Ipswich Borough Council

Air Quality Action Plan

2025 - 2030

In fulfilment of Part IV of the Environment Act 1995, as amended by the Environment Act 2021

Local Air Quality Management

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Executive Summary

This Air Quality Action Plan (AQAP) has been produced as part of our statutory duties required by the Local Air Quality Management framework. It outlines the actions we will take to improve air quality in Ipswich between 2025 - 2030. The AQAP sets out how the local authority will exercise its functions in order to secure the achievement of the air quality objectives.

This action plan replaces the previous AQAP which ran from 2019 – 2024. Implementation of the outlined measures will result in the relevant objective(s) being attained by 2030.

The relevant Air Quality Management Areas (AQMAs) addressed by this action plan are outlined below:

- *Ipswich AQMA No. 2* - From the junction with Peel Street, extending along Crown Street, St Margarets Street and St Helens Street to the junction with Palmerston Road, and from St Margarets Street extending up Woodbridge Road to just beyond the junction with Argyle Street (declared 2006; amended 2017);
- *Ipswich AQMA No. 3* - Encompassing the land in and around College Street, Key Street, Salthouse Street, Fore Street, Star Lane, Neptune Square and Grimwade Street (declared 2006; amended 2017 and 2021);
- *Ipswich AQMA No. 5* - Incorporating the land in or around St. Matthews Street / Norwich Road between the Civic Drive roundabout and Bramford Road (declared 2017).

This action plan replaces the previous action plan which ran from 2019 - 2024. Projects delivered through the past action plan include:

- Significant upgrades to the Councils EV fleet and charging infrastructure;
- Significant expansion of EV charging infrastructure across the Council's owned car parks;
- The implementation of a Suffolk-Wide anti-idling campaign;

- The development of an air quality toolkit for schools;
- The development of a Low Emissions Supplementary Planning Document which requires developers to mitigate against air quality impacts arising from development;
- The adoption of a new Local Plan which includes a policy on Air Quality.
- The Introduction of a Hackney Carriage and Private Hire Licensing Policy which sets standards in relation to vehicle age to help reduce the levels of pollutants emitted from the local taxi fleet;
- The installation of Council owned variable messaging signs that can be used to deliver air quality messages;
- Securing £115,632 of air quality grant funding from Defra, to run an educational campaign around domestic burning;
- Although not a specific measure listed within the previous AQAP, an Air Quality Profile for Suffolk has been produced. The report maps, at a district and borough level, local air pollution levels and explores evidence-based interventions that can be undertaken by local authorities, businesses, communities and individuals to improve air quality.

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 less affluent[1,2].

The UK Health Security Agency (formally Public Health England) has estimated that the costs of air pollution in England to health and social care services could reach

[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

between £5.3 and 18.6 billion between 2018 and 2035 [3]. Ipswich Borough Council is committed to reducing the exposure of people in Ipswich to poor air quality in order to improve health.

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

- Alternatives to private vehicle use
- Freight and delivery management
- Policy guidance and development control
- Promoting low emission plants
- Environmental Permits
- Promoting low emission transport
- Promoting travel alternatives
- Public information
- Transport planning and infrastructure
- Traffic management
- Vehicle fleet efficiency

Our priorities are:

- **Priority 1** – Public health, behaviours and awareness - Facilitating a modal shift away from private vehicles towards public transport and active travel, to improve air quality and create healthier communities.
- **Priority 2** – Transport - Incentivise switching to cleaner vehicles, including LGV's, buses, taxis and corporate fleets, to reduce poor air quality and to create a more sustainable environment.
- **Priority 3** - Policy, planning and infrastructure - By embedding air quality measures into policy development, planning applications and major

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

developments, to bring future improvements to air quality and create an enjoyable and sustainable place to live and work, building a strong Ipswich economy.

- **Priority 4** – Wider strategic approach - Reducing exposure to air pollution by tackling the sources of pollution from further transport initiatives and domestic sources.

In this AQAP, we outline how we plan to effectively tackle air quality issues within our control. However, we recognise that there are a large number of air quality policy areas that are outside of our influence (such as vehicle emissions standards) 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 Ipswich Borough Council's direct influence.

Responsibilities and Commitment

This AQAP was prepared by the Environmental Protection department at Ipswich Borough Council with the support and agreement of the following officers and departments:

Public Protection, Ipswich Borough Council

- Head of Public Protection
- Principal Environmental Health Officer (Environmental Protection)
- Environmental Health Officer (Environmental Protection)
- Technical Officer (Environmental Protection)

Planning and Development, Ipswich Borough Council

- Head of Town Planning and Development
- Planning Policy Team Leader

Growth, Highways and Infrastructure, Suffolk County Council

- Strategic Transport & Policy Manager
- Transport Planning Manager

Public Health and Communities, Suffolk County Council

- Wider Determinants Manager
- Wider Determinants Lead

This AQAP has been approved by:

Assistant Director, Communities (Ipswich Borough Council) and the wider Council Corporate Management Team

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

The following Air Quality Partners / stakeholders have contributed to the development of the AQAP and will be committed to delivery of actions:

- Ipswich Borough Council – Environmental Health, Transport, Planning, Licensing. Procurement, Communications, Climate Change
- Suffolk County Council – Transport and Public Health
- Ipswich Buses
- First Buses
- University of Suffolk
- Suffolk and North-East Essex (SNEE) ICB

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

The Air Quality Action Plan is a live document. Measures will be added and developed throughout the lifetime of this plan.

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

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1 Introduction

This report outlines the actions that Ipswich Borough Council will deliver between 2025 – 2030 in order to reduce concentrations of air pollutants and exposure to air pollution; thereby positively impacting on the health and quality of life of residents and visitors to the Borough of Ipswich. The purpose of the report is to set out how the local authority will exercise its functions in order to achieve the relevant air quality objectives and where possible, working in partnership with Public Health at Suffolk County Council, demonstrating any resulting health impacts.

It has been developed in recognition of the legal requirement on the local authority to achieve and maintain Air Quality Objectives under Part IV of the Environment Act 1995, as amended by the Environment Act 2021, and to meet the requirements of the Local Air Quality Management (LAQM) statutory process.

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

2 Summary of Current Air Quality in Ipswich Borough

2.1 Air Quality Management Areas

Please refer to the latest ASR from Ipswich Borough Council. At the time of writing this AQAP, this was the 2024 ASR. Updated reports can be found on the Councils air quality webpage.

In order to comply with its duty to review the air quality within its area, Ipswich Borough Council (IBC) monitors nitrogen dioxide (NO_2) levels within the town using two automatic analysers located on St Matthews Street and Chevallier Street and a total of 96 diffusion tubes positioned at 86 carefully selected locations across the borough.

The Council has begun conducting real time monitoring for PM_{10} and $PM_{2.5}$ in May 2023 using a FIDAS reference analyser installed on St Helens Street. At the time of writing this AQAP, the Council had yet to collect a years' worth of data from the analyser. However, following ratification and annualisation, an annual mean $PM_{2.5}$ concentration of 8µg/m^3 was recorded. This is below the annual mean concentration target of 10µg/m^3 to be met by 2040. Furthermore, ratification and annualisation, an annual mean PM_{10} concentration of 13.6µg/m^3 was recorded at the monitor on St Helens Street. This is below the annual mean objective level. No exceedances of the 24-hour mean were observed.

To date, Ipswich Borough Council has declared a total of three Air Quality Management Areas (AQMA) at locations where the annual mean concentration of nitrogen dioxide (NO_2) is, or is likely to, exceed the national objective level of 40µg/m^3 on a consistent basis. The relevant Air Quality Management Areas (AQMAs) addressed by this AQAP are outlined below.

Further information on the AQMAs (shown in Figure 1 below) are available on Ipswich Borough Council's AQMA webpage on the DEFRA website.

For the most up-to-date air quality monitoring data for the AQMAs and across the Borough, please refer to the latest ASR available on the from Ipswich Borough Council Air Quality Management website.

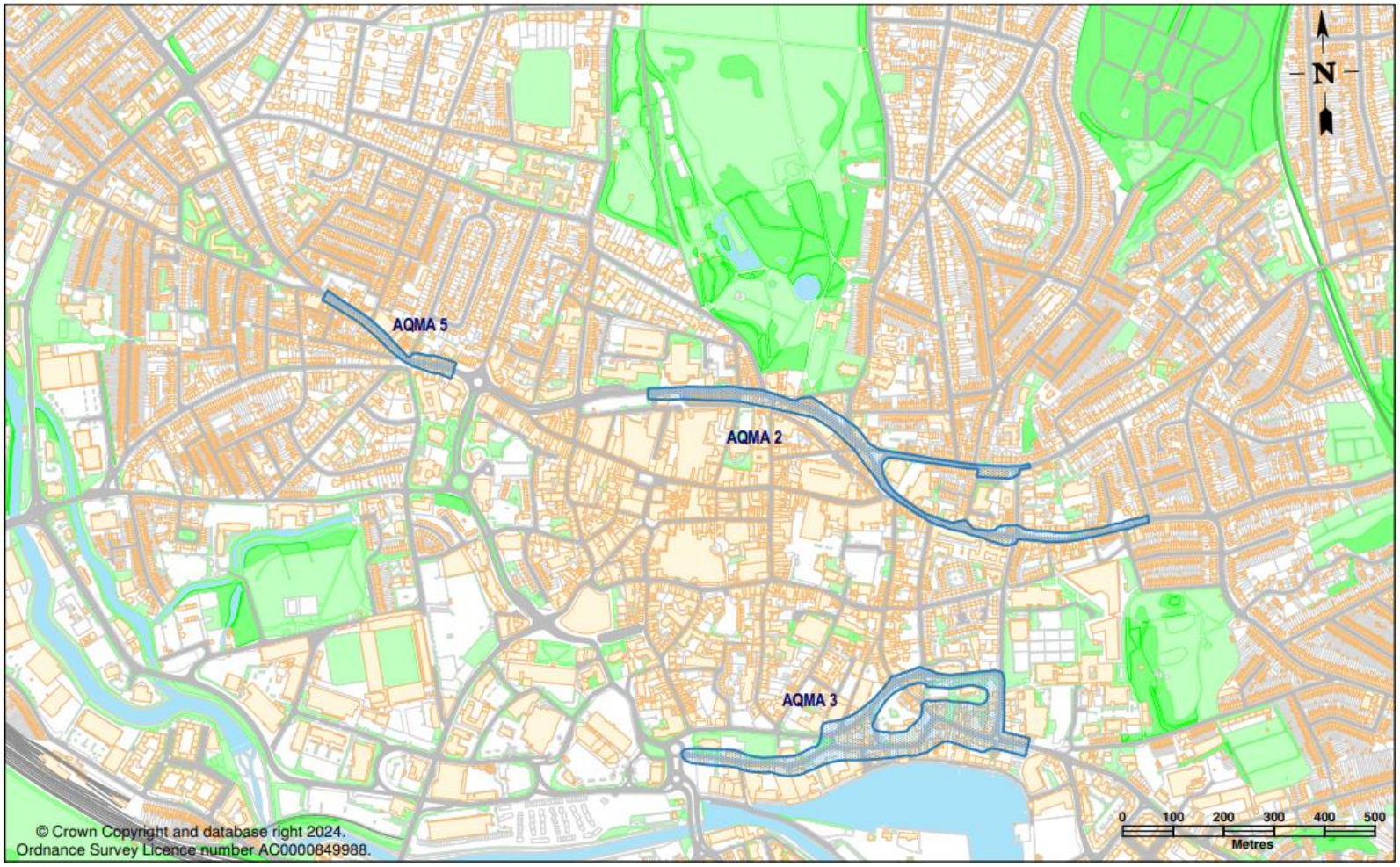
Both nationally and locally the main source of high levels of nitrogen dioxide is from vehicle emissions, so the AQAP will focus primarily on ways to reduce these emissions, as well as reducing other sources of air pollution.

Table 2.1 – Relevant Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality within the AQMA influenced by National Highways roads?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Number of Years Compliant with Air Quality Objective
Ipswich AQMA No.2	Declared 11/04/2006 Amended 12/09/2017	NO_2 Annual Mean	An area from the junction with Peel Street, extending along Crown Street, St Margarets Street and St Helens Street to the junction with Palmerston Road, and from St Margarets Street extending up Woodbridge Road to just beyond the junction with Argyle Street.	NO	45µg/m^3	37	1 year
Ipswich AQMA No.3	Declared 11/04/2006 Amended 12/09/2017 Amended 19/08/2021	NO_2 Annual Mean	Encompassing the land in and around College Street, Key Street, Salthouse Street, Fore Street, Star Lane, Neptune Square and Grimwade Street.	NO	50µg/m^3	35	4 years

Ipswich AQMA No.5	Declared 12/09/2017	NO_2 Annual Mean	An area incorporating the land in or around St. Matthews Street / Norwich Road between the Civic Drive roundabout and Bramford Road.	NO	49µg/m^3	39	1 year

Figure 1 - Location and Boundaries of Ipswich's AQMAs



2.2 Public Exposure

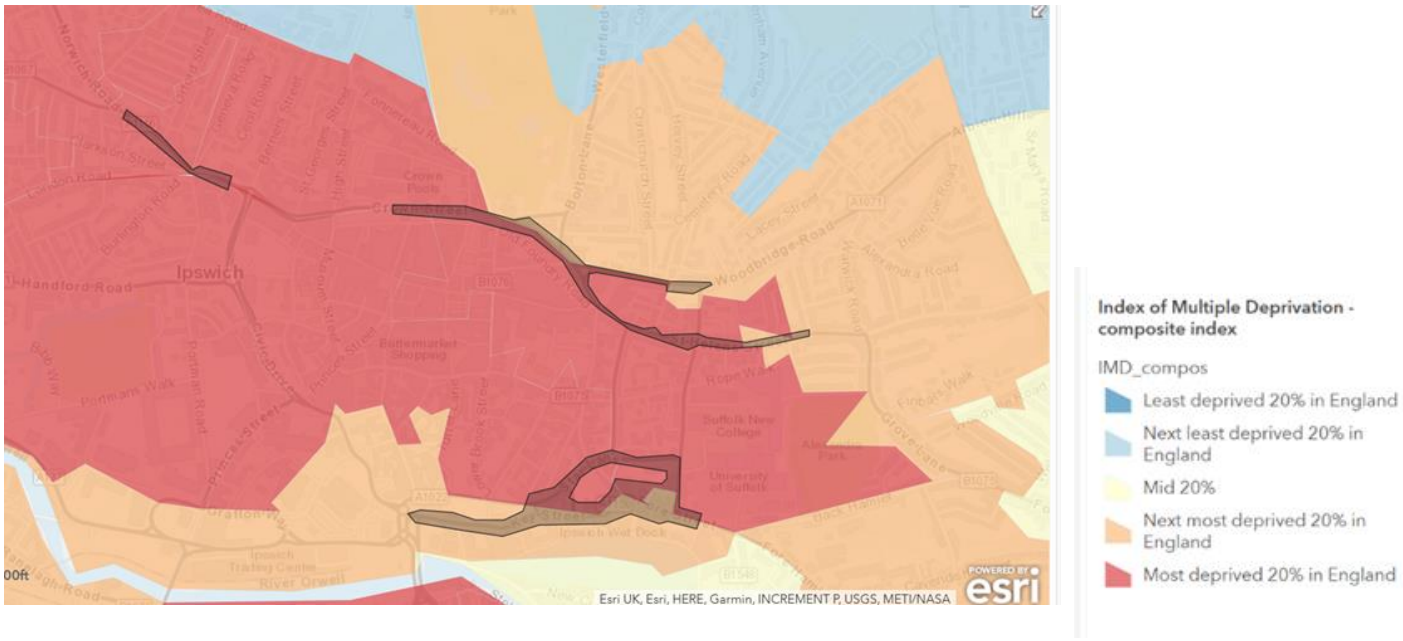
To understand the population exposed to poor air quality, a review of the estimated population of each AQMA has been undertaken. Data has been obtained from the Public Health and Communities Team at Suffolk County Council to estimate the population living in each AQMA. It is estimated there are 373 households, and 664 people living within AQMAs in Ipswich. This is shown in Table 2.2. below.

Table 2.2 – Estimated Population Exposure within AQMAs

AQMA	Number of Houses (dwellings)	Estimated population (household extrapolation method)
AQMA No. 2	265	457
AQMA No. 3	80	154
AQMA No. 5	28	53
Totals:	373	664

The data also shows that all three of Ipswich's AQMA's are situated in the 20% most deprived or 20% second most deprived areas (IMD 2019 Data) in Ipswich as shown below:

Figure 2 - Location of Ipswich's AQMAs in comparison to areas of deprivation



Measures within the AQAP should positively improve these areas, contributing to reducing deprivation.

3 Ipswich Borough Council's Air Quality Priorities

3.1 Public Health Context

Air pollution is one of the largest environmental risks to public health in the UK. The annual mortality of human-made air pollution in the UK is roughly equivalent to between 28,000 and 36,000 deaths every year[4]. It is estimated that between 2017 and 2025 the total cost to the NHS and social care system of air pollutants (fine particulate matter and nitrogen dioxide), for which there is more robust evidence for an association, will be £1.6 billion[5]. Air pollution can cause and worsen health effects in all individuals, particularly society's most vulnerable populations. Long-term exposure to air pollution can cause chronic conditions such as cardiovascular and respiratory diseases as well as lung cancer, leading to reduced life expectancy. Short-term increases in levels of air pollution can also cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in respiratory and cardiovascular hospital admissions and mortality. Air pollution can affect anyone's health; nevertheless, some individuals can be more susceptible than others. These include children, the elderly, individuals with existing cardiovascular or respiratory diseases, pregnant women, communities in areas of higher pollution, such as close to busy roads and low-income communities[6].

The Public Health Outcomes Framework (PHOF) is a Public Health England data tool, intended to focus public health action on increasing healthy life expectancy and reducing differences in life expectancy between communities. The PHOF includes an indicator, based on the effect of particulate matter ($PM_{2.5}$) on mortality. According to the public health outcomes framework, the fraction of mortality in those aged over 30 years, attributable to particulate air pollution (measured as $PM_{2.5}$) in 2022 in Ipswich

[4] https://www.gov.uk/government/publications/air-pollution-applying-all-our-health/air-pollution-applying-all-our-health

[5] https://www.gov.uk/government/publications/air-pollution-applying-all-our-health/air-pollution-applying-all-our-health

[6] https://www.gov.uk/government/publications/air-pollution-applying-all-our-health/air-pollution-applying-all-our-health

is 6.3%, above the average for England (5.8%) and the East of England Region (6.2%)[7]. This would suggest that $PM_{2.5}$ concentrations in Ipswich are slightly higher than other areas in the UK. However, it should be noted that a large proportion of the $PM_{2.5}$ in Suffolk is derived from intercontinental sources over which the local authority has no control; this may explain, either partly or wholly, why the fraction of mortality in those aged over 30 years, is above the average for England.

The AQMAs in Ipswich are in areas of generally higher levels of deprivation. Homes within these areas are also more likely to be in poor condition internally (e.g. possible damp and mould issues, problems with heating, disrepair issues to doors, windows and mechanical ventilation etc.) which in turn could impact on indoor air quality. For example, if windows and doors are in disrepair, pollution from outdoors could expose residents to higher levels of indoor air pollution. Measure 24 of this AQAP relates to the development and implementation of a campaign to raise awareness on indoor air quality, including supporting work outlined in the SCC Suffolk Air Quality Strategy, with particular focus on properties within the AQMAs.

Health impacts of air pollution and associated trends are monitored by Public Health Suffolk using data and evidence from a range of sources. Data is shared with stakeholders, including IBC as appropriate and in line with data sharing law, to assist in the targeting of interventions. Data will be provided as required relating to the Public Health Outcomes Framework (PHOF) indicator on the effect of particulate matter ($PM_{2.5}$) on mortality.

3.2 Planning and Policy Context

The national planning policy context is provided by the National Planning Policy Framework (NPPF, 2024). Paragraph 199 of the NPPF states:

'Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the

[7] https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/1/gid/1000043/pat/6/par/E12000006/ati/301/are/E07000202/iid/93861/age/230/sex/4/cat/-1/ctp/-1/yrr/1/cid/4/tbm/1/page-options/car-do-0

presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. … Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan.'

The National Planning Practice Guidance on Air Quality was updated in 2019. It provides additional guidance on how local planning authorities should consider air quality in both plan-making and determining planning applications.

Further detailed guidance documents are available, issued by Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM): *"Land-Use Planning and Development Control: Planning for Air Quality guidance*" and "*Guidance on the assessment of dust from demolition and construction*".

Aimed at maintaining and where possible improving air quality, this guidance is intended to ensure a consistent approach to local air quality management and new development by:

i. identifying circumstances where an air quality assessment would be required to accompany an application;

ii. providing guidance on the requirements of the air quality assessment; and

iii. providing guidance on mitigation and offsetting.

Transport and road congestion have an impact on local air quality. In 2020, the Department for Transport (DfT) published *Gear Change: A Bold Vision for Cycling and Walking* to increase participation in walking and cycling, as it could result in "savings of £567 million annually from air quality alone and prevent 8,300 premature deaths each year" if walking and cycling levels can be doubled. Since the publication of this vision, the DfT have set up their walking, wheeling and cycling executive agency called Active Travel England to oversee its delivery. Furthermore, the DfT published *Decarbonising Transport: A Better, Greener Britain* which identifies the need to improve air quality, as "poor air quality could cost health and social care services in England £5.3 billion by 2035".

At the local level, strategic objectives guiding the adopted 2022 Ipswich Local Plan Review 2018-2036 include *"AIR QUALITY AND CLIMATE CHANGE - Every*

development should contribute to the aim of reducing Ipswich's carbon emissions below 2004 levels," and, "TRANSPORT AND CONNECTIVITY - To improve accessibility to and the convenience of all forms of transport and achieve significant modal shift from the car to more sustainable modes through local initiatives."

There are references throughout the document to measures to improve air quality, including:

i. locating and designing development to minimise the need to travel (Policy CS5 Improving Accessibility);

ii. providing infrastructure to support modal shift to active travel (walking and cycling) and public transport (e.g. Policy CS20 Key Transport Proposals and SP32 Improving Pedestrian and Cycle Routes in the IP-One Area);

iii. ensuring that the impact of development on air quality is mitigated (Policy DM3 Air Quality);

iv. the requirement for travel planning and car clubs at significant new developments (Policy DM21 Transport and Access in New Developments);

v. the importance of green infrastructure in mitigating the effects of air pollution (e.g. Policy DM5 Protection of Open Spaces, Sports and Recreation Facilities and DM9 Protection of Trees and Hedgerows); and

vi. the provision of electric vehicle charging points to support the uptake of ultra-low emission vehicles (ULEVs) (Policy DM21 Transport and Access in New Developments).

The adopted Local Plan includes a new policy DM3 Air Quality, a detailed development management policy setting out air quality criteria with which development would need to comply. The focus of Policy DM3 is to mitigate the impact of development on air quality and to ensure exposure to poor air quality is reduced in the Borough, to contribute towards achieving compliance with air quality limit values for pollutants.

The Local Plan commitment to safeguarding and improving air quality through transport measures is most clearly expressed through *Policy DM21: Transport and Access in New Developments*, which states:

> *"To promote sustainable growth in Ipswich and reduce the impact of traffic congestion, new development shall not result in a significant detrimental impact*

on air quality and shall address the appropriate mitigation measures as required in accordance with Policy DM3."

Further clauses in Policy DM21 require transport measures to be provided as appropriate, including: electric vehicle charging points, car clubs or pool cars, walking and cycling routes and safe and convenient access to public transport. The Local Plan provides a range of policies, which focus on supporting active and sustainable travel and protecting and enhancing green space, alongside Air Quality Policy DM3.

Transport modelling undertaken to inform Local Plans within the Ipswich Strategic Planning Area (ISPA[8]) indicated that the built-up area of the Ipswich network comes under particular strain as a result of the cumulative planned growth across the ISPA districts. Therefore, the County Council's Transport Mitigation Strategy for the Ipswich Strategic Planning Area[9] sets out a transport mitigation strategy that informs an implementation programme of measures that will support the ISPA district partners' local plans by delivering modal shift in Ipswich.

To support the promotion of active travel, in 2016 Ipswich Borough Council adopted a Cycling Strategy Supplementary Planning Document (SPD). This cycling SPD is also supplemented by an *Ipswich Local Cycling and Walking Infrastructure Plan (LCWIP)* which is in the process of being finalised following public consultation. In addition to this, the Council adopted a Low Emissions SPD in November 2021. The SPD does not set new policies but is a material consideration in taking decisions on planning applications and is designed to amplify developer requirements to mitigate the potential development impacts, outlined in Ipswich Local Plan Review Policy DM3. Providing a consistent approach to dealing with air quality and planning in Ipswich, the SPD provides guidance on measures that can be implemented to mitigate the potentially harmful impacts of new development (*e.g.* increased traffic and congestion; increased emissions from the heating of new homes). As such it considers measures regarding: the use and type of vehicles; the role of walking, cycling and public transport; boiler

[8] Ipswich Strategic Planning Area covers the same area as the Ipswich Housing Market Area, i.e. Ipswich Borough. Mid Suffolk and Babergh Districts and the former Suffolk Coastal area of East Suffolk.

[9] https://www.ipswich.gov.uk/sites/www.ipswich.gov.uk/files/2019-08.ispa_mitigation_strategy.pdf

types; and the role of trees and hedgerows in absorbing pollutants. The Low Emissions SPD also sets out an approach to car parking provision within the IP-One Area which covers central Ipswich. Here, at the hub of the public transport network and close to the facilities offered by the town centre, it is appropriate to require lower private car parking provision than elsewhere in the Borough. (IBC, 2021).

At the time of writing this report, Suffolk County Council (SCC) as Highway Authority were drafting an update to the Suffolk Local Transport Plan 2025 - 2040. The update includes both the County Council's long-term transport strategy to 2040 and 15 area transport plans, including for Ipswich. The update to the Local Transport Plan reflects the Council's and Government's zero carbon ambitions and has been produced in accordance with the DfT's revised Local Transport Plan Guidance which has a focus on quantifiable carbon reductions (QCR). At the time of writing this AQAP, the public consultation on the revised Local Transport Plan has concluded and the plan was adopted by Cabinet on 25th February 2025.

One of the priority themes within the Local Transport Plan is entitled 'Health, wellbeing and social inclusion'. As part of this theme, a sub theme entitled 'Improving air quality and reduce transport-related noise pollution where they pose a risk to human health'. The Local Transport Plan acknowledges that zero emission cars, motorcycles and buses will reduce tail pipe emissions over the long term; however, particulate matter caused by tyre wear and brake dust will remain an issue during and after vehicle fleets transition to zero-emission. Therefore, air quality strategies developed during this local transport plan period will recognise the limitations and potential inequities of relying on only transitioning to zero-emission vehicles, and strategies will focus on reducing the demand for motor car use in favour of active travel, micromobility, and passenger transport solutions. This AQAP is mindful of this approach, and contains a number of measures that promote active travel, micromobility and passenger transport solutions.

In addition to the Local Transport Plan, SCC have recently adopted a Suffolk Local Cycling and Walking Infrastructure Plan which identifies and prioritises feasible improvements of routes. The LCWIP will also inform SCC's responses to planning applications, especially where identified routes align with district and borough councils' Local Plans or other spatial frameworks, such as Neighbourhood Plans.

SCC have produced complementary guidance documents, such as the *Suffolk Guidance for Parking* which includes provisions to increase the number of electric

vehicle charging points in parking arrangements for new developments. Furthermore, SCC have produced dedicated *Travel Plan Guidance* for schools, workplaces and residential sites. This Travel Plan Guidance also requires these schools, workplaces and residential sites to write, deliver and monitor their Travel Plan on the *Modeshift STARS* system to work towards a nationally recognised STARS accreditation. These Travel Plans must include measures to increase the uptake of sustainable travel and also improve air quality in the vicinity of the site (e.g. promotion of Clean Air Day and anti-idling schemes).

SCC have also trialled some further highway measures to improve air quality in Ipswich, such as *School Street* schemes to restrict vehicular traffic directly outside schools during drop-off and collection times. Experimental schemes have taken place outside Ranelagh Primary School and Morland Primary School. The scheme outside Ranelagh Primary School has now been made permanent, with the intention that the scheme at Morland Primary School will also be made permanent. Ranelagh Primary School reported that the scheme has made a positive difference, with a 35% increase in the number of pupils walking, cycling or scooting. Furthermore, at the time of writing this AQAP, Broke Hall Primary and Whitehouse Community Primary School are both currently exploring whether to progress with the implementation of *School Street* schemes.

In 2019, Suffolk's Public Sector Leaders (SPSL) committed to producing a Suffolk Climate Emergency Plan in response to the various declarations of a climate emergency made by Local Authorities that year. This sought to address the aspiration to work towards a carbon neutral Suffolk by 2030. Work was undertaken to:

- Analyse existing data to provide a clear, evidence-based baseline for Suffolk partners on the current picture, including clarity on data and any current gaps.
- Identify areas of current and potential influence by Council policy and collaboration with partners to understand the extent to which we can reduce emissions identified by the analysis.
- Feasibility test options so that the focus is on actions that can deliver meaningful emissions reductions.
- Engage stakeholders and the wider community in Plan development.

- Co-design and launch a delivery plan (including associated communication activity) that builds on the evidence base, feasibility options and community engagement.

A final Plan has been produced and approved. The Plan identifies the reduction of CO_2 emissions from the Transport sector as a key theme and contains the following Priority Actions in this theme:

Low Carbon Transport Sector:

- Priority Action 42 – Increase sustainable transport readiness by preparing for and encouraging a sustainable transport system;
- Priority Actions 47 and 51: Reduce demand for car use by providing comprehensive active travel infrastructure and improving public transport; and
- Priority Actions 70 and 72: Making the transition to a zero emissions fleet by developing comprehensive private vehicle charging infrastructure (~40,000 public and ~300,000 private chargers) and incentivising electric vehicle (EV) uptake in private vehicles (estimated 330,000 EVs), and by encouraging low emission freight (targeted at ~50,000 vehicles).

A number of matters broadly relevant to air quality are also being undertaken in the other themes, in particular the 'Sustainable Homes' theme and the 'Cleaner Power' theme. More information on the detail of the Plan is available here:

Suffolk Climate Emergency Plan – Green Suffolk

In July 2019, Ipswich Borough Council's Executive Committee declared a Climate Emergency and resolved to start working towards becoming carbon neutral by 2030. In 2020, Ipswich Borough Council published a 2020-2030 Climate Change Strategy and Action Plan which takes into consideration the following:

Transport

- Procure zero and/ or ultra-low emission vehicles for the fleet:
    - Continue with projects to replace all fossil-fuelled car and car derived vans with EV alternatives; and
    - Develop proposals to replace panel type vans with EV or PHEV vehicles.

- Where necessary replace panel type vans and Large Goods Vehicles with ultra-low emission vehicles if zero emission vehicles are not cost effective;

- Ongoing monitoring of technology improvements in order to ensure the best use of available technology for Large Goods Vehicles. With the aim that all Large Goods Vehicles replaced from 2023 onwards, such as Refuse Collection Vehicles are zero emission;

- Use of more sustainable transport:
    - Encourage staff to adopt sustainable transport options such as cycling, walking, car sharing, public transport (including park and ride) where appropriate;
    - Avoid unnecessary travel by staff; and
    - Encourage home and/ or local working

- Reduction in the use of the 'Grey Fleet'; and

- Investigate the reasons for staff use of their own vehicles on Council business and provide alternatives.

Other Projects that have been identified but which are not fully developed include:

- EV Residential Charging Points;
- Taxi and bus projects; and
- Living bus shelter rooftops

Mobile Plant:

- Procure zero and/ or low emission mobile plant;
- Replace fossil-fuelled plant with zero or low emission alternatives where available; and
- Ongoing monitoring of technology improvements in order to ensure the best use of available technology for larger pieces of mobile plant.

The Council's Climate Change Strategy and Action Plan acts as the starting point for the development of an ongoing Climate Change Strategy for Ipswich Borough Council

and focusses on the Council's proposed approach for tackling climate change. There are a number of measures listed above that overlap with this AQAP, so it is important to ensure that measures within both the AQAP and Climate Change Strategy are harmonious (i.e. detail the same timescales and KPI's etc.).

Information on the Green House Gas Emissions status of Ipswich Borough Council is available here.

Finally, at the time of writing this report, both West Suffolk Council and Babergh and Mid Suffolk Council are planning to revoke their remaining AQMAs. In addition, East Suffolk Council revoked their remaining AQMA in 2024. The aforementioned Suffolk Councils plan to meet and align their air quality strategies following the revocation of their remaining AQMAs. Ipswich Borough Council intend to support the neighbouring Authorities in developing their Air Quality Strategies and ensure this AQAP aligns with them.

3.3 Source Apportionment

Although the NO_2 annual mean concentrations in the AQMAs fall below the national air quality objective level, there have been exceedances within the last 5 years, and as such, a source apportionment exercise was carried out for the AQMAs. These were undertaken in accordance with Box 7-5 of LAQM.TG22. Full calculations are presented in Appendix B.

The pollutant of concern within the Borough has been identified as nitrogen dioxide (NO_2) predominately from road traffic. Source apportionment allows us to gain a better understanding of the nature of the vehicles resulting in exceedances within the AQMAs. A source apportionment exercise was carried out by Ipswich Borough Council in 2023.

Background concentrations of NO_2 are comprised from both regional and local sources, such as rural, industrial and domestic sources which the Council are unable to influence or are regulated by other processes e.g. point source industrial emissions are minimised through the Environmental Permitting process. As such, these were not considered further.

As part of the exercise, traffic flows from the 2016 Suffolk County wide transport model were projected to be representative of 2023 using the Trip End Model

Presentation Program (TEMPro). The calculated 2023 flows were subsequently compared to and checked against traffic counts provided by the Department for Transport (DfT).

The breakdown of 2018 ANPR traffic data by vehicle class and Euro proportions reported in the Ipswich Borough Council Source Apportionment Study (June 2018) were projected to be representative of 2023 using the vehicle fleet composition projections provided by the National Atmospheric Emissions Inventory (NAEI).

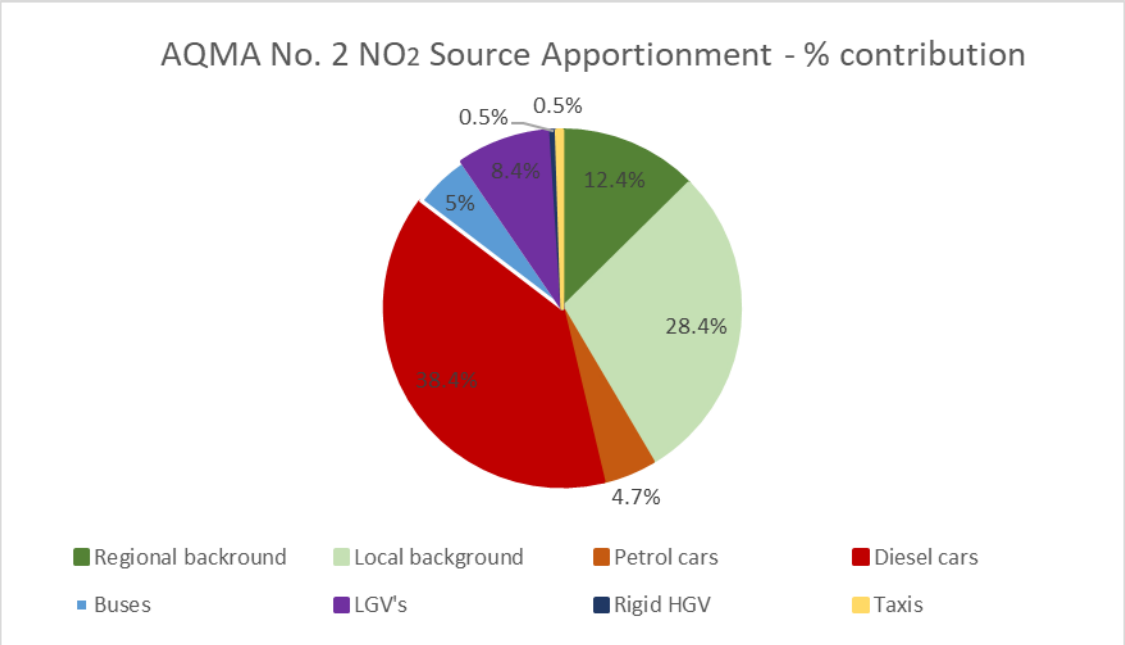
The AQAP measures presented in this report are intended to be targeted towards the predominant sources of emissions within Ipswich Borough Council's area.

3.3.1 Source apportionment for NO_2 in Air Quality Management Area 2

Within AQMA No 2, diffusion tubes 11,12, and 19 (triplicate) were selected as the most appropriate to form the basis for the calculations with the highest 2023 annual mean concentration at a relevant receptor of NO2 of 37µg/m^3. This AQMA is located in a busy urban area along an arterial road into/out of Ipswich Town Centre with a number of road junctions.

In summary, the source apportionment exercise identified within the AQMA, the percentage source contributions were as follows:

- Regional background = 4.6ug/m3 (12.4%)
- Local background = 10.5ug/m3 (28.4%)
- Local traffic:
    - Petrol cars = 1.8ug/m3 (4.7%)
    - Diesel cars = 14.2ug/m3 (38.4%)
    - Buses = 2.2ug/m3 (5%)
    - LGV's = 3.1ug/m3 (8.4%)
    - Rigid HGV = 0.2ug/m3 (0.5%)
    - Taxis = 0.2ug/m3 (0.5%)

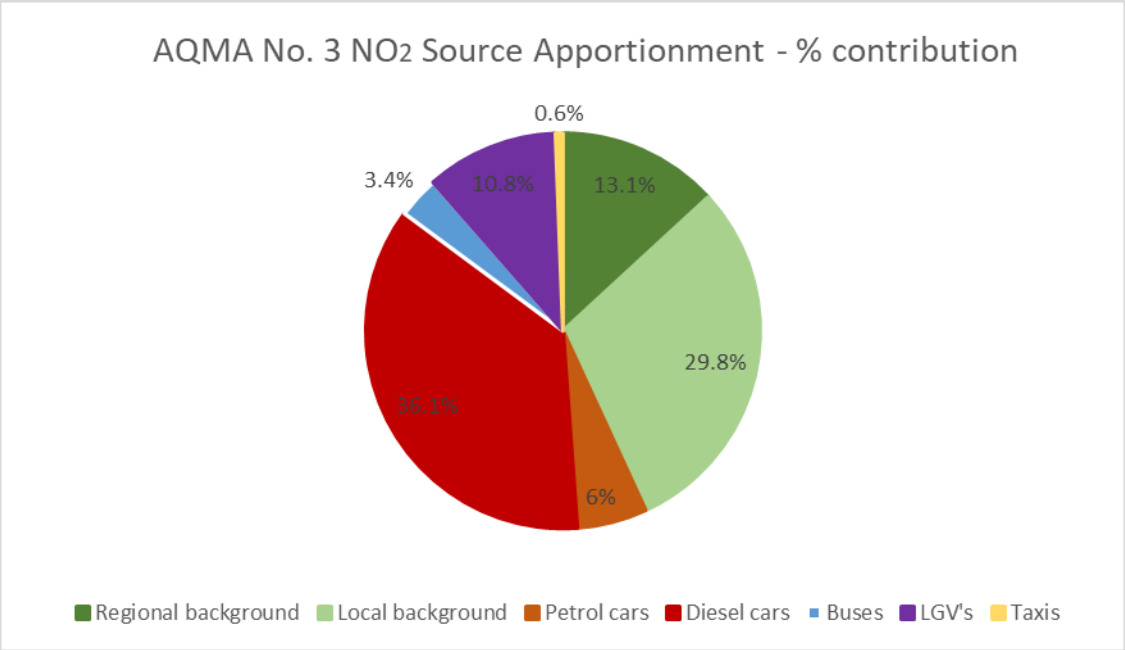


3.3.2 Source apportionment for NO_2 in Air Quality Management Area 3

Within AQMA No 3, diffusion tube 30 was selected as the most appropriate to form the basis for the calculations with the highest 2023 annual mean concentration at a relevant receptor of NO_2 of 35µg/m^3. This AQMA is located in the gyratory system around the waterfront and contains main arterial roads into/out of Ipswich Town Centre.

In summary, the source apportionment exercise identified within the AQMA, the percentage source contributions were as follows:

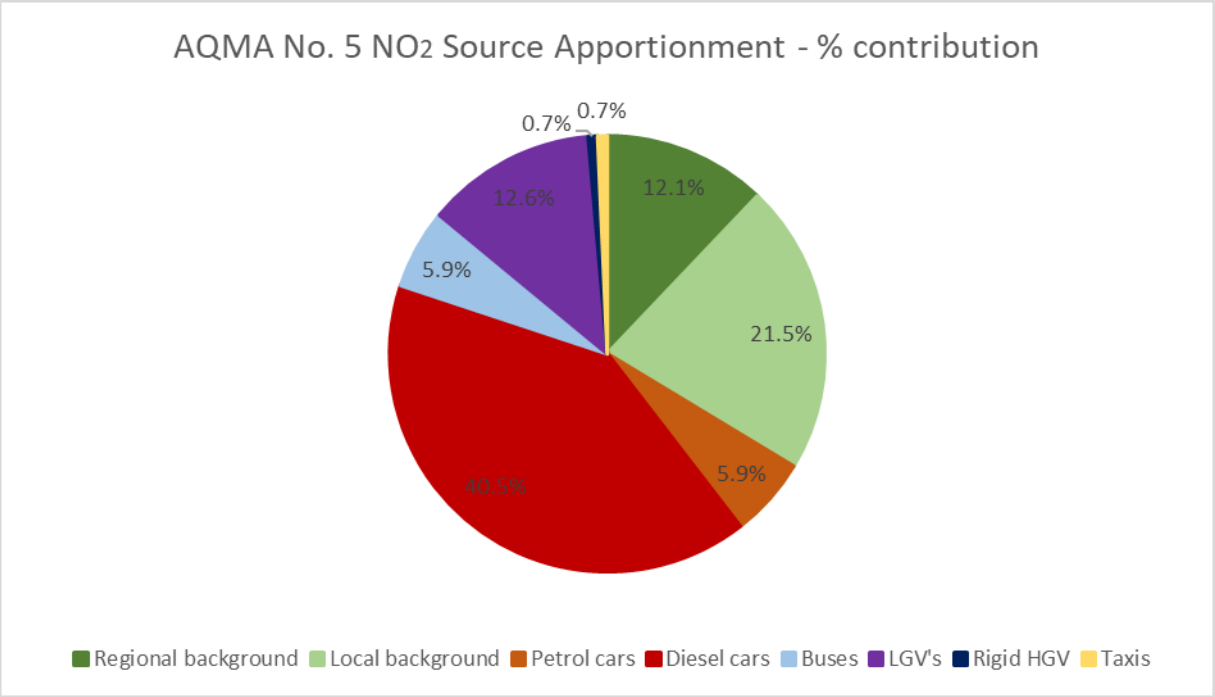
- Regional background = 4.6ug/m3 (13.1%)
- Local background = 10.5ug/m3 (29.8%)
- Local traffic:
    - Petrol cars = 2ug/m3 (5.7%)
    - Diesel cars = 12.7ug/m3 (36.1%)
    - Buses = 1.2ug/m3 (3.4%)
    - LGV's = 3.8ug/m3 (10.8%)
    - Taxis = 0.2ug/m3 (0.6%)



3.3.3 Source apportionment for NO2 in Air Quality Management Area 5

Within AQMA No 5, diffusion tubes 64&65 (duplicate) were selected as the most appropriate to form the basis for the calculations with the highest 2023 annual mean concentration at a relevant receptor of NO2 of 39µg/m^3. This AQMA is located in a busy urban area along an arterial road into/out of Ipswich Town Centre.

- Regional background = 4.7ug/m3 (12.1%)
- Local background = 8.4ug/m3 (21.5%)
- Local traffic:
    - Petrol cars = 2.3ug/m3 (5.9%)
    - Diesel cars = 15.8ug/m3 (40.5%)
    - Buses = 2.3ug/m3 (5.9%)
    - LGV's = 4.9ug/m3 (12.6%)
    - Rigid HGV = 0.26ug/m3 (0.7%)
    - Taxis = 0.26ug/m3 (0.7%)



The % split of LGV's in this AQMA is slightly higher than in the other AQMAs, possibly due to the difficulties in goods vehicles serving the businesses in this AQMA being able to load/unload in other locations. Commonly, vehicles load/unload directly on the road.

3.4 Required Reduction in Emissions

The required reductions in emissions were reviewed during the development of this AQAP.

Within all AQMAs in 2023, the monitoring data indicates that there were no exceedances of the annual mean NO_2 objective level. Concentrations have been steadily falling within all AQMAs over the last five years, with annual mean concentrations within AQMA No.3 below the objective level for the past four years.

Despite falling concentrations, exceedances of the annual mean objective level have been noticed in AQMA 2 and AQMA 5 over the last five years. Concentrations have remained generally lower post Covid-19 pandemic than seen in 2019. Bias and distance corrected diffusion tube data in 2022 from the worst-case monitoring locations were used to calculate the required reductions. Calculations were performed in accordance with the method described in Chapter 7 of the Technical Guidance LAQM.TG22 (Defra, 2022). The required reductions are shown in Table 3.1 below.

Table 3.1 - Required reductions in NO_2 / traffic related NO_x

AQMA	Required NO2 Concentration Reduction [worst case] (µg/m^3)	Required Reduction in Road-Related NOx Emissions [worst case] (%)	Monitoring Location [worst case]
5	3	18.5%	Tubes 64,65
2	2	8.8%	Tubes 11,12,19
3	-	-	-

3.5 Key Priorities

Based upon our findings and the source apportionment study, which identified that the main impact is from road vehicle emissions, the following areas are a priority for action:

Priority 1: Public health, behaviours and awareness - Facilitating a modal shift away from private vehicles towards public transport and active travel, to improve air quality and create a healthy community.

With the use of technology and providing information to inform the public, enable people to change their behaviours to reduce their exposure, as well as their contribution, to air pollution. This is particularly important for vulnerable members of society, such as the young, the elderly and those that may have heart or lung conditions.

Discouraging short distance commuting journeys and investing in walking and cycling can help reduce emissions of relevant air pollutants, as well as bring about health benefits to the community.

Priority 2: Transport - Incentivise switching to cleaner vehicles, including LGV's, buses, taxis and corporate fleets, to reduce poor air quality and to create a more sustainable environment.

Influencing transport emissions through development of appropriate measures either under the council's direct control or via partnership work, which include provision of electric charging points, encourage switch cleaner LGV's and consolidated deliveries, renewing of bus fleets and taxi emissions standards.

Priority 3: Policy, planning and infrastructure - By embedding air quality measures into policy development, planning applications and major developments, to bring future improvements to air quality and create an enjoyable and sustainable place to live and work, building a strong Ipswich economy.

Planning policies should sustain compliance with and contribute national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas.

Cooperation between transport, environmental health, public health and planning teams, as well as with partner organisations, to ensure a strategic approach to improving air quality and quality of life, especially for those living near busy roads and junctions.

Priority 4: Wider strategic approach - Reducing exposure to air pollution by tackling the sources of pollution from further transport initiatives and domestic sources.

By taking an active role in Suffolk wide campaigns and other air pollution initiatives such as domestic burning to create a more sustainable environment.

4 Development and Implementation of Ipswich Borough Councils' AQAP

4.1 Consultation and Stakeholder Engagement

Ipswich Borough Council is not the Highways Authority for the town, these functions are performed by Suffolk County Council. Action to reduce vehicle emissions relies on commitment by a coalition of partners, both public and private sector. Therefore, whilst this AQAP has been published by Ipswich Borough Council, there are a significant number of collaborative projects that will have to be taken forward in collaboration with others. Some of these projects will be independently run, by their own project boards and groups, and may undertake their own specific consultation or stakeholder engagement. For this reason, the consultation described below will not be the only consultation which will be undertaken on the measures.

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, as amended by the Environment Act (2021), requires local authorities to consult the bodies listed in Table 4.1. In addition, we have undertaken the following stakeholder engagement:

- Ipswich Borough Council's Website and social medial channels, including links to a questionnaire
- Consultation engagement via two 'drop-in days' at the Council's Offices'

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

Table 4.1 – Consultation Undertaken

Consultee	Consultation Undertaken
The Secretary of State	Yes
The Environment Agency	Yes
All neighbouring local authorities	Yes
The County Councils (if a District Council)	Yes
Other public authorities as appropriate, such as Public Health officials	Yes
Bodies representing local business interests and other organisations as appropriate	Yes

4.2 Steering Group

A steering group was established at the start of the update process to drive forward the development of the new AQAP. The full Steering Group met several times prior to consulting on this action plan. The core aim of the steering group was to identify measures for inclusion within the AQAP that would be effective both in terms of reducing NO_2 concentrations and also feasible in terms of implementation and delivery. The Steering Group consists of the following representatives:

Chair

- Assistant Director for Communities (Ipswich Borough Council)

Public Protection, Ipswich Borough Council

- Head of Public Protection
- Principal Environmental Health Officer (Environmental Protection)
- Environmental Health Officer (Environmental Protection)

Planning and Development, Ipswich Borough Council

- Head of Town Planning and Development

- Senior Planning Policy Officer
- Planning Officer

Growth, Highways and Infrastructure, Suffolk County Council

- Strategic Transport & Policy Manager
- Transport Planning Manager

Public Health & Communities, Suffolk County Council

- Wider Determinants Manager
- Wider Determinants Lead

The organisations involved in the steering group are responsible for the implementation of each measure as detailed in Table 5.2. below

The group will aim to meet quarterly to evaluate progress with the AQAP, discuss any key lessons learnt from the implementation of measures and to continue to discuss any new ideas in terms of future measures and actions that could be included within the plan. Of upmost importance, the steering group will discuss reasons for why some actions are not working as effectively as intended or why some actions are proving more difficult to implement than expected and develop strategies to overcome these difficulties.

The intention is for the steering group to be expanded to include other stakeholders as and when specific measures are being discussed in more detail.

5 AQAP Measures

Table 5.22 shows Ipswich Borough Council's AQAP measures. It contains:

- A list of the actions that form part of the plan;
- The departments/organisations responsible for delivering this action;
- Estimated cost of implementing each action;
- Expected benefit in terms of pollutant emission and/or concentration reduction;
- The timescale for implementation; and
- How progress will be monitored.

NB: Please see future Annual Status Reports (ASRs) for regular annual updates on implementation of these measures.

The colours shown in the AQAP table of measures below are graded based on the results of cost benefit analysis detailed in Section 6. The cost benefit analysis was informed by estimates of air quality impacts, feasibility and expected costs. Table 5.1. below highlights the colour grading of measures based on the accompanying cost benefit analysis score.

Table 5.1 – Colour grading of AQAP measures based on cost benefit analysis score

Overall cost benefit analysis score	Priority rating of measure	Colour grading
12+	High priority measure	
11 ⇩ 5	Medium priority measure	
4 ⇩ 0	Low priority measure	
N/A	N/A as measure relates primarily to non-NOx emissions	

Table 5.2 – Air Quality Action Plan Measures

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Date	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
Strategic Measures															
1 (medium priority)	Development and implementation of both the Suffolk and Ipswich Cycling and Walking Infrastructure Plans, and work to improve existing cycle routes	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality	2025	2025	Ipswich Borough Council/ Suffolk County Council	IBC Officer Resource, DfT Active Travel Fund, Developer Funding, External funds	No	Partially Funded	>£10 million	Planning	Specific value not known but will contribute to overall reduction in NO_2 levels in town centre and surrounds Not modelled – est. 1-5µg/m3	Implementation of Walking and Cycling Plans	The Suffolk LCWIP was approved at cabinet on 25th February 2025 and is being implemented. SCC are currently designing and intend to deliver the following improvements in the financial year 25/26: •Bridge Street – Stoke Bridge to St Peters Street •Upper Brook Street •Woodbridge Road – Heath Road to Beech Road •Ipswich Hospital to the Waterfront •Park Road parallel crossing •Nacton Road – Maryon Road to Felixstowe Road •Princes Street – Ranelagh Road to Civic Drive •Sidegate Lane (West) – footway improvements A further £2.1m of capital funding has been allocated to SCC for improvements across the county, some of which will be invested in Ipswich. SCC have some S106 funding that has come in from the Ipswich Garden Suburb Scheme although these are the first of a number of payments linked to trigger points on development. Public consultation on the Ipswich LCWIP closed on 6th March 2025. The consultation responses are being examined and the plan will be taken back to Council Executive for approval.	The availability of sufficient funding is a barrier to implementation for both the Suffolk and Ipswich LCWIPs. Furthermore, other Suffolk active travel schemes higher in the priority order may be a barrier to implementing some Ipswich schemes.

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Date	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
2 (medium priority)	Develop Local Transport Plan (LTP4) to create a more efficient use of the highway in and around the town, and across Suffolk	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality	2025	Adoption Spring 2025	Suffolk County Council	Various including; DfT, ATE, Developer Contributions, CIL	No	TBC, SCC receives annual block grants, but anticipate longer term funding settlements in the future	>10 million	Planning	Specific value not known but will contribute to overall reduction in NO_2 levels in town centre and surrounds. LTP4 include specific objectives around AQ Not modelled – est. 1-5µg/m3	Implementation of LTP	This went to Suffolk County Council cabinet on 25th February and was approved for adoption in March 2025.	Individual schemes may require statutory consultation, and be subject to change, but the LTP4 set out a long term vision, to 2040, and isn't dependant on individual local schemes.
3 (medium priority)	Ongoing commitment to promoting the Suffolk anti-idling campaign	Other	Other	2025	2030	Ipswich Borough Council	Ipswich Borough Council	No	Funded	<£10k	Implementation	Specific value not known but will contribute to overall reduction in NO_2 levels in town centre and surrounds Not modelled, est. <0.5µg/m3	Number of anti-idling events attended. Monitored and reviewed via IBC's Environmental Protection Department	Campaign materials previously produced by the Suffolk Air Quality Working Group. Implementation on-going. Internal staff within Environmental Health and Waste Operations have been given anti-idling training. A number of anti-idling events have been held outside schools.	
4 (medium priority)	Expansion of air aware schools toolkit to further raise awareness of air quality in schools, particularly schools near AQMAs	Public Information	Other	2025	2030	Ipswich Borough Council	Ipswich Borough Council Suffolk County Council have funded the school streets project	No	Funded	<£10k	Implementation	Specific value not known but will contribute to overall reduction in NO_2 levels in town centre and surrounds Not modelled, est. <0.5µg/m3.	Present information to schools near AQMAs and within the borough. Monitored and reviewed via IBC's Environmental Protection Department Awareness levels of the impacts of idling from SCC obtained data	IBC have produced an 'Air Aware Ipswich' Schools Toolkit. A 12 week programme aimed at raising awareness of air quality issues with school children. This has been adapted from initiatives used in London and Oxford. This is available at: https://www.ipswich.gov.uk/content/air-quality-resources-schools. SCC have a School Streets Policy. Ranelagh Primary School and Morland VA Road both have school streets.	
5 (medium priority)	Promote the Councils Green Travel Plan to employees, including use of agile working	Promoting Travel Alternatives	Workplace Travel Planning	2025	2030	Ipswich Borough Council	Ipswich Borough Council	No	Funded	Travel plan balances its own costs from staff parking charges	Implementation	Specific value not known but will contribute to overall reduction in NO_2 levels in town centre and surrounds Not modelled, est. <1 µg/m3	Annual promotion of travel plan. Increase (self-reported) in the number of IBC staff walking, cycling or traveling sustainably to work via the Suffolk-wide travel to work survey results	Staff travel plan promoted on the intranet. A large proportion of staff are 'hybrid working', dividing their working time between home and the office, thereby reducing the number of commuting trips. Dr Bike sessions promoted to employees to enable their bikes to be checked	

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Date	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
														and maintained by a competent mechanic. Free use of Ipswich Buses to all IBC employees.	
6 (medium priority)	Support air quality events such as Clean Air Day and Clean Air Night	Public Information	Other	2025	2030	Ipswich Borough Council	Ipswich Borough Council	No	Funded	<10k	Implementation	Specific value not known but will contribute to overall reduction in NO_2 levels in town centre and surrounds Not modelled, est. <0.5µg/m3	Annual participation in Clean Air Day and Clean Air Night events	Clean Air Day 2024 involved engagement with schools and anti-idling events. Officers also published information relating to the Defra grant funded domestic burning campaign.	Extent of campaign limited by budget available
7 (medium priority)	Investigate the feasibility of promoting air quality messages on IBC procured variable message signs around Ipswich	Public Information	Other	2025	2030	Ipswich Borough Council	Ipswich Borough Council	No	Funded	£100k - £500k (signs already purchased and installed)	Implementation	Specific value not known but will contribute to overall reduction in NO_2 levels in town centre and surrounds Not modelled, est. <0.5µg/m3	Promote anti-idling messages quarterly Increased awareness of the impacts of idling from SCC obtained data	VMS project cost £259,000. All VMS had been installed. Anti-idling messages to be prepared and agreed with the relevant operational team.	At present, signs only being used to display car park information for operational purposes. This will be reviewed in 6 months and planning restrictions will need to be considered. Once messages determined, ongoing promotion of messages, hence completion date listed for lifetime of AQAP
8 (medium priority)	Promotion of travel alternatives e.g. walking, cycling, public transport (including park and ride), car sharing & air quality matters. Measure includes: Development and implementation of the Ipswich Air Aware Campaign, including disseminating messages directed at those living within the AQMAs	Public Information	Other	2025	2030	Ipswich Borough Council, Suffolk County Council	Ipswich Borough Council, Suffolk County Council	No	Partially funded	<£10,000	Implementation	Specific value not known but will contribute to overall reduction in NO_2 levels in town centre and surrounds Not modelled, est. <0.5µg/m3	Website patronage, number of Facebook posts/comments, number of video views Air quality messages being displayed. KPI monitored by the IBC communications department and also by the relevant departments at Suffolk County Council.	In 2020, SCC worked with borough and district councils to develop the Suffolk Air Quality Profile, published in 2021, with the aim of increasing local knowledge, identifying areas of concern and making recommendations on what could be done to mitigate the impact of poor air quality. This led to the Suffolk Health and Wellbeing Board making air quality a priority. The recommendations from the Suffolk Profile have informed both the development of a Suffolk wide Air Quality Strategy, published in May 2023, and a Suffolk Air Quality Community Engagement Plan. The Community Engagement Plan also includes engaging with the public on sustainable transport issue to try and encourage modal shift. In Suffolk in 2023: •2 School Streets established, 3 more	

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Date	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
														planned. 130 e-bike trials undertaken. With ongoing programme planned for the coming year. Regular weekly attendance at walking and cycling groups in Ipswich of approx. 50 individuals participating in Active Travel Social Prescribing Pilot. •1 Accessible Cycling club delivered, which has enabled approx. 50 uses of accessible cycles, and 15 individuals now regularly accessing them •Free bikes provided to school pupils •New scheme launched for parents / carers to trial a cargo bike for the school run. •3 Cargo bikes being used around the county for business trials. • 3769 year 5 & 6 students trained in Bikeability Level 2. One walking and cycling community hub up and running in Ipswich (Burlington) and plans underway for a second location (Ransomes). 3 further hubs open outside the borough. Last Mile Deliveries: SCC are exploring developing a First Mile/ Last Mile delivery offer with community interest groups to establish a trial in Ipswich. A meeting has been held with potential provider in December 2023, and we now awaiting business case proposal to take forward. E cargo bike trial run by Ipswich Borough Council in August 2023. The trial was considered a success by the Parks department and a Pashley ALECS trike is to be purchased subject to funding being agreed.	
9 (low priority)	Procurement of low emission vehicles in Ipswich Borough Council Fleet	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	2025	2031	Ipswich Borough Council	Ipswich Borough Council	No	Funded	£1 million - £10 million	Implementation	Specific value not known but will contribute to overall reduction in NO_2 levels in town centre and surrounds Not modelled, est. <0.5µg/m3.	Provision of new vehicles. Monitored and reviewed by the Council's Transport Manager	3-year replacement plan for small vehicle fleet to zero emission was concluded in 2022. However, the Council are committed to reducing emissions within the fleet. Currently within Ipswich Borough Council fleet currently breaks down as followed:	The Council are committed to reducing emissions within the fleet and the renewal programme (previously concluded in 2022) has been extended to a rolling programme, with phase one now due for completion in

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Date	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
														EV Fleet = 26.04 % Ultra Low Emission = 30.21 % (Euro 6/6+) Low Emission = 34.84 % (Euro 5) High Emission = 8.91 % (Euro 4) Within the 2024/2025 budget 20 vehicles are due to be replaced with zero emission fleet. The aim of the vehicle replacement plan is in line with the Councils Climate Change Strategy and Action Plan. This aims to reduce CO2 to net zero by 2030, with vehicles being zero emissions or as low as reasonably practicable by the same date. This will have the knock on benefit of eliminating exhaust emissions of nitrogen dioxide and particulate matter.	2031. Half a million pounds has been set aside for fleet renewal each year. The Council has now reached EV capacity until the new depot comes online.
10 (low priority)	Provision of EV charging points across IBC offices, Crown Street and Elm Street public car parks and investigate the feasibility of additional charging points across IBC car parks	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2025	2030	Ipswich Borough Council	Ipswich Borough Council	No	Partially Funded	£500k - £1 million	Completed	Specific value not known but will contribute to overall reduction in NO_2 levels in town centre and surrounds Not modelled, est. <1 µg/m3	Provision of charging stations at IBC offices. Usage of EV charging points by the public Monitored and reviewed by the Councils Parking Services Department.	Number of charging points now installed at the following locations: Grafton House – 28 Gipping House – 9 Christchurch Mansion – 4 Chantry Park – 2 Holywells Park – 2 Crematorium – 1 Gainsborough sports centre – 2 Crown Car Park – 28 Elm St Car Park – 2 Upper Orwell Street North Car Park - 3. 3 DC charging points (twin), 32 EV charging points and 4 fork lift charging points proposed at New Way depot – completion date December 2024. The Council have also secured some external funding from the ORCS/Energy Savings Trust to install 24 charging units in 7 addtional car parks - William Street, Fore Street, Smart Street, Regent Street, Portman Road A, Cromwell Square, and South Street. while the back office systems for parking services, currently run through MiPermit, are procured. This is due for tender this year and once the selected provider is in place we should be able to continue with the	Provision of additional charging points depends on success of usage of current charging points. Usage at sites increasing year on year. Crown car park – Between June 2023 and April 2024 – there has been 25075hrs of charging sessions using total of 163321.18kWh. Upper Orwell North car park – Between June 2023 and April 2024 there has been 4607hrs8mins of charging sessions using total of 25511.25kWhr. Elm Street Car Park - Between June 2023 and March 2024 – there has been 5091hrs41mins of charging sessions using total of 76221.77kWh.

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														procurement of the chargepoints. We do have a large funding gap for that project so it is reliant on further IBC funding being provided.	
11 (low priority)	Work with Bus Operators in the town (i.e. Ipswich Buses, First, Norse, Beestons), to encourage the renewal of their fleet to cleaner i.e. Euro VI or better and/or low emission, hybrid buses, on certain routes	Vehicle Fleet Efficiency	Other	2025	2030	Suffolk County Council and Ipswich Borough Council	Bus Operators (plus other sources of funding)	NO	Partially Funded	>10m	Implementation	Specific value not known but will contribute to overall reduction in NO_2 levels in town centre and surrounds Not modelled, est. >1 µg/m3	Reduced fleet emissions	First - The Current fleet profile is as follows: 1 x Euro 3, 13 x Euro 4, 15 x Euro 5, 26 X Euro 6. The DfT funding of the £2 fare cap remains in place until the end of December 2024. Any vehicle replacements will continue to move them towards lower emission standards although given the rural nature of routes and the current range limitations of electric vehicles these will be incremental and staged. We are actively looking at new technologies and battery improvements which we hope will present new opportunities in the near future. First are also trying to encourage sustainable travel and they have entered into an agreement with Ipswich Town FC to promote bus services and to offer free Park and Ride to ticket holders for some matches. https://www.itfc.co.uk/news/2024/may/05/town-partner-with-first-bus/. Ipswich Buses - The company has added seven additional vehicles to its fleet in 2024. All seven vehicles were Euro-VI graded. This has allowed the company to begin the process of removing Euro-III-graded vehicles from its fleet. It is the company's ambition to dispose of all remaining Euro-III-graded vehicles in 2025. The current emission profile is below. Euro 3 x 6, Euro 4 x 8, Euro 5 x 47, Euro 6 x 13. Total fleet size:74 Ipswich Buses is currently compiling its future strategy. The Ipswich Buses Strategic Plan will set out the strategic plan for Ipswich Buses over the next 6-year period (two, three-year business planning cycles). Alongside this document will sit the Ipswich	

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Date	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
														Buses Fleet Strategy which will outline the organisation's approach to its fleet and feet replacement during this period. A pillar on which the fleet replacement strategy will be built will be the focus on improving air quality making environmentally responsible vehicle purchases. A draft strategy has been compiled however, must be approved by the IBL Board and shareholders before it is adopted. In advance of this, all figures quoted draft projections. Working on draft projections the company hopes to operate vehicles with the current emissions profile by 2030: Euro 5 x 31, Euro 6 x 43 Total fleet size: 74 NB - these projections are based on a like-for-like service provision not accounting for growth. To date all vehicle purchases have been made from reserves however, an ongoing fleet replacement will require a mixture of self-funding and credit. This will therefore require a mixture of new and nearly new vehicles to achieve, with the cost of new vehicles ranging from approx. £230,000 (single deck) to £290,000 (double deck).	
12 (low priority)	Delivery of Bus Service Improvement Plan (BSIP)	Transport Planning and Infrastructure	Bus Route Improvements	2025	TBC	Suffolk County Council, Ipswich Borough Council Bus companies	TBC	No	Part Funded	>10m (£150k approx. for design work)	Planning	Specific value not known but will contribute to overall reduction in NO_2 levels in town centre and surrounds Not modelled, est. >1µg/m3	Reduced Fleet Emissions	Progress can be found at https://www.suffolkonboard.com/suffolk-enhanced-partnership/bus-service-improvement-plan-bsip/	
13 (medium priority)	Continue to explore the possibility and apply to DEFRA for grant funding under Air Quality Grant	Public Information	Other	2025	2030	Ipswich Borough Council	Ipswich Borough Council	YES	Funded	£100k - £500k	Implementation	Insufficient detail to quantify this measure. Reduction expected will depend on the grant project applied for.	Depends on the nature of the works relating to grant funding. Current grant project will be a reduction in domestic burning complaints.		

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Date	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
	Scheme (if available) and any other appropriate funding												Reduced PM concentrations		
14 (low priority)	Continued implementation of taxi licencing policy 2024-2027	Promoting Low Emission Transport	Taxi Licensing conditions	2024	2027	Ipswich Borough Council	Ipswich Borough Council	No	Funded	<£10k	Implementation	Specific value not known but will contribute to overall reduction in NO_2 levels in town centre and surrounds Not modelled, est. <1 µg/m3	Reduction in non-euro 6 diesel Monitored and reviewed by the Councils Licencing Department	Completed - New Hackney Carriage and Private Hire Licensing Policy 2022-2025	Future revisions to this policy are likely to include requirements for vehicles licensed as taxi and private hire in Ipswich to be zero or extremely low carbon emission.
15 (high priority)	Delivering air quality improvements through the planning system. Includes ongoing delivery of the Local Plan and Low Emissions SPD	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2025	2030	Ipswich Borough Council	Ipswich Borough Council	No	Funded	£10-50k	Implementation	Specific value not known but will contribute to overall reduction in NO_2 levels in town centre and surrounds Not modelled. Est 1-5ug/m3.	Ongoing implementation of policy and guidance	Ongoing implementation of policy.	Local planning policies DM1 and DM2 relate to sustainable construction and decentralised renewable or low carbon energy. The Councils Low Carbon Guide for Developers has been produced to support developers in working towards net zero.
16 (low priority)	Supporting, where appropriate, the measures identified in the Ipswich Strategic Planning Area Transport Mitigation Strategy developed by Suffolk County Council to support the Ipswich Strategic Plan Area (ISPA) local plans, works to be funded by the ISPA authorities	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality	2025	TBC	Suffolk County Council. IPSA authorities	IPSA authorities	NO	Not Funded	Unknown	Planning	Specific value not known but will contribute to overall reduction in NO_2 levels in town centre and surrounds Not modelled. Est 1-5ug/m3.	Implementation of transport mitigation strategy	The Ipswich Strategic Planning Area (ISPA) mitigation strategy has been used to secure sustainable transport mitigation on larger sites, such as Wolsey Grange 2 recently. But coming up with a funding formula which can be applied to a wider range of rural and urban sites has proven to be more difficult. Discussions are ongoing with the District / Borough councils to try and refine a project plan and agree on a mechanism for funding. The Funding Strategy Group continues to meet regularly to find a way that will allow the Highway Authority to secure contributions to mitigate the cumulative impacts of development in the Ipswich Strategic Planning Area.	Not much further progress has been made on this since the last ASR. All adopted Local Plans have policies to secure ISPA Transport Mitigation contributions from developers and this is built into CIL arrangements at East Suffolk and Babergh/Mid Suffolk. In Ipswich for larger sites, there is some overlap with Damage Costs mitigation as part of the Low Emissions SPD which is designed to capture contributions and work to reduce the transport impact on air quality in Ipswich. .

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Date	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
17 (low priority)	Car Clubs & E Bike Hire Schemes	Sustainable Transport	Sustainable Transport	2025	Not known	Suffolk County Council, Ipswich Borough Council	Suffolk County Council, Ipswich Borough Council	No	Not funded	£800k+	Planning - Implementation dependant on funding	Specific value not known but will contribute to overall reduction in NO_2 levels in town centre and surrounds. Not modelled, est. <0.5µg/m3	Implementation of schemes	Currently out to procurement for two 'on-street' electric car clubs to be sited in residential areas in Ipswich with planned launch in April 2025. No formal e-bike hire scheme planned at the moment. During informal discussions with providers, entry financing in the region of £800k+ is likely to be required. Providers also say that e-scooters are an essential part of the mix to make a scheme viable and no further trials of these can take place at the moment. Hiya Car Club providing two cars as part of Grafton Way development.	A report by CoMoUK in 2021 indicates that 20 private cars are replaced by each car club vehicle. They also state that car club vehicles have 89% lower NOx and 72% lower PM2.5 emissions than average UK cars . Research conducted by CoMoUK also suggests that bike hire schemes save 3.7 car miles per user per week.
18 (low priority)	Fleet Recognition Schemes	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	2025	Not known	Suffolk County Council, Ipswich Borough Council	Suffolk County Council, Ipswich Borough Council	No	Not funded	TBC	Planning - Implementation dependant on funding	Specific value not known but will contribute to overall reduction in NO_2 levels in town centre and surrounds. Not modelled, est. <0.5µg/m3	Number of firms signed up to scheme. Monitored and reviewed annually as part of ASR submission.	Measure feasibility being explored	
19 (low priority)	Undertake pilot project to test 'micro-consolidation centre for distribution of commercial light goods	Freight and Delivery Management	Delivery and Service Plans	2025	Not known	Suffolk County Council, Ipswich Borough Council, Local Delivery Operators	Suffolk County Council, Ipswich Borough Council	No	Not funded	TBC	Planning - Implementation dependant on funding and suitable location	Specific value not known but will contribute to overall reduction in NO_2 levels in town centre and surrounds. Not modelled, est. <0.5µg/m3	Number of deliveries made by renewable means	Measure feasibility being explored	Investigate the viability of incentivising sustainable modes of last mile delivery, given LGVs are dominant contributor sources in AQMAs
20 (low priority)	Assist the Councils Car Parking Services in the development of their policies and strategies to promote clean travel and improved air quality. Review	Promoting Low Emission Transport	Other	TBC	TBC	Ipswich Borough Council	Ipswich Borough Council	No	Not funded	Not known	Planning	Specific value not known but will contribute to overall reduction in NO2 levels in town centre and surrounds. Not modelled, est. <0.5µg/m3	Not known at this stage	Measure feasibility being explored	

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Date	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
	use of short and long stay car parks														
21 (No priority given as measure relates to CO^2 emissions)	Supporting where appropriate, Suffolk Climate Change, Environment & Energy Board's development and implementation of the Suffolk Climate Emergency Plan.	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality	2021	2030	Suffolk Climate Change, Energy & Environment Board (SCCEEB) reporting to Suffolk Public Sector Leaders (SPSL)	Suffolk Climate Change, Energy & Environment Board (SCCEEB) reporting to Suffolk Public Sector Leaders (SPSL)	NO	Partially Funded	£1 million - £10 million	Implementation	- (Relates to CO2 emissions not NO_2)	See Plan for specific KPIs	Published in 2021. Work progressing to implement the plan.	Climate and air quality policies often overlap, so joint consideration will be essential to success in both areas
22 (No priority given as measure relates to PM emissions)	Development and implementation of campaign to provide information about the impacts of domestic burning and good practice, including wood burners and burning of garden waste	Public Information	Other	2021	2024	Ipswich Borough Council	Ipswich Borough Council, DEFRA	YES	Funded	£100k - £500k	Implementation	PM reduction not estimated but communications campaigns can increase awareness of air quality issues and drive behavioural change	Reduction in number of domestic burning complaints received. Reduction in PM concentrations Monitored and reviewed via IBC's Environmental Protection Department Increased awareness of the impacts of domestic burning from SCC obtained data	Information produced on IBC website relating to domestic burning. Bonfire complaint letters also updated with information. Social media posts produced alongside designs around winter burning. Information currently being collected on outdoor burning. Ipswich secured £115,632 from Defra as part of the 2021 Air Quality Grant Programme to run a monitoring and behavioural change campaign around domestic burning. Project ongoing. Ipswich have committed £33,939 in match funding. Hetas and Woodsure have been proactively looking online at wood sellers and identifying those who are not signed up to Woodsure 'Burn Right' campaign.	Ongoing project
23 (medium priority)	Ensure that point source industrial emissions are minimised through the Environmental Permitting process	Environmental Permits	Introduction/ increase of environmental funding through permit systems and economic instruments	Ongoing	Ongoing	Ipswich Borough Council	Ipswich Borough Council, operators of permitted processes	No	Funded. Cost recovery based on activity and applicable regulations	<£10k (Cost neutral)	Implemented	Not modelled, est. <0.5µg/m3	All permitted processes to be inspected at a frequency in line with their risk rating and suitable action taken for non-compliance. Monitored and reviewed via IBC's	All permitted processes being inspected in line with their risk rating and suitable action taken for non-compliance.	The Council charges for permits in line with the Environmental Permitted Regulations

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Date	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
													Environmental Protection Department as part of annual PPC returns to Defra.		
24 (No priority given as measure relates primarily to non-NOx emissions)	Development and implementation of a campaign to raise awareness on indoor air quality, including supporting work outlined in the SCC Suffolk Air Quality Strategy, with particular focus on properties within the AQMAs	Public Information	Other	2025	TBC	Ipswich Borough Council, Suffolk County Council	Ipswich Borough Council, Suffolk County Council	No	Not funded	Unknown	Planning	Relates primarily to non-NOx emissions. Reductions not estimated but communications campaigns can increase awareness of air quality issues and drive behavioural change	Increased awareness of the health impacts of poor indoor air quality particularly including those living in AQMA's – SCC data The number of annual referrals to home efficiency schemes (such as Warm Homes Suffolk) and grants including those living in AQMA's – SCC data Number of visitors to the SCC Housing and Health webpages	Suffolk County Council (SCC) are currently updating the Suffolk Air Quality Strategy (due to be published Spring 2025). This has an increased focus on indoor air quality and will be monitored by SCC with data shared with IBC where applicable.	The type of energy efficiency retrofits provided depends on the property and resident; this will most likely be to heating insulation and ventilation but could also include other measures. The analysis team at Public Health Suffolk and Warm Homes Suffolk have confirmed a report can be run identifying the number of properties specifically within the AQMAs that have undergone improvements.
AQMA Specific Measures															
25 (AQMAs 2 and 5) (Low priority)	Review opportunities for alterations to traffic management to reduce congestion in AQMAs, including the provision of red routes.	Traffic Management	UTC, Congestion management, traffic reduction	2025	Currently unknown	Suffolk County Council	Suffolk County Council	NO	Not Funded	Unknown	Planning	Specific value not known but will contribute to overall reduction in NO_2 levels in town centre and surrounds. Not modelled, est. <1µg/m3	Reduction in congestion on Civic Drive/ St Matthews Street roundabout Reduction in NO_2 concentrations. Primarily monitored via diffusion tube monitoring	An air quality consultant has been appointed to undertake a study to determine the feasibility of introducing an option or package of options aimed at reducing air pollution from road transport within the borough of Ipswich, with particular focus on the urban area settlements and the AQMAs.	No completion for this measure known. Possible mitigation dependant on funding and appropriate support from stakeholders. Likely that funding will be sought as and when opportunity arise, unless suitable funding agreement made available from other sources e.g. Defra or DfT.
26 (AQMA 5) (Medium priority)	Promote the use of Norwich Road Shoppers Car Park, short term parking bays behind	Traffic Management	Other	2025	2030	Ipswich Borough Council	Ipswich Borough Council	NO	Funded	<£10k	Implementation	Specific value not known but will contribute to overall reduction in NO_2 levels in town centre and surrounds. Not modelled, est. <0.5µg/m3	Reduction in congestion along Norwich Road/St Matthews Street. Number of penalty notices served – monitored by the Councils Parking	Between 15/5/2023 - 13/5/2024 the following number of PCNs were served along Norwich Road, St Matthews Street and St Matthews Street Service Road (North): 1068 for parking on a restricted street 38 for loading in a restricted street/3 for parking in a bus stop or	

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Date	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
	businesses on Norwich Road. Incentivising use of allocated parking and enforcement against unauthorised on street loading/ parking to assist with the reduction of congestion in the area.												Services Department.	stand/ 5 for parking on a pedestrian crossing. 7 PCN's were issued in Norwich Road Shoppers Car Park for overstaying in the free parking bays.	
27 (AQMA 5) (Low priority)	Review (in conjunction with other IBC/ SCC work streams), the traffic management arrangements in the St Matthews St/ Norwich Rd corridor. Maintaining delivery facilities, whilst minimising disruption to traffic flows.	Freight and Delivery Management	Quiet & out of hours delivery	2025	Currently unknown	Suffolk County Council	Suffolk County Council	No	Not Funded	Unknown	Planning	Specific value not known but will contribute to overall reduction in NO_2 levels in town centre and surrounds. Not modelled, est. <1µg/m3	Reduction in congestion along Norwich Road & St Matthews Street. Reduction in NO_2 concentrations. Primarily monitored via diffusion tube and automatic monitoring	-	An action within the Suffolk Air Quality Strategy Action Plan, published in May 2023, is to scope out evidence-based initiatives to reduce transport related emissions. An air quality consultant has now been appointed to undertake a study to determine the feasibility of introducing an option or package of options aimed at reducing air pollution from road transport within the borough of Ipswich, with particular focus on the urban area settlements and the AQMAs.

5.1 Timescales of the AQAP Measures

Several measures outlined in Table 5.2 were implemented prior to the launch of this AQAP. A number of these measures are ongoing commitments and therefore run the whole life of the AQAP. Most measures should be complete by 2030.

5.2 Air Quality Partners

Ipswich Borough Council is collaborating with Suffolk County Council on the below actions:

- Improving facilities and infrastructure for walking and cycling
- Developing the Local Transport Plan
- Reviewing opportunities for traffic management
- District wide Clean Air Days
- Ongoing commitment to the Suffolk Anti-Idling Campaign
- Promoting travel alternatives such as walking, cycling, care sharing and use of public transport
- Car Clubs
- Fleet recognition schemes
- A pilot of a micro-consolidation centre

Ipswich Borough Council and Suffolk County Council are working with bus operators on the below actions:

- Encouraging fleet renewal
- Delivery of the Bus Service Improvement Plan (BSIP)

Ipswich Borough Council are collaborating with its Ipswich Strategic Planning Area (ISPA) partners to develop the ISPA Local Plans.

Ipswich Borough Council and Suffolk County Council are both working with its partners at the University of Suffolk and the Suffolk and North East Essex SNEE to plan and deliver additional projects currently not included in this AQAP.

5.3 Maintaining Safe Air Quality

Ipswich Borough Council will persist in monitoring local air quality and providing analyses within the ASRs to ensure the objectives are maintained in the future. An Air Quality Strategy (AQS) will be produced and implemented upon the revocation of all AQMAs within Ipswich in the future. Collaboration with air quality partners on the long-term projects, particularly those focused on public information and regional policies, will continue to be integral to any local Air Quality Strategy, ensuring sustained success after the objectives have been achieved.

Ipswich Borough Council confirm that monitoring will continue within the district to ensure any substantial uplift in traffic numbers that may increase NO_2 levels will be captured in monitoring results. Furthermore, any AQS put in place will be regularly reviewed and updated as necessary.

6 Quantification of Measures

6.1 Assumptions

Most of the action plan measures set out in Table 5.2 are very difficult to quantify. Some measures do allow for a high-level analysis of reductions in emissions. A summary consideration of the measures and whether they can be quantified is contained in Table 6.1 below. Where this has not been possible professional judgement based off experience and expertise has been utilised to provide an approximate quantification.

An air quality consultant is currently appraising a number of possible options which are included within the measures table. Options selected will include a quantification of emissions and cost benefit analysis. Further details will be provided as the project proceeds.

The table also details the AQMA most affected by the measures.

To note: Measures 21 and 22 in Table 6.1 below relate to PM and CO_2 emissions and therefore NO_2 emissions reductions have not been calculated as a result.

Table 6.1 – Assumptions around Quantification of Measures

Measure No.	Measure	Assumptions for Quantification	Assumed Reduction in AQMA		
			AQMA 2	AQMA 3	AQMA 5
1	Development and implementation of both the Suffolk and Ipswich Cycling and Walking Infrastructure Plans, and work to improve existing cycle routes	Insufficient detail to quantify this measure but Officers carried out a literature review. DfT Guidance[10] states as more of our short journeys (48% of all trips in urban towns and cities are under 2 miles) are walked or cycled, the air quality benefits will be complemented by significant improvements in public health and wellbeing. It is estimated that active travel can deliver between 1 MtCO2e and 6 MtCO2e savings from 2020 to 2050 in the Governments transport decarbonisation plan. Reduction based on professional judgement.	~1-5µg/m^3	~1-5µg/m^3	~1-5µg/m^3
2	Development and implementation Local Transport Plan to create a more efficient use of the highway in and around the town, and across Suffolk	Suffolk Local Transport Plan indicates that the proportion of walking and wheeling trips must increase from 13% to 16%, and cycle trips from 5% to 8% to achieve net zero in Suffolk by 2024. While this policy measure will improve air quality, it is not considered possible to quantify its overall effect. Reduction based on professional judgement.	~1-5µg/m^3	~1-5µg/m^3	~1-5µg/m^3
3	Ongoing commitment to promoting the Suffolk anti-idling campaign	The Air Quality Expert Group report 'Exhaust Emissions from Road Transport'[11] advise that further research is required to provide advice on the effectiveness of anti-idling due to the differing emissions standards and exhaust management systems of vehicles on UK roads. Some broad principles however would be that for extended periods of time spent stationary, meaning several minutes and more, engine-off would likely be the right action irrespective of vehicle. Insufficient detail to quantify this measure. Reduction based on professional judgement	<0.5µg/m^3	<0.5µg/m^3	<0.5µg/m^3

[10] Department for Transport, 2022, Active travel: local authority toolkit

[11] AQEG, 2021, Exhaust Emissions from Road Transport

4	Expansion of air aware schools toolkit to further raise awareness of air quality in schools, particularly schools near AQMAs	Insufficient detail to quantify this measure but Officers carried out a literature review. A study at Lambeth found that School Streets reduced nitrogen dioxide by up to 23 per cent during morning drop off. 81 per cent of parents and carers supported the measures at their children's school. Research also showed that 18 per cent of parents reported driving to school less as a result of School Streets[12]. Reduction based on professional judgement	<0.5µg/m³	<0.5µg/m³	<0.5µg/m³
5	Promote the Councils Green Travel Plan to employees, including use of agile working	Insufficient detail to quantify this measure. Reduction based on literature review and professional judgement. According to a British case study on Travel Plan[13], an average reduction of 18% in car journeys was achieved among surveyed British organisations.	<1µg/m³	<1µg/m³	<1µg/m³
6	Support air quality events such as Clean Air Day and Clean Air Night	Insufficient detail to quantify this measure, will vary depending on the event. Reduction based on literature review and professional judgement. Global Action Plan, who organise Clean Air Day estimate that in the 2023 campaign, 35% of those who had heard about the campaign had cycled over the past month vs. 12% of those who hadn't heard of the campaign. 52% of those who had heard about the campaign had walked over the past month vs. 40% of those who hadn't heard of the campaign[14]. Global Action Plan also stated for Clean Air Night 2024, 25% of people who had heard of the campaign said they would burn less, 24% said they would stop burning, and 21% said they would not buy a stove[15].	<0.5µg/m³	<0.5µg/m³	<0.5µg/m³

[12] Greater London Authority, 2021, New studies show School Streets improve air quality

[13] 11 Newson, C., Cairns, S. & Davis, A. (2002). Making travel plans work: Lessons from UK case studies

[14] Global Action Plan, 2023, Clean Air Day 2024 – Celebration and Insights report.

[15] Global Action Plan, 2024, Clean Air Night 2024 – Insights and celebration

7	Investigate the feasibility of promoting air quality messages on IBC procured variable message signs around Ipswich	Insufficient detail to quantify this measure. Reduction based on professional judgement.	<0.5µg/m³	<0.5µg/m³	<0.5µg/m³
8	Promotion of travel alternatives e.g. walking, cycling, public transport (including park and ride), car sharing & air quality matters. Measure includes: Development and implementation of the Ipswich Air Aware Campaign	Insufficient detail to quantify this measure. Reduction based on professional judgement.	<0.5µg/m³	<0.5µg/m³	<0.5µg/m³
9	Procurement of low emission vehicles in Ipswich Borough Council Fleet	Insufficient detail to quantify this measure but an estimated reduction in NOx and $PM_{2.5}$ emissions of the overall fleet switching 100% to EV has been calculated in section 6.1.1 below. 20 vehicles replaced for EV variants in 2024/2025 with an overall CO_2 reduction of 2203g/km.	<0.5µg/m³	<0.5µg/m³	<0.5µg/m³
10	Provision of EV charging points across IBC offices, Crown Street and Elm Street public car parks and investigate the feasibility of additional charging points across IBC car parks	Insufficient detail to quantify this measure. Reduction based on professional judgement.	<1µg/m³	<1µg/m³	<1µg/m³
11	Work with Bus Operators in the town (i.e. Ipswich Buses, First), to encourage the renewal of their fleet to cleaner i.e. Euro VI or better and/or low emission, hybrid buses, on certain routes	Insufficient detail to accurately quantify this measure, but a quantitative calculation has been carried out below – see section 6.1.1.	>1µg/m³	>1µg/m³	>1µg/m³
12	Delivery of Bus Service Improvement Plan (BSIP)	Insufficient detail to quantify this measure. Reduction based on professional judgement.	>1µg/m³	>1µg/m³	>1µg/m³
13	Continue to explore the possibility and apply to DEFRA for grant funding under Air Quality Grant Scheme (if available) and any other appropriate funding	Insufficient detail to quantify this measure. Reduction expected will depend on the grant project applied for.	-	-	-
14	Continued implementation of taxi licencing policy 2022-2025	Insufficient detail to quantify this measure. Reduction based on professional judgement.	<1µg/m³	<1µg/m³	<1µg/m³
15	Delivering air quality improvements through the planning system. Includes ongoing delivery of the Local Plan and Low Emissions SPD	Insufficient detail to quantify this measure. Reduction based on professional judgement.	~1-5µg/m³	~1-5µg/m³	~1-5µg/m³

16	Supporting, where appropriate, the measures identified in the Ipswich Strategic Planning Area Transport Mitigation Strategy developed by Suffolk County Council to support the Ipswich Strategic Plan Area (ISPA) local plans, works to be funded by the ISPA authorities	ISPA mitigation of the transport issues within Ipswich has been identified as delivering modal shift in the order of 7% for new development and 9% for existing trips[16]. Insufficient detail to quantify this measure. Reduction based on professional judgement.	~1-5µg/m^3	~1-5µg/m^3	~1-5µg/m^3
17	Car Club and E Bike Hire Schemes	Insufficient detail to quantify this measure but Officers carried out a literature review. A report by CoMoUK in 2021 indicates that 20 private cars are replaced by each car club vehicle. They also state that car club vehicles have 89% lower NOx and 72% lower PM2.5 emissions than average UK cars[17]. Research conducted by CoMoUK also suggests that bike hire schemes save 3.7 car miles per user per week[18].	<0.5µg/m^3	<0.5µg/m^3	<0.5µg/m^3
18	Fleet Recognition Scheme	Insufficient detail to quantify this measure but Officers carried out a literature review. A case study of the ECO Stars scheme indicated that emissions savings of 12% NOx and 41% PM were possible[19].	<0.5µg/m^3	<0.5µg/m^3	<0.5µg/m^3
19	Undertake pilot project to test 'micro-consolidation centre' for distribution of commercial light goods	Insufficient detail to quantify this measure. Reduction based on professional judgement. Officers attempted a literature review but found little information. Currently, the Impact on Urban Health are trialling and evaluating a 'last mile' logistics hub to understand how effective the consolidation of urban deliveries could be in improving air quality and public health[20].	<0.5µg/m^3	<0.5µg/m^3	<0.5µg/m^3

[16] Suffolk County Council, 2019, Transport Mitigation Strategy for the Ipswich Strategic Planning Area

[17] CoMoUK, 2021, Car Club Annual Report - United Kingdom 2021

[18] CoMoUK, 2021, Bike Share Annual Report GB 2021

[19] Public Health England, 2021, Caste Study - ECO Stars Fleet Recognition Scheme

[20] Impact on Urban Health, 2024, Testing if 'last mile' logistics hubs can reduce air pollution

20	Assist the Councils Car Parking Services in the development of their policies and strategies to promote clean travel and improved air quality. Review use of short and long stay car parks.	Insufficient detail to quantify this measure. Reduction based on professional judgement.	<1µg/m³	<1µg/m³	<1µg/m³
21	Supporting, where appropriate, Suffolk Climate Change, Environment & Energy Board's development and implementation of the Suffolk Climate Emergency Plan.	Measure relates to CO_2 emissions	-	-	-
22	Development and implementation of campaign to provide information about the impacts of domestic burning and good practice, including wood burners and burning of garden waste	Measure relates to PM emissions	-	-	-
23	Ensure that point source industrial emissions are minimised through the Environmental Permitting process	Difficult to quantify this in terms of absolute air quality impact, other than to say it will be positive. Reduction based on professional judgement.	<0.5µg/m³	<0.5µg/m³	<0.5µg/m³
24	Development and implementation of a campaign to raise awareness on indoor air quality, including supporting work outlined in the SCC Suffolk Air Quality Strategy.	Measure primarily relates to non-NOx emissions	-	-	-
25	Review opportunities for alterations to traffic management to reduce congestion in AQMAs, including the provision of red routes.	Insufficient detail to quantify this measure. Reduction based on professional judgement.	<0.5µg/m³	<0.5µg/m³	<1µg/m³
26	Promote the use of Norwich Road Shoppers Car Park, short term parking bays behind businesses on Norwich Road. Incentivising use of allocated parking and enforcement against unauthorised on street loading/ parking to assist with the reduction of congestion in the area.	Insufficient detail to quantify this measure. Reduction based on professional judgement.	<0.5µg/m³	<0.5µg/m³	<1µg/m³

27	Review (in conjunction with other IBC/ SCC work streams), the traffic management arrangements in the St Matthews St/ Norwich Rd corridor. Maintaining delivery facilities, whilst minimising disruption to traffic flows.	Insufficient detail to quantify this measure. Reduction based on professional judgement.	<0.5µg/m³	<0.5µg/m³	<1µg/m³

6.1.1 Detailed Quantitative Calculation

Two measures are quantified by using Emissions Factors Toolkit (EFT) to estimate the reduction in Road NOx emission. While the NO_2 concentrations are not directly predicted, the reduction in Road NOx emission can help indicate the impact of these measures.

Measure 9: Procurement of low emission vehicles in Ipswich Borough Council Fleet

Currently the Council operates 198 vehicles in its fleet, excluding plant. 52 of these vehicles are already EV.

The Emissions Factor Toolkit (EFT) was used to approximate emissions reductions from switching the current fleet fully to EV. The below calculations have been estimated using current available fleet data. It is estimated that each vehicle travels 5,000 miles (8046.72 km) annually, but this is vary based on the nature of each vehicles task.

Current Fleet

EV = 52 (36.5 % car, 63.5% van)

Source Name	Pollutant Name	All Vehicles (g/km)	Electric Cars (g/km)	Electric LGVs (g/km)
EV	NOx	-	-	-
EV	PM2.5	**1.07017**	0.25717	0.81300

Euro 6 = 83 (25% rigid HGV and 75% van – diesel)

Source Name	Pollutant Name	All Vehicles (g/km)	Diesel LGVs (g/km)	Rigid HGVs (g/km)
Euro 6	NOx	**81.70279**	72.45283	9.24997
Euro 6	PM2.5	**2.93145**	1.58687	1.34458

Euro 5 = 62 (5% diesel HGV, 95% van – diesel)

Source Name	Pollutant Name	All Vehicles (g/km)	All LDVs (g/km)	All HDVs (g/km)
Euro 5	NOx	**80.91173**	68.55376	12.35798
Euro 5	PM2.5	**1.81559**	1.50147	0.31412

Euro 4 = 1 (100% van – diesel)

Source Name	Pollutant Name	All Vehicles (g/km)	All LDVs (g/km)
Euro 4	NOx	**0.86063**	0.86063
Euro 4	PM2.5	**0.05557**	0.05557

Future switch to a 100% EV Fleet

EV = 198 vehicles (19 cars (10%), 24 HGV (12%), 155 vans (78%))

Source Name	Pollutant Name	All Vehicles (g/km)
EV switch	NOx	-
EV switch	PM2.5	5.52040

Calculated NOx emission reduction – 100% switch to EV
NOx - 0.86063, 80.91173, 81.70279 = 163.47515 g/km 5000 miles per year per vehicle = 8046.72 per vehicle 8046.72 x 198 vehicles = 1593250.56 km for fleet per annum 1593250.56km x 163.47515 g/km = 260456874.284 g (**260.456874284 tonnes per annum**) **Estimated NOx reduction of approximately 260.5 tonnes if fleet switches 100% to EV**

Calculated $PM_{2.5}$ emission reduction – 100% switch to EV
PM2.5 - 0.05557, 1.81559, 2.93145, 1.07017 = 5.87278 g/km 5000 miles per year per vehicle = 8046.72 per vehicle 8046.72 x 198 vehicles = 1593250.56 km for fleet per annum 1593250.56km x 5.87278 g/km = 9356810.02376g (**currently 9.356810023760001 tonnes per annum**) Future $PM_{2.5}$ = 5.52040 g/km 1593250.56km x 5.52040 g/km = 8795380.39142g (**8.79538039142 tonnes per annum**) **Approx. 6% reduction in $PM_{2.5}$ for a 100% switch to EV**

The calculations show that the Council can potentially reduce their NOx emissions by around 260.5 tonnes per annum if the fleet switched 100% to EV (excluding plant).

Furthermore, the Council could reduce their $PM_{2.5.}$ emissions by 6% if the fleet switched 100% to EV.

Measure 11: Work with Bus Operators in the town (i.e. Ipswich Buses, First), to encourage the renewal of their fleet to cleaner i.e. Euro VI or better and/or low emission, hybrid buses, on certain routes

The below calculations have been estimated using current and projected fleet data from the bus operators. AADT was estimated based on using bus timetables to determine frequency. This is a very rough calculation as the Euroclass of buses passing through the AQMA's vary daily based on service need.

First Buses project their fleets year on year, whereas Ipswich Buses have given a longer-term projection to 2030. No buses operated by First travel past Tube 30 (worst case receptor located in AQMA 3), hence why AQMA 3 is not included in the quantitative calculation of their fleet upgrades.

Table 6.2 – Detailed Quantitative Calculation – First Buses upgrading fleet between 2024 and 2025.

2024 Euroclass:	**Total**	**2025 Euroclass:**	**Total**
Euro 4	12	Euro 5	14
Euro 5	14	Euro 6	38
Euro 6	26	**Total fleet size:**	52
Total fleet size:	**52**		

AQMA 2 – Tubes 11, 12, 19	
AADT (based on approximation from bus timetable)	258
Speed	13kph
AQMA link length	1.418km
Annual Link NOx Emissions – 2024	716.60497 kg/yr
Annual Link NOx Emissions – 2025	494.84035 kg/yr
Reduction in Road NOx from fleet upgrades	**31%**
AQMA 5 – Tubes 64 & 65	
AADT (based on approximation from bus timetable)	316

Speed	25kph
AQMA link length	0.314km
Annual Link NOx Emissions – 2024	14.91158 kg/yr
Annual Link NOx Emissions – 2025	9.53675 kg/yr
Reduction in Road NOx from fleet upgrades	**36%**

Table 6.2 shows that this measure can result in the bus fleet achieving a 31% NOx emission reduction in AQMA 2, and a 36% NOx emission reduction in AQMA 5. **NOTE:** this is an emissions reduction calculation to the overall fleet based on fleet projections, not the contribution to the overall expected NOx emission reduction in the AQMAs from improvements to the bus fleet (source apportionment shows buses make up a small proportion, approximately 3.4 – 5.9%, of the overall fleet emissions in the AQMAs).

Table 6.3 – Detailed Quantitative Calculation – Ipswich Buses upgrading fleet between 2024 and 2030.

2024 Euroclass	**Total**		
Euro 3	6	**2030 Euroclass**	**Total**
Euro 4	8	Euro 5	31
Euro 5	47	Euro 6	43
Euro 6	13	**Total fleet size:**	**74**
Total fleet size:	**74**		
AQMA 2 – Tubes 11, 12, 19			
AADT (based on approximation from bus timetable)			162
Speed			13kph
AQMA link length			1.418km
Annual Link NOx Emissions – 2024			812.16017kg/yr
Annual Link NOx Emissions – 2030			448.28485 kg/yr
Reduction in Road NOx from fleet upgrades			**45%**
AQMA 3 – Tube 30			
AADT (based on approximation from bus timetable)			393

Speed	32kph
AQMA link length	1.33km
Annual Link NOx Emissions – 2024	833.91150 kg/yr
Annual Link NOx Emissions – 2030	435.98924 kg/yr
Reduction in Road NOx from fleet upgrades	**48%**
AQMA 5 – Tubes 64 & 65	
AADT (based on approximation from bus timetable)	316
Speed	25kph
AQMA link length	0.314km
Annual Link NOx Emissions – 2024	201.72993 kg/yr
Annual Link NOx Emissions – 2030	108.43403 kg/yr
Reduction in Road NOx from fleet upgrades	**46%**

Table 6.3 shows that this measure can result in the bus fleet achieving a 45% NOx emission reduction in AQMA 2, a 48% NOx reduction in AQMA 3, and a 46% NOx emission reduction in AQMA 5. **NOTE:** this is an emissions reduction calculation to the overall fleet based on fleet projections, not the contribution to the overall expected NOx emission reduction in the AQMAs from improvements to the bus fleet (source apportionment shows buses make up a small proportion, approximately 3.4 – 5.9%, of the overall fleet emissions in the AQMAs).

An air quality consultant has been appointed to undertake a study to determine the feasibility of introducing an option or package of options aimed at reducing air pollution from road transport within the borough of Ipswich, with particular focus on the urban area settlements and the AQMAs. The report will also consider the economic benefits of the option(s) relative to predicted air quality improvements. A report on this work will be available in Summer 2025, with the findings incorporated into an updated version of this AQAP.

6.2 Cost Benefit Analysis of Measures

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.

6.2.1 Methodology

Measures included within this AQAP have been reviewed in line with the LAQM.TG(22) Supplementary Guidance for England, informed by professional judgement of officers from IBC and SCC, experience gained from previous projects/literature reviews into the effectiveness of similar interventions, including information and case studies on the Air Quality Hub.

Each measure is summarised in the following section, which includes a simple cost benefit analysis based on the metrics outlined in Table 6.2. As many of the measures are conceptual at this stage, these are largely qualitative comparisons but should aid the interpretation of the relative efficacy of each measure. This comparison also recognises that whilst measures may have varying impacts on air quality, that is not always the only consideration for their implementation. None of the metrics are given a stronger weighting as a result. The metrics within the analysis can be described as follows:

- Air Quality Impacts on AQMAs (AQ) - 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 Ipswich and elsewhere.
    - Low (<1 µg/m^3) minor improvement anticipated but unlikely to be explicitly detectable (i.e. within uncertainties of monitoring / modelling technique)
    - Medium (1-5 µg/m^3) – improvement anticipated of up to ~5µg/m3 NO_2 that could be demonstrated via desktop modelling study.

  - High (>5 µg/m^3) - significant impact anticipated of over 5µg/m3 NO_2 that could be demonstrated via modelling and likely to be detectable via local monitoring.

- Feasibility (F) - 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 IBC polices including climate strategy, planning policies
  - Public health impacts (PM2.5 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)
  - Time and resource intensity
  - Sources of funding available / possible
- Expected Cost of project (£) – anticipated financial implications of measure, the direct cost of implementation

Table 6.4 – Measure Cost Benefit Analysis (CBA)

Level	Air Quality Impact (AQ)	Feasibility (F)	Expected Cost (£)
1	Low (<1 µg/m3) benefit to NO_2	Very difficult to implement, no political appetite, time and resource intensive, no funding available	High (>100,000 - 10 million)
2	Medium (1-5 µg/m3) benefit to NO_2	Possible to implement, moderately time intensive, may require additional support and resources	Medium (£10,000 - £100,000)
3	High (>5 µg/m3) benefit to NO_2	Measure has already been started/easy to implement, political support, sufficient resources, funding available	Low (<£10,000)
Example calculation of prioritisation score: Measure X: AQ (2) x F (2) x £ (3) = 12 CBA Rating Banding 0 – 5 = Low priority measure (graded red or orange) 6 – 11 = Medium priority measure (graded olive/green or green) 12+ = High priority measure (graded dark green)			

6.2.2 Cost Benefit Analysis

Following the above assessment, it has been possible to rank the measures by cost, benefit and feasibility, this is shown in Table 6.3 below. With the feasibility weighting meaning that measures which are the easiest to progress are scored higher, these are prioritised. Measures 21 and 22 relate to PM and CO_2 emissions so are not scored.

Table 6.5 – Cost Benefit Analysis of Measures

Measure No:	Measure	Air Quality Impact	Feasibility	Expected Cost	Overall Score
15	Delivering air quality improvements through the planning system. Includes ongoing delivery of the Local Plan and Low Emissions SPD	2	3	2	12
3	Ongoing commitment to promoting the Suffolk anti-idling campaign	1	3	3	9
4	Expansion of air aware schools toolkit to further raise awareness of air quality in schools, particularly schools near AQMAs	1	3	3	9
5	Promote the Councils Green Travel Plan to employees, including use of agile working	1	3	3	9
6	Support air quality events such as Clean Air Day and Clean Air Night	1	3	3	9
7	Investigate the feasibility of promoting air quality messages on IBC procured variable message signs around Ipswich	1	3	3	9
26	Promote the use of Norwich Road Shoppers Car Park, short term parking bays behind businesses on Norwich Road. Incentivising use of allocated parking and enforcement against unauthorised on street loading/ parking to assist with the reduction of congestion in the area.	1	3	3	9
23	Ensure that point source industrial emissions are minimised through the Environmental Permitting process	1	3	3	9
13	Continue to explore the possibility and apply to DEFRA for grant funding under Air Quality Grant Scheme (if available) and any other appropriate funding (scored to reflect an ambitious grant bid and costs to reflect estimated match funding)	2	2	2	8
1	Development and implementation of both the Suffolk and Ipswich Cycling and Walking Infrastructure Plans, and work to improve existing cycle routes	2	3	1	6

2	Development and implementation of Local Transport Plan to create a more efficient use of the highway in and around the town, and across Suffolk	2	3	1	6
8	Promotion of travel alternatives e.g. walking, cycling, public transport (including park and ride), car sharing & air quality matters. Measure includes: Development and implementation of the Ipswich Air Aware Campaign.	1	2	3	6
11	Work with Bus Operators in the town (i.e. Ipswich Buses, First, Norse, Beestons), to encourage the renewal of their fleet to cleaner i.e. Euro VI or better and/or low emission, hybrid buses, on certain routes	2	2	1	4
12	Delivery of Bus Service Improvement Plan (BSIP)	2	2	1	4
18	Fleet Recognition Schemes	1	2	2	4
25	Review opportunities for alterations to traffic management to reduce congestion in AQMAs, including the provision of red routes	2	2	1	4
27	Review (in conjunction with other IBC/ SCC work streams), the traffic management arrangements in the St Matthews St/ Norwich Rd corridor. Maintaining delivery facilities, whilst minimising disruption to traffic flows.	2	2	1	4
14	Continued implementation of taxi licencing policy 2024-2027	1	3	1	3
9	Procurement of low emission vehicles in Ipswich Borough Council Fleet	1	2	1	2
10	Provision of EV charging points across IBC offices, Crown Street and Elm Street public car parks and investigate the feasibility of additional charging points across IBC car parks	1	2	1	2
16	Supporting, where appropriate, the measures identified in the Ipswich Strategic Planning Area Transport Mitigation Strategy developed by Suffolk County Council to support the Ipswich Strategic Plan Area (ISPA) local plans, works to be funded by the ISPA authorities	2	1	1	2
17	Car Clubs & E Bike Hire Schemes	1	2	1	2
19	Undertake pilot project to test ‘micro-consolidation centre’ for distribution of commercial light goods	1	2	1	2
20	Assist the Councils Car Parking Services in the development of their policies and strategies to promote clean travel and improved air quality. Review use of short and long stay car parks	1	1	2	2
21	Supporting, where appropriate, Suffolk Climate Change, Environment & Energy Board’s development and implementation of the Suffolk	N/A	N/A	N/A	N/A

	Climate Emergency Plan **(plan primarily relates to CO_2 emissions so not scored)**				
22	Development and implementation of campaign to provide information about the impacts of domestic burning and good practice, including wood burners and burning of garden waste **(plan primarily relates to $PM_{2.5}$ emissions so not scored)**	N/A	N/A	N/A	N/A
24	Development and implementation of a campaign to raise awareness on indoor air quality, including supporting work outlined in the SCC Suffolk Air Quality Strategy **(action primarily relates to non-NOx emissions so not scored)**	N/A	N/A	N/A	N/A

6.3 Year of Objective Compliance

Ipswich Borough Council aims that the implementation of the outlined measures will result in the relevant objectives being attained by:

- 2030 within AQMA No.2
- 2027 within AQMA No.3
- 2030 within AQMA No.5

Appendix A: Response to Consultation

Following the approval for consultation of the draft Air Quality Action Plan (AQAP) in January 2025, a consultation process was undertaken for 6 weeks from 27th January 2025 to 9th March 2025. The survey was carried out online with paper copies of the survey available on request. The consultation asked respondents their opinions, via a survey, about the proposed actions for the Air Quality Action Plan. There was an opportunity throughout the survey to provide additional comments.

There were 2 main groups of consultees during the development of the Air Quality Action Plan, which were:

- Statutory Consultees – required by legislation
- The public – due to significant public interest in local air quality

A total of 26 responses were received. Of these responses, 23 were received via the online questionnaire and 3 by direct email. The Council have considered these comments and made some initial amendments to the plan. We will also discuss the comments received during the next steering group meeting. The AQAP will be updated again as required. Responses from statutory consultees are outlined in full below. Responses provided by non-statutory consultees are summarised below.

It was noted that all public responses were all from individuals. The Public Health Department at Suffolk County Council have previously engaged with the public on air quality and the associated health impacts. Findings from their engagement work will be taken forward in the implementation of measures within this AQAP. In addition, there are a significant number of projects that will have to be taken forward in collaboration with others. Some of these projects will be independently run, by their own project boards and groups, and may undertake their own specific consultation or stakeholder engagement, including a particular focus on consultation and engagement with those within AQMAs.

There were no measures within the draft AQAP that were not taken forward in the final AQAP.

Responses from Statutory Consultees

DEFRA

Comments: The Draft AQAP is accepted, on the basis that the following comments are incorporated into the Final AQAP. The Council is advised to take consideration of the commentary below in the further development and revision of the AQAP as it progresses to a final submission for it to be accepted and implemented.

Commentary

1. The public health context has been outlined relative to the area. More detail could be provided around the implementation of financially accessible measures relative to the socioeconomic status of the area. Areas of high NO_2 concentrations which correlate with high levels of deprivation could be identified to provide more detail.
2. The AQAP measures are well presented within Table 5.1 (now table 5.2) and discussed in detail throughout the AQAP.
3. Whilst in Table 5.1 (now table 5.2), key performance indicators have been outlined, these have not been elaborated on in the text to establish how these actions will be monitored and reviewed. Where appropriate this should be elaborated on in the AQAP to action this point.
4. A source apportionment exercise has been undertaken. Whilst the source apportionment has considered the regional and local backgrounds and vehicle contributions, there is no discussion as to why commercial/domestic sources and industrial sources have been omitted from consideration. Detail and justification should be added to this section in the final AQAP to outline these decisions.
5. Relevant policies, plans and strategies are outlined within the AQAP. Within this, reference is made to the Local Transport Plan, however it is not made clear whether the AQAP will be integrated with this. It is also not made clear how the AQAP will impact these policies, and likewise these policies have impacted the development of the AQAP. Further detail on this would add to the AQAPs robustness. The final AQAP should elaborate on this point for clarity.
6. It is stated “Schedule 11 of the Environment Act 1995 requires local authorities to consult the bodies listed in Table 4.1”. The AQAP outlines that these bodies have been consulted within the production of the draft AQAP however details around this correspondence have not been included. A clear discussion of the scope and outcome of consultation with these relevant bodies should be included within the final AQAP. A summary of responses received from consultation need to be included within the relevant appendix within the final version of the AQAP.
7. The steering group has been established, and roles have been designated. It is difficult to ascertain from the provided text if the relevant authority/organisation/person has been designated as responsible for the implementation of each action. Furthermore, how these will be implemented through successful engagement of the steering group is unclear. Further detail around this should be provided in the final AQAP.
8. The Table in Appendix D relating to reasons why measures have not been pursued has not been completed. If there are no measures not being taken forwards, and therefore this table is not relevant, a statement to this effect in the final AQAP would be suitable.
9. There is a large amount of information surrounding the proposed measures within the AQAP. For some measures where quantification is possible, an exercise has been

undertaken to calculate the resultant NO_2 reduction at receptors. This is accompanied by calculations of the required reductions in NO_2 concentrations to achieve compliance. It is clear within the AQAP when compliance with the annual NO_2 objective is expected for each AQMA.

10. The measures set out are ordered by priority. A cost-benefit analysis has been completed for each measure which allows these to be ordered.
11. The AQAP outlines measures and actions which will be perused and how they will help achieve the relevant objectives. The LA will then continue to monitor air quality and establish an Air Quality Strategy.
12. The final AQAP should be signed off by a Director of Public Health.
13. While there are some formatting anomalies and grammatical errors, it is acknowledged that the document is still in draft.
14. Following the completion of the action plan, with the comments made above taken into consideration future reporting of progress against the Plan should be done through the Annual Status Report (ASR).

Response: Comments are noted and actioned within the AQAP where appropriate.

Suffolk County Council Public Health

- **Comments:** The focus of the Ipswich Air Quality Action Plan (AQAP) 2025 - 2030 is very much on outdoor air pollution which is understandable given Ipswich has 3 Air Quality Management Area's. However, in the Executive Summary it states that: 'Ipswich Borough Council is committed to reducing the exposure of people in Ipswich to poor air quality in order to improve health.'

  The Chief Medical Officer's 2022 report on air pollution notes that 80% of peoples' time is spent indoors, and that as the outdoor air quality improves, the relative proportion of the health risk associated with indoor air pollution will increase.

  It would therefore be useful to have this reflected in the AQAP in light of Ipswich Borough Council's (IBC) commitment to reducing pollution exposure.

  Suffolk County Council (SCC) are currently updating the Suffolk Air Quality Strategy Action Plan (due to be published early 2025). This has an increased focus on indoor air quality so a suggestion would be for the Ipswich AQAP to refer to this with a statement of intention to support work outlined in the Suffolk Air Quality Strategy Action Plan on exposure to poor indoor air quality.
- Page V: The formatting is off - the contact details go on to the next page on their own and the rest is blank space.
- Page 1 Introduction: "reduce concentrations of air pollutants and exposure to air pollution; thereby positively impacting on the health and quality of life of residents and visitors to the Borough of Ipswich". Are there any plans to evidence or evaluate whether there have been positive impacts on the health and quality of life of residents/visitors? Public Health can provide demographic and health data.
- Section 3: Could the Suffolk Air Quality Strategy be referenced in this section please?

- Section 4: Has IBC undertaken public engagement with 'vulnerable groups' specifically older people, those with existing health conditions and those living in more deprived areas who are more vulnerable to the effects of pollution. It would be beneficial to have feedback on the AQAP from a broad demographic, if not the individuals themselves then organisations representing the interests of those groups.
- Page 23: The job title referenced should be Transport Planning Manager, not Transport Planner Manager.
- Page 24: Formatting off, section 5 starts at the bottom of the page.
- Section 5: Please refer to earlier feedback relating to indoor air quality. Is there a way to include something here on indoor air quality exposure? A reference to IBC supporting actions on addressing exposure to indoor air quality as set out in the updated Suffolk Air Quality Strategy.
- Action plan: Is there a way of making the measurements and key performance indicators in the AQAP more specific even if it is an estimate. This will be particularly useful where pollution level reductions cannot be evidenced.

  For example, page 27 action 5 which covers IBC staff travel, what are the figures for current travel methods amongst IBC employees - number of single driver car journeys etc? Could you set a % target per year relating to increased active travel? Or a % decrease per year in single occupancy car journeys? Being more specific will make it easier to report on progress and highlight achievements. This could also apply to action 8.

  Action 17, again numbers would be helpful, how many car club members are you hoping for, what does existing evidence say about how many vehicle movements are removed from the roads from car clubs – Como UK may have suitable data to inform estimates: Shared cars > Overview and benefits
- Page 48: Can this be updated to say that the Ricardo report will be available Summer 2025?
- Table 5.1 (now table 5.2) item 1: This is now at public consultation. Dates may need adjusting.
- Table 5.1 item 2 (now table 5.2): This went to Suffolk County Council Cabinet on 25 February and was approved for adoption in March 2025.
- Table 5.1 item 4 (now table 5.2): Can this acknowledge that Suffolk County Council have funded the School Streets in the funding source column?

Response: The Council met with the SCC public health department post consultation to discuss the comments raised and the AQAP has been amended where appropriate.

The AQAP now refers to the SCC Suffolk Air Quality Strategy. In addition, a number of measures now have more specific KPI's.

The AQAP aims to improve air quality across the entire area of Ipswich Borough Council, but also focuses on the AQMAs which were declared on the basis of public exposure. Improvements will reduce exposure for everyone but the positive effects will be particularly significant for groups more impacted by air pollution, contributing to reducing inequality.

Measure 8 now specifically mentions disseminating messages directed at those living within AQMAs as part of an Ipswich Air Aware Campaign. Furthermore, measure 24 has now been included within the AQAP – 'Development and implementation of a campaign to raise awareness on indoor air quality, including supporting work outlined in the SCC Suffolk Air Quality Strategy, with particular focus on properties within the AQMAs'.

Responses from Non-Statutory Consultees

Comments relating to traffic management, highways/road layouts and traffic flows

- Numerous respondents made comments relating to traffic lights in the town, relating to how they worsen congestion, cause cars to idle unnecessarily by stopping traffic flow, poor filtering/phasing/sequencing. This included specific concerns regarding traffic flows on Bond Street, St Helens Street, Wherstead Road, Felixstowe Road and Crown Street.
- Concerns regarding traffic flows when the Orwell Bridge is closed
- More focus on sequencing roadworks/road closures to enable free flowing traffic
- Improving the method of notifying road users of traffic volume/roadworks/bridge closure etc. and proactively redirecting traffic to help keep traffic moving.
- Where roadworks are necessary work until the job has been completed. Don't have cones and fences out blocking roads when no work is taking place.
- A suggestion to remove the flower pots that close roads off such as the ones near Stoke Bridge. Having them there makes unnecessary traffic build up, take them away and let traffic flow round better as it used to.
- Improve Toy-R-Us intersection, Orwell bridge alternative, tunnel etc. 90mins to travel 5miles late afternoon on Wed 12-Feb via Crane Hill/ Chevalier Street/ Valley Road/ Colchester Road/ Heath Road (due to bridge being closed). Digital signage boards could have cascaded the severeness, early warning and highlighted proposed alternative routes.
- A few people mentioned building a Northern Bypass
- A specific suggestion relating to the lane markings at the St Augustine roundabout. The respondent claimed it does not work and causes bottle necking, suggesting it should be studied during peak times and alterations could make it work much better. As you are trying to come from Felixstowe Road to turn left to Heath Road you cannot because of constant traffic coming from Sainsburys as they have both lanes. This causes the crossroads junction of Cobham, Kings Way and Felixstowe Road to become gridlocked with no one being able to move.

Response: Comments in relation to traffic flow will be passed to Suffolk Highways and Transport Policy for consideration. Caution should be exercised when altering street layouts and junctions as it potentially could lead to the worsening of traffic flows and/or creating new pollution hotspots.

Measure 2 specifically relates to the development of the Local Transport Plan (LTP4) to create a more efficient use of the highway in and around the town, and across Suffolk.

Measure 25 relates to reviewing opportunities for alternations to traffic management to reduce congestion in AQMAs, including the provision of red routes.

Comments relating to improving public transport • More/better public transport, including reliability and affordability • Better public transport to stop car journeys • Comments were received regarding increasing bus service provision generally, including in the IP1 area and on Tuddenham Road, as well as being more efficient to enable travel across town. • A few respondents suggested increased bus services at peak times and after 7pm • Taxis are too expensive
Response: Comments in relation to traffic flow will be passed to Suffolk County Council Passenger Transport, Suffolk Highways and public transport operators for consideration. It is recognised that it is vital to work in partnership with these stakeholders to address the concerns raised above and will continue to do so via the steering group and other appropriate forums. Measure 11 of the AQAP relates to working with Bus Operators in the town (i.e. Ipswich Buses, First, Norse, Beestons), to encourage the renewal of their fleet to cleaner i.e. Euro VI or better and/or low emission, hybrid buses, on certain routes. Measure 12 of the AQAP relates to the delivery of the Bus Service Improvement Plan. Hackney carriage (taxi) fares are set by the Council and increase in line with average CPI for the preceding 12 month period. Drivers can charge less than the metered fare but not more. With private hire schemes, operators set the fares themselves.

Comments relating to cycling and walking infrastructure • Prioritise expansion of cycle routes into town • Better cycle routes on main roads • More car-free walking routes • Getting much more ‘aggressive’ with active travel. It's only by making cycle and walking more attractive that we can reduce reliance on private vehicles.
Response: Ipswich Borough Council and Suffolk County Council will seek to improve facilities for cyclists and walkers, and address priorities set out in local transport plan. Joint working on planning issues to maintain and enhance the existing cycling and walking network and ensure further development management process gives due consideration to cycling and walking. Measure 1 relates to the development and implementation of Local Ipswich Cycling and Walking Infrastructure Plans (LCWIP), and work to improve existing cycle routes. Public consultation on the LCWIP closed on 6th March 2025, with the intention that the plan will be adopted in Summer/Autumn 2025. Measure 15 specifically relates to delivering air quality improvements through the planning system, including the ongoing delivery of the Local Plan and Low Emissions SPD. Within the Low Emissions SPD, developers are required to implement appropriate measures to mitigate against air quality impacts arising from their scheme. This may include the

provision of cycle storage and measures to support walking and cycling infrastructure such as including routes linking into existing and planned networks.

Comments relating to planning/development issues

- A comment on more sensitive planting, to screen pedestrian areas away from traffic.
- A general comment to plant more trees
- Scrap EV charging
- Air pollution will increase dramatically as the houses on Henley Gate are completed and the quarry at Westerfield is approved
- The government want to expand traffic to Felixstowe Docks putting more pressure on the Orwell Bridge
- Move more freight onto the railways - double the track to Felixstowe & increase rail services ideally.

Response: The Council has an active tree planting programme to assist with maximising tree planting in parks and green spaces within the borough. However, consideration needs to be given to the link between planting and improvements in air quality. The DEFRA air quality information site suggests that trees can help absorb air pollution. In some cases, tree planting can worsen air quality by creating a canyon effect and preventing pollutants from dispersing so care with the design of landscaping schemes should seek to avoid this issue.

Local Plan Policies CS14, DM9 and DM12 reference urban greening. Furthermore, policy DM9 includes a tree canopy target for the Borough of achieving 22% cover by 2050.

The Local Plan is air quality aware and the importance attached to the issue in the National Planning Policy Framework is now addressed by a separate policy in the

Local Plan (Policy DM3 – Air Quality). Measure 15 specifically relates to delivering air quality improvements through the planning system, including the ongoing delivery of the Local Plan and Low Emissions SPD.

Further initiatives will be taken through the joint SCC/ IBC working group to develop improvements in air quality as part of the combined effort to mitigate the increase in traffic arising from Local Plan growth in the period to 2036.

Electric cars remain part of the Governments strategy to meet carbon reduction targets so continued provision needs to be made for charging.

An air quality assessment has been undertaken for developments at the Ipswich Garden Suburb, including Henley Gate, and mitigation has been proposed against air quality impacts.

Westerfield quarry falls outside the Borough boundary. Nonetheless, an Air Quality Assessment will be conducted for the development and Ipswich Borough Council will be consulted as part of the planning process. Officers will review any air quality assessment submitted and comment where appropriate.

Local Planning Policy ISPA2 Strategic Infrastructure Priorities states that the Council also supports work to investigate the provision of increased capacity on railway lines for freight and passenger traffic. Furthermore, the Suffolk Public Sectors Leaders Group, which includes both the Leader and Chief Executive of Ipswich Borough Council, support the Suffolk Economy Strategy. This includes supporting Transport East to secure rail improvements for both freight capacity and increased regularity of cross-country passenger services.

Suffolk County Councils Local Transport Plan specifically mentions, as part of the decarbonisation of transport priority theme, rail capacity improvements. It identifies that investment is needed for junction and line capacity improvements, electrification, and to resolve level crossing issues. An enhancement scheme has been developed and the Council continues to advocate and lobby for improvements to the railway network.

Comments relating to antisocial behaviour/Public Health issues

- Enforcement of smoking where it is prohibited and enforcement of littering offences, such as dropping cigarette butts
- Some respondents stated that they had asthma and that they try and avoid breathing in traffic fumes and that poor air quality such as from vehicles triggers their asthma.
- One respondent raised concerns regarding vehicle idling
- Concerns over bike theft
- One respondent felt unsafe regarding using public transport at night
- One respondent stated that the Council needs to ensure landlords respond to mould issues in the home and mandate action.

Response: Smoking is not considered to be a significant element of ambient air quality, so an action has not been included. The Councils Waste Enforcement Officers regularly conduct patrols across the town and enforce regulations in relation to littering, including serving Fixed Penalty Notices for littering offences.

Measure 3 within the AQAP relates to ongoing promotion of the Suffolk anti-idling campaign.

The Council encourages respondents to report incidents of anti-social behaviour/crimes to the relevant authorities i.e. the police.

The Council advise that tenants contact their landlord in the first instance to discuss disrepair issues in their homes. If a tenant has given their landlord a fair and reasonable period to investigate a complaint and complete any necessary works, but no progress has been made, they can contact the Councils Private Sector Housing team for advice. The Council's Private Sector Housing Team can investigate complaints regarding housing disrepair, including mould issues. If items of disrepair are found, causing mould issues, then the Council can take further action to require the landlord to conduct the necessary repairs.

General comments questioning the need for an Air Quality Action Plan/air quality being an issue

Responses included:

- A suggestion to scrap the Air Quality Action Plan
- Some respondents did not believe there were any issues with the towns air quality
- One respondent suggested the move to emission free vehicles was unaffordable and net zero will bankrupt our councils and the taxpayer
- A comment that the 'Climate Emergency' thing was rubbish and a scam to get money from people

Response:

The Environment Act 1995 places a duty on Local Authorities to review the air quality in their area. The majority of Ipswich generally experiences air quality that meets National Objective Levels. However, in some areas close to busy roads, air quality does not meet the nitrogen dioxide annual mean national air quality objective level. As such, the Air Quality Action Plan (AQAP) has been produced as part of the Council's statutory duties required by the Local Air Quality Management framework.

Air pollution is one of the largest environmental risks to public health in the UK. Section 3 of the AQAP details the Public Health context for improving air quality.

The Council recognises the synergies between air quality and climate change. Whilst climate change is a global issue, urgent efforts must be made by the Council along with the town's residents and businesses to halt carbon emissions and remove the greenhouse gases from the atmosphere to prevent unsustainable global warming resulting in catastrophic sea level rising and increased intensity and frequency of natural disasters.

The Council's Climate Change Strategy and Action Plan document acts as the starting point for the development of an ongoing Climate Change Strategy for Ipswich Borough Council and focuses on our proposed approach for tackling climate change.

Measure 21 of the AQAP relates to supporting where appropriate, the Suffolk Climate Change, Environment & Energy Board's development and implementation of the Suffolk Climate Emergency Plan.

Other comments

- A suggestion to monitor on Wherstead Road
- Enforce cars stopping outside convenience stores on busy routes which causes unnecessary congestion
- One resident stated that the new charge of £50 for a brown bin to be collected would increase the number of bonfires they have and therefore air pollution.
- One resident stated that about knowing the rules in relation to bonfires
- A comment emphasising the benefit of working from home in improving air quality

Response:

Over the years, we have monitored in areas of the district where we felt there was potential for levels of NO_2 to be above a national objective. There have been a number of other sites where equipment has been in place but were subsequently removed as levels were not found to be high enough to warrant further monitoring. We review our monitoring locations annually and the Annual Status Report we submit to Defra ensures we consider where pollution levels or relevant exposure may change. All historical data is available on our Air Quality Management webpage.

The Councils Parking Services Department regularly patrol the town and take enforcement action against motorists committing parking offences. In addition, measure 23 of the AQAP relates to reviewing opportunities for alterations to traffic management to reduce congestion in AQMAs, including the provision of red routes. Measure 24 relates to promoting the use of Norwich Road Shoppers Car Park, short term parking bays behind businesses on Norwich Road, including incentivising the use of allocated parking and enforcement against unauthorised on street loading/ parking to assist with the reduction of congestion in the area.

The Council strongly encourages alternatives to bonfires for disposing of all waste, such

as composting recycling or taking waste to a Household Waste Recycling Centre

(HWRC). There are no byelaws prohibiting bonfires in Ipswich, but the Council can take action on individuals having bonfires that cause a nuisance (Environmental Protection Act 1990). The Council will continue to raise awareness of pollution impacts of bonfires and to

promote alternatives as detailed in measure 22 of the AQAP.

The Council has a travel plan that is promoted on the intranet. A large proportion of staff are ‘hybrid working’, dividing their working time between home and the office, thereby reducing the number of commuting trips.

Appendix B: Calculations for Source Apportionment Exercise

Source Apportionment calculations for NO_2 undertaken in accordance with the methodology contained in Box 7-5 of LAQM.TG22.

Source Apportionment – AQMA No. 2

Ipswich AQMA No. 2		**Concentration µg/m^3**
Selected Annual Mean NO_2 Concentration – Tubes 11,12,19	[T-NO_2]	37.0
Step 1: Establishing and deriving background NO_2 and NO_x		
Total background NO_2 (for grid square within which tubes are located.	[TB-NO_2]	15.11763
Total background NO_x	[TB-NO_x]	20.8509
Regional background NO_x	[RB-NO_x]	6.403118
Derive a local background NO_x [LB-NO_x] = [TB-NO_x] – [RB-NO_x]	[LB-NO_x]	14.447782
Step 2: Apportion the total background NO2 into regional and local using regional and local NO_x proportions		
Regional NO2 [RB-NO_2] = [TB-NO_2] x ([RB-NO_x]/ [TB-NO_x])	[RB-NO_2]	4.6
Local NO2 [LB-NO_2] = [TB-NO_2] x ([LB-NO_x]/ [TB-NO_x])	[LB-NO_2]	10.5
Step 3: calculate the local NO2 contribution at the worst-case location [L-NO2] from the total measured minus background		
[L-NO_2] = [T-NO_2] - [TB-NO_2]	[L-NO_2]	21.9
Step 4: Apportion the local contributions to total NO_2 concentration		
Petrol cars = 8% x [L-NO_2] =		1.8
Diesel cars = 65% x [L-NO_2] =		14.2
Buses = 10% x [L-NO_2] =		2.2

LGV's = 14% x [L-NO_2] =	3.1
Rigid HGV = 1% x [L-NO_2] =	0.2
Taxis = 1% x [L-NO_2] =	0.2
Final source apportionment of AQMA 2 of worst case NO_2 37µg/m3 • Regional background = 4.6µg/m3 (12.4%) • Local background = 10.5µg/m3 (28.4%) • Local traffic: ○ Petrol cars = 1.8µg/m3 (4.7%) ○ Diesel cars = 14.2µg/m3 (38.4%) ○ Buses = 2.2µg/m3 (5%) ○ LGV's = 3.1µg/m3 (8.4%) ○ Rigid HGV = 0.2µg/m3 (0.5%) ○ Taxis = 0.2µg/m3 (0.5%)	

Source Apportionment – AQMA No. 3

Ipswich AQMA No. 3		**Concentration µg/m^3**
Selected Annual Mean NO_2 Concentration – Tube 30	[T-NO_2]	35.2
Step 1: Establishing and deriving background NO_2 and NO_x		
Total background NO_2 (for grid square within which tubes are located.	[TB-NO_2]	15.11763
Total background NO_x	[TB-NO_x]	20.8509
Regional background NO_x	[RB-NO_x]	6.403118
Derive a local background NO_x [LB-NO_x] = [TB-NO_x] – [RB-NO_x]	[LB-NO_x]	14.447782
Step 2: Apportion the total background NO2 into regional and local using regional and local NO_x proportions		
Regional NO2 [RB-NO_2] = [TB-NO_2] x ([RB-NO_x]/ [TB-NO_x])	[RB-NO_2]	4.6

Local NO2 [LB-NO_2] = [TB-NO_2] x ([LB-NO_x]/ [TB-NO_x])	[LB-NO_2]	10.5
Step 3: Calculate the local NO2 contribution at the worst-case location [L-NO2] from the total measured minus background		
[L-NO_2] = [T-NO_2] - [TB-NO_2]	[L-NO_2]	20.1
Step 4: Apportion the local contributions to total NO_2 concentration		
Petrol cars = 10% x [L-NO_2] =		2.0
Diesel cars = 63% x [L-NO_2] =		12.7
Buses = 6% x [L-NO_2] =		1.2
LGV's = 19% x [L-NO_2] =		3.8
Taxis = 1% x [L-NO_2] =		0.2

Final source apportionment of AQMA 3 of worst case NO_2 35.2µg/m3

- Regional background = 4.6µg/m3 (13.1%)
- Local background = 10.5µg/m3 (29.8%)
- Local traffic:
  - Petrol cars = 2µg/m3 (5.7%)
  - Diesel cars = 12.7µg/m3 (36.1%)
  - Buses = 1.2µg/m3 (3.4%)
  - LGV's = 3.8µg/m3 (10.8%)
  - Taxis = 0.2µg/m3 (0.6%)

Source Apportionment – AQMA No. 5

Ipswich AQMA No. 5		**Concentration µg/m^3**
Selected Annual Mean NO_2 Concentration – Tubes 64&65	[T-NO_2]	39.0
Step 1: Establishing and deriving background NO_2 and NO_x		
Total background NO_2 (for grid square within which tubes are located.	[TB-NO_2]	13.10662

Total background NO_x	[TB-NO_x]	17.72558
Regional background NO_x	[RB-NO_x]	6.403118
Derive a local background NO_x [LB-NO_x] = [TB-NO_x] – [RB-NO_x]	[LB-NO_x]	11.322462
Step 2: Apportion the total background NO2 into regional and local using regional and local NO_x proportions		
Regional NO2 [RB-NO_2] = [TB-NO_2] x ([RB-NO_x]/ [TB-NO_x])	[RB-NO_2]	4.7
Local NO2 [LB-NO_2] = [TB-NO_2] x ([LB-NO_x]/ [TB-NO_x])	[LB-NO_2]	8.4
Step 3: calculate the local NO2 contribution at the worst-case location [L-NO2] from the total measured minus background		
[L-NO_2] = [T-NO_2] - [TB-NO_2]	[L-NO_2]	25.9
Step 4: Apportion the local contributions to total NO_2 concentration		
Petrol cars = 9% x [L-NO_2] =		2.3
Diesel cars = 61% x [L-NO_2] =		15.8
Buses = 9% x [L-NO_2] =		2.3
LGV's = 19% x [L-NO_2] =		4.9
Rigid HGV = 1% x [L-NO_2] =		0.26
Taxis = 1% x [L-NO_2] =		0.26

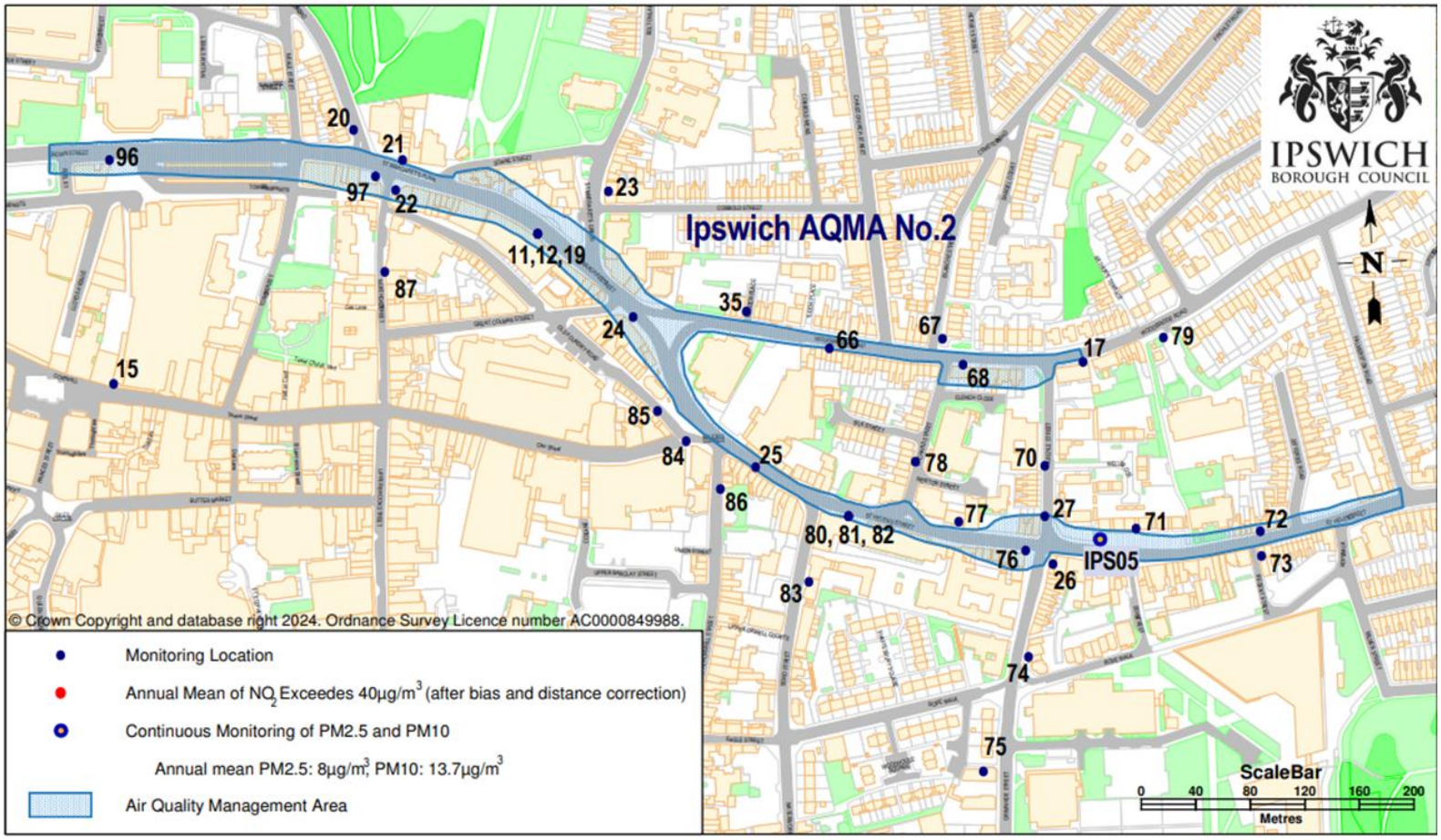
Final source apportionment of AQMA 5 of worst case NO_2 39µg/m3

- Regional background = 4.7µg/m3 (12.1%)
- Local background = 8.4µg/m3 (21.5%)
- Local traffic:
    - Petrol cars = 2.3µg/m3 (5.9%)
    - Diesel cars = 15.8µg/m3 (40.5%)
    - Buses = 2.3µg/m3 (5.9%)
    - LGV's = 4.9µg/m3 (12.6%)
    - Rigid HGV = 0.26µg/m3 (0.7%)

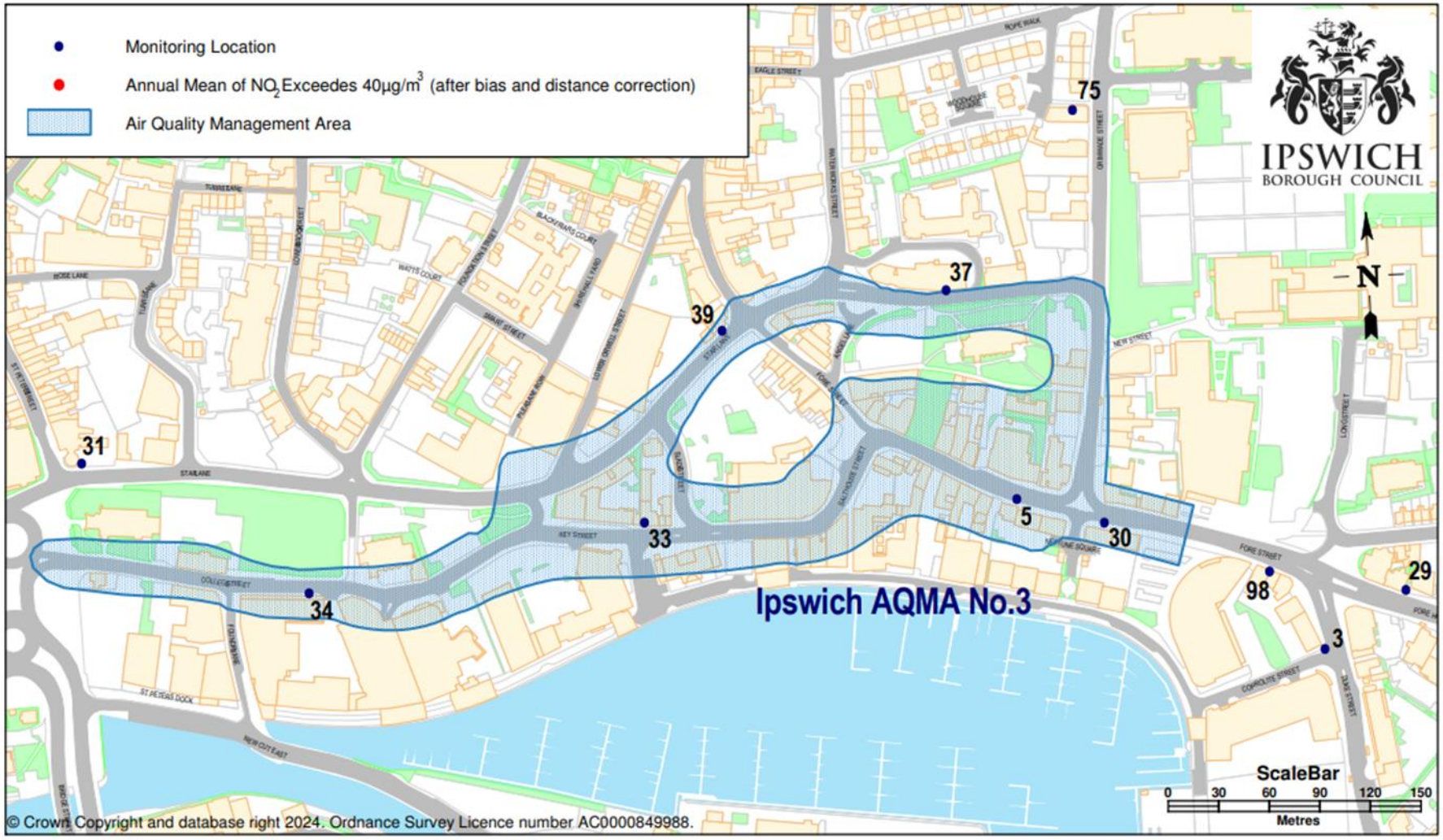
- Taxis = 0.26µg/m3 (0.7%)

Appendix C: Maps of AQMAs and Monitoring Locations

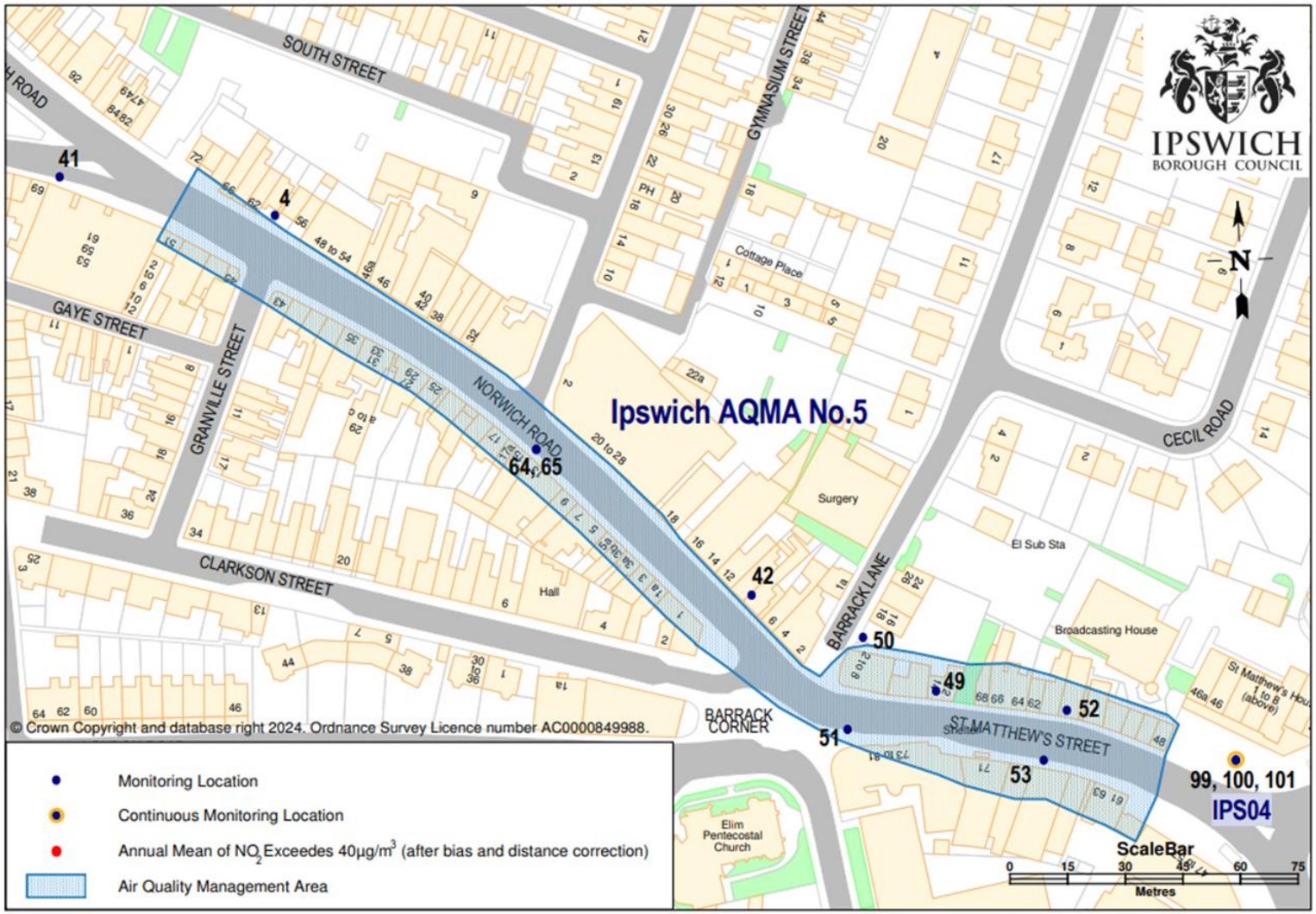
Ipswich Air Quality Management Area No.2



Ipswich Air Quality Management Area No.3



Ipswich Air Quality Management Area No.5



Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
AQS	Air Quality Strategy
ASR	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
SO_2	Sulphur dioxide

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. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland
- LAQM.TG(22) Supplementary Guidance for England (exc. London) - Determining the impact of air quality improvement measures. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland
- Ipswich Borough Council Adopted Local Plan Review 2018 – 2036. Adopted March 2022.
- Ipswich Borough Council Low Emissions SPD. Adopted December 2021.
- Ipswich Borough Council's previous LAQM reports can be found at: Air Quality Management.
- Air quality information provided by Suffolk County Council, including the Suffolk Air Quality Strategy can be found at: Air Quality in Suffolk.
- Suffolk County Councils Transport strategy and planning information can be found at: Transport Strategy and Planning.
- Suffolk County Councils Travel Planning information can be found at: The Way to Go Suffolk.