Swindon Borough Council

Kingshill Air Quality Action Plan,

Version 1.1 - 2024

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

December 2023

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Executive Summary

This reviewed Kingshill Air Quality Action Plan (AQAP) has been produced as part of our statutory duties required by the Local Air Quality Management framework. It outlines the action we will take to continue to improve the air quality in Swindon between 2024 and 2028.

This action plan replaces the initial version which ran from March 2019. Projects delivered through that action plan include:

- Funding allocation and full design of a Traffic Regulation Order to remove most heavy vehicles from Kingshill, including signage and alternative routes.
- Tightened age and emission limits for taxis.
- Reviewed and updated planning and highways policy and guidance to foster green energy generation, greater air quality awareness in all development, and managing growth in traffic flow on Kingshill.
- Rescheduled refuse collections on Kingshill to avoid congestion.
- Amended Council fleet purchasing policy to prioritise alternative fuelled vehicles, and the installation of charging infrastructure at depots and offices.
- Securing of funding for all outstanding actions such as Variable Message Sign (VMS) installation, outreach and communications campaigns around air quality.
- Automatic Number Plate Recognition survey of traffic on Kingshill and associated routes to confirm the likely effectiveness of the Traffic Regulation Order and inform alternative route selection.

The Covid-19 pandemic diverted much human and financial resource away from normal business, changed priorities, and made outreach on air quality matters more difficult. As a result, we have not been able to progress the above actions as quickly as we would have liked, and others remain outstanding.

We have not yet secured any funding to upgrade the Old Town Railway Cycle Path, which has the potential to influence transport choices for Wichelstowe and other

residents coming into the town centre. We continue to search for funding opportunities here.

We are now moving forward on our planned outreach campaigns on air quality, and have commissioned the Variable Message Sign (VMS) units on Kingshill approaches. These two projects have been funded via a successful DEFRA grant application and are moving forward apace.

Progress has been made on the design of the Traffic Regulation Order (TRO) scheme for Kingshill, which will then need to go through the final consultation and installation phases. For efficiency, it is anticipated that the early stages of consultation can be undertaken alongside the design work. Funding has been allocated for this for some time, but other resource constraints have, until recently, prevented us from completing this.

Air pollution is associated with a number of adverse health impacts and poor air quality is the largest environmental risk to public health. Long-term exposure to air pollution (over years or lifetimes) can cause chronic conditions such as cardiovascular and respiratory diseases as well as lung cancer, leading to reduced life expectancy. Short-term exposure (over hours or days) to elevated levels of air pollution can also cause a range of health impacts, including effects on lung function, exacerbation of asthma and increases in respiratory and cardiovascular hospital admissions and mortality. There is also emerging evidence of associations between air pollution and low birth weight, diabetes, cognitive decline and dementia.

It is recognised as a contributing factor in the onset of heart disease and cancer.

Although air pollution can be harmful to everyone, some people are more affected because they live in a polluted area, are exposed to higher levels of air pollution in their day-to-day lives, or are more susceptible to health problems caused by air pollution. The most vulnerable face all of these disadvantages.

Groups that are more affected by air pollution include:

- older people
- children
- individuals with existing CVD or respiratory disease
- pregnant women
- communities in areas of higher pollution, such as close to busy roads
- low-income communities

Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with inequalities, because areas with poor air quality are also often less affluent . The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion[1]. Swindon Borough Council is committed to reducing the exposure of people in Swindon to poor air quality in order to improve health.

[1] Defra. Abatement cost guidance for valuing changes in air quality, May 2013

The outstanding actions outlined above and new actions we have developed can be considered under seven broad topics:

- Alternatives to private vehicle use
- Freight and delivery management
- Promoting low emission transport
- Promoting travel alternatives
- Public information
- Transport planning and infrastructure
- Traffic management

Our operational priorities are:

1. To complete the TRO and so remove most heavy vehicles from Kingshill. A renewed source apportionment suggests this could remove around 5% of Nitrogen Dioxide emissions from there.
2. To engage with Swindon residents, businesses and other organisations to promote active travel and public transport use, and so to reduce emissions of the most harmful pollutants.
    a. The creation of a dedicated active travel and sustainable transport team in Strategic Transport
    b. To work with key operators and stakeholders through a Local Logistics Partnership to promote efficient fleets and routes, especially for last mile journeys.
    c. To refresh our own Staff Travel Plan.
    d. To work with Public Transport providers through an Enhanced Bus Partnership, and a Bus Service Improvement Plan, 'Bus Back Better'. To include pursuing traffic signal advantage schemes for buses.
    e. To increase the use of transport sustainability tools within schools such as www.Platformrail.org, https://modeshift.org.uk/ and other green travel promotional tools

f. To develop our Town Centre Access and Active Travel Map, and other site specific walking and cycling maps (including access to Coate Water and healthy heritage walks)

g. To develop our Transport Conversation survey and engagement approach to hear from the public about walking, cycling and low carbon transport ideas and solutions

3. To prioritise and improve infrastructure for active travel such as walking and cycling.

    a. To identify funding to upgrade the Old Town Railway Cycle Path, which could be a key active travel link between Wichelstowe, and wider, and the town centre.

    b. To improve cycle connectivity across the town centre

    c. To enhance accessibility to the New Eastern Villages by cycle, including enhanced facilities on the Southern Connector Road and Wanborough Road

    d. To develop the Northern Flyer cycle link

4. To support low carbon transport development

    a. To enter strategic bids to improve public electric vehicle charging facilities.

    b. To put in place a new transport modelling solution for the whole of Swindon, updating our SATURN strategic transport model

    c. To refresh and develop a station travel plan for Swindon rail station

This plan will also link with and complement Swindon's Climate Change Action Plan and the work of the Achieving Net Zero Committee, Planning, and the Get Swindon Active Strategy. The work of the Reducing Inequality and Building Better Swindon Committee is also interlinked and highly relevant

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

elsewhere), but for which we may have useful evidence, and so we will continue to work with regional and central government on policies and issues beyond Swindon's direct influence.

Responsibilities and Commitment

This AQAP was prepared by the Air Quality Steering Group of Swindon Borough Council (SBC) with the support and agreement of the following officers and departments:

Cabinet Member for Communities and Joint Working

Director of Public Health, SBC

Head of Strategic Transport, SBC

Head of Environmental Health, SBC

Planning Policy Manager, SBC

This AQAP has been approved by Swindon Borough Council's Cabinet, and by the Director of Public Health.

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

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

If you have any comments on this AQAP please send them to the Head of Environmental Health at:

Wat Tyler House West 5th Floor, Beckhampton Street, Swindon SN1 2JG.

dgreen@swindon.gov.uk

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Introduction

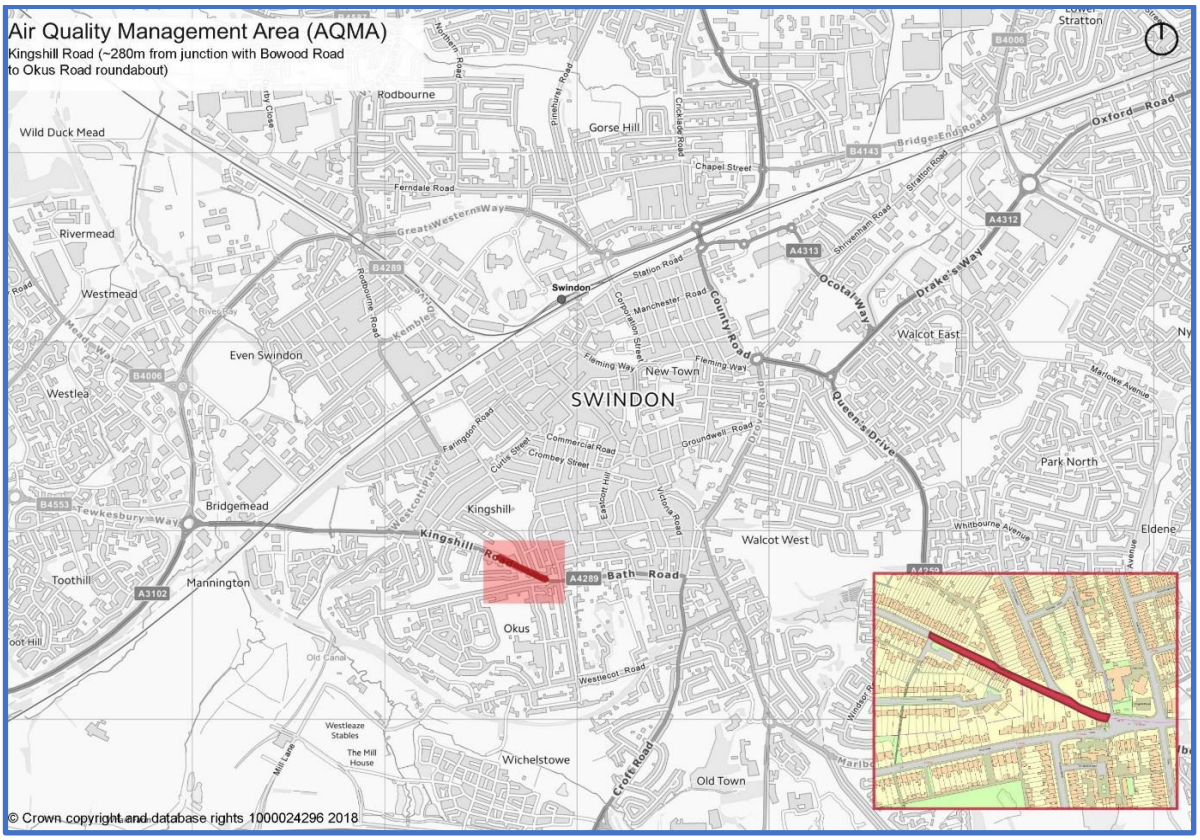
This report outlines the actions that Swindon will deliver between 2024 and 2028 in order to further reduce concentrations of Nitrogen Dioxide (NO_2) on Kingshill Road ('Kingshill'), the A4289; thereby positively impacting on the health and quality of life of residents and visitors to Swindon Borough.

The non-compliant stretch of Kingshill is steeply uphill, with houses and trees on each side forming a small street canyon. The road runs WNW to ESE and so is relatively sheltered from prevailing winds that might otherwise help to disperse the gases.

Air quality monitoring results published in 2018 identified a discrete portion of Kingshill that was affected by levels significantly in excess of the annual average objective limit for Nitrogen Dioxide. The level of Nitrogen Dioxide (NO_2) at relevant receptors, a row of 14 terraces lying very close to the kerb, was measured at 56µg/m^3 during 2018, against the objective limit of 40µg/m^3. An Air Quality Management Area (AQMA) was declared in February 2018. The worst monitored level of Nitrogen Dioxide on Kingshill in 2022 was 42µg/m^3.

A copy of the Air Quality Management Order that put the Air Quality Management Area (AQMA) in place may be found at Appendix 1, and the following diagram shows the extent of the AQMA in Swindon.

Figure 1 - Air Quality Management Area



This is the first significant review of Swindon's first Air Quality Action Plan, which was published in March of 2019. This report has been developed in recognition of the legal requirement on the local authority to work towards national 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 Action Plan will be reviewed in 2028 at the latest, and progress on measures set out within this Plan will be reported on annually within Swindon's air quality Annual Status Report (ASR).

Over the course of the original Action Plan period, NO_2 levels have dropped significantly within the AQMA, to marginally in excess of the objective limit, but we must do more to bring NO_2 levels sustainably down below the 40µg/m^3 objective without further delay.

Summary of Current Air Quality in Swindon

Please refer to the latest published ASR from Swindon Borough Council, which includes maps of our current monitoring network

Air Quality within Swindon Borough with regard to Nitrogen Dioxide (NO_2) is generally good, and is improving. Modelled background NO_2 in Swindon's worst affected grid squares lies at 15µg (2018: 18µg). Swindon's best background value lies at just 6µg (2018: 7µg), and the annual average modelled background value across our 232 1km^2 grid squares, is 9µg (2018: 11µg).

Our monitoring network of 42 diffusion tubes found, in 2022, that there is now a clear improving trend across the Borough, including within the Air Quality Management Area (AQMA). Just one monitoring site in Swindon (S15; outside 102 Kingshill Road), and within the AQMA, now lies above the limit value; at 42µg/m^3 as an annual average when adjusted for receptor distance. Two further sites within the AQMA, S29 and S30, lie within 10% of the limit value of 40µg/m^3 when adjusted for receptor distance. Both S29 (opposite 102 Kingshill Road) and S30 (on the corner of Clifton Street and Kingshill Road are situated on the uphill side of the road within the most canyon-like portion.

In 2022 roughly half of our borough wide monitoring sites marginally improved, and half marginally deteriorated, but the improving trend was maintained. The average roadside NO_2 value identified by our monitoring network, many sites of which are located at our assumed least favoured locations, was 27µg/m^3 in 2022, against 31µg/m^3 in 2019. This observed improvement is somewhat supported by DEFRA's own Urban Background monitor at Walcot (UKA00650) in Swindon, which also shows a similar improving trend over the period.

Within the Kingshill AQMA, the worst monitored site has improved from 56µg/m^3 in 2018 to 42µg in 2022. This significant observed improvement has been brought about by the continued greening of the national vehicle fleet, changes in travel habits following the Covid-19 pandemic, and the remedial actions we have put in place to date. Alongside this, the significant traffic growth which was previously expected on Kingshill, due to the continued rapid expansion of the town and especially that in Wichelstowe, has not yet materialised. Traffic volumes on Kingshill remain approximately 5% below pre-Covid-19 levels in 2022.

At the time of declaring our AQMA on Kingshill in 2018, we were also concerned about several other locations in the town with regard to NO_2; Devizes Road, Manchester Road, Rodbourne Road, and Emlyn Square, which all displayed levels around 10% from the limit value. These concerns have now relented in line with the generally improving trend seen across the town; improving by an average of 15% since 2017.

We continue to monitor Nitrogen Dioxide levels across the town through an expanded network of 45 diffusion tubes at 38 locations in 2023.

The following graphs of 5-year trends across the town illustrate the improvements recently seen.

Figure 2 - Trend of Roadside NO_2 levels within or adjacent to the AQMA

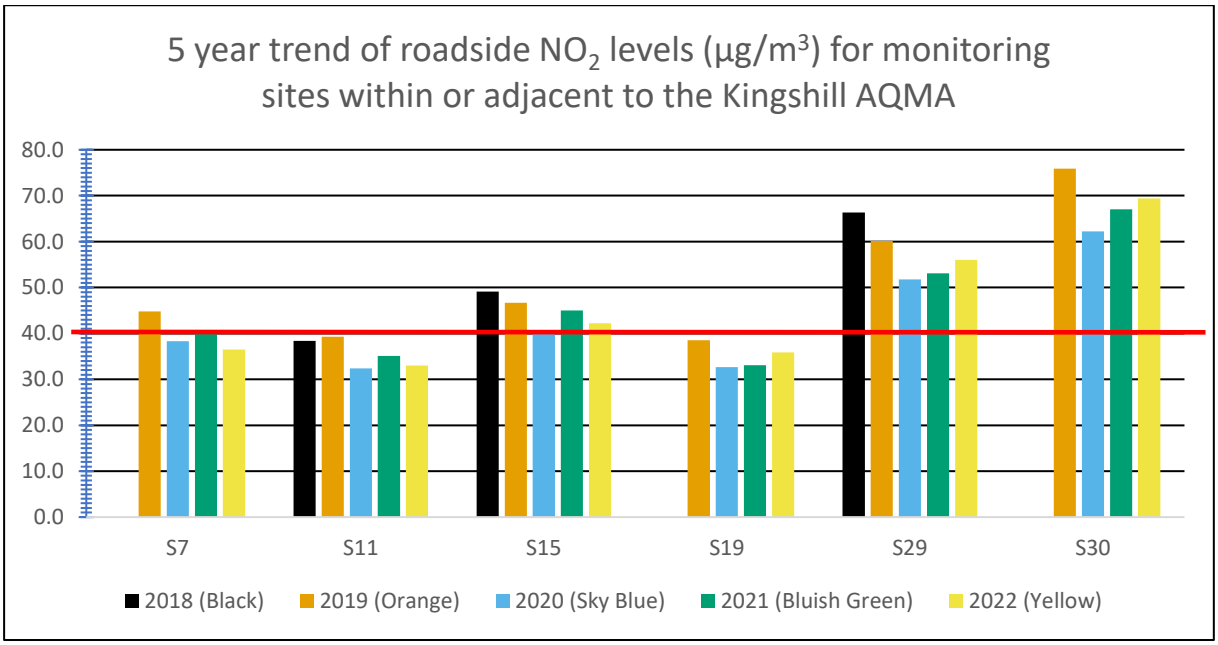


Figure 3 – Trend of Roadside NO_2 levels South of the railway line in Swindon

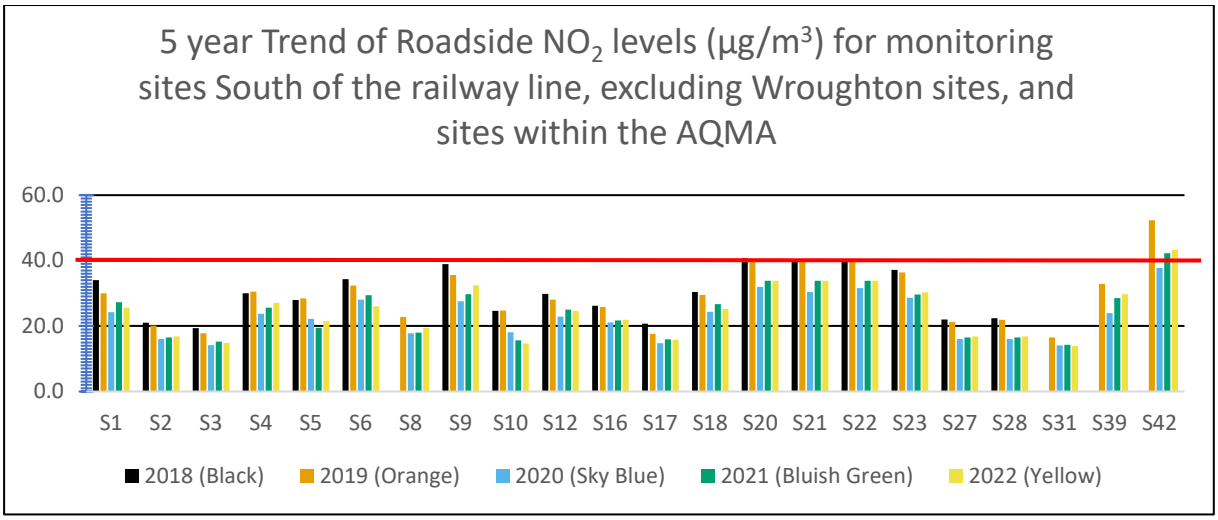


Figure 4 - Trend of roadside NO_2 levels North of the railway line in Swindon

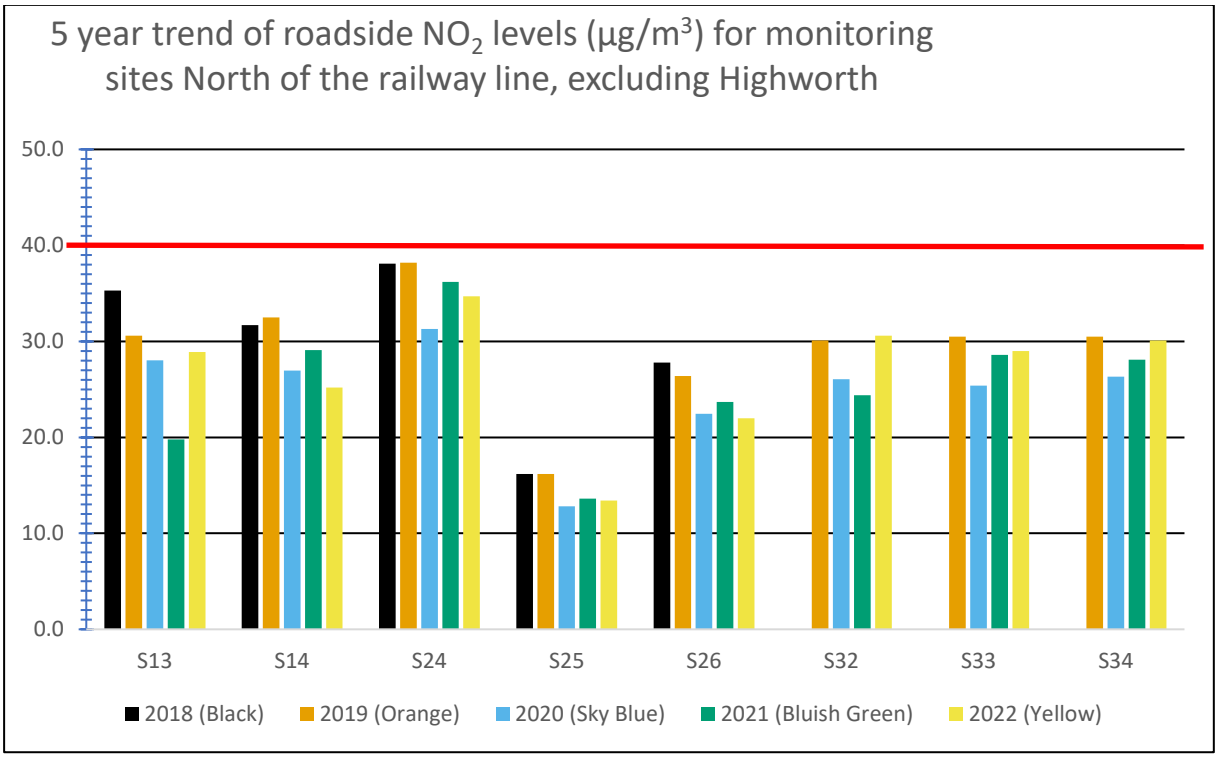


Figure 5 - Trend of roadside NO_2 levels in Highworth

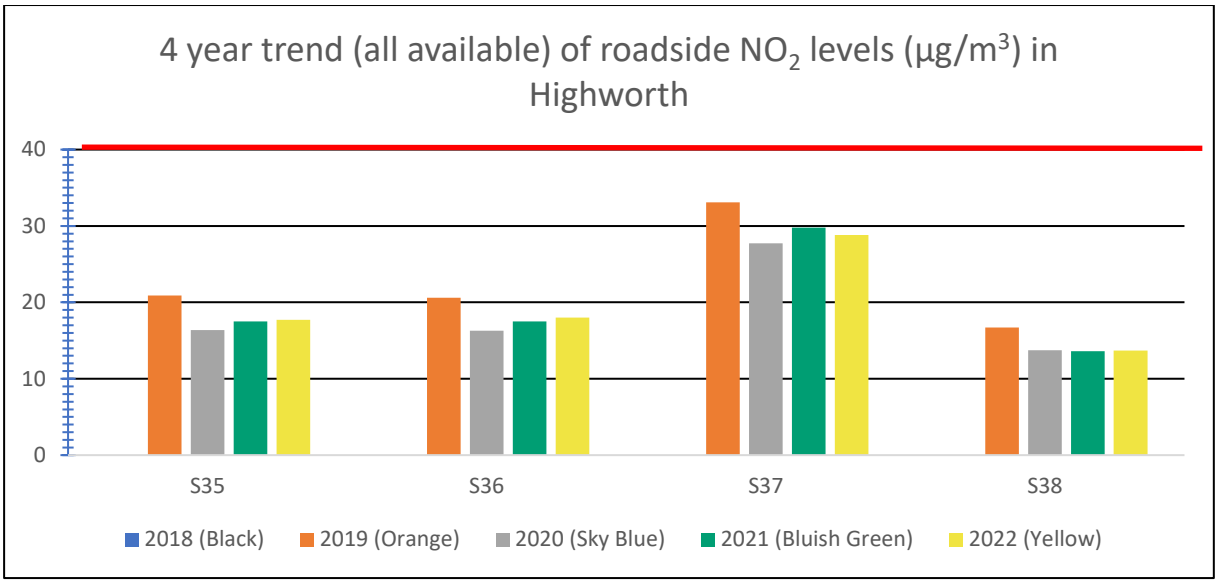
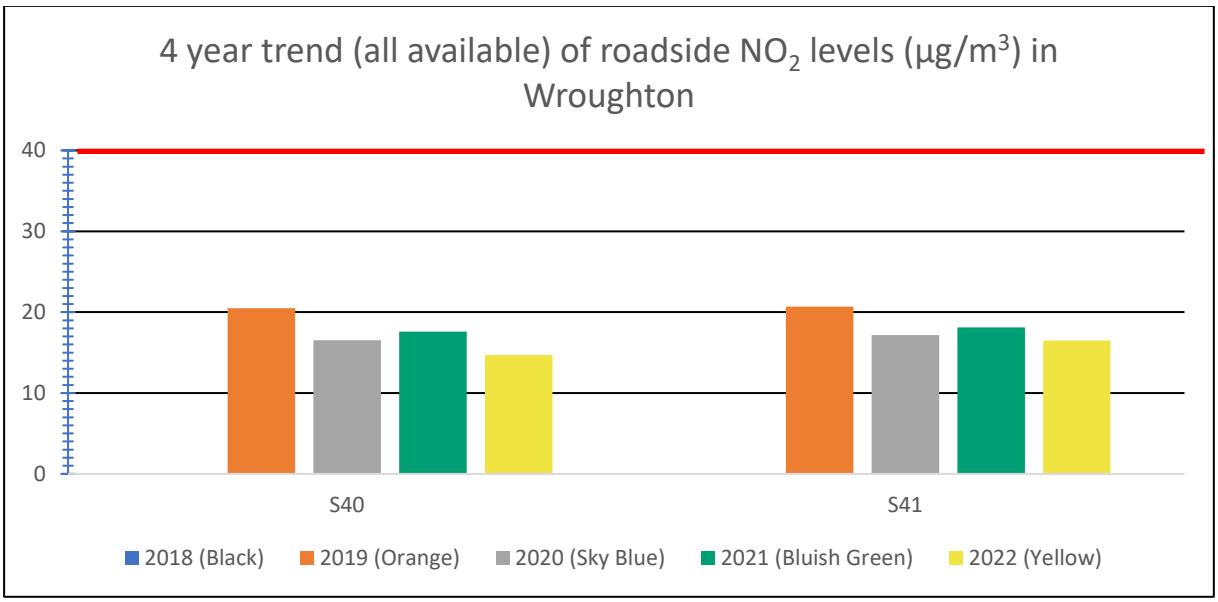


Figure 6 - Trend of roadside NO_2 levels in Wroughton



Swindon's Air Quality Priorities

Swindon is growing fast, with its population increasing by 11.6% between the 2011 and the 2021 Census, forecast to increase further. It is home for several major development growth areas, such as Wichelstowe and the New Eastern Villages, with a pipeline of about 16,000 new homes, and many new commercial projects such as the Pannatoni Park manufacturing and logistics hub on the site of the old Honda manufacturing site and town centre regeneration priorities.

Major new developments are designed and constructed to mitigate against local air quality impacts, but the growth of the town also has the potential to significantly increase traffic in and around the centre (depending upon alternative travel options, policies and locations), where there is less environmental carrying capacity. Our priority is to ensure that all of Swindon enjoys good air quality, and that it is protected and enhanced as Swindon continues to grow.

We remain committed to our principal measure of putting in place a Traffic Regulation Order (TRO) to remove most heavy vehicles from Kingshill Road, and we expect this to reduce NO_2 by 5% in our latest source apportionment, which was informed by an ANPR survey in 2021. Although the TRO has been fully funded for some time, we have not been able to progress it as quickly as we would have liked, but it is now moving forward apace again.

A recently successful DEFRA Air Quality Grant bid will fund two Variable Message Sign (VMS) units to support compliance with the TRO, and these will also be used to promote modal shift and active travel.

The estimated air quality impact of the TRO is that it should, all things being equal, bring measured NO_2 levels on Kingshill below the objective limit vale, but we recognise that we must do more to do so sustainably and with sufficient margin of safety to allow us to remove the AQMA Order. We recognise that all parts of society have a role to play in reducing emissions, and that we must also promote and facilitate modal shift. This will have important benefits for air quality, for climate change, and for the health of our residents too.

We will seek to promote and facilitate modal shift in a number of ways, using the levers available to us:

1. Promote public transport through an Enhanced Bus Partnership Scheme and Bus Service Improvement Plan.
2. Investigate traffic signal advantage schemes for buses.
3. Embed a dedicated Sustainable and Active Travel team with our Highways department to compliment and support work being done by the Public Health team aimed at 'Getting Swindon Active'.
4. Review our own Staff Travel Plan and work with other employers to do the same.
5. Bid for funds to speed up electrical vehicle charging infrastructure.
6. Promote the use of sustainability resources within schools, such as platformrail.org.
7. Run outreach with schools, community groups and residents in general on active travel and reducing emissions (DEFRA Air Quality Grant funded).
8. Ensure an integrated approach to transport, air quality and carbon modelling in relation to planning new growth.

We will also use the outputs from our recent 'Transport Conversation' survey with residents, to inform the outreach work we will do, and will continue to update and apply our strategic transport model, to inform further work.

Alongside this, we have recently set up a Local Logistics Partnership to work with logistics concerns to promote green fleets, reduce emissions, and mitigate environmental pressure on key corridors in Swindon.

We will continue working through, refreshing as appropriate, key programs such as the Local Transport Plan and Town Centre Movement Strategy. We will continue to work with stakeholders to facilitate greener transport, and will continue to seek funding opportunities to bring forward major projects like the upgrade of the Old Town Railway Cycle Path.

We will maintain our monitoring network, grow it where needed, and will use all other monitoring resources available to us. We are confident that we have identified, and monitor levels, at all locations with the current potential for non-compliance.

1.1 Public Health Context

Air pollution is associated with a number of adverse health impacts and poor air quality is the largest environmental risk to public health. Long-term exposure to air pollution (over years or lifetimes) can cause chronic conditions such as cardiovascular and respiratory diseases as well as lung cancer, leading to reduced life expectancy. Short-term exposure (over hours or days) to elevated levels of air pollution can also cause a range of health impacts, including effects on lung function, exacerbation of asthma and increases in respiratory and cardiovascular hospital admissions and mortality. There is also emerging evidence of associations between air pollution and low birth weight, diabetes, cognitive decline and dementia.

It is recognised as a contributing factor in the onset of heart disease and cancer.

Although air pollution can be harmful to everyone, some people are more affected because they live in a polluted area, are exposed to higher levels of air pollution in their day-to-day lives, or are more susceptible to health problems caused by air pollution. The most vulnerable face all of these disadvantages.

Groups that are more affected by air pollution include:

- older people
- children
- individuals with existing CVD or respiratory disease
- pregnant women
- communities in areas of higher pollution, such as close to busy roads
- low-income communities

Our Joint Strategic Needs Assessment 2022 identifies air quality as a local concern, and uses the UK Health Security Agency produced vulnerability indicators to map population level vulnerability, at the Lower Super Output Area level, on both NO_2 and $PM_{2.5}$. Fortunately; the AQMA does not lie in a LSOA with particular vulnerability; passing through an area with a low vulnerability to NO_2 score of 2 (out of 10).

In common with many towns and cities in the South and East of England, fine particulate matter ($PM_{2.5}$) is of wider concern. The Office for Health Improvement and Disparities (OHID) Public Health Outcomes Framework identifies that Swindon

carries a fraction of mortality attributable to particulate air pollution of 5.9% in 2021. This is higher than the South West region as a whole (5.1%) and higher than the England average of 5.5%. Fine particulate matter is a transboundary pollutant with the highest levels found in the South and South East of the country in regions that Swindon borders, rather than a pollutant where much of the local exposure stems from local emissions like Nitrogen Dioxide.

We are fortunate to host a DEFRA monitor installation in Walcot in Swindon (Link to DEFRA website with results from UKA00650 in Walcot), which began monitoring urban background $PM_{2.5}$ in mid 2022. Monitoring results from this installation suggest that $PM_{2.5}$ at this location may be lower than models (which are based on data from the pre-Covid-19 period) suggest, and we maintain a watching brief as the volume of data from that increases.

It is thought that, nationally, up to 30% of $PM_{2.5}$ may now be emitted from domestic burning, such as via log burners, bonfires and the like. Census 2021 identified that a very low proportion of Swindon residents need to burn solid fuels as their only heat source however, and the town is well connected to the national gas grid. Our local focus is therefore to seek to reduce elective burning such as in log burners where there is no need to do so to heat the home, bonfires, and similar. We have secured funding via the DEFRA Air Quality Grant to run outreach from within the Public Health team on these topics, and we maintain the proactive enforcement stance on very smoky bonfires that we put in place during the Covid-19 pandemic. We also continue to prioritise the permitting and regulation of industry that emits to air through the Local Authority Pollution Control regime.

1.2 Planning and Policy Context

The Swindon Borough Local Plan 2026 forms part of the overall Development Plan for the Borough alongside adopted Neighbourhood Plans and sets policies to inform development in the Borough, including influencing travel behaviours and low carbon alternatives to the car. Good quality sustainable urban design is flagged as having an important role to play in all development. The transport themes in the adopted Local Plan recognise a need to improve the transport network through accessibility

enhancements, reduced journey times and importantly improving air quality and reducing transport emissions. Furthermore, policies set out to:

- improve Swindon's sense of place and quality of life through minimising the impact of congestion, noise and (poor) air quality;
- improve key transport gateways and corridors;
- provide good access to Swindon Central Area and key destinations;
- reduce severance caused by transport corridors and the dominance of the car on the streetscene;
- minimise the environmental impact from transport (for example, vehicle emissions);
- minimise congestion and therefore journey time, noise and air quality;
- promote healthy lifestyles and travel choices and maximise opportunities to walk and cycle;
- support good public transport provision; and encourage innovative transport initiatives for rural areas.

In addition, a number of Local Development Orders[2] are targeted at reducing emissions on the wider scale:

- Swindon low carbon LDO1: Non-domestic air source heat pumps and district heating installations
- Swindon low carbon LDO2: Hydrogen and electric car fuelling installations
- Swindon low carbon LDO3: Site 2 M4 solar noise barrier
- Swindon low carbon LDO3: Site 3 A419 solar noise barrier
- Swindon low carbon LDO3: Site 4 Former landfill at Barnfield Road
- Swindon low carbon LDO3: Site 5 Mannington depot

[2] The Local Development Orders are under review as part of the new Local Plan process.

- Swindon low carbon LDO3: Site 6 Chapel Farm
- Swindon low carbon LDO3: Site 8 Common Farm
- Swindon low carbon LDO3: Site 9 Newburn sidings
- Swindon low carbon LDO3: Sites 10 to 25 canopy mounted solar arrays
- Swindon low carbon LDO3: Site 26 Beech Farm
- Swindon low carbon LDO3: Site 27 Land north of Blunsdon

All potentially polluting, or pollution receiving, developments are consulted on with the Environmental Health team, and assessed in line with national standards and the potential for local impacts.

A new Local Plan is under development for Swindon Borough which includes ensuring air quality measures and the impacts of growth are fully understood. This will be done through the development of the evidence base including modelling transport scenarios, together with updates to planning policies and site allocations,which will be focused upon a robust approach to minimising environmental impacts.

1.3 Source Apportionment

The AQAP measures presented in this report are intended to be targeted towards the predominant sources of emissions within Swindon's area, and specifically within the AQMA on Kingshill.

An Automatic Number Plate Recognition survey was carried out within and around the AQMA in early January 2022 to support alternative route design for the Traffic Regulation Order on Kingshill. The survey monitored vehicles between 0600 and 1800 over three days between the 18th and 20th January 2022. The ANPR output was compared to data from the traffic monitoring loops within the road surface on Kingshill, and good agreement was observed. This has allowed us to improve the source apportionment laid out in the earlier version of this document (SBC/AQAP01).

A source apportionment exercise was carried out by Swindon in 2023 using the procedure outlined in Chapter 7 of the LAQM Technical Guidance (TG22) . This has identified that within the AQMA, the percentage source contributions, for 2024, are as follows:

Source Apportionment:

Step one

1. Highest NO_2 value at Receptor (T-NO_2, µg/m^3) = 41.7
2. Total Background NO_2 (TB-NO_2, µg/m^3) = 10.79
3. Total Background NO_x (TB-NO_x, µg/m^3) = 14.25
4. Regional Background NO_x (RB-NO_x, µg/m^3) = 5.27
5. Local Background NO_x (LB-NO_x, µg/m^3) = 8.98

Step Two

6. Regional Background NO_2 (RB-NO_2, µg/m^3) = 3.99
7. Local Background NO_2 (LB-NO_2, µg/m^3) = 6.80

Step Three

8. Local NO_2 contribution, worst case (L-NO_2, µg/m^3) = 30.91

The above shows that around 74% of the NO_2 measured at the worst case location within the AQMA stems from the traffic using Kingshill. Around 15% comes from other local sources, which may be under more limited local control, and 11% from outside of the local area.

The ANPR survey conducted gives us an indication of vehicle specific contributions to the Nitrogen Dioxide measured at that location. Vehicle data from that survey has been split to match 'Detailed Option 1' in the Emissions Factors Toolkit (EFT2021_v11.0), and NOx contributions calculated as a percentage and absolute concentration terms.

Table 3.1 – Source Apportionment Output

VEHICLE TYPE	% traffic flow	% NO_2 contribution	µg/m^3 NO_2 contribution
Petrol Cars and Taxis	85.00	12.6%	3.9028
Diesel Cars and Taxis		54.8%	16.9275
EV and Hybrid cars and taxis.		1.8%	0.5491
Petrol LGV	13.40	0.0%	0.0118
Diesel LGV		25.9%	7.9981
Rigid HGV	1.50	3.0%	0.9255
Artculated HGV		1.9%	0.5808
Bus/Coach	0.01	0.0%	0.0079
Motorcycles	0.10	0.0%	0.0064
TOTAL	**100**	**100.0%**	**30.91**

It can be seen that Heavy Goods Vehicles (HGV) make up a very small proportion of the vehicle load on this road (1.5%), yet contribute a disproportionately large part of the NOx emissions here (4.9%), equating to 1.6 µg/m^3 NO_2.

Lighter goods vehicles (LGV: 13.4%) also make a significant and disproportionate impact to emissions here (25.9%), equating to 8.1 µg/m^3 NO_2.

Cars and taxis make up the clear bulk of the traffic (85%), and 69.2% of the NO_2 emissions; 21.4 µg/m^3 NO_2. Diesel cars and taxis contribute 54.8% of the NO_2 here.

1.4 Required Reduction in Emissions

In accordance with the Technical Guidance document (LAQM TG22), the functionality of the 'NO_x to NO_2 Calculator' (NOx _to_NO2_Calculator_v8.1) was used to calculate the reduction in emissions required to attain the objective limit of 40 µg/m^3. The table below shows that in order to attain the objective limit value in 2024, a reduction in oxides of Nitrogen emissions of 6%, from the 2022 base, is required.

Table 3.2 - Required Reduction in Road NOx

Local Authority:		**Swindon**		
Site ID	**Diffusion tube NO_2, µg m^{-3}**	**Background**	**µg m^{-3}**	**Road NO_x, µg m^{-3}**
	µg m^{-3}	**NO_x**	**NO_2**	
S15 2024	41.7		10.79	64.42
S15 Road NOx objective	40		10.79	60.37
Required Reduction in Road NOx				6%

1.5 Key Priorities

The analysis laid out in previous sections, leads us to conclude that we must act on a number of areas in order to sustainably reduce NO_2 levels on Kingshill.

Commercial vehicles have a disproportionate impact on the air quality on Kingshill. Light and heavy goods vehicles together emit almost 31% of the NO_2 on the road, yet together make up less than 15% of the traffic. The section of road within the AQMA also has a gradient of almost 10%, and is narrow with houses close to the road; meaning it is not entirely suitable for heavy vehicles. The 2022 ANPR survey suggests that the majority of goods vehicles using Kingshill are not doing so to directly service businesses in the town centre, but are instead making their way across Old Town to routes out of Swindon to the East and South. More suitable routes exist, especially for heavy goods vehicles.

The growth of online shopping especially has led to a significant growth in light goods vehicles making home deliveries in recent years. This puts pressure on roads around the town centre, and has environmental impacts for residents.

Goods vehicles may have a disproportionate impact on the air quality on Kingshill, but the great majority of the traffic on Kingshill, and the emissions, are produced by private cars and taxis. There is sometimes no realistic alternative to using a car, and analysis by the Department of Transport's National Travel Survey 2021 shows that 17% of trips of under 1 mile in 2021 were completed by car. 61% of car trips were under 5 miles in 2020; a distance easily travelled by a more active mode of travel such as cycling, walking, or by public transport.

We must also ensure that Swindon's rapid growth does not lead to environmental pressure with regard to air quality.

Our priority themes stem from these observations.

- Priority 1 – Introduce a weight restriction of 7.5t on Kingshill via a Traffic Regulation Order.
- Priority 2 – Work hard to promote and enable modal shift, especially for short journeys of less than 5 miles.
- Priority 3 – Work with local bus companies to improve routes and services, and green bus fleets.
- Priority 4 – Engage with logistics concerns to reduce environmental impacts from goods vehicles, including vans.
- Priority 5 - Ensure that Local Plan growth scenarios and development proposals effectively model and mitigate against negative air quality impacts?

Development and Implementation of Swindon AQAP

1.6 Consultation and Stakeholder Engagement

In preparing the initial version of this document in 2018, Swindon Borough Council consulted widely before adopting the plan and implementing those measures for which it was able. This document is not a major departure from that original version; the principle measure, that of the TRO, being carried forward from the previous version, which was mostly delayed by the Covid-19 pandemic. That measure is subject to consultation of itself.

The air quality issues on Kingshill are exclusively local in nature and well understood, and there are no statutory 'air quality partners' to consider, as the predominant cause of the problem is local road traffic.

Schedule 11 of the Environment Act 1995 requires local authorities to consult the bodies listed in the below table, and copies of this document have been made available to them. As a Unitary Local Authority, both the relevant Highways Authority and Public Health Officials are embedded within and have been involved in the preparation of this document.

Table 4.1 - Consultation Undertaken

Consultee	Consultation Undertaken
The Secretary of State (DEFRA)	TBC
The Environment Agency	TBC
The highways authority	Yes, embedded
All neighbouring local authorities	Yes
Other public authorities as appropriate, such as Public Health officials	Yes, embedded
Bodies representing local business interests and other organisations as appropriate	No

1.7 Steering Group

Swindon's Air Quality Steering Group (AQSG) is comprised of the following members, who all have a role in responding to the non-compliant NO_2 levels:

1. The Director of Public Health
2. Consultant in Public Health (Health Protection)
3. Head of Environmental Health
4. Senior Environmental Health Officer
5. Head of Strategic Transport
6. Planning Policy Manager
7. Travel Plan Officer
8. Senior Traffic Technician

Other members have been co-opted at various times, such as the Council's Lead Member with portfolio and the Licensing Manager, as appropriate from time to time.

The AQSG have met at least quarterly since 2018, both in person and remotely, to review the implementation of version 1 of the Kingshill Air Quality Action Plan, and to aid in the removal of blockages. The AQSG has been instrumental in securing funding for outstanding actions within v.1.0 of the AQAP, and in refining and agreeing the measures outlined in this, updated, v1.1.

The group's composition; combining operational and technical experts with senior managers able to commit to measures without further sign off has been pivotal in the process.

AQAP Measures

Table 5.1, below shows Swindon's AQAP measures. It contains, where known:

- a list of the actions that form part of the plan
- the responsible individual and departments/organisations who will deliver this action
- estimated cost of implementing each action (overall cost and cost to the local authority)
- expected benefit in terms of pollutant emission and/or concentration reduction
- the timescale for implementation
- how progress will be monitored

NB: Please see our web page with completed Annual Status Reports for regular annual updates on implementation of these measures

Table 5.1 - Air Quality Action Plan Measures

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
1	Kingshill Weight Limit	Freight and Delivery Management	Strategic Routing for HGVs	2024	2024	LA Strategic Transport	Public Health	No	Fully Funded	£100k - £500k	Implementation	5%	Traffic Regulation Order in Place	Fully funded. Alternative Routes and Signage being designed. Consultation exercises to commence imminently.	On track
2	Active Travel Outreach	Promoting Travel Alternatives	• Promotion of Cycling • Promotion of Walking • Workplace Travel Planning • Promotion of use of rail and inland waterways • Modeshift Stars travel planning activity • Swindon Transport Conversation Engagement • Town Centre Access and Active Travel Map	2023	2025	• LA Public Health • LA Strategic Transport	• Internal Funding, BAU • Public Health Funding • DEFRA Grant Funding	Yes	Fully Funded	£50k - £100k	Implementation	5%	Reduction in measured NO_2	Teams recruited, work beginning	On track

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
			• Other local walking/cycle maps												
3	Variable Message Signage	Public Information	Via other mechanisms	2023	2025	LA Highways	• DEFRA Grant Funding	Yes	Fully Funded	£59k - £100k	Implementation	<2%	Sign units installed and in use.	Purchase Order issued. Civils order issued.	None expected
4	Enhanced Bus Partnership, Bus Service Improvement Plan,	Transport Planning & Infrastructure	• Bus route Improvements • Other	2021	Ongoing	LA Transport	• Internal, BAU	No	Funded	BAU	Implementation	<2%	• 44% increase in passenger boardings by 2030, 13% by 2025. • 40% increase in propensity to use the bus. • Doubling of Bus Mode Share in Highworth and Wroughton, and new developments	Plan in place	
5	Town Centre Regeneration (inc. Bus Boulevard)	Transport Planning & Infrastructure	Public Transport Improvements – interchanges, stations and services	2023	2025	LA Highways	• Future High Streets Fund, internal, LEP	No	Funded	£33m	Implementation	<2%	New town centre bus boulevard built out and in use.	Construction underway	

Swindon Borough Council

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
6	Staff Travel	Promoting Travel Alternatives	Workplace Travel Planning (inc. SBC)	2018	2025	LA Highways	• Internal, BAU	No	Funded	NA	Implementation	<1%	SBC Staff Travel Plan review.	ongoing	
7	Old Town Railway Cycle Path	Transport Planning & Infrastructure	Cycle Network	2024	2025	LA Highways	• TBC	No	Not yet funded	£1m	Awaiting funding	<2%	Improved cycle way in regular use.	Drainage works in 2022.	Funding the major constraint.
8	Local Logistics Partnership	Freight and Delivery Management	Freight Partnerships for Swindon including last mile town centre deliveries	2023	2024	LA Highways	• Internal, BAU	No	Funded	BAU	Implementation	<5%	Local Logistics Partnership in place and functioning well.	LLP in place.	
9	Public EV Charging	Promoting Low Emission Transport	Procuring Alternative Fuelling Infrastructure	2025	ongoing	LA Highways	• External Grants, TBC	No	Not yet funded	TBC	Planning	NA	Appropriate levels of EV charging for fleet.	NA	Dependent on strategic bids for funding
10	Transport Modelling Application	Traffic Management and Forward Planning	Other	2024	2024 initial outputs	LA Highways	• Internal, BAU	No	Not yet funded	TBC	Market Testing	NA	New modelling solution in use	Market testing	Funding
11	Schools Sustainable Transport	Promoting Travel Alternatives	Other	2023	2025	• LA Public Health • LA Highways	• Internals, DEFRA Grant	Yes, partially	Partially funded, partially BAU	BAU	Implementation	<1%	More pupils arriving at school by active travel modes	Planning	
12	Local Transport Plan, Town Centre Movement Strategy	Policy Guidance and Development Control	Other Policy	2023	ongoing	• LA Planning • LA Highways	• Internal, BAU	No	Funded, BAU	BAU	Implementation	<2%	Plan priorities in place	Plans in Place	
13	Local Enterprise	Promoting Low	Procuring alternative	2023	ongoing	Swindon and Wiltshire LEP	• Internal, BAU	No	BAU	TBC	Implementation	<1%	Increased Hydrogen	Plan in Place	Swindon and Wiltshire Green

Measure No.	Measure	Category	Classification	Estimated Year Measure to be Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Potential Barriers to Implementation
	Partnership Priorities	Emission Transport	refuelling infrastructure to promote low emission vehicles…										fuelling facilities on main regional corridors		Hydrogen Plan as a component of the 'West HyWay' and Western Gateway hydrogen network.
14	Bus Signal Advantage Scheme	Traffic Management	Bus Priority	2024	2025	LA Highways	• Internal, BAU	No	Not yet funded	TBC	Planning	<1%	Bus Signal Advantage scheme in place	High Level Planning	Funding possibly a constraint.
15	Growth Modelling	Policy Guidance and Development Control	Other	2024	2025	LA Highways / Planning Policy	• Internal	No	TBC	TBC	Planning and Design	TBC	Mitigation measures to be agreed	Moving from concept to detailed approach	In design as part of transport modelling linked outputs

Appendix 1: Air Quality Management Area Order

Environment Act 1995 Part IV Section 83(1)

SWINDON
BOROUGH COUNCIL

Air Quality Management Area Order No 1

Swindon Borough Council, in exercise of the powers conferred upon it by Section 83(1) of the Environment Act 1995, hereby makes the following Order.

1. This Order may be cited/referred to as the Swindon Borough Council Air Quality Management Area No 1, and shall come into effect on the **2nd of May 2018.**

2. The area shown on the attached map in red is to be designated as an air quality management area (the designated area). The designated area incorporates the section of the A4289 eastwards from grid reference 414635E 183838N on Kingshill Road, to its junction with Okus Road. The map may be viewed at the Council Offices.

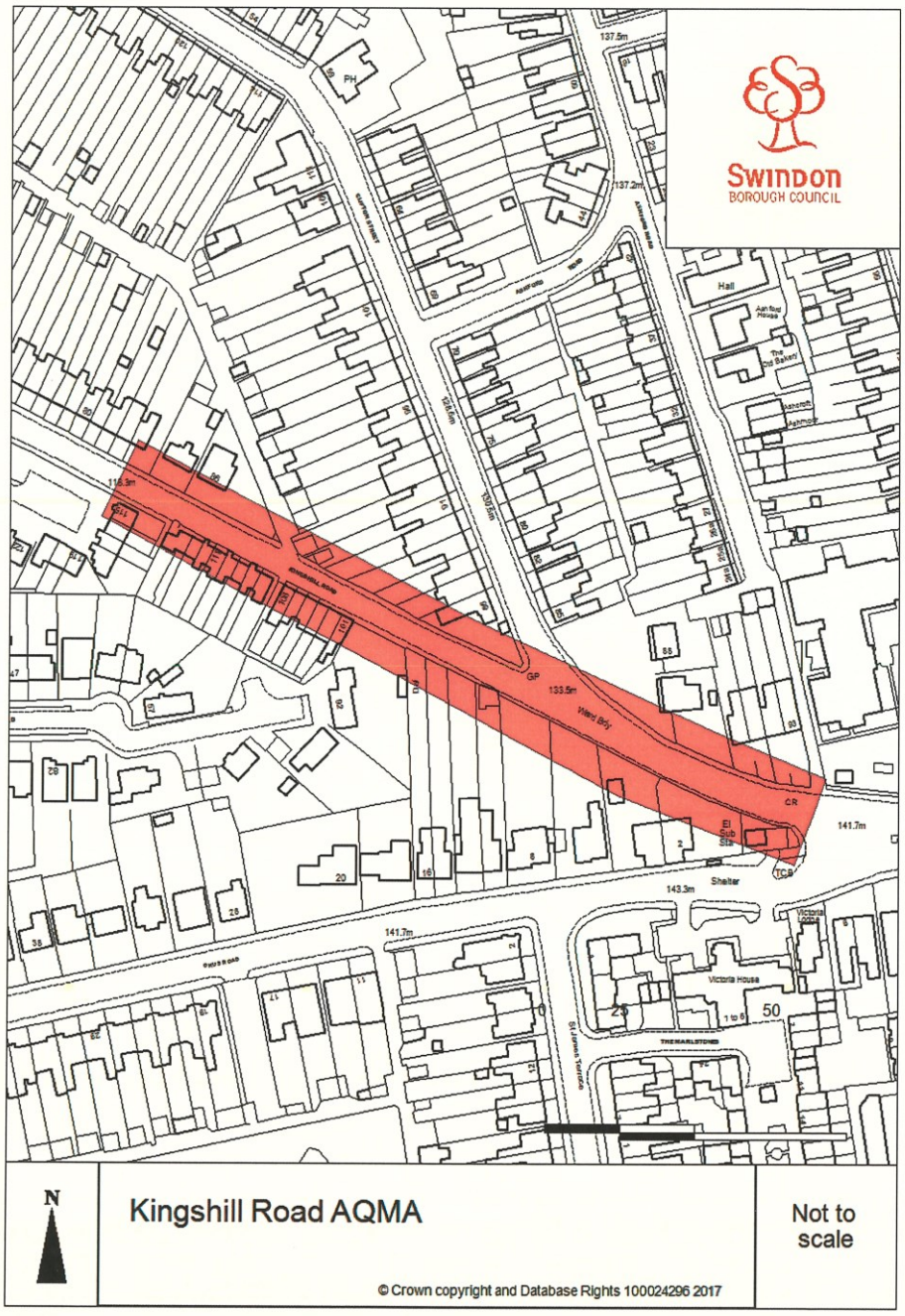
3. This Area is designated in relation to a likely breach of the nitrogen dioxide (annual mean) objective as specified in the Air Quality Regulations 2000.

This Order shall remain in force until it is varied or revoked by a subsequent order.

The Common Seal of Swindon Borough Council was hereto affixed on the **2nd of May 2018** and signed in the presence of /on behalf of said Council.

865077

HEAD OF LITIGATION
AND PERSONAL SERVICES


Swindon
BOROUGH COUNCIL
N
Kingshill Road AQMA
Not to scale
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Glossary of Terms

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