City of York Council

Fourth Air Quality Action Plan (AQAP4)

Final Document

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

July 2024

Local Authority Officers	Andrew Gillah, Mike Southcombe
Department	Public Protection, Place Directorate
Address	City of York Council Public Protection Hazel Court Eco Depot James Street York YO10 3DS
Telephone	01904 551525
E-mail	public.protection@york.gov.uk
Report Reference number	CYC AQAP4
Date	July 2024

Executive Summary

This Air Quality Action Plan (AQAP4) 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 further improve air quality in York over the next 5 years between 2024 and 2028 to go beyond health-based National Air Quality Objectives in all areas and to work towards meeting stricter World Health Organisation (WHO) Guidelines.

In line with statutory guidance from the Department for Environment, Food and Rural Affairs (DEFRA), AQAP4 presents a comprehensive and targeted list of air quality improvement measures to deliver further reductions in nitrogen dioxide (NO_2) in York. AQAP4 also outlines City of York Council's wider ambition to address other pollutants with known health impacts, such as particulate matter.

AQAP4 is fully aligned to the Council Plan and reflects ambitions contained within our 10-Year Strategies covering climate, health and wellbeing and the economy.

AQAP4 supports the aims of the council's Health and Wellbeing Strategy by minimising and reducing public exposure to air pollution and raising public awareness about the impacts of air pollution on health. AQAP4 will also continue to ensure that new developments provide a safe and healthy environment for occupants, support active travel initiatives, and help to address health inequalities in the city. AQAP4 firmly embeds the Council Plan's priority of sustainable, accessible transport for all and recognises the important continued role of modal shift in air quality improvement. AQAP4 strives to facilitate the uptake of low and zero emission modes of transport to allow York's residents, workforce and visitors to travel sustainably.

AQAP4 additionally embeds the council's commitment to healthy and affordable (energy-efficient) homes and has been developed to complement CYC's Climate Change Strategy and support the guiding

principles of our Economic Strategy, which aims to build inclusive, healthy and sustainable communities.

This action plan updates and replaces the previous action plan (AQAP3) which ran from September 2015 and was the principal delivery mechanism for York's Low Emission Strategy (LES) produced in October 2012. For the current, updated AQAP, a comprehensive review of previously adopted air quality improvement measures has been undertaken. Where still relevant to York's air quality issues and principal emission sources, measures and targets have been updated to ensure they strive to achieve continual improvement in air quality across the city over the next 5-year period to improve public health outcomes.

Additional measures are included in AQAP4 to reflect:

- the growing evidence base around air quality and health impacts of fine particulate matter, together with new targets introduced through the Environment Act 2021 and obligations for local authorities outlined in DEFRA's Air Quality Strategy;
- updated emissions source apportionment work for City of York Council's area;
- the current air quality position across the city with respect to health based Air Quality Objectives, and
- additional work undertaken in relation to freight movements since publication of the last AQAP in 2015.

The complete list of measures is provided in table 5.13 in chapter 5.

Projects delivered through AQAP3 include:

- York's first fully electric Park & Ride site at Poppleton Bar and the introduction of electric buses across other Park & Ride sites. Five out of six sites are now operating solely using electric buses. The fully electric fleet on the York Park and Ride has been now been expanded to 33 buses and includes one of the largest fleets of electric double decker buses outside London.

- A Clean Air Zone (CAZ) for buses. Buses making 5 or more entrances to the city centre CAZ per day are now required to be Ultra Low Emission Buses (ULEB) (Euro VI diesel or electric).
- A Low Emission Taxi Grant scheme for taxi drivers licensed by City of York Council. We have encouraged over a third of the York taxi fleet to change to low emission alternatives (petrol hybrid or electric); a significant number of these have been supported by our innovative taxi grant scheme. We have also strengthened Taxi Licensing policy and introduced conditions about the types of vehicles that can be licensed.
- Delivery of extensive 'pay as you go' fast and rapid charge public electric vehicle recharging facilities across the city. In addition, we have delivered ultra-rapid charging facilities via our network of charging Hyper-Hubs.
- Introduction of low emission vehicles into City of York Council's fleet, including a number of fully electric waste collection vehicles.
- Development of draft Low Emission Planning Guidance to outline our design and mitigation expectations for all new developments in the city
- Launched an ECO-Stars Fleet Recognition Scheme. The scheme attracted fleet membership from 106 organisations and has provided advice on operational best practice.
- Implemented a package of measures aimed at deterring stationary vehicles from idling, including a 'Kick the Habit' anti-idling awareness raising campaign aimed at encouraging people to think about the importance of clean air and the impact this has on their health. The campaign has been supported with anti-idling signage across council owned car parks, city centre bus stops, taxi ranks and other key locations across the city. We have also worked in partnership with local schools and other partner organisations to raise awareness of idling emissions.

In addition to the above, York continues to deliver on walking, cycling and public transport improvements through the Local Transport Plan and I-Travel York Sustainable Travel programmes.

The case for clean air and improving health outcomes

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas[1,2,3].

The mortality burden of air pollution within the UK is equivalent to 29,000 to 43,000 deaths at typical ages[4], with a total estimated healthcare cost to the NHS and social care of £157 million in 2017[5]. City of York Council is committed to reducing the exposure of people in York to poor air quality in order to improve health. It is estimated that long-term exposure to air pollution (specifically fine particulate, $PM_{2.5}$) was a contributory factor to the cause of death in 4.4% of deaths (approximately 90) in York in 2021[6]. This is approximately 1 in every 22 deaths.

Air pollution can also have economic impacts through sickness absence and reduced productivity of a workforce. This, in turn, can affect goods, services and supply chains. Impacts on the economy can also arise

[1] Environmental equity, air quality, socioeconomic status and respiratory health, 2010

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

[3] https://pubs.rsc.org/en/content/articlelanding/2023/va/d3va00054k (overview at https://www.york.ac.uk/news-and-events/news/2023/research/deprived-communities-air-pollution/)

[4] Defra. Air quality appraisal: damage cost guidance, January 2023

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

[6] https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/3/gid/1000043/pat/6/par/E12000003/ati/302/are/E06000014/iid/93861/age/230/sex/4/cat/-1/ctp/-1/yrr/1/cid/4/tbm/1

through damage to historic monuments (and associated restoration costs) and impacts on ecosystem processes affecting drinking water, timber production and nature (and associated remediation costs). DEFRA has previously estimated that poor air quality cost the economy £2.7 billion through its impact on productivity[7].

Residents, commuters through the city and those who work in York were invited to participate in Our Big Conversation during 2021 and 2022, a city-wide discussion helping the city to get to grips with some of the biggest challenges facing York over the next decade, including transport priorities and associated air quality impacts, carbon reduction and York's economy.

More than half of York residents consider congestion to be a very serious problem in York, with almost half considering local air pollution from traffic and the impact of traffic on climate change to be very serious issues. The survey indicated clear support for continued action to improve walking and cycling facilities and to deliver continued improvements to public transport.

Well over half of residents recognised the need to reduce idling emissions, with over half of residents having either already switched to electric or hybrid vehicles (8%) or planning to switch to these modes in the future (43%). Residents indicated clear support for CYC's investment in EV charging infrastructure, with over half supporting additional charge points to enable the wider uptake of ultra-low and zero tailpipe emission vehicles.

Views of York's residents and workforce reflect a positive shift in priorities nationally with respect to the environment, air quality and health.

[7] Valuing the impacts of air quality on productivity. Ricardo-AEA. Available online at: https://uk-air.defra.gov.uk/assets/documents/reports/cat19/1511251135_140610_Valuing_the_impacts_of_air_quality_on_productivity_Final_Report_3_0.pdf

Source contributions and the role of transport

There has been a general downward trend in NO_2 concentrations monitored across the city since 2012. The reductions observed are related to improvements in traffic emissions generally, changes in background air quality and local initiatives introduced through AQAP3, LTP3 and CYC's wider sustainable travel programmes. Despite these improvements, there remain a number of areas around the inner ring road (within the existing Air Quality Management Area (AQMA) boundary) where exceedances of the annual mean NO_2 objective have been monitored in recent years.

Emissions of oxides of nitrogen (NO_x) and man-made particulate must be reduced to meet the health based national air quality objectives in York to improve public health. AQAP4 recognises that there are no 'safe' limits for fine particulate emissions ($PM_{2.5}$) and CYC will aim to work to reduce particulate emissions as far as practically possible in line with new Environment Act (2021) commitments.

Our latest source apportionment work has demonstrated that across York's area, the transport sector continues to be the largest contributor (57%) to total NO_x emissions compared to 15% and 17% of PM_{10} and $PM_{2.5}$ emissions respectively. Road transport is responsible for most of these emissions, with a smaller contribution from sources such as non-road mobile machinery (NRMM) and railways. In comparison, domestic combustion makes up 17% of NO_x emissions compared to 23% of PM_{10} emissions and 37% of $PM_{2.5}$ emissions. It should be noted that the exact contribution from road transport will vary by location and in some urbanised areas will be considerably higher than the figure stated above.

Of the road transport emission contribution, cars are the dominant source of NO_x emissions, comprising over half the traffic emissions on the majority of York roads, and having a much greater contribution on many roads. For example, the contribution from cars in areas of poorer air quality, such as Gillygate and Holgate/Blossom Street, ranged from 64% to 87%. Recent survey work has shown that petrol and diesel

vehicles still represent the majority of the car fleet, with around 6% of cars being either electric-hybrid or fully electric.

Light goods vehicles (LGVs)[8] are responsible for less than 10% of road traffic NO_x emissions on the majority of roads, but are more significant in certain areas such as the outer ring road and on key arterial routes, representing up to 25% of total road traffic emissions.

Heavy Goods Vehicles (HGVs)[9] are a significant emission source on the majority of major roads including the outer ring road, key routes into York, and the inner ring road / AQMA, where they contribute between 15 – 25% of the total road NO_x emissions, although there are a few areas around the city centre where HGVs are more significant and contribute between 35% and 55% of the total road traffic NO_x emissions, including at Bootham, Lawrence Street, Barbican Road/Cemetery Road, Hull Road, Lord Mayors Walk and Tower Street. Although there are far less HGVs than cars, these larger vehicles contribute disproportionately to elevated pollution levels in a number of areas. This is consistent with findings from earlier source apportionment work and AQAPs for York.

Bus emissions are less than 10% of the total road transport NO_x emissions on the majority of streets and are most significant on roads with proportionally less emissions, where bus flows form a larger proportion of the overall traffic. Across areas with elevated total NO_x emissions, such as George Hudson Street and Blossom Street, bus emissions generally contribute between 10 and 25% of the total and are therefore still contributing disproportionately to elevated pollution in some areas. It should be noted that the relative contribution of buses to total road NO_x in the city centre has been reduced significantly in recent years due to the Clean Air Zone and upgrades to vehicles servicing high frequency routes. This has been progressed in parallel to the transition to zero tailpipe emission electric buses serving York Park & Ride routes.

[8] Generally vans and other goods vehicles <3.5 tonnes

[9] Generally rigid and articulated trucks / goods vehicles > 3.5 tonnes

Our previous action plan (AQAP3) was adopted by CYC in 2015. AQAP3 previously estimated that reductions in road NO_x of up to 65% would be required to achieve the annual mean NO_2 objective in all locations around the AQMA; the reduction in NO_x emissions required has now reduced by 40% to 25%. Whilst vehicle technology improvements, associated improvements in vehicle emissions and fall in background pollution concentrations in York are responsible for some of the improvements in air quality seen across the city in recent years, there has been a marked reduction in NO_2 concentrations across the AQMA over the last 6-7 years, undoubtedly accelerated due to local air quality interventions delivered during AQAP3, such as upgrades to the York bus and taxi fleets, wider and more accessible EV charging facilities promoting EV uptake, education and awareness around anti-idling, low emission planning measures, sustainable travel initiatives and improvements to walking and cycling infrastructure. The continued success of these measures must be recognised and reflected in AQAP4, which will build on the successful initiatives and programmes delivered to date, with new targets set to reflect CYC's future ambition.

Actions and priorities for AQAP4

For this updated AQAP, in line with DEFRA guidance, we have outlined 29 actions that can be considered under 10 broad topics[10] as follows:

- Environmental permits
- Freight and delivery management
- Policy guidance and development control
- Promoting low emission plant *(includes control of domestic emissions and energy advice services)*
- Promoting low emission transport
- Promoting travel alternatives

[10] Topic areas consistent with National Air Quality Action Plans and EU Categories as required by DEFRA Guidance.

- Public information (and awareness raising)
- Transport planning and infrastructure
- Traffic management
- Vehicle fleet efficiency

The priority areas that AQAP4 will address are as follows:

- **Reduce emissions from freight / delivery vehicles** - Measures to reduce emissions from HGVs and LGVs will be an important part of City of York Council's ongoing strategy for air quality improvement, especially in the city centre AQMA. CYC will continue feasibility work to address first/last mile delivery of light goods in York as part of the development of a city-wide 'Movement and Place' plan and will work with partners to evaluate low emission delivery modes. We will also prioritise a pilot project to test a 'micro-consolidation centre' for the purpose of distributing commercial light goods around the city centre and will consider the feasibility of extending the Clean Air Zone to include HGVs / freight vehicles.
- **Reduce emissions from York buses** - CYC will continue to work in partnership with bus operators to improve bus provision for all service users. Whilst considerable progress has been made to clean up York's buses in recent years, CYC must continue to address emissions from lower frequency services and maximise the number of services operating fully electric buses to further reduce exhaust emissions. CYC will work with partners to deliver further bus upgrades (including an all-electric urban bus fleet), using secured DfT funding and consider the feasibility of extending the Clean Air Zone (for buses) to other areas, including York Central.
- **Reduce emissions from idling vehicles** - CYC will be proactive in raising awareness of the impact of idling vehicle emissions upon public health through our 'Kick the Habit' anti-idling awareness / behaviour change campaign, supported by anti-idling patrols. This

will include raising awareness with commercial vehicle operators, such as those involved in deliveries or construction.

- **Reducing emissions from taxis** - CYC will continue to work with the taxi trade to facilitate the transition to low emission vehicles via the use of incentives and awareness raising. This will be supplemented by further revisions to Taxi Licensing policy to phase out older, more polluting taxis, following consultation with the taxi trade. We will prioritise further opportunities for minimising emissions from taxis in the city centre, including exploring the feasibility of including them within the Clean Air Zone.
- **Reduce emissions from CYC vehicles** - CYC recognise that the way our own fleet vehicles are renewed is a vital part of the CYC air quality improvement / carbon reduction programmes and that the transition to a cleaner, greener fleet must be done without compromising the essential services CYC delivers to the city and its residents. We also recognise that we must lead by example; the successful operation of ultra-low and zero emission vehicles as part of the CYC fleet will show leadership and will act as a catalyst for other fleet operators in the city to upgrade their vehicles and accelerate their renewal programmes.
- **Expand EV charging** - CYC's EV Charging Strategy sets out the rationale for the number and location of public EV charging points, the principles of tariff-setting and CYC's approach to providing charging for residents in streets without off-road parking. CYC will deliver additional fast and rapid charge points and actively monitor plug-in vehicle uptake in the city to ensure our charging network remains fit for purpose. We will undertake an evaluation of the recently opened HyperHub charging sites and deliver additional sites (subject to consultation).
- **Minimise development related emissions** - AQAP4 will align with CYC's Climate Change Strategy, including planning policies and local guidance. CYC will continue to ensure that emissions and air quality impacts from new developments are appropriately assessed

and mitigated (including during construction), exposure to poor air quality is reduced via good design practices and that new private trips are minimised via provision of opportunities for sustainable transport. We will ensure that air quality considerations are used to inform the design of new developments and will strengthen local planning guidance to facilitate a transition away from fossil fuel heating sources, which can contribute to local air quality issues.

- **Provide local incentives for low emission vehicles and modes** - Whilst CYC's priority is to encourage modal shift and reduce private vehicle miles travelled, we will seek to ensure that any remaining trips are made by the lowest emission vehicles possible. CYC is committed to further incentivising the ultra-low emission and zero tailpipe emission vehicles (and other micro-mobility modes) via development of incentives and rewards. Such incentives will complement other work priority areas identified.
- **Improved public information and awareness** - Delivering clear messages to the public around the cause and consequence of poor air quality, particularly around impacts on health, are particularly important for driving behaviour change. Campaigns relating to issues such as energy efficiency, domestic smoke control, bonfires, fireworks and indoor air quality can all be valuable parts of a wider local air quality improvement strategy. CYC will continue to address these wider issues, alongside existing public information campaign work relating to sustainable transport provision in the city.
- **Modal shift, active travel and network improvement** - Measures to reduce trips, encourage modal shift away from private vehicles towards active travel modes such as walking and cycling, and reduce congestion are considered fundamental to any air quality improvement programme for York. CYC's Local Transport Plan (LTP) continues to be an intrinsic part of the overall approach to air quality improvement and transport-based emission reduction across the city, with active travel at the apex of the city's travel

hierarchy. CYC's Transport Strategy sets a target of 20% reduction in vehicle miles travelled by 2030, which will need to supported by significant increases in walking, cycling and use of public transport across York. We will implement measures to reduce vehicle congestion, which will have significant positive benefits for local air quality, and explore specific traffic management options for areas like Gillygate to reduce emissions and improve air quality.

- **Regulation of industrial and domestic emissions** - In addition to reducing transport emissions, AQAP4 also has a role to play in reducing emissions associated with domestic and industrial combustion, particularly fine particulate matter ($PM_{2.5}$). AQAP4 also recognises the synergies with CYC's carbon reduction programme and measures to improve energy efficiency and support services. CYC will actively seek opportunities for grants to support such activities.
- **Monitor air quality / access to air quality information** - Monitoring allows CYC to assess compliance with Air Quality Objectives, evaluate the effectiveness of air quality improvement interventions and provide reliable information to York's residents, visitors and workers to help them reduce exposure. We will ensure that the location and type of monitoring in the city is reviewed annually and remains relevant and targeted to key sources and pollutants. We will seek further opportunities to improve access to air quality information by residents, especially vulnerable groups.

In this updated 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 CYC's direct influence.

Consultation and strategic alignment

A draft version of AQAP4 was approved for public consultation by the Executive Member for Environment and Climate Emergency in November 2023. On online consultation questionnaire was made available on CYC's website between 22nd November 2023 and 4th February 2024 to seek feedback on the draft document. In total, 173 people took part in the consultation; responses have fed into this final version of AQAP4.

Further information about consultation activities is provided in chapter 4 and in Appendix A.

Measures in AQAP4 to reduce transport emissions have been informed by consultation and 'conversations' around transport and environmental priorities. Widespread engagement with York's residents, workers and businesses as part of York's 'One Big Conversation' brought together the overlapping themes of transport, economy and carbon reduction.

AQAP4 is fully aligned to the Council Plan and reflects ambitions contained within our 10-Year Strategies covering climate, health and wellbeing and the economy.

AQAP4 has been developed to complement CYC's Climate Change Strategy (2022-2032). Ongoing delivery of AQAP4 must strive to maximise synergies with this strategy; it must also prevent conflicts. Consideration has been given to these issues in preparation of AQAP4 to ensure measures remain appropriate for addressing local air quality and climate change alike.

Measures in AQAP4 support CYC's Health and Wellbeing Strategy (2022-2032), which aims to tackle health inequalities and promote healthy lifestyles. AQAP4 measures also align with and complement the guiding principles of CYC's Economic Strategy (2022 – 2032) which aim to build inclusive, healthy and sustainable communities by promoting the positive social and environmental benefits of economic development and working with local businesses to build "green" skills.

AQAP4 is part of the Strategy and Policy Framework (approved by Council in December 2022) that shows how strategic ambition will be delivered through a series of plans, including the Local Plan, The Local Transport Plan (LTP), the Council Plan and this Air Quality Action Plan (AQAP4). CYC's wider ambitions for not only delivering a sustainable transport network and increasing public and active transport, but also for achieving Net Zero by 2030, reducing health inequalities and improving wellbeing, and supporting a thriving and green economy are all set out in our 10-Year Strategies.

Through previous AQAPs, CYC has already delivered many measures to reduce emissions and protect and improve the health of its residents. However, with an increasing population and further development, preventing emission growth and improving air quality further remain significant and difficult challenges for the foreseeable future. Alongside CYC's complementary strategies, AQAP4 will continue to work towards our ultimate aspiration of becoming an internationally recognised ultra-low emission city, offering some of the best urban air quality in the UK. We will take bold action to reduce air pollution beyond statutory National Air Quality Objectives and work towards meeting much stricter World Health Organisation (WHO) guidelines.

Responsibilities and Commitment

This AQAP was prepared by the Public Protection Department of City of York Council with the support and agreement of the following officers and departments:

- James Gilchrist (Director of Transport, Environment and Planning)
- Peter Roderick (Director of Public Health)
- Matt Boxall (Head of Public Protection, Public Protection)
- Mike Southcombe (Environmental Protection Manager)
- Andrew Gillah (Principal Air Quality Officer, Environmental Protection)
- Julian Ridge (Local Transport Plan Lead, Transport Planning)

- Andy Vose (Local Transport Plan Manager, Transport Planning)
- Shaun Gibbons (Head of Carbon Reduction)
- Leigh Bell (Public Health Specialist Practitioner, Public Health)
- Andrew Leadbetter (Project Manager, EV Strategy)
- Ian Hoult (Head of Fleet and Operations)
- Graham Titchener (Head of Parking Services)
- Becky Eades (Head of Planning and Development Services)
- Alison Cooke (Head of Strategic Planning Policy, Integrated Strategy)
- Duncan McIntyre (Active Travel Manager)
- Michael Howard (Head of Active and Sustainable Transport)
- Christian Wood (Head of Programmes and ITS)
- Claire Foale (AD Policy and Strategy)

This AQAP has been approved by City of York Council's Executive.

This AQAP has been signed off by the Director of Public Health.

This AQAP will be subject to an annual review and appraisal of progress. Progress each year will be reported in the Annual Status Reports (ASRs) produced by City of York Council, as part of our statutory Local Air Quality Management duties.

If you have any comments on this AQAP please send them to City of York Council's Public Protection team at:

Address: City of York Council, Public Protection, Hazel Court Eco Depot, James Street, York, YO10 3DS

Telephone: (01904) 551525

Email: public.protection@york.gov.uk

Contents

List of Tables

List of Figures

1 Introduction

This Air Quality Action Plan (AQAP4) outlines the actions that City of York Council (CYC) will deliver between 2024 – 2028 to reduce emissions and exposure to air pollution to improve health and quality of life of residents and visitors to York.

AQAP4 updates and replaces the previous action plan (AQAP3) which ran from September 2015 and was the principal delivery mechanism for York's Low Emission Strategy (LES) produced in October 2012.

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 annually within CYC's Air Quality Annual Status Reports (ASRs).

The following sections of AQAP4 outline current air quality in the city, setting out the scale of the remaining air quality challenge and updating previous source apportionment work for the current Air Quality Management Area and wider York area. AQAP4 outlines priority areas that CYC will focus on to deliver continued emission reduction and air quality improvement in the city over the next five year period to improve public health outcomes. AQAP4 updates and refines measures in earlier AQAPs and includes additional priority measures to strengthen CYC's response to tackling York's air quality issues. Reductions in air pollutant emissions in York will also have wider national and international benefit.

2 Summary of Current Air Quality in York

2.1 Review and Assessment of air quality

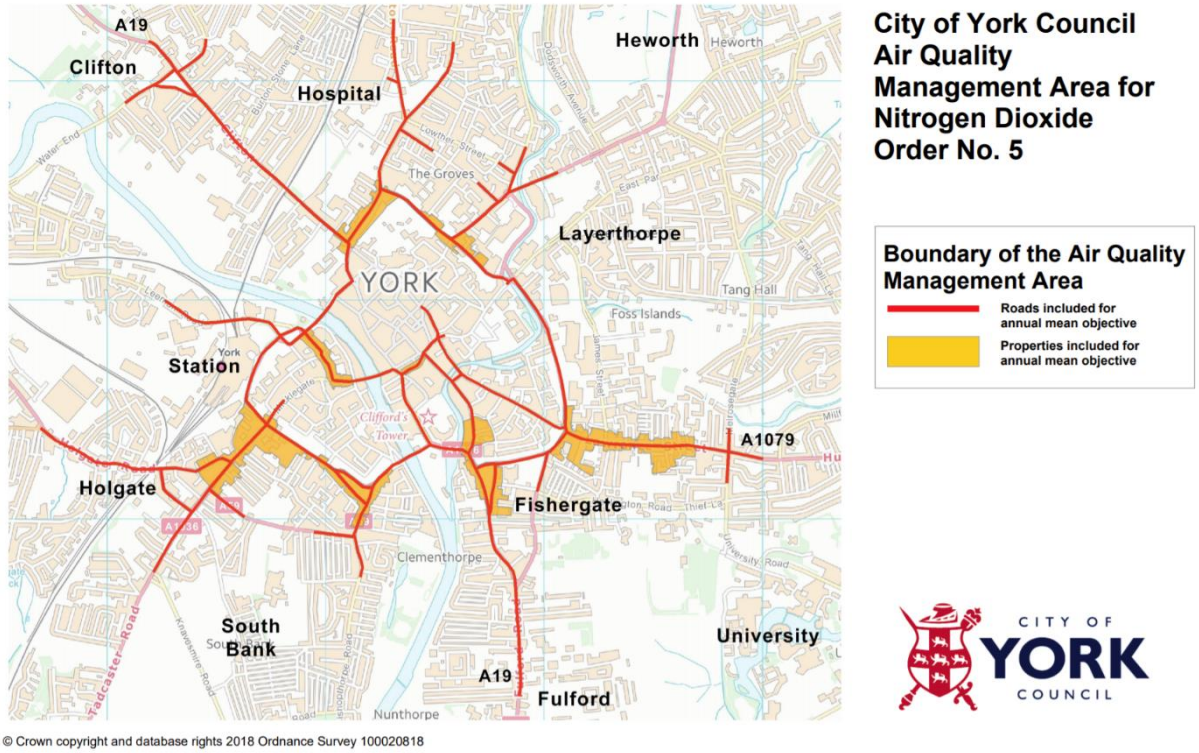
Review and Assessment of air quality in York has been undertaken since 1999. In 2001, five areas of the city around the busy inner ring road were identified as having NO_2 concentrations in excess of the government's health based annual mean NO_2 objective. This long-term objective for NO_2 is aimed at protecting the most vulnerable members of society (e.g. the young, the elderly and those already suffering from respiratory conditions) from the long-term (chronic) impacts of poor air quality.

Following public consultation, the five areas of 'technical breach' were incorporated into a single Air Quality Management Area (AQMA) declared in 2002. Within the areas of technical breach, relevant locations[11] were included within the AQMA boundary. Outside the technical breach areas, only roads were included.

Monitoring of NO_2 across the city centre, since the AQMA declaration, has identified a number of areas where air quality has improved, but has also identified some additional areas around the inner ring road breaching health based objectives. The city centre AQMA boundary has been amended twice since 2002 to reflect additional city centre locations known to be above health based objectives. The latest amendment was in December 2018 and the extent of the current AQMA (Order No.5), declared on the basis of the annual mean NO_2 objective, is shown in figure 2.1 below. Air quality in these additional areas has also generally improved since the amendments were made.

[11] Relevant locations with respect to the annual mean NO_2 objective include all locations where members of the public might be regularly exposed to poor air quality. Examples include building facades of residential properties, schools, hospitals and care-homes. They do not include building facades of offices or other places of work, where members of the public do not have regular access.

Figure 2. 1 Current AQMA boundary (Order No.5)



Map showing CYC Air Quality Management Area for Nitrogen Dioxide Order No. 5. Red line denotes roads included for annual mean objective, yellow shapes denote area of properties included for annual mean objective.

Additional AQMAs existed in York on Fulford Main Street (declared 2010) and along Salisbury Terrace (declared 2012) on the basis of monitored exceedances of the annual mean NO_2 objective. These AQMAs have since been revoked, as monitoring over multiple years demonstrated improvements in air quality and sustained compliance with health based objectives.

Maps of the current and historical AQMAs in York can be viewed on CYC's website.

2.2 Previous AQAPs for York

CYC previously published AQAPs in 2004 (AQAP1) and 2006 (AQAP2). These were primarily modal shift and congestion reduction based plans with an emphasis on reducing vehicle trips across the city. Despite the

introduction of these plans, air quality in York continued to deteriorate throughout the 2004 to 2010 period. In response to this, CYC published a Low Emission Strategy (LES) in 2012. This document was the first of its kind in the UK and aimed to encourage the uptake of alternative fuels and low emission vehicle technologies in the city. In 2015, CYC published its third AQAP (AQAP3), which served as a formal delivery mechanism for the LES and aimed to supplement and enhance the congestion reduction and sustainable transport measures delivered through CYC's Local Transport Plan and I-Travel York programmes, such as measures to encourage the uptake of walking, cycling and public transport use across the city. AQAP3 aimed to prevent the need for further AQMA declarations and allow the eventual revocation of the three AQMAs existing at the time (covering the City Centre, Fulford Main Street and Salisbury Terrace). AQAP3's wider objective was to reduce emissions to air across the whole York area to minimise deterioration in background air quality and improve public health outcomes.

Since publication, AQAP3 and the LES have facilitated the introduction of 33 electric buses across York's Park & Ride sites, a city centre Clean Air Zone (CAZ), low emission planning guidance to minimise and mitigate development related emissions, an anti-idling campaign, widespread EV charging infrastructure across the city and incentives for low emission vehicle use. The strategies have been particularly effective at tackling emissions from essential service vehicles such as buses and taxis, which fall outside the scope of trip reduction based modal shift improvement measures. Annual progress with measures in AQAP3 can be found in CYC's historical Annual Status Reports.

2.3 Current air quality in York and recent trends

Real-time monitoring of NO_2 and other pollutants (including particulate matter) has been undertaken at a total of 14 different locations across York since 1999 (real-time monitoring is currently undertaken at 9 sites). CYC has also historically undertaken long-term nitrogen dioxide diffusion tube monitoring across 340 locations in the city. Current and historical real-time monitoring results across York are available at Air Quality

England. Diffusion tube monitoring results can be viewed on the interactive map available on YorkView. The current status of air quality in York is summarised in CYC's latest Annual Status Report.

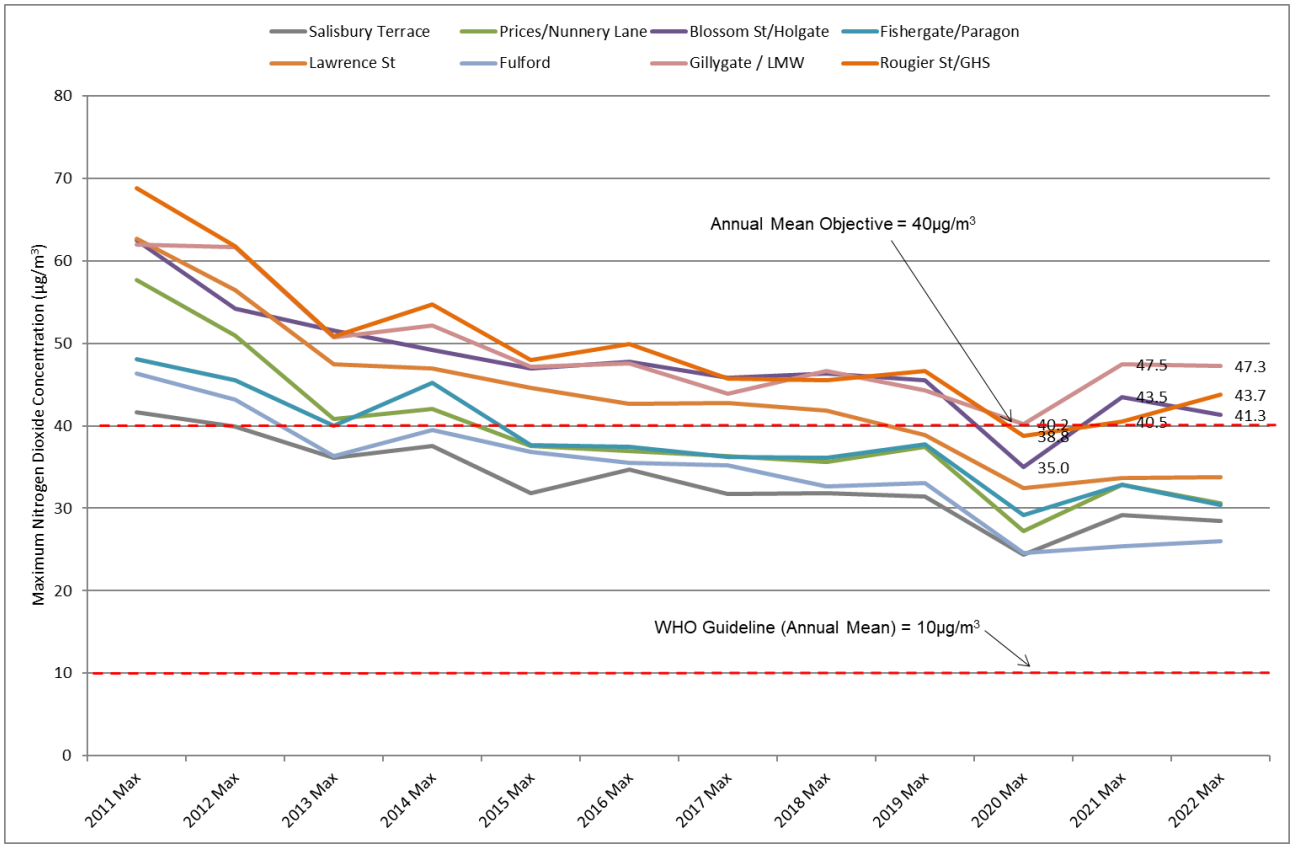
Nitrogen Dioxide (NO_2)

There has been a general downward trend in NO_2 concentrations monitored across the city since 2012. The reductions observed are related to improvements in traffic emissions generally, changes in background air quality and local initiatives introduced through AQAP3, LTP3 and CYC's wider sustainable travel programmes. Despite these improvements, there are still a small number of areas around the inner ring road (in the existing AQMA boundary) where exceedances of the annual mean NO_2 objective are being monitored.

Widespread improvements in air quality were observed in York in 2020 compared with previous years, primarily due to a reduction in emissions from vehicles on the York road network caused by work from home directions and non-essential retail being closed as a result of the Coronavirus pandemic. In 2020, the highest concentration of NO_2 recorded at a relevant location was 40 µg/m^3 (equal to the health-based objective). Improvements in air quality monitored in 2020 reinforced previous source apportionment work demonstrating that traffic is a significant source of NO_2 in the city, supporting the measures the council has taken so far to reduce vehicle emissions. Whilst concentrations of NO_2 monitored in York more recently in 2021 and 2022 were higher than those monitored in 2020, in most areas they remain lower than pre-pandemic levels recorded in 2019 and continue the general downward trend in air pollution seen in York over the last 10+ years. Despite this, pollution levels in some areas of York remain above long term health based standards. Ongoing air quality monitoring in all locations will be fundamental to understanding the longer term environmental impacts of the pandemic and associated behaviour changes in terms of mode of travel.

Trends in maximum annual average NO_2 concentrations monitored at relevant locations across the AQMA over the last 12 years are shown in figure 2.2 below.

Figure 2. 2 Maximum annual average NO_2 concentrations monitored at a relevant location across key areas of the current AQMA



Graph showing trends in the maximum nitrogen dioxide concentration monitored across key areas of the Air Quality Management Area between 2011 and 2022. A general downward trend in concentrations is observed, with a pronounced fall in concentrations seen in 2020, caused by reduced traffic during the coronavirus pandemic.

Note on Figure 2.2: Salisbury Terrace and Fulford Road AQMAs now revoked but the data is shown for information

In line with DEFRA's LAQM guidance, before revoking an AQMA on the basis of measured pollutant concentrations, a local authority needs to be

reasonably certain that any future exceedences of air quality objectives are unlikely.

For this reason, CYC must consider local measurements carried out over several years post-pandemic, national trends in emissions, as well as local factors that may affect the AQMA. In line with this timeframe, AQAP4 seeks to ensure that air quality improvement measures and targets strive to achieve continual improvement in air quality across the city, ultimately allowing the revocation of the existing AQMA declared for NO_2, preventing the need for further AQMAs and reducing fine particulate emissions ($PM_{2.5}$) to further improve public health outcomes.

Particulate Matter ($PM_{2.5}$ and PM_{10})

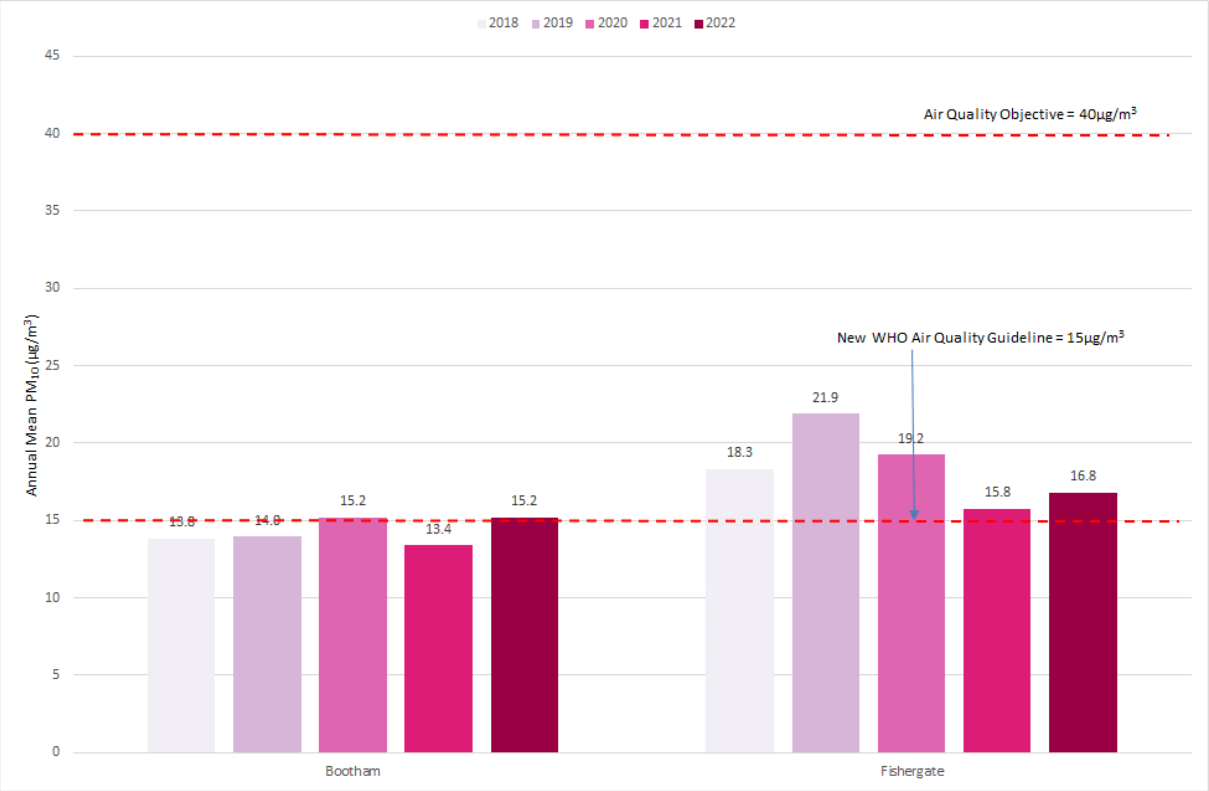
$PM_{2.5}$ is the pollutant which has the biggest impact on public health, contributing to premature mortality, allergic reactions and cardiovascular diseases. $PM_{2.5}$ are small enough to pass through the lungs, into the bloodstream and organs. In the main, these small particles are produced from the combustion of solid and liquid fuels in vehicle engines, through domestic heating and power generation. Agriculture is the largest source of ammonia emissions in the UK and also contributes to $PM_{2.5}$ through chemical reactions in the atmosphere. Whilst local authorities do not have direct regulatory powers over agriculture, DEFRAs Air Quality Strategy outlines opportunities for local authorities to encourage tenant and other farmers to reduce ammonia emissions by following codes of good agricultural practice.

In recent years, concentrations of $PM_{2.5}$ have generally decreased at roadside monitoring sites in York. Whilst national air quality objectives for both PM_{10} and $PM_{2.5}$ are currently met in York, along with most other urbanised areas of the UK, these concentrations are above World Health Organisation (WHO) guidelines for these pollutants. WHO Guidelines offer global guidance on thresholds and limits for key air pollutants that pose health risks. Prior to September 2021, guidelines of 10 and 20µg/m^3 (as annual means) existed for $PM_{2.5}$ and PM_{10} respectively, although these have now been tightened to 5µg/m^3 ($PM_{2.5}$) and 15µg/m^3 (PM_{10}). A similar strengthening of WHO guidelines occurred for NO_2, with

the annual average recommendation falling from 40 to 10µg/m^3. The new guidelines reflect the large body of evidence produced in recent years of the harm caused to people by much lower levels of pollution than previously thought. The WHO recognise that these are very ambitious public health recommendations and achieving the guideline levels would be the ultimate goal.

Trends in annual mean PM_{10} and $PM_{2.5}$ concentrations as recorded at AURN affiliated monitoring sites[12] in York over the last 5 years are shown in figures 2.3 and 2.4 below. Historical concentrations of particulate at both these and other sites in York are documented in CYC's Annual Status Reports.

Figure 2. 3 Trends in PM_{10}

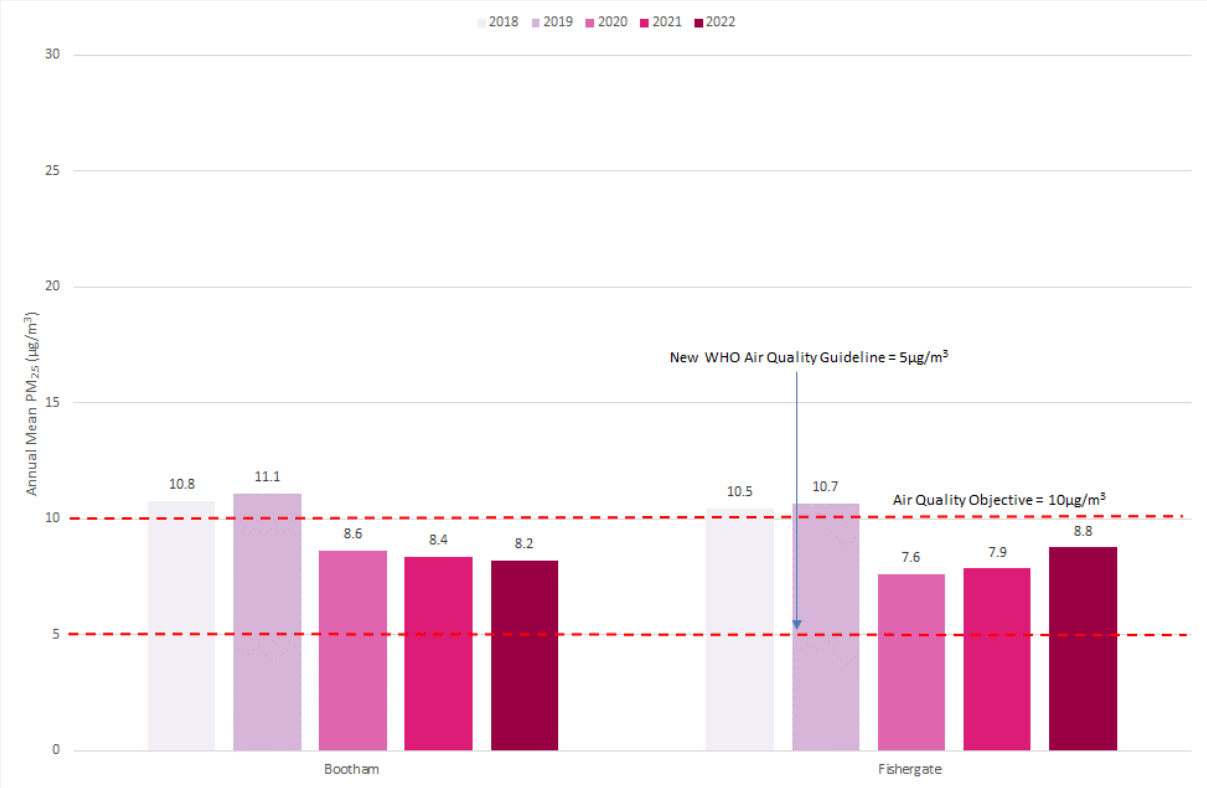


Graph to show trends in annual mean PM_{10} concentration monitored at York Bootham and Fishergate monitoring sites

[12] York AURN monitoring sites use reference method equivalent monitoring techniques, approved by DEFRA, for measuring particulate and comparison with health based objectives. Results from other sites in York that measure particulate are shown in York's ASRs and are considered indicative.

between 2018 and 2022. Concentrations were well within the current UK Air Quality Objective in all years and in 2022 were just above the World Health Organisation Guideline of 15µg/m^3.

Figure 2. 4 Trends in $PM_{2.5}$



Graph to show trends in annual mean $PM_{2.5}$ concentration monitored at York Bootham and Fishergate monitoring sites between 2018 and 2022. A downward trend is observed at both sites, with concentrations in 2022 being within the current UK Air Quality Objective, but above the World Health Organisation Guideline of 5µg/m^3.

Policy Guidance LAQM.PG(22) acknowledges that many local authorities will consider how to address $PM_{2.5}$ alongside other pollutants when tackling their own fleets and services and/or work with communities and business to achieve improvements in air quality. CYC recognises that there are no 'safe' limits for particulate emissions (particularly $PM_{2.5}$) and is committed to reducing anthropogenic (man-made) particulate emissions across York, alongside emissions of oxides of nitrogen (NO_x) for the protection of public health.

3 City of York Council's Air Quality Priorities

3.1 Public Health Context

Air pollution is the largest environmental risk to public health in the UK. The mortality burden of air pollution (based on both $PM_{2.5}$ and NO_2) in the UK, is equivalent to 28,000 to 36,000 deaths at typical ages[13] with a total estimated healthcare cost to the NHS and social care of £157 million in 2017[14].

Epidemiological studies have demonstrated that long-term exposure to air pollution can reduce life expectancy, mainly due to cardiovascular diseases, respiratory conditions and lung cancer. In addition, short-term exposure (over hours or days) to elevated levels of air pollution can also cause health impacts, such as reduced lung function, exacerbation of asthma, increases in respiratory and cardiovascular hospital admissions and mortality[15].

Emerging evidence suggests that air pollution may also affect the brain, with suggested links to dementia and cognitive decline. The health effects of air pollution are varied and complex and can affect everyone, at all stages of life, as illustrated in figure 3.1 below. The focus of the Chief Medical Officer's Annual Report in 2022 was air pollution; the report lays out the scale of the challenge of reducing air pollution, the substantial progress that has been made and highlights achievable solutions.

---

[13] Air quality appraisal: damage cost guidance. DEFRA. Available online at: https://www.gov.uk/government/publications/assess-the-impact-of-air-quality/air-quality-appraisal-damage-cost-guidance

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

[15] Health matters: air pollution. Public Health England. Available online at https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution

Figure 3. 1 Impacts of air pollution throughout life

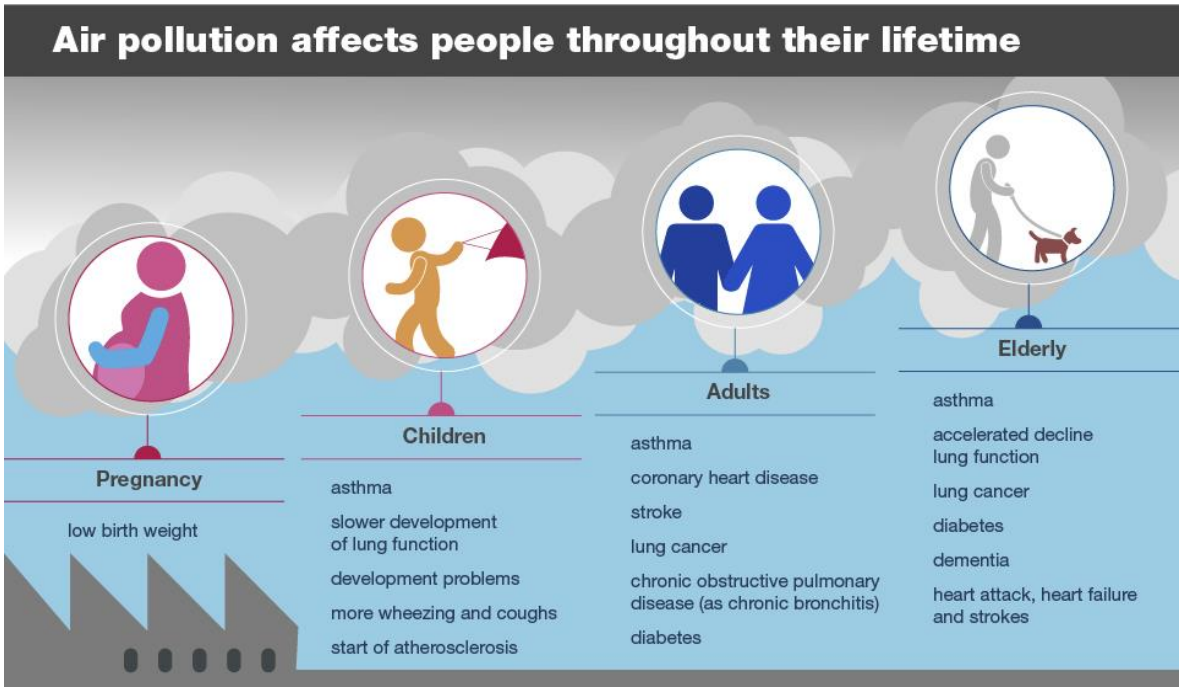


Image from Public Health England: Health Matters, which depicts:

- *Pregnancy – low birth weight.*
- *Children – asthma, slower development of lung function, development problems, more wheezing and coughs, start of atherosclerosis.*
- *Adults – asthma, coronary heart disease, stroke, lung cancer, chromic obstructive pulmonary disease (as chronic bronchitis), diabetes.*
- *Elderly – asthma, accelerated decline lung function, lung cancer, diabetes, dementia, heart attack, heart failure and stroke.*

Whilst air pollution can be harmful throughout life and across all age groups, some people are more affected, perhaps because they are exposed to higher levels of air pollution in their day to day lives, live in polluted areas, or are more susceptible to air pollution related health issues, see figure 3.2 below.

Figure 3. 2 Air pollution and health inequalities

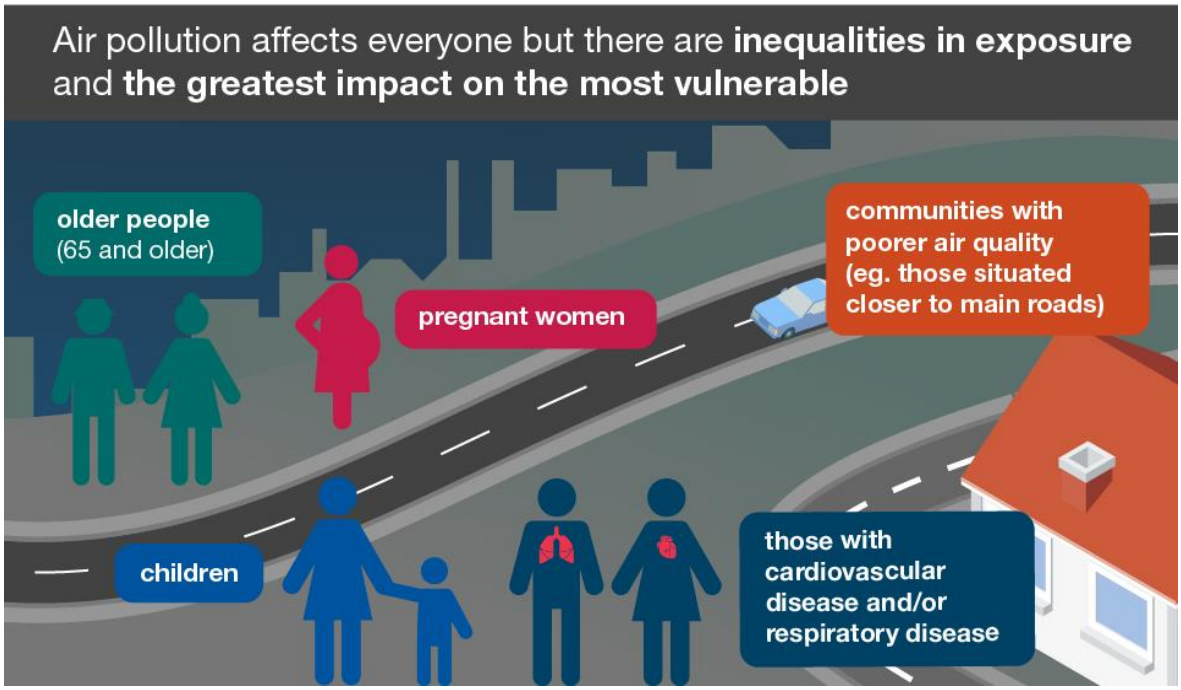


Image from Public Health England: Health Matters which illustrates: Air pollution affects everyone but there are inequalities in exposure and it has the greatest impact on the most vulnerable: older people (65 and older), pregnant women, children, those with cardiovascular disease and/or respiratory disease.

Air pollution also impacts people of working age, resulting in economic impacts through sickness absence and reduced productivity of a workforce. This, in turn, can affect goods, services and supply chains. Impacts on the economy can also arise through damage to historic monuments (and associated restoration costs) and impacts on ecosystem processes affecting drinking water, timber production and nature (and associated remediation costs).

DEFRA estimated that in 2012, poor air quality cost the economy £2.7 billion through its impact on productivity[16].

[16] Valuing the impacts of air quality on productivity. Ricardo-AEA. Available online at: https://uk-air.defra.gov.uk/assets/documents/reports/cat19/1511251135_140610_Valuing_the_impacts_of_air_quality_on_productivity_Final_Report_3_0.pdf

The coronavirus pandemic has clearly demonstrated the critical link between human health, economic prosperity and resilience.

Due to overwhelming evidence that $PM_{2.5}$ (particulate matter with an aerodynamic diameter of 2.5µm or less) has a significant impact on human health, including premature mortality, allergic reactions and cardiovascular diseases, local authorities and their associated public health departments are expected to work towards reducing emissions and/or concentrations of fine particulates. DEFRA acknowledge that many local authorities will consider how to address $PM_{2.5}$ alongside other pollutants when tackling their own vehicle fleets and services and/or work with communities and businesses to achieve improvements in air quality and that few standalone $PM_{2.5}$ measures will be chosen unless in order to address a very specific local problem.

Whilst this updated AQAP is focussed on reducing concentrations of NO_2 (as this is the pollutant for which the current AQMA is declared) it contains a number of measures to specifically target particulate matter. It should also be recognised that a number of the air quality improvement measures developed to address NO_2 concentrations within the AQMA will also have mutual benefit in terms of reducing particulate matter. The current AQAP will therefore have additional public health benefits over and above those delivered via a reduction in NO_2 concentrations within the current AQMA. It should also be acknowledged that delivery of wider public health objectives / benefits, such as reducing obesity and improving mental health wellbeing, will also be delivered indirectly as a result of AQAP4, via promotion of active travel options such as walking and cycling and associated increased levels of physical activity.

Effective local action to reduce air pollution and improve public health requires an inclusive, multi-disciplinary approach across local authority functions involving spatial and transport planners, environmental and public health teams, local political and community leaders and the public. AQAP4 aims to strengthen the existing partnerships across CYC functions, to deliver continual improvement in air pollution and improve public health outcomes in the city.

3.1.1 Public Health Outcomes Framework (PHOF)

The Public Health Outcomes Framework includes an indicator relating to the fraction of mortality attributable to particulate pollution. This indicator enables Directors of Public Health to prioritise action on air quality in their local area to help reduce the health burden from air pollution. Indicator D01 'Fraction of mortality attributable to particulate air pollution' is defined as the fraction of annual all-cause adult mortality attributable to particulate air pollution (concentrations of total $PM_{2.5}$). It can be viewed as the mortality burden associated with long-term exposure to particulate air pollution at current levels, expressed as the percentage of annual deaths from all causes in those aged 30 and over.

It is estimated that long-term exposure to air pollution (specifically fine particulate, $PM_{2.5}$) was a contributory factor to the cause of death in 4.4% of deaths (approximately 90, or 1 in every 22 deaths) in York in 2021[17]. This figure is less than the figure reported for the wider Yorkshire and Humber region in 2021 (5.0%) and less than the average figure reported for England in 2021 (5.5%).

It is widely accepted that fine particulate matter has a significant impact on both morbidity and mortality and diesel emissions have been classified as carcinogenic by the International Agency for Research on Cancer (part of the World Health Organisation).

There is particular concern about the 'black carbon' fraction of particulate matter due to its health impacts, and its strong ability to absorb light energy and increase global warming. Black carbon emissions in urban environments arise predominantly from diesel transport, but are also a product of biomass combustion, used increasingly for energy production and space heating.

[17] From Primary Care Mortality Database (PCMD), there were 2045 deaths (all causes) of people in York aged 30 and above in 2021. Indicator D01 shows that air pollution (specifically PM2.5) is attributable to the cause of death in 4.4% of these deaths (approximately 90 deaths, or 1 in 22 deaths).

Emissions of oxides of nitrogen (NO_x) and man-made particulate must be reduced to meet the health based national air quality objectives in the remaining areas of York, work towards meeting World Health Organisation (WHO) Guidelines and improve public health. AQAP4 recognises that there are no 'safe' limits for particulate emissions (particularly $PM_{2.5}$) and CYC will strive to reduce such emissions as far as practically possible. We will continue to work with regional and central government on policies and issues beyond CYC's direct influence to achieve this aim.

3.1.2 National Institute for Health and Care Excellence (NICE) Guidelines

In 2020, NICE updated recommendations regarding road traffic related air pollution and policy options and interventions for improving local air quality.

Interventions to reduce emissions and exposure to road-traffic related air pollution, included within NICE recommendations are as follows:

- Greater consideration of air quality issues during the planning process, to include the provision of charging points for electric vehicles in workplaces, commercial developments and residential areas to facilitate low and zero-emission travel. Minimising exposure of vulnerable groups to air pollution via careful design and siting of developments should also be a consideration.
- Use of Clean Air Zones to provide restrictions on certain classes of vehicle and to support zero and low-emission travel.
- Reducing emissions from public sector transport services and vehicle fleets
- Encouraging smooth driving and speed reduction
- Providing support for active travel and provide a choice of cycle routes, including routes that avoid highly polluted roads and utilise quiet streets or segregated routes.

During the development of AQAP4 and the measures contained within this document, consideration has been given to the NICE recommendations above.

3.1.3 City of York Council Public Health

The work of the Public Health Team is driven by the Council Plan and the Joint Health and Wellbeing Strategy for York, which is informed by the Joint Strategic Needs Assessment. The York Health and Wellbeing Board sets the strategic vision and direction for health and social care in the city and has a number of statutory responsibilities. Whilst it is a formally constituted Committee of the Council in terms of governance it is a partnership and legislation sets out a minimum membership of at least one council elected member, representatives from NHS Humber and North Yorkshire Integrated Care Board (ICB), directors of adult social services, children's services and public health, a representative from local Healthwatch (an independent consumer champion for healthcare) and a representative of NHS England, when required. In York we have expanded this membership to include other organisations such as the Police, Independent Care Group, York Health and Care Collaborative and other members of the voluntary sector.

The York Health and Wellbeing Board work together to make improvements to the health and wellbeing of York's residents and produce a Joint Strategic Needs Assessment (JSNA). The joint strategic needs assessment describes the current and emerging health and wellbeing needs for people who live in York.

AQAP4 has an important role to play in minimising and reducing public exposure to air pollutants and raising awareness about the impacts of air pollution on health. Measures in AQAP4 around further development of low emission planning guidance will help to ensure new development provide a safe and healthy environment for residents, support active travel initiatives and address health inequalities in the city.

3.2 Planning and Policy Context

AQAP4 has been developed with due consideration to the following policies and strategies which have the potential to impact directly on York's air quality and/or have influenced the scope of measures included in the AQAP.

3.2.1 The Council Plan 2023 to 2027

The Council Plan is City of York Council's corporate strategy for the period 2023 – 2027. It will guide the council's priorities whilst providing a framework for financial and performance management and to help the city identify and respond to new opportunities or challenges. It set's out our organisation's contribution to delivering the vision for the city and long-term ambitions contained within the 10-Year Plan and 10-Year Strategies covering climate, health and wellbeing and the economy.

Underpinning the priorities set out in the Council Plan are our 'Four Core Commitments' – the four outcomes we will put at the heart of council services and the decisions we make:

- **Equalities** – providing equal opportunity, balancing human rights, standing up to hate, championing communities
- **Affordability** – finding new ways so everyone benefits from the city's success, targeting support where it's most needed
- **Climate** – understanding the impact our decisions have on the environment, adapting the city to prepare for extreme weather events
- **Health** – improving health and wellbeing, reducing health inequalities, targeting areas of deprivation

The Council Plan has seven priorities, with the Four Core Commitment outcomes running through each:

a) **Heath and wellbeing**: A health generating city, for children and adults

b) **Education and skills**: High quality skills and learning for all

c) **Economy and good employment**: A fair, thriving, green economy for all

d) **Transport**: Sustainable accessible transport for all

e) **Housing**: Increasing the supply of affordable housing

f) **Sustainability**: Cutting carbon, enhancing the environment for our future

g) How the Council operates

AQAP4 will contribute to the Council Plan by delivering measures to improve air quality and public awareness of air pollution and impacts on health, thus promoting good health and wellbeing. AQAP4 firmly embeds the Council Plan's priority of sustainable, accessible transport for all and recognises the important continued role of reduced vehicle traffic and modal shift in air quality improvement.

AQAP4 strives to facilitate the uptake of low and zero emission modes of transport to allow York's residents, workforce and visitors to travel sustainably. However, we also recognise that AQAP4 must additionally tackle non-transport related emissions, such as those generated via construction activities or those from domestic heating. AQAP4 also contains measures to address emissions from these important sources to further improve health.

AQAP4 has been developed to complement CYC's Climate Change Strategy, to recognise synergies and prevent conflict, and additionally supports the guiding principles of our Economic Strategy which aims to build inclusive, healthy and sustainable communities.

3.2.2 York Low Emission Strategy (LES)

In 2012, CYC developed and adopted an overarching Low Emission Strategy to holistically reduce air pollution and carbon emissions in the city. The LES built upon the existing congestion reduction and modal shift approach to air quality improvement in York, by encouraging the uptake of low emission fuels and technologies and encouraging better vehicle maintenance and driving techniques.

The LES placed particular emphasis on reducing emissions from diesel vehicles, especially HGVs, buses and taxis, which deliver essential services across York's transport network and cannot be dealt with effectively through modal shift. York's previous AQAP3 was the main delivery mechanism for this strategy. Whilst many measures within the LES have now been delivered, the overarching aims and vision remain relevant for AQAP4.

3.2.3 Local Transport Strategy (LTP3 / LTP4)

York's previous LTP3 was developed in 2011 with a vision for York's transport landscape across the subsequent two decades. However, since then many aspects of how we travel in to and through York has changed, not least as a result of emerging technology and the pandemic changing travel habits. Many of the previous plan's ambitions have now also been met, such as:

- Funding to deliver major schemes for York Central, committing to increase the capacity of the A1237 York Outer Ring Road and improve the area in front of York Station.
- A Clean Air Zone for buses has been introduced covering much of central York.
- There has been great progress in electrifying the bus network
- In the early years of LTP3, funding was obtained to build new park and ride sites at Poppleton Bar and Askham Bar and improve the junction between the A1237 and A59 Harrogate Road
- A mandate has been secured to develop a new station at Haxby
- A new segregated cycle and footpath links Clifton Moor and Haxby
- Improvements for pedestrians and cyclists have been made on Scarborough Bridge and its approaches
- More recently Micklegate has been closed in one direction to motorised traffic.

LTP4's development recognises that whilst the plan is taking place in an era of great change, there will be a number of fixed points that will need consideration such as commitments to major schemes such as York Central and York Station Frontage, as well as parameters set by regional and central government policies. LTP4 also recognises priorities of the city as demonstrated in the council's commitment to net-zero carbon neutrality by 2030.

LTP4 will set the vision, objectives and targets for York's transport strategy for the next generation and will complement strategies developed for York's Economic Recovery and Carbon Reduction. LTP4 will concentrate on a 15 year period, aligning with the city's Local Plan, with a proposed review at each five year milestone. Measures in AQAP4 to reduce transport emissions have been informed by a city-wide conversation around transport and environmental priorities progressed throughout 2021 and 2022, that considered experience of and priorities for transport, air quality and carbon reduction, journeys and the economy. CYC also worked with partners at York Civic Trust to contribute to policy research and emerging findings throughout the period of engagement.

CYC has developed a draft Local Transport Strategy, that sets out high level principles and priorities for York that will underpin future transport strategies, to be encompassed within York's Local Transport Delivery Plan. The draft Local Transport Strategy will strengthen the policy context leading to the development of a list of major schemes. It will articulate York's transport priorities and enable their incorporation in the Local Transport Plan for York and North Yorkshire. 'Tackling transport emissions' is recognised as key policy strand within York's Local Transport Strategy. Measures in AQAP4 will support both this aim and York's wider transport vision, to reduce congestion, pollution and traffic levels and make active travel and new modes of travel more attractive.

3.2.4 York's Joint Health and Wellbeing Strategy 2022-2032

This strategy aims to ensure that every single resident of York can enjoy the best possible health and wellbeing throughout the course of their life.

The current updated AQAP continues to have an important role in contributing to the aims of CYC's Health and Wellbeing Strategy by minimising and reducing public exposure to air pollution and raising public awareness about the impacts of air pollution on health. AQAP4 will also continue to ensure that new developments provide a safe and healthy environment for occupants, support active travel initiatives and help to address health inequalities in the city.

3.2.5 York's New Local Plan

In 2005, the current Local Plan was approved for development management purposes. Although not 'formally adopted', this is the document CYC use as the basis for development control decisions. It provides a framework to guide and promote development, and to protect the quality of York's unique historic, natural and built environment. The document sets strategic priorities for the whole city and forms the basis for planning decisions; it must be reviewed at regular intervals to be kept up to date.

CYC are currently working towards the New Local Plan being fully compliant with the National Planning Policy Framework (NPPF) and other relevant regulations. Once 'adopted', the new Local Plan will determine how the city develops over the next 15 years and beyond. The new Local Plan will respond to the issues facing York and will consider issues such as transport priorities, air quality and climate change. The plan will reflect the city's economic ambitions and help to deliver economic success, whilst building strong communities and protecting and enhancing its unique environment. Our new Local Plan is currently in the process of Examination by Independent Planning Inspectors following submission of the Local Plan to the Secretary of State for Housing, Communities and Local Government on 25 May 2018.

AQAP4 contains measures relating to the Local Plan that will build upon previous actions delivered as part of earlier AQAPs for the city. These include the continued development of Low Emission Planning Guidance, to formalise the approach for assessing and mitigating the emissions impacts of new development. AQAP4 also includes measures to tackle

emissions associated with solid fuel burning across new development sites.

3.2.6 York Climate Change Strategy 2022 - 2032

In 2019, CYC announced a Climate Emergency and have since set an ambition for CYC to reduce its carbon emissions to net zero by 2030. CYC recognise the threat of climate change at both a global and local scale, and are committed to delivering bold, local climate action to deliver economic and social benefits, such as new green jobs, economic savings, market opportunities and much improved well-being for York residents. Our ambitions will be reflected in the York Climate Change Strategy.

Whilst care has been taken to avoid unnecessary duplication between the Climate Change Strategy aspirations and AQAP4, there remain a number of areas of cross over between the plans and each must be implemented with due regard for the other.

Air quality and climate change are intrinsically linked and there may often be common emission sources contributing to local air pollution and greenhouse gas emissions (e.g. combustion of fossil fuels). Climate actions, such as installation of heat pumps over gas boilers, or energy efficiency measures, can offer considerable benefits for both agendas. However, it should be noted that in some areas conflicts can arise. Examples have included the use of diesel fuel and the promotion of biomass boilers within urban areas.

Whilst diesel vehicles are generally more fuel efficient than petrol alternatives, older diesel vehicles have high NO_x and PM emissions. Whilst using biomass as a fuel can offer significant carbon savings, it can have a negative impact on local air quality. Other low carbon fuels such as hydrogen[18] create similar dilemmas.

Emissions of NO_x and particulate from biomass boilers can be significant and may not be appropriate where air quality is already poor (urban

[18] https://ncas.ac.uk/limit-hydrogen-emissions-to-feel-the-benefits-for-climate-urge-scientists/

environments) or where there is a sensitive population close by (e.g. schools, hospitals or care homes). In the case of large-scale plant, transport emissions associated with fuel deliveries may also be significant for local air quality. Other examples of conflict may include District Heat Network (DHN) schemes, where a single large emission source may be proposed to replace a number of smaller emission sources.

Air quality improvement strategies and planning decisions should complement wider climate change/carbon reduction agendas and all should be well aligned to recognise synergies and prevent conflict. In some cases a compromise approach may be needed to balance the two agendas. For example, a large scale biomass boiler may be allowed but it should be located in a position where the impact on sensitive receptor points will be minimised. Consideration may need to be given to additional emission abatement or control in sensitive areas.

York's Economic Strategy 2022 – 2032

CYC's new 10-year Economic Strategy sets out to improve living standards and livelihoods for all of York's residents and businesses. We aim to do this through increasing productivity, raising earnings, and maintaining our skills advantage. AQAP4 measures complement the guiding principles of our Economic Strategy which aim to build inclusive, healthy and sustainable communities by promoting the positive social and environmental benefits of economic development and working with local businesses to build "green" skills.

3.3 Source Apportionment

The AQAP measures presented in this report are intended to be targeted at the main sources of emissions within City of York Council's area.

Source apportionment studies for York, including work carried out for the development of previous AQAPs, clearly identified traffic as the main source of NO_2 in the city centre, with between 51 to 72% of NO_2 estimated to be arising from transport sources in the city centre 'technical breach areas'.

In past years, carbon-based vehicle taxation policies have resulted in older petrol vehicles being replaced with new diesel vehicles. York's air quality issues have previously been attributed, at least in part, to the prevalence of diesel vehicles across the city. AQAP3 aimed to address the growth in diesel passenger cars by encouraging the uptake of lower emission alternatives such as electric and hybrid vehicles and this must continue through the lifetime of AQAP4. AQAP3 measures to support this aim are retained in AQAP4, with indicators and targets updated for AQAP4 to ensure that measures remain focussed and drive continuous improvement in the York fleet.

In line with many other local authority areas, York's earlier source apportionment studies have also highlighted that buses, coaches and HGVs, whilst making up only a small proportion of the total vehicle fleet in some areas, have a disproportionate impact on local air quality due to their relatively high emissions per unit distance travelled (this issue was also exacerbated by the age / emission standard of certain vehicles being operated across York). Measures in AQAP3 to reduce emissions from buses, such as delivery of a Clean Air Zone in the city centre, widespread introduction of electric buses across York's Park and Ride service and anti-idling policies, have been particularly successful in tackling emissions from such service vehicles. Whilst AQAP4 recognises these successes, further measures are proposed in AQAP4 to ensure continued improvement in the bus fleet and to address additional emissions from HGVs (and LGVs), particularly in relation to movement of freight into and around the city. Additional measures are also proposed to further reduce emissions from taxis.

Previous source apportionment work carried out for York's current and historical AQMA declarations and areas of air quality 'technical breach' is fully summarised in AQAP3 and the reader should refer to this document for details.

3.3.1 Updated Source Apportionment Work for AQAP4

In addition to the detailed source apportioned studies carried out for the purpose of informing the development of AQAP3 (which largely remain

relevant to the updated Action Plan and remaining city centre AQMA designation), further source apportionment work has been carried out to refine the evidence base for AQAP4, to ensure that air quality improvement measures continue to be targeted to the main sources of pollution across the city; this will ensure maximum air quality improvement in the shortest possible timescale.

Whilst consideration of the source contributions of NO_x/NO_2 will ensure that measures are appropriately targeted towards achievement of the health based annual mean objective for NO_2 in all locations in the city, further consideration has been given to PM_{10} and $PM_{2.5}$ in the updated source apportionment work, reflecting the Governments strengthened national commitment (and indeed CYC's local commitment) to delivering reduction in such pollutants for the protection of public health. The Environment Act 2021 required government to set targets on air quality, including fine particulate matter ($PM_{2.5}$), the most damaging pollutant to human health. The Act has also improved existing frameworks laid out in existing substantive primary legislation such as the Environment Act 1995 *(which sets up the local air quality management framework, including local government responsibilities to tackle air pollution)* and the Clean Air Act 1993 *(which enables local authorities to tackle smoke emissions from chimneys of buildings, fixed boilers and industrial plant)* enabling more effective action to tackle air pollution and deliver health benefits, as well as increasing transparency and accountability at all levels. DEFRA have produced an Air Quality Factsheet that summarises headline measures.

Whilst AQAP4 contains a number of new measures to specifically target PM_{10}/$PM_{2.5}$, it should be recognised that a number of the ongoing air quality improvement measures previously developed to address NO_2 concentrations within the AQMA will also have benefits for PM_{10}/$PM_{2.5}$.

NAEI Source Apportionment - emission sources by activity sector

The National Atmospheric Emission Inventory (NAEI) provides emission maps for various pollutants that can be downloaded at 1km x 1km

resolution across the UK. One set of maps is produced each year for the most recent NAEI year.

The geographical distribution of emissions across the UK is built up from a number of map distributions for each sector. These individual NAEI sector distributions are developed using information and surrogate statistics appropriate to each sector.

A review of the NAEI 1km x 1km emission maps considered emissions across both CYC's local authority boundary area and a smaller area covering York's city centre / inner ring road / areas of existing air quality technical breach. Emissions in each of these areas have been apportioned into the relative contributions from each source sector.

Total emissions from each source sector and pollutant have been expressed as a percentage of all emissions within the area under consideration. Sectors are described in Table 3.1 below.

Table 3. 1 NAEI source sector descriptions

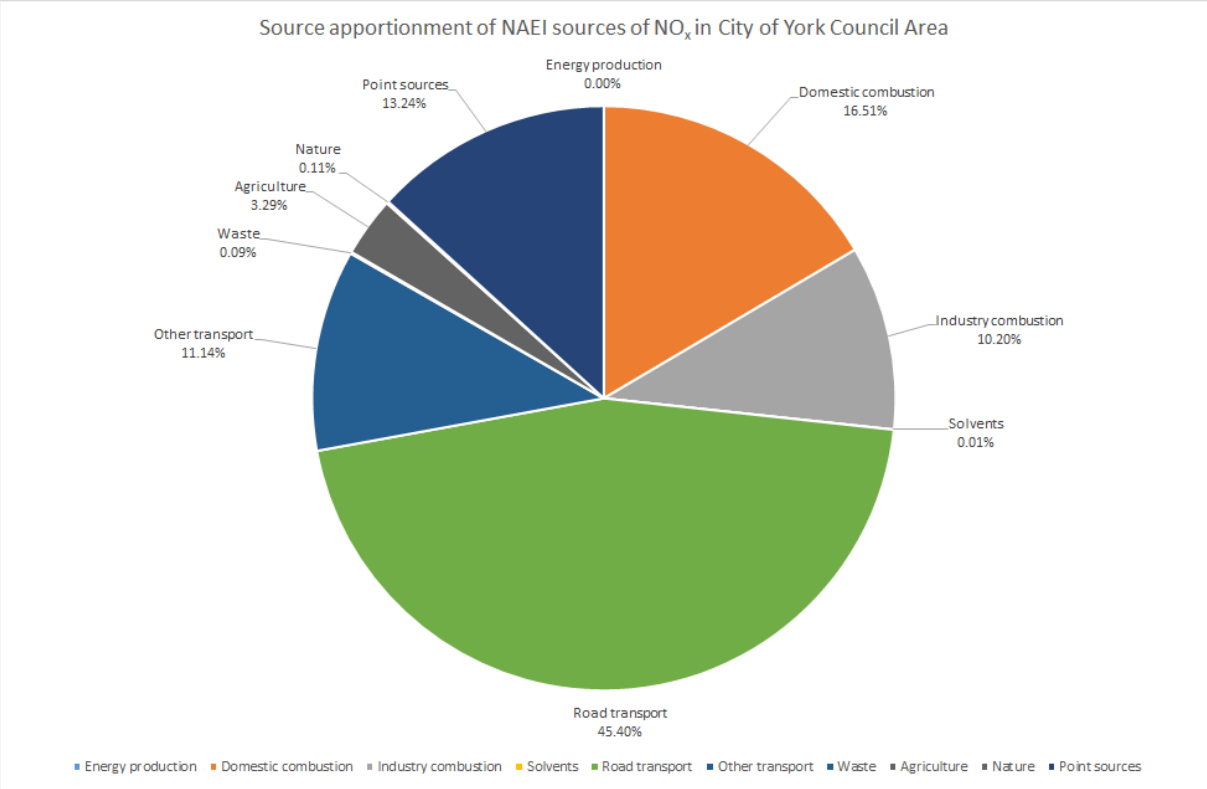
Sector	Description
Energy production	Combustion in energy production and transfer
Domestic combustion	Combustion in commercial, institutions, residential, agriculture. Note for $PM_{2.5}$ only, this sector is further split into domestic combustion of 'wood', 'smokeless solid fuels' and 'other fuels'
Industry combustion	Combustion in manufacturing industry
Production processes	Production processes
Offshore	Extraction and distribution of fossil fuels
Solvents	Solvent use
Road transport	Road transport
Other transport	Other transport and mobile machinery

Sector	Description
Waste	Waste treatment and disposal
Agriculture	Agriculture, forestry and land use change
Nature	Nature
Point sources*	Point sources

*Point source emissions calculated by subtracting the sum of all other sectors above from NAEI total emissions (which include point source emissions).

The contribution of each NAEI activity sector to the total emissions of NO_x, PM_{10} and $PM_{2.5}$ in CYC's area of administration is shown in Figures 3.3 to 3.5 below.

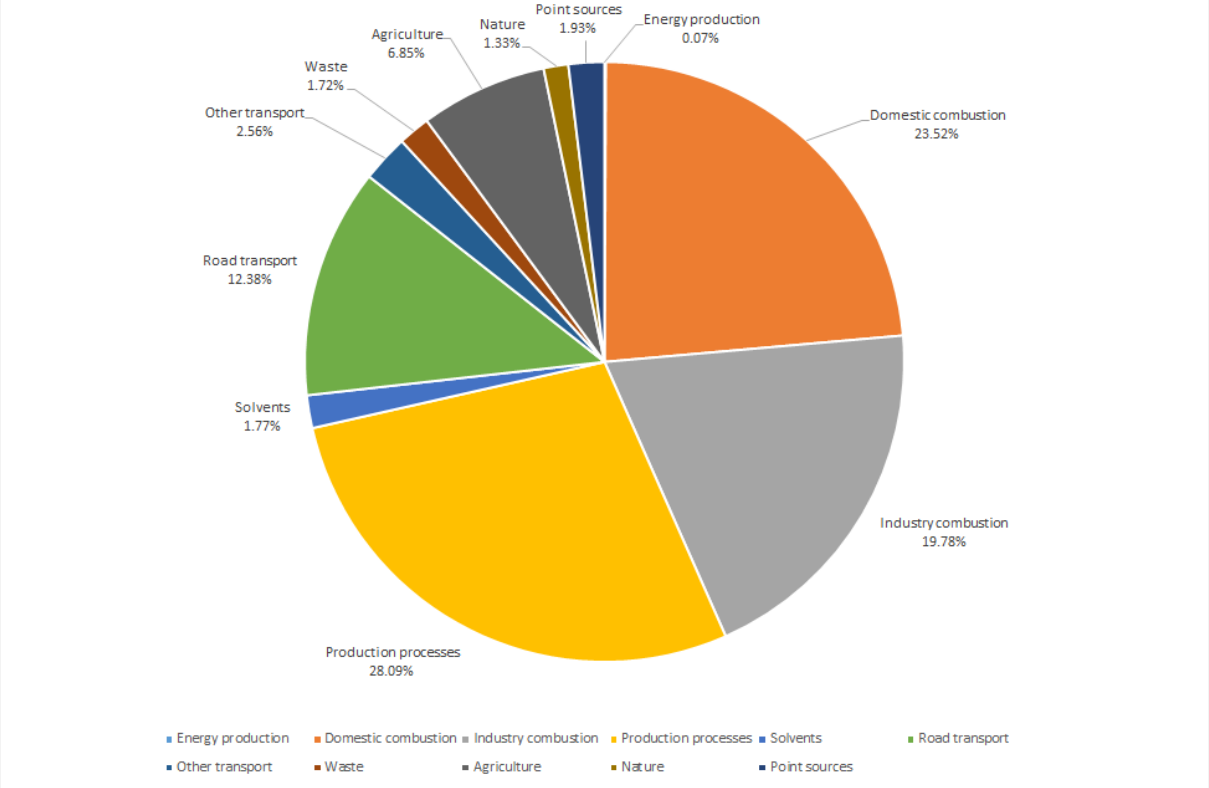
Figure 3. 3 Source apportionment of NAEI sources of NO_x in CYC's area



Pie chart showing (clockwise from top) Domestic Combustion, 16.51%. Industry Combustion, 10.20%. Solvents, 0.01%. Road

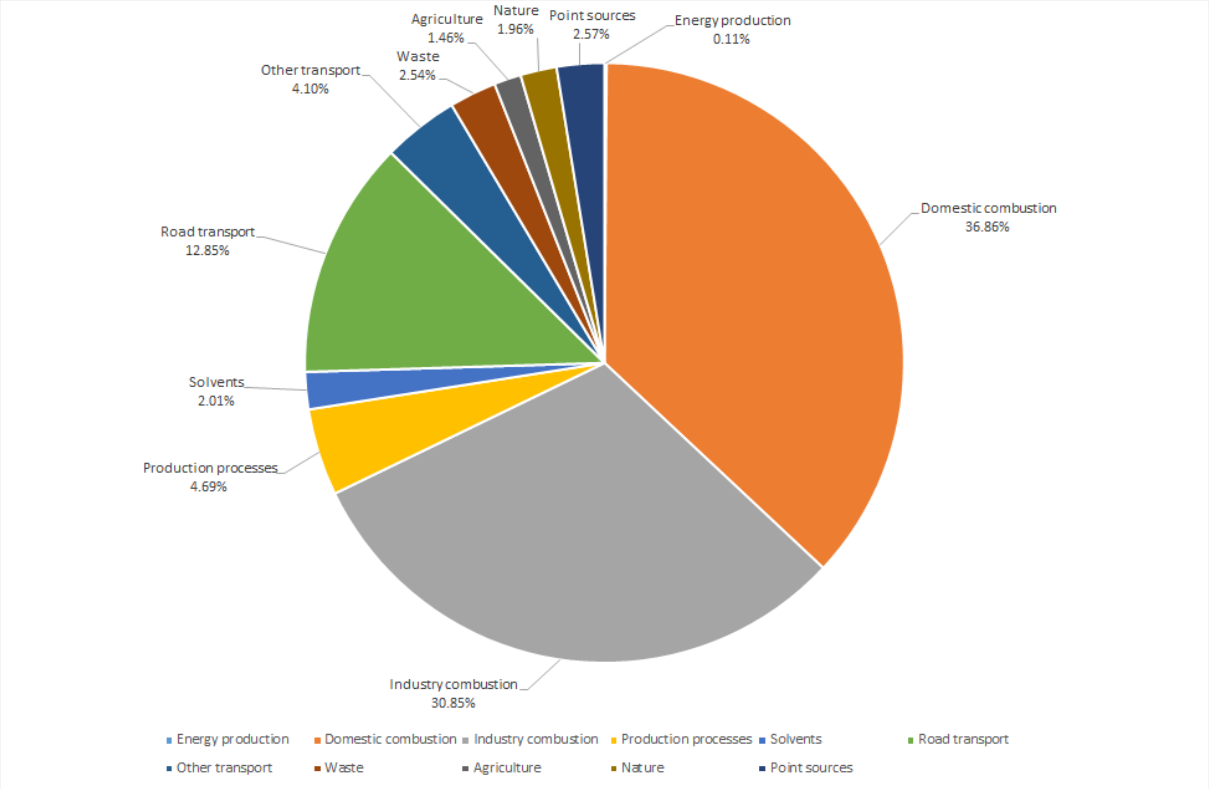
transport, 45.40%. Other transport, 11.14%. Waste, 0.09%. Agriculture, 3.29%. Nature, 0.11%. Point Sources, 13.24%. Energy Production 0.00%.

Figure 3. 4 Source apportionment of NAEI sources of PM_{10} in CYC's Area



Pie chart showing (clockwise from top) Domestic Combustion, 23.52%. Industry Combustion, 19.78%. Production Processes, 28.09%. Solvents, 1.77%. Road transport, 12.38%. Other transport, 2.56%. Waste, 1.72%. Agriculture, 6.85%. Nature, 1.33%. Point Sources, 1.93%. Energy Production 0.07%.

Figure 3. 5 Source apportionment of NAEI sources of $PM_{2.5}$ in CYC's area



Pie chart showing (clockwise from top) Domestic Combustion, 36.86%. Industry Combustion, 30.85%. Production Processes, 4.69%. Solvents, 2.01%. Road transport, 12.85%. Other transport, 4.10%. Waste, 2.54%. Agriculture, 1.46%. Nature, 1.96%. Point Sources, 2.57%. Energy Production 0.11%.

Across CYC's local authority area, the 'transport' sector continues to be the largest contributor (57%) to total NO_x emissions. Road transport specifically comprises approximately 45% of the total NO_x emissions, compared to 12% and 13% of PM_{10} and $PM_{2.5}$ emissions respectively. Domestic combustion makes up only 17% of NO_x emissions compared to 23% of PM_{10} emissions and 37% of $PM_{2.5}$ emissions.

When considering the smaller 9km^2 area covering York city centre (the inner ring road and existing areas of air quality technical breach with respect to the annual mean NO_2 objective) some differences are apparent. Whilst the contribution from road transport is broadly consistent between the two areas, domestic combustion increases from

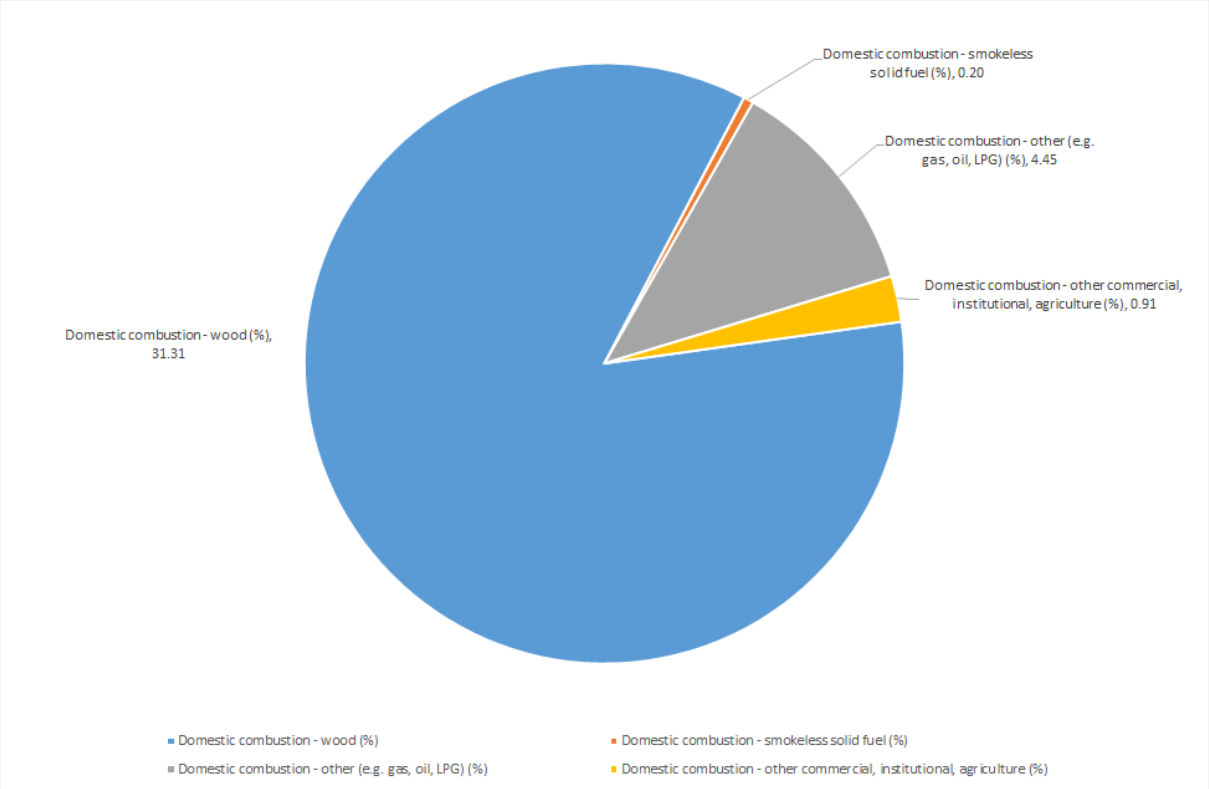
17% across the whole of York to 42% within the smaller city centre area. Similar, but less pronounced increases are observed for PM_{10} and $PM_{2.5}$. This is related to an increased density of commercial and domestic premises (and therefore combustion activity) within the heart of the city.

Combustion from industry (i.e. non-commercial and non-domestic) is notably higher for the wider area of York due to the location of larger scale combustion plant. The impact from agricultural emissions for all pollutants considered is also several orders of magnitude greater for the wider CYC area, as it takes into account the wider rural area of York.

Larger point source emissions absent from the city centre area are represented within the wider York boundary. These point sources include York Crematorium, waste water treatment works and waste disposal/treatment facilities such as Harewood Whin to the west of the city. These facilities are regulated by CYC and the Environment Agency.

With respect to $PM_{2.5}$ the NAEI provides a further breakdown of emissions from domestic combustion sources, such as those associated with burning of wood, smokeless solid fuels and other fuels such as gas, oil and LPG. This is shown in figure 3.6 below.

Figure 3. 6 Breakdown of $PM_{2.5}$ emissions from 'domestic combustion' NAEI sector



Pie chart showing that combustion of wood makes up the majority of $PM_{2.5}$ emissions from the NAEI domestic combustion sector at 31.3%, with the combustion of other fuels, such as smokeless solid fuels, gas, oil and LPG making up around 5.6% combined. The domestic combustion sector shown in the chart makes up 36.9% of total $PM_{2.5}$ emissions in total.

Across CYC's area, it is estimated that 31% of $PM_{2.5}$ emissions are due to wood burning, compared to only 0.2% from smokeless solid fuels and 4.5% from other boiler technologies. NAEI mapping estimates that domestic combustion of wood accounts for more than double the $PM_{2.5}$ emissions produced by road traffic across CYC's wider area.

The Air Quality (Domestic Solid Fuels Standards) (England) Regulations 2020 made under section 87 of the Environment Act 1995 restrict the sale of certain solid fuels. The regulations have effectively banned the sale of polluting 'wet' wood and house coal across England, with only 'dry' wood and smokeless mineral fuels being currently legally available

for purchase and use. The legislation became law from 1st May 2021 and together with cleaner modern solid fuel appliances, will assist in reducing particulate emissions and improving local air quality and health across York. New measures are included in AQAP4 to further raise awareness of the legal responsibilities of suppliers and consumers, together with the health impacts associated with solid fuel burning and particulate matter emissions across the city.

Updated Road Traffic Source Apportionment

In March 2021, CYC was awarded DEFRA funding to carry out a feasibility study to consider how to reduce emissions relating to deliveries travelling in to and out of York. A key project objective was to consider how to reduce the number of deliveries made to the city centre and around York by LGVs and HGVs and how to reduce emissions from the remaining fleet. Part of the study commission was to undertake a review of baseline emissions associated with all vehicle types using York's network, to aid understanding of the relative contribution that delivery vehicles make to current pollution levels in the city. The study has also provided further insight into the composition of the wider York vehicle fleet and has created an up to date emissions profile based on vehicle classifications and ages.

Automatic Number Plate Recognition (ANPR) camera surveys were undertaken at 4 locations from 24th – 27th August 2021. Vehicle registration data was processed through the DVLA to obtain information on the vehicle fleet composition (vehicle type, age, fuel type and Euro emission classification). The locally observed fleet profiles from the ANPR camera surveys have been used in conjunction with the Emission Factor Toolkit (EFT) (v10.1) and traffic flow data to calculate total emissions on road links across the York network. Physical features that may affect emission rates and/or dispersion, such as junction details, gradients and street canyons were accounted for. In addition, a review of the network was undertaken to identify which locations may be operating for periods of the day under congested conditions. Such locations were modelled using an additional low speed source (i.e. 5

km/h) to represent congested movement and to improve emissions estimates.

Analysis of emissions for each link has been conducted using the EFT and local fleet data to determine the main vehicle contributors to NO_x emissions across the weekday and weekend periods, in both existing and future years. Headline findings from this study are outlined below:

- With respect to cars, petrol and diesel vehicles still represent the majority of the fleet, although there was a clear preference for petrol (52% petrol vs 43% diesel). The remaining ~5% of fuel technology was mostly petrol hybrid, with electric vehicles making up ~1% of the fleet.
- Of the other vehicle classifications, the majority of LGVs and HGVs were diesel fuelled, whereas the bus fleet was diesel and electric. The vast majority of buses operating within the York urban area are Euro VI diesel in line with requirements of the Clean Air Zone, with all but one of the Park & Ride services (Rawcliffe Bar) operating 100% electric buses.
- The trend for cars and LGVs was towards newer Euro V and VI engines, although this was trailing behind EFT national estimates, which is expected to some extent at the time of the survey, due to the effects of the pandemic slowing fleet turnover.
- The HGV fleets were also predominantly diesel Euro V and VI. The rigid HGV fleet was slightly older than the articulated HGV fleet, which is consistent with trends recorded in other cities and interpreted to be related to a larger component of owner-operator vehicles and longer retention of these vehicle types in the fleet.
- Cars are the dominant source of NO_x emissions across all roads, forming over 55% of emissions on the majority of York roads, with cars having a much greater contribution on many roads across the city.
- LGV proportions are highest on eastern and south eastern routes such as Fulford Road and Hull Road. The majority of LGV NO_x

emissions make up less than 10% of the total emissions. Emissions from LGVs is more pronounced on the Outer Ring Road , Fulford Road and Askham Lane, where up to 25% of the total NO_x emissions are from LGVs.

- On the key road network within York, HGVs are most dominant on roads coming into the city centre from the north, east and south east routes, for example Gillygate, Wiggington Road, Foss Islands Road, Hull Road and Fulford Road. HGVs are a significant emission source on the majority of major roads including the Outer Ring Road, key routes into York, and the Inner Ring Road, where they contribute between 15 – 25% of the total, although they are insignificant on smaller, local roads. There are a few areas where HGVs are more significant and form between 35 – 55% of the total NO_x emissions on roads with significant total emissions, including areas such as Bootham, Lawrence Street, Barbican Road/Cemetery Road, Hull Road, Lord Mayors Walk and Tower Street.
- Bus emissions comprise less than 10% of the total NO_x emissions on the majority of roads. Areas where bus emissions are most significant are largely on roads with proportionately less emissions (i.e. on Coppergate, Pavement, Merchantgate and Walmgate and on bus only routes). George Hudson Street, Micklegate, Blossom Street and The Mount are roads with elevated total NO_x emissions where bus emissions form between 10 and 25% of the total.

The source apportioned data for NO_x and $PM_{2.5}$ for selected roads, including some links within the current AQMA, are shown in tables 3.2 and 3.3 below. This is also represented as a pie chart in figure 3.7. The source contributions for the two pollutants are broadly similar, although cars tend to contribute a comparatively higher proportion of $PM_{2.5}$.

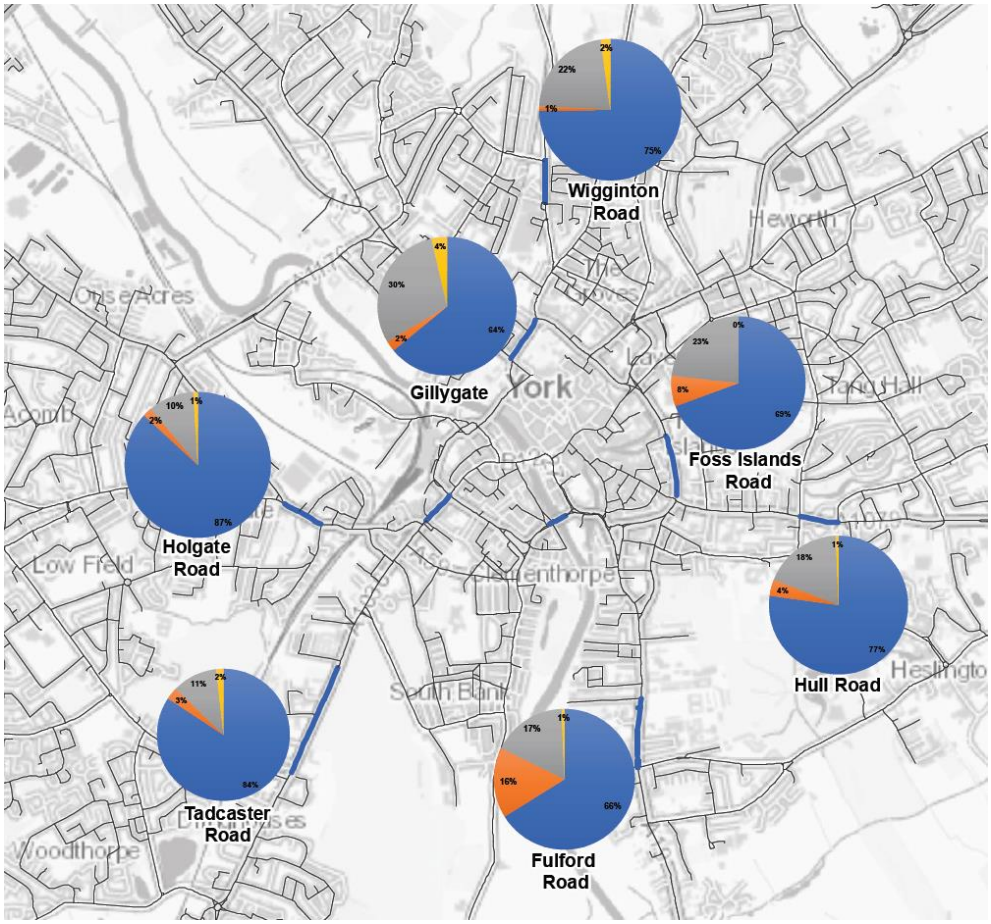
Table 3. 2 NO_x emissions contributions from traffic on selected roads

Road	Car (% NO_x)	LGV (% NO_x)	HGV (% NOx)	Bus (% NOx)
Gillygate	64	2	30	4
Wiggington Road	75	1	22	2
Foss Islands Road	69	7	23	0
Hull Road	77	4	18	1
Skeldergate Bridge	86	2	11	0
Fulford Road	66	16	17	1
Tadcaster Road	84	3	11	2
Holgate Road	87	2	10	1
Blossom Street	76	3	18	3

Table 3. 3 $PM_{2.5}$ emissions contributions from traffic on selected roads

Road	Car (% $PM_{2.5}$)	LGV (% $PM_{2.5}$)	HGV (% $PM_{2.5}$)	Bus (% $PM_{2.5}$)
Gillygate	84	2	12	3
Wiggington Road	90	1	8	1
Foss Islands Road	83	5	11	0
Hull Road	83	2	12	3
Skeldergate Bridge	91	2	6	1
Fulford Road	76	10	12	3
Tadcaster Road	87	2	6	5
Holgate Road	91	1	5	3
Blossom Street	80	2	9	9

Figure 3. 7 NO_x emissions traffic source apportionment for selected roads



Key: Cars (blue) LGVs (orange) HGVs (grey) Buses (yellow)

Source Apportionment for Nitrogen Dioxide

DEFRA's Technical Guidance note LAQM.TG(22) highlights that source apportionment need not be carried out with absolute precision, but it should allow a local authority to identify the predominant sources that contribute to pollutant concentrations across an AQMA. An important separation is into:

- **Regional background**, which a local authority is unable to influence;
- **Local background**, which a local authority should have some influence over; and
- **Local sources**, which will add to the background to give rise to the hotspot areas of exceedance. These are the principal sources for the local authority to control within the Action Plan.

As measures in AQAP4 will mainly influence emissions from local sources, particularly transport, it is also important to separate transport sources into broad vehicle types to understand their respective contributions to NO_2 concentrations across the AQMA.

The NO_x emissions (split into vehicle category) calculated for road links across the AQMA have been used to undertake a further source apportionment for NO_2, in line with the methodology outlined in box 7.5 of LAQM.TG(22).

To provide the most up to date estimate of the likely contribution of regional / local background concentrations, together with local traffic sources, the highest 2022 annual mean NO_2 concentration monitored at relevant locations across key areas of the AQMA (both current and previous technical breach areas) has been used in conjunction with DEFRA's national maps of background NO_x/NO_2 concentrations (projected to 2022).

Traffic data for the road link segment closest to the air quality monitor in question has been used to estimate the breakdown of emissions from each vehicle category.

The table below provides an estimate of the relative contribution of regional background NO_2 (RB-NO_2), local background NO_2 (LB-NO_2) and NO_2 from traffic sources, to the total monitored NO_2 in key areas. It should be noted that these proportions will vary by location and sometimes even on the same street due to congestion, variable speeds and/or queuing at junctions.

Table 3. 4 Source apportionment for NO_2 across key areas of the AQMA

Location (Tube Ref)	RB-NO_2 (µg/m^3)	LB-NO_2 (µg/m^3)	Cars (µg/m^3)	LGV (µg/m^3)	HGV (µg/m^3)	Bus (µg/m^3)	Total (µg/m^3)
Gillygate (14)	3.5 (7.4%)	9.8 (20.7%)	20.7 (43.7%)	0.8 (1.8%)	11.2 (23.7%)	1.2 (2.6%)	47.3
Blossom St (C27)	3.5 (8.5%)	9.8 (23.7%)	15.8 (38.2%)	0.7 (1.7%)	8.3 (20.2%)	3.1 (7.6%)	41.3
Rougier St (109)	3.5 (8.0%)	9.8 (22.4%)	22.0 (50.3%)	0.6 (1.3%)	4.7 (10.8%)	3.1 (7.1%)	43.7
Prices Ln (D35)	3.5 (11.3%)	11.4 (37.4%)	13.3 (43.3%)	0.4 (1.4%)	1.9 (6.2%)	0.1 (0.4%)	30.6
Paragon St (D16)	3.5 (11.4%)	11.4 (37.6%)	12.0 (39.4%)	0.6 (1.9%)	2.8 (9.3%)	0.1 (0.4%)	30.4
Lawrence St (B72)	3.6 (10.6%)	7.7 (22.8%)	12.0 (35.5%)	0.6 (1.8%)	9.3 (27.5%)	0.6 (1.8%)	33.8
Coppergate (D56)	3.5 (9.7%)	11.4 (31.8%)	4.5 (12.6%)	0.0 (0.1%)	0.0 (0.0%)	16.4 (45.8%)	35.9

3.4 Required Reduction in Emissions

Local authorities are required to identify the reduction in pollutant emissions needed to meet the health-based objectives with their AQMAs to determine the scale of effort required in an AQAP. In the case of NO_2 alongside roads, the required reduction should be stated as the concentration reduction in µg/m^3, for example, a 5µg/m^3 reduction from 45µg/m^3 to 40µg/m^3. Whilst this provides an indication of the scale of any air quality challenge faced by a local authority, it is not a suitable parameter for assessing the actual level of emission reduction needed. Any required percentage reductions of local transport emissions should be expressed in terms of NO_x due to the local road traffic. This is because the primary emission is of NO_x and there is a non-linear relationship between NO_x emission reduction and NO_2 concentrations[19]; this is due to the availability of Ozone (O_3).

The required reduction in road NO_x emissions has been carried out in line with the methodology in LAQM-TG22 (Aug 2022). To provide a robust worst-case estimate of the required reduction in emissions, monitoring data pre and post pandemic between 2018 and 2022 has been reviewed and the highest monitored annual mean concentration at a 'relevant location' within each historical area of technical breach with the current AQMA chosen for the calculation. A comparison has been made with the figures presented in CYC's previous AQAP3 document, covering the period 2015-2020, which adopted a similar approach but considered worst case monitoring figures for each area between the years of 2012 and 2014 inclusive. A comparison of this nature provides an indication of improvement in air quality that has been observed across the AQMA since publication of AQAP3, the progress that has been made with implementation of measures in AQAP3 and updates the evidence base with respect to the scale of effort required to meet the Air Quality Objectives across the AQMA area.

[19] https://laqm.defra.gov.uk/wp-content/uploads/2022/08/LAQM-TG22-August-22-v1.0.pdf

Estimates of background NO_2 concentrations across CYC's current AQMA (corresponding to the relevant year of monitoring) were made using DEFRA's background mapping data for local authorities. DEFRA publish and regularly update the background maps to assist local authorities in carrying out review and assessment of local air quality. The maps can be used in air quality assessments to better understand the contribution of local sources to total pollutant concentrations. The maps provide information about how pollutant concentrations change over time and across a wide area; they also provide an estimated breakdown of the relative sources of pollution. The 2018 reference year background maps[20], based on monitoring and meteorological data for 2018 have been used for the calculations, and projected to the relevant year of monitoring between 2018 and 2022.

As widespread improvements in air quality were observed across York in 2020 compared with previous years (primarily due to a reduction in emissions from vehicles on the York road network caused by work from home directions and non-essential retail being closed during the Covid-19 lockdowns), consideration of monitored concentrations in York in 2018/2019 (pre-pandemic) and in 2021/2022 (post-pandemic) has provided a worst case picture of the required reduction in emissions across the current AQMA.

Note that previous calculations of this nature undertaken for AQAP3 considered Salisbury Terrace and Fulford Road AQMAs, but as these AQMAs were revoked in 2017 and 2020 respectively (and concentrations of NO_2 are still well below health-based standards) they have not been specifically included in the current analysis.

Tables 3.5 and 3.6 below provide details of the calculations undertaken to determine the percentage reductions in NO_2 and roadside NO_x needed to meet the health-based objectives for NO_2 in the current AQMA. Table 3.5 additionally includes an estimate of the population exposure across

[20] https://uk-air.defra.gov.uk/data/laqm-background-home

each area[21]. It should be noted that in 2022, there were only three areas of the AQMA where annual mean concentrations of NO_2 above 40µg/m^3 were monitored, namely Gillygate, Rougier Street and Blossom Street. The latest monitoring data for York is presented in CYC's Annual Status Report.

Table 3. 5 Reductions in NO_2 required within current AQMA

AQMA Area	Maximum annual mean NO_2 (µg/m^3) between 2018 - 2022	Required reduction in NO_2 to meet objective (µg/m^3)	Required reduction in NO_2 to meet objective (%)	Estimate of population within area of AQMA (people)
Gillygate / Lord Mayors Walk	47.5 (2021)	7.5	15.8	514
Lawrence St	41.8 (2018)	1.8	4.3	811
Holgate / Blossom St	46.3 (2018)	6.3	13.6	401
Rougier St / George Hudson St	46.7 (2019)	6.7	14.3	48
Coppergate	42.3 (2018)	2.3	5.4	7
Fishergate / Paragon St	37.8 (2019)	0 *(objective already achieved)*	0 *(objective already achieved)*	559

[21] Estimate of population exposure assumed 2.4 residents per household in line with Office for National Statistics, Families and households in the UK: 2022

AQMA Area	Maximum annual mean NO_2 ($\mu g/m^3$) between 2018 - 2022	Required reduction in NO_2 to meet objective ($\mu g/m^3$)	Required reduction in NO_2 to meet objective (%)	Estimate of population within area of AQMA (people)
Nunnery Lane / Prices Lane	37.4 (2019)	0 *(objective already achieved)*	0 *(objective already achieved)*	334

Table 3. 6 Reduction in roadside NO_x required within current AQMA

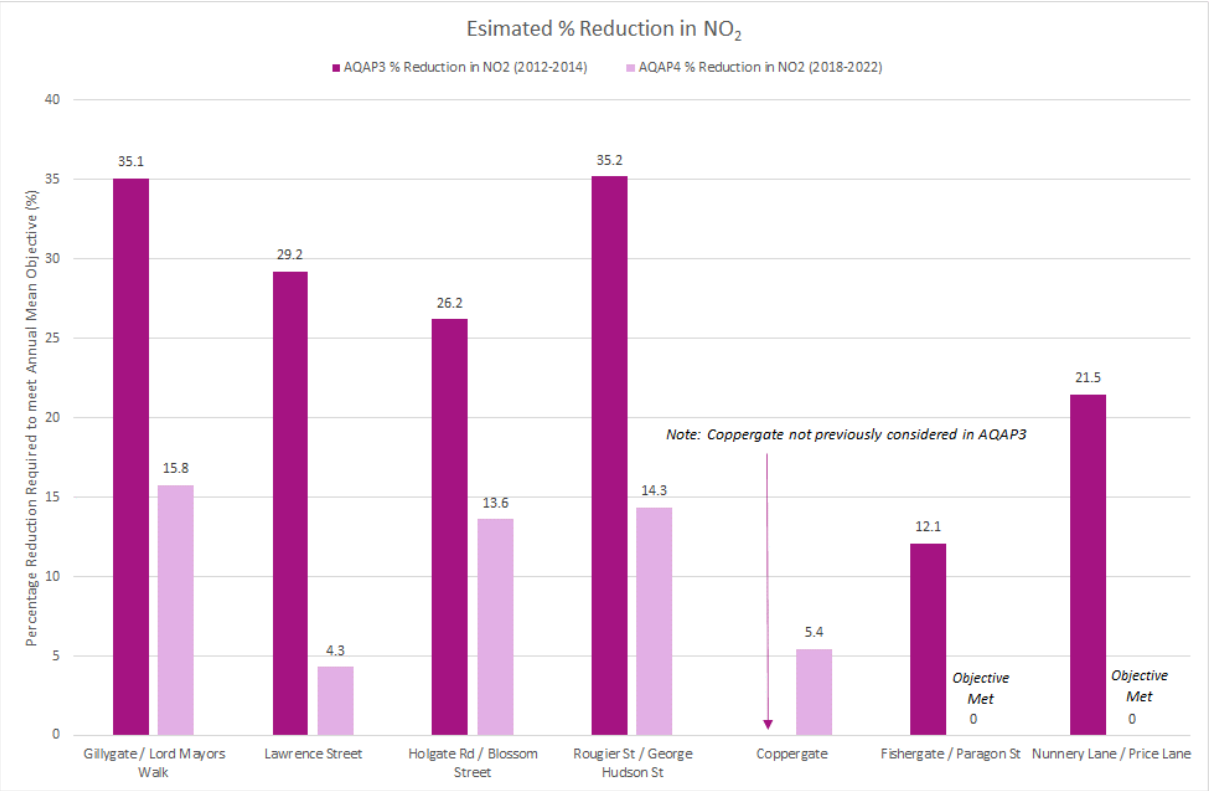
AQMA Area	DEFRA Background NO_2 ($\mu g/m^3$)	Road NO_x equivalent to maximum monitored annual mean NO_2 ($\mu g/m^3$)	Road NO_x required to achieve objective ($\mu g/m^3$)	Required reduction in NO_x to meet objective ($\mu g/m^3$)	Required reduction in NO_x to meet objective (%)
Gillygate / Lord Mayors Walk	13.8	71.1	53.4	17.7	24.9
Lawrence St	13.1	59.1	54.9	4.2	7.1
Holgate / Blossom St	15.7	64.3	49.6	14.8	23.0
Rougier St / George Hudson St	15.1	66.5	50.8	15.7	23.6
Coppergate	17.2	51.8	46.5	5.3	10.1

AQMA Area	DEFRA Background NO_2 ($\mu g/m^3$)	Road NO_x equivalent to maximum monitored annual mean NO_2 ($\mu g/m^3$)	Road NO_x required to achieve objective ($\mu g/m^3$)	Required reduction in NO_x to meet objective ($\mu g/m^3$)	Required reduction in NO_x to meet objective (%)
Fishergate / Paragon St	16.6	42.7	47.6	0 *(objective already achieved)*	0 *(objective already achieved)*
Nunnery Lane / Prices Lane	16.6	41.8	47.6	0 *(objective already achieved)*	0 *(objective already achieved)*

Based on worst case monitoring undertaken across the AQMA at relevant locations between 2018 and 2022, required reductions in NO_2 ranged from 4.3% (Lawrence Street) to 15.8% (Gillygate). Corresponding reductions required in road NO_x ranged from 7.1% to 24.9% at Lawrence Street and Gillygate respectively.

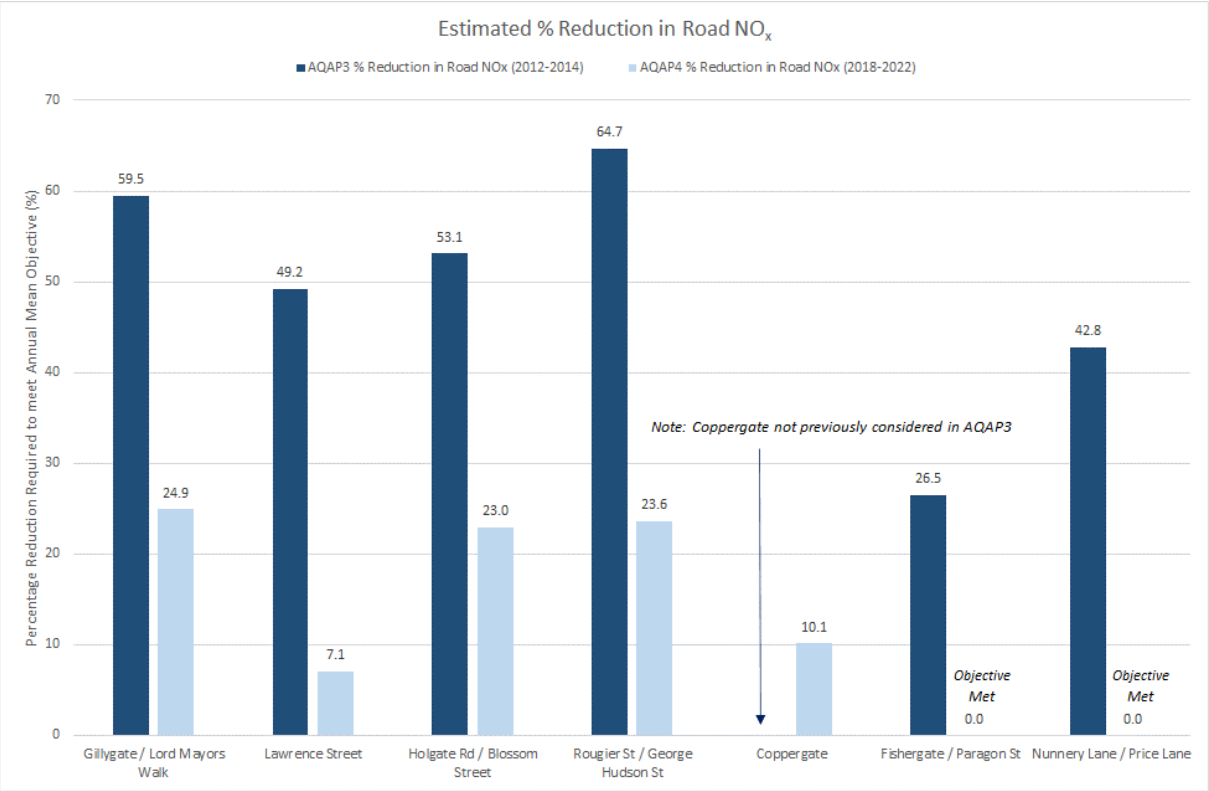
Figures 3.8 and 3.9 below illustrate the estimated percentage reduction in NO_2 and road NO_x across the AQMA, based on worst case monitoring undertaken at a relevant location between 2018 and 2022. The figures below also display the percentage reductions previously calculated and published in AQAP3, based on monitoring undertaken between 2012 and 2014.

Figure 3. 8 Percentage reductions in NO_2 (AQAP3 vs AQAP4)



Graph shows the percentage reductions in nitrogen dioxide (NO_2) needed to meet the health based annual mean objective, based on council monitoring undertaken between 2018 and 2022. Reductions of up to 15.8% are needed in some areas such as Gillygate. These figures have fallen considerably since publication of the last Air Quality Action Plan in 2015 (where approximately 35% reduction was needed in some areas).

Figure 3. 9 Percentage reduction in road NO_x (AQAP3 vs AQAP4)



Graph shows the percentage reductions in road NO_x needed to meet the health based annual mean objective, based on council monitoring undertaken between 2018 and 2022. Reductions of up to 24.9% are needed in some areas such as Gillygate. These figures have fallen considerably since publication of the last Air Quality Action Plan in 2015 (where approximately 65% reduction was needed in some areas).

3.4.1 Progress since AQAP3 and implications for AQAP4

The required road NO_x reduction calculations summarised in this chapter and the comparisons made with comparable calculations published in AQAP3 have important implications for air quality action planning in York. Figures 3.8 and 3.9 demonstrate that there has been considerable progress over the last 7 years across the city centre AQMA in achieving the annual mean NO_2 objective. AQAP3 estimated that reductions in road NO_x of up to 64.7% would be required to achieve the annual mean NO_2 objective in all locations around the AQMA. This figure has now fallen to 24.9%, a decrease of 39.8%.

Considering air quality monitoring undertaken between 2018 and 2022, the annual mean NO_2 objective was consistently met at Fishergate / Paragon Street and Nunnery Lane / Prices Lane, although concentrations were still elevated at 37-38 µg/m^3. Estimated percentage reductions in road NO_x require to meet the annual man NO_2 objective in 3 areas of the current AQMA (Gillygate/Lord Mayors Walk, Holgate Road / Blossom Street, and Rougier Street/George Hudson Street) were broadly similar at approximately 23-25%, with reductions on road NO_x of 7% and 10% required on Lawrence Street and Coppergate respectively.

It should be noted that these percentage reduction figures are based on worst case monitoring undertaken between 2018 and 2022. This provides a robust analysis. As monitoring results in 2020 were lower due to the pandemic and did not reflect longer term trends seen in the city in recent years, the reduction figures are based on annual mean concentrations monitored pre-pandemic in 2018 / 2019 (most sites). The only exception to this is Gillygate, where 2021 monitoring figures were slightly higher than pre-pandemic levels (with 2022 figures only marginally lower than 2021).

Whilst vehicle technology improvements, associated improvements in vehicle emissions and lower background pollution concentrations in York are responsible for some of the improvements in air quality seen across the city in recent years, there has been a marked reduction in NO_2 concentrations across the AQMA over the last 7 years, undoubtedly accelerated due to local air quality interventions delivered during AQAP3, such as upgrades to the York bus and taxi fleets, wider and more accessible EV charging facilities promoting EV uptake, education and awareness around anti-idling, low emission planning measures, sustainable travel initiatives and improvements to walking and cycling infrastructure. The ongoing success of these measures must be recognised and reflected in AQAP4 via continued delivery of such initiatives, with new targets set to reflect CYC's future ambition.

As previously mentioned, widespread improvements in air quality were observed in York in 2020 compared with earlier years, primarily due to a reduction in emissions from vehicles on the York road network caused by

work from home directions and non-essential retail being closed during the Covid-19 pandemic. This reinforces both previous (and updated) source apportionment work demonstrating that traffic is a significant source of NO_2 in the city and supports the measures the council has taken so far to reduce vehicle emissions.

As monitoring results for 2020 are not representative of long-term trends in NO_2 concentrations, the Covid-19 pandemic has meant that the ongoing impact of AQAP3, including major air quality improvement measures implemented in 2020 such as the impact of the York Clean Air Zone (introduced January 2020) and new electric Park and Ride bus services, have been difficult to quantify.

The true impacts of such measures may only be apparent in subsequent years, as traffic levels and behaviour return to 'normal' and the air quality impact of such interventions can be verified via ongoing air quality trends. CYC will continue to report upon air quality annually via Annual Status Reports.

3.5 Potential NO_x emission reduction through AQAP4 traffic measures

The exact emission impact of AQAP4 is difficult to quantify precisely as there are many factors which may influence future emission levels in the city. These include:

- The extent and rate at which AQAP4 measures are delivered locally. This will be dependent on additional funding and resources to support delivery (e.g. for permanent freight consolidation facilities, for example).
- The on-road emission performance of newer vehicles compared with specified emission standards.
- The age and rate of replacement vehicles in York, including the rate of uptake of ultra-low and especially zero emission vehicles.

- The number of journeys which can be switched to more sustainable transport modes such as walking, cycling and public transport.
- Future trip demand on the York road network, influenced by factors such as the state of the economy and new development.
- Developments in neighbouring local authority areas may also, to some extent, influence vehicle types and usage patterns in York.

An estimate of NO_x emission reduction potential on a section of road within CYC's existing AQMA, under various AQAP delivery scenarios, has been made using DEFRA's Low Emission Factor Toolkit (EFT) [22]. A range of scenarios have been modelled to consider the emissions impact potential of measures in AQAP4 and to provide some sensitivity testing with respect to measures that affect different vehicle types.

Table 3.7 includes a description of each modelled scenario and a summary of the predicted emission reduction that could be achieved. It should be noted that additional air quality benefits may be realised in practice due to reduced congestion associated with these scenarios. Whilst the results of this emission reduction screening exercise have been used to understand the potential magnitude of some of the outcomes of AQAP4, the exact emission reduction potential will vary depending on exact location, fleet composition and specific traffic conditions (including queuing) on the network.

For this screening assessment, the York bus fleet has been more accurately reflected in the EFT based on CAZ requirements and estimated proportions of buses that were already electric / Euro VI (and lower) across the network. The age profile / emission classification of other vehicle categories was considered broadly consistent with default EFT values and sufficiently accurate for this high-level screening exercise.

[22] Baseline flows and fleet proportions taken from DfT counter 75395, Blossom Street, York.

Table 3. 7 Changes in annual NO_x emissions (kg/y) under each scenario

Scenario	Description of Scenario	NO_x emissions (kg/y)	Change in NO_x emissions relative to base (kg/y)	Change in NO_x emissions relative to base (%)
1	Baseline	330.7	-	-
2a	Reduce cars by 5%	320.6	10.1	3.0
2b	Reduce cars by 10%	310.6	20.1	6.1
2c	Reduce cars by 15%	300.5	30.2	9.1
2d	Reduce cars by 20%	290.4	40.2	12.2
2e	Reduce cars by 30%	270.3	60.4	18.3
2f	Reduce cars by 40%	250.2	80.5	24.3
2g	Reduce cars by 50%	230.1	100.6	30.4
3a	Reduce all vehicles classes by 5%	314.2	16.5	5.0
3b	Reduce all vehicles classes by 10%	297.6	33.1	10.0
4a	Reduce HGVs by 25%	326.1	4.6	1.4
4b	Reduce HGVs by 50%	321.6	9.1	2.8

Scenario	Description of Scenario	NO_x emissions (kg/y)	Change in NO_x emissions relative to base (kg/y)	Change in NO_x emissions relative to base (%)
4c	HGV Ban	312.4	18.2	5.5
5a	Reduce LGVs by 25%	308.1	22.5	6.8
5b	Reduce LGVs by 50%	285.6	45.1	13.6
6	All buses electric	311.5	19.2	5.8
7	5% of cars and LGVs electric	316.1	14.6	4.4
8	10% Cars and LGVs electric	301.5	29.1	8.8
Potential emission reduction from AQAP4 traffic measures	Combination of scenarios 2a, 4a, 5a, 6 & 8	-	85.5	25.9 %

Calculations presented in section 3.4 estimated that reductions in road traffic emissions of up to 25% may be required to meet the objectives across all areas of the existing AQMA based on worst case air quality monitoring between 2018 - 2022.

The indicative emission modelling work presented here has shown that reductions in road traffic NO_x emissions of approximatively 26% could be achieved through a combination of measures and associated outcomes delivered through AQAP4 (and associated local strategies / policies) such as:

- Further reduction in car usage of 5% via shift to more sustainable modes such as walking, cycling and public transport
- Reduce HGV and LGV movements by 25% through freight consolidation facilities and other initiatives
- Transition of 10% of car/taxi and LGV fleet to electric vehicles with zero tailpipe emissions, through expansion of local charging infrastructure, awareness raising and incentives
- Conversion of remaining bus fleet to electric vehicles with zero tailpipe emissions

Should reductions in car usage of 20% (in line with CYC's 2030 Transport Strategy target) be achieved alongside the other scenarios above (e.g. 2d, 4a, 5a, 6 & 8), reductions in road traffic NOx emissions would increase to approximately 35%. This would result in additional improvements in air quality across York.

It should be noted that in future years, falling background pollutant concentrations and improvements in vehicle emissions generally across the fleet will also drive reductions in emissions in York over and above those presented above. Further sensitivity analysis undertaken using the EFT demonstrated that routine fleet replacement and improvements in vehicle emissions may be sufficient to drive the required level of emission reduction within a 4-year time period (by 2027/28)[23] without AQAP4 measures in place. However, CYC has a statutory duty to deliver air quality improvement as quickly as possible and must take all measures reasonably practical to deliver cleaner air and achieve further reductions in vehicle miles travelled in York. It is considered that local interventions outlined in AQAP4 (and associated transport policies) should theoretically deliver the level of emission reduction required to meet objective levels across York within a 2-year period (by 2025/26),

[23] Modelling assumed traffic volumes and vehicle fleet proportions for the modelled area remain consistent with baseline

but it should be noted that further bespoke intervention may be necessary in some specific areas.

It should also be noted that NO_x emission reduction across York can also be influenced, albeit to a lesser extent, by measures to tackle non-transport related emissions such as those associated with commercial and domestic heat and power provision. AQAP4 presents a comprehensive and targeted list of updated air quality improvement measures to deliver further reductions in NO_x (and PM) emissions over and above those likely to be realised through natural fleet replacement and falling background concentrations.

3.6 Key Priorities

AQAP4 provides a framework for continuing current activity in the city to reduce NO_2 concentrations and presents additional measures for wider emission improvement across the city.

The key priorities of AQAP4 are to ensure that the downward trend in NO_2 concentrations across the existing city centre AQMA continues, such that sustained compliance[24] with health based objectives is achieved at all locations; this will allow the ultimate revocation of the existing AQMA.

Measures delivered through the lifetime of AQAP4 will also strive to deliver improvements in particulate matter, to recognise the growing evidence base around particles and health impacts as reflected in the Environment Act 2021.

Through AQAP4, CYC will ensure that concentrations of all local pollutants are reduced as far as practically possible and that opportunities for low emission travel in the city are maximised for residents, workers and visitors alike. CYC will also continue to facilitate

[24] DEFRA guidance LAQM TG22 states that the revocation of an AQMA should be considered following three consecutive years of compliance with the relevant objective as evidenced through monitoring

and encourage walking, cycling and low emission public transport use, which have co-benefits for health and wellbeing.

The results of our updated source apportionment work and wider emissions analysis have shown that:

- In line with earlier AQAPs, transport emissions remain the predominant source of NO_x emissions across the AQMA and wider CYC area and we must therefore continue to deliver sustainable transport solutions and work towards reducing emission across all vehicle categories.
- NO_x emissions from private cars continue to make up a large proportion of these transport emissions, contributing to well over 50% of transport emissions on the majority of roads and over 80% in some areas. The contribution from cars in areas of poorer air quality, such as Gillygate, Holgate and Blossom Street, ranges from 64% to 87%. These figures show that CYC must continue to facilitate modal shift and promote active travel modes to minimise private car journeys. We must also maximise the uptake of zero emission vehicles via incentives and provision of suitable charging infrastructure. This should be supported via measures such as ongoing campaign work to reduce idling emissions from cars and robust planning guidance to ensure private vehicle trips are minimised on new developments.
- NO_x emissions from LGVs generally make up less than 10% of the total emissions, but in certain areas of the outer ring road and on key routes, the contribution can be greater at up to 25%.
- HGVs are a significant emission source on the majority of roads including the Outer Ring Road, key routes into York, and the Inner Ring Road, where they contribute between 15 – 25% of the total NO_x transport emissions. HGVs are more significant in some areas and form between 35 – 55% of the total NO_x emissions on roads with significant total emissions, including areas such as Bootham, Lawrence Street, Barbican Road/Cemetery Road, Hull Road, Lord Mayors Walk and Tower Street. Due to the relatively

lower flows of HGVs in relation to cars, these larger vehicles are contributing disproportionately to elevated pollution levels in a number of areas. This is consistent with findings from earlier source apportionment work and AQAPs for York.

- Bus emissions comprise less than 10% of the total road transport NO_x emissions on the majority of streets and are most significant on roads with proportionally less emissions, where bus flows form a larger proportion of the overall traffic. Across areas with elevated total NO_x emissions, such as George Hudson Street and Blossom Street, bus emissions generally contribute between 10 and 25% of the total and are therefore still contributing disproportionately to elevated pollution in some areas. It should be noted that the relative contribution of buses to total road NO_x in the city centre has been reduced significantly in recent years due to the Clean Air Zone and upgrades to vehicles servicing high frequency routes. This has been progressed in parallel to the transition to zero tailpipe emission electric buses serving the majority of York Park & Ride routes.
- There are opportunities to reduce fine particulate emissions, $PM_{2.5}$ from domestic combustion of solid fuels. Whilst in part this is being addressed via new legislation around the types of fuels that can be legally sold, there are opportunities for CYC to raise awareness of the impacts of burning solid fuels and ensure that suppliers/retailers are complying with legal requirements. Measures to address this issue will also help to reduce NO_x emissions, albeit to a lesser extent. Across CYC's area, it is estimated that 31% of $PM_{2.5}$ emissions are due to wood burning, compared to only 0.2% from smokeless solid fuels and 4.5% from other boiler technologies such as natural gas, oil and LPG. The latest source apportionment work undertaken estimates that domestic combustion of wood accounts for over twice the $PM_{2.5}$ emissions of those produced by road traffic.

Priority areas over the lifetime of AQAP4 are shown below. These areas are grouped into themes and the order below does not necessarily reflect the anticipated air quality impact. The relative air quality impacts of specific measures are discussed further in Chapter 5 and Appendix C.

- **Priority 1 – Reduce emissions from freight / delivery vehicles.** CYC will continue feasibility work to address first/last mile delivery of light goods in York as part of the development of a city-wide 'Movement and Place' plan. We will continue to work with partners to evaluate low emission delivery modes. We will also prioritise a pilot project to test a 'micro-consolidation centre' for the purpose of distributing commercial light goods around the city centre and will consider the feasibility of extending the Clean Air Zone to include HGVs / freight vehicles.
- **Priority 2 – Reduce emissions from York buses.** Buses play an important role in York's sustainable travel infrastructure and form a vital transport service for residents and visitors. CYC will continue to work in partnership with bus operators to improve bus provision for all service users. Considerable progress has been made to clean up York's buses in recent years, but CYC must continue to address emissions from lower frequency services and strive to maximise the number of services operating fully electric buses to further reduce exhaust emissions. Recent DfT funding will allow us to pursue an all-electric urban bus fleet for the city. We will also consider the feasibility of extending the Clean Air Zone (for buses) to other areas, including York Central
- **Priority 3 – Reduce emissions from idling vehicles.** CYC will continue to raise awareness of the impact of idling vehicles upon public health through our 'Kick the Habit' anti-idling awareness / behaviour change campaign, supported by anti-idling patrols. This will include raising awareness with commercial vehicle operators, such as those involved in deliveries or construction.
- **Priority 4 – Reduce emissions from taxis.** We will continue to work with the taxi trade to facilitate the transition to low emission

vehicles via the use of incentives and awareness raising, thereby providing taxi drivers with information to allow informed choices about vehicle emissions and total cost of ownership of low emission and/or electric taxis. This will be supplemented by revisions to Taxi Licensing policy to phase out older, more polluting taxis, in consultation with the taxi trade. We will prioritise further opportunities for minimising emissions from taxis in the city centre, including exploring the feasibility of including them within the Clean Air Zone.

- **Priority 5 – Reduce emissions from CYC vehicles.** CYC recognise that the way our own fleet vehicles are renewed is a vital part of the CYC air quality improvement and carbon reduction programmes and that the transition to a cleaner, greener fleet must be done without compromising the valued services CYC delivers to the city and its residents. We also recognise that we must lead by example; the successful operation of ultra-low and zero emission vehicles as part of the CYC fleet will show leadership and will act as a catalyst for other fleet operators in the city to upgrade their vehicles and accelerate their renewal programmes.
- **Priority 6 – Expand EV charging.** CYC's EV Charging Strategy sets out the rationale for the number and location of public EV charging points, the principles of tariff-setting and CYC's approach to providing charging for residents in streets without off-road parking. The current strategy outlines an equitable approach to charging infrastructure that will support improved air quality, climate change objectives and financial vitality, and aligns with wider transport policy objectives of maximising active travel and minimising private vehicle / car usage. CYC will continue to enable EV use but take care to ensure that interventions encourage the use of other forms of sustainable transport first, rather than embed private car ownership. CYC will deliver additional fast and rapid charge points and actively monitor plug-in vehicle uptake in the city to ensure our charging network remains fit for purpose. We will undertake an evaluation of the recently opened HyperHub charging

sites and seek funding to deliver additional sites. Our current EV Charging Strategy will be reviewed and refreshed within the lifetime of AQAP4.

- **Priority 7 – Minimise development related emissions.** Delivery of AQAP4 must strive to maximise synergies with the CYC's carbon reduction aspirations, via the alignment of respective planning policies and local guidance. CYC will continue to ensure that emissions and air quality impacts from new developments are appropriately assessed and mitigated, exposure to poor air quality is reduced via good design practices and that new private trips are minimised via the provision of sustainable transport solutions. We will ensure that air quality considerations are used to inform the design of new developments and will strengthen local planning guidance to facilitate a transition away from fossil fuel heating sources, which can contribute to local air quality issues.
- **Priority 8 – Provide local incentives for low emission vehicles and modes**. CYC is committed to further encouraging the wider uptake of ultra-low emission and zero emission vehicles (and other micro-mobility modes) via development of incentives and rewards. These may be linked to parking fee reductions and discounted attraction entrance fees. Such incentives will complement other work priority areas identified.
- **Priority 9 – Improve public information and awareness**. Delivering clear messages to the public around the cause and consequence of poor air quality, particularly around impacts on health, are particularly important for driving behaviour change. Campaigns relating to issues such as energy efficiency, domestic smoke control, bonfires, fireworks and indoor air quality can all be valuable parts of a wider local air quality improvement strategy. CYC will continue to address these wider issues, alongside existing public information campaign work relating to sustainable transport provision in the city.

- **Priority 10 – Modal shift, active travel and network improvement**. Measures to reduce trips, encourage modal shift away from private vehicles towards active travel modes such as walking and cycling, and reduce congestion are considered fundamental to any air quality improvement programme for York. CYC's Local Transport Plan (LTP) continues to be an intrinsic part of the overall approach to air quality improvement and transport based emission reduction across the city, with active travel at the apex of the city's travel hierarchy. Major schemes and complementary work programmes with the potential to contribute directly to air quality improvement across the city are referenced within this AQAP. We will implement measures to reduce vehicle congestion, which will have significant positive benefits for local air quality, and explore specific traffic management options for areas like Gillygate to reduce emissions and improve air quality.
- **Priority 11 – Regulation of industrial and domestic emissions**. In addition to reducing transport emissions, AQAP4 also has a role to play in reducing emissions associated with domestic and industrial combustion, particularly fine particulate matter ($PM_{2.5}$). We will ensure that smoke control area boundaries are reviewed and investigate complaints of non-compliance in line with updates to the Clean Air Act 1993. AQAP4 also recognise the synergies with CYC's carbon reduction programme and measures to improve energy efficiency and support services. CYC will actively seek opportunities for grants to support such activities.
- **Priority 12** – **Monitor air quality / access to air quality information**. Monitoring allows CYC to assess compliance with Air Quality Objectives, evaluate the effectiveness of air quality improvement interventions and provide reliable information to York's residents, visitors and workers to help them reduce exposure. CYC must respond to changing monitoring priorities, especially in relation to the relative importance of nitrogen dioxide and particulate matter and the links to human health. We will ensure that the location and type of monitoring in the city is

reviewed annually and remains relevant and targeted to key sources and pollutants.

The following chapters of AQAP4 provide an overview of all measures and interventions and their associated key performance indicators, targets and anticipated funding sources. Measures will be delivered by a range of partners, both within CYC departments and across the wider city.

3.7 AQAP4 Air Quality Indicators

Through delivery of AQAP4 and our complementary strategies we will take bold action to reduce air pollution beyond statutory National Air Quality Objectives and work towards World Health Organisation (WHO) Guidelines in the longer term.

The WHO published revised long-term Air Quality Guidelines (AQGs) for pollutants in ambient air in September 2021. The new AQGs for particulate matter (PM) and nitrogen dioxide (NO_2) are substantially lower than the previous guidelines. The updated long-term (annual average) AQG for PM_{10} is 15µg/m^3, for $PM_{2.5}$ is 5µg/m^3 and for NO_2 is 10µg/m^3 (see table below).

Table 3. 8 Summary of long-term AQ Targets and WHO Guideline Values for NO_2, PM_{10} and $PM_{2.5}$ and commentary on York position

AQ (England) Regulations 2000 (apply to Local Air Quality Management)

Pollutant	Averaging period	UK Limit (µg/m^3)	WHO (2021) Guideline (µg/m^3)	CYC Position
Nitrogen Dioxide (NO_2)	Annual Mean	40	10	Current UK Limit exceeded in 3 areas of the current AQMA in 2022 (max concentration recorded at a point of relevant

Pollutant	Averaging period	UK Limit (µg/m^3)	WHO (2021) Guideline (µg/m^3)	CYC Position
				exposure was 47µg/m^3 on Gillygate). WHO Guideline exceeded at all monitoring sites in York in 2022.
Particulate Matter (PM_{10})	Annual Mean	40	15	Current UK Limit met at all PM_{10} monitoring locations (max concentration recorded in 2022 was 17.9µg/m^3). WHO Guideline exceeded at all PM_{10} monitoring locations in 2022

Environmental Targets (PM) regulations 2023 (apply to national government, but local authorities are expected to contribute measures locally to drive compliance)

Pollutant	Averaging period	UK Limit (µg/m3)	WHO (2021) Guideline (µg/m3)	CYC Position
Fine Particulate Matter ($PM_{2.5}$)	Annual Mean	10 by 2040 (interim target of 12 by 2028)	5	Current UK Limit met at all $PM_{2.5}$ monitoring locations (max concentration recorded in 2022 was 8.8µg/m^3). WHO Guideline exceeded at all $PM_{2.5}$ monitoring locations in 2022

The long-term WHO AQGs were developed based on evidence from studies of spatial variation in long-term average concentrations of air pollutants. The relative risks found in these studies of spatial variation in long-term average concentrations (often cohort studies) are typically larger than those reported from studies of effects associated with short-term temporal variations in concentrations. The WHO chose the AQGs to represent long-term concentrations at which it was confident, from the available evidence, that there is an increase in adverse health effects[25].

It should be stressed that the WHO air quality guidelines are significantly more stringent than current UK Air Quality Objectives and do not apply in UK law. The WHO acknowledge that the guidelines are extremely

[25] https://www.gov.uk/government/publications/comeap-statement-response-to-who-air-quality-guidelines-2021/comeap-statement-response-to-publication-of-the-world-health-organization-air-quality-guidelines-2021

challenging public health recommendations and achieving the guideline levels would be the ultimate goal. The UK's Committee on the Medical Effects of Air Pollutants (COMEAP)[26] suggests that WHO's revised AQGs for pollutants in outdoor air are suitable as long-term targets to inform policy development.

Annual Reporting of Air Quality

Annual Mean concentrations and trends in NO_2, PM_{10} and $PM_{2.5}$ across York will be reported annually as part of CYC's Annual Status Report to DEFRA. This will be published on CYC's website. A full comparison with current UK limits (and WHO Guidelines) will be made in an Annual Air Quality Update report to the Executive Member for Environment and Climate Emergency.

In addition to the Key Performance Indicators (KPIs) used to monitor progress for specific AQAP4 measures (see Chapter 5), the following indicators are proposed to track changes in long term nitrogen dioxide concentrations across York for clear comparison with current UK health-based objectives and WHO Guidelines.

- **Indicator 1 – Average annual mean nitrogen dioxide concentration across key areas of the AQMA.** This indicator provides an average nitrogen dioxide concentration based on all monitoring undertaken within specific areas of the AQMA (e.g. Gillygate / Lord Mayors Walk area, Holgate Road / Blossom Street area etc). Monitoring results include diffusion tube data and data from continuous monitors (if applicable to the area in question). This indicator is useful for looking at general trends across the AQMA and establishing how the rate of improvement varies area by area. This indicator has previously been reported annually as part of CYC's statutory Annual Status Report to DEFRA.
- **Indicator 2 - Maximum nitrogen dioxide concentration (at relevant location) across key areas of the AQMA**. This indicator

[26] https://www.gov.uk/government/groups/committee-on-the-medical-effects-of-air-pollutants-comeap

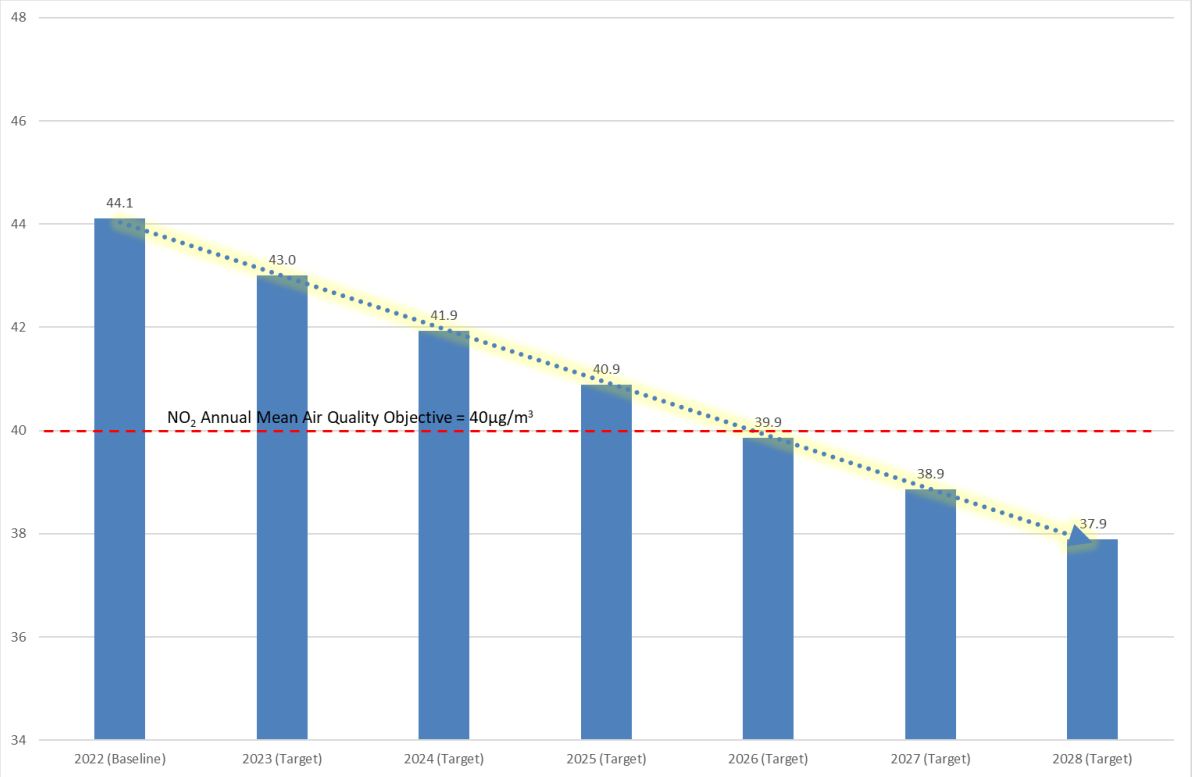
provides a maximum recorded annual mean nitrogen dioxide concentration within specific areas of the AQMA. In line with Local Air Quality Management requirements and current UK objectives, this only considers monitoring at points of *relevant public exposure* and is therefore useful to look at the validity of the AQMA boundary year to year. This indicator has also previously been reported annually as part of CYC's statutory Annual Status Report to DEFRA.

- **Indicator 3 - Average of maximum annual mean nitrogen dioxide concentrations recorded across three areas of technical breach (at points of relevant public exposure).** CYC's air quality monitoring network currently demonstrates sustained exceedances of the health-based annual mean NO_2 objective of 40µg/m^3 in 3 areas of the city, namely Gillygate/Lord Mayor's Walk, Blossom Street/Holgate Road, and Rougier Street / George Hudson Street. These are referred to as areas of 'technical breach'. Whilst not all monitoring points within these areas are exceeding health-based standards, there is at least one monitor at a point of relevant public exposure within each area that is above the annual mean objective of 40µg/m^3. The indicator considers an average of the maximum annual mean concentrations of NO_2 in these three areas. This indictor is a new indicator and provides a simple and meaningful single indicator that will enable CYC to measure the new administration's policy commitments as delivered via the Council Plan and AQAP4.

  The baseline 2022 figure for this indicator is 44.1µg/m^3 and in the 3 specific areas mentioned there has been around 25% reduction in this figure over the last 10 years since 2012. Whilst the rate of improvement has not been consistent (it has slowed considerably in recent years), CYC will aim to maintain a continued average 2.5% annual reduction in this indicator with a target to achieve a figure of less than 40 µg/m^3 before 2026 (with all areas also below 40 respectively). This target is considered challenging but realistic. Within the 5-year lifetime of AQAP4, it is expected that Indicator 3

(and all technical breach areas respectively) will be confidently below 40 µg/m^3 and within health-based standards.

Figure 3. 10 Air Quality 'Indicator 3' baseline (2022) and annual targets



Graph shows proposed year on year improvement target for Indicator 3. A baseline value of 44.1µg/m^3 has been calculated for 2022, with a 2.5% improvement target every year until 2028.

The three indicators described above, together with full reporting of air quality concentrations as measured at all CYC monitoring sites, will provide a transparent means for CYC to assess rates of air quality improvement and compliance with legal standards and aspirational WHO guidelines in the longer term.

4 Development and Implementation of City of York Council's AQAP

4.1 Consultation and Stakeholder Engagement

In developing/updating this AQAP, we have worked with other local authorities, agencies, businesses and the local 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, we have undertaken the following stakeholder engagement:

- Written AQAP consultation with major stakeholders and partners. Notification of the consultation was sent directly to all statutory consultees and a number of other relevant stakeholders. This included Department for Environment Food and Rural Affairs (DEFRA), all neighbouring local authorities, York Civic Trust, UK Health Security Agency, the Environment Agency, National Highways, Yorkshire Ambulance Service, York Hospital, North Yorkshire Police, all local bus and taxi operators, the Confederation for Passenger Transport, Asthma and Lung UK, the University of York and York St John University. The consultation was also sent to bodes representing local business interests including Make it York, York BID, Federation of Small Business, York Chamber of Commerce and York & North Yorkshire Local Enterprise Partnership.
- Public consultation through CYC's website. An online survey and 'accessible' version the draft AQAP4 document were hosted on the CYC Consultations webpage between 22nd November 2023 and 4th February 2024. The consultation was also regularly promoted via CYC's social media channels throughout the consultation period.
- Previous public consultation through 'Our Big Conversation' in 2021/2022 in relation to challenges facing York over the next decade, including transport priorities and associated air quality impacts, carbon reduction and York's economy.

- Articles in local press
- Promotion at Local Transport Strategy (in-person) drop-in events in York throughout December 2023 and January 2024. The Environmental Protection team hosted a stand at three of these events to obtain feedback on AQAP4 and wider air quality issues.
- The consultation was promoted to CYC staff through the 'CYC Staff Update' and to the wider public via the 'Our City' residents newsletters issued by CYC's Marketing and Communications team throughout the consultation period.
- The consultation was sent directly to all CYC councillors on 29th November 2023, with information about to how to respond
- In addition to the above, CYC's Environmental Protection team were available to answer questions on AQAP4 over the phone, in person by appointment, or by email during the consultation period.

The consultation draft of AQAP4 and outline of the proposed consultation approach and questionnaire was shared with CYC's Economy, Place, Access and Transport Scrutiny Committee on 24 October 2023 (as part of the paper discussing overarching principles for York's overarching Transport Strategy and Plan). Whilst comments received from this committee related primarily to higher level transport objectives, feedback was used to inform the consultation activities around AQAP4, such as use of accessible language and opportunities for face-to-face feedback etc.

The response to our consultation stakeholder engagement is given in Appendix A.

Table 4. 1 Consultation Undertaken

Yes/No	Consultee
Yes	the Secretary of State
Yes	the Environment Agency
Yes	the highways authority

Yes/No	Consultee
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

4.1.1 Consultation on AQAP4 draft document

A copy of the draft AQAP4 document was made available on CYC's website, together with an online consultation questionnaire, between 22nd November 2023 and 4th February 2024. Consultees were invited to participate in the consultation via CYC's website, social media channels and via direct correspondence with statutory consultees and other groups.

A total of 173 responses to the survey were received from 148 York Residents (94%), 5 non-York residents (3%), and 5 people (3%) responding in in professional / business capacity (including 1 taxi driver/operator, 1 academic institution/university and 2 environmental charities/pressure groups). A separate written response to the consultation was received from York Civic Trust (YCT).

Over three quarters (79%) of respondents agreed that the council should continue to reduce air pollution. Between 67% and 87% of respondents indicated support for all AQAP4 priority areas (% dependent upon area), with 60% of respondents agreeing that the measures in AQAP4 would help to reduce emissions and improve air quality. The top 5 areas (either supported or strongly supported) were reducing emissions from buses (87.3%), monitoring air quality / access to air quality information (84.9%), reducing emissions from freight/delivery vehicles (83.3%), reducing emissions from taxis (83.2%), and reducing emissions from council vehicles (81.7%).

Further information about the consultation is provided at Appendix A.

4.1.2 Summary of LTP consultation 'Our Big Conversation – Transport Strategy'

Residents, commuters through the city and those who work in York were invited to participate in York's Big Conversation during 2021 and 2022, a city-wide discussion helping the city to get to grips with some of the biggest challenges facing York over the next decade, including transport priorities and associated air quality impacts, carbon reduction and York's economy. A summary of the headline results with respect to York's Transport Strategy is provided below and has informed development of the transport-based measures within AQAP4.

Transport modes

- Walking and driving are the most commonly used forms of transport, with driving used most often to access services
- Walking and cycling are primarily used for accessing parks and open spaces
- A bus is most often used when travelling for entertainment purposes
- Electric vehicles were used by only 1-2% of people

Car use

- 3 in 10 (31%) make less than a fifth of their journeys by car, while 8% do not drive at all
- The highest proportion, 43%, are not expecting their car use to change over the next five years, while one third are expecting to use their car less

Transport mode frequency

- Walking and driving are the modes of transport most likely to be used daily or several times a week, while taxis and rail services tend to be used less often
- Cycling tends to be done regularly or not at all, while bus and rail services tend to be used infrequently

- More than half or residents have not used taxis in the past year, and more than 9 out of 10 have not used e-scooter/e-bikes in the last year

Travel preference by activity

- Car is the preferred form of travel when shopping for heavy items or visiting friends/relatives longer distance, while walking is preferred when shopping for small items or visiting friends/relatives locally
- Buses are most likely to be used for leisure/entertainment trips
- Walking and cycling were the most popular option for going to work, school or college
- Park and Ride is rarely used by York residents for any purpose

Transport needs / opinion of York transport

- Residents are most likely to feel that walking routes meet their needs very or quite well, followed by rail services
- A third of those expressing an opinion felt that cycling routes did not meet their needs
- Residents are least likely to feel electric vehicle charging points meet their needs, though only 1 in 5 had an opinion

Perceptions of transport related issues in York

- More than half of York residents consider congestion to be a very serious problem in York (56%)
- Almost half consider local air pollution from traffic (47%) and the impact of transport on climate change (48%) to be very serious.
- 54% of people considered unduly large delivery vehicles to be a ‘very’ (24%) or ‘fairly’ (30%) serious issue.

Tackling congestion and air pollution

- In order to help ease congestion and reduce air pollution, residents are most likely to have already reduced the number of trips they make, to be shopping more locally or ordering online, and/or walking for more of their trips

- 59% of respondents recognise the need to reduce idling and already switch off when stationary, an additional 10% plan to do so.
- 8% of respondents have already switched to an electric or hybrid vehicle and an additional 43% plan to switch in the future
- 86% of respondents have not used a car club or car share scheme and do not plan to do so.
- 9 out of 10 people have not and have no plans to buy or hire an e-bike/e-scooter

Barriers to sustainable transport use

- Needing to travel too far to walk or cycle is the main reason for not using sustainable transport more often, while almost one quarter cite a lack of suitable cycle routes
- Other responses cited bus frequency / reliability / routes and need to carry shopping / heavy items

Encouraging more sustainable travel – public transport and traffic measures

- More than 2 in 3 felt that a more frequent and reliable bus services, a more extensive bus network and cheaper bus fares would be effective in encouraging greater use of public transport. Over half of respondents (58%) said that better quality / electric buses would be effective in encouraging greater public transport use
- The highest proportion of residents (54%) felt that more EV charging points would be the most effective measure in encouraging more sustainable travel

Encouraging more sustainable travel – walking/cycling and travel reduction measures

- More than 3 in 4 residents told us that dedicated, well lit walking routes and safer and dedicated cycle routes would be most effective in encouraging greater levels of active travel/walking amongst residents. A similar proportion consider safer and dedicated cycle routes would be an effective means of encouraging more cycling

- More flexibility from employers to work at home and a better range of shops and services near where they live would be most likely to encourage residents to reduce their travel

Opinions of York Transport initiatives over the last year

- The following percentages of respondents felt that the following initiatives improved their city centre experience in the past year:

  Expansion of foot streets (49%), Electrifying the bus network (44%), Improved walking routes (27%), Introduction of a Clean Air Zone (26%), Provision of new cycle lanes (24%), Groves low traffic neighbourhood trial (17%).

Webinar 'How should we tackle transport emissions?' (March 2023)

A public webinar entitled 'How should we tackle transport emissions?' was hosted online by City of York Council on 17th March 2023 and covered a range of issues set out in the draft local transport strategy, including discussions of how we can improve air quality, cut emissions in the areas we need to and manage the move to electric vehicles. Suggestions and feedback during this webinar have also be used to inform the measures within AQAP4.

4.2 Steering Group Activities

A full overview of previous officer steering group activity in relation to developing air quality improvement measures to address exceedences of the health based air quality objectives in the current (and historical) AQMA(s) in York is provided in chapter 5.0 of AQAP3. The following officer steering groups have been involved in the update of CYC's AQAP.

Public Protection Air Quality Working Group

A full review of measures in CYC's AQAP3 and LES was initially undertaken by Public Protection officers. A Public Protection Air Quality Working Group met 4 times to undertake this initial review of measures. Additional meetings were also held between Public Protection staff and lead officers in Transport Planning / Sustainable Transport Service and lead officers for CYC's Carbon Reduction Strategy to discuss AQAP4 and identify synergies between AQAP4 and other complementary strategies.

Officers in Public Protection continued to meet frequently throughout 2022/2023 to discuss progress with the update and alignment with other key CYC strategies. Public Protection also produced a briefing document for CYC's Director of Public Health, outlining future opportunities for Public Health to work alongside Public Protection and other teams in delivery of AQAP4 measures to inform and protect the public with respect to air quality and health issues.

Local Transport Plan (LTP) Working Group

AQAP4 has been developed in parallel to CYC's draft Transport Strategy. A Local Transport Plan working group was established in 2021 to progress development of LTP4 and associated sister and daughter documents, including the transport related measures and themes within AQAP4.

Public Protection officers participated in monthly meetings of this group, commencing May 2021.

Composition of this group was as follows:

- Director for Transport, Highways and Environment
- Public Protection (Air Quality)
- Sustainable Transport Service / Transport Planning
- Programmes and Smart Place
- Economic Development
- Carbon Reduction
- Marketing and Communications

Measures in AQAP4 (retained and updated from AQAP3) were previously drawn mainly from the York Local Transport Plan (LTP) and the York Low Emission Strategy (LES). Both these documents were developed by internal officer working / steering groups and have been subject to extensive public consultation. Where still relevant to York's air quality issues and principal emission sources, measures and targets have been updated to ensure they strive to achieve continual improvement in air quality across the city over the next 5 year period. Additional measures are included in the current AQAP to reflect the growing evidence base around air quality and health impacts of particulate matter, the current air quality position in the city with respect to health-based objectives and additional feasibility work undertaken since publication of the last AQAP (see Freight Study below). New measures in AQAP4 (and associated targets and indicators) have been reviewed by the above working group and other key departments across CYC.

DEFRA Freight Study / Low Emission Deliveries Working Group

City of York Council was awarded funding from DEFRA in March 2021 to explore options for moving goods sustainability into and out of York and commission a pilot scheme to test options. The project aims to develop options to reduce the number of deliveries made to the city centre (and around the wider York network) by LGVs / HGVs and to ensure that any remaining journeys are made by sustainable modes.

A working group was formed to progress this study and met monthly between March 2021 and December 2022. This group has led on the review and assessment of options for tackling freight movements across the city, which will be developed throughout the lifetime of AQAP4.

Composition of this group was as follows:

- Carbon Reduction Team
- Public Protection (Air Quality)
- Sustainable Transport Service / Transport Planning
- Programmes and Smart Place / Transport Systems
- Asset and Property Management
- Parking Services
- Marketing and Communications
- Economic Development
- York Business Improvement District (BID)
- AECOM (external consultants commissioned to undertake the feasibility study)

In addition to the above, CYC have set up a ‘Freight Forum’ for York, comprising of external stakeholders to share knowledge and advise on freight logistics and a possible strategy for York.

The forum consists of representatives from the freight transport industry, local operators, interest groups, York Civic Trust, the Local Enterprise Partnership and CYC representatives.

The forum is independently facilitated by Dr Erica Ballantyne who leads the Logistics & Supply Chain Management Research Theme within the Operations Management & Decision Sciences Research Centre at the University of Sheffield.

Gillygate Air Quality Working Group

An officer working group was established in August 2023 to consider specific air quality improvement measures on Gillygate in response to

continued exceedances of health-based standards. This group met monthly from Aug 2023.

5 AQAP Measures

Table 5.13, later in this section, summarises the measures in AQAP4. 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

Further information on the cost / benefit of these measures is provided in section 5.1 below and in Appendix C. CYC's future Annual Status Reports will provide regular annual updates on implementation of these measures.

5.1 Measure evaluation and cost benefit analysis

For the current, updated AQAP4, a comprehensive review of previously adopted air quality improvement measures has been undertaken. Where still relevant to York's air quality issues and principal emission sources, measures and targets have been updated to ensure they strive to achieve continual improvement in air quality across the city throughout the AQAP4 period.

Absolute impacts on air quality will vary between AQAP4 measures, as will implementation costs. Whilst some actions are already underway, some are in the planning stages or may not yet have funding secured. As a result, actions have different implementation times and in some cases these may extend beyond the timeframe of AQAP4.

As part of AQAP4 development, an updated evaluation of all measures proposed has been undertaken to consider issues such as air quality impacts, feasibility, funding streams, costs, implementation timescales and alignment with wider CYC strategies.

Whilst DEFRA do not expect local authorities to undertake detailed cost-benefit analysis with AQAPs, it is expected that measures should be ranked according to their cost (both financial and other environmental impacts) and the improvements to air quality that each measure might bring.

AQAP4 measures have been reviewed in terms of the issues outlined in the list below, informed by professional judgement of CYC officers, experience gained from previous CYC projects / feasibility studies, the LAQM Action Toolbox in LAQM.TG22 and information and case studies on the Air Quality Hub.

- **Air Quality Impact** – Impacts relate to the anticipated reduction in emissions or concentrations of local pollutants such as NO_2. This is based on professional judgement and, where possible, draws on experience gained from studies undertaken in York and elsewhere.
    - **Low (✓)** – minor improvement anticipated but unlikely to be explicitly detectable (i.e. within uncertainties of monitoring / modelling technique)
    - **Medium (✓✓) –** improvement anticipated of up to ~2µg/m^3 NO_2 that could be demonstrated via desktop modelling study
    - **High (✓✓✓)** – significant impact anticipated of over 2µg/m^3 NO_2 that could be demonstrated via modelling and likely to be detectable via local monitoring
- **Cost of implementation** – the following scoring and symbology provides an approximate indication of implementation costs as appropriate for AQAP development; more detailed costing will follow as part of specific project plans. For ease of future reporting, cost bandings have been aligned with Annual Status Report reporting requirements as follows:

  - **£££££££** >£10m
  - **£££££** £1m - £10m
  - **£££££** £500k - £1m
  - **££££** £100k - £500k
  - **£££** £50k - £100k
  - **££** £10k - £50k
  - **£** <£10k

- **Feasibility** - wider feasibility has considered the following issues and has been assigned an overall feasibility ranking of **Low (✓), Medium (✓✓)** or **High (✓✓✓)**:
  - Compatibility and synergies with wider CYC polices including climate strategy, planning policies
  - Public health impacts ($PM_{2.5}$ and wider determinants)
  - Wider non-air quality impacts (social economic, wider economic)
  - Stakeholder views - including likely public perception and political acceptability *(note this is subject to consultation)*
  - Sources of funding available / possible
- **Implementation timescales** – assigned values of:
  - Short term (<2 years) – actions that can be delivered now to reduce emissions
  - Medium term (2-5 years) – medium term delivery, but within timeframe of AQAP4
  - Long term (>5 years) - may extend beyond timeframe of AQAP4

Section 5.2 below provides an overview of the areas prioritised for action and outline the AQAP4 commitments within each respective area. A high-level cost-benefit analysis has been undertaken and is documented under each area and summarised in Appendix C. Measures not taken forward in AQAP4 are discussed further in Appendix B.

5.2 AQAP4 Priority Areas

5.2.1 Reducing emissions from freight / deliveries

Over the past decade, last-mile deliveries have become dominated by smaller diesel vans, mainly due to the rapid growth of Internet shopping. This has impacted negatively on air quality and traffic congestion. Last-mile delivery emissions can be reduced by replacing diesel delivery vehicles with ultra-low emission vehicles or zero-emission bicycles/e-cargo bikes and portering (operating from depots outside busy and congested areas).

Freight consolidation schemes combine deliveries from several distributors onto a single vehicle before they enter urban and residential areas. This reduces the total number of vehicle movements and reduces congestion and emissions.

Since most HGV/LGV's are diesel vehicles, which emit NO_x and PM, and with expected constraints on capacity for deliveries within York's city centre, there is a need to identify how freight logistics can address these problems in the future. The first/last mile of deliveries is an important focus, as this is the least efficient in terms of time, emissions and congestion.

York has:

- Undertaken a freight improvement study (2013); recommendations were considered during the preparation of earlier Local Transport Plans (LTP3).
- Obtained DEFRA funding in 2021 to carry out a feasibility study and subsequent pilot scheme to reduce emissions relating to deliveries travelling in to and out of York (currently ongoing). The project will focus on how to reduce the number of deliveries made to the city centre and around York by LGVs and HGVs and will identify suitable sustainable alternatives which may include a delivery 'hub' allowing the last or first mile of the journey to be made by low emission modes, including e-cargo bikes. The council is engaging with businesses, including delivery companies, as part of the study.

- Established a freight forum, comprising of external stakeholders, to share knowledge and advise on freight logistics and a possible strategy for York. The forum consists of representatives from the freight transport industry, local operators, interest groups, York Civic Trust, the Local Enterprise Partnership and CYC representatives.
- Provided advice to fleet operators on operational best practice through delivery of an ECO Stars Fleet Recognition Scheme, a measure delivered through AQAP3.

AQAP4 commitments:

- Continue feasibility work to address first/last mile delivery for light goods in York, with the aim of reducing emissions of NO_x, PM and CO_2 from HGV/LGV's entering the city centre via a reduction in the overall number of vehicles undertaking deliveries and emissions from the remaining fleet. We will continue to work with partners to evaluate low emission delivery modes that could replace journeys by conventionally fuelled HGVs/LGVs as part of the development of a city-wide 'Movement and Place' plan.
- Prioritise a pilot project to test a 'micro-consolidation centre' for the purpose of distributing commercial light goods around the city centre, with the first/last mile of travel undertaken by low emission modes. We will consider expanding the scope of the pilot to test use of the consolidation centre for residential deliveries, where appropriate.
- Following feasibility work, we will explore funding opportunities for permanent freight consolidation facilities (or other innovative approaches) in the city to reduce emissions associated with deliveries.
- Consider the feasibility of extending the Clean Air Zone to include HGVs / freight vehicles

Table 5. 1 Reducing emissions from freight

Action	Reducing emission from freight
Air quality impact	**Medium** to **High** impacts within the AQMA and city centre, especially where freight consolidated out of city centre and deliveries transferred to zero emission modes. Exact impacts subject to further work and review of pilot. Impacts associated with CAZ extension subject to further feasibility work.
Cost	***££££*** Feasibility study and pilot (freight consolidation centre) £100 - £500k Permanent consolidation facilities subject to further costing, (informed by pilot evaluation) Extension of CAZ to include HGVs subject to further feasibility work and costing
Feasibility	**Medium to High** - Permanent consolidation facilities likely to be widely supported as directly support air quality and climate agendas, and will have positive economic impacts in terms of green job creation (both for consolidation hub and onward last-mile delivery of goods using low emission modes). Removal of some delivery vehicles from the network would improve reliability of deliveries and create a safer and more pleasant environment for shoppers and visitors. Would also address congestion and improve public realm, particularly within city centre, outside foot street hours. Additional benefits may arise in relation to preservation of historic buildings, especially where facilities act to reduce numbers of HGVs in space constrained historic core.

Action	Reducing emission from freight
	Ultimately depends on external investment / partners and planning process. City-wide Movement and Place plan will be developed as a statement of intent for discussion with the new Mayor Extension of CAZ to include HGVs subject to further feasibility work
Implementation timescales	Feasibility study / pilot project – **Short term (< 2 years)** Freight consolidation facilities – **Medium (2 – 5 years)** CAZ extension – subject to further feasibility work
Ownership	CYC, freight transport industry, local operators
Partners	Interest groups, York Civic Trust, the Local Enterprise Partnership, York Business Improvement District (BID)
Funding	DEFRA funding already secured for initial feasibility work and pilot study Future freight consolidation or initiatives likely to be subject to external funding and suitable partner organisations

5.2.2 Reducing emissions from buses

Buses play an important role in York sustainable travel infrastructure and form a vital transport service for residents and visitors. CYC has a Clean Air Zone (CAZ) for buses in the city centre and operates electric buses across the majority of Park and Ride services. Through the lifetime of AQAP4, CYC will continue to work in partnership with bus operators to improve bus provision for all service users and minimise tailpipe emissions from buses.

York has:

- Delivered a Clean Air Zone (CAZ) for buses in the city centre and allocated funding to help to replace/retrofit 93 buses to CAZ compliant vehicles. Buses making 5 or more entrances to the city centre CAZ per day are now required to be Ultra Low Emission Buses (ULEB) (Euro VI diesel or electric).
- Raised awareness of the impact of bus idling and implemented a Traffic Regulation Condition to prohibit bus idling within the CAZ area; this applies to all local bus services, irrespective of service frequency or engine type.

AQAP4 commitments:

- Work with partners to upgrade (CAZ exempt) inter-urban and rural services to ultra-low emission vehicles. Where it is not practical to electrify routes, services will be upgraded to Euro VI to further improve local air quality and reduce greenhouse gas emissions.
- Work in partnership with bus operators to deliver an all-electric, zero emission bus fleet for all services operating predominantly in the York urban area. It remains a CYC ambition to pursue an all-electric bus fleet where all buses are capable of operating in electric zero-tailpipe emission mode in key locations. York's Bus Service Improvement Plan (BSIP) is the delivery vehicle for CYC's known aspirations for bus services in the city, particularly their conversion to electric drive, but also other measures such as bus priorities or improvements to stops, shelters and passenger information. The BSIP outlines the vision for York's bus network, which is to be inclusive, accessible to all, attractive and welcoming – becoming a source of pride for the city and its residents. CYC was awarded funding in 2022 to deliver this vision. The BSIP is delivered through York's Enhanced Bus Partnership, which brings together the Local Transport Authority, operators, stakeholders and the public. Additional funding has also been awarded to CYC through DfT's ZEBRA fund, to deliver 44 new electric buses and associated infrastructure.

- Continue to work in partnership with bus operators to eliminate unnecessary bus idling across the network, especially within the city centre designated AQMA / CAZ area.
- Extend the CAZ to other areas, including York Central

Table 5. 2 Reducing emissions from buses

Action	Reducing emissions from buses
Air quality impact	Improvements in air quality seen in recent years due in part to widespread uptake of electric and low emission buses (coupled with a reduction in anti-idling events). Further upgrades to low frequency services likely to result in Low air quality impacts over and above impacts delivered through existing CAZ. However, an all-electric York bus fleet likely to result in additional High air quality impacts across the AQMA and wider network due to elimination of tailpipe emissions Electric buses will eliminate local emissions of NO_2, tailpipe emissions of PM and offer considerable carbon savings. CAZ extension to other areas will ensure bus emissions are minimised in other key locations
Cost	Cost of developing York's BSIP covered by one-off payment of £100,000 that the DfT has made to all requested authorities to cover the cost of development. £££££££ Additional low frequency bus upgrades and/or conversion of further services to electric drive subject to further feasibility work. CYC awarded £8.4m funding for 44 new electric buses through DfT's ZEBRA fund (March 2022) which will

Action	Reducing emissions from buses
	be matched by a further £10m investment by First. In April 2022, CYC was awarded an additional £17m to support the development of key schemes and initiatives in the BSIP, including wider electrification of the urban bus fleet. Approximately £12m will be used to fund the conversion of 60 additional buses and associated infrastructure.
Feasibility	Medium to High – strong political and public will to continue to work alongside bus operators to deliver further improvements to vehicles. Supports sustainable transport objectives in Council Plan, also economic development objectives, objectives to improve air quality and reduce carbon emissions. Because bus services generally support more active travel *(through walking to bus stop, but also because availability of an effective bus service encourages lower car ownership and hence greater use of active travel modes such as walking and cycling)* measures also support health objectives in the Council Plan. Funding identified. Note that an all-electric bus city involves high costs but these will be met by external funding that has already been secured. Other benefits of electric buses include reduction in noise, and improve passenger/driver experience Any CAZ extension proposals subject to review by Traffic Commissioner
Implementation timescales	Medium (2-5 years), but transition to electric buses for whole fleet may potentially extend beyond AQAP timescales, subject to vehicle production and delivery timescales

Action	Reducing emissions from buses
Ownership	CYC (Sustainable Transport Service) / Bus operators
Partners	Manufacturers of low emission buses, charging infrastructure providers, emissions abatement equipment providers, Office of the Traffic Commissioner
Funding	DfT / DEFRA funding

5.2.3 Anti-Idling Initiatives

Leaving engines running when parked (stationary idling) causes unnecessary emissions, wastes fuel and adds to local noise levels. CYC will take a proportionate approach to tackling stationary idling emissions, recognising that whilst they form a small contribution to overall emissions in York, they should continue to be targeted as part of a comprehensive Air Quality Action Plan. Tackling unnecessary idling emissions also has co-benefits in terms of reducing noise pollution and carbon emissions.

York has:

- Obtained member approval for implementation of a package of measures aimed at deterring stationary vehicles from idling, including the use of discretionary powers under the Road Traffic Regulations 2002 to issue fixed penalty notices to drivers who refuse to switch off their engines when asked.
- Launched a Kick the Habit anti-idling awareness-raising campaign (2019), aimed at encouraging people to think about the importance of clean air and the impact that this has on health. We have undertaken annual promotional work in relation to vehicle idling as part of Clean Air Day, working with schools, local businesses and residents groups.
- Undertaken regular daytime and night-time anti-idling enforcement patrols. Enforcement of idling legislation is delivered by staff in Public Protection, with support from Civil Enforcement Officers. During 2021, the duties of CYC's Support Marshalls were extended to include

monitoring of vehicle idling in key city centre locations, this has now been extended to Public Protection Support Offices, who undertake monitoring of idling as part of other routine operations.

- Erected anti-idling signage in CYC car parks, coach parks, city centre bus stops, taxi ranks and other key locations across the city.

AQAP4 commitments:

- Continue to undertake annual awareness of CYC's 'Kick the Habit' anti-idling campaign with local schools and partner organisations such as York Hospital and the University of York. This will include raising awareness with commercial vehicle operators, such as those involved in deliveries or construction.
- Explore further anti-idling signage in key locations on the public highway[27] (informed by future complaints) and develop new anti-idling resources to support the campaign as required. We will work with local businesses to raise awareness and minimise occurrences of idling away from the public highway, particularly where this coincides with public exposure (e.g. seating areas in close proximity to idling vehicles)
- Review CYC's approach to anti-idling enforcement and seek opportunities to obtain additional staff resources for undertaking enforcement patrols. This will include both on the public highway and across CYC's estate (e.g. coach parks).
- Undertake further anti-idling promotion amongst the taxi trade via awareness raising and information. We will also seek opportunities to raise awareness of vehicle idling associated with other activities that require CYC consent, such as mobile catering units.

[27] Whilst CYC cannot take formal enforcement action against drivers who idle their vehicles whilst sitting in traffic, we will consider opportunities for advisory anti-idling signage in areas of air quality concern, requesting drivers switch off their vehicle engines whilst waiting at traffic lights, for example. Such signage would be 'advisory' only in accordance with the Traffic Signs Regulations and General Directions.

- Respond to public complaints about idling.

Table 5. 3 Anti-idling initiatives

Action	Anti-idling initiatives
Air quality impact	Likely to be Low but may increase to medium in specific hotspot locations, dependent upon extent of idling and vehicles involved
Cost	Kick the Habit campaign and resources already developed, main future costs in relation to promotion (signage / additional resources) and staffing (enforcement). £ - ££ Ongoing promotion can be delivered for <£10k per year, with additional dedicated staff resource for enforcement likely to be <£10k per year.
Feasibility	High – unlikely to conflict with any CYC policy and will directly support emission and carbon reduction agendas. Reduced idling will also help protect public health and create a safer and more pleasant environment. Ongoing promotion of existing campaign likely to be supported both by public and politically. No direct socio-economic implications. Ongoing promotion/enforcement will assist bus/freight/delivery operators to enforce their own policies which will result in fuel savings and reduced operating costs. Other benefits include reduction in noise. Budget available for ongoing publicity but wider enforcement subject to funding / additional staff resource. Potential for some enforcement duties to incorporated into existing CYC posts.

Action	Anti-idling initiatives
Implementation timescales	Short term (<2 years) – anti-idling campaign already developed and will continue to be rolled out and promoted
Ownership	CYC (Public Protection/ Parking Services / Sustainable Transport)
Partners	Bus companies, taxi companies, freight / delivery companies, local businesses. Promotion undertaken with partners such as York Hospital, University of York
Funding	CYC internal budget available for ongoing promotion and development of additional resources to support existing campaign. Wider scale enforcement subject to additional staff resource and funding

5.2.4 Reducing emissions from taxis

Taxis provide essential transport services in the city but are intensively used in the city centre and across residential areas where air quality issues remain.

Many people depend on such vehicles for trips when other forms of transport are unsuitable or unavailable, including the vulnerable and some school children who are likely to be more susceptible to poor air quality and respiratory illness.

It is important that we continue to work with the taxi trade to understand their needs and ensure operators are part of our wider air quality improvement programme.

We will continue to facilitate the transition to low emission vehicles across the taxi fleet via the use of incentives (subject to external funding) and awareness raising, thereby providing taxi drivers with information to allow informed choices about vehicle emissions and total cost of ownership of low emission and/or electric taxis.

York has:

- Previously adopted Taxi Licensing policy that incorporated environmental considerations and required CYC licensed vehicles to meet minimum vehicle emission standards.
- Encouraged over a third of the York taxi fleet to change to low emission alternatives (petrol-hybrid or electric) through CYC's low emission taxi grant scheme.
- Provided information to taxi drivers about anti-idling policies as part of the annual CYC vehicle licence renewal process and has placed anti-idling signage at key city centre taxi ranks.
- To help meet unmet demand for hackney carriage vehicles, CYC's Licensing and Regulatory Committee approved the issuing of ten new hackney carriage vehicle licences (end of 2022) bringing the total number to 190. In response to a continuing desire to improve local air quality, the new licences will only be issued to wheelchair accessible vehicles, which are also fully electric or plug in electric hybrid.

AQAP4 commitments:

- Consult further with the taxi trade regarding revisions to CYC's Taxi Licensing policy and conditions about the type and age of vehicle that will be licensed by CYC in the future. Conditions will reflect CYC aspirations for an ultra-low emission taxi fleet and strive to achieve continual emission reduction from licensed vehicles (both hackney carriage and private hire vehicles).
- Seek opportunities to obtain further grant funding to enable taxi drivers to upgrade their taxis to low emission vehicles. We will also work alongside the trade to understand their requirements with respect to electric vehicle charging infrastructure needs as part of our Public EV Charging Strategy review.
- Explore and consider opportunities for addressing emissions associated with non-CYC registered taxis. We will explore the feasibility of including all taxis within the city centre Clean Air Zone.

- Continue to work with the taxi trade to minimise engine idling and undertake further awareness raising in relation to this issue, installing further anti-idling signage where necessary.

Table 5. 4 Reducing emissions from taxis

Action	Reducing emissions from taxis
Air quality impact	Likely to be Low across AQMA and wider city but may increase to Medium in specific locations with high proportions of taxis such as taxi ranks, especially where electric vehicles are being used. Petrol hybrid vehicles produce considerably lower emissions of NO_x and PM compared with older diesel vehicles and offer substantial carbon savings. Air quality impacts associated with CAZ extension to taxis subject to further feasibility work
Cost	~~£~~£ - ~~£~~£~~£~~£~~£~~ Future policy changes and associated consultation subject to costs of £10-£50k, with wider support/incentives for taxi drivers to upgrade vehicles likely to be much higher (~£500k - £1m) over the existing grant funds secured by CYC for this purpose Extension of CAZ to include taxis subject to further feasibility work and costing
Feasibility	Medium to High - Will directly support emission and carbon reduction agendas and cleaner low emission taxis likely to be widely supported by public. May be socio-economic impacts. Further strengthening of existing Taxi Licensing Policy may be subject to challenge by the taxi trade; impacts on

Action	Reducing emissions from taxis
	the trade must be carefully considered to ensure numbers of licensed vehicles meet demand and to minimise economic impacts (particularly following impacts on the taxi trade during Covid-19). Whilst low emission vehicles may have higher purchase costs, these can usually be offset via longer term fuel and tax savings. CYC must ensure that an adequate number of wheelchair accessible vehicles (WAVs) remain in the fleet; licensing policy needs to consider options available for these vehicles and set emission / age standards accordingly. A cleaner taxi fleet will improve the image of the city with positive implications for tourism and inward investment. Ultra-low emission / electric taxis likely to be quieter offering benefits for late night transport in residential areas. Extension of CAZ to include taxis subject to further feasibility work
Implementation timescales	Updates to Taxi Licensing Policy and consultation will progress during 2024 Short term (< 2 years) Opportunities for further grant funding for drivers (subject to grant opportunities) Short to Medium term (<2 – 5 years)
Ownership	CYC (Public Protection / Taxi Licensing)
Partners	Taxi operators, charging infrastructure providers
Funding	Work to support policy change and associated consultation with trade funded through CYC internal budget.

Action	Reducing emissions from taxis
	External grant funding required to support additional vehicle upgrades (over and above DEFRA funding already obtained)

5.2.5 Reducing emissions from CYC vehicles

Effective fleet renewal policies can help to ensure that the energy, carbon and local air quality impacts of local authority operated vehicles are considered as part of fleet replacement programmes. Fleet management policies can further drive energy and carbon savings and deliver air quality benefits.

CYC own and operate a wide range of vehicles and equipment to support building maintenance, highways maintenance, waste management and delivery of other key services. Such vehicles make regular, frequent trips within York city centre.

CYC also procure the services of third party owned vehicles such as in connection with education (e.g. school buses and taxi services).

The current CYC fleet comprises 535 vehicles and items of plant equipment. This includes 180 vehicles that are under 3.5 tonnes.

We recognise that the way our own fleet vehicles are renewed is a vital part of the CYC air quality improvement and carbon reduction programmes and that the transition to a cleaner, greener fleet must be done without compromising the important services the council delivers to the city and its residents.

We also recognise that we must lead by example; the successful operation of ultra-low and zero emission vehicles as part of the CYC fleet will show leadership and will act as a catalyst for other fleet operators in the city to accelerate their fleet renewal programmes.

York has:

- Agreed to commence the transition to an electric fleet for all vehicles under 3.5 tonnes as part of a four-year replacement programme. This was agreed in March 2020 by City of York Council's Executive
- Installed 'Fast' charging infrastructure at the Hazel Court Eco-depot for charging up to 6 vehicles simultaneously, this has allowed trials of ultra-low emission plug-in vehicles across various services to be undertake in recent years.
- Reduced 'grey fleet' trips and worked in partnership with Enterprise Car Club to provide a range of pool vehicles at various locations near West Offices (Main CYC HQ), Hazel Court and across the city which can be booked online and accessed via a smart membership card. A number of diesel pool cars have been replaced with the very latest petrol hybrid technology as part of the car club initiative and are now regularly used across various CYC services.
- Undertaken a programme of driver training, incorporating eco-driving elements. We have also undertaken trials of telematics systems and evaluated fuel additives across the fleet in recent years. CYC has also implemented a Masternaut telematics system for improving safety, reducing emissions and improving vehicle and driver efficiency.

AQAP4 commitments:

- Implement a fleet replacement programme for all vehicles under 3.5 tonnes. A four-year programme was considered adequate for services to be restructured around an electric fleet. CYC does not intend to purchase any new petrol / diesel vehicles during this transition period, but short-term lease replacements may be necessary if existing vehicles fail and an electric vehicle is not available, or the service cannot immediately operate an electric vehicle due to charging infrastructure requirements.
- In line with the above replacement programme, CYC will upgrade power distribution to the Hazel Court Eco Depot to ensure that suitable infrastructure is in place and can support the phased

approach to fleet replacement and gradual increase in number of EVs across all services.

- Continue to explore the options for fleet vehicles over 3.5 tonnes to move away from fossil fuels such as diesel. Whilst many specialist items of fleet are in the early stages of development and testing (and early adoption brings associated risks for service areas) CYC Fleet Services will continue to arrange trials and evaluation of these vehicles to assess suitability for core service areas.

Table 5. 5 Reducing emissions from the CYC fleet

Action	Reducing emissions from CYC fleet
Air quality impact	Likely to be Low - Medium across AQMA and wider city, and may increase further in specific locations across CYCs estate and considering all operations. Considerable CO_2 benefits through fleet upgrades to electric and other low emission technologies.
Cost	~~£££££~~ Upgrades to power distribution at Hazel Court Depot estimated at £1.5m Upgrades to 153 vehicles over programme lifetime (capital and revenue costs) estimated at £1m - £10m.
Feasibility	High – phased fleet replacement programme already agreed for vehicles under 3.5 tonnes. Directly supports carbon and air quality agendas. No future conflict with wider CYC policy and likely to be supported widely by public. Indeed, a cleaner fleet will improve public perception of CYC and may encourage uptake of low emission vehicles by others. CYC will endeavour to promote and showcase upgrades to other organisations.

Action	Reducing emissions from CYC fleet
	Considerable progress has already been made with reducing grey fleet trips via use of low emission Car Club vehicles and other sustainable modes. CYC staff in post to oversee and develop staff initiatives to further reduce grey fleet mileage. Alternatively fuelled vehicles can provide a better driving experience for drivers, with the potential for considerable longer term financial savings for CYC
Implementation timescales	Medium term - Whilst initial implementation already commenced, fleet replacement programme for vehicles under 3.5 tonnes likely to be complete within 2 to 5 years. Short term - Trials of vehicles over 3.5 tonnes ongoing and arranged as suitable vehicles come to market
Ownership	CYC (Environmental Services and Fleet)
Partners	Vehicle manufacturers, infrastructure providers
Funding	CYC budget for fleet renewal / electric vehicle capital purchase and ongoing revenue costs

5.2.6 Expansion of EV charging network

Local Authorities are uniquely positioned to provide strategically located charging infrastructure that will support residents, commuters, fleets and through traffic to conveniently and affordably recharge electric vehicles.

CYC's EV Charging Strategy (approved March 2020) sets out the rationale for the number and location of public EV charging points, the principles of tariff-setting and CYC's approach to providing charging for residents in streets without off-road parking.

The strategy outlines an equitable approach to charging infrastructure that will support improved air quality, climate change objectives and

financial vitality, and aligns with wider transport policy objectives of maximising active travel and minimising private vehicle usage. CYC's Executive have also endorsed a commitment to continue to explore options for on street charging and facilities for charging electric taxis in the city centre.

York has:

- Pioneered public charging for electric vehicles (EV) when we launched a public charging network for EVs in 2013. We have gained significant experience and knowledge since 2013 through the CYC network and have improved CYC's internal management of the network, resulting in a dramatic improvement in chargepoint reliability.
- Launched a Public EV Charging Strategy in March 2020, setting out the next phase of the delivery of York's EV charging network up to 2025. Delivery of the Strategy is already underway, enabling the provision of a robust and fit for purpose EV charging network across York.
- Stimulated the EV market via increasing requirements for EV chargepoints in new developments, requiring 'fast' chargepoints in 5% of spaces (with an additional 5% of spaces to be chargepoint 'ready'). This has provided more opportunities for charging at destinations and will complement CYC's investment in CYC owned long-stay car parks. CYC are also supportive of commercial EV chargepoint networks which will support consumer choice, geographical spread and enhanced roll-out rates.
- Opened two HyperHub EV charging sites; dedicated charging hubs with 24/7 access, providing 16 charging bays, 8 Rapid and 8 Ultra Rapid. HyperHubs have been part funded by Office for Low Emission Vehicles and the European Regional Development Fund.

AQAP4 commitments:

- We will review standard charging tariffs on an annual basis to ensure we can deliver a modern and reliable network and continue to make our tariff as simple as possible; users just pay per kWh. Electricity for

all charge points originates from the wider CYC contract, which purchases renewable energy.

- We will roll-out new Fast and Rapid chargers across York's car parks and Park and Ride sites.
- Seek external funding to deliver a minimum of 5% fast charger provision in long-stay car parks and Park and Ride sites. We will actively monitor plug-in vehicle uptake in York and review the figure of 5% provision (supported by HyperHubs) every 12 months to ensure we can respond quickly to ensure the CYC network remains fit for purpose.
- We will evaluate the success of the first two HyperHubs and consider options and funding to deliver additional sites. We will also work constructively with commercial operators to ensure the best range of charging facilities and networks are available in York.
- We will maintain a first class network of Fast, Rapid and Ultra-Rapid chargers supported by commercial operators, providing a wide consumer choice and market leading charging experience.
- We will deliver an updated 'Public EV Charging Strategy' by 2025, to ensure we continue to provide a robust and fit for purpose future EV charging network across York. This will include further consideration of on-street charging, which currently presents a challenge for terraced streets in York.

Table 5. 6 Delivery of strategic EV charging network

Action	Delivery of strategic EV charging network
Air quality impact	Medium to High – as EV uptake increases, emissions of NO_x and PM will decrease. Benefits to local air quality will increase over time. In line with local and national planning guidance, changes in vehicle AADT of 5% or more (comparable to 5% BEV uptake) across an AQMA may result in measurable AQ impacts, this aligns with CYC's

Action	Delivery of strategic EV charging network
	aspiration to provide 5% of parking spaces with charge point provision. Uptake of electric vehicles will have a positive impact on carbon emissions, especially where power obtained through renewable energy tariffs. Total impact of implementing EV charging is difficult to quantify due to uncertainties over electric vehicle uptake but for every conventionally fuelled vehicle replaced local emissions of NO_x and tailpipe PM_{10} are eliminated.
Cost	~~£££££~~ Remaining work programme to 2025 estimated at £4-£5m. CYC has provisionally secured this funding (with some elements of match funding to be confirmed). Current plans to develop 2 further Hyper Hub sites at a cost of £3-£4m (included in cost estimate above)
Feasibility	High – EV Strategy and future work programme approved. Directly supports carbon and air quality agendas. Supports wider sustainable transport objectives in Council Plan and reinforces Low Emission Planning Guidance principles that require EV infrastructure on new developments. Funding sources identified. An established and evolving EV charging network provides EV drivers with more confidence to visit York for business or leisure trips and may influence destination choice. Development and maintenance of EV charging network creates jobs. Switching to EVs can offer considerable fuel and tax savings to local businesses and residents.

Action	Delivery of strategic EV charging network
	Expansion of strategic EV charging network provides opportunities for wider EV ownership, even those without off-street parking. Wider uptake of EVs will also result in reduced traffic noise.
Implementation timescales	Short term (< 2 years) for delivery of existing programme of Fast / Rapid / Ultra-Rapid charge points Medium term (2-5 years) for evaluation of existing hyper hubs and to consider locations and feasibility of additional sites. New Public EV Charging Strategy to be produced by 2025
Ownership	CYC (Transport / EV Strategy)
Partners	BP Pulse (access partner), EV charge point manufacturer(s)
Funding	CYC, ERDF, OLEV

5.2.7 Minimise development related emissions

Air quality improvement strategies and planning decisions should complement wider climate change/carbon reduction agendas and these should be well aligned to recognise synergies and prevent conflict. In some cases a compromise approach may be needed to balance the two agendas.

Ongoing delivery of AQAP4 must strive to maximise synergies with the CYC's carbon reduction aspirations, via the alignment of respective planning policies and local guidance. It must also continue to ensure that emissions and air quality impacts from new developments are appropriately assessed and mitigated.

York has:

- Developed Low Emission Planning guidance to accompany policy ENV1 'Air Quality' of the Local Plan. This guidance, outlines CYC's

design and mitigation expectations for all new developments in the city and is actively used for development control purposes.

- Developed local standards and template planning conditions in relation to provision of electric vehicle (EV) recharging facilities (and associated management and maintenance) and requirements for Construction Environmental Management Plans (CEMPs) on new development sites.

AQAP4 commitments:

- Update and strengthen local Low Emission Planning Guidance to further reflect synergies between air quality improvement and carbon reduction strategies, such as those relating to heat and power provision. Updated guidance will aim to facilitate a transition away from fossil fuel heating sources, which can contribute to local air quality issues, alongside traffic emissions. Formal adoption of updated guidance is subject to the Local Plan and examination process. Public Protection will work closely with Planning Policy colleagues to ensure local air quality issues are adequately addressed as part of this process.
- Ensure that planning applications are reviewed in line with the above Low Emission Planning Guidance and that resultant emissions / air quality impacts are appropriated assessed and mitigated. We will seek to ensure that assessment of air quality impacts considers cumulative impacts from nearby sites to minimise ‘emissions creep’ across the city.
- DEFRA research has shown that a large proportion of Non-Road Mobile Machinery (NRMM) emissions come from the construction industry and that NRMM has the potential to contribute to local pollution hotspots. CYC will consider emission control requirements for Non-Road Mobile Machinery (NRMM) on development sites in York.
- Ensure that local standards for EV charging infrastructure across all sites with parking provision (currently 5% active provision is required)

remain appropriate for current EV use (and anticipated future EV uptake) in the city and are aligned to CYC's vision as laid out in CYC's EV Charging Strategy. CYC will continue to lead by example with respect to providing first-class EV charging provision on across CYC's estate and council led development.

- We will seek opportunities to use green infrastructure (planting of trees and shrubs) to mitigate emissions on both new and existing developments, aiming to prioritise protection to more vulnerable populations.

Table 5. 7 Minimise development related emissions

Action	Reducing development related emissions
Air quality impact	Medium – Local planning decisions have an important role to play in maintaining and improving local air quality, since they can significantly affect the design, location and management of emission sources and sensitive receptors. Local guidance can assist in securing infrastructure for ultra-low emission vehicles and that emissions during construction are minimised. Minimising exposure to poor air quality through the planning system via principles of good building design will also bring about additional benefits in terms of public health, especially for sensitive groups.
Cost	££ £10-£50k - Mainly staff time in connection with updates to guidance and associated consultation / development of new standard planning conditions. Will also be staff costs associated with assisting developers to comply with guidance and to check the accuracy and effectiveness of impact assessments and mitigation.

Action	Reducing development related emissions
	Costs associated with NRMM currently unknown and subject to further research and national guidance
Feasibility	High – existing guidance currently exists and is actively used for development control purposes. Existing air quality policy hooks within Local Plan. Effective management and mitigation of development related emissions will help maximise development opportunities. Provision of low emission vehicle infrastructure, low emission vehicles and other low carbon technologies on new developments will make developments more attractive to the end users and offer opportunities to showcase low emission measures to the wider population of York. Contributions towards low emission public transport, service vehicles and other low emission infrastructure will have positive air quality and climate change benefits beyond development sites and help to achieve a general improvement in public transport. Future action around NRMM subject to review of national type approval system
Implementation timescales	Anticipated to be Short term < 2 years but dependent on Local Plan process.
Ownership	CYC (Planning / Integrated Strategy / Public Protection)
Partners	Developers, landowners, construction industry
Funding	CYC internal budget (for guidance updates / consultation)

Action	Reducing development related emissions
	Planning obligations / s106 for mitigation measures

5.2.8 Local incentives for low emission vehicles / modes

Zero emission vehicle use and EV recharging infrastructure is now well established in York. CYC also has additional plans to further improve public EV charging facilities in the future.

Whilst CYC's priority is to encourage modal shift and reduce private vehicle miles travelled, we will seek to ensure that any remaining trips are made by the lowest emission vehicles possible. CYC is committed to further incentivising the wider uptake of low emission vehicles (especially non-combustion engine, zero tailpipe emission vehicles such as EVs) and use of the facilities provided via development of incentives and rewards. These may be linked to such things as parking fee reductions and discounted attraction entrance fees.

Any incentives must be sustainable in the longer term, as electric vehicle ownership and usage continues to grow in line with the government's announcement to ban the sale of new conventional petrol and diesel engine vehicles from 2030.

York has:

- Developed an EV charging network across the city, which has experienced rapid growth in usage in recent years. In 2014 there were 1,510 charging sessions, which increased to 13,695 session in 2018. CYC's EV charging strategy affirms our commitment to provide a high quality public network that supports and accelerates the transition to EV, ultimately enabling the decarbonisation of road transport.
- Since 2013, EV users haven't paid parking fees in CYC charging bays, instead at fast charging bays users have received up to 12 hours of free provided they are plugged into a charger. We have reviewed this incentive as part of our EV Charging Strategy and whilst daytime parking fees now apply in fast charging bays, free parking is

now offered for rapid and ultra-raid charging bays. We have committed to making fast charging bays in CYC car parks available for overnight charging free of charge for residents.

- In recent years, offered a 50% discount on certain types of CYC parking permit if associated with a low emission vehicle.
- Pioneered a low emission taxi grant scheme in 2013, accelerating the uptake of low emission taxis in the city. Further incentives were offered to York registered taxi drivers in 2014/15 and 2015/16 using LSTF funding and CYC obtained further funding from DEFRA in 2020/21 to support additional vehicle upgrades. Currently over a third of the York taxi fleet operate low emission petrol-hybrid or electric vehicles

AQAP4 commitments:

- Review ResPark arrangements and areas covered to consider priority parking / reduced parking fees for low emission vehicles. We will periodically review the local definition of 'low emission vehicle' in the context of national policy and local parking discounts to ensure that incentives remain appropriate and deliver continuous improvement. We will also review the need for a parking surcharge on specific vehicles based on their emissions
- Explore further incentives for use of low and zero tailpipe emission vehicles, both privately and across local businesses. Whilst we must prioritise the uptake of zero tailpipe emission vehicles across the network, we acknowledge that for some sectors alternative fuels may need to be considered (especially heavy duty vehicles) and we will work with partners to assess needs and support infrastructure requirements. In line with CYC's Climate and Economic Strategy, we will assist and support local business to transition to ultra-low emission and electric vehicles
- Promote and encourage the acquisition of ultra-low and zero tailpipe emission vehicles via travel planning services (and incentives for their use)

- Participate in trials and explore further incentives to increase use of modes such as E-Bikes / E-Scooters

Table 5. 8 Local incentives for low emission vehicles and modes

Action	Local incentives for low emission vehicles and modes
Air quality impact	Currently unknown - additional incentives likely to accelerate uptake of alternative fuels and low emission vehicles and will lead to positive air quality impacts. Air quality impacts dependent upon incentives available and uptake.
Cost	Currently unknown – subject to further investigation. May be some small capital costs and ongoing revenue costs (e.g. potential loss of parking income / provision of rewards).
Feasibility	Medium - Whilst local incentives to encourage low emission vehicles well aligned with carbon and air quality agendas, incentives such as CYC parking fee reductions subject to member approval and CYC budgetary process. Financial savings made through the purchase and use of low emission vehicles will reduce operational costs and may result in greater consumer spending in other areas e.g. leisure and shopping. Supports CYC Economic Strategy and support for EV uptake by local businesses. Also potential links to tourism and inward investment. Opportunities for linking incentives to developer emission mitigation plans / green travel plans. In addition to low emission vehicles, incentives can be applied to walking, cycling and use of public transport to ensure that all positive behavioural

Action	Local incentives for low emission vehicles and modes
	changes are rewarded and not limited to low emission vehicle purchase. This will also ensure that incentives can be made accessible to all, including non-drivers and those with disabilities. Likely to be well received by the public/visitors as opportunities for reward or financial/material gain generally viewed positively
Implementation timescales	Short to Medium term (<2 – 5 years)
Ownership	CYC (Parking Services, Transport Planning, Public Protection, Economic Development, Marketing and Communications)
Partners	Make it York, Parking infrastructure delivery partners, Developers, Micro-mobility solution partners
Funding	Structuring / pricing of parking fees subject to review and CYC budgetary process. Wider incentives also subject to budgetary review.

5.2.9 Improved public information and awareness

Delivering clear messages to the public around the cause and consequence of poor air quality, particularly around impacts on health, are particularly important for driving behaviour change. Whilst raising awareness about the health impacts of air pollution and encouraging people to minimise transport related emissions tend to be the main focus of most local authority emission reduction campaigns, there are other actions that the public can take to help improve air quality and protect their health.

Campaigns relating to issues such as energy efficiency, domestic smoke control, bonfires, fireworks and indoor air quality can all be valuable parts of a wider local air quality improvement strategy.

CYC will continue to address these wider issues, alongside existing public information campaign work relating to sustainable travel, as part of package of measures to improve dissemination of information to the public.

York has:

- Provided news and advice on sustainable travel around York via the I-Travel York campaign. CYC's I-Travel provide support to York's businesses and schools to develop travel plans and promote sustainable travel. Promotion of walking, cycling and public transport use are also central to this campaign, which also provides information around EV ownership and charging.
- Provided information locally about air quality via CYC's air quality webpages and social media, including information about air pollution and health, low emission vehicles, air quality improvement measures and the planning process. CYC also provides information about current air quality levels across the city.
- Undertaken ad-hoc promotion of the rules around solid fuel burning in smoke control areas and garden bonfires.
- Been the lead local authority in the development of a DEFRA funded national Air Quality Hub; an information and knowledge sharing resource for local authority air quality professionals. The hub's aim is to help local authorities create robust air quality policies and take effective action to improve air quality across the UK.

AQAP4 commitments:

- Regularly review information on CYC's webpages to ensure information remains accessible, relevant and up to date.
- Publish an annual summary of air quality data on our website, to aid local transparency and increase accessibility of air quality to the wider

public. We will ensure that data from York's automatic air quality monitors continues to be available to the public via an online portal; this will include the publication of a daily Air Quality Index for the city. We will progress an air quality alert system for residents and visitors, especially vulnerable groups, to help minimise exposure when pollution levels are high. We will also explore wider behaviour change messaging in response to high pollution episodes, to include press releases, digital signage and social media.

- We will work with Public Health to inform the public about the health impacts of air pollution and how behaviour change can reduce emissions and exposure, particularly amongst vulnerable members of the public (i.e. people with pre-existing respiratory or cardio-vascular conditions). We will also continue to explore and promote spaces that encourage active travel such as walking and cycling.
- Undertake annual public awareness raising via local publications and CYC's social media presence to support the national Burn Better campaign to help householders choose cleaner fuels and ensure they are aware of best practice in terms of maintenance of solid fuel burning appliances.
- Undertake annual public awareness raising in relation to smoke control areas and the use of appropriate fuels and appliances. This will include consideration of indoor air quality.
- Undertake awareness raising around the impacts of bonfire smoke on health
- Develop further air quality resources for schools and businesses to support the work of CYC's I-Travel team and promote sustainable travel initiatives across CYC's area. We will ensure that air quality monitoring data is considered to help target interventions to those areas with the highest pollution levels.
- Whilst not current covered by the Local Air Quality Management regime, we recognise the need for more research into personal exposure monitoring and will seek opportunities to collaborate with

others to better understand the associations between lifestyle and exposure to air pollution.

Table 5. 9 Improved Public Information

Action	Improved Public Information
Air quality impact	Public awareness around solid fuel burning, smoke control areas and bonfires will directly target reductions in particulate matter across the city, bringing additional health benefits to York residents. It is hard to quantify this in terms of absolute air quality impact, other than to say it will be positive. Air quality benefits of wider sustainable travel initiatives and reduction in private car use likely to be Medium in the longer term. Exposure reduction initiatives will ensure public exposure is minimised and bring about additional health benefits. Providing information about opportunities for active travel such as walking and cycling can also contribute to air quality improvement.
Cost	Annual cost of publicity likely to be <£10k (£) but the development of specific campaigns and air quality forecasting / alert services likely to have greater associated costs of approximately £50k - £100k (£££).
Feasibility	High - Very well aligned with air quality, carbon, public health and planning agendas. Unlikely to conflict with wider CYC policy and campaign work likely to be well supported by the public and CYC members and will be perceived as worthwhile and informative.

Action	Improved Public Information
	Direct positive benefits in terms of reducing fine particulate emissions and associated public health benefits Increasing awareness of air quality and health impacts and providing advice can help reduce sickness absence and reduce pressure on local health facilities. Funding available for annual publicity, but would require additional funding for specific campaign work *(note that DEFRA funding already obtained to develop an air quality forecasting and alert service and to raise awareness of PM emissions and health impacts)* Funding available for I-Travel campaign, which is already well established.
Implementation timescales	Most measures Short term (<2 years) for initial implementation and will recur annually. May run into Medium term (2-5 years) for website upgrades or dedicated campaign work
Ownership	CYC (Public Protection / Sustainable Transport / Public Health)
Partners	CYC (Marketing and Communications), website infrastructure partners, local publications
Funding	Annual public awareness raising and development of associated resources around solid fuel burning and smoke control can be funded via CYC's internal budget. DEFRA funding was obtained in early 2023 to develop an air quality forecasting and alert service and to undertake an awareness campaign in

Action	Improved Public Information
	relation to PM emissions and health impacts, with specific emphasis on domestic solid fuel burning Major revisions to CYC's existing air quality web presence, if required, is subject to additional funding (CYC budget and/or DEFRA grant)

5.2.10 Modal shift, active travel and network improvement

Measures to reduce trips, encourage modal shift and reduce congestion are considered fundamental to any air quality improvement programme for York. This has been recognised through all previous iterations of CYC's Air Quality Action Plan for the city centre AQMA.

Measures in CYC's Local Transport Plan (LTP) continue to be an intrinsic part of the overall approach to air quality improvement and transport based emission reduction across the city.

Active travel (principally walking and cycling) plays an important role in a modern, sustainable city and for a number of years CYC has played a nationally significant role in the development of active travel measures as national strategy has sharpened its focus in this area. Active travel is at the apex of the city's travel hierarchy as laid out in our Local Transport Plan. Further information on trip reduction, modal shift and active travel measures can be found in CYC's current LTP. CYC's Transport Strategy sets a target of 20% reduction in vehicle miles travelled by 2030, which will need to supported by significant increases in walking, cycling and use of public transport across York.

For completeness and to avoid unnecessary duplication, only the major LTP based schemes that support air quality action planning in York have been included in this updated AQAP4 as distinct measures.

York has:

- Obtained funding to deliver major schemes for York Central, increasing the capacity of the A1237/Outer Ring Road and improving the area in front of York Station.

- Delivered a Clean Air Zone for buses covering much of central York.
- Made significant progress electrifying the bus network.
- Built new park and ride sites at Poppleton Bar and Askham Bar and improved the junction between the A1237 and A59 Harrogate Road
- Secured mandates to develop projects to improve the area around Castle car park and for a new station at Haxby
- Delivered improvements for pedestrians and cyclists, such as on Scarborough Bridge and its approaches and a new segregated cycle and footpath linking Clifton Moor and Haxby
- Introduced restrictions on motorised traffic in some areas.
- Has participated in trials to offer residents, commuters and visitors E-Scooters and E-Bikes to encourage more sustainable micro-mobility.

AQAP4 Commitments:

- Deliver key priorities for bus services as laid out in the Bus Service Improvement Plan (BSIP). The BSIP responds to consultation with operators and adjacent local authorities and reflects operational assessments of the network, research with bus passengers and CYC's own Our Big Conversation engagement with local residents and businesses.
- Deliver further capacity upgrades to the outer ring road. The air quality assessment undertaken for the scheme (A1237 from A19 Shipton Road to A1036 Little Hopgrove roundabout) suggests that the York Outer Ring Road has the potential to result a reduction in traffic through some areas of the city centre AQMA. This may provide CYC with opportunities in the future for further measures to manage traffic, encourage safe active travel and increase the use of public transport.
- Continued delivery of I-Travel York programme. This programme underpins the objectives of the Local Transport Plan and programme initiatives will complement highway and traffic measures to enable people to travel more sustainably. Examples of measures that will be delivered include work with schools to promote sustainable travel

choices[28], minimise idling events during school pick-up / drop-off, and deliver Bikeability cycle training; work with businesses to embed sustainable travel modes into current business models and encourage uptake amongst employees; and provision of travel information and sustainable travel events.

- Develop a city-wide 'Movement and Place' plan, reallocating road space to bring about a decrease in vehicle trips, reduction in congestion and increase in public transport and active travel journeys. This Movement and Place plan will also consider opportunities for further management of freight deliveries.
- CYC will enable more walking and cycling as a long-term method for commuting and to address the current capacity constraints on public transport and private vehicle travel. Proposed schemes to be progressed through feasibility and delivered where supported can be viewed at Active Travel Fund.
- Deliver a Local Cycling and Walking Infrastructure Plan (LCWIP) which will designate strategic networks within York for cycling and walking and will identify and prioritise infrastructure schemes to deliver such networks.
- Continue to investigate new and innovative modes of transport to complement the existing e-scooter and e-bike hire schemes in operation across the city.
- We will explore specific traffic management options for areas like Gillygate to reduce emissions and improve air quality.

[28] The contribution of the school run in Waltham Forest in 2013 was estimated to be just under 14% of the NO_x, PM_{10} and $PM_{2.5}$ emissions from all cars between 08:00 and 09:00. Modelling work showed that modal shift from cars to bicycles, walking and public transport had the potential to result in a 7% reduction in NO_x, PM_{10} and $PM_{2.5}$ emissions from cars during the same time period. https://www.walthamforest.gov.uk/sites/default/files/2021-10/Waltham%20Forest%20Kings%20Report.pdf

Table 5. 10 Modal shift, active travel and network improvement

Action	Modal shift, active travel and network improvement
Air quality impact	Air quality impacts are scheme dependent and are likely to range from Low to High Modal shift measures fundamental to tackling non-exhaust PM component from traffic, as will reduce PM emissions associated with brake and tyre wear and road surface abrasion. Road surfaces and repair strategies are also likely to influence this important source of non-exhaust PM.
Cost	Costs are scheme dependent but as a package fall into the highest cost bracket of >£10m £££££££ Bus Service Improvement Plan requested £34m from the DfT and a further £14m post 2025 to improve York's bus network. £17.5m was awarded for the period up to 2025. In addition to £12m to complete the electrification of York's bus fleet, the funding bid also includes £2.5m to improve bus service frequencies, provide more routes and support the reintroduction of park and ride services from Poppleton Bar; £5m to provide better, cheaper tickets for young people, and better tickets which are valid for travel on all bus services in York; £5m to provide bus priorities and support rapid bus services to new developments around York, and £5m to upgrade York's park and ride network, allowing it to support a wider range of bus services, provide overnight parking at more sites and refurbish the two oldest sites, at Rawcliffe Bar and Grimston Bar. CYC also requested funding to provide benches and lighting

Action	Modal shift, active travel and network improvement
	at more bus stops, provide audio announcements on all buses in York and install 100 more real time bus information screens across the city. CYC previously allocated around £3.3m to support active travel schemes. Costs of specific cycling and walking infrastructure schemes are scheme dependent ITravel York Programme – annual costs estimated at £450k for business, school and community engagement ££££
Feasibility	Medium to High - LTP4 will build on the work already done for initiatives like My City Centre and the Local Plan and will complement the strategies being developed for York's economic recovery, air quality and carbon reduction/climate change agendas. Reduced congestion and improved public transport / sustainable transport provision will improve the public realm and support economic growth. Measures will result in direct air quality improvements and support carbon reduction aspirations. The LTP has a critical role in promoting equality of access to the transport network. Some measures may improve access to some areas of the city for some users and modal shift measures will support provision of accessible transport for all. It should be noted that some future LTP policies or schemes may fail during the feasibility or design

Action	Modal shift, active travel and network improvement
	stages, or be delayed because it is not possible to attract funding for them or because closer scrutiny of more developed plans shows them to have unacceptable costs and/ or impacts. However, inclusion of them within the LTP signals an intent to seriously investigate their feasibility and seek to deliver them if they are shown to be feasible and acceptable. All active travel schemes which impact on residents and businesses will be subject to public consultation prior to progression. CYC aim to encourage more people to walk and cycle as part of their everyday travel in the city. The Active Travel Programme is part of CYC's overall Transport Capital Programme and highlights upcoming projects and proposed schemes (some projects are subject to successful bids). BSIP delivered through the Enhanced Bus Partnership.
Implementation timescales	Draft LTP4 document due 2024. Policy document will focus on a 15 year period, with a review at every 5 year period. Timescales are scheme dependent *(see LTP4 and complementary strategies such as Bus Service Improvement Plan)* Completion of ORR upgrade works expected within Medium term (2-5 years) I-Travel York programme – Ongoing (subject to funding)

Action	Modal shift, active travel and network improvement
	Active travel measures – variety of schemes subject to further feasibility and funding, but most expected to be delivered by the end of 2024 - Short term (<2 years) Development of LCWIP - Currently ongoing
Ownership	CYC (Sustainable Transport)
Partners	Various CYC departments involved in project feasibility and delivery, alongside external partners such as bus operators, infrastructure providers and developers
Funding	CYC and external funding (e.g. DfT) for specific schemes BSIP Funding (£17m) Active Travel Programme – provisional allocation of £3.3m, with some schemes subject to successful funding bids

5.2.11 Regulation of industrial and domestic emissions

As transport emissions decrease with time, the relative proportions and importance of emissions from sectors such as domestic and industrial combustion increases, especially with respect to PM_{10} and $PM_{2.5}$ emissions, but also NO_x (particularly from gas boilers).

Due to the established links between fine particulate pollution and human health, together with the evidence highlighting that there are no ‘safe’ levels of particulate, it is important that AQAP4 raises public awareness of non-transport emissions, especially in the context of particulates. AQAP4 must also recognise the synergies with CYC’s carbon reduction programme and measures to reduce combustion activities generally across the city, via increased energy efficiency and advice services.

York has:

- Undertaken routine scheduled inspection of industrial premises under CYC control (Part A2 or Part B activities).
- Investigated and prevented dark smoke emissions from industrial, trade and other premises
- Undertaken ad-hoc promotion of the rules around solid fuel burning, smoke control areas and garden bonfires.

AQAP4 Commitments:

- Continue to regulate non-transport emissions from industrial premises under CYC control (Part A2 or Part B activities). Where required, we will support other agencies (e.g. Environment Agency) with regulating emissions to air from larger processes outside CYC's direct control.
- Continue to investigate and prevent dark smoke emissions from industrial or trade premises, such as those from bonfires (Clean Air Act)
- We will ensure that smoke control area boundaries are reviewed; where necessary these will be amended. We will investigate complaints of non-compliance with smoke control area regulations, taking enforcement action where necessary in line with updates to the Clean Air Act 1993 (as required by Environment Act 2021). This will require a new CYC policy for civil penalties for smoke emissions within Smoke Control Areas.
- We will investigate sales of non-authorised solid fuels and complaints of non-compliance. We will undertake regular review of known retailers selling solid fuels to ensure they meet required standards in terms of labelling and information at the point of sale (e.g. 'Ready to Burn' certification).
- Complementing the above commitments, CYC will reduce future emissions through CYC's Housing Delivery Programme, the most ambitious council-led scheme for a generation and the largest zero carbon house building programme in the country. The programme is

a long-term investment in high-quality new affordable homes for current and future generations pioneering low carbon lifestyles and promoting health and wellbeing. Sites will embrace principles of energy efficiency and support sustainable transport choices and connectivity.

- CYC will also facilitate home upgrade energy efficiency grants alongside partner organisations and promote business initiatives to reduce energy use and emissions across York. We will actively seek future opportunities for grants to support such activities. We will also support building retrofit events in York which will support residents to discover how their homes can be made more efficient. CYC's Local Area Energy Plan outlines potential demonstrator projects for near term implementation. Producing a LAEP will contribute to delivering the net zero ambition for York by 2030, providing an optimised, cost-effective, and evidence-based pathway to achieving our target.

Table 5. 11 Regulation of industrial and domestic emissions

Action	Regulation of industrial and domestic emissions
Air quality impact	Low - Medium Difficult to quantify this in terms of absolute air quality impact, other than to say it will be positive. Addressing domestic emissions / solid fuel burning will directly target $PM_{2.5}$. Regulation of industrial premises and enforcement of smoke regulations will seeks to minimise emissions across the city, including fine particulates, for the protection of public health. Review of smoke control area boundaries could offer wider opportunities to minimise emissions in certain areas via the use of authorised fuels and restrictions on the types of appliance that can be used. However, as the majority of areas with the outer ring road as well as Haxby and Wiggington

Action	Regulation of industrial and domestic emissions
	are already included within the smoke control area, expansion to currently undeveloped sites will serve to *minimise* future emissions, rather than affecting the current baseline air quality position. New policy position for civil penalties for smoke emissions will act as a deterrent to unauthorised burning and serve to reduce fine particulate emissions. Home upgrade energy efficiency grants and advice services to residents and businesses will complement wider emission reduction measures of AQAP4.
Cost	Main costs to CYC in relation to staffing resource needed for investigation and enforcement, publicity and associated resources. May be higher costs associated with extension to smoke control areas and provision of financial support to existing homeowners to upgrade appliances, where applicable. Costs subject to further investigation but would not be relevant to currently empty undeveloped sites. Staffing costs estimated at £10-£50k per year (££) on an ongoing basis (although delivered through existing staff resources where possible)
Feasibility	High – most measures currently ongoing and resourced. Control of domestic and industrial emissions directly supports air quality improvements and CYC's carbon reduction agenda. Specifically supports public health agenda via reduction in particulates and supports sustainable, low carbon development.

Action	Regulation of industrial and domestic emissions
	Permitting regime is designed to prevent and/or minimise the impact to human health and the environment. Local authority advice and support to local industries through this regime helps them to meet emission regulation requirements and reduce operational costs thus benefitting the local economy. Measures likely to be generally supported via the public as not only will they benefit local air quality but the control of emissions/smoke can help avoid occurrence of nuisance and odours and identify occurrences of illegal waste disposal.
Implementation timescales	Mostly Short term (<2 years) and ongoing Housing delivery programme Long term (>5 years)
Ownership	CYC (Public Protection) - regulation of industrial premises and enforcement of smoke regulations CYC (Major Projects) - housing delivery programme CYC (Carbon Reduction) - energy efficiency upgrades and advice
Partners	CYC (Marketing and Communications), Operators of industrial processes, Environment Agency, Housing delivery and energy efficiency partners
Funding	CYC internal budget. Enforcement and investigation of smoke emissions delivered via existing staff resource, subject to new policy position for civil penalties following updates to Clean Air Act 1993 (in line with Environment Act 2021).

Action	Regulation of industrial and domestic emissions
	Regulation of industrial processes subject to CYC cost recovery based on activity and applicable regulations. Domestic heating upgrades (if deemed necessary) subject to external funding source

5.2.12 Monitoring air quality and access to air quality information

Monitoring air quality across York allows CYC to assess compliance with Air Quality Objectives, evaluate the effectiveness of air quality improvement interventions and to provide information to York's residents, visitors and workers to help them reduce exposure.

CYC have been monitoring air quality for over 20 years and have a huge repository of open access data; summary information is shared annually via Air Quality Annual Status Reports (ASRs).

Air quality monitoring data is also used to inform the suitability of new development for its location and the requirement for mitigation to reduce public exposure and prevent further air quality deterioration.

York is currently:

- Monitoring air quality (NO_x/NO_2) at over 200 locations in the city via a network of NO_2 diffusion tubes and real-time air quality monitoring stations, two of which form part of DEFRA's Automatic Urban and Rural Network (AURN). We also monitor PM_{10} and $PM_{2.5}$ at some locations.

AQAP4 commitments:

- Continue to monitor air quality across CYC's area, focussing on the AQMA, key transport corridors and wider strategic locations
- Publish an annual summary of air quality data and progress with AQAP4 measures on our website, to aid local transparency, increase accessibility of air quality information to the wider public and

encourage buy-in to delivering air quality improvement measures by those best placed to assist. This summary will be actively shared with local leads for Public Health and Transport and we will brief CYC relevant elected Air Quality portfolio holders.

- Ensure that data from York's automatic air quality monitors is available to the public via an online portal; this will include the publication of a daily Air Quality Index for the city.
- Respond to changing monitoring priorities, especially in relation to the relative importance of NO_2 compared with $PM_{2.5}$ and the links to human health. We will ensure that the location and type of monitoring in the city is reviewed annually and remains relevant and targeted to key sources and pollutants. This may be subject to additional funding where new equipment or upgrades are needed and will be informed by future DEFRA guidance on this subject.

Table 5. 12 Monitoring air quality in York

Action	Monitoring air quality in York
Air quality impact	No direct air quality impact per se, but used to monitor ongoing impact of AQAP4 and wider CYC strategies affecting traffic and local development. Indirect impacts via awareness raising in relation to CYC interventions and greater uptake of sustainable transport
Cost	££ £10-£50k per annum (for ongoing operational costs). Additional monitoring / equipment upgrades subject to additional capital costs
Feasibility	High – level and scope of monitoring subject to local capital and revenue budget but existing network well established and two sites affiliated into DEFRA's AURN (and receive financial support for continued operation).

Action	Monitoring air quality in York
Implementation timescales	Annual review - Ongoing
Ownership	CYC (Public Protection)
Partners	DEFRA (AURN sites), University of York (equipment trials)
Funding	CYC internal budget (supported by DEFRA for operation of AURN sites). Future upgrades to existing monitoring infrastructure will require additional capital funding (either from CYC or external source)

Table 5. 13 Air Quality Action Plan Measures: 2024 – 2028

Measure 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
1a	Explore opportunities / options for reducing freight emissions	Freight and Delivery Management	Delivery and Service Plans Freight Consolidation Centre Freight Partnerships for city centre deliveries	2024	2025/26	CYC Freight transport industry Local operators York Civic Trust Local Enterprise Partnership York Business Improvement District (BID)	DEFRA funding secured for feasibility study and pilot	Yes	Partially Funded	£100k - £500k	Planning	Baseline emission assessment undertaken (2021) demonstrated that HGVs are a significant emission source on the majority of major roads, where they contribute 15 – 25% of total road NO_x emissions and up to 55% in some areas. LGVs generally responsible for less than 10% of road traffic NO_x emissions, but are more significant in certain areas such as the outer ring road and on key routes like Fulford Road, representing up to 25% of total road emissions. AQAP4 section 3.5 estimates that reducing HGV/LGV volumes by 25% would result in around 8% reduction in overall NO_x emissions (for the area modelled).	Feasibility studies completed Reduction in freight mileage / freight emissions	Initial feasibility study to address first/last mile delivery of light goods in York undertaken Oct/Nov 2021. Reviewing recommendations and progressing pilot study Freight forum established 2021 Council Plan commitment to develop a city-wide Movement and Place Plan that will consider management of freight deliveries	Initial feasibility study funded. Permanent consolidation facilities subject to further costing and investment

Measure 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
1b	Undertake pilot project to test 'micro-consolidation centre' for distribution of commercial light goods	Freight and Delivery Management	Freight Consolidation Centre	2024	2025	CYC Local delivery operators and support staff	DEFRA funding secured for pilot	Yes	Funded	£100k - £500k	Planning	Subject to evaluation of pilot and reduction in freight mileage AQAP4 section 3.5 estimates that reducing HGV/LGV volumes by 25% would result in around 8% reduction in overall NO_x emissions (for the area modelled).	Completion / evaluation of pilot Reduction in freight mileage / freight emissions (as demonstrated through pilot)	Currently seeking pilot delivery partners and suitable premises	Pilot funded Anticipated that the pilot will be supported by Blueberry Academy, who provide specialist support for young people and adults with learning differences, autism, social, emotional and mental health needs and/or other disabilities.
1c	Consider feasibility of extending Clean Air Zone to include freight vehicles	Promote Low Emission Transport	Clean Air Zone (CAZ)	2024	Currently unknown	CYC Freight transport industry Local operators York Civic Trust Local Enterprise Partnership York Business Improvement District (BID)	Currently unknown	No	Not funded	Currently unknown	Planning	Currently unknown	To be developed	CYC Council Plan 2023 – 2027 aspiration to consider extension of CAZ to freight vehicles	Subject to further feasibility work
2a	Upgrade (CAZ exempt) inter-urban and rural services to ultra-low emission (electric) vehicles	Promoting Low Emission Transport	Clean Air Zone (CAZ)	2024	2025	CYC Sustainable Transport Bus operators Manufacturers of low emission buses Charging infrastructure providers Emissions abatement equipment providers	DfT Bus Operators (match funding)	No (DfT funded)	Funded	tba	Implementation	Buses generally contribute less than 10% of traffic emissions on the majority of streets and are most significant on roads with proportionally less emissions, where bus flows form a larger proportion of the overall traffic. In areas like George Hudson Street and Blossom Street,	% inter-urban and rural services electric / Euro VI diesel *BSIP target to convert all inter-urban and rural services to Euro VI diesel by 2024/25 (if it not practical to electrify the routes)* *Enhanced Partnership Plan (Sept 2022) contains high*	See update for associated measure 2b. Where it is not practical to electrify routes, all inter-urban and rural services will be upgraded to Euro VI	An advisory minimum emission standard applied to CAZ exempt vehicles of Euro IV by January 2020, increasing to Euro V from January 2022 and ULEB / Euro VI from January 2024

Measure 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
												between 10 - 25% of the total road NO_x emissions are due to buses AQAP4 section 3.5 estimates that electrifying the remaining bus fleet would result in around 6% reduction in overall NO_x emissions (for the area modelled). However, this is dependent upon bus frequency / the area of York.	*level objective of at least 95% of inter-urban and rural services to be operated using vehicles of Euro VI standard or better by 2024/25.*		
2b	Work in partnership with bus operators to pursue an all-electric, zero emission bus fleet for all services operating predominantly in the York urban area	Vehicle Fleet Efficiency	Promoting Low Emission Public Transport	2024	2025	CYC Sustainable Transport Bus operators Manufacturers of low emission buses Charging infrastructure providers	DfT Bus Operators (match funding)	No DfT funded	Funded	>£10m	Implementation	Emission contributions from buses discussed under measure 2a The new buses will be used on First's routes 1, 4, 5 and 6, for the York Hospital shuttle bus and on Park&Ride route 2, reducing carbon emissions in York by 2,300 tonnes per year as well as reducing NO_x and particulate emissions across the city. This adds to the current annual reduction of 1,600 tonnes achieved by the zero-emission Park and Ride fleet.	% Electric Bus within 'urban' bus fleet *BSIP target to convert all bus services operating predominantly in the York urban area to electric vehicles by 2024/25.* <u>Enhanced Partnership Plan</u> (Sept 2022) contains high level objective of At least 90% of bus services operating predominantly in the York urban area to be operated using	In March 2022, CYC was awarded £8.4m through DfT's ZEBRA fund to buy an additional 44 new electric buses. This will be matched by a further £10 million investment by First. Once in operation, this will expand the York bus fleet to 77 all-electric buses, which will run more than half the bus-miles operated in the city, including the entire Park and Ride network Bus Service Improvement Plan (BSIP) bid submitted to DfT in October 2021. In April 2022, CYC was awarded an additional £17m to support the development of key schemes and initiatives in the BSIP, including wider electrification of the urban bus fleet. Approximately	Additional benefits include reduction in carbon emissions, noise pollution and improved passenger (and driver) experience York will receive 24 single deck GB Kite Electroliners and 20 Double Deck StreetDecks. This will more than double the number of electric buses in use in the York area, helping to improve air quality by reducing diesel exhaust emissions, First Bus placed order with UK manufacturer Wrigthbus in Sept 2022 Opportunities to work with York tour bus operators to facilitate upgrades

Measure 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
													electric vehicles by 2024/25.	£12m will be used to fund the conversion of 60 additional buses and associated infrastructure.	
2c	Extend CAZ (for buses) to York Central	Promoting Low Emission Transport	Clean Air Zone (CAZ)	2024	Currently unknown	CYC Sustainable Transport Bus operators Traffic Commissioners Office	Currently unknown	No	Not funded	Currently unknown	Planning	-	Change to the Traffic Regulation Condition (TRC)	CYC Council Plan 2023 – 2027 aspiration to consider extension of CAZ area to York Central	Subject to discussions with the Traffic Commissioners Office and a change to the Traffic Regulation Condition
3a	Continued promotion of CYC 'Kick the Habit' campaign	Traffic Management Public Information	Anti-idling enforcement Via leaflets / the Internet / Other	2024	Ongoing	CYC Public Protection / Parking Services / Sustainable Transport. Bus companies, taxi companies, freight / delivery companies, local businesses. Promotion undertaken with partners such as York Hospital, University of York and local schools	CYC internal funding for ongoing promotion and development of resources to support the campaign	Original campaign resources funded through DEFRA grant funding	Funded	<£10k	Implementation	Previous feasibility work undertaken by CYC suggested at 5 busiest service bus locations, estimated savings of 1,526kg NO_x, 36kg PM_{10}, 46,555kg CO_2,and 17,949 litres of fuel per year could be made by addressing idling.	Estimate of idling time saved (mins)	Existing 'Kick the Habit' campaign Annual promotion on Clean Air Day	Partnership working with schools, hospital and academic institutions Opportunities to roll-out campaign in other local authority areas Awareness raising with commercial operators
3b	Erect further signage / develop new anti-idling resources / review approach to anti-idling enforcement	Traffic Management	Anti-idling enforcement	2024	Ongoing	CYC Public Protection / Parking Services / Sustainable Transport	CYC	Original campaign resources funded through DEFRA grant funding, ongoing resource development likely to be CYC funded	Partially funded	New resources <£10k Staff resource for enforcement subject to higher cost but opportunities to incorporate idling duties into other related posts.	Planning	Difficult to quantify exact emission savings as measures aimed at preventing idling / education	N/A	Permanent signage in CYC car parks, at most city centre bus stops, multiple taxi ranks and at other key locations since scheme launch in 2019. Anti-idling leaflets produced for different target audiences (schools, taxi drivers, commercial vehicles etc)	Applicable to all vehicle modes, including cars, taxis, buses, LGVs, HGVs
4a	Review and update of CYC Taxi	Promoting Low Emission Transport	Taxi Licensing conditions	2024	2024	CYC Public Protection / Taxi Licensing	CYC	No	Funded	£10k - £50k	Planning	Air quality / emissions impact can be quantified when policy	Adoption of new Taxi Licensing Policy	Consultation with the taxi trade previously undertaken in 2020	Review of policy subject to consultation

Measure 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
	Licensing Policy to accelerate uptake of ULEVs											revisions are agreed			with taxi trade and member approval CYC will consider opportunities for addressing emissions associated with non-CYC registered taxis that operate in the city
4b	Seek further opportunities for CYC to support taxi drivers to upgrade vehicles to ULEVs	Promoting Low Emission Transport	Taxi emission incentives	2024	Ongoing	CYC Public Protection / Taxi Licensing	Likely to require external funding	Previous DEFRA grant funding obtained for Low Emission Taxi Grant scheme	Not funded	£500k - £1m	Planning	Converting the remaining taxi fleet to electric or petrol-hybrid technology can offer considerable emission savings compared with older diesel technology	% low emission taxis (electric / hybrid) across CYC licensed taxi fleet Baseline (June 2023) is 34%	Low Emission Taxi Grant scheme rolled out 2021/22 34% of York registered taxis were electric or petrol hybrid as of June 2023	CYC will also work alongside the taxi trade to understand requirements of charging infrastructure needs.
4c	Consider feasibility of extending the Clean Air Zone to include taxis	Promoting Low Emission Transport	Clean Air Zone (CAZ)	2024	Currently unknown	CYC Public Protection / Taxi Licensing Taxi Trade	Currently unknown	No	Not funded	Currently unknown	Planning	Currently unknown	To be developed	CYC Council Plan 2023 – 2027 aspiration to consider extension of CAZ area to include taxis	Subject to further feasibility work
5a	Implement an EV fleet replacement programme for all vehicles under 3.5 tonnes	Promoting Low Emission Transport	Company Vehicle Procurement – Prioritising uptake of low emission vehicles	2024	2025	CYC Highways and Fleet	CYC	No	Funded	£1m - £10m Estimate of costs of upgrades to 153 vehicles over programme lifetime (capital and revenue costs)	Implementation	CYC's 2020 vehicle fleet emitted 1763t of CO_2 every year (including HDVs). NOx/PM reduction not yet estimated	% of EVs in CYC Fleet <3.5T (Sept 2023 figure 33.5%)	Phased fleet programme agreed for vehicles under 3.5 tonnes Upgrades to power distribution at Hazel Court Depot progressed 2022	Phased vehicle upgrade as part of replacement programme will see gradual increase in EVs across all services
5b	Explore options for fleet vehicles over 3.5 tonnes to move away from diesel	Promoting Low Emission Transport	Company Vehicle Procurement – Prioritising uptake of low emission vehicles	2024	Ongoing	CYC Highways and Fleet	CYC	No	Partially funded	£1m - £10m	Planning	CYC's 2020 vehicle fleet emitted 1763t of CO2 every year (including HDVs). NOx/PM reduction not estimated	% ULEV (over 3.5 tonnes) (Sept 2023 figure 3.6% which relates to 2 electric refuse vehicles)	Zero-emission 'eCollect' refuse collection vehicles (eRCVs) are used six days a week on commercial waste collections benefitting the city with zero emissions and quieter operations.	CYC will continue to arrange trials and evaluation of vehicles to assess suitability for core service areas.

Measure 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
5c	Maximise CYC journey efficiency (and minimise emissions) through use of telematics, training and sustainable travel options for staff	Vehicle Fleet Efficiency	Driver training and ECO driving aids	2024	Ongoing	CYC Highways and Fleet / Rethinking Travel	CYC	No	Funded	Dependent upon exact options progressed	Planning	NOx/PM reduction not estimated	Telematics feedback and evaluation Use of pool bikes, car club vehicles, discounted public transport tickets for work travel	ECO driver training previously undertaken Masternaut telematics system rolled out 2021	-
6	Delivery of CYC Public EV Charging Strategy / roll-out of additional charge points / hubs	Promoting Low Emission Transport	Procuring alternate refuelling infrastructure to promote Low Emission Vehicles, EV Charging	2024	Ongoing Strategy introduced 2020 and will run until 2025 with annual review	CYC Transport (EV Strategy) BP Pulse (access partner) EV Charge Point manufacturers	CYC	No Funding for HyperHubs secured through OLEV/ERDF	Funded	£1m - £10m bracket Remaining charge point rollout programme to 2025 estimated at £4 - £5m	Implementation	Emission reduction dependent upon EV uptake. For every conventionally fuelled vehicle replaced local emissions of NO_x and tailpipe PM_{10} are eliminated. AQAP4 section 3.5 estimates that enabling 10% of cars and LGVs to switch to electric would result in around 9% reduction in overall NO_x emissions (for the area modelled).	Number of operational fast, rapid and ultra-rapid CYC charge points (Sept 2023 figure is 103 comprising 84 Fast, 11 Rapid 11 and 8 Ultra Rapid) Number of charging episodes (2022 figure was 24,109)	Extensive ‘pay as you go’ fast charge public electric vehicle recharging network consists of 84 Fast, 11 Rapid 11 and 8 Ultra Rapid chargers (Sept 2023) Two Hyperhub sites delivered and operational Two further Hyperhub sites in development	Work programme agreed and funded CYC will monitor plug-in vehicle uptake in York and usage of CYC’s network (at least annually) to assess if charge point provision meets demand. Updated EV charging strategy to be produced by end 2025
7a	Review / update Low Emission Planning Guidance and ensure alignment	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2024	Anticipated 2024/25 Timescales for adoption of updated guidance is subject to the Local Plan	CYC Public Protection / Planning / Integrated Strategy / Carbon Reduction	CYC	No	Funded	£10-£50k	Implementation	NOx/PM reduction not estimated	Revision and adoption of updated low emission planning guidance	Draft guidance written and currently being actively used for development control purposes	Cost anticipated mainly in relation to staff time and consultation CYC will ensure that local standards for EV charging infrastructure provision remain

Measure 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
	with carbon reduction policies				and examination process.										appropriate for current EV use (and anticipated future EV uptake) in the city and are aligned to CYC's vision as laid out in CYC's EV Charging Strategy. Consideration of energy efficiency with respect to commercial / domestic heating Consideration of low NOx boiler technologies Aim to ensure that heating technologies in new developments achieve the lowest emissions possible, considering both local air quality and carbon reduction targets Consideration of emissions from Non-Road Mobile Machinery (NRMM) and local standards Opportunities for formal adoption of the guidance as a Supplementary Planning Document (SPD) in the longer term
7b	Ensure development related emissions are appropriately assessed and mitigated in line with	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2024	Ongoing	CYC Public Protection / Planning	CYC	No	Funded	£50-£100k Staff time plus oncosts	Implementation	NO_x/PM reduction not estimated	Planning applications reviewed in terms of air quality and a summary of any conditions imposed are summarised as part of CYC's Annual Air	Ongoing assessment of planning applications Development of standard planning conditions for air quality issues Development of local standards for EV charging provision AQ Policy ENV1 developed as part of Local Plan	Cost anticipated mainly in relation to staff time for implementing guidance Assessment of air quality impacts will consider cumulative impacts from nearby sites to minimise

Measure 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
	CYC guidance												Quality Status report to DEFRA.		'emission creep' across the city. Standards for EV charging provision subject to annual review
8	Continue to explore incentives and opportunities to encourage the wider uptake of low and zero emission vehicles	Promoting Low Emission Transport	Priority parking for LEV's Company Vehicle Procurement - Prioritising uptake of low emission vehicles Public Vehicle Procurement - Prioritising uptake of low emission vehicles	2024	Ongoing	CYC Transport / Public Protection / Parking Services / Transport Planning Partners may include infrastructure delivery partners, developers, micro-mobility solution providers	CYC	No	Not funded	Scheme Dependent	Planning	AQAP4 section 3.5 estimates that enabling 10% of cars and LGVs to switch to electric would result in around 9% reduction in overall NO_x emissions (for the area modelled).	Number of low emission parking permits issued Further ULEV / ZEV / micro mobility trials undertaken	Parking incentives whilst use of rapid and ultra-rapid charge points Low emission discount offered on parking permits Advice to businesses on EV transition and infrastructure	CYC will explore further incentives to increase use of micro-mobility modes, such as E-Bikes / E-Scooters
9a	Improve public access to air quality information and advice	Public Information	Via the Internet	2024	Ongoing	CYC Public Protection / Public Health	CYC	No	Partially funded	Dependent on activity but likely to be <£10k for review and update of existing web content	Implementation	N/A	Web content subject to ongoing periodic review to consider topics of local significance and interest Availability of local, up to date, air quality monitoring data and annual summary reports	Air quality pages of CYC website Real-time air quality data available at Air Quality England. Diffusion tube data available on YorkView Promotion of smoke control area (SCA) requirements	Updates will assist with providing information to the public about the health impacts of air pollution and how behavioural change can reduce emissions and exposure. Updates will also cover issues such as the impacts of bonfire smoke
9b	Air Quality Alert / Notification Service	Public Information	Via the Internet / Via other mechanisms	2024	2024	CYC Public Protection / Public Health External IT platform provider	Measure subject to DEFRA grant	Yes	Funded	£50k - £100k	Planning	Measure aimed at reducing exposure rather than pollution reduction per se	Ongoing platform usage (e.g. visitor stats and subscriptions to notification service), supplemented with registered platform user feedback	DEFRA AQ Grant obtained for Air Quality Forecasting and Alert Service in 2023, currently in development and due to launch 2024	Will result in improved knowledge and awareness of air pollution, links to health impacts, and means to reduce exposure to pollutants via lifestyle choices / travel route / modal choice

Measure 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
															We will also explore wider behaviour change messaging in response to high pollution episodes
9c	Local promotion of 'Burn Better' campaign and rules around Smoke Control Areas (SCAs)	Public Information	Via the Internet / Via leaflets / Via other mechanisms	2024	Ongoing	CYC Public Protection / Public Health	CYC for ongoing local promotion of SCAs and existing campaigns New dedicated particulate awareness and reduction campaign subject to DEFRA grant	Yes	Funded	Local promotion of SCAs and existing campaigns <£10k New particulate campaign £10k - £50k	Planning	NO_x/PM reduction not estimated but communications campaigns can increase awareness of air quality issues and drive behavioural change	Annual promotion undertaken Reduction in solid fuel burning / change in domestic heating patterns, awareness of correct maintenance and efficient use of appliances and fuel certification schemes	Promotion undertaken via CYC media channels Autumn/Winter 2022 Compliance checks across solid fuel distribution outlets were progressed throughout 2022 to ensure that all solid fuels being sold were certified as 'Ready to Burn' DEFRA AQ Grant obtained in 2023 for campaign work in relation to domestic solid fuel burning and links to air pollution and health	Promotion of 'Burn Better' campaign will help householders choose cleaner fuels and ensure they are aware of best practice in terms of maintenance of solid fuel burning appliances.
10a	Continue to promote sustainable travel in York	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure Promotion of cycling Promotion of walking School Travel Plans Workplace Travel Planning	2024	Ongoing (funding dependent)	CYC Sustainable Transport CYC Marketing and Communications Schools Local businesses Sustrans	DfT	No	Partially funded	£100k - £500k (annually) for engagement with businesses, schools and the general community	Implementation	Hard to precisely quantify but target to increase modal shift away from private car to walking / cycling and public transport use AQAP4 section 3.5 estimates that reducing car usage by 20% (in line with CYC's 2030 Transport Strategy target) would result in around 12% reduction in overall NO_x emissions (for the area modelled). This would be over and above any improvements	Various KPIs reported as part of Local Transport Plan, such as: Cycle counts / cycle training delivered School travel plans delivered Businesses adopting sustainable travel modes Increase in bus patronage Increase in walking / cycling	Since 2021/22 CYC's I-Travel programme has delivered: E-cycle switch scheme E-cargo bike scheme Delivery of active travel campaign 'Better Points' scheme 'Bikeability' training to all Primary and Secondary state schools Urban Cycle Skills training for adults and families York Walking Festival Production of cycle route videos and audio walking guides School Travel Planning CYC is currently developing a Local Cycling and Walking Infrastructure Plan (LCWIP)	Existing I-Travel programme subject to ongoing funding Continued work with schools to promote sustainable travel choices, minimise idling events, deliver cycle training, produce school travel plans and facilitate events to promote Walk to School week / Clean Air Day etc Continued work with businesses to embed sustainable travel modes into current business models and encourage uptake Also see measure 10c for updates on CYC's LCWIP

Measure 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
												delivered through vehicle emission technology.			
10b	Delivery of Bus Service Improvement Plan (BSIP)	Transport Planning and Infrastructure	Bus route improvements Public transport improvements – interchanges, stations and services	2024	2025	CYC Sustainable Transport Bus companies Infrastructure providers	DfT	No	Funded	>£10m	Implementation	Bus emissions (post CAZ implementation) generally up to 10% of road traffic emissions on majority of network, but up to 25% in some areas of AQMA – see section 3.3	Various KPIs outlined in BSIP, examples include: Passenger trips per year Bus punctuality /excess wait time Service frequency % Electric Bus BSIP Target of 20 million bus passenger trips a year by April 2025 (25% increase on the peak seen in 2017/18).	Award of £8.4m through DfT's ZEBRA fund in March 2022 to fund 44 electric buses, with an additional award of £1.8m to increase the scope to co-fund a further 9 buses Award of £17m in April 2022 to support the development of key schemes and initiatives in line with York's Bus Service Improvement Plan, including wider electrification of the urban bus fleet, bus priority measures, improvements to stops, shelters and passenger information	See BSIP report to Executive Member of Transport
10c	Delivery of other LTP infrastructure measures	Transport Planning and Infrastructure	Other	2024	Ongoing	CYC Infrastructure providers	Scheme dependent	No	Scheme dependent	Scheme dependent	Implementation	Scheme specific York Outer Ring Road Air Quality Impact Assessment demonstrated a possible reduction in vehicle traffic (and air pollution emissions) in some areas of the city centre AQMA.	Scheme specific / to be developed	Capacity upgrades to York Outer Ring Road (YORR) CYC is in the process of developing a Local Cycle and Walking Infrastructure Plan (LCWIP), which will designate strategic networks within York for cycling and walking and will identify and prioritise infrastructure schemes to deliver such networks. Consideration of Gillygate specific measures in progress	Scoping report for CYC LCWIP
11a	Regulation and control of industrial emissions	Environmental Permits	Other	2024	Ongoing	CYC Public Protection	CYC	No	Funded	£10k - £50k	Implementation	NO_x / PM emission reduction not estimated but will prevent further deterioration in	Scheduled CYC inspections completed per annum	Annual inspection programme ongoing	Scheduled inspections undertaken by CYC Public Protection staff. Work programme

Measure 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
												air pollution via regulation and control of existing processes			subject to maintaining existing staff resource
11b	Regulation and control of domestic emissions	Promoting Low Emission Plant	Other Policy	2024	Ongoing	CYC Public Protection	CYC	No	Funded	£10-£50k	Planning	NOx / PM emission reduction not estimated – subject to review of boundaries and further assessment	Review smoke control area boundaries and implementation of new legislation, including enforcement methods Reduction in complaints of smoke nuisance	Compliance checks across key solid fuel distribution outlets have been undertaken as part of other routine CYC operations.to ensure that all solid fuels being sold were certified as 'Ready to Burn' in line with the Air Quality (Domestic Solid Fuels Standards) (England) Regulations 2020.	Work programme subject to maintaining existing staff resource Revised enforcement approach in line with amendments to the Clean Air Act 1993 made through the Environment Act 2021 CYC will also investigate sales of non-authorised solid fuels and complaints of non-compliance.
11c	Provision / promotion of energy advice services and upgrade grants to domestic and business sectors	Promoting Low Emission Plant	Other Policy	2024	Ongoing	CYC Carbon Reduction	External grant funding	No	Funded	Scheme dependent	Implementation	Home upgrade energy efficiency grants and advice services to residents and businesses will complement wider emission reduction measures of AQAP4. Across York, domestic buildings are the largest sources of greenhouse gas emissions at 31.9%.	Grants awarded / energy savings / carbon reduction	Rollout of Home Upgrade Grant (HUG) that provide insulation for low-income households to reduce heating bills and carbon emissions Building retrofit events delivered Resource Efficient Business (REBiz) programme Production of CYC Local Area Energy Plan outlining demonstrator and 'low regret' projects for near term implementation A local partnership group, led by CYC, has won an award of £3.3m from Innovate (UK's Net Zero Living programme) to create a Retrofit One-Stop-Shop to facilitate retrofitting homes with low-carbon measures, improve the householder experience and contribute to better	CYC gas consumption will be reduced through a range of initiatives including building efficiency improvements, transitioning to electrical heating and encouraging staff to take steps to reduce energy usage when working from home. CYC secured £175,980 grant funding from the Government's Low Carbon Skills Fund to create decarbonisation plans for 21 schools and 5 leisure centres in the City, identifying opportunities to reduce energy consumption, providing both financial and carbon savings.

Measure 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
														energy efficiency standards across the city.	Building fabric upgrades (energy efficiency) and low carbon heating technology upgrades will contribute to improved local air quality and carbon reduction targets
12a	Maintain CYC's air quality monitoring network and respond to changing monitoring priorities	-	-	2024	Ongoing	CYC Public Protection Academic Institutions (equipment trials)	CYC	No	Funded (routine operation of existing equipment) Future upgrades subject to additional funding	£10-£50k per annum	Implementation	No direct air quality impact but used to monitor impact of AQAP measures and complementary CYC strategies affecting traffic and local development	Average and/or maximum concentrations of NO_2, PM_{10} and $PM_{2.5}$ across key areas in the AQMA / the wider area of York	Established monitoring network including 9 real-time monitoring stations and 233 passive NO_2 diffusion tubes across CYC area	Full details of CYC's up to date monitoring strategy and any changes are provided annually in CYC's Annual Air Quality Status Reports New and upgraded monitoring equipment subject to internal / external funding and national standards
12b	Ensure AQ data is disseminated to the public and shared with local leads for air quality, public health and transport	Public Information	Via the Internet Other	2024	Ongoing	CYC Public Protection	CYC	No	Funded	£10-£50k per annum	Implementation	N/A	Publication of annual air quality summary / ASR Briefings to local leads for Air Quality Real-time air quality data publication on online portal	AQ data currently disseminated via Air Quality England website and CYC Annual Status Reports hosted on council website Successful DEFRA AQ Grant bid for air quality alert / forecasting service	Costs relate to annual staff costs. Additional mechanisms to disseminate data, would be subject to additional funding.

Appendix A: Response to Consultation

Table A. 1 Summary of Responses to Consultation and Stakeholder Engagement on the AQAP

Consultee	Category / Comment	Response
DEFRA (via AQAP Appraisal Report on draft AQAP4)	Whilst not considered an essential addition, the AQAP could include more detail on the national AQ policy context.	Links provided to CYC's Annual Status Report in section 2.3, which provides the reader with further information about the national air quality policy context
DEFRA (via AQAP Appraisal Report on draft AQAP4)	In line with section 2.22 of LAQM.TG(22), AQAPs should, where possible, include the population for the AQMA area.	An estimate of the population across each area of the AQMA has been added to table 3.5 (section 3.4). This is based on number of residential dwellings, assuming 2.4 residents per household, in line with Office for National Statistics (ONS) data for 2022.
DEFRA (via AQAP Appraisal Report on draft AQAP4)	Suggested that source apportionment of NO_2 would be a welcome addition to AQAP4 as per paragraph 7.109 of LAQM.TG(22)	Additional NO_2 source apportionment has been undertaken for all key areas of the AQMA, including all areas where annual mean concentrations of NO_2 above 40µg/m^3 were recorded in 2022. This is now presented at the end of section 3.3.1.

Consultee	Category / Comment	Response
DEFRA (via AQAP Appraisal Report on draft AQAP4)	Useful to include an estimated year of compliance both with and without AQAP4 measures.	Section 3.5 has been updated to reflect further sensitivity testing undertaken with the Emission Factor Toolkit. Specific dates with and without AQAP4 measures have been estimated.
DEFRA (via AQAP Appraisal Report on draft AQAP4)	Suggested to tie quantification of the measures presented in table 3.7 to specific measures within the summary table 5.13. Suggested to include the impacts assessed within the *'Target Reduction in Pollutant / Emission from Measure'* column, where relevant.	The screening exercise presented in table 3.7 has been included in AQAP4 to outline the potential magnitude of some of the outcomes of AQAP4, the exact emission reduction potential will vary depending on exact location, fleet composition and specific traffic conditions (including queuing) on the network. Where relevant, measures in table 5.13 have been updated to include the estimated emission impacts in the appropriate column of the table. Examples include measures 1a, 1b, 2a, 6, 8 and 10a.
DEFRA (via AQAP Appraisal Report on draft AQAP4)	Within the cost / benefit analysis, it may be pertinent to apply fewer cost bands to make the overall assessment easier to interpret	The cost bandings used have been aligned to the current reporting requirements for AQAP measures in Annual Status Reports (ASRs); a full key is provided in section 5.1. These bandings can be simplified in future

Consultee	Category / Comment	Response
		AQAPs in line with any future changes to ASR reporting requirements.
DEFRA (via AQAP Appraisal Report on draft AQAP4)	Advised that a summary of consultation responses should be provided, with signposts to relevant sections of AQAP4, to outline how comments have been considered.	A summary of comments received and updates made to the final AQAP4 document is provided in this table.
DEFRA (via AQAP Appraisal Report on draft AQAP4)	Recommended that CYC's Director of Public Health approves AQAP4	CYC's current Director of Public Health has reviewed drafts of AQAP4 throughout its development and has approved the final document
Public Consultation	A summary of responses received during the public consultation were presented to CYC's Executive on 18 July 2024	This table should be read in conjunction with Annex C (AQAP4 Consultation Responses) of Agenda Item 12 - 'Results of Air Quality Action Plan 4 (AQAP4) Consultation' of the Executive Meeting 18 July 2024

Appendix B: Reasons for Not Pursuing Action Plan Measures

Table B. 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)
Alternatives to private vehicle use	**Rail based Park and Ride**	Due to the location of the railway station and fact that it is already served by extensive public transport routes, additional long-stay parking facilities would introduce additional private vehicle trips into the AQMA area and may even divert existing trips away from low and zero emission bus services operating in the city. CYC will continue to work alongside the station to facilitate improved pedestrian access, modal exchange and the creation of new accessible public spaces - see York Railway Station Frontage scheme for updates.
Promoting Low Emission Transport	**Clean Air Zone (CAZ) extension to all vehicle types e.g. Cars**	Note that the cost of implementing and enforcing a wider CAZ likely to have a severe detrimental impact on the local economy and significant

Action category	Action description	Reason action is not being pursued (including Stakeholder views)
		resource and cost implications. The current bus-based CAZ in York has been facilitated via grant support to operators from CYC and external sources. Reduction in emissions from private cars will also be facilitated in the longer term via government commitments to decarbonise road transport and stop selling new petrol/diesel vehicles. Work is ongoing to improve EV charging opportunities across the city to facilitate the uptake of EVs. The nature of the York road network also makes diversion/re-routing of non-CAZ compliant vehicles extremely challenging, particularly in the city centre.
Promoting Low Emission Transport	**CNG refuelling facilities**	Recent research has shown that vehicles fuelled by CNG may emit especially large numbers of ultra-fine particles, with the highest particle number emissions measured during urban driving (i.e. low speeds, cold-starts) which has implications for York's city centre environment

Action category	Action description	Reason action is not being pursued (including Stakeholder views)
		and fine particulate exposure reduction targets as outlined in the Environment Act 2021. In line with local air quality and carbon reduction aspirations, promotion of hydrocarbon based fuels is no longer considered appropriate for AQAP4.
Promoting Travel Alternatives	**Promote use of inland waterways**	Potential disruption from flooding that could affect passenger and goods transport.
Public Information	**Via Television**	Public information via leaflets, internet and possibly radio forms a part of AQAP4 but there is unlikely to be enough resources or budget to extend this to television. CYC will endeavour to continue to attract local media coverage of campaigns and air quality related issues wherever possible.
Traffic Management	**Reduction in speed limits, 20mph zones**	A reduction in traffic speeds within the existing AQMA, which already experiences slow moving traffic and congested conditions, is unlikely to result in further measurable air quality

Action category	Action description	Reason action is not being pursued (including Stakeholder views)
		improvements, although it is acknowledged that this may have positive road safety implications and will be considered in the wider context of CYC's road safety schemes.
Traffic Management	**Testing vehicle emissions (on street)**	Resource implications of on street vehicle emission testing considered likely to far outweigh the likely benefit. Pulling up vehicles for testing can result in additional congestion which could impact on air quality in the AQMA. Any available budget for enforcement action is considered better targeted at enforcing idling, where issue can be resolved promptly. There is an existing mechanism for reporting excessively smoky lorry or bus exhausts to the Driver and Vehicle Standards Agency (DVSA) for investigation.
Vehicle Fleet Efficiency	**Fleet efficiency and recognition schemes**	Alongside many other authorities within the Yorkshire region, CYC has previously rolled out an ECO Stars Fleet Recognition Scheme (funded

Action category	Action description	Reason action is not being pursued (including Stakeholder views)
		through DEFRA grant). Many of the fleet vehicles travelling around York are already members of the scheme (either via existing York membership or through membership of schemes in nearby local authority areas). CYC is not currently actively recruiting new members to the York ECO Stars scheme (currently 106 members), but existing members are being supported as required. This will be revisited should future demand for ECO Stars be apparent and if external funding sources are available.
Traffic Management	**Workplace Parking Levy**	CYC recognise that a workplace parking levy would have a direct economic impact on employers / people employed in York. This is not currently an option being considered by CYC's present administration

Action category	Action description	Reason action is not being pursued (including Stakeholder views)
Traffic Management	**Congestion charging**	Road User Charging (RUC) / Congestion charging is not an option currently being considered by CYC's present administration.
Promoting Low Emission Transport	**Ensure that only York registered taxis work in the city**	The Deregulation Act 2015 allows bookings to be subcontracted out of district and legislation currently allows for cross border hiring. This measure can therefore currently not be taken forward. CYC's priority is to find ways to encourage taxi drivers to drive electric and hybrid taxis rather than Euro VI diesel and petrol.
Promoting Low Emission Transport	**Exclude retrofitted Euro 6 diesel buses from the Bus CAZ**	CYC understands that JAQU (Joint Air Quality Unit) / bus retrofit expert group are due to report on the Euro VI retrofit issue in due course, following more detailed research into the efficacy of exhaust retrofit solutions. CYC will await the results of his research. Should retrofitted Euro VI buses be shown not be complaint with Euro VI emission standards, the current CAZ policy will

Action category	Action description	Reason action is not being pursued (including Stakeholder views)
		need to be reviewed. Electrification of all buses is a priority for CYC
Promoting Low Emission Transport	**Provide on-street EV charging**	AQAP4 commits to delivering an updated 'Public EV Charging Strategy' by 2025 (see measure 6), to ensure we continue to provide a robust and fit for purpose future EV charging network across York. Opportunities for on-street charging will be revisited as part of this review.
Policy Guidance and Development Control	**Banning new developments which increase car journeys**	CYC is committed to exploring sustainable travel options for new developments and reducing private vehicle use as far as practicable. CYC Low Emission Planning Guidance currently exists and is due to be updated within the timeframe of AQAP4 (see measure 7a)
Alternatives to private vehicle use	**Reintroduce trams**	Not a measure that can be delivered within the 5-year period of AQAP4 but comment fed back to lead for Local Transport Strategy (LTS) consultation for further consideration.

Appendix C: Cost-benefit summary

Table C. 1 Summary of cost-benefit analysis

Impact descriptors / key explained in section 5.1

Reducing emissions from freight

Measure	Targets emissions	Air Quality Impact	Cost	Wider Feasibility	Other Comments
1a. Explore further opportunities for reducing freight emissions	Mainly HGVs/LGVs	Medium - High	££££	Medium - High	Initial feasibility study funded and delivered.
1b. Micro-consolidation centre pilot	Mainly HGVs/LGVs	Medium - High	££££	Medium - High	Pilot funded
1c. Consider feasibility of extending Clean Air Zone to include HGVs / freight vehicles	HGVs/LGVs	Currently unknown	Currently unknown	Currently unknown	Subject to further feasibility work.

Reducing emissions from buses

Measure	Targets emissions	Air Quality Impact	Cost	Wider Feasibility	Other Comments
2a. Upgrade CAZ exempt inter-urban and rural services to ULEVs (electric) or Euro 6 buses	Buses	Low	~~£~~£££ (cost dependent on practicality of electrifying routes vs upgrade to Euro 6)	Medium - High	BSIP / ZEBRA funding obtained (however, further funding required for some services).
2b. Pursue all electric, zero emission fleet for all urban services	Buses	Medium - High	~~£~~£~~£~~£~~£~~£~~£	Medium - High	BSIP / ZEBRA funding obtained (however, further funding required for some services).
2c. Extend CAZ for buses to York Central site	Buses	Low	Currently unknown	High	Timescales subject to development of YC site

Anti-idling initiatives

Measure	Targets emissions	Air Quality Impact	Cost	Wider Feasibility	Other Comments
3a. Continue to Promote ‘Kick the Habit’	All traffic	Low - Medium	£	High	Initial campaign developed
3b. Develop new resources and review enforcement approach	All traffic	Low	£	Medium	Wider enforcement subject to funding

Reducing emissions from taxis

Measure	Targets emissions	Air Quality Impact	Cost	Wider Feasibility	Other Comments
4a. Review Taxi Licensing policy	Taxis (car / minibus)	Low - Medium	££	Medium - High	Subject to consultation

Measure	Targets emissions	Air Quality Impact	Cost	Wider Feasibility	Other Comments
4b. Seek further resources for taxi upgrades to ULEVs	Taxis (car / minibus)	Low - Medium	£££££	Medium	Subject to external funding
4c. Consider feasibility of extending the Clean Air Zone to include taxis	Taxis (car / minibus)	Currently unknown	Currently unknown	Currently unknown	Subject to further feasibility work

Reducing emissions from CYC fleet

Measure	Targets emissions	Air Quality Impact	Cost	Wider Feasibility	Other Comments
5a. Implement EV fleet replacement for vehicles under 3.5t	CYC fleet (LGVs, Cars)	Low - Medium	££££££	High	Phased fleet programme agreed
5b. Explore options for fleet vehicles over 3.5t to move away from diesel fuel	CYC fleet (LGVs / HGVs)	Low - Medium	££££££	Medium	Trials ongoing

Measure	Targets emissions	Air Quality Impact	Cost	Wider Feasibility	Other Comments
5c. Maximise CYC journey efficiency through telematics, training and sustainable travel options	All CYC fleet vehicles	Low	tba	Medium - High	-

Expand EV charging network

Measure	Targets emissions	Air Quality Impact	Cost	Wider Feasibility	Other Comments
6. Delivery of CYC Public EV Charging Strategy	Mainly cars/vans/LGVs	Medium - High	££££	High	Work programme agreed / funded. Updated 'Public EV Charging Strategy' due by 2025

Minimise development related emissions

Measure	Targets emissions	Air Quality Impact	Cost	Wider Feasibility	Other Comments
7a. Review and update low emission planning guidance	All vehicle types	Low - Medium	££	High	Costs mainly in relation to staff time
7b. Ensure development related emissions are appropriately assessed and mitigated	All vehicle types	Medium	££	High	Costs mainly in relation to staff time. Opportunities for developer contributions to wider low emission measures

Local incentives for low emission vehicles / modes

Measure	Targets emissions	Air Quality Impact	Cost	Wider Feasibility	Other Comments
8. Explore incentives / opportunities for wider uptake of ULEVs	Mainly private cars, although potentially all modes	Anticipated low (dependent upon incentive)	Scheme dependent	Anticipated medium	-

Improved public information and awareness

Measure	Targets emissions	Air Quality Impact	Cost	Wider Feasibility	Other Comments
9a. Improve public access to air quality information and advice	Supporting measure	N/A	£ - ££	High	Opportunities for resource development for schools / businesses
9b. Air quality alert / notification service	Supporting measure	N/A	££	Medium	DEFRA funding obtained

Measure	Targets emissions	Air Quality Impact	Cost	Wider Feasibility	Other Comments
9c. Local promotion of 'Burn Better' and smoke control areas / use of appropriate fuels etc	Non-transport emissions	Low - Medium (mainly $PM_{2.5}$)	£	High	DEFRA funding obtained for wider PM campaign

Modal shift, active travel and network improvement

Measure	Targets emissions	Air Quality Impact	Cost	Wider Feasibility	Other Comments
10a. Continued to promote sustainable travel in York	Reduction in private car use	Low - Medium	£££££ (annually)	Medium - High	Existing ITravel programme, subject to funding
10b. Delivery of Bus Service Improvement Plan	Bus	Medium – High (bus upgrades)	£££££££	Medium - High	Funding obtained
10c. Delivery of LTP infrastructure measures	All traffic	Scheme dependent	Scheme dependent	Medium - High	ORR capacity upgrades / LCWIP /

Measure	Targets emissions	Air Quality Impact	Cost	Wider Feasibility	Other Comments
					active travel measures

Regulation of industrial and domestic emissions

Measure	Targets emissions	Air Quality Impact	Cost	Wider Feasibility	Other Comments
11a. Regulation and control of industrial emissions	Industrial emissions	Low - Medium	££	High	Subject to maintaining existing staff resource
11b. Regulation and control of domestic emissions	Domestic emissions	Low – Medium (will directly target $PM_{2.5}$)	££	High	Subject to maintaining existing staff resource
11c. Energy advice services and upgrade	Business and domestic emissions	Low / Supporting measure	Scheme dependent	Medium - High	-

Measure	Targets emissions	Air Quality Impact	Cost	Wider Feasibility	Other Comments
grants to domestic and business sectors					

Monitoring of air quality and access to air quality information

Measure	Targets emissions	Air Quality Impact	Cost	Wider Feasibility	Other Comments
12a. Maintain CYC monitoring network and respond to changing monitoring priorities	Supporting measure	Supporting measure	££	High	Equipment upgrades subject to funding
12b. Ensure AQ data is effectively disseminated to the public and shared with local leads	Supporting measure	Supporting measure	££	High	Costs relate to annual staff costs

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
BAM	Beta Attenuation Monitor
CYC	City of York Council
Defra	Department for Environment, Food and Rural Affairs
EU	European Union
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm (micrometres or microns) or less

References

- Local Air Quality Management Technical Guidance LAQM.TG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Local Air Quality Management Policy Guidance LAQM.PG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- City of York Council's previous LAQM Review and Assessment reports can be found CYC's website
- Air Quality Hub – A Practitioner's Guide. Available online at https://www.airqualityhub.co.uk/