



BEDFORD
BOROUGH COUNCIL

Bedford Borough Council Air Quality Action Plan

In fulfilment of Part IV of the
Environment Act 1995
Local Air Quality Management

2021 -2026

Local Authority Officer	Bedford Borough Council
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Executive Summary

This Air Quality Action Plan (AQAP) has been produced as part of our statutory duties required by the Local Air Quality Management framework subsequent to the declaration of an Air Quality Management area. It sets out the priority actions we will take to improve air quality in Bedford Borough between 2021 and 2026.

The plan acknowledges the findings of air quality monitoring across the Borough which shows continued exceedances of the annual average concentrations of nitrogen dioxide at some Bedford town centre locations. Analysis of the sources of air pollution which contribute to these exceedances identifies motor vehicles as the major contributing factor.

The management of air quality requires a variety of approaches to be adopted as well as the involvement of a range of functions across the authority. To support this approach officers across a range of departments within Bedford Borough have and will continue to work collaboratively to deliver actions within this plan and identify further opportunities and actions to deliver improvements to air quality within the Borough.

This action plan replaces the previous action plan which ran from 2011.

A number of projects have been delivered in the past through the previous action plan including:

- Ensuring all development proposals within the AQMA are assessed for impacts of air quality
- Provision of Road Safety education for cyclists in schools, and for adults, supporting alternative transport choices
- Promotional campaigns to encourage walking and cycling and support behavioural change in relation to travel choices
- Cycle to work guarantee taken up
- Implementation of Bedford 2020 with a core purpose to reduce congestion and improve traffic flow
- Train station travel plan encouraging alternative travel to stations in order to limit vehicles coming into town centre locations

- A review of existing Parking strategies
- Introduction of bus lane enforcement
- Commenced programme for the installation of charging points introduced for electric vehicles
- Undertaken a review of school travel plans

Despite delivery of these actions the Air Quality Management Area remains in place. Accordingly we have reviewed our previous plan, taking account of previous experience within Bedford Borough, the experience of others and available guidance to identify and develop actions that can be considered under four broad topics:

- Transport planning and infrastructure: significant road development to ease congestion
- Cleaner transport: road transport is the main source of air pollution in Bedford. We need to incentivise a change to walking, cycling and ultra-low emission vehicles (such as electric) as far as possible.
- Public health and awareness raising: increasing awareness can drive behavioural change to lower emissions as well as to reduce exposure to air pollution;
- Emissions from developments: Ensuring air quality actions are imposed on relevant new developments in terms of buildings as well as traffic management.

Our priorities are to provide sustainable transport, reduce peak-time congestion and reduce exposure to harmful pollutants and to support the transition to less polluting forms of transport. These priorities will focus improvement on the Borough's transport infrastructure in order to support growth in the local economy and to make the Borough more attractive as a place to live and do business. Reducing congestion in the Borough, particularly into and around the town centre and by making journeys by public transport, walking and cycling more attractive will encourage an increase in more sustainable and healthy modes of transport.

In this AQAP we outline how we plan to effectively tackle air quality issues within our control and details the most immediate and developed actions. However, there are a

number of air quality policy areas that are outside of our influence, such as government policy, and this document is flexible and will evolve to respond to funding and policy changes as required.

Responsibilities and Commitment

This AQAP was prepared by Bedford Borough Council's Regulatory Services with the support and agreement of the following officers and departments:

- Callum Fletcher – Manager for Corporate Safety & Commercial Regulation
- Rob Couch – Public Health Manager
- Melanie MacLeod – Manager for Transport Policy, Infrastructure and HDC
- Sonia Gallaher – Senior Planning and Transport officer
- Gill Cowie – Manager for Planning and Housing Strategy
- Brian Hayward – Project Manager – Town Centre Transport Strategy
- David Rubidge – Enforcement Officer – Air Quality, PPC & Contaminated land
- Claire Wilkinson – Senior Energy and Water Technical Officer (Environmental Services)
- Alastair Wren – Principal Planning Officer
- Gideon Richards – Team Leader Development Management
- John Molyneux – Chief Officer for Regulatory Services & Culture
- Yo Higon – Team Leader for Sustainable Transport

This AQAP has been approved by:

- Vicky Head – Public Health Manager

Progress each year will be reported in the Annual Status Reports (ASRs) produced by Bedford Borough Council as part of our statutory Local Air Quality Management duties. If you have any comments on this AQAP please send them to:

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1. Introduction

This report outlines the actions that Bedford Borough Council will undertake between 2021 and 2026 in order to manage air quality and reduce concentrations of air pollutants, to minimise exposure to air pollution and thereby positively impact on the health and quality of life of residents and visitors to Bedford.

Air pollution has been deemed one of the greatest environmental risks to the health of the public in the UK. Poor air quality can cause, but also exacerbate, cardiovascular and respiratory disease, and is associated with lung cancer. It is estimated that long term chronic exposure to man-made air pollution reduces life-expectancy and is thought to contribute to 28,000-36,000 deaths in the UK.¹

Both short term and long term exposure to air pollutants can impact on health, with differing effects across the life-course. Very young children, older adults and people from more deprived backgrounds are most vulnerable to the health consequences of air pollution, contributing to health and social inequalities.

Bedford Borough is positioned to be an important link between Oxford and Cambridge and is already well established as a commuter route to London, fuelling the growth of Bedford Borough's population, with growth forecast to continue at a level which places the Borough among the fastest growing authorities in England. The population is projected to rise from 171,623 in 2018 to an estimated 185,675 by 2025. As this expansion continues the Bedford Local Plan 2030 establishes a key objective to improve the Borough's transport infrastructure in order to support growth in the local economy and to make the Borough more attractive as a place to live and do business, aiming to reduce congestion in the Borough, particularly into and around the town centre by making journeys by walking and cycling and public transport more attractive encouraging an increase in more sustainable and healthy modes of transport. Bedford Borough Council is committed to developing this air quality action plan and delivering those priorities and objectives it sets out in order to maintain and improve local air quality to ensure Bedford continues to thrive with air quality that ensures a healthy place to live, learn and work.

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

This plan outlines the actions that Bedford Borough Council commit to deliver between 2021 and 2026 in order to maintain and reduce concentrations of air pollutants and exposure to air pollution; thereby positively impacting on the health and quality of life of residents and visitors to Bedford Borough.

This plan is a live document and will change and evolve over the course of the five year timeframe to take into consideration new regulations, policies and guidance that may introduce new prioritised actions or variations in existing ones.

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

This Plan will be reviewed every five years and progress on measures set out within this Plan will be reported on annually within Bedford Borough Council's air quality Annual Status Report (ASR).

2. Summary of Current Air Quality in Bedford

Air quality in Bedford Borough is mostly very good, however, there are locations where pollutants build up and are slow to disperse due to traffic volumes and road traffic routes with unfavourable layouts/local geography.

The main pollutant of concern in Bedford Borough is nitrogen dioxide (NO₂), the primary source of which is road traffic emissions. Bedford has several strategic transport routes including the A1, A421 and A6 which carry high levels of traffic. Traffic routes are constrained in and around the town centre by river, road and rail bridges, and one-way traffic systems have evolved to deal with the pinch points created by these constraints. This combined with high levels of car ownership and use results in congestion hotspots.

Bedford Borough Council has one Air Quality Management Area (AQMA) – AQMA 5 *Bedford Town Centre* (see figure 1) – with details also available on [DEFRA Air information resource](#).

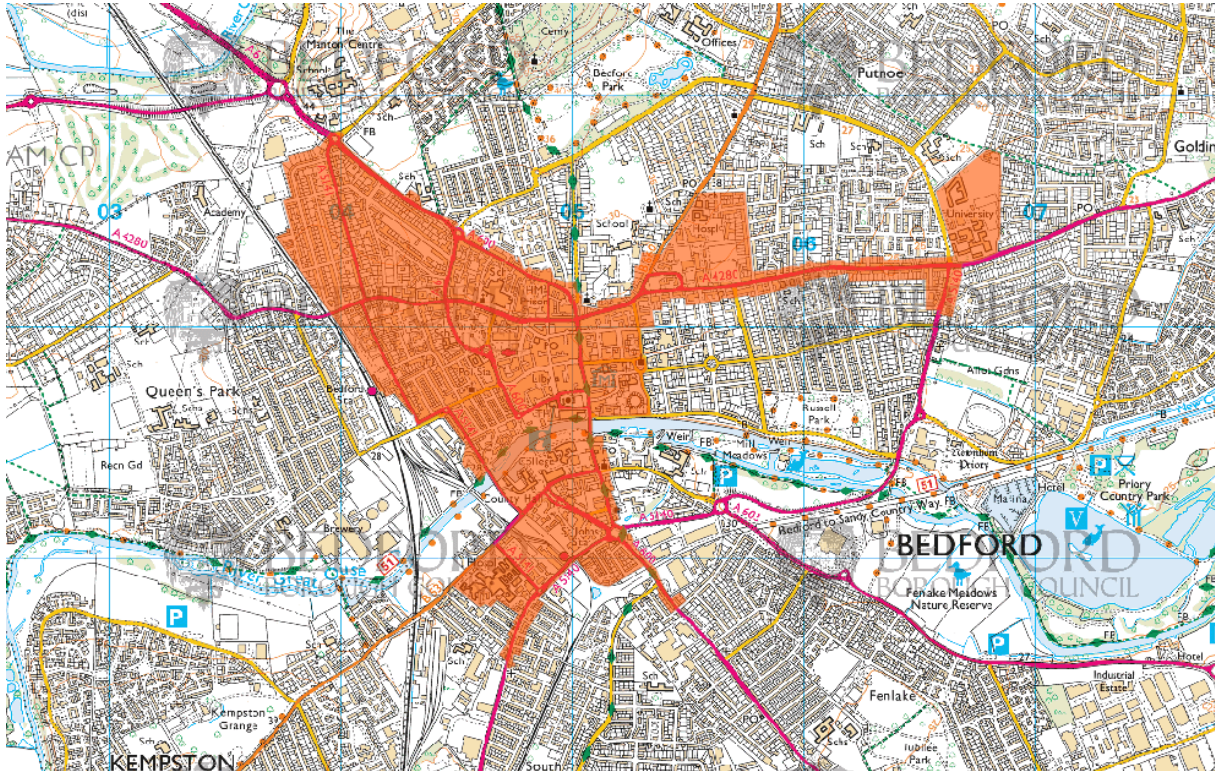


Figure 1 – Bedford AQMA 5

The AQMA is for Nitrogen dioxide and was declared in 2009 for an area encompassing the majority of properties within Bedford Town Centre, and incorporating the 2 previous AQMAs in the Town Centre. Table 2.1 shows the diffusion tube values at 3 locations when the AQMA was declared and for 2019.

	<i>Tube ref</i>	<i>2009 ($\mu\text{g m}^{-3}$)</i>	<i>2019 ($\mu\text{g m}^{-3}$)</i>
<i>Prebend St</i>	20	59	47
<i>High st</i>	27	58	42
<i>St Peters St</i>	50	50	44

Table 2.1: Annual mean NO₂ concentrations from diffusion tubes at three locations comparing 2009 (date of AQMA declaration) and 2019.

The actions discussed proposed within the action plan will progress further reduction in these values and where these are consistently below 40 ug/m3 (within 10%) to reduce the AQMA.

Bedford Borough Council is currently undertaking air quality monitoring for NO₂ at two automatic sites and at 52 passive diffusion tube sites, (including 5 additional diffusion tube sites added in 2019 following a review of the network). The 2019 monitoring results have determined that there are exceedances of the annual mean NO₂ objective at four diffusion tube sites at locations of relevant exposure within the AQMA. This is a reduction in the number of locations above the limit from 2018.

The monitoring results in 2020 reduced further to just one exceedance of the NO₂ annual mean objective. However due to the covid pandemic and the reduction in traffic over the course of the year, we will require further monitoring over the coming years to determine the impact of actions and the pandemic on vehicle use and traffic numbers and subsequent air pollutant concentrations.

For English local authorities, as per LAQM.TG(16)1 paragraph 3.49-3.53, current guidance states that it expects local authorities will consider measurements carried out over a period of three to five consecutive years when deliberating the revocation or amendment of an AQMA, as well as national trends in emissions and measures introduced as part of an Air Quality Action Plan (AQAP).

Prior to the Pandemic a number of locations within the AQMA had shown evidence of reductions or periods without increases towards the current target/objective level for NO₂, with some early discussions around the possibility of reducing the size of the

current AQMA taking place. However Covid 19 significantly impacted monitoring results during 2020, due to the 3 month lockdown commencing in April 2020 resulting in significant reductions in vehicle movements and therefore emissions. During 2021 ongoing reductions to journeys and changes to traffic patterns as a result of work from home guidance and further shorter lockdowns associated to the pandemic meant that the reliability of monitoring results needed to be questioned. A number of measures to improve local air quality from vehicle emissions were implemented during this period and it will now be necessary to obtain reliable and robust monitoring results, once levels of vehicle movement have returned to a new normal before appropriately informed decisions can be made around possible opportunities for reducing the size of the AQMA.

This approach is supported by supplementary guidance (DEFRA, 2021) which advises against considering the revocation or amendment of an AQMA based solely upon compliance being achieved in 2020, as this year may not be representative of long-term trends in pollutant concentrations and there must be confidence that air quality objectives will continue to be met in future years. However it should be noted that where 2020 is one of many (at least three) consecutive years of compliance, this may still be considered for revocation where the supporting evidence is considered suitably robust.

2020 data may be presented and considered when proposing to amend the AQMA for Bedford, as we have data may be available for some locations in some areas showing reductions below the air quality objective prior to 2020 and during 2022 if this continues to remain below the objective.

The main source of nitrogen dioxide in Bedford is from vehicle emissions. As a result the Air Quality Action Plan will focus primarily on ways to reduce these emissions, as well as reducing other sources of air pollution.

Legal limits are in place for small particles, known as PM₁₀. The levels of PM₁₀ in Bedford are well below the legal limits (annual mean 40 µg/m³), therefore the primary focus of this Plan is the reduction of nitrogen dioxide levels.

The EU limit for PM_{2.5} is 25 µg/m³ annual mean. Modelling suggests Bedford are well below the 25 µg/m³ figure and closer to the WHO recommended 10 µg/m³. Actions as part of this plan will include developing a better understanding of PM_{2.5} levels in the Borough including local monitoring.

Figure 2 below shows annual mean NO₂ concentrations at automatic stations from 2016 to 2020.

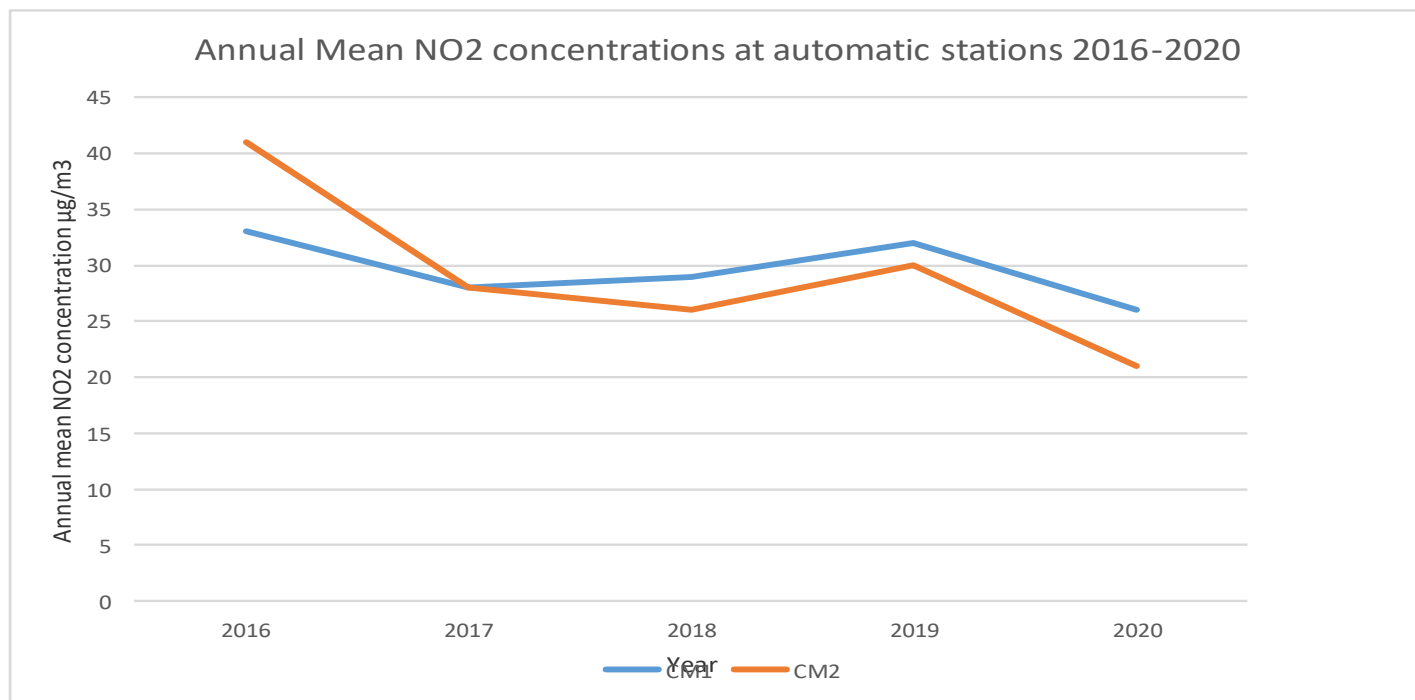


Figure 2 – Trends in Annual Mean NO₂ Concentrations (CM1 Prebend Street Monitor, CM2 Lurke Street Monitor)

3. Bedford Borough Council's Air Quality Priorities

The exceedance of legal objectives for Nitrogen dioxide in Bedford is predominantly from road traffic and associated congestion. Actions will predominantly be set to improving traffic flow in congested areas, reduce numbers of road vehicles and increase the use of, and infrastructure associated to, electric vehicles. Previous work has identified that PM₁₀ is not considered to be high, further work is planned to better understand levels of PM_{2.5} in the Borough, although it is believed at the current time that levels are below the current objectives, it is also envisaged that actions to reduce NO₂ will also result in some reduction to particulate matter. The action plan is complimented by the work of Transporting Bedford 2020, a major project to tackle congestion across Bedford's town centre with works commencing in 2019 with proposed end date of 2023 (impacted due to Covid pandemic).

The priorities for Bedford are to reduce emissions where possible with the goal of reducing the AQMA and in the longer term ultimately revoking the AQMA by:

- Transport planning and infrastructure: significant road development to ease congestion
- Cleaner transport: Incentivise and support a change to walking, cycling and ultra-low emission vehicles (such as electric) as far as possible.
- Public health and awareness raising: increasing awareness can drive behavioural change to lower emissions as well as to reduce exposure to air pollution;
- Emissions from developments: ensuring air quality actions are imposed on new developments in terms of buildings as well as traffic management.

3.1 Public Health Context

Air pollution has been deemed one of the greatest environmental risks to the health of the public in the UK. Poor air quality can cause, but also exacerbate, cardiovascular and respiratory disease, and is associated with lung cancer. It is

estimated that **long term** chronic exposure to man-made air pollution reduces life-expectancy and is thought to contribute to 28,000-36,000 deaths in the UK.¹

Both short term and long term exposure to air pollutants can impact on health, with differing effects across the life-course. Very young children, older adults and people from more deprived backgrounds are most vulnerable to the health consequences of air pollution, contributing to health and social inequalities.

The Public Health Outcomes Framework indicator for air pollution is about raising awareness of the effect of air pollution on public health. It is intended to encourage promotion of the need for local, regional and national actions to reduce air pollution and help form a partnership between all delivery partners in pursuit of this goal. The Public Health Outcomes Framework concentrates on two high level outcomes to be achieved across the public health system – how long people live, and how well they live at all stages of life.

Between 2017 and 2019 an estimated 1,424 people in Bedford Borough died under the age of 75 (from all causes), and during the same period, 78 premature deaths (5.5%) were attributable to Particulate Air Pollution (expressed as the percentage of annual deaths from all causes in those aged 30+).²

Local Air Quality Management Policy Guidance (PG16) and Technical Guidance (LAQM.TG16) include chapters on public health, referring to the impact on health of PM_{2.5}. Whilst there is evidence to suggest that exposure to particulate matter, specifically PM_{2.5}, is associated with the exacerbation of asthma, cardiovascular disease, respiratory disease, lung cancer and reduced life expectancy, government policy has not previously required the routine monitoring within the Borough. However, a number of actions within the plan will develop the current understanding of levels of PM_{2.5} within the Borough. Nitrogen Dioxide (NO₂) which can cause respiratory irritation, exacerbate asthma symptoms and pre-existing respiratory disease is also a pollutant of concern. Chronic exposure to NO₂ is associated with reduced lung development in children and affects lung function in adults. NO₂ is the

¹ Review of interventions to improve outdoor air quality and public health, Public Health England, 2019, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/795185/Review_of_interventions_to_improve_a_ir_quality.pdf
² [Public health outcomes framework](#)

main pollutant of concern in Bedford Borough, there was one exceedance of the 40 µg/m³ limit in 2020.

3.2 Planning and Policy Context

The National Framework

The revised National Planning Policy Framework 24 (NPPF) published in 2018 (updated in June 2019) sets out the Government's planning policies for England. The purpose of the planning system is to contribute to the achievement of sustainable development. The document states that economic growth can secure higher social and environmental standards; well-designed buildings and places can improve the lives of people and communities. The planning system should play an active role in guiding development to sustainable solutions and air quality is a material planning consideration. Core planning principles are set out in the NPPF to ensure that planning enhances and improves the places in which people live their lives, to secure high quality design and a good standard of amenity for all occupants of land and buildings. Development should contribute to conserving and enhancing the natural environment, reducing pollution, take account of and support local strategies to improve health, social and cultural wellbeing for all, as well as deliver sufficient community and cultural facilities and services to meet local needs.

Two of these are specifically related to improving air quality:

Promoting sustainable transport

Transport policies have an important role to play in facilitating sustainable development but also in contributing to wider sustainability and health objectives. In preparing local plans, local planning authorities should therefore support a pattern of development which facilitates the use of sustainable modes of transport, including:

- a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas and second to facilitating access to high quality public transport with layouts that maximise the catchment area for bus and other public transport services and facilities that encourage public transport use.
- b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport.

- c) create places that are safe, secure and attractive – which minimise the scope for conflict between pedestrians, cyclists and vehicles and avoid unnecessary street clutter and respond to local character and design standards'
- d) allow for the efficient delivery of goods, and access by service and emergency vehicles.
- e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.

Conserving and enhancing the natural environment

The NPPF specifically refers to air pollution in this section, where it states that planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan.

The Local Framework

The emerging local plans for Bedford are the introduction of 3636 new homes and for an additional 6900 jobs in the period to 2030. Policy 48 of the emerging Bedford Local Plan includes the policy that any development will prevent emissions of significant levels of pollutants into the air.

Policy 48 – Pollution, disturbance and contaminated land.

All development proposals will be required to:

- i. Prevent the emission of significant levels of pollutants into the soil, air or water and*
- ii. Avoid noise giving rise to significant adverse impacts on health and quality of life or, where appropriate, mitigate and reduce its impact and*
- iii. Avoid any significant impact of artificial light on local amenity. Details of any external lighting scheme required as part of a new development should be submitted with the application and*
- iv. Reduce as far as practicable other potential impacts including from: vibration, dust, mud on the highway, smoke, fumes, gases, odours, litter, birds or pests and*
- v. Be appropriate for their location, having regard to the existing noise, air quality, ground stability or pollution environment, including the proximity of pollutants and hazardous substances and vi. Remediate and mitigate despoiled, degraded, derelict, contaminated and unstable land so that it is suitable for its proposed use.*

Other policies in the local plan will assist with the delivery of the action plan including:

Policy 32: The impact of development – access impacts

Policy 78: New employment development in the countryside

Policy 91: Public transport

Policy 92: Impact of transport on people, places and environment

Policy 93: Electric vehicle infrastructure

Policy 94s: Transport infrastructure and network improvements

Policy 98: Broadband

Local transport plans

Bedford has a local transport plan which runs until 2021 (2011 – 2021) setting out the transport aims and ambitions for Bedford Borough and identifies the key strategies, schemes and initiatives necessary to deliver corporate and local outcomes. Many of the goals within this plan are common goals for improving air quality by promoting active travel, efficient travel and smart travel.

The transport plan identifies eight key strategies: Active travel strategies, Freight strategy, Network management strategy, parking strategy, passenger transport strategy, road safety strategy, sustainable modes of travel to school and transport asset management plan.

Transporting Bedford 2020 consists of a number of significant road transport developments set to tackle congestion hot spots across Bedford. Major works will take place at key points in the Bedford road network to reduce congestion including:

- The creation of a 'Smart Corridor' on Ampthill Road;
- Increased capacity round the Hospital with modifications to the Ampthill Road/Britannia Road/Kempston Road junctions.
- A number of other traffic signalled junctions have been modernised and the towns' urban traffic management and control system - which controls all the traffic lights across the town - has received major overhaul.
- Major refurbishment works will be carried out in the heart of the town centre with traffic reduced to one lane on the High Street, creating more space for shoppers.

This follows confirmation that the Council's bid for Government funding was successful, after winning the support of the South East Midlands Local Enterprise Partnership.

3.3 Source Apportionment

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

A source apportionment exercise carried out by Bedford Borough Council in August 2019 using a baseline year of 2018 (Bureau Veritas, 2019). The dispersion model used in this assessment to assess the impact of road traffic emissions on air quality was the atmospheric dispersion model ADMS-Roads (Version 4.1.1). Pollutant emissions from roads vehicles were calculated using the Emissions Factors Toolkit (Version 9.0).

This identified that within the AQMA, the percentage source contributions were as follows:

Local (Road) Sources have the largest contribution to NO_x concentrations at 56.1%, followed by Local Background at 25.8% then Regional Background at 18.1%, show in figure 3.

When considering the average NO_x concentration across all modelled receptors across the modelling domain, road traffic accounts for 26.3µg/m³ (56%) of total 46.9µg/m³. Of this 46.9 µg/m³, Cars account for the most (31.4%) of any of the vehicle types, followed by LGVs (14.6%) (Figure 5).

When considering the average NO_x concentration at receptors with annual mean concentration above 40µg/m³ (Figure 6), road traffic accounts for 80% of this with cars accounting for the most, 42%, of any of the vehicle types followed by LGVs 18.4%.

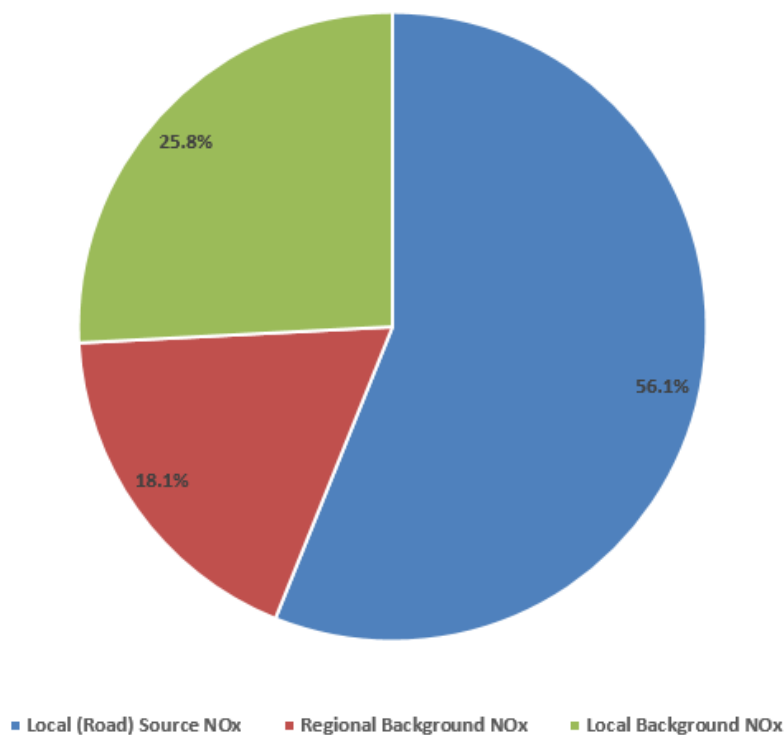


Figure 3: Average NO_x contribution Across All Modelled Receptors - General Breakdown.

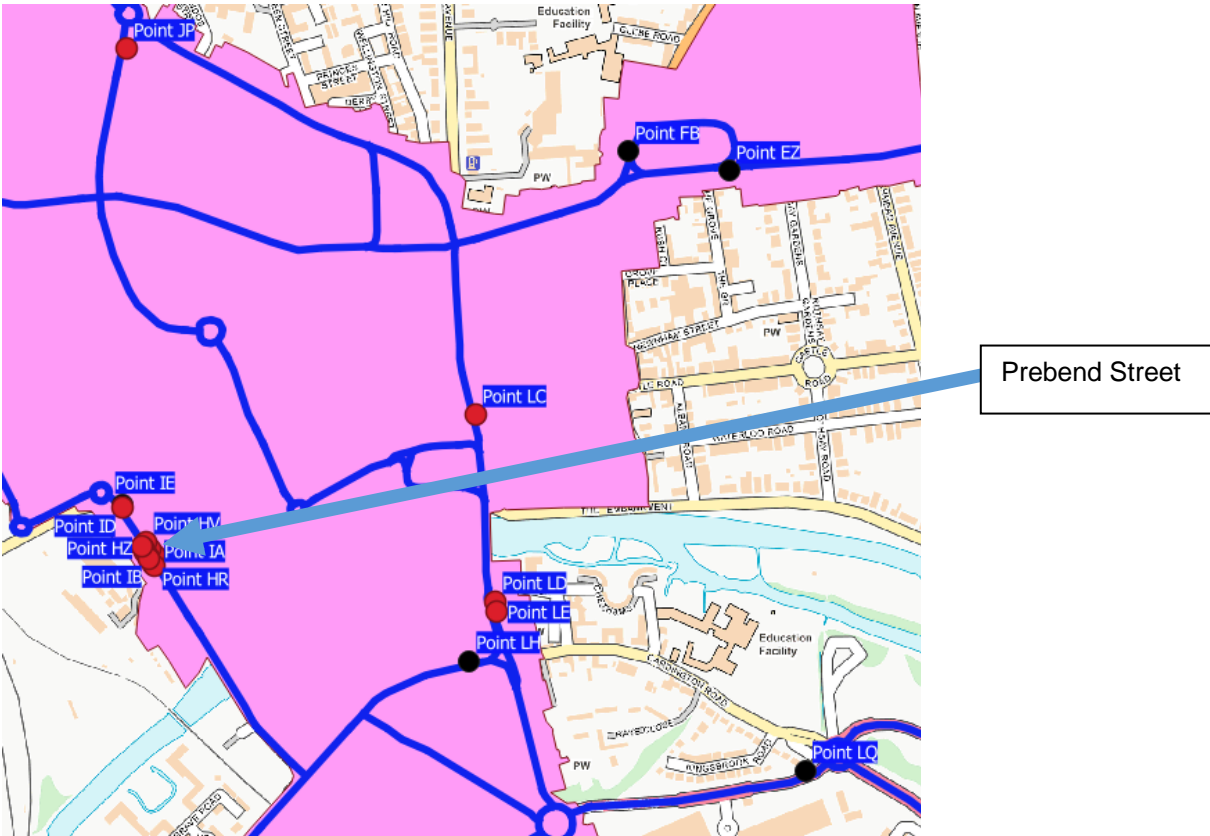


Figure 4: Location of Receptors Predicted to be within 10% of, or exceeding the 40µg/m3 AQS objective. Prebend street is at point IE to HR.

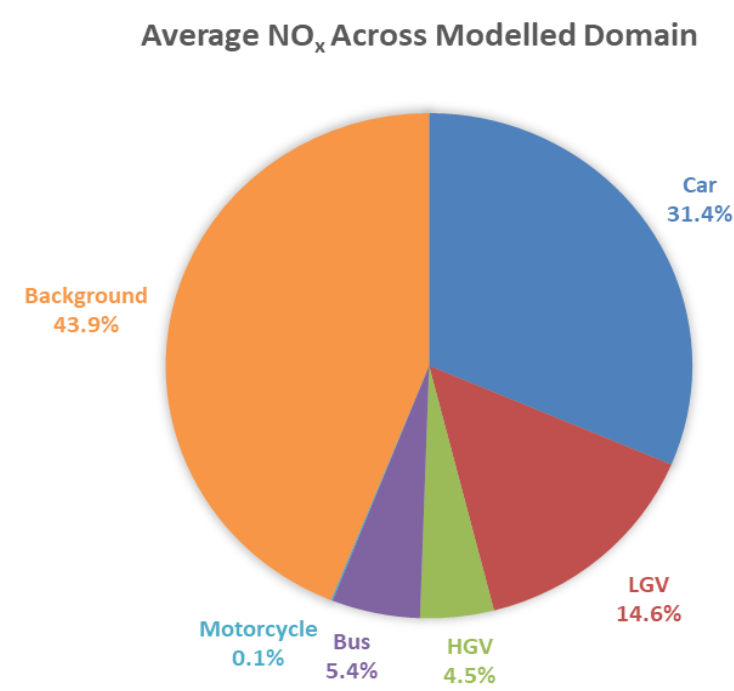


Figure 5: Average NO_x across modelled domain shows traffic accounts for 56.1%.

Average Across Modelled Receptors With NO_x Annual Mean Concentrations Above 40µg/m³

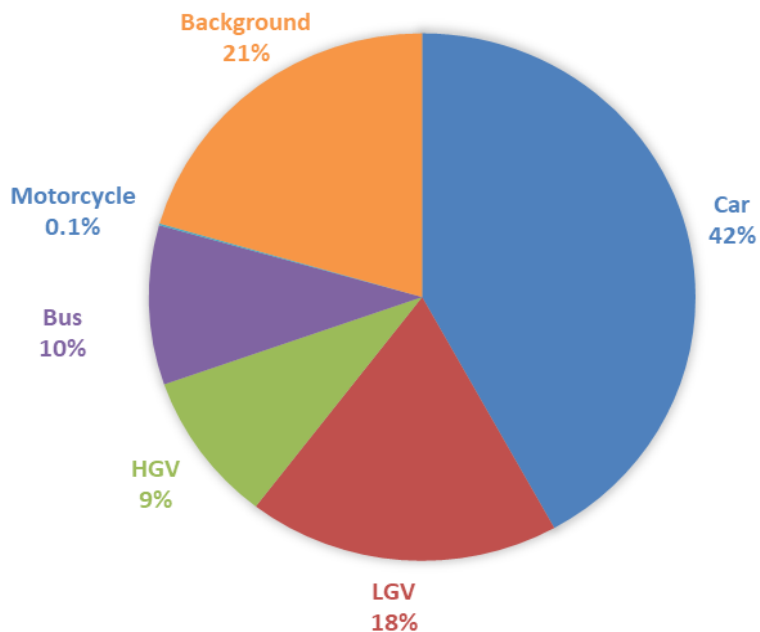


Figure 6: The average NO_x concentration at receptors with annual mean concentration above 40µg/m³.

With road traffic being the main source of NO₂, and cars/LGV accounting for a large percentage of this, a reduction in road traffic is highlighted as a requirement to reduce NO_x.

The report highlights that the congestion causing high NO₂ results are predominantly on Prebend Street and on the High Street and these are the areas that require actions to improve traffic flow and reduce volume of traffic. Figure 4 shows the location of receptors predicted to be within 10% of, or exceeding the 40µg/m³ AQS objective. Prebend street is at point IE to HR and contains the largest volume of receptors. Point LO is on the High Street.

3.4 Key Priorities

The priorities for Bedford Borough Council are to reduce emissions so that concentrations of nitrogen dioxide are below the National Air Quality Objective, the second is to ensure that concentrations of nitrogen dioxide remain at levels below the National Air Quality Objectives; the third is to improve public health by taking action to keep air pollution levels as low as they can possibly be. These will be met by tackling the following:

- 1 - Reduce emissions on Prebend Street

The Source apportionment shows that traffic emissions are the main source of air pollution and one area of significance was Prebend Street. A significant reduction in traffic is required to meet the objective. Completion of measures in this plan will contribute significantly to this reduction, some actions associated to this are dependent on the outcome of funding applications which are being submitted to support delivery of changes to the existing road layouts around Prebend Street.

- 2 – Reduce emissions on High Street

The work being carried out on transporting Bedford 2020 project will be key to tackling congestion on the High Street and the long term objective will be a significant reduction in traffic.

- 3 – Ensure emissions remain low throughout the Borough.

Keeping emissions low, and reducing them further in the future will require ongoing involvement with development and delivery of relevant transport and planning policies, strategies and plans.

4. Development and Implementation of Bedford Borough Council AQAP

4.1 Consultation and Stakeholder Engagement

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

Table 4.1 – Consultation Undertaken

Yes/No	Consultee
No	DEFRA – to be consulted following responses from EA & Highways
Yes	Environment Agency
Yes	Highways Authority
No	All neighbouring Local Authorities

Yes	other public authorities as appropriate, such as Public Health officials
No	bodies representing local business interests and other organisations as appropriate – further consultation to follow

4.2 Steering Group

This AQAP was prepared by Regulatory Services of Bedford Borough Council under the direction, support and agreement of the Steering Group which is made up of the following officers and departments:

Bedford Borough Council:

Callum Fletcher (Manager for Corporate Safety and Commercial Regulation)

David Rubidge (Enforcement Officer – Commercial Regulation)

Melanie MacLeod (Manager for Transport Policy, Infrastructure and HDC)

Brian Hayward (Project Manager – Town centre Transport Strategy)

Alastair Wren (Senior Planner, Development management)

Gideon Richards (Principal Planner – Major projects)

Jackie Golding (Public Health Manager)

Yo Higon (Team Leader for Sustainable Transport)

Claire Wilkinson (Senior Energy and Water Technical Officer)

Sonia Gallaher (Senior Planning and Transport Officer)

Gill Cowie (Manager for Planning and Housing strategy)

5.AQAP Measures

Table 5.1 shows the Bedford Borough Council AQAP measures. It contains:

- A list of the actions that form part of the plan
- The responsible individual and departments/organisations who will deliver this action
- Expected benefit in terms of pollutant emission and/or concentration reduction
- The timescale for implementation
- How progress will be monitored

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

Table 5.1 – Air Quality Action Plan Measures

Measure No.	Measure	EU Category	EU Classification	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
1	School focused campaign to highlight engine idling	Traffic management	Anti-idling enforcement	Bedford Borough Council - Public Health/sustainable transport	2019	2020	School visits carried out highlighting engine idling	NO ₂	Appropriate school being identified. Campaign material being sourced	Initial campaigns 2021	Delayed due to Covid – due to commence winter 2021.
2	School street - (pedestrian and cycling zones)	Traffic management	Anti-idling enforcement	Bedford Borough Council - Public Health / Sustainable Transport	2019	2021	Inputting a school street	NO ₂	pilot – March 2021	Ongoing	Trial commencing September 2021
3	Increase 20 mph zones outside schools	Traffic management	Reduction of speed limits, 20mph zones	Bedford Borough Council - Transport	In place	ongoing	increased number of 20 mph zones outside schools	NO ₂	More than 15 already in place	Ongoing	The implementation of 20mph speed limits is part of the Local Transport Plan (LTP3) to promote reduced speeds in residential areas and around schools.

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4	High street reduction to 20 mph	Traffic management	Reduction of speed limits, 20mph zones	Bedford Borough Council - Transport	2019	2020	High street reduced to 20 mph	NO ₂	Work to commence as part of transporting Bedford 2020. Due for completion Nov 2021	2021	Temporary 20 mph implemented summer 2020
5	Transporting Bedford 2020 - reducing High street to single lane	Traffic management	Strategic highway improvements, Re-prioritising road space away from cars, Inc. Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	Bedford Borough Council - Transport	2019	2020	reduced traffic on high street	NO ₂	Grant obtained - work to commence Summer 2020. Due for completion Nov 2021	End 2021	Project delayed due to covid – temporary single lane implemented summer 2020.
6	Traffic management project - Prebend street roundabout diversion	Traffic management	Strategic highway improvements, Re-prioritising road space away from cars, Inc. Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	Bedford Borough Council - Transport	2020	Ongoing	reduced congestion on Prebend street	NO ₂	Delayed Awaiting funding decision	2022	Awaiting funding

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7	Transporting Bedford 2020 - Ampthill road smart corridor including bus lanes, cycle lanes	Traffic management	Strategic highway improvements, Re-prioritising road space away from cars, Inc. Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	Bedford Borough Council - Transport	2019	2021	improved traffic flow/reduced congestion monitored	NO ₂	Advance utility diversion works started on site Feb 2021, main body of works planned to start spring 2021	2022	Air quality monitoring in 2 places on Ampthill Rd.
8	Rearrangement of junction layout of Cauldwell Street/St Mary's Street/St John's Street: to enhance the flow of traffic from Cauldwell Street into St John's Street and tie-in with reduced carriageway width over the Town Bridge.	Traffic management	Strategic highway improvements, Re-prioritising road space away from cars, Inc. Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	Bedford Borough Council - Transport	2019	2022	improved traffic flow	NO ₂	Works on hold pending a review of wider planning issues for the area.	2023	Designs complete – now being considered as part of wider plans for the area
9	Updating urban traffic management control system upgrading signals and providing message signs highlighting congestion	Traffic management	Strategic highway improvements, Re-prioritising road space away from cars, Inc. Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	Bedford Borough Council - Transport	2019	2020	diversions to avoid congestion - improved traffic flow	NO ₂	underway	2021	Expected to be fully operational by late Autumn 2021

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10	Bedford Borough Council agile working policy	Promoting travel alternatives	Encourage / Facilitate home-working	Bedford Borough Council	In place	2018	roll out of remote working throughout council	NO ₂	department s all trained and implemented	ongoing	Reduced travelling to offices and agile working in place and encouraged Covid 19 has led to increased numbers of agile working and less driving by staff.
11	Active travel strategy to be reviewed	Promoting travel alternatives	Intensive active travel campaign & infrastructure	Bedford Borough Council	2020	2021	Strategy reviewed	NO ₂	current active travel strategy in place	2022	current strategy runs until 2021
12	Provide road safety education and training for pedestrians and cyclists at schools (bikeability)	Promoting travel alternatives	Intensive active travel campaign & infrastructure	Bedford Borough Council	In place	2020	Increased number educated	NO ₂	Road safety education to children in school supplied	ongoing	
13	Provide road safety education and training for pedestrians and cyclists at workplaces to residents.	Promoting travel alternatives	Intensive active travel campaign & infrastructure	Bedford Borough Council	In place	2022	Increased number educated	NO ₂	Providing cycle confidence and beginner training	ongoing	
14	Access funding and capability funding	Promoting travel alternatives and creating Travel Plans	Intensive active travel campaign & infrastructure	Bedford Borough Council/ Sustrans	2019	2021	extended contract	NO ₂	Work with schools and businesses continues	2022	Funding extended

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		for schools and businesses							until summer 21		
15	Travel plans requested for significant planning applications	Promoting travel alternatives	Personalised Travel Planning	Bedford Borough Council	In place	ongoing	travel plans requested on major planning applications	NO ₂	Travel plans requested on major applications	ongoing	
16	New train stations	Promoting travel alternatives	Promote use of rail and inland waterways	Bedford Borough Council/Network rail	2020	2021	New train station open	NO ₂	Initial proposals drafted	2024	Wixams train station due to open
17	Cycle parking provision in local plan for new development	Promoting travel alternatives	Promotion of cycling	Bedford Borough Council/sustrans	2019	2020	cycle parking conditions in planning applications	NO ₂	In place	ongoing	
18	Promote and support Cycle to work	Promoting travel alternatives	Promotion of cycling	Bedford Borough Council/sustrans	In place	ongoing	number of employees cycling to work	NO ₂	no of cycle to work increased	ongoing	
19	Cyclescheme - help to buy bike scheme	Promoting travel alternatives	Promotion of cycling	Bedford Borough Council	In place	ongoing	Number using help to buy scheme	NO ₂	underway	ongoing	Amount available to borrow increased 2019
20	Promotion of cycling routes	Promoting travel alternatives	Promotion of cycling	Bedford Borough Council/Sustrans	In place	ongoing	increase in cycling	NO ₂	web site of cycle routes and schemes http://www.travelbedford.co.uk/Cycling.html	ongoing	
21	Bike repair scheme	Promoting travel alternatives	Promotion of cycling	Bedford Borough Council	In place	ongoing	increase in employees cycling	NO ₂	periodic bike repairs	ongoing	

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22	promotion of walking routes/organised walks	Promoting travel alternatives	Promotion of walking	Sustrans	In place	ongoing	Increase in walking	NO ₂	web site of walking routes and schemes http://www.travelbedford.co.uk/Walking.html	ongoing	
23	Schools participating in school modeshift stars scheme	Promoting travel alternatives	School Travel Plans	Bedford Borough Council	In place	2018	number of schools signed up	NO ₂	a number of Schools already participating	ongoing	Number of STARS Schools – Total of 27 schools taking part in Modeshift STARS, 6 Bronze award and one Gold and one awaiting platinum
24	sustainable modes of travel to school strategy to be reviewed	Promoting travel alternatives	School Travel Plans	Bedford Borough Council /Transport	2020	2021	Strategy reviewed	NO ₂		2021	current strategy runs until 2021
25	Officer in post to promote school travel plans	Promoting travel alternatives	School Travel Plans	Bedford Borough Council /Transport	2019	2019	number of schools promoting alternative transport to school	NO ₂	officer in post	2021	
26	Bedford stations travel plan in place and to be reviewed and updated-	Promoting travel alternatives	Workplace Travel Planning	Bedford Borough Council /Transport	2019	2020	stations travel plan updated	NO ₂	travel plan in place from 2011	To be reviewed 2021/22	Review after Covid restrictions are mostly lifted and travel patterns return to

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											normal
27	Electric vehicle policy in local plan (Policy 93 Electric Vehicle Infrastructure)	Policy guidance and development control	Air quality planning and policy guidance	Bedford Borough Council	2019	2020	charging points conditioned in planning applications	NO ₂	policy 89 in local plan adopted		Policy sets out requirement for new development to provide charge points
28	Air Quality planning guidance document to be written and implemented	Policy guidance and development control	Air quality planning and policy guidance	Bedford Borough Council	2019/20	2021	AQ conditions on planning applications	NO ₂	document in draft	ongoing	
29	Bedford Borough Council committed to the Sustainable Development and Environmental Efficiency Strategy (SDEES) action plan	Policy guidance and development control	low emissions strategy	Bedford Borough Council	In place	2017	promoting environmental sustainability	CO ₂ / NO ₂	In place	ongoing	The Sustainable Development and Environmental Efficiency Strategy (SDEES) (PDF) incorporates the Carbon Management Plan, Affordable Warmth Strategy, Climate Change Strategy and the Water Strategy

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30	Bedford Borough Council committed to Environmental policy	Policy guidance and development control	other policy	Bedford Borough Council	In place	2015	The Council will seek to integrate the principles of sustainable development within its policies and strategies	CO ₂ / NO ₂	policy in place		
31	Energy and water reduction officer in place	Policy guidance and development control	other policy	Bedford Borough Council	In place	2018	reviewing council energy usage	CO ₂ / NO ₂	officer in place	ongoing	
32	Air Quality steering group in place	Policy guidance and development control	regional groups coordinating programmes to develop area wide strategies to reduce emissions and improve air quality	Bedford Borough Council	2019	2019	inter departmental communication	NO ₂	Ongoing	ongoing	
33	Herts and Beds Air Quality group meetings	Policy guidance and development control	regional groups coordinating programmes to develop area wide strategies to reduce emissions and improve air quality	various	In place	ongoing	local authority cross communication	N/A	quarterly meetings	ongoing	
34	Sustainable procurement guidance considered at tender stage - Bedford Borough Council	Policy guidance and development control	Sustainable procurement guidance	Bedford Borough Council	In place	2010	sustainable procurement considered	N/A	in place	ongoing	

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35	Enforcement of solid fuel regulations	Policy guidance and development control	Low emissions strategy	Bedford Borough Council	2021	2021	Compliance with regulations	PM	Information sent to local businesses	ongoing	
36	Installation of publicly available rapid charging points roadside/car parks	Promoting low emission transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	Bedford Borough Council	In place	ongoing	number of roadside charging points increased	NO ₂	79 in place to date	ongoing	
37	Installation of rapid charging points as part of planning process	Promoting low emission transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	Bedford Borough Council	In place	ongoing	Rapid charging points conditioned on planning applications	NO ₂	underway	ongoing	
38	Reviewing taxi licencing policy	Promoting low emission transport	Taxi Licensing conditions	Bedford Borough Council	2020	2020	Introduction of new policy with incentive for cleaner vehicles	NO ₂	Under review	2021	licensing
39	Bedford passenger transport strategy reviewed	Transport planning and infrastructure	Bus route improvements	Bedford Borough Council	2020	2021	passenger transport strategy reviewed	NO ₂	Bus Service Improvement Plan in preparation		
40	Bus lane cameras in place and updated when feasible	Transport planning and infrastructure	Bus route improvements	Bedford Borough Council	In place	ongoing	Bus lane cameras in place and working	NO ₂	In place	ongoing	

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41	Implement and enforce bus priority measures	Transport planning and infrastructure	Bus route improvements	Bedford Borough Council	2020	2021	New bus lanes - Ampthill Rd	NO ₂	Smart corridor for Ampthill Rd proposed 2020	Ongoing	Reports on use of bus lanes by ULEVs taken to Licencing and Climate change committees in late 2020
42	Tree retention policy in local plan	Transport planning and infrastructure	other	Bedford Borough Council	2020	Ongoing	Tree retention policy written in local plan 2030	NO ₂	Planned number of trees in high street changes	In place	
43	To ensure that freight delivery routeing, controls and infrastructure are considered as an integral part of planning proposals for Bedford Borough	Freight and delivery management	Delivery and Service plans	Bedford Borough Council	In place	ongoing	Freight routes conditioned on industrial applications	NO ₂		Ongoing	
44	Delivery restrictions in place - Harpur street	Freight and delivery management	Quiet and out of hours delivery	Bedford Borough Council	In place	ongoing	Deliveries outside of busy periods	NO ₂		Ongoing	
45	Delivery restrictions in place - High Street	Freight and delivery management	Quiet and out of hours delivery	Bedford Borough Council	2021	2021	Deliveries outside of busy periods	NO ₂		Ongoing	
46	To promote and implement the Freight Route Network	Freight and delivery management	Route management plans/strategic routing strategy for HGVs	Bedford Borough Council	In place	ongoing	Freight route network implemented	NO ₂		Ongoing	

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47	Review and revise Bedford Borough Council freight strategy	Freight and delivery management	Route management plans/strategic routing strategy for HGVs	Bedford Borough Council	2020	2021	Freight strategy revised	NO ₂		2021	
48	Electrifying train line	Alternatives to private vehicle use	Other	Network rail		2020	Train line electrified	NO ₂	completed	2020	BBC will continue to press for Wat West Rail to be electrified
49	Considering alternative fuels for BBC fleet such as Gas to Liquid fuel	Promoting low emission plant	Low emission fuels for stationary and mobile sources in public procurement	Bedford Borough Council	2019	2019	Reduction of BBC fleet emissions	NO ₂	trialled GTL in fleet 2019	Ongoing	
50	Electric/hybrid replacement vehicles listed for BBC fleet	Promoting low emission plant	Low emission fuels for stationary and mobile sources in public procurement	Bedford Borough Council	2019	ongoing	Vehicles replaced by electric/hybrid	NO ₂	2 electric vehicles in use	Vehicles replaced with electric when due for change	
51	Review of smoke control area and map updates for web site	Promoting low emission plant	Regulations for fuel quality for low emission fuels for stationary and mobile sources	Bedford Borough Council	2020	2020	Smoke control maps reviewed	NO ₂ /PM		2021	
52	Publishing annual results and AQMA updates	Public information	Via internet	Bedford Borough Council	2020	2020	ASR reports published on line annually	NO ₂	2019 ASR available September 2019		
53	Alternative travel leaflets distributed to encourage cycling/walking	Public information	Via leaflets	Bedford Borough Council	2021	2021		NO ₂		Ongoing	
54	Continued compliance inspection to ensure	Environment al permits	Other measure through permit systems and economic	Bedford Borough Council	In place	ongoing	All compliance inspections carried out and up to date	NO ₂ /PM	all	Ongoing	

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	permitted processed are fully compliant		instruments								
55	Air quality Officer in post – Client and Public Transport	Public information	Other	Bedford Borough Council	2020	2021	Officer working with nurseries, schools and higher educational establishment s to raise awareness of air quality issues and what causes it.	NO ₂ /PM	ongoing	2023	Funding from Defra's Air Quality Grant 2021

Appendix A: Response to Consultation

Table A.1 – Summary of Responses to Consultation and Stakeholder Engagement on the AQAP

Consultee	Category	Response
Public Health	Local authority	Provided Public Health context to impacts of reduced air quality and direction on lead organisations for delivery of certain action contained within table 5.1. Public Health have also worked in liaison with a number of members of the air quality steering group around delivery of actions contained within the action plan, in particular work around reducing congestion associated to school transport, promotion of alternative methods of travel associated to this. Some aspects of this work have been delayed as a result of Covid-19.
Environment Agency		No comments
Highways	Local authority	Revised dates for transporting Bedford 2020 work, delays due to Covid. Confirmation of some transport policies ongoing.
DEFRA	Government	To be consulted following comments received from above consultation

Appendix B: Source apportionment data

The tables below show a more detailed breakdown of the local sources contribution to NO_x concentrations, based on the average across all modelled receptors within the modelling domain, the average across all receptors within the AQMA and the receptor where the maximum road NO_x concentration has been predicted. The maximum annual mean NO₂ concentration was predicted at receptor Point 1A at a height of 1.5m on Prebend Street, with predicted results of 57.0µg/m³ (2018). The highest monitored NO₂ result from diffusion tube results in 2019 gave an average value of 47µg/m³ at Prebend street.

	All vehicles	Car	LGV	HGV	Bus	Motorcycle	Background
NO _x Concentration (µg/m ³)	26.3	14.7	6.9	2.1	2.5	0.05	20.6
Percentage	56%	31%	15%	5%	5%	0.1%	44%
Percentage road contribution	100%	56%	26%	8%	10%	0.2%	

Averaged across all modelled receptors

	All vehicles	Car	LGV	HGV	Bus	Motorcycle	Background
NO _x Concentration (µg/m ³)	80.9	42.7	18.8	9.4	9.9	0.1	20.9
Percentage	80%	42%	18%	9%	10%	0.1%	20%
Percentage road contribution	100%	53%	23%	12%	12%	0.1%	

Average across modelled receptors with NO₂ Annual Mean Concentrations above 40µgm³

	All vehicles	Car	LGV	HGV	Bus	Motorcycle	Background
NO _x Concentration (µg/m ³)	96.8	51.1	22.4	11.3	11.9	0.1	20.9
Percentage	82%	43%	19%	10%	10%	0.1%	18%
Percentage road contribution	100%	53%	23%	12%	12%	0.1%	

At Receptor with maximum road NO_x Concentration (Point IA –Prebend street)

Appendix C : Diffusion tube results in the AQMA since 2009 (bias adjusted).

The table below shows diffusion tube data from 2009 until 2019. Numbers in green are below 10% of the 40 ug/m³ limit and those in red above it.

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DT ref	Site	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
DT14	Horne Lane, Bedford	35	32	34	37	33	32	30	37	31	31	33
DT16	Kempston Road ,Bedford	30	31	34	32	28	27	24	28	26	28	27
DT17	Ampthill Road , Bedford	40	39	37	42	34	38	32	34	32	33	31
DT19	Kimbolton Road ,Bedford	31	30	33	33	29	31	25	28	25	26	25
DT20	Prebend Street ,Bedford	60	54	62	68	57	52	48	60	50	44	47
DT25	London Road crossroad	47	43	43	52	43	43	40	41	42	39	35
DT27	High St Iadbrookes	58	48	60	62	48	48	43	47	40	41	42
DT28	Prebend St corner of commercial road	43	41	39	42	41	38	36	40	34	34	32
DT29	Goldington Road opp uni	43	39	42	42	39	39	34	37	37	38	36
DT30	High St Barovic jewellers	51	46	52	56	50	41	41	44	40	41	39
DT31	High St, luddingtons	53	49	52	55	49	46	40	42	36	40	39
DT33	Shakespeare Road/Bromham Rd Junction	49	51	51	51	49	45	43	43	38	38	36
DT34	St Marys St kings arms PH	52	49	50	54	48	45	42	45	37	42	38
DT35	Prebend St, crown quay	45	40	41	43	39	38	36	37	33	36	36
DT36	37 Ashburnham Road	42	41	40	46	39	37	32	38	34	36	33
DT40	YMCA, Tavistock St	31	30	34	32	30	30	25	24	26	25	25
DT42	28 St Johns St	47	44	48	46	44	43	40	43	37	39	39
DT43	45 Dame Alice St	45	44	46	45	43	38	35	39	35	40	31
DT44	Midland Road- outside No.137,139A	41	42	44	48	41	42	37	40	38	42	40
DT46	Midland Rd- outside Beegees opp Priory St	43	40	44	42	39	41	36	35	36	34	37
DT47	On corner Harpur St – opp 51A	33	34	33	34	34	30	27	31	27	30	32
DT48	Outside Sound & Vision –Tavistock St	48	45	46	49	40	40	33	36	35	37	36
DT50	Outside John Bull – St Peters St	51	48	64	65	51	50	43	44	47	43	44
DT53	Outside Longstaff Gentle & Co – 59-61 Harpur St	47	41	41	42	38	37	33	36	32	33	31
DT54	Outside 63 –Union St	42	38	46	53	39	38	35	38	32	31	30
DT55	Opp urban & Rural on corner – Bromham Rd	42	40	37	39	36	38	35	36	33	33	30
DT57	Outside 110 - Newnham Av	37	32	40	38	35	38	36	34	34	33	31
DT61	Outside 185 Goldington Rd	35	33	45	45	37	40	34	37	37	34	33
DT62	Outside 139 Goldington Rd	35	33	34	36	33	33	27	30	27	27	27
DT65	Outside no.43 London Rd	35	34	40	42	34	32	29	31	31	31	34
DT66, DT6	Monitoring station		38	42	42	37	35	33	36	33	30	34
DT69	River Street, opposite chinese			38	43	37	37	34	34	31	30	32
DT70	Outside bus station			38	42	35	39	33	36	33	32	34
DT74, DT7	LS Monitor								37	31	29	28
DT 86	Outside 33 Goldington Rd											

Appendix D: References

- 1 - Public Health England. Estimation of costs to the NHS and social care due to the health impacts of air pollution: summary report, May 2018
- 2- DEFRA. Local air quality management- technical guidance. TG16, February 2018
[LAQM-TG16-February-18-v1.pdf \(defra.gov.uk\)](#)
- 3 - Review of interventions to improve outdoor air quality and public health, Public Health England, 2019,
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/795185/Review_of_interventions_to_improve_air_quality.pdf
- 4 - Public health outcomes framework, May 2021
[Public Health Outcomes Framework: May 2021 data update - GOV.UK \(www.gov.uk\)](#)
- 5 - National Planning Policy Framework 24 (NPPF), June 2019
[National Planning Policy Framework - Guidance - GOV.UK \(www.gov.uk\)](#)
- 6 – Bedford Borough Council Local Plan 2030, January 2020
[Local Plan 2030 - Bedford Borough Council](#)
- 7 – Bedford Borough Council local transport plan 2011 – 2021
[Local transport plan 2011-2021 - Bedford Borough Council](#)
- 8 – LAQM air quality modelling report Bedford Borough Council – AQMA review 2019, September 2019. Bureau Veritas
- 9 – DEFRA Covid 19 supplementary guidance, 2021

<https://laqm.defra.gov.uk/wp-content/uploads/2021/08/Covid-19-Supplementary-Guidance-for-Local-Air-Quality-Management-Reporting-in-2021-v1.pdf>

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
...	...

