



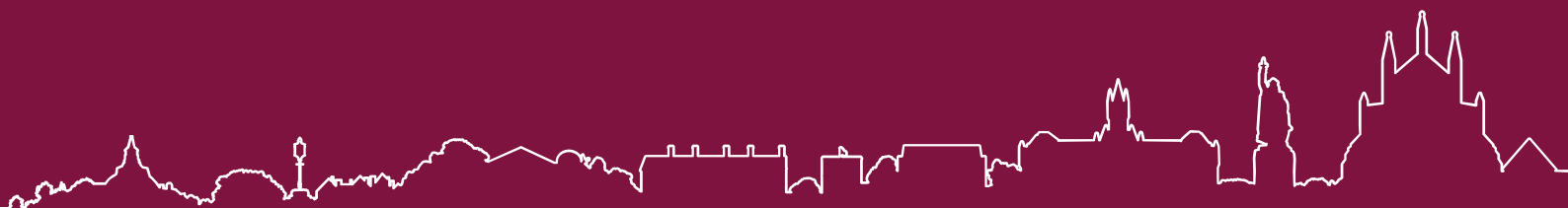
AN AIR QUALITY STRATEGY FOR WINCHESTER



Winchester
City Council

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GLOSSARY

The following table sets out, in alphabetical order, a brief explanation of the abbreviations used throughout this strategy.

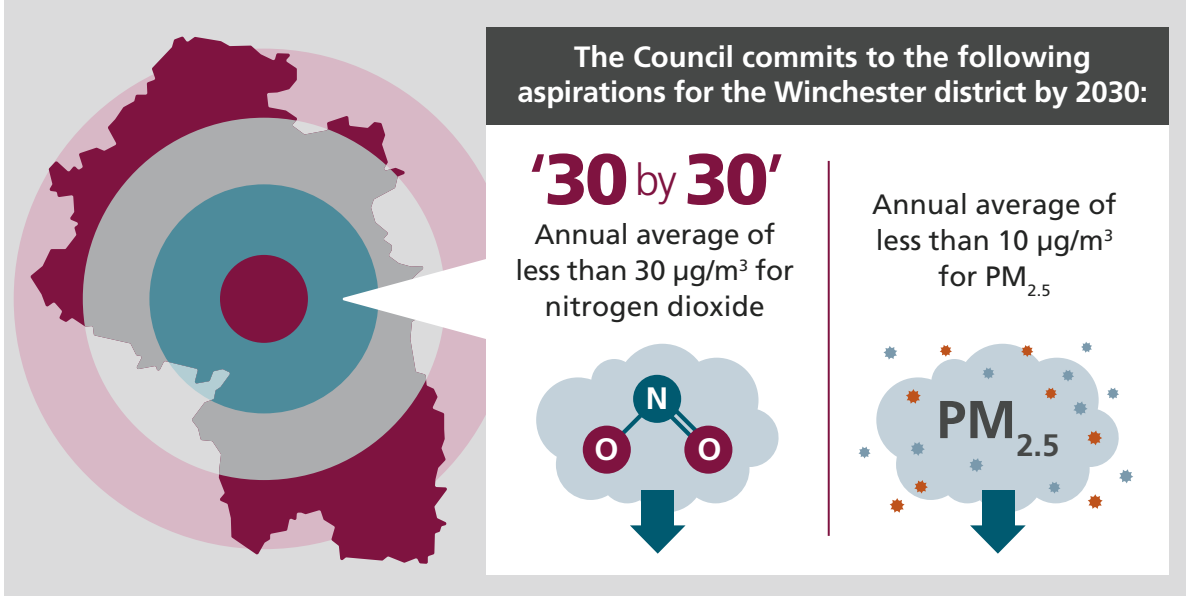
Abbreviation	Term	Definition
AQMA	Air Quality Management Area	An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives.
AQS	Air Quality Strategy	Since 2023, local authorities in England without AQMAs, including those in the process of revoking their AQMA(s), are required to produce a local Air Quality Strategy.
ASR	Air Quality Annual Status Report	An annual requirement showing the strategies employed by Winchester to improve air quality and any progress that has been made.
BID	Business Improvement District	A defined area in which the local businesses have voted to invest together to improve their environment.
CEMP	Construction Environmental Management Plan	A framework to avoid, minimise or mitigate any construction effects on the environment.
COMEAP	Committee on the Medical Effects of Air Pollutants	A group of scientific experts who provide independent and authoritative advice to the UK government on the health effects of air pollution.
Defra	Department for Environment, Food and Rural Affairs	The government department responsible for environmental protection, food production and standards, agriculture, fisheries and rural communities.
DoPH	Hampshire County Council Director of Public Health	The person responsible for determining the overall vision and objectives for public health in a local area or in a defined area of public health, such as health protection.
HCC	Hampshire County Council	The administrative body responsible for services across the whole of Hampshire.
LAQM	Local Air Quality Management	A government led process that places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved.
LCWIP	Local Cycling and Walking Infrastructure Plan	Evidence-led, long-term plans that identify cycling, walking and wheeling improvements at the local level.
NAEI	National Atmospheric Emissions Inventory	A government-funded project which estimates annual pollutant emissions from 1970 to the most current publication year for the majority of pollutants.

Abbreviation	Term	Definition
NHS	National Health Service	England's publicly funded healthcare system.
NO _x	Oxides of nitrogen	A term describing a mixture composed of nitrogen oxides (NO and NO ₂).
NO ₂	Nitrogen dioxide	Produced during combustion and formed by the oxidation of NO in the atmosphere.
NRMM	Non-road mobile machinery	Includes mobile machines and transportable industrial equipment or vehicles that are fitted with an internal combustion engine and not meant for transporting goods or passengers on roads.
PM ₁₀	Coarse particulate matter	Airborne particulate matter with an aerodynamic diameter of 10 µm or less.
PM _{2.5}	Fine particulate matter	Airborne particulate matter with an aerodynamic diameter of 2.5 µm or less.
SDNP	South Downs National Park	An area in South Downs set aside by the UK Government to preserve the natural environment.
SPD	Air Quality Supplementary Planning Document	A document for developers to use to ensure construction and demolition works minimise emissions of air pollutants.
WCC	Winchester City Council	The administrative body responsible for services across the whole of Winchester.
WHO	World Health Organisation	Directs and coordinates international health within the United Nations' organisation.
WinACCP	Winchester Action on Climate Change	A local charity that works to cut the carbon footprint of Winchester district, creating lower energy bills, healthier lifestyles and stronger communities.

EXECUTIVE SUMMARY

The Winchester Air Quality Strategy provides the framework to improve the health of everyone in Winchester by working collaboratively across the district to achieve cleaner air by 2030.

WINCHESTER CITY COUNCIL IS DEDICATED TO GOING ABOVE AND BEYOND THE UK NATIONAL TARGETS FOR AIR QUALITY LEVELS.



The Council commits to the following aspirations for the Winchester district by 2030:

'30 by 30'
Annual average of less than 30 $\mu\text{g}/\text{m}^3$ for nitrogen dioxide

Annual average of less than 10 $\mu\text{g}/\text{m}^3$ for $\text{PM}_{2.5}$

Winchester City Council monitors air quality across the district every year to ensure that concentrations are not exceeding national objectives and to track changes over time. Air quality in Winchester is generally good, and there has been an overall improvement in air quality over the past five years. However, there are still improvements to be made to meet Winchester City Council's air quality targets by 2030.

Why do we need to improve air quality?

Air pollution is the most significant environmental threat to public health in the UK¹. In recent decades, the introduction of policies and advances in technology have contributed to steady improvements in air quality. However, there is still need for action across communities in the UK to improve air quality and safeguard public health, the environment, and the economy.

Poor air quality is a significant contributor to premature mortality, the onset of diseases, and a decline in both quality of life and overall wellbeing. It is estimated that air pollution in the UK leads to 29,000 to 43,000 premature deaths every year, which is projected to incur a cost of £1.6 billion for the NHS and our social care system between 2017 and 2025^{1,2}.

- 1 Office for Health Improvement & Disparities, Air Pollution: applying All Our Health 2022 <https://www.gov.uk/government/publications/air-pollution-applying-all-our-health>
- 2 Health Effects of Climate Change in the UK (HECC) 2023 report -Chapter 4. Impacts of climate change and policy on air pollution and human health <https://assets.publishing.service.gov.uk/media/6570a68b7469300012488948/HECC-report-2023-chapter-4-outdoor-air-quality.pdf>

People are affected by air pollution in different ways, and some groups of people are more susceptible to air pollution than others, including older people, children, people with pre-existing respiratory and cardiovascular health conditions, and pregnant people³.

Air quality in Winchester

The key sources of nitrogen dioxide and particulate matter pollution in Winchester are from local and regional road transport, and domestic and commercial burning of fossil fuels. Air quality in Winchester is also affected by emissions outside the borough from neighbouring districts, the rest of the UK, and other countries. It is therefore important that we collaborate with neighbouring communities and businesses in Hampshire and Southeast England to improve our air quality and achieve our ambitious targets.

Winchester City Council's commitments to improving air quality

The Winchester City Council Air Quality Strategy Steering Group have committed to 13 new actions between 2024 and 2030 to improve our air quality for residents and businesses. These actions fall under five key areas.

Expanding the **air quality monitoring network** and undertaking more detailed **modelling** is a priority so that we can more effectively reduce air pollution and improve the health of the public and the environment. The Council will also focus on **reducing emissions from road transport** by adjusting the way that we travel in and around Winchester city centre and the wider district. This Air Quality Strategy also considers emissions from **domestic and business heating and burning**, as well as improving **indoor air quality**. Finally, the Council commit to reducing emissions from **construction and new developments** through strengthening the Local Plan.

Reducing your exposure to air pollution

Everyone plays a part in contributing to air pollution, including the UK Government, Winchester City Council, businesses, and individuals. The Winchester Air Quality Strategy sets out the Council's commitments to improve the air we breathe, but it also provides some tips on how you can reduce your exposure to poor air quality to protect your health and the health of those around you.

There are also useful resources provided throughout the Air Quality Strategy if you want to find out more about current air quality levels in Winchester, actions that Winchester City Council are taking, or information on health and wellbeing.

Monitoring and Evaluation

Winchester City Council and the Air Quality Strategy Steering Group will work collaboratively to monitor, evaluate, and regulate the actions outlined in this Strategy. The Strategy will be reviewed and reported on annually in Winchester City Council's Air Quality Annual Status Reports, keeping stakeholders up to date with progress and any changes being made.

3 Chief Medical Officer's annual report 2022: air pollution <https://www.gov.uk/government/publications/chief-medical-officers-annual-report-2022-air-pollution>

1 AN AIR QUALITY STRATEGY FOR WINCHESTER

1.1 INTRODUCTION

The Winchester District is considered a relatively green, clean and healthy part of the country but air pollution is an invisible problem we have to tackle to create a safe environment for our residents and visitors.

Almost all of us, whether inside or out, are breathing in air which exceeds World Health Organisation guidelines for pollutants. Particulates and gases which cause respiratory and other diseases and these sources contribute to ill-health and premature death. The air inside the places where we live and work can be more polluted than the air outside. Wood burners, gas cookers and fires, candles, mould, cleaning products, paints and varnishes are all sources of particles or gases which are bad for our health.

Many of the drivers of air pollution such as burning fossil fuels are also sources of greenhouse gas emissions. Policies to reduce air pollution can not only benefit our health but improve local ecosystems and lead to carbon reduction. We will never eliminate all air pollution, some of which comes from natural sources, but we can all make changes that will make a significant difference to the air quality and the health and well-being of our residents and our natural environment.

We invite everyone, be they residents, businesses, and institutions, to find out more about the impacts of poor air quality outlined in this document and consider which of the options proposed for all of us would give you the opportunity to improve Winchester district's air quality both for ourselves and for others too.

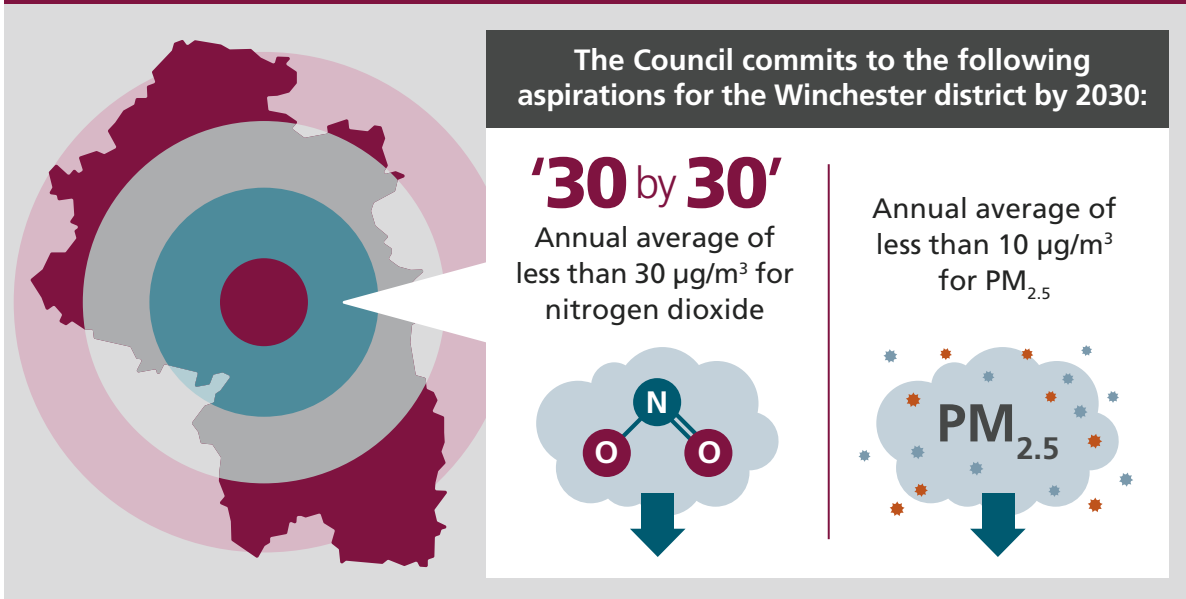
Councillor Jackie Porter

Cabinet Member for Place and Local Plan

Councillor Kelsie Learney

Cabinet Member for Climate Emergency

WINCHESTER CITY COUNCIL IS DEDICATED TO GOING ABOVE AND BEYOND THE UK NATIONAL TARGETS FOR AIR QUALITY LEVELS.



The Council commits to the following aspirations for the Winchester district by 2030:

'30 by 30'
Annual average of less than 30 $\mu\text{g}/\text{m}^3$ for nitrogen dioxide

Annual average of less than 10 $\mu\text{g}/\text{m}^3$ for $\text{PM}_{2.5}$

1.2 OUR VISION



To deliver cleaner air for those who live and work in Winchester, it is essential that leaders, individuals, businesses and networks work collaboratively in a system-based approach. This collective effort is crucial to decrease air pollution and enhance the health and wellbeing of our community.

This Strategy has been developed with the dedicated support of an Air Quality Steering Group established by Winchester City Council. This Steering Group includes Winchester City Council Councillors and Officers, Hampshire County Council Public Health, Winchester Business Improvement District (BID), and Winchester Action on Climate Change (WinACC).

The Council also gathered input from local residents and businesses on the Air Quality Strategy through stakeholder consultation and public engagement. By hearing from a range of perspectives, we have ensured that varying priorities across the Winchester District community were considered in shaping an inclusive Air Quality Strategy.

2 WHY DO WE NEED TO IMPROVE AIR QUALITY?

Air pollution is a public health emergency and the most significant environmental threat to public health in the UK⁴. In recent decades, the introduction of policies and advances in technology have contributed to steady improvements in air quality. However, there is still need for action across communities in the UK to improve air quality and safeguard public health, the environment, the economy, and quality of life.

2.1 PUBLIC HEALTH IMPACTS

Air pollution is a significant contributor to premature mortality, the onset of diseases, and a decline in both quality of life and overall wellbeing. It is estimated that air pollution in the UK leads to 29,000 to 43,000 premature deaths every year, which is projected to incur a cost of £1.6 billion for the NHS and our social care system between 2017 and 2025^{1,5}.

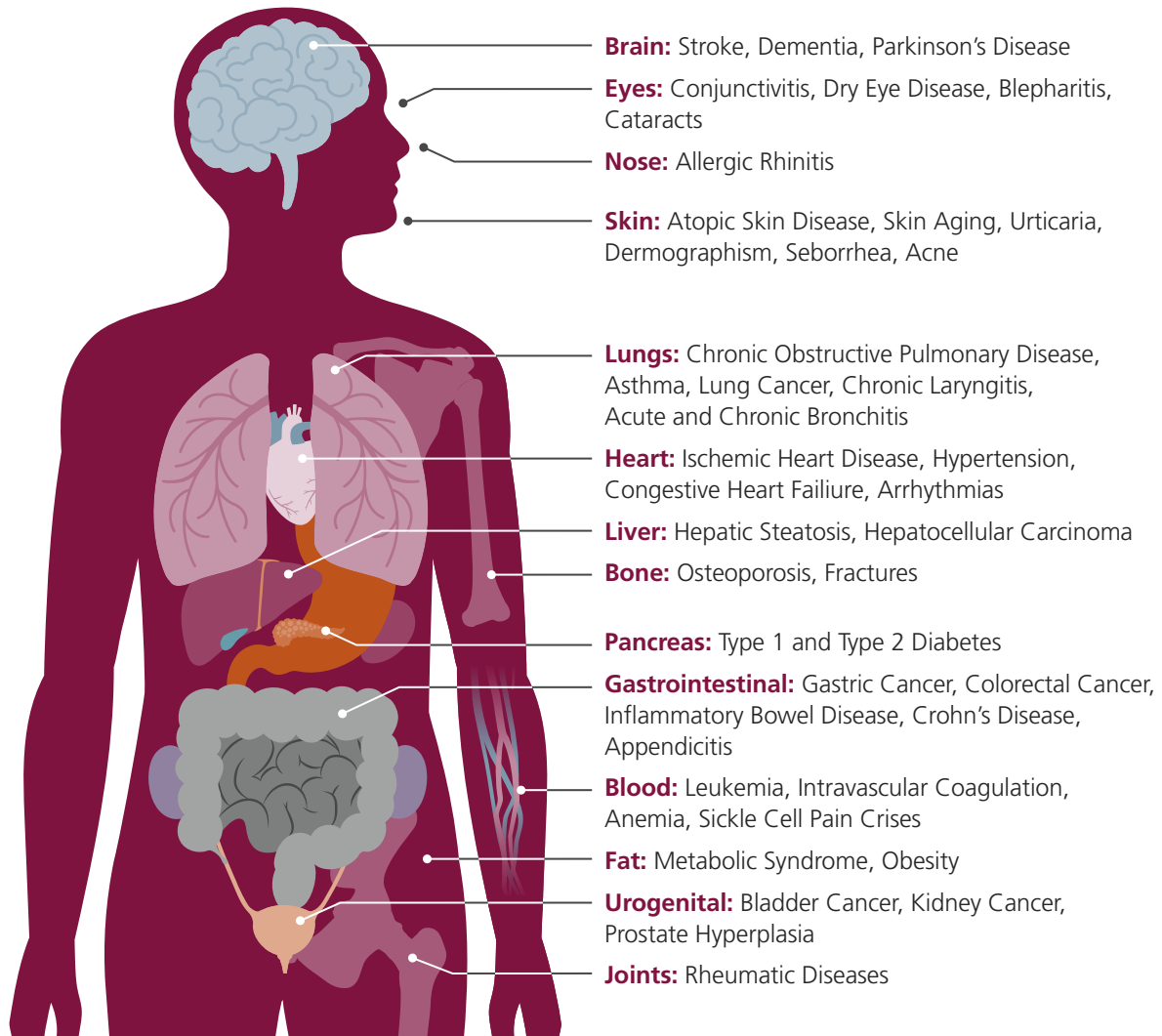
Recent research has shown that air pollution can damage almost every organ in the body, leading to diseases such as strokes, cancers, lower respiratory infections, and chronic obstructive pulmonary disease⁶.

4 Office for Health Improvement & Disparities, Air Pollution: applying All Our Health 2022 <https://www.gov.uk/government/publications/air-pollution-applying-all-our-health>

5 Health Effects of Climate Change in the UK (HECC) 2023 report -Chapter 4. Impacts of climate change and policy on air pollution and human health <https://assets.publishing.service.gov.uk/media/6570a68b7469300012488948/HECC-report-2023-chapter-4-outdoor-air-quality.pdf>

6 European Environment Agency, How air pollution affects our health, 2023 <https://www.eea.europa.eu/en/topics/in-depth/air-pollution/eow-it-affects-our-health>

Health impacts of air pollution⁷:



2.2 WHAT ARE THE MAIN POLLUTANTS OF CONCERN?

Air pollution can come from various human activities in urban and rural areas, including outdoor sources like road transport, industrial processes, and agriculture, as well as indoor activities like domestic combustion.

There are many different air pollutants that impact human health. Two of the most important are nitrogen dioxide and particulate matter.

Nitrogen oxides (NO_x) are a group of gases formed during fossil fuel combustion which react with the air to form nitrogen dioxide (NO₂). The key sources of NO_x in Winchester are road transport, industrial processes, and domestic combustion.

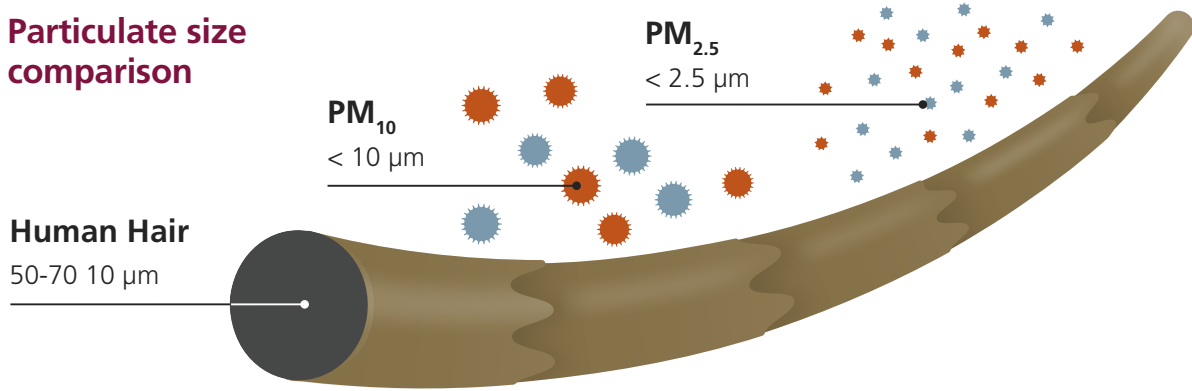
Particulate matter is solid and liquid particles suspended in the air. These particles vary in size and composition, and some forms of particulate matter can be toxic to human health. Coarse particulate matter (PM₁₀) can irritate the eyes, nose, and throat which can worsen asthma and other respiratory illnesses.

7 Adapted from Schraufnagel et al., 2019. Air Pollution and Noncommunicable Diseases. Chest. 155(2), p.417-426 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6904854/>

Particulate size comparison

Human Hair

50-70 10 μm



PM_{2.5} is the air pollutant responsible for the most substantial health issues and premature mortality. In 2022, 5.6% of deaths in those aged 30 and older in Winchester were associated with long term exposure to particulate air pollution at current levels. This was slightly lower than the national average of 5.8%⁸.

2.3 WHO IS MOST VULNERABLE TO AIR POLLUTION?

Air pollution affects people in different ways, and some groups of people are more susceptible to air pollution than others, including older people, children, people with pre-existing respiratory and cardiovascular health conditions, and pregnant people⁹.

The average age of the Winchester population is higher than the rest of England¹⁰. As people age, they are more likely to suffer from heart, lung, and cognitive conditions such as dementia, and exposure to air pollution increases these risks. Evidence shows that when particulate matter levels are high, older people have an increased chance of hospitalisation¹¹.

Children and young people are also more susceptible to air pollution because their organs and immune systems are still developing. Exposure to air pollution at a young age can both harm health in childhood and increase the likelihood of developing diseases later in life¹².

Communities with lower socio-economic status frequently face elevated exposure to air pollution, meaning that health impacts from poor air quality disproportionately affects deprived neighbourhoods. Communities with higher levels of deprivation are more likely to live next to busy roads or industrial areas, have underlying health conditions, and have less access to medical care and healthy lifestyle amenities, which increases their vulnerability to air pollution^{13,14}.

8 Office for Health Improvement & Disparities, Public Health Outcomes Framework: D01 – Fraction of mortality attributable to particulate air pollution, 2022 <https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data>

9 Chief Medical Officer's annual report 2022: air pollution <https://www.gov.uk/government/publications/chief-medical-officers-annual-report-2022-air-pollution>

10 Office for National Statistics, Winchester Census 2021 <https://www.ons.gov.uk/visualisations/censusareachanges/E07000094/>

11 Impact on Urban Health, Air pollution and older people <https://urbanhealth.org.uk/insights/reports/air-pollution-and-older-people>

12 European Environment Agency, Air Pollution and children's health, 2023 <https://www.eea.europa.eu/publications/air-pollution-and-childrens-health>

13 European Environment Agency, Income-related environmental inequalities associated with air pollution in Europe, 2023 <https://www.eea.europa.eu/en/analysis/indicators/income-related-environmental-inequalities-associated>

14 Ferguson et al., 2021, Systemic inequalities in indoor air pollution exposure in London, UK <https://journal-buildingscities.org/articles/10.5334/bc.100>

2.4 LEGISLATION AND STANDARDS

Winchester City Council are legally required to protect public health by ensuring that pollutant concentrations do not exceed the UK Air Quality Standards¹⁵ which were implemented in 2010.

In 2021, the World Health Organisation established revised air quality guidelines, based on recent evidence on the effects of different air pollutants on human health, however these are not obligatory guidelines in the UK¹⁶. In 2023, the UK Government introduced new legally binding targets for PM_{2.5} to set out a 2040 goal of achieving cleaner air and improving public health¹⁷.

Several epidemiological studies have shown that fine particulate matter (PM_{2.5}) and nitrogen dioxide (NO₂) cause the highest risk to human health¹⁸. Based on the tighter World Health Organisation air quality guidelines, and the Committee on the Medical Effects of Air Pollutants (COMEAP) research that supports tighter restrictions to safeguard public health¹⁹, Winchester City Council is dedicated to going above and beyond the current UK national targets for air quality, committing to the following pollutant standards for NO₂ and PM_{2.5} for the Winchester district by 2030.

Annual mean pollutant concentration standards in microgram per cubic metre (µg/m³) based on the 2021 WHO guidelines, the UK Air Quality Standards Regulations 2010, The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023, and Winchester City Council's targets for 2030 across Winchester district.

Pollutant	World Health Organisation Guideline (2021)	UK Air Quality Standard (2010)	England PM _{2.5} Target (2023) by 2040	Winchester City Council targets (2024) by 2030
Nitrogen dioxide (NO ₂)	10	40	-	30
Fine particulate matter (PM _{2.5})	5	25	10	10

15 Defra, UK Air Quality Limits, 2010 <https://uk-air.defra.gov.uk/air-pollution/uk-limits>

16 World Health Organisation, WHO global air quality guidelines: particulate matter (PM_{2.5} and PM₁₀), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide, 2021. <https://www.who.int/publications/i/item/9789240034228>

17 The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 <https://www.legislation.gov.uk/ukxi/2023/96/contents/made>

18 Li et al., 2019. A model for estimating the lifelong exposure to PM_{2.5} and NO₂ and the application to population studies. Environmental Research. 178. <https://www.sciencedirect.com/science/article/abs/pii/S0013935119304268>

19 COMEAP summary of recommendations for quantifying the health effect of air pollutants, 2023 <https://www.gov.uk/government/publications/air-pollutants-quantification-of-associated-health-effects>

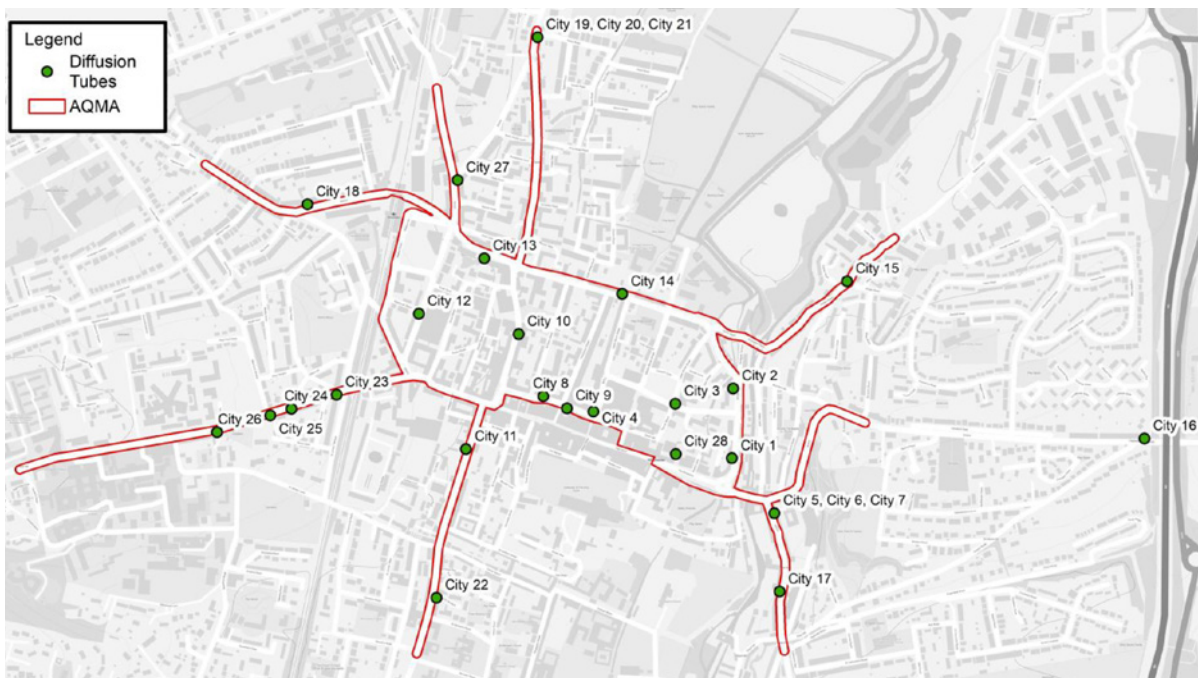
3 AIR QUALITY IN WINCHESTER

3.1 MONITORING AIR QUALITY

Winchester City Council monitors air quality within the City's Air Quality Management Area (AQMA) and in selected locations within the wider district every year, to ensure that concentrations are not exceeding the national objectives and to track changes over time. There are currently 35 air quality monitoring sites across Winchester city and district. These monitoring sites mainly measure nitrogen dioxide concentrations using low-cost diffusion tubes. Some measure particulate matter concentrations using automatic monitoring. All monitored concentrations undergo analysis following the Government guidelines to ensure that the concentrations are robust.

Across the Winchester district there is one Air Quality Management Area (AQMA). This AQMA is in Winchester's city centre and has been in place since 2003 due to past exceedances of the UK national air quality objectives for nitrogen dioxide (NO₂)²⁰. Pollutant concentrations in the town centre have been high because of road traffic and high congestion levels.

Winchester City Centre AQMA and Diffusion Tubes within the City in 2023



Air quality in Winchester is generally good, and there has been an overall improvement in air quality over the past five years. The most recently available data shows that there have been no exceedances of the nitrogen dioxide (NO₂) national objectives since 2020, and no exceedances of the PM₁₀ and PM_{2.5} national objectives since 2019.

We publish our latest monitoring data and an update on actions taken to address air quality each year in our Air Quality Annual Status Report (ASR). <https://www.winchester.gov.uk/environment/air-quality/historical-air-quality-reports-for-government>

20 AQMAs Declared by Winchester City Council https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=314

3.2 WHERE DOES AIR POLLUTION IN WINCHESTER COME FROM?

Air pollution in Winchester comes from a range of different sources. It is important to understand which sources have a greater impact on air pollution so that we can design effective policies to improve air quality.

The key pollutants in Winchester are nitrogen oxides (NO_x) which include nitrogen dioxide (NO₂), coarse particulate matter (PM₁₀), and fine particulate matter (PM_{2.5}).

Across the district of Winchester, just under two-thirds of NO_x emissions are from vehicles on the road. Other sources that contribute to NO_x pollution include industrial processes, other modes of transport, domestic and commercial combustion, and agriculture and forestry.

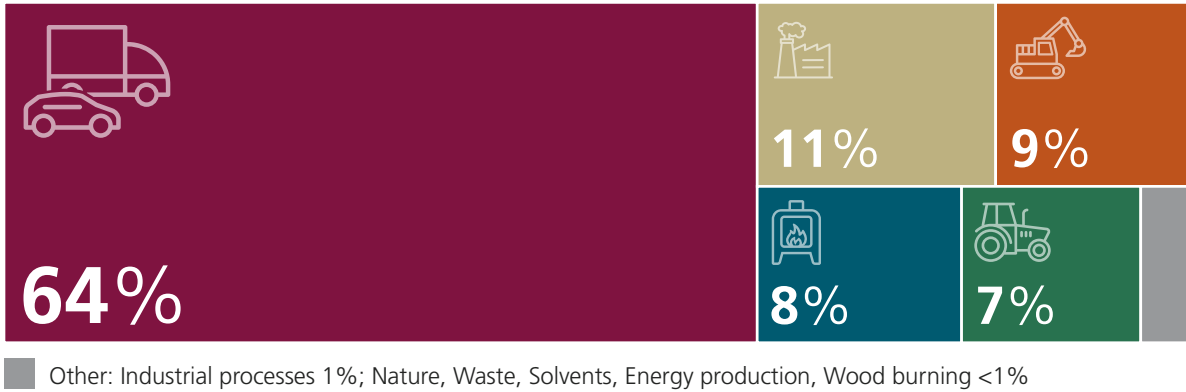
For particulate matter, the largest source of emissions in Winchester is domestic and commercial burning of fossil fuels (not including wood), which gives rise to just over one-quarter of the emissions of PM₁₀, and just under half of the emissions of PM_{2.5}. Road transport, wood burning, and production processes are also important sources of particulate matter in Winchester.

Air quality in Winchester is also affected by emissions from other areas because air pollution can be transported across long distances. Specifically, particulate matter can often be carried from neighbouring districts, regions, and even countries in mainland Europe. As a result, it is important that we collaborate with neighbouring communities in Hampshire and Southeast England to improve our air quality and achieve our ambitious targets.

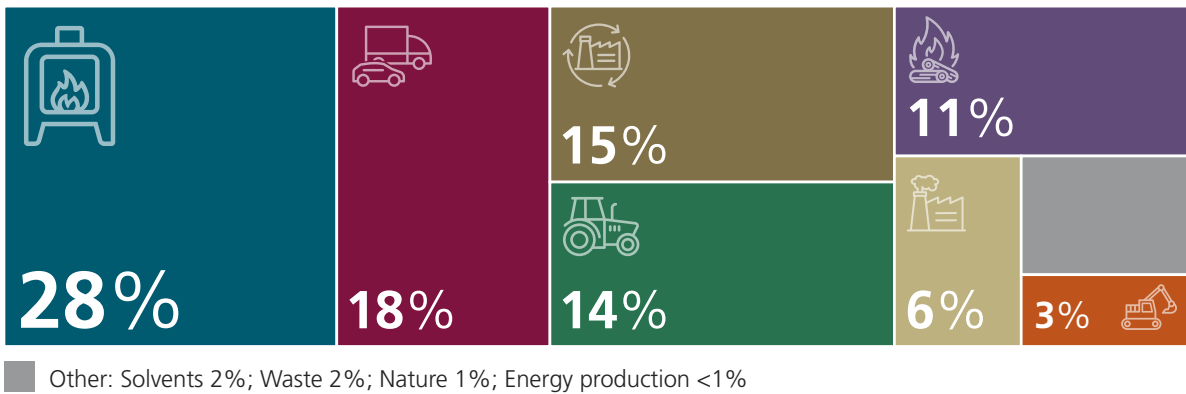


Primary emissions sources of NO_x, PM₁₀, PM_{2.5} in Winchester district (based on NAEI 2019 data²¹):

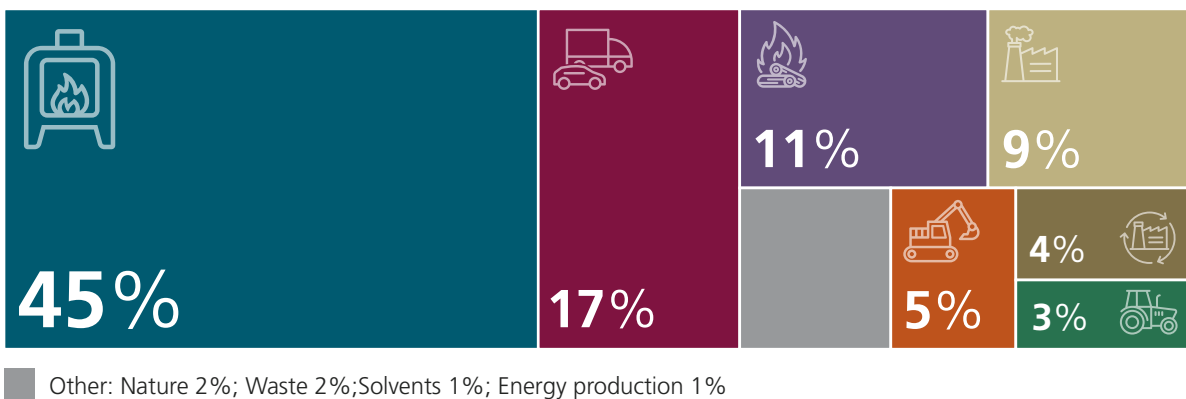
NO_x emissions source apportionment



PM₁₀ emissions source apportionment



PM_{2.5} emissions source apportionment



- Road transport
- Other transport
- Industrial combustion
- Domestic & business combustion
- Industrial processes
- Agriculture & forestry
- Wood burning
- Other

3.3 RELATIONSHIP WITH OTHER POLICIES

Various local, regional, and national plans, policies, and strategies are in place to address air quality in Winchester, both through direct and indirect actions. National policies mandate local authorities to fulfil statutory duties, while regional and local policies implement actions to achieve national objectives.

The Winchester Air Quality Strategy has been developed with these plans, policies, and strategies in mind to ensure effective synergy across actions.

For example, the Winchester City Council Carbon Neutrality Action Plan²² was published in response to Winchester City Council declaring a climate emergency in June 2019. It focuses on reducing fossil fuel emissions to mitigate climate change, with the aim to be a carbon neutral district by 2030. Given that climate change and air pollution are closely interlinked, and the reduction of fossil fuel emissions will also improve air quality, the Winchester Air Quality Strategy is aligned with the actions of the Carbon Neutrality Action Plan.

You can sign up for updates of Winchester City Council's progress towards becoming a carbon neutral district on the Council's website: <https://www.winchester.gov.uk/climate-change-and-energy>

Some of the local, regional, and national policies that address air quality in Winchester:

NATIONAL		
Defra Local Air Quality Management Policy Guidance	Air quality strategy: framework for local authority delivery	
Environmental Targets (Fine Particulate Matter) (England) Regulations 2023	Environment Act 2021 c. 30	
HAMPSHIRE COUNTY COUNCIL		
Hampshire County Council's Local Transport Plan 4	Hampshire County Council Climate Change Strategy 2020-2025	Hampshire County Council Public Health Strategy 2023-2026
Hampshire County Council Health and Wellbeing Board	Hampshire Joint Strategic Needs Assessment	
WINCHESTER CITY COUNCIL		
WCC Carbon Neutrality Action Plan	WCC Air Quality Action Plan	WCC Electric Vehicle Recharging Strategy
Winchester Movement Strategy	Winchester District Local Plan 2020-2040 (Emerging)*	Winchester City Council Plan 2020-2025

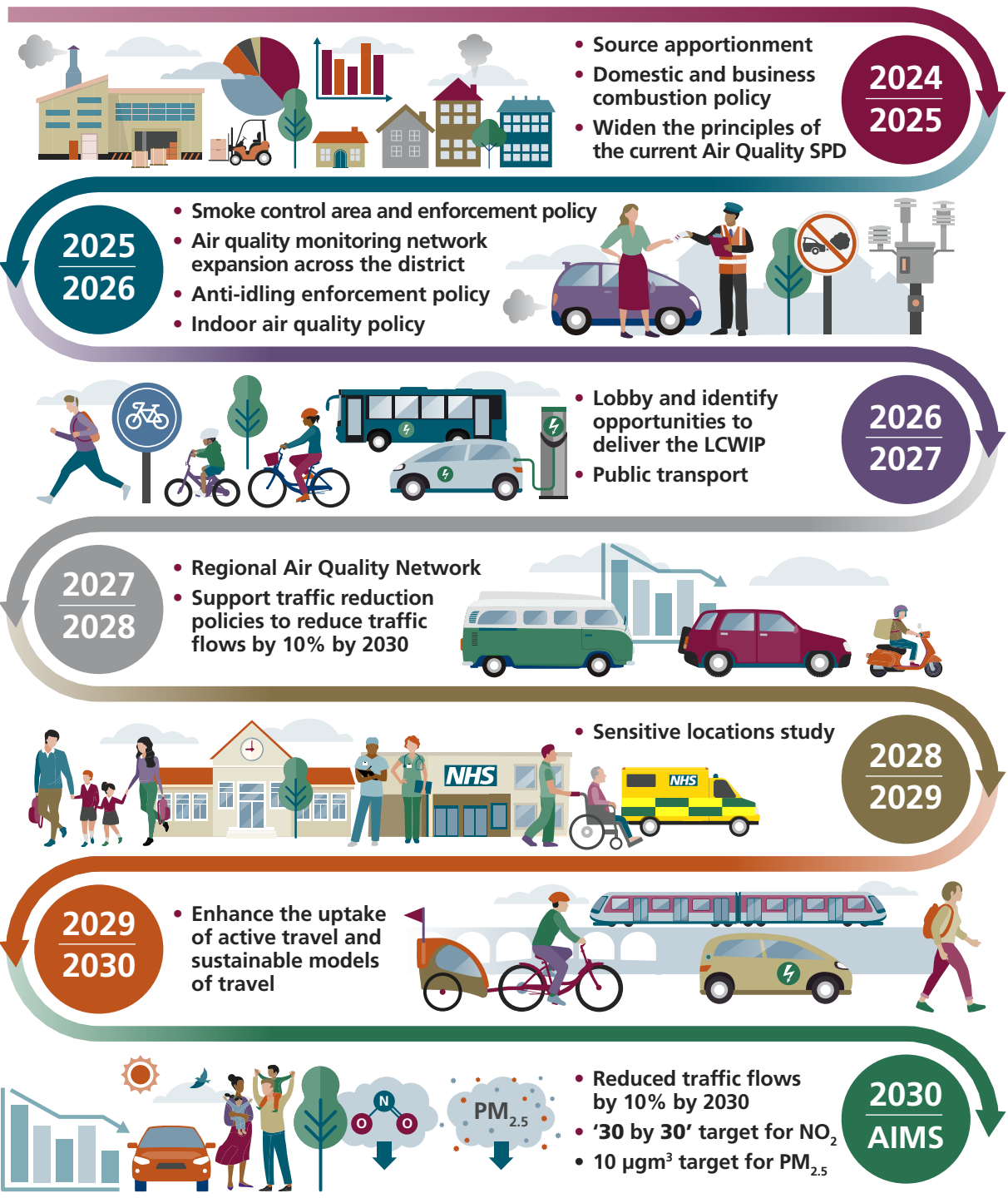
*Does not apply to area within South Downs National Park – shown as:

22 Winchester City Council Carbon Neutrality Action Plan 2023-2030 <https://www.winchester.gov.uk/climate-change-and-energy/carbon-neutrality-action-plan>

4 ACTION AREAS

The Winchester City Council Air Quality Strategy Steering Group have committed to 13 new actions between 2024 and 2030 to improve air quality. In tandem with existing actions from other plans, policies, and strategies influencing air quality, Winchester City Council are committed to achieving our ambitious targets for the Winchester district by 2030.

For more detail on the 13 new actions between 2024-2030 in Winchester, please see Appendix 1.



4.1 AIR QUALITY MONITORING AND MODELLING

Winchester City Council already undertake a range of air quality monitoring and assessments to understand air quality across Winchester District. Air quality monitoring and modelling are essential for:

1. Tracking air quality progress over time
2. Identifying the relative importance of air pollution sources and their impact on public health
3. Predicting the effectiveness of actions and policies on improving air quality
4. Reducing harmful air pollutants
5. Ensuring compliance with regulations
6. Protecting public health, environmental health, and the economy
7. Communicating with the public
8. Supporting research and development
9. Informing a wider regional approach to improve air quality

Winchester City Council would like to take action to expand the air quality monitoring network and to undertake more detailed modelling so that we can more effectively reduce air pollution and improve the health of the public and the environment. Opportunities for the use of “citizen science” to contribute to the monitoring performed will be explored. The aim being to both expand the monitoring performed whilst encouraging a wider engagement and understanding. Further details of these actions can be found in [Appendix 1](#).



Air Quality Monitoring:

- Expand the air quality monitoring network across the Winchester district, including increased PM_{2.5} measurements using sensor measurements, citizen engagement, and indicative monitoring.
- Develop a new and active participation in, a multi-disciplinary Regional Air Quality Network across Hampshire.



Air Quality Modelling:

- Conduct a detailed atmospheric source inventory for NO₂ and PM_{2.5} pollution in the Winchester District to identify the extent to which different key emission sources contribute to pollutant concentrations.
- Conduct a study to identify and deliver measures at sensitive locations, such as schools/nurseries, playgrounds, or areas where air quality previously failed to meet national air quality objectives.

4.2 ROAD TRANSPORT

Road transport is the largest source of emissions that contribute to nitrogen dioxide pollution in Winchester and the UK, with just under two-thirds of NOx pollution in Winchester coming from road transport. Therefore, air pollution is heightened in urban areas, along roadsides and in areas of heavy traffic.

Vehicles emit a range of harmful air pollutants including nitrogen oxides, particulate matter, and carbon monoxide. These pollutants don't only impact pedestrians, cyclists, and other active travellers, but also those inside of the vehicle. In fact, pollution levels are often higher inside vehicles because emissions from surrounding vehicles can enter through air vents and recirculate around the vehicle²³.

Adjusting the way that we travel in and around Winchester city centre and the wider district, will greatly improve local air quality. Our objective is to achieve carbon neutrality for the district by 2030, establishing an integrated, sustainable, low-emission travel network that guarantees accessibility, safety, and affordability for all.

Through this Air Quality Strategy, Winchester City Council are committing to new actions in three areas.

Reducing emissions from traffic

Whilst private cars are heavily relied upon, it is the least sustainable form of transport due to the space that they take up per person, their contribution to traffic congestion, and their impact on air pollution and the climate crisis. It is essential to shift towards sustainable modes of transport for journeys where this is possible, including low emission and alternative fuels, car sharing, public transport, and active travel.

To support the Hampshire County Council Local Transport Plan²⁴, **Winchester City Council commit to support traffic reduction policies to reduce traffic flows by 10% by 2030**. Not only will this achieve the reduction in passenger transport carbon emissions required by 2030, but it would help achieve Winchester City Council's ambitious air quality targets for the Winchester district.

Active travel

By prioritising improvements for active travel – walking, cycling, and wheeling – we can encourage more residents in Winchester to choose alternative travel options rather than relying on cars. This will help to reduce congestion, encourage healthier lifestyles, and help address air pollution and the climate crisis.

Winchester City Council commit to lobby and identify opportunities to deliver the Local Cycling and Walking Infrastructure Plan (LCWIP)²⁵, to make cycling, walking, and wheeling a more attractive option for those who can. The LCWIP focuses on improving walking routes and cycling corridors, developing infrastructure, and integrating active travel infrastructure with public transport and parking facilities.

The implementation of the LCWIP will maximise efficiency for people in terms of safety, accessibility, and convenience, and improve connectivity between the urban and rural areas of Winchester. The delivery will also focus on priority neighbourhoods and work with local community groups and campaigns to ensure that we reach areas and people in most need.

23 Environmental Research Group, 2023, In-vehicle exposure to traffic and road-generated air pollution. <https://www.london.gov.uk/sites/default/files/2023-09/In-vehicle%20exposure%20to%20traffic%20and%20road-generated%20air%20pollution.pdf>

24 Hampshire County Council Local Transport Plan 4, 2024 <https://www.hants.gov.uk/transport/localtransportplan>

25 City of Winchester LCWIP <https://documents.hants.gov.uk/transport/transportchemes/CityofWinchester-LCWIP-summary.pdf>

Idling

Idling means leaving a vehicle's engine running unnecessarily while it is stationary, which creates emissions that are harmful to human health. A car idling for one minute can fill up to 150 balloons with harmful exhaust emissions. The people that are most affected by idling vehicles are the vehicle drivers and passengers.

There are common hotspots for vehicle idling, including waiting outside of schools during pick up and drop off periods. Unfortunately, children are one of the groups most vulnerable to air pollution because they breathe more rapidly than adults and so take in more air, and they are also closer to car exhausts. Therefore, it is essential we reduce idling emissions at these locations.

Winchester City Council are committed to adopt an anti-idling enforcement policy to educate residents and change the behaviour of motorists. The policy will set out a plan to:

- Raise awareness of the impact of engine idling, focusing on primary and secondary children, bus drivers, and taxi drivers
- Display signage at schools, hospitals, car parks, taxi ranks, major traffic lights, and bus stops
- Provide training to enforcement officers to give information on vehicle idling to motorists and hand out fines if the motorist refuses to switch off their engine if requested to do so

Public transport

Public transport plays a crucial role in encouraging people to take fewer journeys by car and improving local air quality. Winchester City Council commit to support the actions in the Hampshire County Council Local Transport Plan²⁶ that aim to increase the uptake and use of public transport across the district and improve connectivity with the wider region.

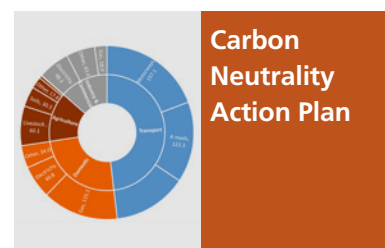
Accommodating a more sustainable means of transport and ensuring access to facilities and services across Winchester district and the wider region, is already a key objective of several Winchester City Council plans, policies and strategies. To find out more about what Winchester City Council are doing across this multidisciplinary subject, take a look at the following resources:



**Winchester
Movement
Strategy**



**Hampshire
County
Council Local
Transport
Plan 4**



**Carbon
Neutrality
Action Plan**



**Local Cycling
and Walking
Infrastructure
Plan**



**Parking
& Access
Strategy**



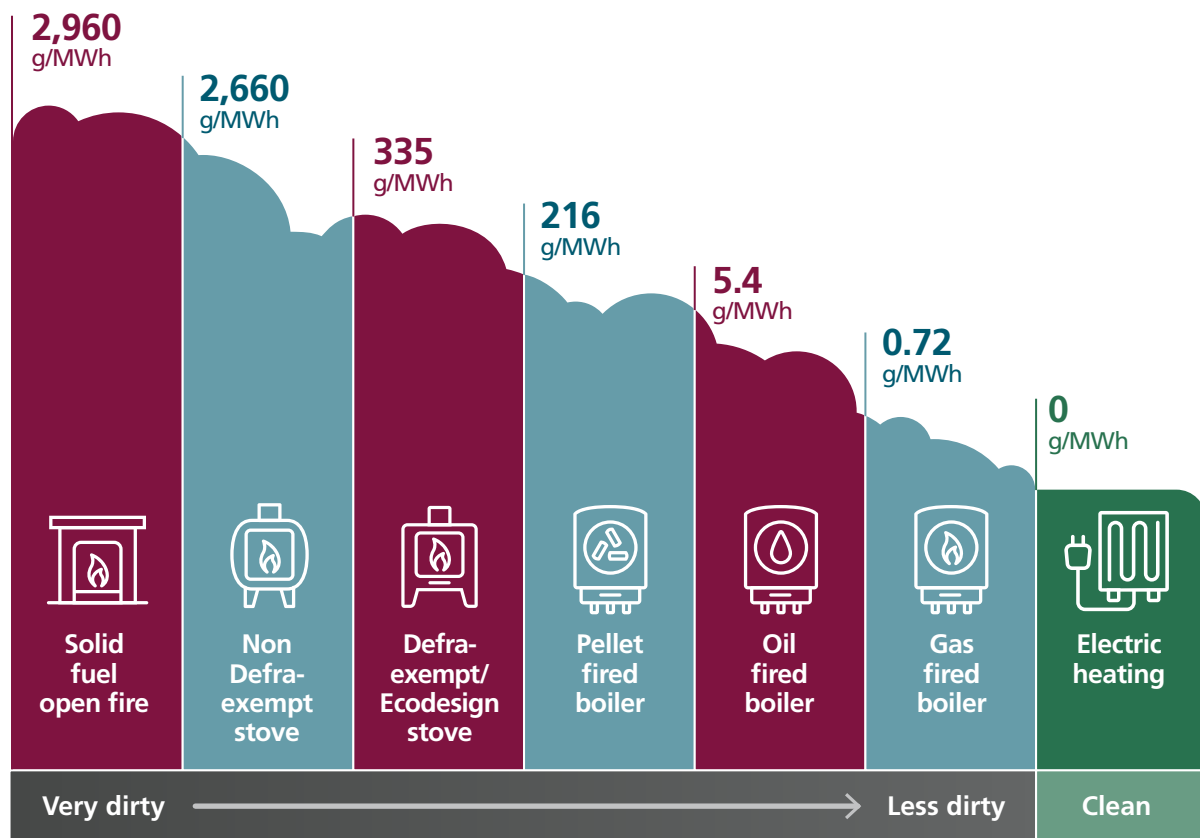
**Electric
Vehicle
Charging
Strategy**

26 Hampshire County Council Local Transport Plan 4, 2024 <https://www.hants.gov.uk/transport/localtransportplan>

4.3 DOMESTIC AND BUSINESS HEATING AND BURNING

The combustion of fuels including gas, oil, coal, and wood in stoves and open fires creates more particulate matter pollution than road traffic in Winchester and across the UK. There is a significant difference between the least and most polluting forms of domestic heating, with coal and wood being the most polluting fuels. Recently, there has also been an increase in the popularity of wood burning, as a result of the perception that it is a more economical or environmentally friendly option.

Methods of domestic heating and their associated fine particulate matter (PM_{2.5}) emissions²⁷:



Through the Winchester Air Quality Strategy, **the Council will explore the feasibility of adopting a Smoke Control Area to cover Winchester District.** Subject to the findings of study, if adopted this policy would mean that residents and businesses would only be allowed to use certain types of fuel or use Defra approved appliances inside the home.

Many areas across the UK are already Smoke Control Areas, including parts of Southampton and Portsmouth, Greater London, Birmingham, Manchester, Liverpool, Newcastle, and Leeds. To find out more about Smoke Control Areas in the UK, visit the following website: <https://www.gov.uk/smoke-control-area-rules>

To address concerns, **Winchester City Council also plan to develop an effective coordinated response to domestic and business combustion.** This policy will be an educational and advisory document to encourage collaboration and behavioural change across Winchester, to help protect the health of those who live and work in Winchester and our neighbouring communities.

27 Emission factors taken from EMEP 2019 Guidebook (1A4 small combustion tables). Adapted from the Clean Air Strategy and the Chief Medical Officer's annual report 2022: Air Pollution with updated data. For details, see Extra Resources on Air Quality on page 29.

4.4 INDOOR AIR QUALITY

Whilst domestic combustion has an impact on both outdoor and indoor air quality, it isn't the only form of indoor air pollution. People spend 80-90% of their time indoors, whether that's at home, in school or workplaces, in other public spaces, or on transport²⁸. This means that poor indoor air quality can have a significant impact on our health, wellbeing, and quality of life.

Key sources of indoor air pollution include cooking and heating appliances, cigarette and e-cigarette smoke, damp and mould, cleaning products, and building materials. Indoor air pollution can be exacerbated by inadequate ventilation, infiltration of polluted outdoor air, small room size, and overcrowding.

The Council are committed to improving indoor air quality across Winchester and commit to developing a policy on an effective coordinated response to indoor air quality to protect against public health. The policy will seek to:

- Consider the housing conditions that put people at increased risk of exposure to indoor air pollution
- Emphasise the need for a balanced approach to ventilation, insulation, and heating for good indoor air quality
- Establishing a campaign to raise awareness of the reducing exposure to indoor air pollution
- Provide advice on alternatives for solid fuel burning
- Encourage collaborative efforts between stakeholders to improve indoor air quality
- Foster joint working with external stakeholders to inform home improvement programmes and identify grants to combat poor indoor air quality

We can all take some simple steps to make a big difference in reducing local air pollution and help protect our families and communities. To find out more about how you can reduce your exposure to indoor air pollution, go to Section 5: Personal exposure reduction or read the following report published by the World Health Organisation:

World Health Organisation, 2024, Personal-level actions to reduce air pollution exposure in the WHO European Region, <https://www.who.int/europe/publications/i/item/WHO-EURO-2024-9115-48887-72806>



28 Indoor Air Quality – UK Parliament POST, 2023 <https://post.parliament.uk/research-briefings/post-pb-0054/#:~:text=Overview%20of%20key%20points,complex%20and%20variable%20than%20outdoors>

4.5 CONSTRUCTION AND NEW DEVELOPMENTS

Developing well-designed, integrated, sustainable places is high on Winchester City Council's Local Plan²⁹ agenda. However, new developments can put pressure on local air quality, especially particulate matter and dust pollution, through construction processes such as demolition work, non-road mobile machinery (NRMM), and the transport of construction materials.

New developments

The Council's new Local Plan (Regulation 19) is planning for development in the coming years alongside enhancing quality of life for local communities and to address the needs of a growing population. It is critical that spatial planning and the placement of new developments strategically consider air quality by providing sustainable transport links, encouraging active travel, and increasing access to open space and recreational facilities. In order to address this, the new Local Plan, requires developers to prioritise sustainable and active transport; walking, cycling, wheeling and public transport as an integral part of the design process. The policy will seek to:

Winchester City Council want to ensure that our new developments both meet the needs of our community and address air pollution. **We commit to continually investigate how, as part of any subsequent review of the Local Plan, we can improve air quality and enhance the uptake and continued use of active and sustainable modes of travel.**

Construction

The Council's Local Plan and Air Quality Supplementary Planning Document (SPD)³⁰ requires additional planning application requirements for any pollution-generating development. These include ambient air quality assessments to consider the impacts of new developments on local air quality, and prevention of potential adverse air quality impacts.

Winchester City Council are in the process of strengthening our developing Local Plan to widen the principles of the current Air Quality Supplementary Planning Document (SPD) as a separate informative Technical Guidance Note. This updated Technical Guidance Note will provide stronger supporting guidance when considering construction activities and non-road mobile machinery (NRMM) in air quality assessments, mitigation measures, and Construction Environmental Management Plans (CEMPs).

We will work closely with our neighbouring planning authorities, South Downs National Park and Hampshire County Council, to consider the areas in Winchester District that are not in the Council's immediate planning policy control. These changes will help to provide guidance to developers to reduce their impact on local air pollution and improve public health and wellbeing for our community.



29 Winchester District Local Plan 2020 – 2040 (Emerging) <https://www.winchester.gov.uk/planning-policy/winchester-district-local-plan-2018-2038-emerging>

30 Winchester City Council Air Quality Supplementary Planning Document 2021 <https://www.winchester.gov.uk/environment/air-quality/air-quality-in-winchester>

5 PERSONAL EXPOSURE REDUCTION

Everyone plays a part in contributing to air pollution: the UK Government, Winchester City Council, businesses, and individuals. The Winchester Air Quality Strategy has set out the Council's commitments to improve the air we breathe. Here are some different adjustments you could make to your daily routine to reduce air pollution and reduce your exposure to poor air quality.

OUTDOOR AIR QUALITY



Use **public transport** or carpool



Choose to **walk down less busy streets**, or walk on the side of the pavement furthest from the road



Choose active travel alternatives, such as **walking or cycling**



Maintain your vehicle and drive efficiently by avoiding rapid acceleration and excessive idling



Consider using **electric or hybrid vehicles**



Avoid having bonfires to burn garden waste



Spread awareness about the impact of air pollution and encourage others to adopt cleaner practices

INDOOR AIR QUALITY



Plant trees and greenery or contribute to local green space initiatives



Ensure that fuel-burning **appliances are frequently serviced** and well maintained



Move away from solid fuels and **use energy-efficient appliances** to reduce energy consumption



Ventilate your home by opening your windows when you are cooking, cleaning, burning candles, and using paints



Support local campaigns and initiatives which aim to reduce air pollution



Limit use of products which release harmful chemicals into the air



Limit wood burning activities inside the home



Do not smoke inside

6 GREEN INFRASTRUCTURE

Green infrastructure is a planned network of natural and semi-natural areas including parks, open spaces, woodlands, street trees, allotments, wetlands, and green roofs and walls. High quality, well-designed, and strategically located green infrastructure is key to Winchester's sustainable future.

Green infrastructure can not only help to reduce your exposure to air pollution, but it can also deliver a wide range of environmental, social, and economic benefits:

ENVIRONMENT



- 1 Reducing exposure to air pollution by creating a barrier between pollution sources and pedestrians
- 2 Enhancing local biodiversity for birds and pollinators
- 3 Offsetting climate change by providing carbon storage
- 4 Providing sustainable drainage to reduce water run-off during flash flooding
- 5 Cooling urban areas during heat waves

SOCIAL



- 6 Improving quality of life
- 7 Supporting people's mental and physical health
- 8 Encouraging active travel by providing safer and more pleasant routes for walking and cycling

ECONOMY



- 9 Attracting investment
- 10 Positively impacting our neighbourhoods



7 MONITORING AND EVALUATION

Regular monitoring and evaluation play a crucial role in assessing the effectiveness of the initiatives outlined in the Winchester Air Quality Strategy. This ongoing review process is essential to enable a prompt and effective response to the air quality challenges within the district.

It is envisaged there will be an increasing monitoring and evaluation role by the proposed multi-disciplinary Regional Air Quality Network across Hampshire where appropriate, for example, when engaging with cross boundary sources and actions.

The Winchester Air Quality Strategy will be reviewed and reported on annually in Winchester City Council's Air Quality Annual Status Reports, keeping stakeholders up to date with progress and any changes being made.

Winchester City Council and the Air Quality Strategy Steering Group will work collaboratively to monitor, evaluate and regulate actions outlined in this Strategy. This will ensure the Strategy is successfully fulfilling its objectives and to establish progress towards meeting the Council's ambitious targets of an annual average nitrogen dioxide concentration of less than $30 \mu\text{g}/\text{m}^3$, and an annual average $\text{PM}_{2.5}$ concentration of less than $10 \mu\text{g}/\text{m}^3$ across the Winchester district by 2030.

Changes in air quality and other indicators over time can be considered against original objectives and baseline information where available. Where actions are shown not to be meeting targets, measures can be taken to bring the action back on track.



8 EXTRA RESOURCES ON AIR QUALITY

If you want to find out more about current air quality levels in Winchester, actions that Winchester City Council are taking, or information on health and wellbeing, please see the following list of useful resources.

Tool/resource	Description	Link
Winchester City Council	Provides Information on Air Quality including the health impacts plus air quality monitoring data and reports	https://www.winchester.gov.uk/environment/air-quality
Winchester AQMA	Provides information about Air Quality Management Areas in Winchester	https://uk-air.defra.gov.uk/aqma/details?aqma_ref=220
Air Quality and Health	Provides information on the different types of pollutants and their impacts on health	https://www.winchester.gov.uk/environment/air-quality/air-quality-and-health
UK Health Security Agency	Provides information about the health impacts of air pollution	https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution
Defra Air Pollution Forecast	Defra's air pollution forecast tool provides the latest outlook for air quality across the UK	https://uk-air.defra.gov.uk/forecasting/
Sustrans	Provides information on the National Cycle Network and resources to help with taking up cycling	https://www.sustrans.org.uk/national-cycle-network
Cycling UK	Offer a range of impartial advice, guides, reviews, inspiration, and routes to help people experience the joy of cycling	https://www.cyclinguk.org/
Visit Winchester	Guidance on getting around Winchester on foot, by bicycle, and using public transport	https://www.visitwinchester.co.uk/listing/the-cycle-company/
Cycle Winchester	A local community action group campaigning to make Winchester better by bike	https://cyclewinchester.org.uk/

Tool/resource	Description	Link
School Run Travel Apps	There are several SchoolRun travel apps which help to find healthier, active and sustainable travel routes to school, for example, by facilitating carpooling, finding routes with less traffic, tracking kids' journeys, or coordinating walking and cycling groups; e.g. HomeRun.	https://www.homerun-app.com/
NICE Indoor Air Quality Guidance	Guidance on the importance of good air quality in people's homes and how to achieve this	https://www.nice.org.uk/guidance/ng149
The Carbon Trust	Organisations such as The Carbon Trust help business and the public sector cut emissions	https://www.carbontrust.com/
Burn Right	Information about causes and ways to reduce air pollution from wood burning	https://burnright.co.uk/how-to-burn-right/
Household bonfires and smoke nuisance	Provides information on household bonfires and how to report them as a nuisance	https://www.winchester.gov.uk/environment/nuisance/bonfires
Smoke control areas rules	Rules for smoke control areas, including information on penalties	https://www.gov.uk/smoke-control-area-rules
The Tree Council	The Tree Council provides advice about planting new trees and hedges – of the right kind and in the right place	https://treecouncil.org.uk/
RE:NEW and RE:FIT programmes	Government-led programmes to support energy efficiency at work and home	https://www.london.gov.uk/what-we-do/environment/energy/renew-0 https://localpartnerships.org.uk/our-expertise/re-fit/
The Energy Saving Trust	The Energy Saving Trust helps households, businesses, and organisations to save energy	https://energysavingtrust.org.uk/
European Environment Agency. EMEP/EEA air pollutant emission inventory guidebook 2019		https://www.eea.europa.eu/publications/emep-eea-guidebook-2019
Department for Environment, Food & Rural Affairs (Defra). Clean Air Strategy 2019		https://www.gov.uk/government/publications/clean-air-strategy-2019
Chief Medical Officer's annual report 2022: Air Pollution		https://www.gov.uk/government/publications/chief-medical-officers-annual-report-2022-air-pollution

APPENDIX 1: WINCHESTER AIR QUALITY STRATEGY ACTIONS

ID	Action area	Action	Department Lead(s)	Suggested Start Date	Implementation Timeframe ³¹
1	Air quality monitoring and modelling	Conduct a detailed atmospheric source inventory for NO ₂ and PM _{2.5} pollution in the Winchester District to identify the extent to which different key emission sources contribute to pollutant concentrations.	Service Lead – Public Protection	2024/2025	Very short
2	Air quality monitoring and modelling	Expand the air quality monitoring network across the Winchester district, including increased PM _{2.5} measurements using sensor measurements, citizen engagement, and indicative monitoring.	Service Lead – Public Protection	2025/2026	Short
3	Air quality monitoring and modelling	Develop a new and active participation in, a multi-disciplinary Regional Air Quality Network across Hampshire.	Service Lead – Public Protection	2027/2028	Medium
4	Air quality monitoring and modelling	Conduct a study to identify and deliver measures at sensitive locations, such as schools/nurseries, playgrounds, or areas where air quality previously failed to meet national air quality objectives.	Service Lead – Public Protection and DoPH	2028/2029	Medium
5	Transport	Adopt an anti-idling enforcement policy to educate residents and encourage behavioural change of motorists.	Service Lead – Public Protection	2025/2026	Medium
6	Transport	Lobby and identify capabilities to deliver the Local Cycling and Walking Infrastructure Plan (LCWIP) for Winchester City and District.	Hampshire County Council and Winchester City Council	2026/2027	Long

31 Very short (<6 months), Short (6-12 months), Medium (1-2 yrs), Long (2+ yrs)

ID	Action area	Action	Department Lead(s)	Suggested Start Date	Implementation Timeframe
7	Transport	To support the Hampshire County Council Local Transport Plan, Winchester City Council commit to investigate and support traffic reduction policies to reduce traffic flows by 10% by 2030.	Corporate Head of Programme: Place	2027/2028	Long
8	Transport	To support Hampshire County Council Local Transport Plan measures that will increase the uptake and use of Public Transport across the district and improve connectivity with the wider region.	Corporate Head of Programme: Place	2026/2027	Long
9	Domestic heating and combustion	Develop an educational and advisory policy on an effective coordinated response to domestic combustion concerns.	Service Leads – Public Protection and Communications	2024/2025	Very Short
10	Domestic heating and combustion	Explore the feasibility of adopting a Smoke Control Area and associated enforcement policy to cover Winchester District.	Service Lead – Public Protection	2025/2026	Short
11	Indoor air quality	Develop an educational and advisory policy on an effective coordinated response to indoor air quality concerns, including mould and bio aerosols.	Service Leads – Strategic Housing, Housing Options and Inclusion and Communications	2025/2026	Short
12	Construction and new developments	Strengthen our developing Local Plan to widen the principles of the current Air Quality Supplementary Planning Document (SPD) as a separate informative Technical Guidance Note.	Service Lead – Public Protection	2024/2025	Short
13	Construction and new developments	Investigate how, as part of the subsequent review of the Local Plan, we can improve air quality and enhance the uptake and continued use of active and sustainable modes of travel.	Strategic Planning Manager Built Environment	2029/2030	Long