Leicester City Council

Air Quality Action Plan 2025-2030

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

31 July 2024

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Executive Summary

This draft Air Quality Action Plan (AQAP) has been produced as part of our statutory duties required by the Local Air Quality Management (LAQM) framework. It outlines the proposed actions we will take to improve air quality in Leicester between 2025 and 2030 and will replace the previous action plan which ran from 2015-2026.

Air pollution has long been associated with several adverse health impacts. It is recognised as a contributing factor in the onset of heart disease, cancer, dementia and other illnesses. Additionally, air pollution particularly affects the most vulnerable in society: children, older people, and those with heart and lung conditions. Areas with poor air quality are often less affluent areas, leading to a strong correlation with inequality.

In the UK, the annual health cost to society due to the impacts of particulate matter alone is estimated to be £16 billion. Leicester City Council is committed to reducing the exposure of people in Leicester to poor air quality in order to not only improve health for individuals, but also to reduce the adverse impacts on wider health and social care programmes.

Leicester City Council has made significant progress to tackle the city's air quality over the past action plan period and the impact of this can be seen in our monitoring results. Successful projects delivered through our last action plan include:

- Delivery of Phase II 'Connecting Leicester' programme.
- Delivery of the Transforming Cities Fund (TCF) programme – this has improved transport alternatives for commuters to travel by bus, walking and cycling on key radial corridors.
- Redeveloped two city centre bus stations, with St. Margaret's Bus Station being the UK's first net zero carbon bus station.
- Development and progression of goals under the Leicester Enhanced Bus Partnership: Leicester Bus Plan. This includes the introduction of the Greenlines Electric Bus Project and delivery of 120 electric buses into the commercial bus fleet.

- Ongoing delivering of behavioural change interventions, working with schools, communities and businesses.
- Appointment of an Air Quality Education Officer, that helps to run air quality related events in schools and promotes the key message of anti-idling.

Due to these measures, and national improvements, air quality in Leicester has met all national objectives for NO_2 since 2022. The Council's ambition is to ensure concentrations of pollutants that are of concern are continually reduced for the benefit of the city's residents.

Like many UK cities, our evidence has shown that road transport, particularly diesel cars, remains the main source of air pollutants.

Our ambitious air quality action plan will ensure we do not remain complacent in our efforts to improve the health of people in Leicester and reduce inequalities. It contains far reaching actions over the period of 2025 to 2030 and is intended to allow the Council to maintain compliance and work towards meeting stricter World Health Organisation (WHO) Guidelines.

This draft Plan presents measures that have been developed for consideration under five broad theme areas where we will take action to improve air quality:

- **Theme 1: Air Quality Monitoring, Public Awareness and Engagement** – this includes maintaining and enhancing the air quality monitoring network to understand any pollution hotspots, enabling targeted interventions, supporting awareness campaigns and working with communities, businesses and schools. Maintaining, and expanding where necessary, monitoring networks to understand where legal limits are exceeding.
- **Theme 2: Promoting, Supporting, and Encouraging Sustainable Transport** – this includes expansion of the walking and cycling network to create a top-quality, connected and cohesive network of attractive routes and continued delivery of our Bus Service Improvement Plan.
- **Theme 3: Reducing Emissions from Transport** – this includes adopting cleaner transportation methods, such as encouraging the use of electric vehicles (EVs) for public transport, freight and private vehicles.

- **Theme 4: Optimising Traffic Management** – this includes continuing to provide and enhance infrastructure to help people walking, cycling or using public transport, whilst ensuring effective management of traffic flow. Major schemes and complementary work programmes have the potential to contribute directly to air quality improvements.
- **Theme 5: Development Control and Regulatory Services** –this includes ensuring air quality considerations are considered in the planning process and other Council documentation. Continue to control domestic and industrial emissions.

From the evidence presented, the following issues need to be prioritised, followed by an overall key outcome (in no particular order):

Priority 1: Providing residents and workers of Leicester with active and sustainable transport choices.

Priority 2: Promoting awareness of air pollution and engaging with schools, communities and businesses, whilst maintaining and expanding our monitoring network.

Priority 3: Reducing air pollution exposure and improving conditions for those who live and work in Leicester.

Priority 4: Mitigating the impact of future growth on air quality.

Key Outcome: Improving the health outcomes for all and providing opportunities to live healthy lives.

In this AQAP we outline how we plan to effectively tackle air quality issues within our control. We recognise that there are many effective measures which the Council cannot achieve alone (such as vehicle emissions standards agreed in Europe), but for which we can serve as a key contributor for evidence and action and so we will continue to work with regional and central government on policies and issues beyond Leicester City Council's direct influence.

Responsibilities and Commitment

This AQAP was prepared by the Transport Strategy Section of Leicester City Council with the support and agreement of the following officers and departments:

- Transport Strategy- Anthea Anderson, Rebecca Howe, Matthew Finch, Daniel Pearman
- Public Health- Rob Howard
- Estates and Building Services- Duncan Bell, Anna Dodd
- Planning- Ruth Hamilton, Grant Butterworh
- Regulatory Services- Rachel Hall

This AQAP has been approved by:

- Councillor Geoff Whittle, Assistant City Mayor, Environment and Transport, Leicester City Council.
- Director of Planning, Development and Transportation, Leicester City Council.
- City Transport Director, Leicester City Council.
- City Highways Director, Leicester City Council.
- Director of Public Health, Leicester City Council.

This AQAP will be subject to an annual review, appraisal of progress and reporting via regular Lead Member Briefings (LMBs) to ensure the portfolio holder is updated. Progress each year will be reported in the Annual Status Reports (ASRs) produced by Leicester City Council, as part of our statutory Local Air Quality Management duties.

If you have any comments on this AQAP, please send them to the Transport Strategy Team at:

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1 Introduction

This Air Quality Action Plan (AQAP) outlines the proposed actions that Leicester City Council will deliver between 2025 and 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, workers and visitors to Leicester.

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

This Plan will be reviewed every five years at the latest and progress on measures set out within this Plan will be reported on annually within Leicester City Council's Annual Status Report (ASR).

What is Air Quality and Why is it Important?

Air quality is how we describe how clean or polluted the air around us is. It gives an indication of how healthy the environment is that we are living in.

Poor air pollution occurs when the amount of certain pollutants exceed recommended levels. There are a variety of different pollutants such as ozone and benzene, but the main ones of concern are nitrogen dioxide (NO_2) and fine particles ($PM_{2.5}$ and PM_{10}). Air pollution can be generated from several sources. Some examples include the use of vehicles (which can produce pollution from engines, tyres, and brake use), fires (including domestic burning), and industrial processes. Air pollution can also arise from construction and demolition activities, mainly in the form of particulates.

Not all air pollution is generated locally, and a portion of an area's air quality is often contributed to regionally transported particulates and pollutants.

The links between poor air quality and the adverse impacts on human health are now well recognised by scientific evidence, and it is a contributing factor in the onset of heart disease, cancer, dementia and other illnesses.

Not only does air pollution harm our health, but it also harms our economy. The impact of transport related air pollution is estimated to cost Leicester's economy around £7.2 million per year[1] due to increased sick days and reduced productivity in employees. By improving air quality, we anticipate that this will encourage growth and investment into the city. Additionally, air pollution impacts the natural and built environment as there is damage to buildings from particulates over time.

National guidelines define levels based on the known effect these pollutants have on human health. Guidelines are set in law and as such we have a statutory obligation to meet them. The current national annual mean objective of NO_2 is 40µg m-3 contained within the Air Quality Strategy which Defra updated in April 2023.

The World Health Organisation (WHO) set out global air quality guideline values in a 2021 report. The guideline values are not legally binding, but are more stringent than those legally required in England. However, the consensus within the scientific community is that there is no safe level of concentrations for pollutants of concern. The Council's aspiration is therefore to minimise impacts on health and work towards meeting stricter World Health Organisation Guidelines, where possible.

Addressing air pollution requires a wide range of interventions, the combination of which are likely to have a significant beneficial impact on health and wellbeing: increasing the number of people walking and cycling rather than driving will both reduce transport emissions and increase physical activity levels – an important public health issue in its own right and one that has been found to counter the very same health conditions that air pollution has been linked to.

Progress since the previous Air Quality Action Plan

Leicester City Council has made significant progress to tackle the city's air quality over the past action plan period (2015-26) and since 2022, the Council has met all

[1] LestAir – Low Emission Strategy: Business and Implementation Plan (leicester.gov.uk)

national objectives for Nitrogen Dioxide (NO_2). Examples of key interventions are set out below and include measures delivered through the previous Air Quality Action Plan, Local NO_2 Plan and Local Transport Plan:

- Delivery of Phase II 'Connecting Leicester' programme, this has promoted a safe, convenient and accessible city centre with reduced demand and opportunity for car usage. Work has also included redevelopment of Leicester's two bus stations – with the St. Margaret's Bus Station being the UK's first net zero carbon bus station.
- Delivery of the Transforming Cities Fund (TCF) programme – this has improved transport alternatives for commuters to travel by bus, walking and cycling on key radial corridors.
- Development and progression of goals under the Leicester Enhanced Bus Partnership: Leicester Bus Plan. This included the roll out of integrated smart ticketing (contactless tap on/off with best value fare capping) - and the introduction of 120 new electric vehicles into the commercial bus fleet.
- The introduction of the Greenlines Electric Bus Project, aimed at improving air pollution, relieving congestion and improving accessibility. All park and ride services are now converted to electric vehicles, as is the 40 Orbital Service and the Hospital Hopper.
- A new free Greenlines 'Hop!' bus services was introduced in April 2022 that links transport hubs and other destinations within the city centre via a dedicated electric bus.
- Installation of electric vehicle (EV) charging infrastructure for public use in Council owned car parks.
- Ongoing delivering of behavioural change interventions, working with schools, communities and businesses. This includes extensive work on Clean Air Day.
- Appointment of an Air Quality Education Officer, that helps to run air quality related events in schools and promotes the key message of anti-idling.
- Continued replacement of diesel powered Council fleet vehicles for fully electric vans.

- Delivery of an ECO Stars Freight Recognition Scheme, to encourage freight operators to take actions to reduce emissions associated with their fleet.
- Installation of green and solar bus shelters, to improve air quality and reduce carbon emissions associated with the public transport network.

2 Summary of Current Air Quality in Leicester

Air Quality in Leicester

Since 2022, Leicester is meeting all of the national objectives for the pollutant nitrogen dioxide (NO_2).

Air quality monitoring is undertaken across the city to understand how pollution levels change over time and to compare these with the thresholds set for protecting human health. We operate a series of five automatic air quality monitoring stations (see figure C.1). The stations measure nitrogen dioxide and particulate matter (PM10). The monitoring stations are located in areas of high traffic density. The data from these monitoring sites help us to understand the distribution of past and current concentrations of pollutants in the air. The Air Quality Management Area was declared in 2000 and extended in 2007, as ongoing monitoring had shown areas in Leicester was not meeting air quality objectives.

The major sources of air quality pollutants are from road traffic emissions, along major routes into the city (there were over 24,000 daily car commuters into the city in 2023, with the average commuted distance being six miles). This is of major concern particularly where there are people living along these routes. As well as road traffic emissions, domestic and industrial sources also contribute to NO_2 and Particulate Matter (PM) concentrations in the city.

Table 2.1 shows the annual mean NO_2 concentrations over the last five years. At least two years of compliance has been reported at all five monitoring stations. (It should be noted that the Glenhills Way station was relocated to the newly named Glenhills Way East in 2022, due to non-compliance with LAQM.TG22. The value reported for Glenhills Way in 2021 was distance corrected, resulting in a value below the annual mean objective. Disregarding this site, compliance with the NO_2 annual mean objective has been achieved at the point of sensitive receptor since 2020.).

The highest NO_2 concentrations are visible on the inner ring road (e.g. Vaughan Way and St Matthews Way) and one of the main radial roads (Melton Road) in the city. This is as expected and has been a consistent trend over the previous five

monitoring years. The data collected each year is published in the Annual Status Report (ASR) and these are made available on the council's website: Air quality (leicester.gov.uk).

Maps of air quality monitoring and results can be found in Appendix A and D of this AQAP.

Table 2.1 – Annual Mean NO2 Concentrations

Station	2019	2020	2021	2022	2023
Abbey Lane	31.5	24.3	26.6	26	23.1
Glenhills Way	**48.6**	38.8	**42.1**	26	-
Glenhills Way East	-	-	-	24.2	21.2
Melton Road	38.5	28	31.4	33.4	30.4
St Matthews Way	**40.6**	31.4	34.9	33.7	29.7
Vaughan Way	**45.7**	35.2	36.8	38	36.3
AURN Leicester University	24	19	20.3	18.9	18.1
AURN Leicester A594 Roadside	38	28	29	29.8	28.4

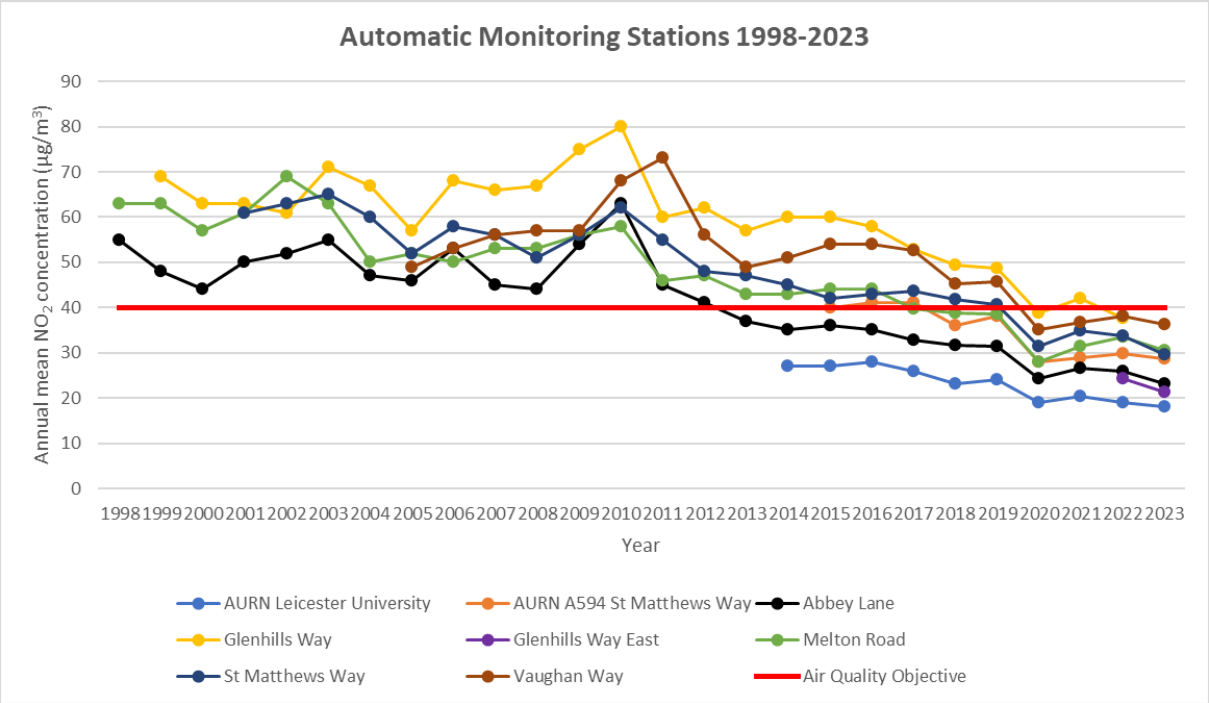
Further investigation has been undertaken to understand why there has been a continued improvement in results since 2020, as 2020's results can be attributed to the effects of Covid-19 pandemic, where restrictions on travel resulted in a significant drop in NO_2 concentrations at all locations across the city. The latest data from our Transport Strategy Team reports 2023 traffic volumes to be very similar to those in 2022, finding no support for the reduction in NO_2 concentrations seen. It is plausible that a combination of gradual fleet renewal, electrification of transport, implementation of Local NO_2 Plan measures, and increased uptake of sustainable transport methods in Leicester have resulted in a decline in NO_2 concentrations.

Trends in pollution levels across Leicester

Figure 2.1 shows the Air Quality Annual Mean Values for Leicester between 1998 and 2023. NO_2 annual mean concentrations have declined since 1998, although there is a notable period of increase between 2009 and 2011 which may be partially attributed to meteorological conditions (e.g. colder winters). Since then, all stations

have steadily declined to values below the national air quality objectives for the first time in 2020. Concentrations increased slightly from 2020 and until 2023, remained on an upward trend. NO_2 levels will be closely monitored in the coming years, with the continued implementation of measures to improve air quality as much as possible.

Figure 2.1 – Automatic Monitoring Station Results: 1998-2023



The trend of long term compliance can also be seen for the two AURN (automatic urban and rural network) sites within the Leicester City boundary. It is interesting to note the similarity in values between St Matthews Way and AURN Leicester A594 Roadside, which are situated on the same link of the inner ring road. This provides reliability to our monitoring results, given the close similarity with a nationally managed reference station.

All of these stations are found within the Leicester Air Quality Management Area (AQMA) and provide a good indication of the performance of measures undertaken to reduce NO_2 concentrations in the city.

The NO_2 Local Plan

In 2018, Leicester City Council was directed by the Secretary of State for the Environment to produce a NO_2 Local Plan, bringing compliance with EU NO_2 Objectives in the shortest possible time. The Plan, submitted to Joint Air Quality Unit (JAQU) in 2021, indicated that Leicester would be fully compliant for NO_2 in 2023 if the planned programme of interventions were followed. The measures have now been implemented with support from JAQU and has helped deliver the improvements in air quality in the city.

The Council are now working with JAQU to evaluate the effectiveness of the Plan and to ensure compliance can be maintained. Leicester City Council are in the process of deploying a diffusion tube network totalling 46 tubes to cover the AQMA, inner ring, and main radial roads of the city. It is proposed that the network will run from 2024 to 2026 and is primarily to inform JAQU's Local NO_2 Plan exit process. This will also serve as a means of further review for the AQMA boundaries and the measures within this AQAP. There is scope to consider revocation, either partially or fully, of the AQMA within the lifetime of this AQAP, subject to future monitoring results evidencing compliance with national air quality objectives.

Other monitoring

The authority also continues to deploy a network of around 20 low cost 'Zephyr' sensors which monitor NO_2 and particulate matter. Although it is recognised that this technique cannot be used for regulatory purposes, the sensors provide a source of indicative data that can be later confirmed using more appropriate methods of monitoring. Furthermore, these sensors are lightweight and portable, allowing the authority to frequently relocate and identify potential future hotspots, without the burdensome process that would be necessary for a fully-fledged automatic monitoring station. Data from the Zephyrs is available in Appendix B.

3 Leicester City Council's Air Quality Priorities

3.1 A profile of Leicester

Leicester is a predominately urban area located in the centre of the county of Leicestershire with a population of about 368,300, making it the largest city in the East Midlands (ONS 2022 Census). The area provides housing, employment, shopping, public administration, leisure, health care at three hospitals, and further and higher education facilities including both the University of Leicester and De Montfort University.

The Leicester Urban Area covers the administrative area of the city, as well as the suburbs and immediately surrounding small towns and villages. The population of the conurbation is approximately 650,000. Leicestershire County has a population of just over 1 million.

The 2021 census data (first release) shows that Leicester Local Authority area's population grew faster than all the England core cities between 2011-2021 at 11.8% and is one of fastest growing cities in the country. Furthermore, Leicester's population density is now the third highest outside of London. The population of Leicester's Air Quality Management Area is around 23,000, just over 6% of Leicester's population (2021 census).

Leicester's growth is set to continue over this Plan period, which has the potential to increase traffic in the city. Leicester has a very tight and compact urban road system with high densities of population. Its transport issues are fundamentally urban; congestion and air pollution and the poor quality of life it causes. Our priority is to ensure that Leicester enjoys good air quality and improve the health and quality of life of residents, as Leicester continues to grow.

3.2 Public Health Context

In the UK, air pollution is the largest environmental risk to public health[2]. It has been estimated that removing all fine particulate air pollution would have a bigger impact on life expectancy in England and Wales than eliminating passive smoking or road traffic accidents[3].

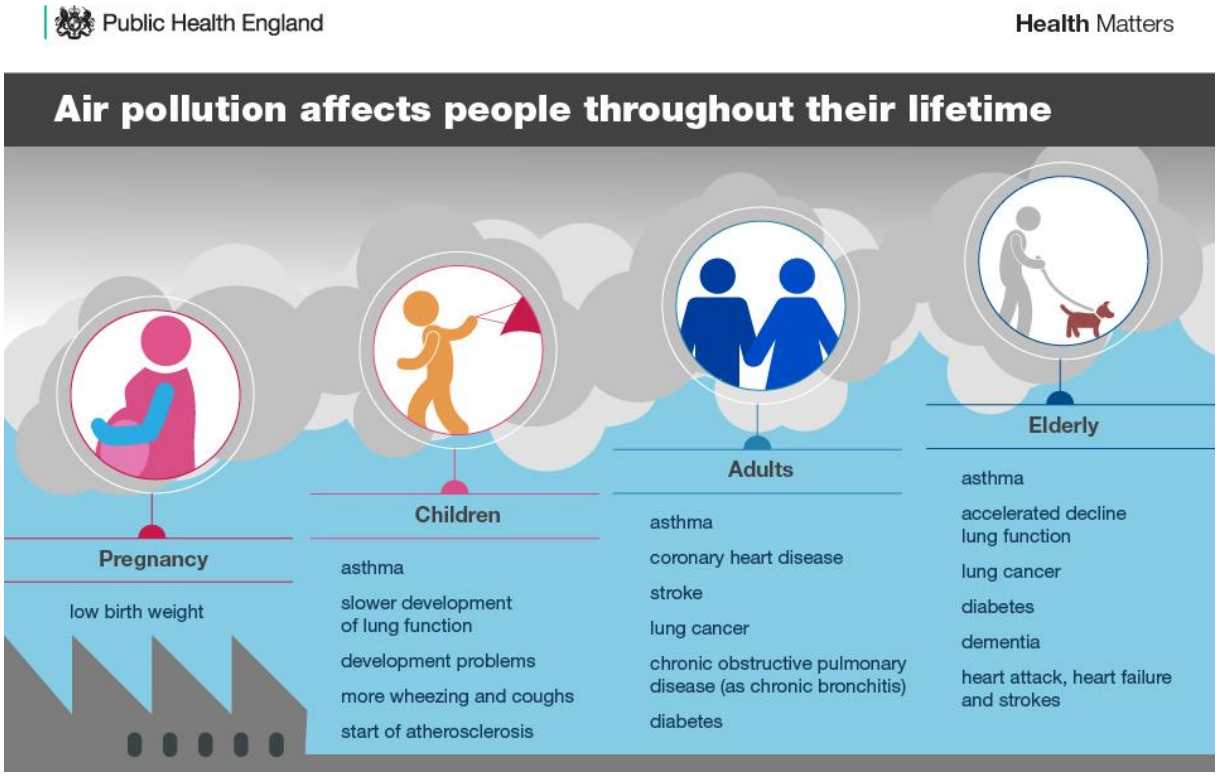
Air pollution can affect the eyes, nose and throat, the heart and associated blood vessels and the lungs and respiratory system. Short-term exposure (over hours or days) can lead to a range of health impacts including lung function, coughing, wheezing and shortness of breath, exacerbation of asthma, increases in respiratory and cardiovascular hospital admissions and mortality. Over long timescales (years or lifetimes) exposure can lead to reduced life expectancy, due to cardiovascular diseases, respiratory diseases, and lung cancer. More recent research has associated air pollution with affecting the brain causing dementia and cognitive decline; diabetes and affecting early life leading to various birth outcomes, for example, low birth weight and developmental problems. Figure 3.1 illustrates the effect of air pollution on people's health through different stages of life[4].

[2] Air pollution: applying All Our Health - GOV.UK (www.gov.uk)

[3] Public Health | LAQM (defra.gov.uk)

[4] Air pollution: applying All Our Health - GOV.UK (www.gov.uk)

Figure 3.1 – Image of impacts of air pollution affecting people throughout their lifetime



Source: Office for Health Improvement and Disparities, Air Pollution: applying All Our Health

Air pollution can cause and worsen health effects in all individuals, particularly society's most vulnerable populations. The health effects of pollutants will depend on many factors as to the level of harm an individual is exposed to. This includes the dose, duration, how an individual comes into contact with the pollutant, in addition to factors such as age, sex, diet, family traits, lifestyle and state of health. While air pollution can affect anyone's health, 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[5]. This is depicted in figure

[5] Air pollution: applying All Our Health - GOV.UK (www.gov.uk)

3.2 below. Air pollution is thus an equality issue and tackling it will help to address Leicester's health inequalities.

Figure 3.2 – Image of Air Pollution and Health Inequalities

Source: Health matters: air pollution.

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), will be £1.6 billion[6]. The annual mortality of human-made air pollution in the UK is roughly equivalent to between 28,000 and 36,000 deaths every year[7]. Estimates from the Public Health Outcomes Framework indicate that the fraction of mortality attributable to particulate air pollution is 7.1% in 2022, while the England average is 5.8%[8].

[6] Air pollution: applying All Our Health - GOV.UK (www.gov.uk)

[7] Air pollution: applying All Our Health - GOV.UK (www.gov.uk)

[8] Public Health Outcomes Framework - Data - OHID (phe.org.uk)

It is therefore important we do all in our power to reduce air pollution in the city to reduce people's exposure to poor air quality. Whilst as a council we have made great progress against our statutory air quality standards, since there are no safe limits for air pollutants we have a public health ambition to lower our emissions to the levels recommended in the World Health Authority (WHO) Air Quality Guidelines[9]. This plan will use public health location data to help identify areas where air quality needs to be lowered as a priority for this ambitious work.

3.3 Planning and Policy Context

National Context

The **UK Air Quality Strategy** published by the Department for Environment, Food, and Rural Affairs (Defra), provides the policy framework for air quality management and assessment in the UK. It provides air quality standards and objectives for key air pollutants, which are designed to protect human health and the environment. It also sets out how the different sectors: industry, transport, and local government, can contribute to achieving the air quality objectives. Local authorities play a particularly important role. The strategy describes the Local Air Quality Management (LAQM) regime that has been established, whereby every authority has to carry out regular reviews and assessments of air quality in its area to identify whether the objectives have been, or will be, achieved at relevant locations, by the applicable date. If this is not the case, the authority must declare an Air Quality Management Area (AQMA) and prepare an action plan which identifies appropriate measures that will be introduced in pursuit of the objectives.

The **National Planning Policy Framework (NNPF)** sets out planning policy for England. It places a general presumption in favour of sustainable development. The planning system should play an active role in guiding development to sustainable solutions and air quality is a material planning consideration. Paragraph 192 of the

[9] What are the WHO Air quality guidelines?

National Planning Policy Framework (NPPF) provides the ability for local authorities to consider air quality as a material planning consideration, particularly where AQMAs are involved:

> "***192.*** *Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the 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. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. 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 government set out it's **'Road to Zero' Strategy** for cleaning up road transport emission and published the **Transport Decarbonisation Plan (TDP)** *Decarbonising transport: a better, greener Britain* in July 2021. The TDP outlines the Government's current position on transport emissions, including highlighting current policies and strategies in place to decarbonise the transport sector. The TDP sets out to ban the sale of diesel and petrol cars and light goods vehicles from 2030, followed by the requirement for all new cars and vans to be fully zero emission at the tailpipe by 2035. Additionally, the Government have published a consultation on ending the sale of all non-zero emission Heavy Goods Vehicles (HGVs) from 2040, with lighter HGVs from 2035.

Regional Context

Air quality is a regional issue as air pollutants released in one area may be transported in the atmosphere and contributes to poor air quality elsewhere. The following strategies and plans are relevant to air quality:

The **Midlands Connect Transport Strategy (2022)** identifies key long-term priorities for regional transport investment supporting levelling up, decarbonisation and the

economic development of the Midlands including Leicester and Leicestershire. This identifies key long-term priorities for regional level transport investment including:

•Establishing a direct rail service between Coventry, Leicester and Nottingham

•Service improvements between Leicester and Birmingham

•Improving North-South connectivity by rail investment in electrification and rolling stock for the Midland Mainline

•Improvements along east-west road links including the A46 corridor

•Supporting innovation and decarbonisation projects

The context for strategic planning sub-regionally is set out in the **Leicester and Leicestershire Strategic Growth Plan** (2018). It presents the long-term strategy for the future development and proposes overall that most development will take place in major strategic locations. The Plan estimates that Leicester and Leicestershire will need 96,580 new homes and 367 – 423ha of employment land in the period 2011-2031. Beyond 2031, the Plan identifies a need for a further 90,500 dwellings and additional employment land. The Plan also identifies Leicester City, particularly the Strategic Regeneration Area and the A46 Priority Growth Corridor to the south and east of Leicester as areas to focus future development. Major infrastructure improvements will be needed to accommodate the growth.

The **Leicester and Leicestershire Strategic Transport Priorities document (LLSTP)**, supports the principles of the Strategic Growth Plan and sets out the long-term approach to guide improvements over the next 30 years delivered through a range of programmes and packages. It has been developed by both the City and County Council to ensure that the long-term development needs and associated transportation requirements are co-ordinated. The Strategic Growth Plan notes that major infrastructure improvements will be needed to unlock land for development and accommodate new growth focussed on major transport corridors such as investment in city transport infrastructure to support improved accessibility to and within the city – principally the hub and spoke plan for bus corridors, park and ride and cycling / walking corridor improvements; Improvements in the city centre to improve it as a travel hub

including rail and bus station enhancements together with connecting links and supporting electric vehicles with appropriate infrastructure and incentives.

Local Context:

Leicester has key plans, strategies and policies that the AQAP will complement and support:

The **City of Leicester Local Plan 2020 – 2036** (Submission Draft) provides the emerging position on the strategic and spatial vision for the future of the Leicester area. The Plan identifies an overall housing need of 39,424 homes across the Plan period. The Council will work towards providing 20,730 homes across the Plan period with the remaining housing requirement being accommodated in the neighbouring districts.

Local Plan Policy T02 is of direct relevance of air pollution in the planning context:

a) Deliver against the council's climate change targets and commitments (to be established, following the climate emergency consultation).

b) Ensure air quality in Leicester will progressively improve, below UK nitrogen dioxide targets towards the 2021 WHO targets, and delivers against emerging fine particle PM2.5 commitments. Major development proposals will be expected to take account of future supplementary planning document on air quality.

The emerging **Leicester Transport Plan (2021-2036)** sets out the Council's transport vision, ambitions and priorities for the city to 2036. The vision includes 'clean air' which is supported by a number of initiatives, including: 100% zero emission vehicles throughout the city (including buses, trains, fleet and freight), public transport and park and ride, cycling or personal e-mobility will be the first choice for longer journeys for most people, a thriving accessible city centre, active transport cycling and walking will be the first choice for shorter journeys for most people. The Plan acknowledges that the Council is committed to improving air quality and the health of citizens, which will assist with the delivery of this AQAP.

The **Care, Health and Wellbeing Strategy (2022-2027)** sets out its objectives which will be supported by a series of action plans. Levels of physical activity and related

obesity remain a concern and transport choices can contribute significantly to improved health and wellbeing outcomes. Transport is highlighted as an issue affecting the local environment and actions include promoting the health benefits of sustainable transport, improving air quality, and working with the transport sectors to reduce their impact on the environment.

The **Leicester Street Design Guide** sets out the principles that will be used to help build healthier streets in future city redevelopment schemes. The guide shows how the Council can prioritise people-friendly urban spaces and public streets, which encourage people to walk, cycle and take public transport.

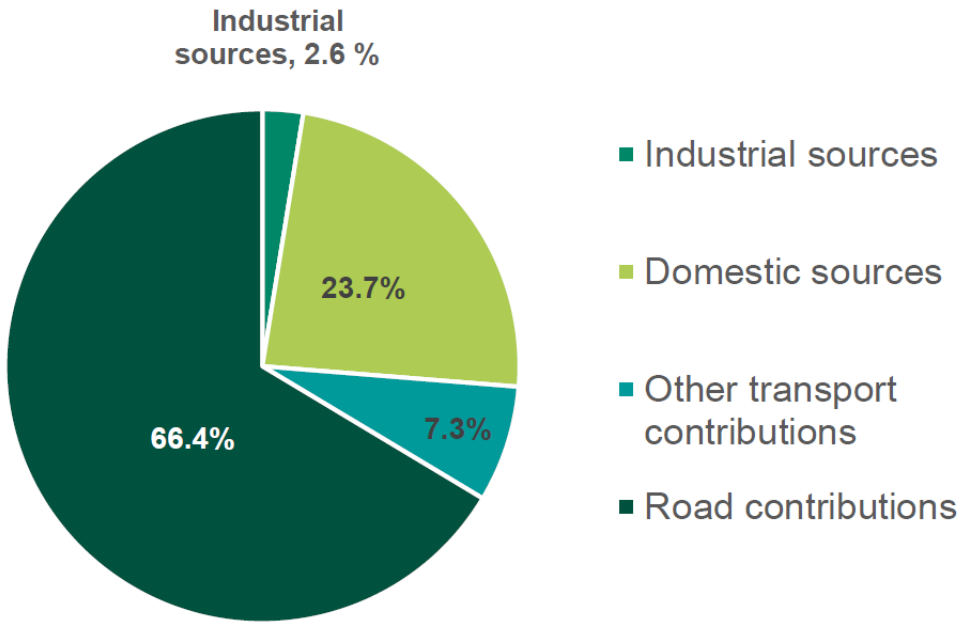
Climate Ready Leicester Plan (2023-28): Leicester City Council declared a climate emergency in February 2019, announcing an ambition to reduce Leicester's carbon emissions to net zero by 2030, or as quickly as possible after that, with Government support. The updated action plan (draft) restates the net zero ambition and sets out our strategy for working towards it, informed by a 'roadmap' published in 2022. To achieve a net zero transport system and great low carbon travel choices for everyone in Leicester, our Climate Ready Leicester Plan sets out that we need to combine the two key priorities of the city-wide net zero roadmap: of reducing demand and switching away from fossil fuels, with the need to ensure that everyone can access services and facilities, and can travel as they need, regardless of whether they have access to a car. It is also important to reduce levels of traffic in order to tackle the negative impacts of congestion on the city. These include the impact of air pollution on health.

3.4 Source Apportionment

Where does pollution come from?

A source apportionment exercise was carried out by Leicester City Council in 2022 to understand where the pollution originates from to then develop measures to target the predominant sources of pollution. This identified that for the entire city of Leicester (including outside of the AQMA), the percentage source contributions were as follows (see figure 3.3):

Figure 3.3 – Leicester NOx Source Apportionment 2022



The exercise clearly identifies road contributions as the main source of NOx in Leicester, with 66% estimated to be arising from it. Further detail is presented in Table 3.1. However, nearly a quarter of NOx emissions are from domestic sources, such as central heating boilers, open fires and wood-burning stoves. The Action Plan has a role to play to address the emissions from domestic sources alongside our Climate Ready Leicester Plan.

Table 3.1 – Leicester Source Apportionment: Tonnes NOx

Source	2022 (Tonnes NO_X)
Transport	1,764.4
Domestic	630.1
Other Transport	194.8
Industry	68.1
Total	**2,657.4**

A further source apportionment exercise, using Defra's Emission Factor Toolkit (EFT v12.0.1), has been undertaken to identify the total emissions from all vehicle categories at point sources to understand, for road transport (the main source of pollution in the city), which types of vehicles are causing pollution. This to ensure that air quality improvement measures continue to be targeted to the main sources of pollution across the city; this will ensure maximum air quality improvement in the shortest timescale possible. Vehicle count data was taken from the Department for Transport: Road Traffic Statistics webpage, which counts vehicle type manually or estimates the figures using previous years data. The exercise was undertaken for all of Leicester City Council's automatic monitoring stations, including Glenhills Way which was decommissioned part way through 2023. Figure 3.4 shows the DfT annual average daily flow (AADF) statistics for each monitoring station location in Leicester. This helps to provide context when looking at source apportionment data for each site, as some roads experience significantly less traffic than others due to their size and location.

Figure 3.4 – Annual average daily flow of traffic for automatic monitoring station locations in 2023, from Department for Transport: Road Traffic statistics.

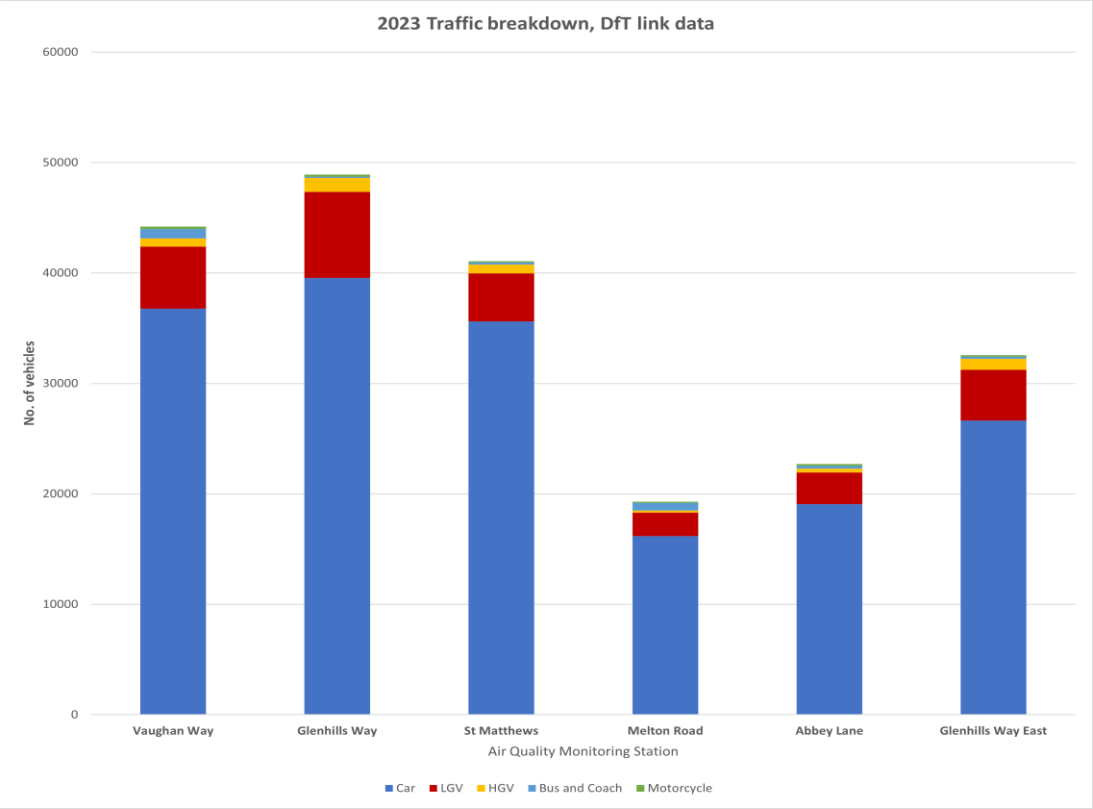


Figure 3.5 – NOx source apportionment from transport, 2023

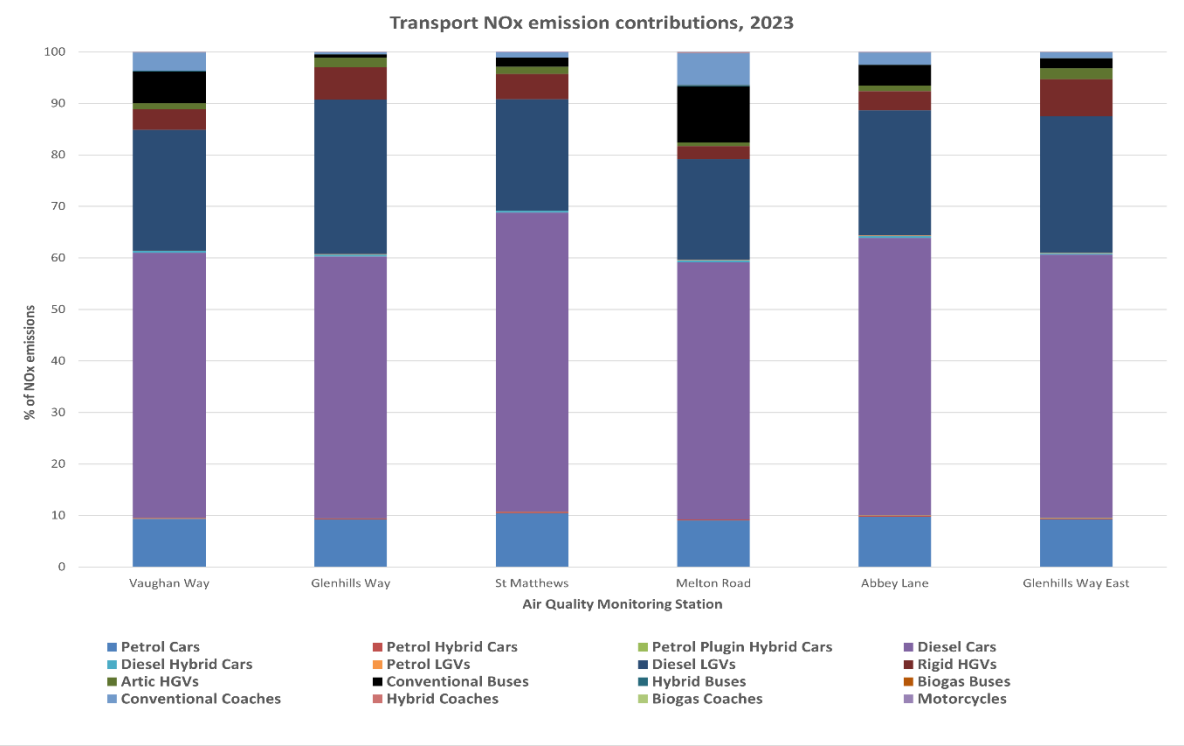


Figure 3.5 shows that diesel cars account for the largest proportion of road NOx concentrations at each link, followed by diesel LGVs. Vaughan Way and Melton Road have similar numbers of buses and coaches to each other; however Melton Road's NOx emissions are proportionally much higher from these vehicles due to an overall smaller flow of traffic. While the relative contribution from traffic varies from road to road in Leicester, the emissions from diesel vehicles are still predominant on each link. Conventional petrol cars, rigid HGVs, buses and conventional coaches also produce non-negligible levels of NOx emissions on most links.

This Action Plan also considers delivering reduction in PM_{10} and $PM_{2.5}$ pollutants for the protection of public health. Whilst there is no AQMA for Particulate Matter, and compliance is being achieved with these objectives, the measures within this plan will also have benefits for PM_{10} and $PM_{2.5}$.

3.5 Required Reduction in Emissions

Local authorities are required to identify the reduction in pollutant emissions needed to meet the health based objectives with their AQMAs to determine the scale of effort required in an AQAP. However, as the air quality objectives are currently being met at all monitoring stations, there is no specific reduction in emissions required.

From our latest air quality modelling exercise (carried out by Aecom as part of the preparation of Leicester's NO_2 Local Plan), it predicted that Leicester would achieve air quality compliance, for the objective NO_2, by 2023 at the latest. Our air quality monitoring supports this as compliance was met in 2022.

3.6 Key Priorities

The air quality objectives have been achieved at all locations since 2022, however the need to reduce concentrations even below the current air quality objective level is recognised in order to maximise health improvements.

Based on the evidence provided that has been drawn from our air pollution findings, the detailed source apportionment modelling, considering the planning and policy context and the professional views and experience of our steering group, the following priorities have been identified where future work over the next five years will

be focussed (the priorities are not numbered relative to their importance), that are supported by the an overall key outcome priority:

Key Outcome: Improving the health outcomes for all and providing opportunities to live healthy lives.

Priority 1: Providing residents, visitors and workers of Leicester with active and sustainable transport choices.

Measures to reduce vehicle trips, encourage modal shift away from private vehicles towards active travel modes such as walking and cycling, and to reduce congestion are fundamental to the overall approach to air quality improvement and to reduce transport based emissions. It will also support future demand from population growth, not only in the city, but neighbouring authorities proposed housing growth.

Priority 2: Promoting awareness of air pollution and engaging with schools, communities and businesses, whilst maintaining and expanding our monitoring network.

Delivering clear messaging to the public around the cause and consequences of poor air quality, particularly around the impacts on health to schools, communities and businesses. Also, campaigns relating to issues such as energy efficiency and domestic smoke control will be a valuable part of the wider local air quality improvement to address domestic sources emissions. Maintaining, and expanding where necessary, monitoring networks to understand where legal limits are exceeding.

Priority 3: Reducing air pollution exposure and improving conditions for those who live and work in Leicester.

The main source of air pollution leading to the declaration of the AQMA is road transport emissions along major routes into the city. Just over 6% of Leicester's population is within the AQMA. Therefore, reducing road transport emissions is a key priority, particularly for those who are most exposed and vulnerable.

Priority 5: Mitigating the impact of future growth on air quality

As Leicester is a growing city, effective planning policies can play a significant role in helping sustain air quality improvements. New residents will need to travel for work and leisure and construction activities can have a significant impact on local air quality. The Council will continue to ensure that air quality impacts are appropriately assessed and mitigated.

4 Development and Implementation of Leicester City Council's AQAP

4.1 Consultation and Stakeholder Engagement

In developing this AQAP, the Council will ensure that the requirements of the statutory consultation are adhered to, and that engagement with stakeholders, including neighbouring local authorities, businesses, agencies and the local community are adhered to.

Schedule 11 of the Environment Act 1995 requires local authorities to consult the bodies listed in **Error! Reference source not found.**able 4.1.

In addition, as part of this consultation, we will undertake the following stakeholder engagement:

- Website
- Online Consultation Questionnaire
- Social media platforms
- Direct correspondence with statutory consultees and other interested groups.

The Council will also present the Air Quality Action Plan to Full Council prior to adoption.

The new Air Quality Action Plan will cover a five year period from 2025-2030.

Table 4.1 – Consultation Undertaken

Consultee	Consultation Undertaken
The Secretary of State	Yes, draft report to be submitted to Defra
The Environment Agency	Yes, will be consulted as part of the public consultation

Consultee	Consultation Undertaken
The highways authority	Yes, Leicester City Highways Authority is a key member of the Air Quality Steering Group
All neighbouring local authorities	Yes, all neighbouring authorities will be consulted as part of the public consultation
Other public authorities as appropriate, such as Public Health officials	Yes, will be consulted as part of the public consultation
Bodies representing local business interests and other organisations as appropriate	Yes, will be consulted as part of the public consultation

4.2 Steering Group

In developing this new Air Quality Action Plan, a steering group was established. The central aim of the steering group has been to identify and evaluate measures for inclusion within the AQAP that would be effective both in terms of continuing to reduce NO_2 concentrations and feasible in terms of implementation and delivery from their service area/sector to improve air quality in Leicester. Measures to reduce PM concentrations were also discussed. Group members are encouraged to work collaboratively and on shared projects (particularly Public Health), to realise benefits beyond simply reducing the concentration.

The steering group is composed mainly of senior officers from different disciplines from Leicester City Council. A steering group meeting was held on 9th May 2024 and included representatives from: Transport and Highways, Planning, Regulatory Services, Sustainability and Climate Change, and Public Health.

The Council has ongoing engagement with businesses and interested parties. The Council has delivered a series of Business Travel Forums to discuss the future strategic development and planning of schemes and improvements, measures to support active and sustainable travel as well as ongoing behavioural change work with businesses and communities to encourage mode shift. The Council also

regularly engages with accessibility groups, this includes LTAP (Leicester Transport Accessibility Partnership) and All In (representing disabled users with a wide array of visual, mobility, and neurological conditions).

Continued engagement is held with specific interest groups, such as Walking and Cycling groups and business groups that cover a range of issues set out in the local transport plan strategy, including discussion of how we can improve air quality and facilitate the increase in sustainable modes of travel.

Suggestions and feedback from all engagement activities have been used to inform the measures with the Action Plan.

The progress towards Actions under the AQAP will be overseen by members of the steering group on a regular basis. Additional measures will be considered if progress is not being made.

5 AQAP Measures

This section details the possible actions that we will take over the next five years to improve air quality. The actions from the previous AQAP largely remain relevant and raise awareness of its impacts. The actions have been grouped into five themes:

- Theme 1: Air Quality Monitoring, Public Awareness and Engagement
- Theme 2: Promoting, Supporting, and Encouraging Sustainable Transport
- Theme 3: Reducing Emissions from Transport
- Theme 4: Optimising Traffic Management
- Theme 5: Development Control and Regulatory Services

Table 5.1 shows the list of actions that form part of the plan. It contains:

- a list of the actions that form part of the plan
- the responsible individual and departments/organisations who will deliver this action
- estimated cost of implementing each action (overall cost and cost to the local authority)
- expected benefit in terms of pollutant emission and/or concentration reduction (if known) - the impact of measures will depend on the extent to which they lead to behaviour change, therefore quantifying the impact, in terms of NO_2 reduction, of the proposed measures is very difficult
- the timescale for implementation
- how progress will be monitored

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

Figure 5.1 below sets out a summary of the air quality priorities for the council and how they are aligned with the Theme headings for the air quality action plan measures:

Figure 5.1 – Priorities and key themes alignment

	Priority 1: Providing residents and workers of Leicester with active and sustainable transport choices	Priority 2: Promoting awareness of air pollution and engaging with schools, communities and business, whilst maintaining and expanding our monitoring network	Priority 3: Reducing air pollution exposure and improving conditions for those who live and work in Leicester	Priority 4: Mitigating the impact of future growth on air quality
Theme 1: Air Quality Monitoring, Public Awareness and Engagement		X		
Theme 2: Promoting, Supporting and Encouraging Sustainable Transport	X			
Theme 3: Reducing Emissions from Transport			X	
Theme 4: Optimising Traffic Management			X	
Theme 5: Development Control and Regulatory Services				X

KEY OUTCOME: Improving the health outcomes for all and providing opportunities to live healthy lives.

Table 5.1 – Air Quality Action Plan Measures

Theme	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
Theme 1: Air Quality Monitoring, Community Awareness and Engagement															
1	Regulatory grade NO_2 monitoring: maintain and enhance.	Policy Guidance and Development Control	Other policy	1994	Ongoing	Leicester City Council, JAQU, Enviro Technology Services Ltd, Arcadis.	Internal funding, JAQU.	No	Fully funded	£100k - £500k	Implementation	Not applicable	Annual reporting of monitoring data through ASR	Monitoring station LSO (local site operator) contract renewed until 2028, with option to extend to 2030.	Reinstatement of diffusion tube network planned for 2024, for a period of 2 years.
2	Indicative NO_2 monitoring	Policy Guidance and Development Control	Other policy	2020	Ongoing	Leicester City Council, EarthSense.	Internal funding,	No	Partially funded	£100k - £500k	Implementation	Not applicable	Annual reporting of monitoring data through ASR	Entire network of Zephyrs extended to December 2024.	Funding is required to continue the network of Zephyrs post 2024.
3	Partnership Working	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality	2015	Ongoing	Leicester City Council, University of Leicester, National Highways, Environment Agency, other LAs.	Internal budgets: BAU, Defra AQ Grant.	No	Not yet funded	£100k - £500k	Implementation	Low impact	n/a	Continued partnership working with University of Leicester, most recently on development of Defra AQ Grant bids (funding scheme then closed in 2024) and assistance with PhD project on VOC concentrations in Leicester.	Recent reinstatement of Leicester and Leicestershire Air Quality Forum, a steering group with neighbouring LAs.
4	Delivering educational activities e.g., Clean Air Day, anti-idling	Public Information Promoting Travel Alternatives	Via Leaflets, Via television, Other Intensive active travel	2015	Ongoing	Leicester City Council, Leicestershire County Council schools, businesses, local communities, Public Health, Sustrans, British Cycling	Internal budgets: BAU Access Fund External Grants TBC	No	Partially funded - BAU	£100k - £500k	Implementation	Low initially. The impact on air quality should increase over time, as further investment will encourage a	Improved cycling / walking levels, increased public transport patronage Number of Bikeability training sessions	Clean Air Day delivered 2024. 26 school stings in 23/24 academic year. Bikeability programme works with approx. 1500	Securing staff resources to deliver the Bikeability programme to the required number of pupils.

Theme	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	campaigns, School stings, Website campaigns to encourage active travel e.g., promotion Choose How You Move website		campaign and infrastructure									greater model shift from car use.		pupils a year to deliver intensive cycle training Walk to School programmes engage over 40 schools and 17,000 pupils to encourage active travel trips to and from school. Choose How You Move: 140,135 users to date, of which 77,579 were new users in 2023, with 146,884 page views	
5	Supporting domestic emission sources awareness campaigns, e.g., woodburning stoves campaigns	Public Information	Via Leaflets, Via television, Other Intensive active travel campaign and infrastructure	2022	Ongoing	Leicester City Council, Public Health	External grants	No	Not funded	TBC	Planning	Low. It may encourage people to change their open burning habits, indirectly improving air quality. Will also reduce PM emissions.	Reduction of complaints	Woodburning stoves and open fires media campaign launched in 2022 that raised awareness about the health impacts of woodburning	
Theme 2: Promoting, Supporting, and Encouraging Sustainable Transport															
6	Continued delivery of Connecti	Transport Planning and Infrastructure	Other	Ongoing	Ongoing	Leicester City Council, utility companies, local businesses	Internal funding,	No	Partially funded	>£10m	Implementation	Low. There would be lower exposure to harmful	Increased uptake in cycling / walking &	TCF programme delivered (2019-23): 16km of cycle lanes and	This action is dependent on securing external funding to continue

Theme	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	ng Leicester Programme: further opportunities for pedestrianisation and cycling improvements and Connecting St. Margaret's Project	Traffic Management	Strategic Highway Improvements				Levelling Up fund External grants					pollutants whilst improving health of people generally through active travel. Benefits will increase as a comprehensive route network develops	public transport journeys. Reduced journey times Reduction in NO_2	4km of bus priority measures. A number of significant improvements have been completed to provide a safe and connected city through the delivery of the Connecting Leicester programme to encourage people to make a shift from the car to more sustainable forms of transport.	the delivery of projects.
7	To increase the uptake of sustainable transport options	Promoting Travel Alternatives	Promotion of cycling Promotion of walking Intensive active travel campaign & infrastructure	Ongoing	Ongoing	Leicester City Council, Leicestershire County Council, Sustrans, British Cycling, Schools, businesses, Ramblers Association, Network Rail, East Midlands Trains, Joint Air Quality Unit (JAQU)	Active Travel Fund, Capability Fund, Levelling Up Fund External grants – TBC	No	Partially funded	TBC	Implementation	Low. The impact on air quality should increase over time, as further investment and actions will encourage a greater model shift from car use	Increased uptake in walking, cycling, public transport and rail journeys Number of Park and Ride journeys	Work to date has included the delivery of a 'Better Points Schemes', Choose How You Move website: journey portal. Delivery of Connecting Leicester and Transforming Cities Programme, Cycling and walking events, offering advice to employers and schools, Bikeability, Adult cycling and walking programmes. Significant transformation redevelopment of Leicester Railway Station	Schemes are reliant on securing continued external funding

Theme	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
8	To increase the number of public transport trips	Traffic Management Promoting Travel Alternatives Transport Planning & Infrastructure Alternatives to private vehicle use	Strategic Highway Improvements Other Bus Route Improvements & Public transport improvements – interchanges stations and services Bus based Park and Ride	2015	2030	Leicester City Council, Leicestershire County Council, bus companies	External funding and grants, bus companies	No	Partially funded	>£10m	Implementation	Low. The impact on air quality should increase over time, as further investment will encourage a greater model shift from car use.	Increased uptake in public transport trips Number of Park and Ride journeys	New City Centre Hop! Service, delivery of a fully integrated network with 25 frequent lines. Ten new fully enforced bus priority schemes, over 1000 new stops with new real time information totems and 500 new shelters, together with a new bus station (St Margaret's). A new Bus Service Improvement Plan (2024-36) was published in June 2024.	Significant ongoing capital funding is required to sustain progress and to take the plan to the next stage (e.g. delivering a step change to the outer orbital services, to complete the electrification of the whole network, extend the park and ride provision and to lower fares for travel to congested outer lying workplaces).
9	To deliver actions within the LCWIP	Transport Planning and Infrastructure	Cycle network Other	2019	2030	Leicester City Council, Leicestershire County Council, Active Travel England	External grants, funds e.g., Active Travel England, Capability fund, developers	No	Not funded	>£10m	Planning	Low. The LWCIP will not directly reduce pollutant emissions, however, should encourage more people to walk/cycle more often, indirectly improving air quality	Increased uptake in active travel journeys.	Leicester's Local Cycling and Walking Infrastructure Plan (phase 1) published 2019	The delivery of schemes is reliant on securing continued external funding
Theme 3: Reducing Emissions from Transport															

Theme	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
10	To work with bus sector to reduce their environmental impact	Vehicle Fleet Efficiency	Promoting Low Emission Transport	2015	Ongoing	Leicester City Council, Bus Operators	Internal budgets, DfT ZEBRA funding, External grants TBC –e.g., BSIP funding.	No	Partially funded	>£10m	Planning, and implementation	High. The introduction of zero-emission buses to replace traditional buses in Leicester will directly reduce exhaust emissions of NOx and PM.	Number of electric buses	120 electric buses, 150 electric buses planned by Summer 2024. All registered operators in Leicester use Euro VI or electric buses as part of the Leicester Enhanced Partnership Scheme as of April 2023	Further delivery of EV buses will be dependent on securing funding.
11	To work with freight sector to reduce their environmental impact	Vehicle Fleet Efficiency Freight and Delivery Management	Fleet efficiency and recognition schemes Freight partnerships	2015	Ongoing	Leicester City Council, Leicestershire County Council, Freight Quality Partnership, Freight Operators	Internal budgets: BAU External grants, e.g., Defra funding	No	Partially funded	£100k - £500k	Planning & Implementation	Low. It will not directly reduce air pollutant concentrations, but will help facilitate uptake of EVs and freight vehicle efficiency.	Number of new freight members to the ECO Stars Scheme	51 freight operators signed up to the ECO Stars Scheme in 2023	Implementation of the ECO Stars Scheme will be dependent on securing external funding.
12	To work with rail sector to reduce their environmental impact	Promoting Low Emission Transport	Other	2015	By 2030	Network Rail, East Midlands Railway, Leicester City Council	External Funding	No	Partially funded	>£10m	Planning	High. The introduction of zero-emission rail stock will directly reduce exhaust emissions of NOx and PM	Railway Station Usage estimate	Wigston through Leicester to Trent Junction – funding subject to government spending review. Funding has been secured from the government's Levelling Up bid to deliver a major transformation of Leicester Railway Station. Demolition work has commenced.	Electrification dependent on government funding / delivery.

Theme	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
13	To work with taxi sector to reduce their environmental impact	Promoting Low Emission Transport	Taxi Licensing Conditions	2015	Ongoing	Leicester City Council, taxi companies	BAU	No	Partially funded	£1m - £10m	Planning and Implementation	Medium. Introducing taxi EVs will directly reduce exhaust emissions of NOx and PM, however, the scale of improvements may not be high	Number of public taxi EV charging points	Reducing emissions from taxis (hackney and private hire) – ensuring taxi licensing conditions compliance with both scheduled and unannounced inspections. To explore further opportunities to incentivise taxi drivers to switch to cleaner vehicles. All licensed taxis have two scheduled inspections per year. Temporary policy from Sept 2023 required vehicles over 11 years to have three scheduled inspections per year. Policy expected to become permanent from summer 2024. Unannounced spot checks are also undertaken - in 2023 there were 8 operations involving 210 vehicles.	The high purchase cost of electric taxis, particularly during the cost of living crisis.
14	Delivery of infrastructure to support the shift to low	Promoting Low Emission Transport	Procuring alternative Refuelling Infrastructure to promote Low Emission	2015	Ongoing	Leicester City Council, OZEV, Energy providers	LEVI funding External grants – TBC	No	Partially funded	£1m - £10m	Planning and Implementation	Low. The provision of EV charging in Leicester will not directly reduce air pollutant	Number of ULEVs registered in Leicester	Over 100 EV chargers had been installed by the end of 2022.	This is dependent on securing external funding

Theme	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	and zero emission vehicles		Vehicles, EV recharging									concentrations, but it will help facilitate the uptake of EVs.	Number of Electric Chargers		
15	Continued reductions in emissions from the Council's vehicle fleet operations	Promoting Low Emission Transport	Public Vehicle Procurement – Prioritising uptake of low emission vehicles	2015	Ongoing	Leicester City Council	External grants – TBC	No	Not funded	£1m - £10m	Planning and Implementation	Medium. Upgrading vehicles in the Council's fleet will directly reduce exhaust emissions of NOx and PM, however, the scale of improvements may not be high.	Vehicles in the Council fleet replaced with low-emission alternatives.	Continued roll out of electric vehicles: approximately 6% of the fleet is now electric. Installing driver behaviour telematics, educating business department managers on the expectation of drivers through formal Logistics UK courses.	Upgrades to fleet are dependent on funding and availability of additional charging infrastructure points
Theme 4: Optimising Traffic Management															
16	20 mph zones	Traffic Management	Reduction of speed limits, 20mph zones	1999	Ongoing	Leicester City Council	Internal budgets	No	Fully funded	500k - £1m	Implementation	Low. Can bring improved localised air quality and encourage walking and cycling	Number of streets with 20mph speed limits	Since 1999, we have created 1672 20mph zones in Leicester. Whilst the primary aim of a 20mph zone is for road safety improvements it can bring about other local environmental improvements including encouraging walking and cycling trips and improving air quality. We will continue our programme of introducing 20mph	

Theme	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
														zones in residential areas across the city	
17	Traffic Management Upgrades: Innovative approaches to managing traffic flow	Traffic Management	UTC, Congestion management, traffic reduction	TBC	TBC	Leicester City Council	External grants	No	Not funded	£100k - £500k	Planning and Implementation	Medium. Projects delivered optimising the traffic network will likely reduce exhaust emissions of NOx and PM, as a result of reduced congestion and idling.	Reduction in NO_2	Project developed	The delivery of schemes is reliant on securing continued external funding
18	Highway Signage	Traffic Management	Other	2024	2026	Leicester City Council	External grants	No	Not funded	£10k - £50k	Planning	Low. Can bring improved localised air quality and will likely reduce exhaust emissions of NOx and PM, as a result of reduced congestion and idling.	Reduction in NO_2	Project developed	The delivery of schemes is reliant on securing continued external funding
Theme 5: Development Control and Regulatory Services															
19	Air quality assessments for relevant planning	Policy Guidance and Development Control	Other policy	Ongoing	Ongoing	Leicester City Council - BAU	Internal funding – BAU	No	Funded	Staff time – BAU	Delivery	Medium. This will set out the requirements for any mitigation measures	Reduction in NO_2	Ongoing	

Theme	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	applications											which will directly reduce NO2 and PM emissions.			
20	Use of air quality dispersion modelling	Policy Guidance and Development Control	Other policy	2025	Ongoing	Leicester City Council, AIRVIRO	Internal funding – BAU	No	Not funded	£10-£50k	Planning	Low. Air quality modelling will not directly improve air quality, but could support delivery of other air quality actions that will help to improve air quality.	Reduction in NO_2	Planning phase	The action depends on funding being secured and staff training.
21	To ensure air quality considerations are embedded within relevant Council documentation	Policy Guidance and Development Control	Other policy	2015	Ongoing	Leicester City Council	Internal funding – BAU	No	Staff time	Staff time – BAU	Delivery	Medium impact over time	Reduction in NO_2 Increase in walking, cycling and public transport patronage	Ongoing	The draft Local Plan examination hearings are due Autumn 2024. The new policy relating to air quality will not be effective until the Plan's adoption.
22	Solar and green bus shelter rooves	Other	Other	2021	Ongoing	Leicester City Council, Clear Channel UK	Clear Channel	No	Not funded	£1m - £10m	Completed	Low impact over time.	Number of shelters implemented	To date, out of 479 bus shelters, 30 have Living roofs and 223 are solar powered.	Clear Channel fully funded 32 bus shelters. Future funding is unknown.
23	A2 Permit Installations	Environmental Permits	Other	2019	2040	Leicester City Council and Leicestershire County Council	Leicester City Council	No	Not funded	<£10k	Implementation	Low	Annual permit inspection and fee collection	Introduction/increase of environmental funding through permit systems and economic instruments. 1 permit - £1446 collected in fees from the process	Change as one of the A2 permits is no longer in production

Appendix A: Map of AQMA and Air Quality Monitoring Locations

The following maps are presented in Figures C.1 to C.3, displaying the air monitoring locations to the end of calendar year 2023, each with reference to the AQMA and Leicester City Council boundary:

- Air Quality Monitoring Stations
- Diffusion Tube network
- Low cost ‘Zephyr’ sensor network

Figure C.1 – Map of Air Quality Monitoring Stations

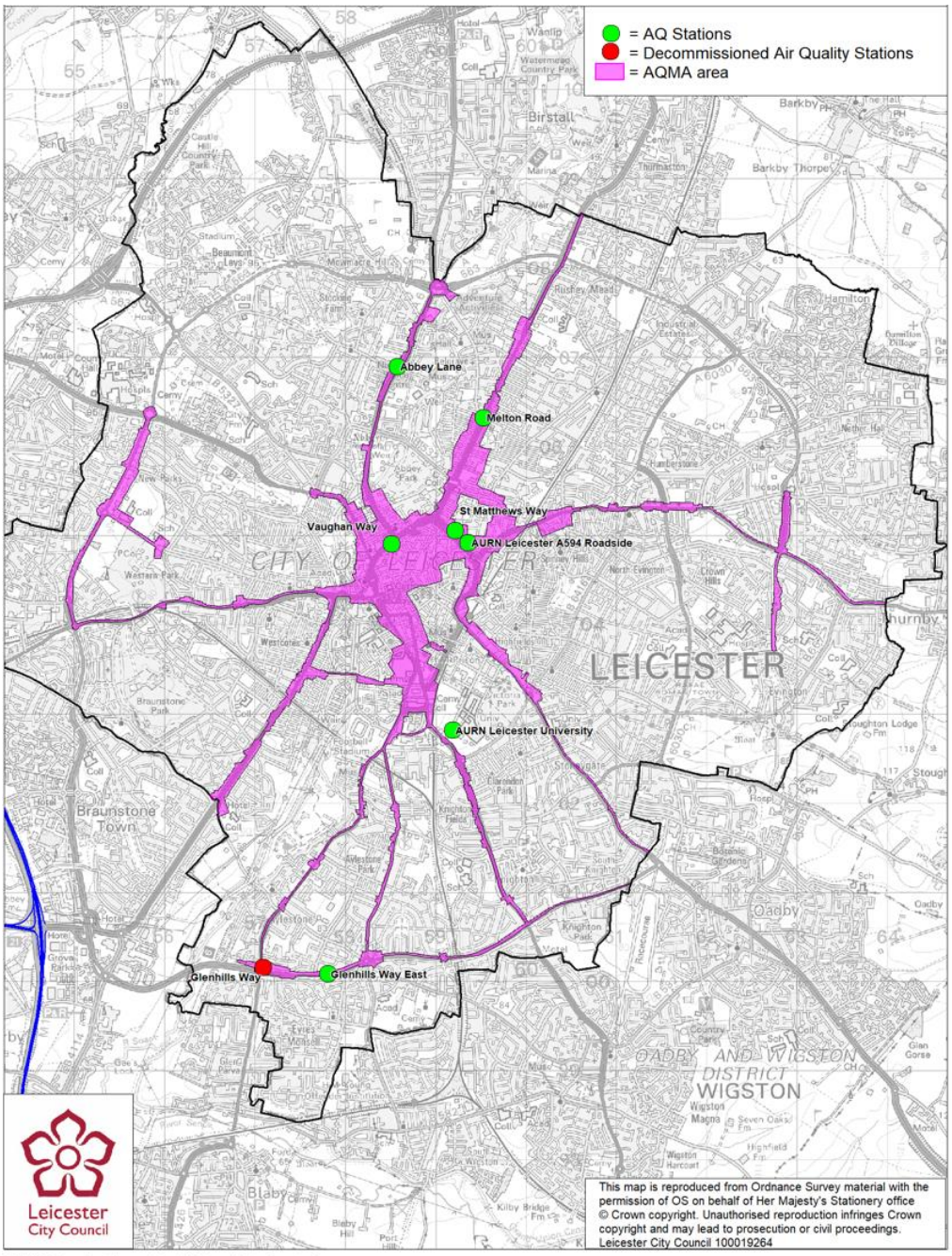


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Figure C.1: Map of automatic air quality monitoring station locations in Leicester, shown in green. Those labelled with the 'AURN' prefix form part of the national network and are not managed by Leicester City Council. The AQMA is shown in purple, and the local authority boundary in black.

Figure C.2 – Map of Diffusion Tube Network

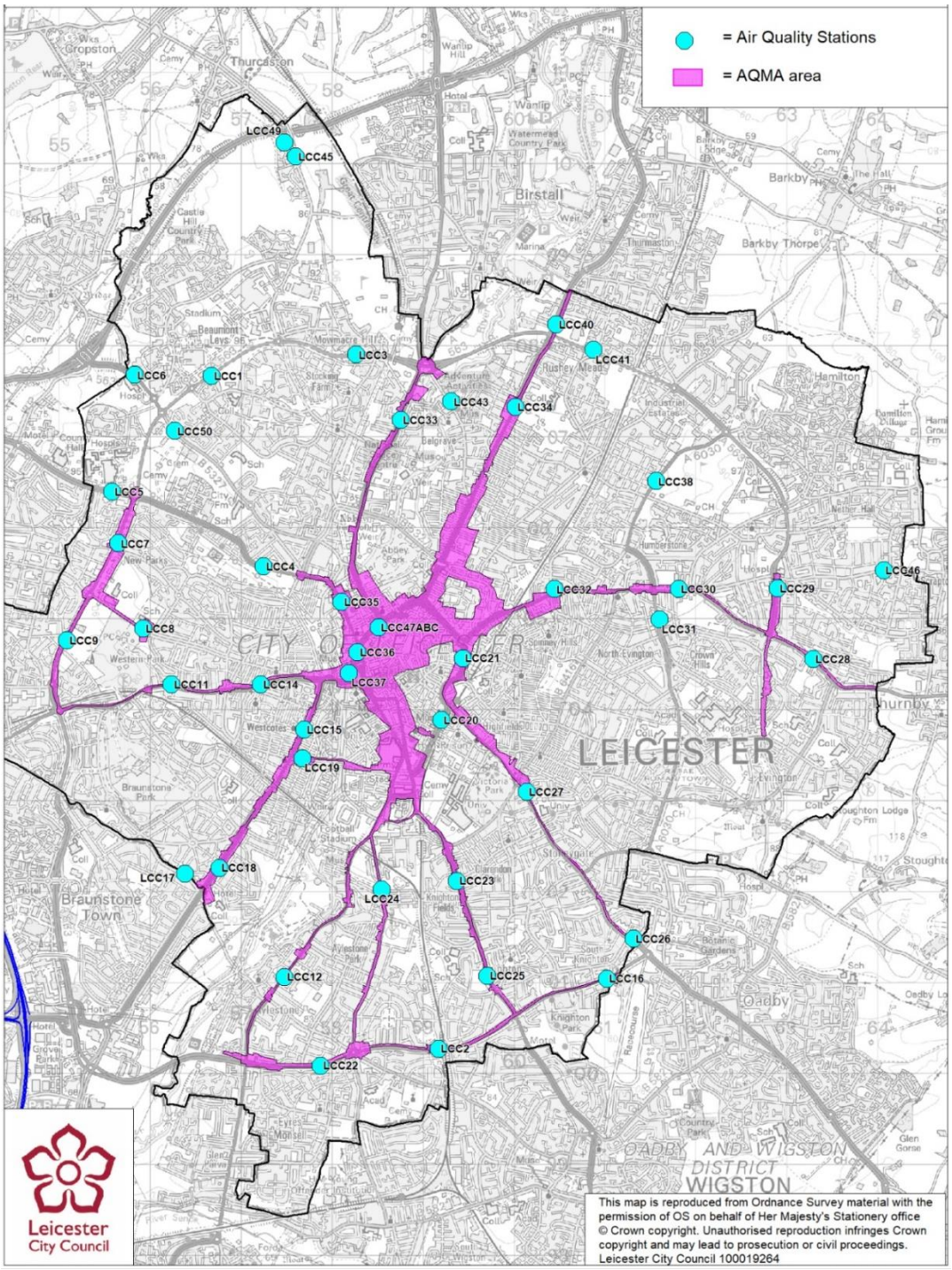


Figure C.2: Map of the diffusion tube locations in Leicester, shown in blue, to the end of monitoring year 2022. The network is due to be reinstated in 2024, with minor changes to the monitoring locations. The AQMA is shown in purple, and the local authority boundary in black. © Crown copyright – Leicester City Council 10019264.

Figure C.3 – Map of Low Cost 'Zephyr' Sensor Network

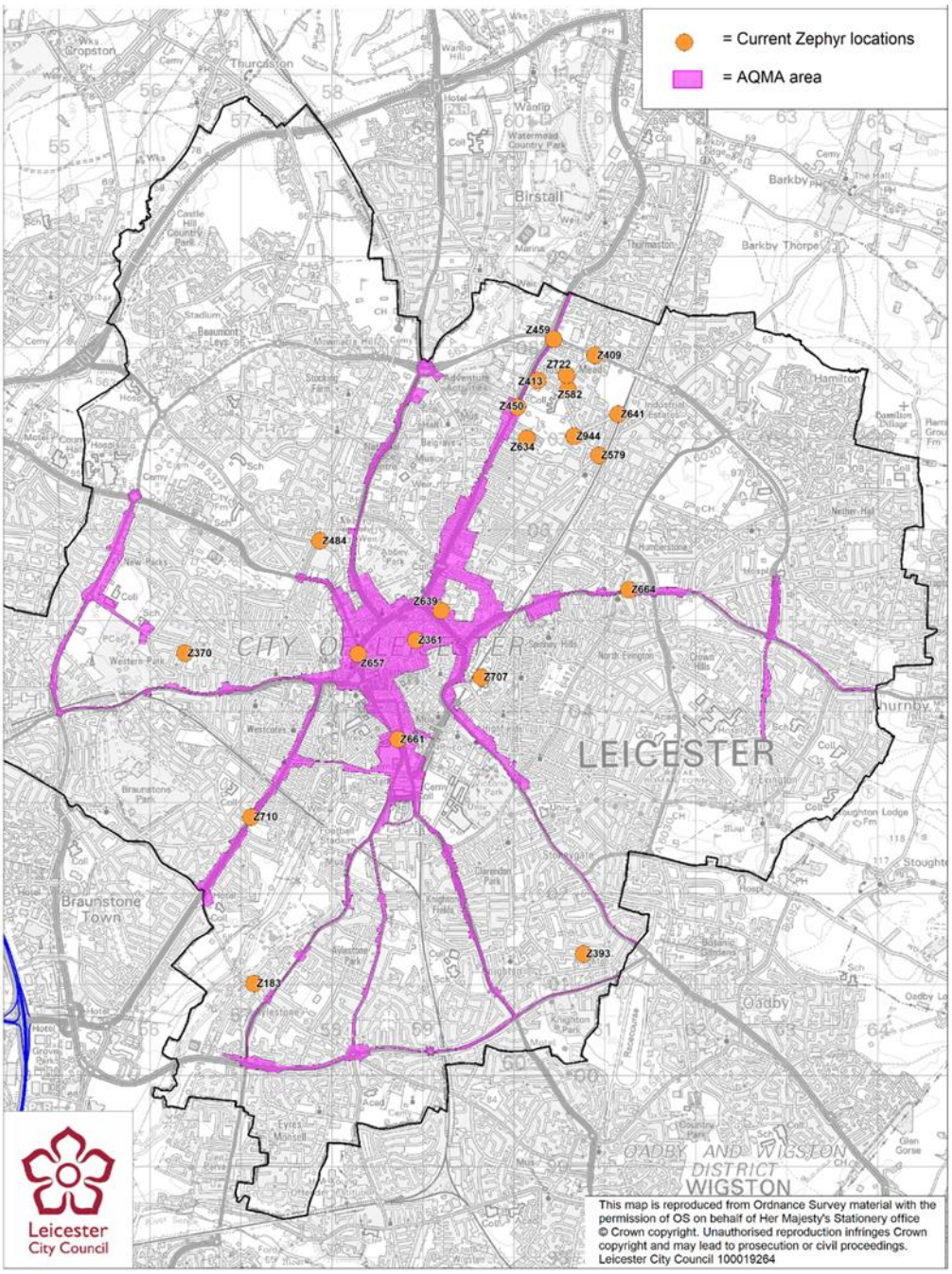


Figure C.3: Map of low cost ‘Zephyr’ sensor locations in Leicester, shown in orange, to the end of monitoring year 2023. In February 2024, Z639 was relocated to Forest Road and Z527 was introduced at Ashfield Road. The AQMA is shown in purple, and the local authority boundary in black.

Appendix B: Air Quality Monitoring Results – NO_2

Table D.1 – Annual Mean NO_2 Monitoring Results: Automatic Monitoring (µg/m^3)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2023 (%) [2]	2019	2020	2021	2022	2023
Abbey Lane	458575	306888	Roadside	98.4	98.4	31.5	24.3	26.6	26	23.1
Glenhills Way	457085	300158	Roadside	-	-	**48.6**	38.8	**42.1**	37.7	-
Glenhills Way East	457803	300090	Roadside	99.5	99.5	-	-	-	24.2	21.2
Melton Road	459528	306316	Roadside	96.5	96.5	38.5	28	31.4	33.4	30.4
St Matthews Way	459210	305052	Roadside	97.7	97.7	**40.6**	31.4	34.9	33.7	29.7
Vaughan Way	458507	304906	Roadside	98.1	98.1	**45.7**	35.2	36.8	38	36.3
AURN Leicester University	459186	302817	Urban Background	99.1	99.1	24	19	20.3	18.9	18.1
AURN Leicester A594 Roadside	459358	304915	Roadside	95.8	95.8	38	28	29	29.8	28.4

Figure D.1 – Trends in Annual Mean NO_2 Concentrations at Automatic Stations

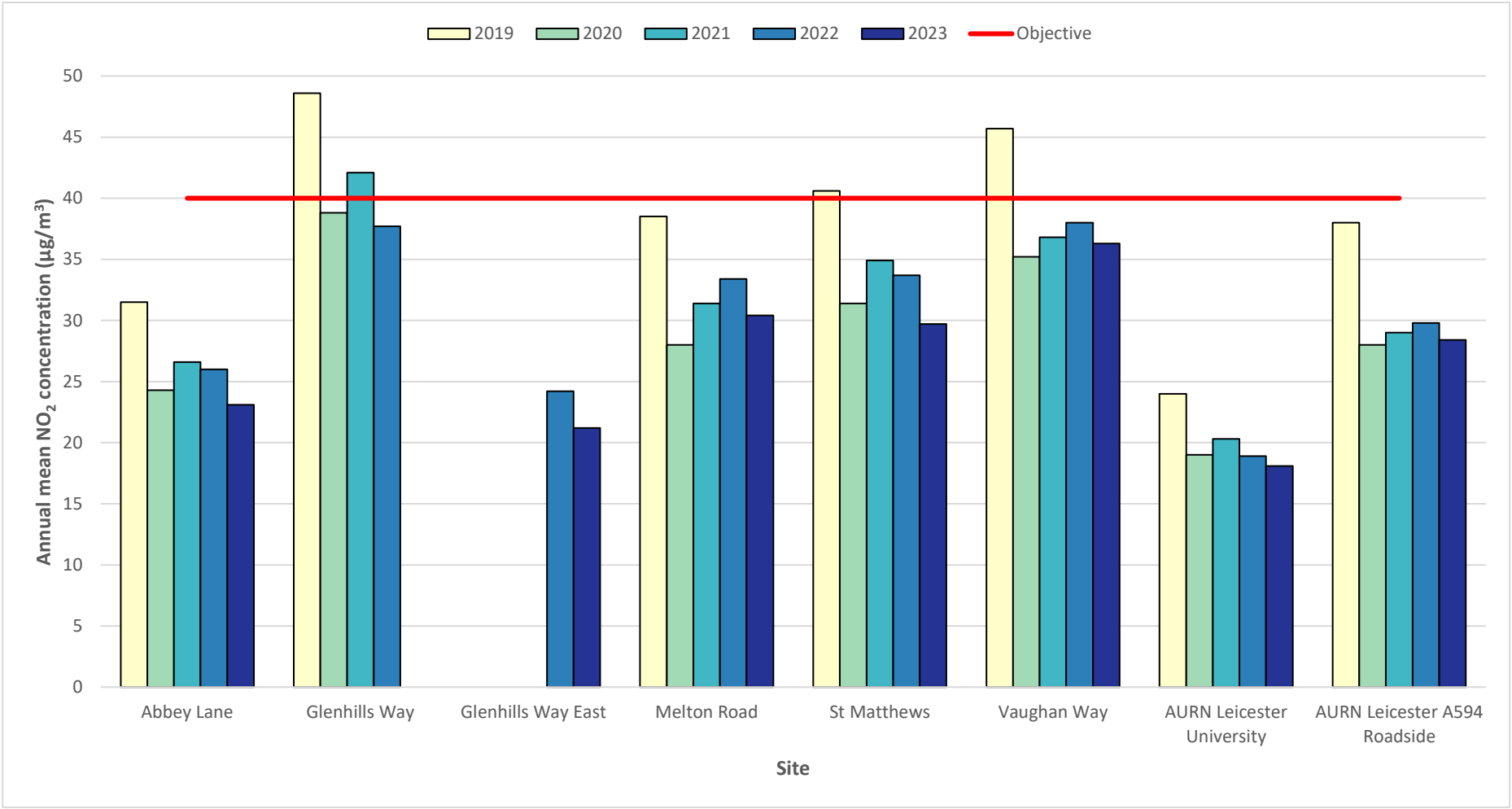


Table D.2 – Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg/m^3)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2023 (%) (2)	2019	2020	2021	2022	2023
LCC1	456672	307669	Roadside	-	-	32.6	23.3	29.9	30.4	-
LCC2	459165	300271	Roadside	-	-	24.9	20.3	24.4	23.5	-
LCC3	458260	307900	Roadside	-	-	34.1	25.0	31.7	31.9	-
LCC4	457244	305572	Roadside	-	-	32.2	-	32.2	28.4	-
LCC5	455578	306395	Roadside	-	-	36.0	25.4	35.2	34.7	-
LCC6	455825	307676	Roadside	-	-	35.3	24.6	33.5	34.9	-
LCC7	455647	305825	Roadside	-	-	31.5	24.7	28	27.8	-
LCC8	455917	304892	Roadside	-	-	21.6	17.7	17.8	19.4	-
LCC9	455082	304761	Roadside	-	-	30.1	21.4	24.3	24.3	-
LCC11	456230	304273	Roadside	-	-	28.2	21.0	26.6	25.2	-
LCC12	457474	301061	Roadside	-	-	28.9	19.8	24.7	22.8	-
LCC14	457210	304276	Roadside	-	-	23.6	17.3	21.9	23.0	-
LCC15	457690	303780	Roadside	-	-	38.3	26.9	-	37.5	-
LCC16	461014	301043	Roadside	-	-	32.0	22.3	34.7	37.3	-
LCC17	456380	302193	Roadside	-	-	25.6	20.1	24.4	24.0	-
LCC18	456754	302259	Roadside	-	-	31.4	22.1	27.6	28.9	-
LCC19	457667	303460	Roadside	-	-	39.6	30.8	39.9	37.1	-
LCC20	459196	303882	Roadside	-	-	27.1	21.8	24.1	23.9	-
LCC21	459431	304564	Roadside	-	-	30.3	24.7	27.1	25.9	-
LCC22	457869	300085	Roadside	-	-	27.8	21.8	27.9	27.4	-
LCC23	459367	302117	Roadside	-	-	35.6	28.5	32.4	34.2	-
LCC24	458542	302023	Roadside	-	-	25.3	21.5	25	24.3	-
LCC25	459703	301072	Roadside	-	-	21.9	16.9	20.6	20.6	-
LCC26	461307	301478	Roadside	-	-	27.5	20.5	25.7	25.9	-
LCC27	460134	303093	Roadside	-	-	34.1	25.6	31.8	32.4	-
LCC28	463282	304552	Roadside	-	-	19.6	15.8	18.8	17.7	-
LCC29	462891	305329	Roadside	-	-	24.7	21.1	22.7	22.7	-
LCC30	461806	305323	Roadside	-	-	35.2	27.1	35.2	27.8	-
LCC31	461596	304989	Roadside	-	-	27.6	21.3	25.8	24.9	-
LCC32	460441	305322	Roadside	-	-	35.0	28.5	33.4	35.0	-

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2023 (%) [2]	2019	2020	2021	2022	2023
LCC33	458749	307184	Roadside	-	-	32.5	25.5	27.5	25.5	-
LCC34	460010	307324	Roadside	-	-	25.6	18.5	23.3	24.6	-
LCC35	458099	305184	Roadside	-	-	33.7	25.1	27.2	27.7	-
LCC36	458272	304630	Roadside	-	-	**49.7**	37.5	-	**45.7**	-
LCC37	458182	304400	Roadside	-	-	38.0	25.0	31.9	31.5	-
LCC38	461558	306508	Roadside	-	-	24.6	15.0	21.9	20.7	-
LCC40	460460	308234	Roadside	-	-	30.8	23.5	27.9	27.9	-
LCC41	460865	307949	Roadside	-	-	31.2	24.4	27.8	29.3	-
LCC43	459304	307385	Roadside	-	-	30.5	18.6	28.8	30.2	-
LCC45	457596	310078	Roadside	-	-	17.7	15.4	14.8	15.9	-
LCC46	464058	305532	Roadside	-	-	19.0	15.8	17.7	17.8	-
LCC47ABC	458507	304904	Roadside	-	-	**42.8**	33.1	36.8	37.8	-
LCC49	457472	310229	Roadside	-	-	18.0	13.6	14.6	13.9	-
LCC50	456269	307062	Roadside	-	-	22.4	17.4	21	19.6	-

Figure D.2 – Trends in Annual Mean NO_2 Concentrations at Diffusion Tubes within the AQMA

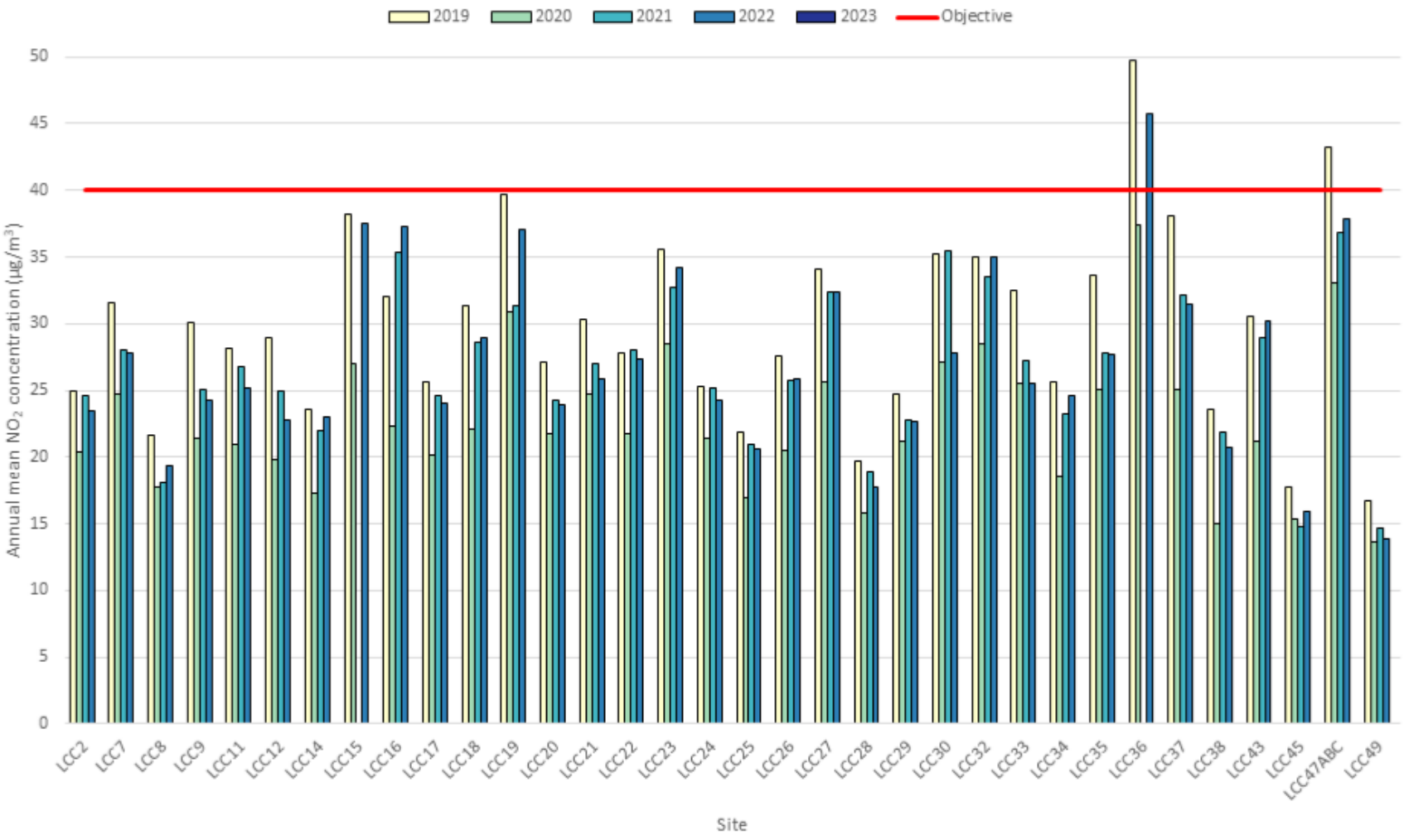


Figure D.3 – Trends in Annual Mean NO_2 Concentrations at Diffusion Tubes outside the AQMA

Table D.3 – Annual Mean NO_2 Monitoring Results: 'Zephyrs' (µg/m^3)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2023 (%) [2]	2019	2020	2021	2022	2023
Z183	457145	301012	Roadside	46.5	46.5	-	21.5	17.8	21.1	16.4
Z361	458922	304785	Roadside	89.1	89.1	-	**43.6**	**53.7**	**47.8**	37.1
Z370	456386	304642	Roadside	44.1	44.1	-	6.2	11.3	12.4	9.4
Z393	460766	301337	Roadside	79	79	-	18.0	16.4	18.3	15.1
Z409	460890	307916	Roadside	85.6	85.6	-	-	29.4	**40.4**	18.5
Z413	460262	307639	Roadside	98.6	98.6	-	-	18.7	17.8	16.5
Z450	460037	307346	Roadside	95.2	95.2	-	-	23.7	19.7	19.5
Z459	460437	308091	Roadside	92.3	92.3	-	-	37.3	31.6	22.9
Z484	457868	305875	Roadside	99.2	99.2	-	-	35.7	33.7	22.8
Z579	460933	306816	Roadside	89.1	89.1	-	-	33.8	29.5	19.7
Z582	460595	307540	Roadside	95.2	95.2	-	-	19.7	20.5	18.3
Z634	460142	307001	Roadside	98.3	98.3	-	-	21.5	18.2	16.5
Z639	459199	305108	Roadside	92.8	92.8	-	-	22.2	25.9	24.9
Z641	461146	307268	Roadside	93	93	-	-	14.3	16.6	14
Z657	458288	304633	Roadside	88.9	88.9	-	-	33.8	34.1	29.9
Z661	458725	303694	Roadside	99.5	99.5	-	-	32.8	35.6	31.5
Z664	461264	305340	Roadside	99.8	99.8	-	-	23.4	24.1	21.7
Z707	459642	304376	Roadside	97	97	-	-	22.6	24.2	23.2
Z710	457110	302842	Roadside	83.9	83.9	-	-	21.4	20.5	17.9
Z722	460578	307698	Roadside	86.9	86.9	-	-	15.1	16.7	13.9
Z944	460660	307025	Roadside	81.6	81.6	-	-	**41.9**	31.7	16.5

These results for 2023 should be treated with caution, due to insufficient data capture. Z639 was relocated to Forest Road (460442, 305324) in February 2024, at the same time as Z527 was introduced to Ashfield Road (460503, 303072). Both are Roadside.

Figure D.4 – Trends in Annual Mean NO_2 Concentrations at Zephyrs within the AQMA

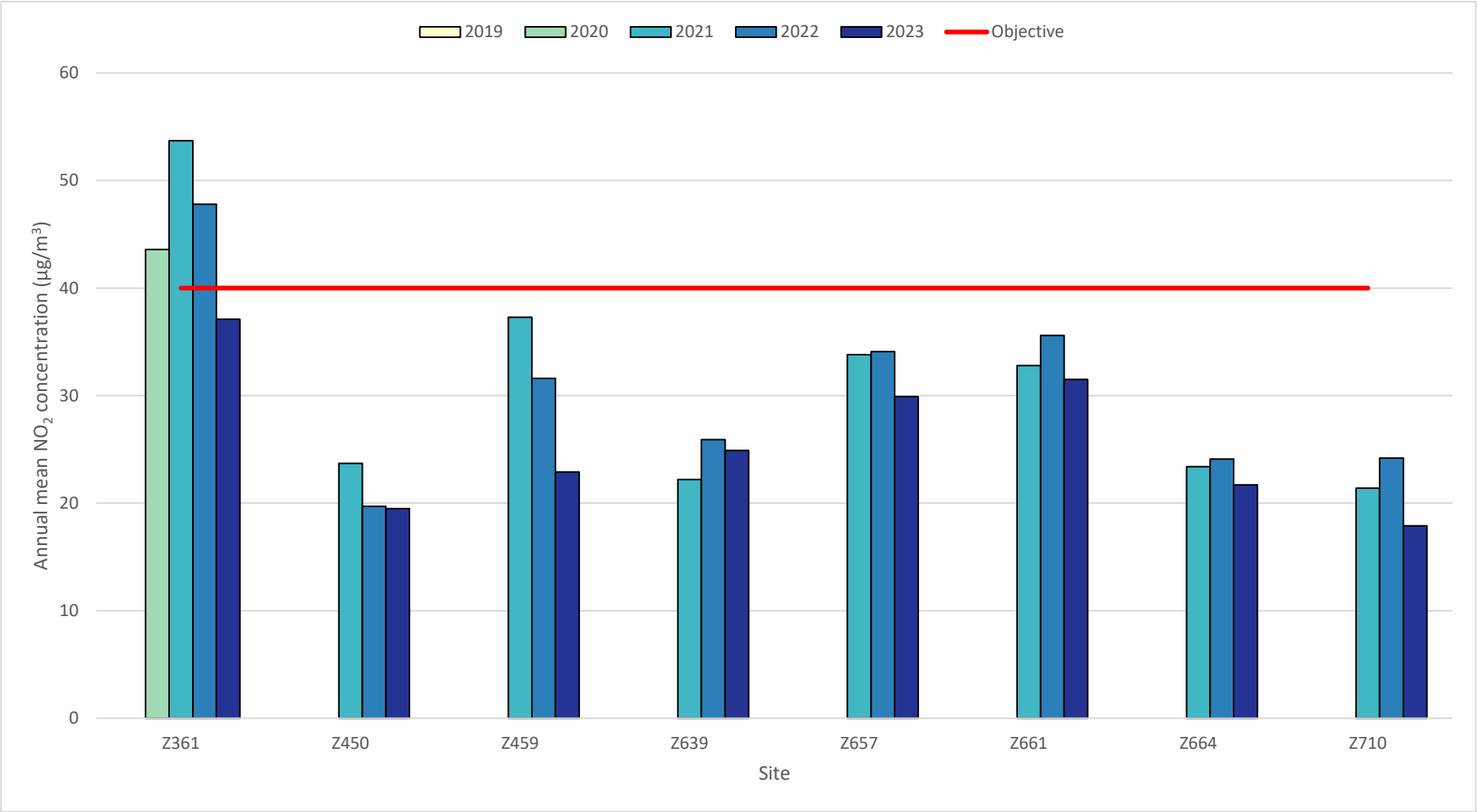
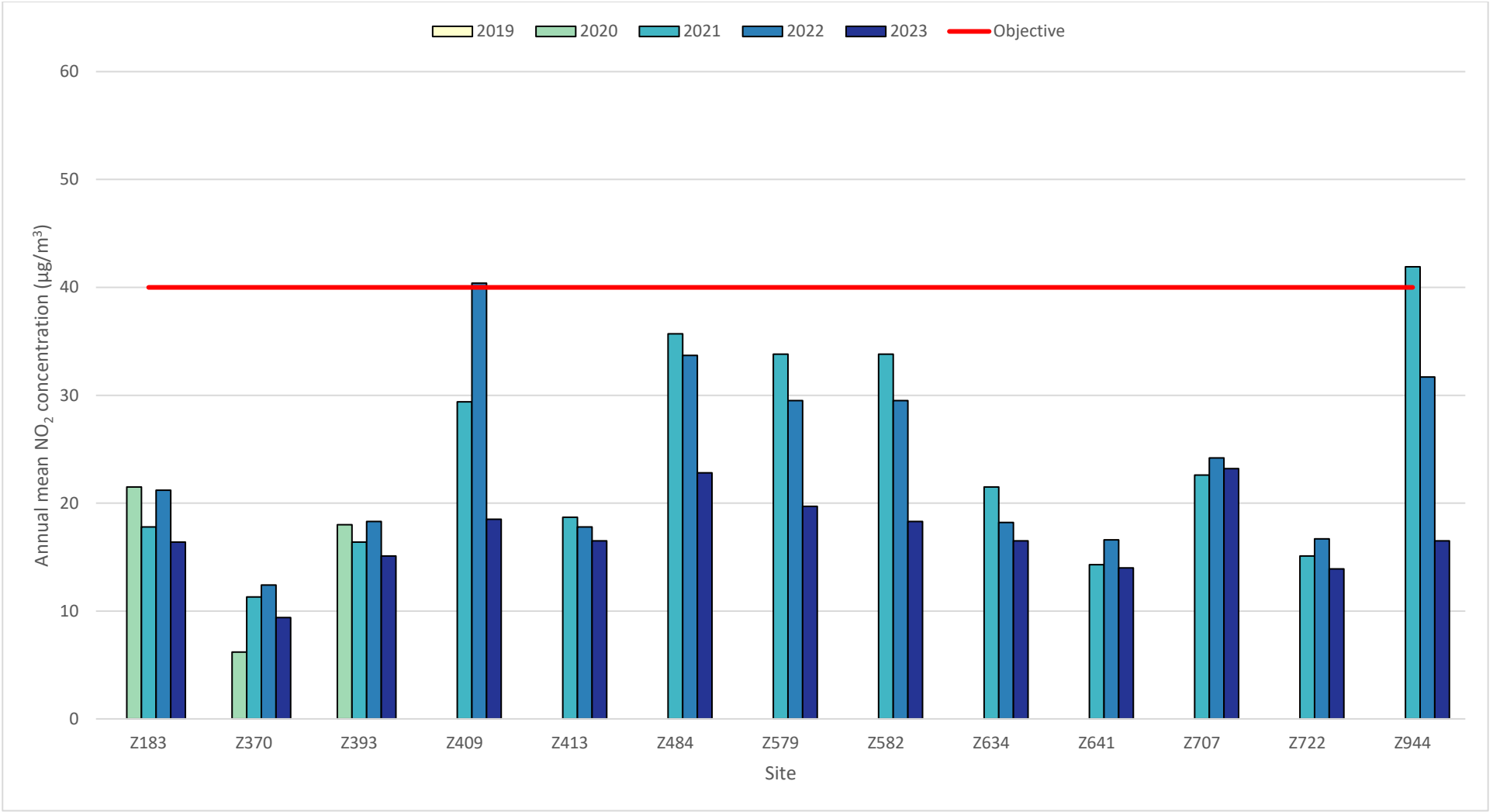


Figure D.5 – Trends in Annual Mean NO_2 Concentrations at Zephyrs outside the AQMA



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.
AQMS	Air Quality Monitoring Station
AQF	Air Quality Forum
AQO	Air Quality Objective
AQP	Air Quality Partner
AQS	Air Quality Strategy
ASHP	Air Source Heat Pump
ASR	Annual Status Report
CHYM	Choose How You Move
CO_2	Carbon Dioxide
Defra	Department for Environment, Food and Rural Affairs
DLUHC	Department for Levelling Up, Housing and Communities
DT	Diffusion Tube

DfT	Department for Transport
EFT	Emissions Factors Toolkit
EPR	Environmental Permitting Regulations
ERDF	European Regional Development Fund
EU	European Union
EV	Electric Vehicle
FDMS	Filter Dynamics Measurement System
FPN	Fixed Penalty Notice
FQP	Freight Quality Partnership
HGV	Heavy Goods Vehicle
HNRFI	Hinckley National Rail Freight Interchange
JAQU	Joint Air Quality Unit
LAQM	Local Air Quality Management
LCC	Leicester City Council
LCWIP	Local Cycling and Walking Infrastructure Plan
LEVI	Local Electric Vehicle Infrastructure
LGV	Light Goods Vehicle
LRI	Leicester Royal Infirmary
LTN	Low Traffic Neighbourhood
LTP	Leicester Transport Plan

MOVA	Microprocessor Optimised Vehicle Actuation
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
NRMM	Non-Road Mobile Machinery
OZEV	Office for Zero Emission Vehicles
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance/Quality Control
SCA	Smoke Control Area
SCOOT	Split Cycle Offset Optimisation Technique
SO_2	Sulphur Dioxide
SPD	Supplementary Planning Document
SSHN	Safer Streets Healthier Neighbourhoods
TCF	Transforming Cities Fund
TRO	Traffic Regulation Order
ULEV	Ultra Low Emission Vehicle
VMS	Variable Message Signs
WHO	World Health Organisation
WPL	Workplace Parking Levy

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