DRAFT

Air Quality Action Plan
2024-2028

In fulfilment of Part IV
of the Environment Act 1995

Local Air Quality Management

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Slough Borough Council

Contents

Introduction from Councillor Gurcharan Manku

Lead Member for the Environment, Environmental Services and Open Spaces

Exposure to poor air quality is a public health concern that can affect every member of society, from children, to adults, and the elderly. Although pollution levels in Slough have reduced in recent years, some areas continue to have persistent poor air quality and the Council is committed to tackling this for the benefit of everyone who lives and works in the borough.
Our new Corporate Plan (2023-2027) sets out our purpose, to close the healthy life expectancy gap, by focusing on children, underpinned by three strategic priorities:

1. A borough for children and young people to thrive.
2. A town where residents can live healthier, safer and more independent lives.
3. A cleaner, healthier and more prosperous Slough.

The new Air Quality Action Plan (2024-2028) will help to achieve these priorities, by setting two time specific aims. The first is to achieve a boroughwide nitrogen dioxide concentration 12.5% below the legal threshold by 2028, and the second is to revoke all of our air quality management areas by 2030.

This action plans sets out the actions that the Council will be undertaking in order to achieve these aims and improve air quality across the borough, focusing on nitrogen dioxide and particulate matter. These actions fall under three broad categories:

Environment: focusing on emission management and reduction of emissions at the source
Transport: focusing on traffic management and infrastructure to support people to choose more sustainable travel methods over private vehicle use
Health Education & Awareness: focusing on improving the air quality knowledge base across the borough

However, air quality cannot be dealt with by the Council alone. Each person living and working in Slough have the opportunity to improve their emission contributions and risk of exposure to pollutants, and collaboration with the Council will be key to achieving our aims.

What is an Air Quality Action Plan?

All local authorities are required to monitor, review and assess air quality within their administrative areas, as required by Part IV of the Environment Act 1995 (amended 2021), to identify locations where national Air Quality Objectives (AQOs) will not be achieved. Where this is likely to occur, this area must be declared as an Air Quality Management Area (AQMA).

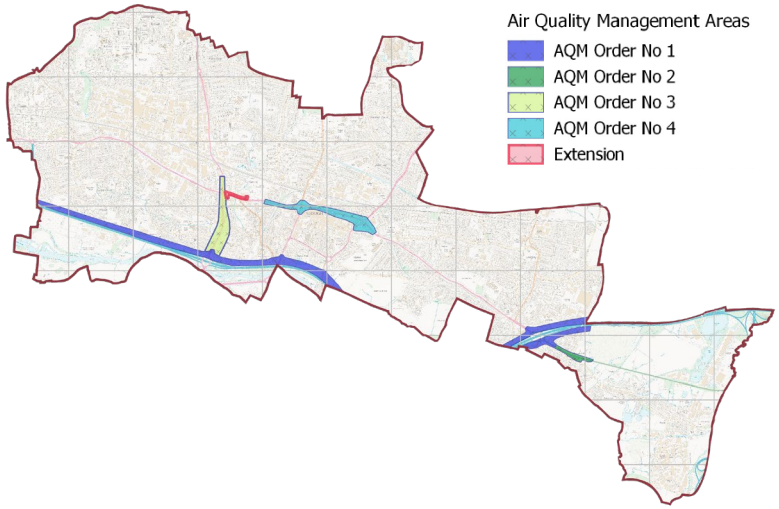
Slough Borough Council monitors concentrations of nitrogen dioxide (NO_2) and particulate matter (PM_{10} and $PM_{2.5}$) to assess compliance against the national AQOs. Exceedances of the NO_2 AQO has resulted in five AQMAs being declared within the borough. Once an AQMA has been declared, local authorities are responsible for setting out plans that detail how compliance will be achieved and the actions that will be undertaken.

This document presents a summary of the draft Air Quality Action Plan (AQAP). The action plan has been developed in collaboration with Council officers and outlines a series of measures to achieve two key aims:

Pollutant	Air Quality Objective	Averaging Period
NO_2	200µg/m³ not to be exceeded more than 18 times a year	hourly mean
NO_2	40 µg/m³	annual mean
PM_{10}	50µg/m³ not to be exceeded more than 35 times a year	24 hour mean
PM_{10}	40 µg/m³	annual mean
$PM_{2.5}$	20 µg/m³	annual mean
$PM_{2.5}$	Target of 20% reduction in concentrations at urban background	annual mean

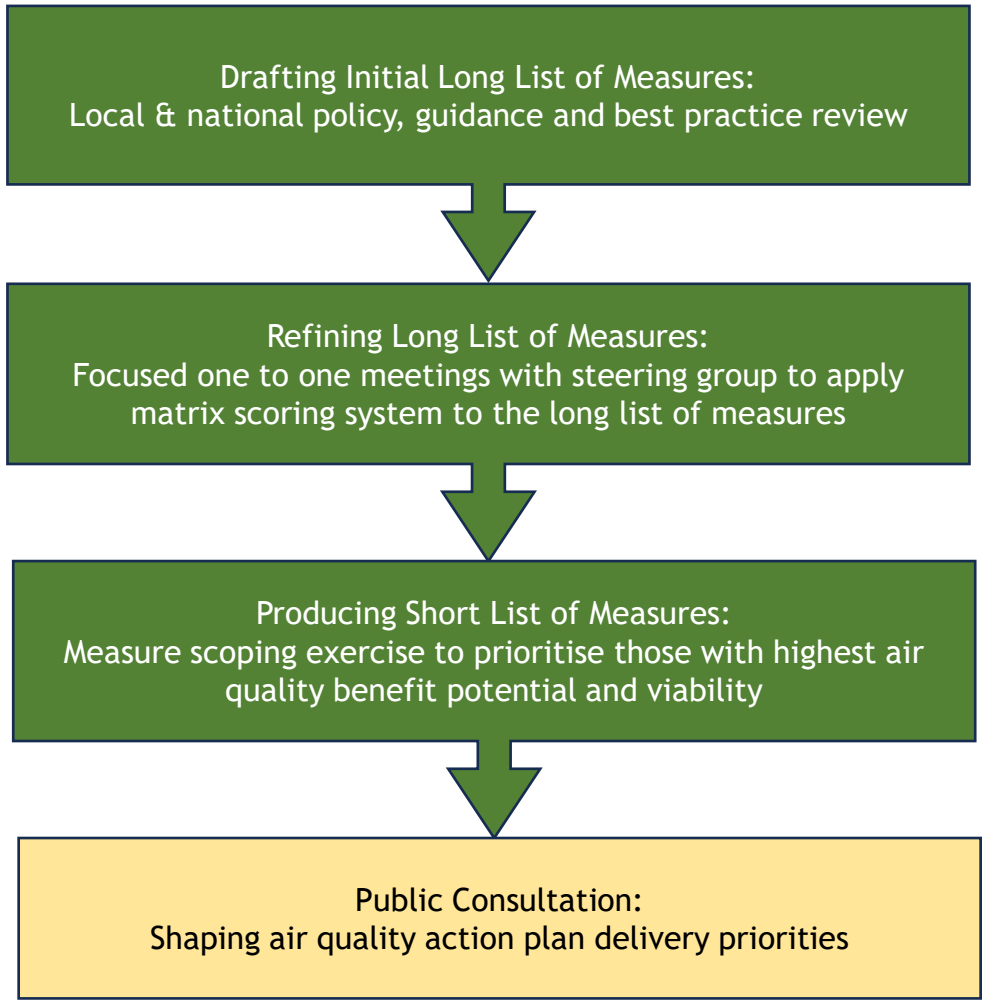
Achieve a boroughwide NO_2 target concentration of <35µg/m³ by 2028

Revoke all of Slough Borough Council's AQMAs by 2030



Human exposure to air pollution has significant health consequences. Exposure during pregnancy can contribute to low birth weight babies and slower lung function development, which can develop into asthma and atherosclerosis during childhood. Adults can further develop coronary heart disease, lung cancer, chronic obstructive pulmonary disease and diabetes. In the elderly, heart failure and dementia risk is increased. In 2021, the fraction of mortality attributable to $PM_{2.5}$ exposure in Slough was 6.3% (England 5.5%, South East 5.4%). As such, air quality must be improved for the benefit of Slough's residents.

Forming the Air Quality Action Plan



A systematic approach has been followed to identify measures to be included in the AQAP, in accordance with Defra's Local Air Quality Management Technical Guidance (LAQM.TG (22)). These measures have been evaluated throughout the development of the action plan by a dedicated steering group, consisting of offices and members from the following areas:

- Carbon & Sustainability
- Sustainable Transport
- Highways Development
- Transport Planning
- Parking
- Taxi Licensing
- Public Health
- Development Management
- Planning Policy
- Housing
- Strategy & Policy
- Lead Member for Environment

The final action plan presents a refined, short list of measures which have been sifted based on their viability. This is a cumulative score based on the measure's potential to improve air quality, technical feasibility, implementation timeframe, cost, and funding availability.

Public consultation is the final stage of the AQAP, where the public have the opportunity to shape action plan priorities and how it is delivered. This is the most valuable stage of the action plan development and all views are welcome.

Slough Borough Council Air Quality Priorities

Slough Context

- Slough is the third most densely populated local authority in the South East (following Portsmouth and Southampton) and ten-fold higher than the South East average.
- Slough has high levels of overcrowding and the largest average household size in England of three people per household (2.4 in England and Wales).
- The borough falls within the top 25% most deprived local authorities in England and is the 5th most deprived decile of local authorities in England. Slough is more deprived than the England average of the 2019 Index of Multiple Deprivation (IMD), with 57.7% deprived in one or more dimensions.
- Slough performs poorly in health statistics compared to other local authorities, with lower healthy life expectancy and high prevalence of cardiovascular diseases and obesity. Exposure to poor air quality exacerbates these conditions.
- Slough's strategic location in proximity to London and Heathrow, and the number of headquarters located in Slough, makes it an attractive employment location, however due to low skilled workers being based in Slough, this results in a high proportion of workers who commute to Slough from elsewhere. This contributes towards high levels of congestion and worsens air quality for Slough's residents.

Health measure	Slough	RBWM	SE
Healthy life expectancy (M)	58.1	69.7	65.5
Healthy life expectancy (F)	60.3	70.3	65.9
Mortality rate: cardiovascular (deaths per 100k under 75)	108.9	51.5	63.1
Year 6: prevalence of obesity (incl. severe obesity)	28.4%	17.5%	20.0%
Low birth weight: term babies (under 2,500g)	4.4%	2.5%	2.4%
% physically active adults (150+ minutes activity per week)	51.6%	76.2%	70.5%

Supporting the Corporate Plan

The Air Quality Action Plan will support the Corporate Plan's strategic priorities, by improving air quality and therefore the health of those who live and work in Slough.

Priority 1:

A borough for children and young people to thrive

Priority 2:

A town where residents can live healthier, safer and more independent lives

Priority 3:

A cleaner, healthier and more prosperous Slough

Air Quality Challenges and Opportunities

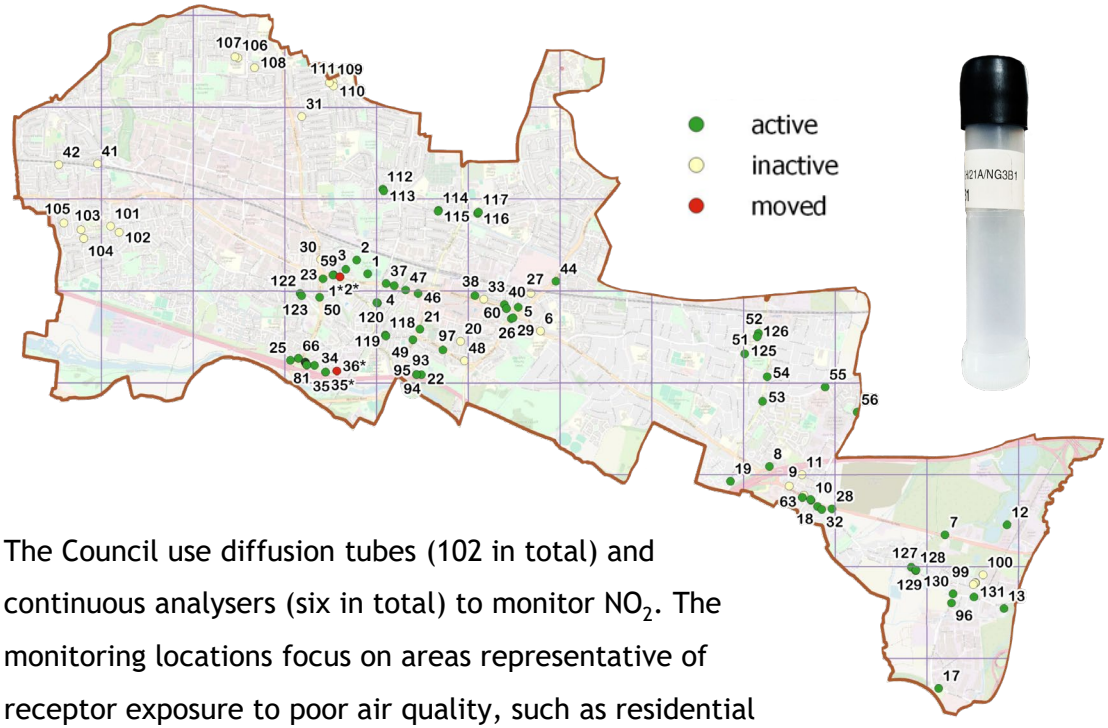
Challenges

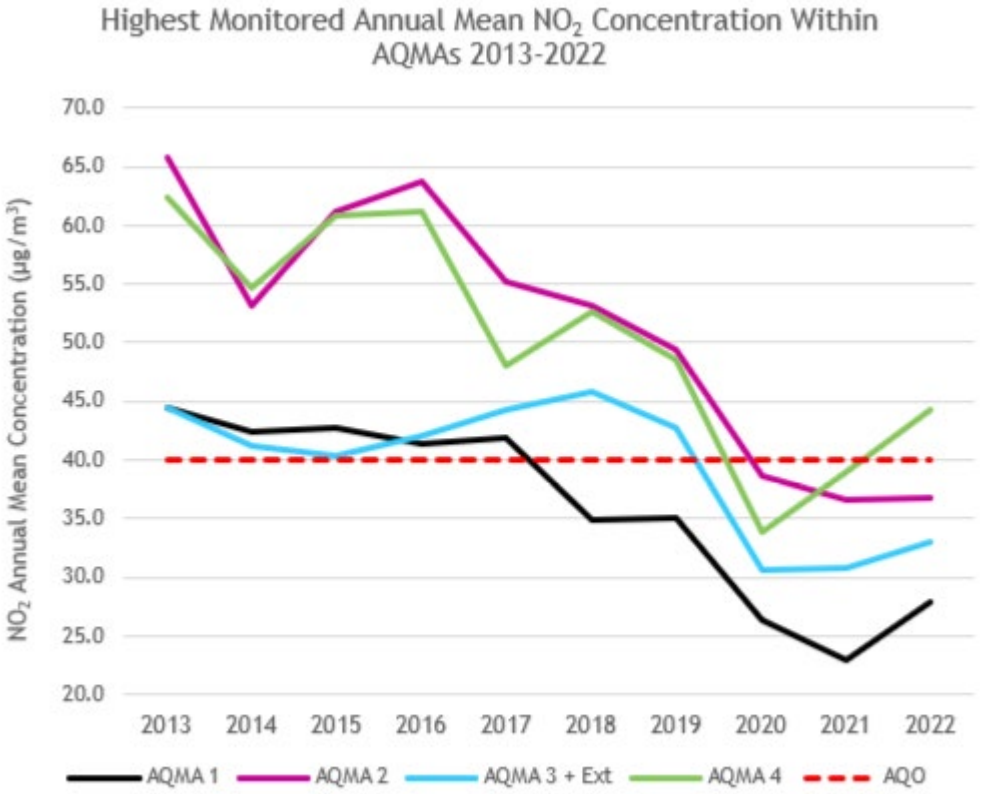
- Slough has a high proportion of households with one or more vehicles relative to its population density (79.7%) when compared with other high density areas (Reading 71.6%; Portsmouth 69.7%, and Southampton 72.6%). Additionally, Slough has a lower proportion of households without access to a car or van (20.3%), compared to Reading (28.4%), Portsmouth (30.3%) and Southampton (27.4%) (ONS, 2021).
- Residents support having a high quantity of private vehicles in Slough and public transport schemes have received little public support (Slough 2040 Vision Engagement Survey, 2020). The A4 cycle lane scheme consultation results indicate that 87% of respondents use private vehicles to travel on the A4 compared to 14.7% by bus (A4 Cycle Scheme Consultation, 2023).
- Of residents who travel to work, 71% travel in a car or van, and often travel using this mode for short journeys under 10km (68%) (ONS, 2021).
- For school travel from 2018/19 to 2022/23, car sharing was the second most popular usual mode choice until 2021/22, when this was overtaken by the single child car mode. Single child car mode remains the second most popular usual mode choice, peaking at 38% in 2022/23 (Hands Up Surveys, 2018-2023).

Opportunities

- Improving children's health is an important value for schools in Slough (School Engagement Survey, 2024) and children are motivated to travel sustainably (Hands Up Surveys, 2018-2022).
- When asked about contributors to poor air quality, 52% of respondents voted that vehicle traffic contributes towards poor air quality. This shows that Slough residents have a good understanding of Slough's dominant pollutant sources (Thinks Report, 2023).
- Slough residents have concerns about their weight (67.3%) and activity levels (65.8%), with a willingness to get active (77.8%), suggesting that there is appetite for active travel related schemes and projects (Healthy Behaviours Survey, 2022).
- Residents voted that cheaper sustainable travel, improved public transport links infrastructure (70% in total) would encourage them to travel more sustainably (Thinks Report, 2023).
- The community would like to be more involved in community engagement activities, with 72% agreeing, alongside useful engagement (Thinks Report, 2023).

The Evidence: Air Quality Monitoring and Trends in Slough





The Council use diffusion tubes (102 in total) and continuous analysers (six in total) to monitor NO_2. The monitoring locations focus on areas representative of receptor exposure to poor air quality, such as residential dwellings close to major roads, or for monitoring background levels, specific sources, and areas of concern.

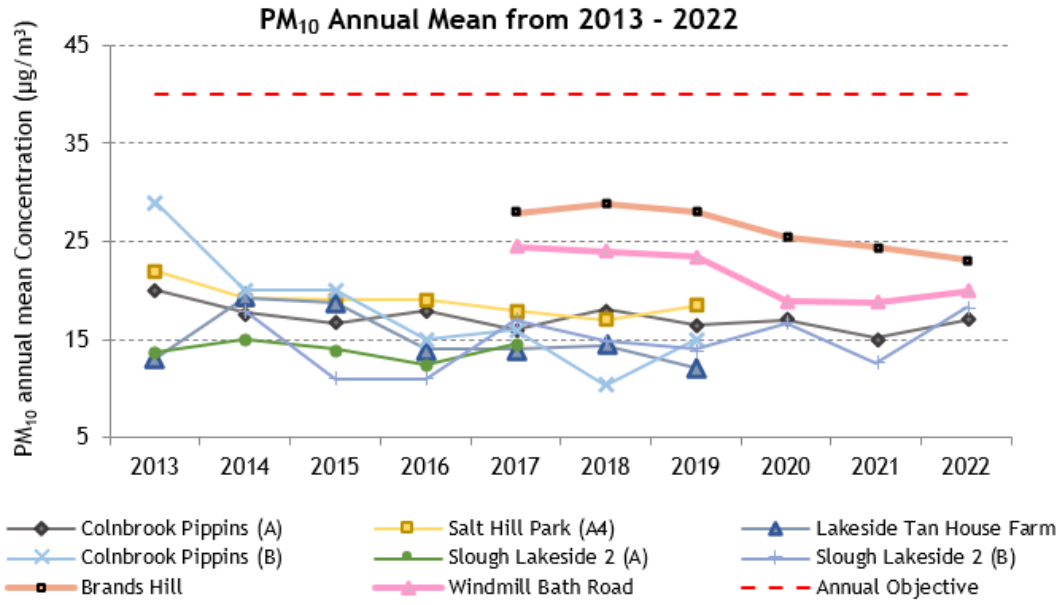
Data from the last 10 years shows that concentrations of NO_2 have been improving in Slough, with a significant decrease in 2020 due to the COVID-19 pandemic. This resulted in widespread compliance with the NO_2 AQO across the borough, a trend which is matched nationally.

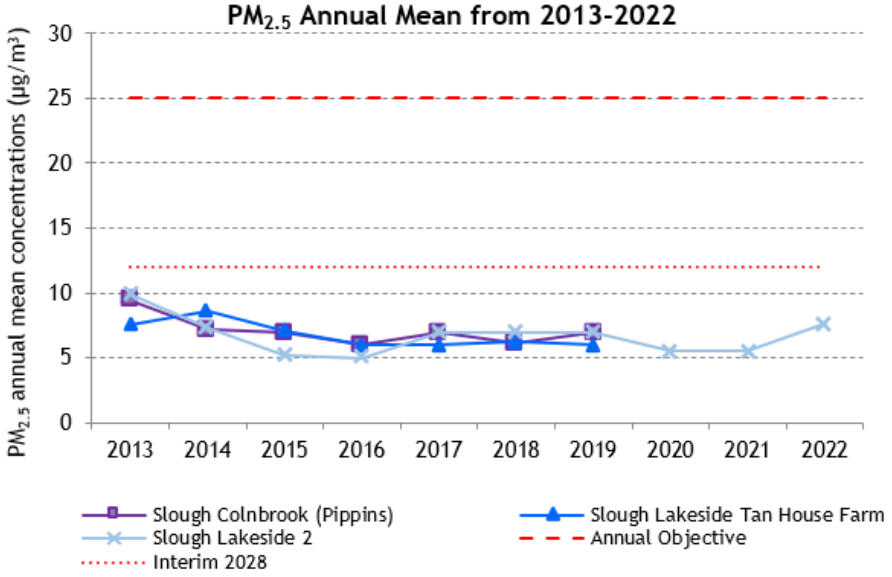
Since the pandemic, concentrations have started to recover, particularly within AQMA 4. Action is therefore needed to ensure that this suppression of NO_2 can be sustained and decreased further in the long term.

The Evidence: Air Quality Monitoring and Trends in Slough

Particulate matter (PM_{10} or $PM_{2.5}$) is monitored using continuous analysers. Historically, Slough has not experienced an exceedance of the AQO for either PM_{10} or $PM_{2.5}$, however reducing PM emissions remains a priority due to the seriousness of the health impacts that result from even low levels of exposure. Over the last 10 years, PM concentrations have reduced, however the trend has been less linear both in Slough and nationally.

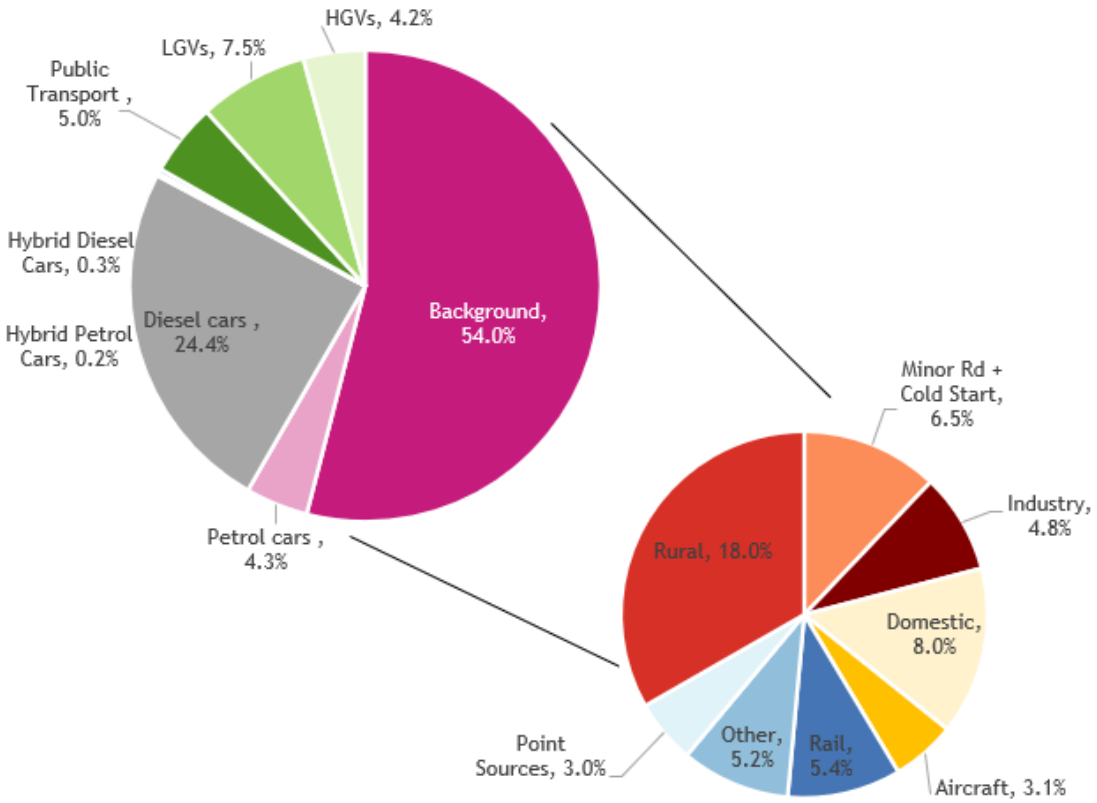
Compared to NO_2, local authorities have a lesser influence on particulate matter concentrations because it is transboundary, meaning it can travel long distances from outside the borough boundary. Across the UK, $PM_{2.5}$ concentrations tend to be highest in urban environments, particularly in the southern and eastern areas of the UK. Influencing factors include population density, weather conditions and a greater exposure to pollution sources from mainland Europe.

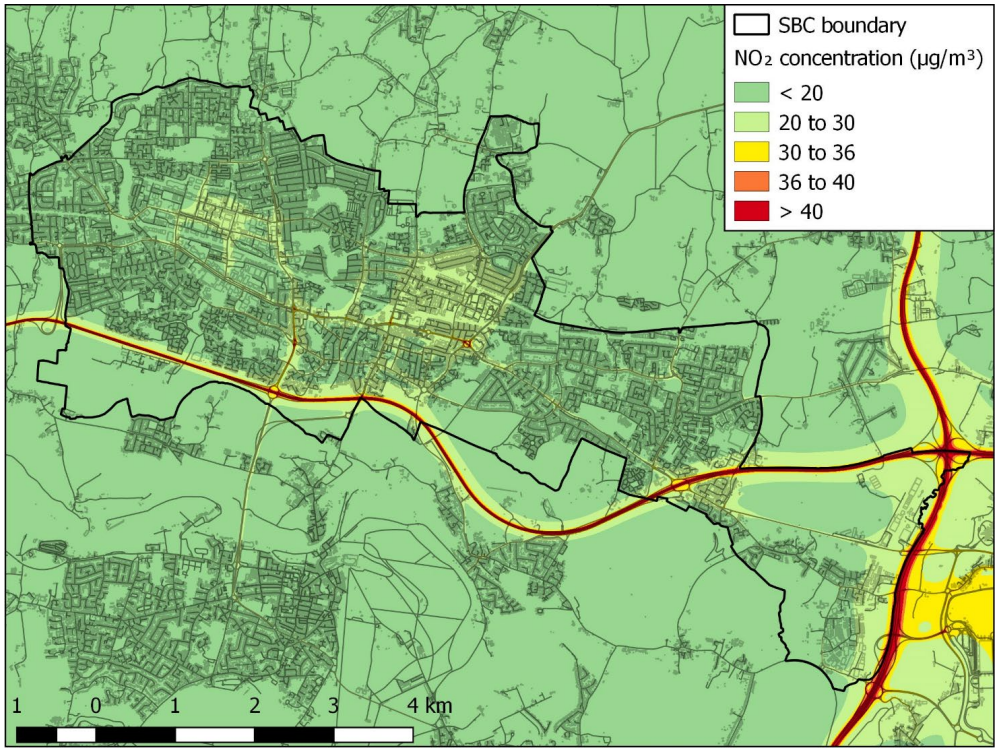




Air Quality Modelling: Nitrogen Dioxide

To get a complete picture of air pollution concentrations and sources in the borough, an air quality modelling and source apportionment exercise was commissioned. This provides further information on the level of action needed to enable the AQOs to be met.





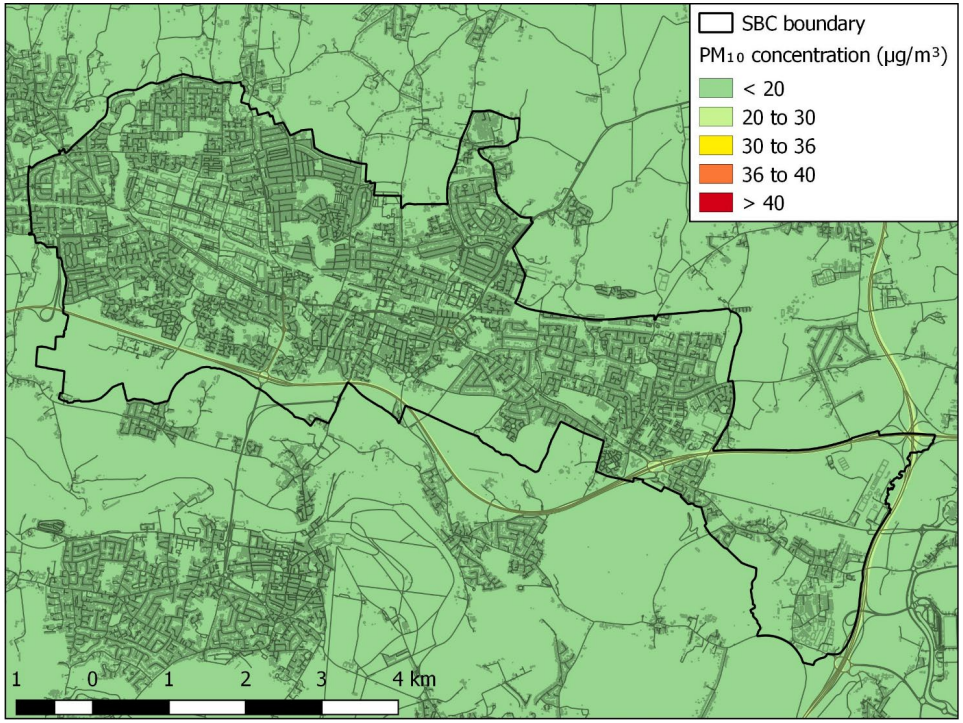
The baseline model indicates that NO_2 is concentrated along busy roads, with higher concentrations across industrial areas.

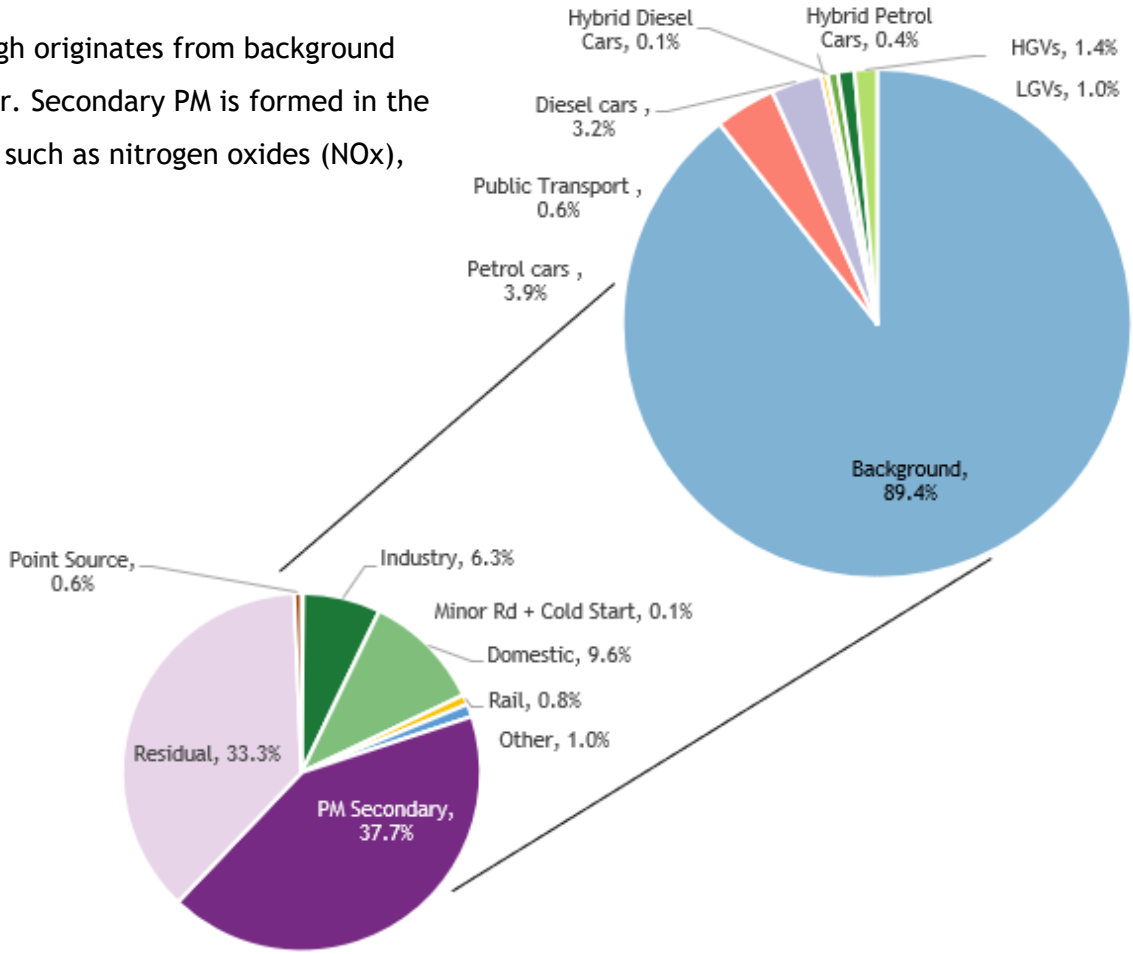
The source apportionment study indicated that although the majority of pollution originates from background sources, a significant portion originates from operations within the borough, including diesel cars (24%).

Air Quality Modelling: Particulate Matter

The baseline model indicates that particulate matter (both PM_{10} and $PM_{2.5}$ is more evenly distributed compared to NO_2 and is not confined to roads.

When considering sources, most of the particulate matter pollution in Slough originates from background sources (89.4%), the majority of which is from secondary particulate matter. Secondary PM is formed in the atmosphere through complex chemical reactions from precursor pollutants such as nitrogen oxides (NOx), volatile organic compounds (VOCs), sulphur dioxides (SO_2), and ammonia.





Action Plan Objectives

Environment: focusing on emission management and reduction of emissions at the source

Why is this important?

Much of the pollution in Slough originates from activities and operations generated by people who work and live in the borough. Actions are therefore needed to reduce emissions at the source, to enable Slough Borough Council to meet legal compliance levels and our <35µg/m^3 target.

Our objectives:

Environment Objective 1 (EO-1)	Undertake statutory duties to monitor, review and manage air quality
Environment Objective 2 (EO-2)	Ensure that air quality is a key consideration in all planning applications and support the Council's clean air ambitions at new developments
Environment Objective 3 (EO-3)	Reduce vehicle and building emissions associated with Council operations.
Environment Objective 4 (EO-4)	Reduce emissions from staff e.g. vehicles associated with Council staff 'grey' fleet to improve air quality and meet CO_2 targets
Environment Objective 5 (EO-5)	Reduce emissions from public transport by implementing emission standards via partnerships and promoting ULEV use with operators
Environment Objective 6 (EO-6)	Work in partnership with stakeholder groups to reduce emissions from vehicles and buildings
Environment Objective 7 (EO-7)	Work in collaboration with council officers to deliver the Air Quality Action Plan & LES Programme and promote the air quality agenda

Our actions:

- The Council will lead by example, by reducing vehicle emissions from its major contracts, where vehicle use is inherent in the contract.
- Update development management controls within the Slough Low Emission Strategy, to accommodate tightened emission controls, electric vehicle charging standards and construction emissions to incorporate increased standards and provision over time.
- Delivery of the Electric Vehicle Charging Infrastructure Strategy, to create a public charge point network
- Delivery of the Electric Vehicle Car Club project.
- Assist the taxi trade in transitioning to cleaner vehicles via the Rapid Charging Infrastructure project and Defra funded Taxi Demo project, and reintroduce emission standards to taxi licensing.
- Support the delivery of low emission heating projects such as the Home Upgrade Grant (HUG2) and district heating plans.

Action Plan Objectives

Transport: focusing on traffic management and infrastructure to support people to choose more sustainable travel methods over private vehicle use

Why is this important?

As private vehicle use is the largest operational contribution towards poor air quality in Slough, alternatives must be sought that enable people to travel around Slough in a sustainable way. This has positive outcomes for health, particularly if travelling actively.

Our objectives:

Transport Objective 1 (TO-1)	Implement major infrastructural change, focusing on active travel, public transport and traffic management.
Transport Objective 2 (TO-2)	Increase uptake on public transport
Transport Objective 3 (TO-3)	Manage vehicle parking in Slough to achieve balance between accommodating growth and managing congestion
Transport Objective 4 (TO-4)	Implement traffic management measures to improve traffic flow and manage congestion
Transport Objective 5 (TO-5)	Improve the uptake of walking and cycling by making active travel an attractive travel option

Our actions:

- Implementation of the Slough Electric Cycle and Scooter Infrastructure Programme with docking locations, delivered in phases starting with rail stations.
- Delivery of cycle lane schemes outlined within the Slough Local Cycling and Walking Infrastructure Plan (LCWIP), including the A4 cycle lane, Station Road cycle lane, and Foxborough cycle lane schemes.
- Delivery of the Destination Farnham Road scheme, including improvements to the public realm, cycle lanes and electric vehicle charging provision.
- Production of a new town centre Parking Strategy, to more effectively manage illegal parking.
- Investigate the feasibility of introducing anti-idling controls in hotspot areas
- Investigate the feasibility of implementing charging or banding levels for car parking, parking permits (residents, businesses etc) and season tickets based on CO_2 emissions from vehicles
- Explore of the feasibility of implementing traffic calming measures within AQMAs.

Action Plan Objectives

Health Education & Awareness: focusing on improving the air quality knowledge base across the borough

Why is this important?

Air quality improvement is a collective effort and is most effective when individuals are taking steps to reduce their emissions and also their exposure to air pollutants. Improving education and awareness of air quality can provide individuals the tools they need to make healthy choices for the benefit of their health and others around them.

Our objectives:

Health Education & Awareness Objective 1 (HEAO-1)	Work in partnership with communities, businesses, schools and healthcare establishments to improve air quality
Health Education & Awareness Objective 2 (HEAO-2)	Improve information dissemination to the public regarding air quality
Health Education & Awareness Objective 3 (HEAO-3)	Improve education and awareness of air quality to promote healthy choices in relation to physical activity, transport, energy efficiency, smoke control and indoor air quality.

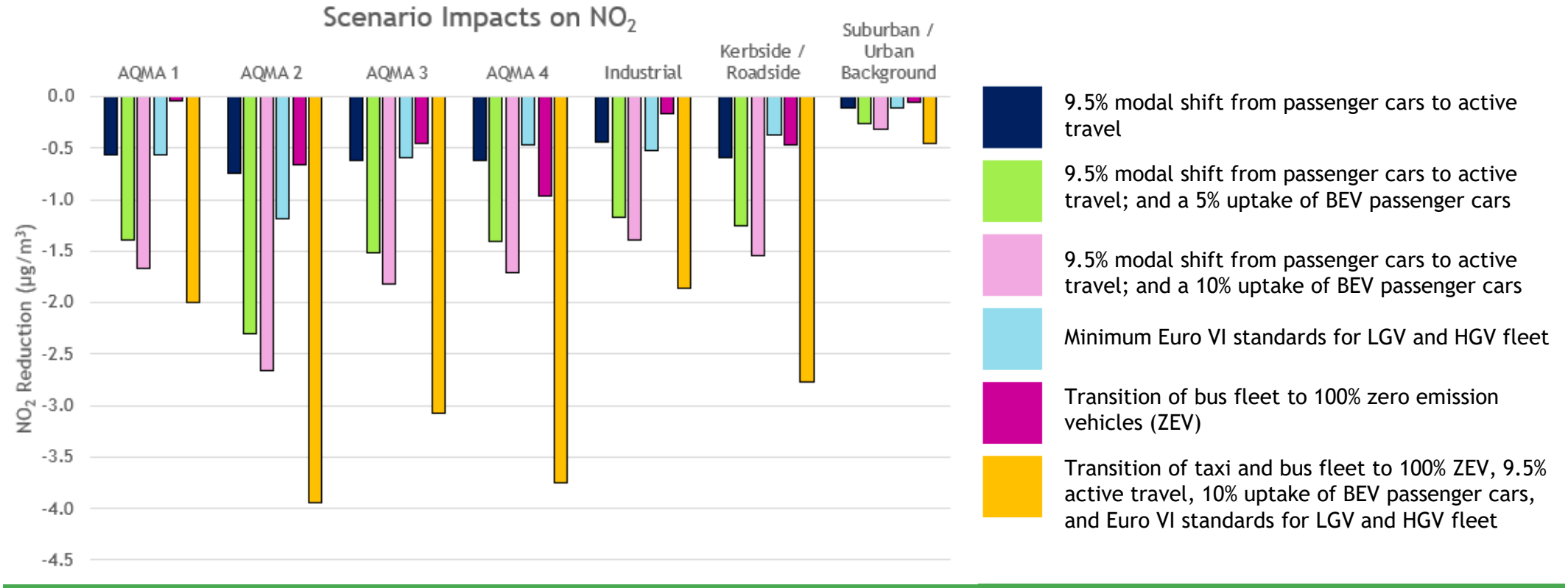
Our actions:

- Relaunch the Smarter Travel Programme, focusing on improving active travel uptake, particularly with schools.
- Development of travel planning tools to assist schools, businesses and other stakeholders in improving active travel uptake. This includes templates, advice on best practice, suitable measures and bespoke travel information.
- Launch a road safety education and training programme, to improve public confidence and uptake of smarter travel initiatives, such as Bikeability.
- Production of an annual events delivery plan, to allow for collaborative delivery of events and focused promotion
- Initiation of a school partnership, to work effectively with schools to support delivery of active travel initiatives, including involvement in Modeshift STARs.
- Delivery of a roadside emission exposure campaign focusing on school commutes and exposure reduction solutions.

Modelling the Scenarios

From the measures selection, five modelling scenarios were developed, to assess the impact of the measures on air pollution in Slough within AQMAs and outside of AQMAs (grouped into industrial, roadside / kerbside, and suburban / urban background sites).

The results indicate that a combination of all measures will have the most significant impact on NO_2. The next most effective measures are those which focus on modal shift to active travel modes and transitioning to electric vehicles, therefore the Council have confidence that the measures within this action plan will achieve the desired aims.



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