

Public Document Pack



Meeting: EAP Sustainable Communities
Date: Wednesday 29th November, 2023
Time: 9.30 am
Venue: Virtual meeting, via Zoom


The meeting will be available for the public to view live at the Democratic Services North Northants YouTube channel:
<https://www.youtube.com/c/DemocraticServicesNorthNorthantsCouncil>

To members of the EAP Sustainable Communities

Councillor Harriet Pentland (Chair), Councillor Tim Allebone, Councillor Jennie Bone, Councillor Alison Dalziel, Councillor Dez Dell, Councillor Jan O'Hara and Councillor Roger Powell

Members of the Panel are invited to attend the above meeting to consider the items of business listed on the agenda.

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02	Members' Declarations of Interest	Chair	
03	Minutes from Meeting held on 11th October 2023	Chair	5 - 8
04	Air Quality Strategy Update	Ciara Longman, Air Quality Project Officer	9 - 282
05	Corby Local Walking and Cycling Infrastructure Plan Public Consultation	Sally Crew, Transport Strategy Manager	283 - 304

06	Close of Meeting	All	
<p>Adele Wylie, Monitoring Officer North Northamptonshire Council</p>  <p>Proper Officer 21st November 2023</p>			

This agenda has been published by Democratic Services.

Committee Administrator: Raj Sohal

☎ 07910 344766

✉ rajvir.sohal@northnorthants.gov.uk

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Where a matter arises at a meeting which **relates to** other Registerable Interests, you must declare the interest. You may speak on the matter only if members of the public are also allowed to speak at the meeting but must not take part in any vote on the matter unless you have been granted a dispensation.

Where a matter arises at a meeting which **relates to** your own financial interest (and is not a Disclosable Pecuniary Interest) or **relates to** a financial interest of a relative, friend or close associate, you must disclose the interest and not vote on the matter unless granted a dispensation. You may speak on the matter only if members of the public are also allowed to speak at the meeting.

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If Members have any queries as to whether a Declaration of Interest should be made please contact the Monitoring Officer at – monitoringofficer@northnorthants.gov.uk

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Minutes of a meeting of the EAP Sustainable Communities

Held at 9.30 am on Wednesday 11th October 2023 as a virtual meeting, via Zoom

Present:-

Members

Councillor Harriet Pentland (Chair)
Councillor Jennie Bone
Councillor Mark Pengelly

Councillor Tim Allebone
Councillor Jan O'Hara
Councillor Sarah Tubbs

Officers

Ian Achurch	Interim Head of Economy and Strategy
Lesley Elkington	Business Support Manager
Liam Faulkner	Grounds Services Manager
Lucy Hawes	Community Development Officer
Greg Haynes	Climate Change and Sustainability Officer
Rebecca Jenkins	Woodlands Manager
Graeme Kane	Interim Director – Place and Economy
Kerry Purnell	Assistant Director – Housing and Communities
Raj Sohal	Democratic Services Officer
Lauren Toll	Waste Performance Officer
Jonathan Waterworth	Assistant Director – Assets and Environment

Also in attendance – Councillor Graham Lawman

32 **Apologies for Absence**

Apologies for absence were received from Councillors Alison Dalziel and Dez Dell.

Councillors Mark Pengelly and Sarah Tubbs were in attendance, as substitutes.

33 **Members' Declarations of Interest**

No declarations of interest were made.

34 **Minutes from Meeting held on 9th August 2023**

RESOLVED that: The minutes of the meeting held on the 9th August 2023 be approved as an accurate record.

35 **Pollinator Strategy Update**

The Panel considered a presentation by The Grounds Services Manager, which provided an update regarding the North Northamptonshire Pollinator Strategy.

During discussion, the principal points were noted:

- Members expressed concern that in certain areas, grass had been allowed to grow and was not collected once cut. One member queried what could be done in future to ensure that this green waste would be collected.
- Members queried whether the local authority could influence land developers to plant more sustainable plants in open spaces, to provide additional habitats for wildlife.
- Members queried where existing 'Butterfly Banks' were located and requested additional information regarding planned sites for future implementation.
- Members queried whether the local authority had utilised alternatives to herbicides, in the treatment of weeds.
- One member queried whether it was possible for residents to 'opt out' from areas being mowed or sprayed (for example, to prevent wild flowers being destroyed).

In response, The Grounds Services Manager clarified that:

- The cutting of verges was carried out in collaboration with Highways and disposal costs of green waste were significant. Nevertheless, officers would assess how many prescribed cuts were to be scheduled for the next year, to mitigate the consequences of the over-growing of such spaces.
- The sustainability of planting in new developments was an issue for the consideration of planning.
- Two Butterfly Banks were located in Corby (Bonnington Walk and Collier's Avenue) and one more at the Kettering Leisure Village (Thurston Drive). A minimum of three additional sites were planned for Wellingborough in 2023/24, the location of which would be determined by net biodiversity gain.
- The use of various herbicide alternatives had been explored, such as hot foam however, these presented other adverse side effects. Glyphosate remained the most cost effective solution in treating weeds. Nevertheless, the usage of herbicides had been reduced considerably.
- The local authority would continue to communicate openly and work with North Northamptonshire residents regarding the mowing and spraying of certain spaces.

RESOLVED that: The report be noted.

36 Woodland Management Update

The Panel considered a report by The Woodlands Manager, which outlined North Northamptonshire Council's Woodland Project.

During discussion, the principal points were noted:

- Members commended the work of the Woodland Project, particularly in transforming woodland areas in Corby.

- One member encouraged officers to visit local allotments, which they suggested could potentially be utilised as ‘tree nurseries’.

In response, The Woodlands Manager clarified that:

- Officers would carry out a site visit to the allotment suggested by the member. Through the project, the local authority sought to reinstate some of the lost allotments across North Northamptonshire.

RESOLVED that: The report be noted.

37 HWRC Options Appraisal Feedback from Workshops

The Panel considered a report by The Business Support Manager, which outlined feedback received from the local authority’s Household Waste Recycling Centres (HWRC) options appraisal.

During discussion, the principal points were noted:

- One member expressed concern regarding the size of the Corby HWRC and its ability to handle large volumes of visitors and traffic, particularly on weekends. The member queried whether it might be necessary to acquire another site for an additional, smaller HWRC.

In response, The Business Support Manager clarified that:

- It would be unlikely for the local authority to acquire an additional site for a HWRC, due to the significant cost it would pose.

RESOLVED that: The report be noted.

38 North Northamptonshire Greenway Strategy

The Panel considered a presentation by The Assistant Director of Housing and Communities, which outlined the North Northamptonshire ‘Greenway Strategy’ project.

During discussion, the principal points were noted:

- Members queried how the Greenway Strategy would be funded, if not through the Capital Programme, and what the local authority’s long-term aspirations for funding this project were.
- One member queried how routes for safe walkways would be prioritised, through the Greenway Strategy.

In response, The Assistant Director clarified that:

- Detailed cost plans would be required at each phase of project implementation. Having the strategy in place, as well as carrying out early feasibility studies, would allow the local authority to determine appropriate sources of funding (e.g. bidding for grants from organisations such as “Active Travel England”). Section

106 funding would also remain a significant contributory factor, though it would not account for funding the entirety of the project.

- Additional walkway routes could be added to the project plans, where demand for them existed. Officers emphasised the local authority's intention to promote active travel.

RESOLVED that: The report be noted.

39 Close of Meeting

The meeting concluded at 11:08am.

The next meeting of the EAP Sustainable Communities would be held at 9:30am on Wednesday 29th November 2023.

Air Quality Update November 2023

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North Northamptonshire Council

Agenda Item 4

Annual Status Report for 2022

- **Statutory duty**: to monitor and produce the ASR every year
- NO₂ monitored in NNC diffusion tubes in 107 locations
- All locations are below the limit value, highest value was 33 µg/m⁻³
- 2022 concentrations are below pre-pandemic levels
- DEFRA have approved the report
- PM₁₀ & PM_{2.5} are not measured
 - Nearest monitoring station is in Northampton
 - PM_{2.5} 10 µg/m⁻³ - legal limit 20 µg/m⁻³

Annual Status Report for 2022

- **Noted:** Voi Scooter project which successfully expanded electric scooter use which in 2022 replaced 201,812 car trips car trips.
- **Noted:** Support for the East Northamptonshire Greenway Project to reduce emissions.
- **Praise:** for the Local Air Quality Strategy being developed

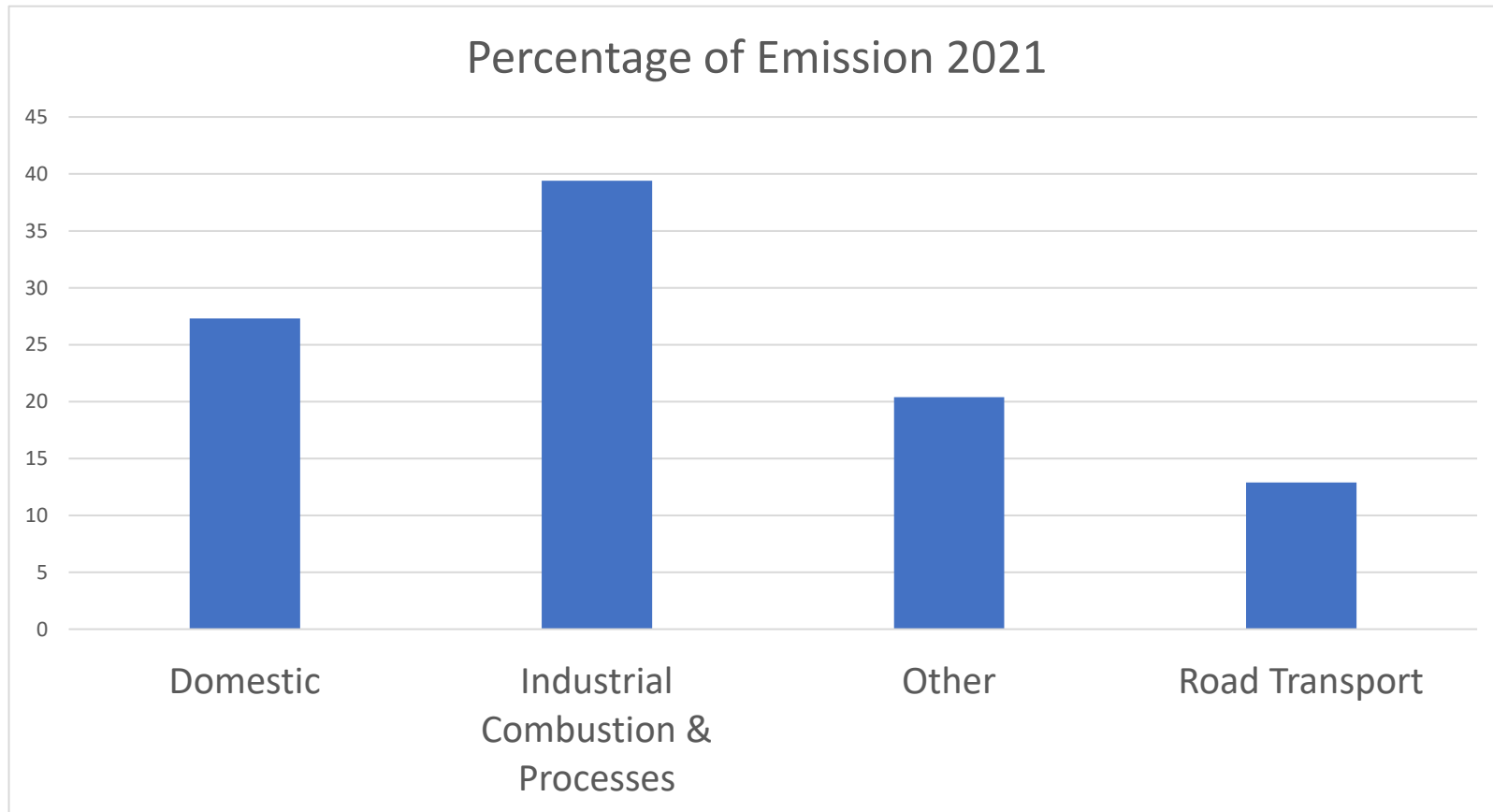
Air Quality Strategy for England

Statutory duty: DEFRA must publish an AQS for England every 5 years

- All local authorities are **expected** to take proactive action to improve air quality
- Local Authorities are **encouraged** to publish a Local Air Quality Strategy
- Directors of Public Health **should** be involved in producing Local Air Quality Strategy

AQS for England PM2.5 & Smoke Control

DEFRA is legally responsible for reducing PM2.5 concentrations



Other
Europe
Pollen
Sea spray
Naturally
occurring dust

AQS for England PM2.5 & Smoke Control

Should the council adopt, extend or revoke Smoke Control Areas in North Northamptonshire;

1. Revoke the current smoke control orders and adopt a new order for the whole of North Northamptonshire making the whole area a smoke control area.
2. Revoke the current smoke control orders and issue new smoke control orders for all towns in North Northamptonshire.

Without monitoring data we cannot legally justify these options

AQS for England PM2.5 & Smoke Control

Should the council adopt, extend or revoke Smoke Control Areas in North Northamptonshire;

1. Do nothing – retain the Corby smoke control areas.

This is the recommended option

2. Revoke the Corby smoke control areas.

Revoking the Smoke Control Order needs justification

AQS for England PM2.5 & Smoke Control

For any current or new smoke control areas, should the council implement civil penalties in smoke control areas for breaches?

CPNs currently used in Housing offences and Immigration offences

1. Implement civil penalties in smoke control areas.

Review this option at a later date when other LAs have implemented it

2. Use existing powers.

This is the recommended option

AQS for England Vehicle Idling

Should the council adopt FPNs/CPNs for vehicle idling ?

Schools

Fixed Penalty Notices require perpetrators details

Penalty Charge Notices do not – public highway only and requires a TMO

- Parking Officers issue
- Low volume of offences
- No increase in staffing numbers is required

AQS for England - Indoor Air Quality

Should the Council include Indoor Air Quality in the Local Air Quality Strategy?

Local authority front line, public health, environmental and planning professionals **should** be familiar with best practice on indoor air quality, including around ventilation.

Where social housing is provided by local authorities, guidance to tenants on ventilation **could** be provided.

DEFRA will be providing guidance on mould and damp, this will have implications for:

- Housing policy
- Include in JSNA?
- Social care guidance

Local AQ Strategy for North Northants

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LOCAL AIR
QUALITY STRATEGY



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- DEFRA requested all Local Authorities publish a Local AQ Strategy
- Currently being finalised – internal consultation
- External consultation in early 2024
- Requires cross-department collaboration



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Public Health Measures

- Air quality is integrated into the JSNA
- Working together to raise awareness of the health impacts of air pollution
- *Future: as knowledge about the adverse health effects of PM2.5 is disseminated by DEFRA we will work together to inform Health Practitioners in Primary and Secondary health care.

Planning Measures

- Air Quality is embedded in NNC's Strategic Plan
- Environmental Protection is consulted on planning applications
- The adoption of the AQ SPD will ensure a unified approach across all former districts

Sustainable Transport Measures

- Many of the projects and policies adopted by our Transport team align with reducing air pollution
- Increasing NetZero vehicle uptake and infrastructure
- Active travel – Greenway project – Cycling and Walking Infrastructure
- Public transport improvement schemes
- Traffic management schemes – Smart & Connected Corby

Carbon Reduction Measures

- Carbon Management Plan
- Climate Change Strategy
- Electric Scooter project
- Starship Robots project

Taxi Licensing Measures

- 31 March 2025:
 - new and replacement taxis must be Euro 6
 - All new applications must be hybrid/NetZero
- 1 January 2031:
 - Only hybrid/NetZero vehicles can be licensed

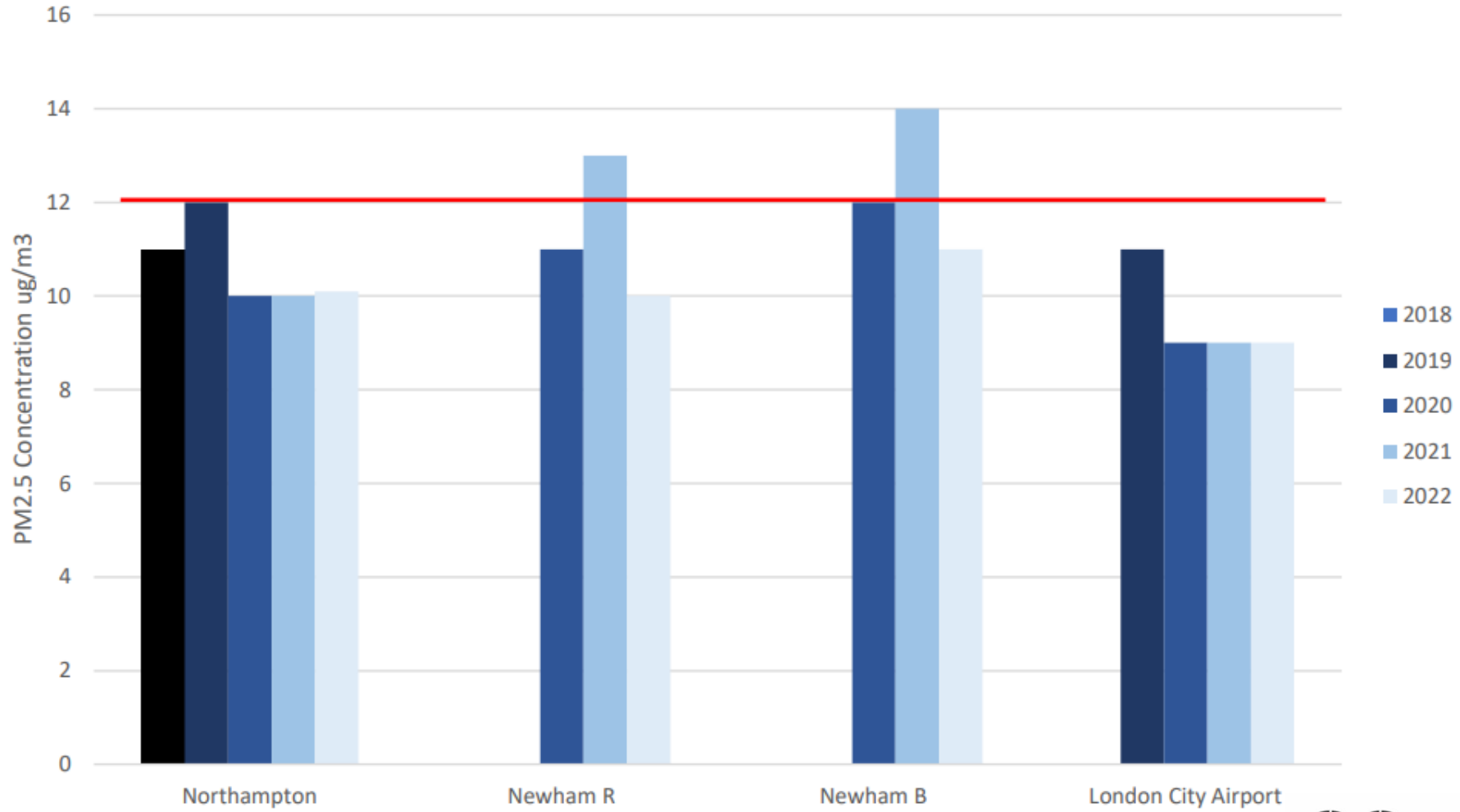
Particulate Pollution Measures

- Corby Smoke Control Area
 - Restrict sale of non-compliant fuels
 - Approved appliance or fuel only
- Construction
 - Any development which creates dust



PM2.5 Automatic Monitoring

AMS PM2.5 Monitoring Results 2018-2022



AQ Supplementary Planning Document



AIRQUALITY
& EMISSIONS
Technical Planning Guidance



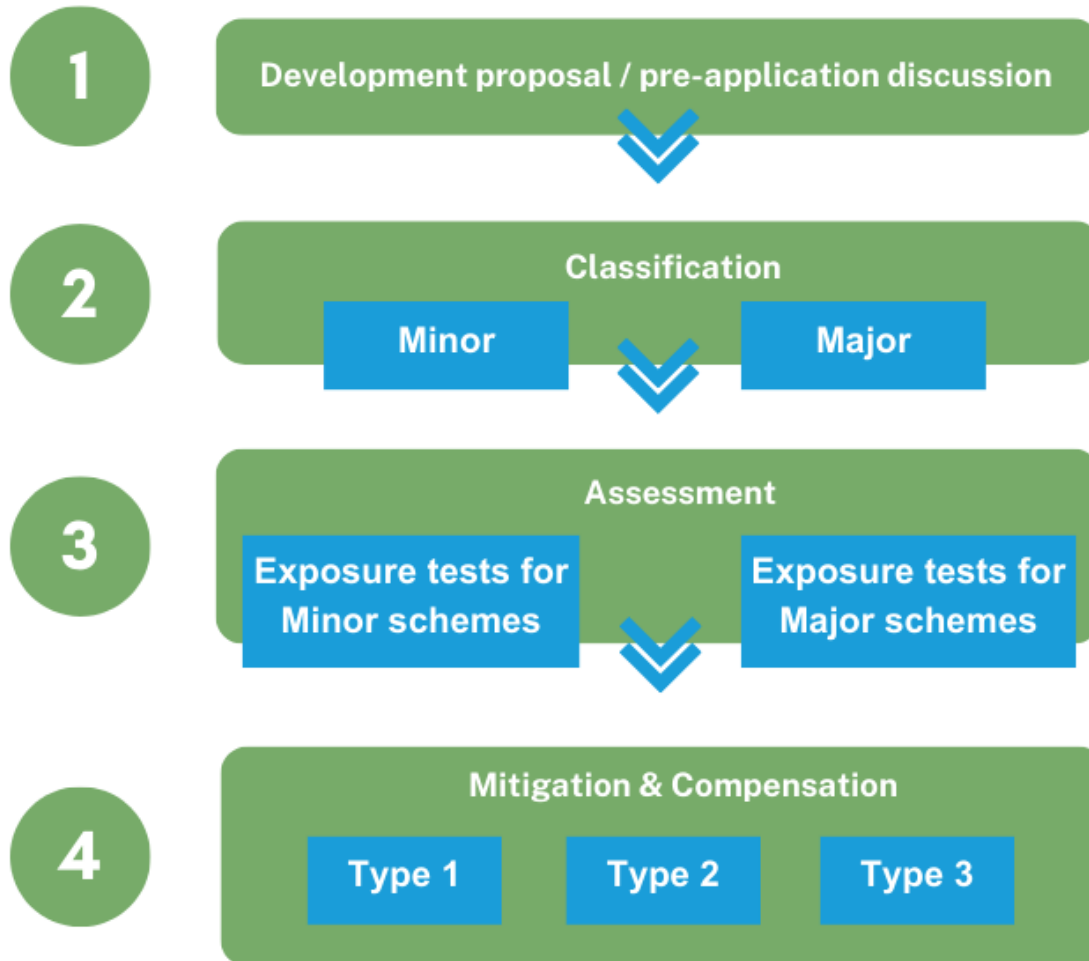
- Wellingborough adopted the East Midlands consortium of Local Authorities AQ SPD
- → AQ has moved forward so needed to be updated
- To include all of NNC area
- Going to consultation in early 2024
- 6 week consultation period

[LINK Draft Air Quality SPD](#)



AQ SPD

Air Quality Assessment Process



- Now aligns with Planning Scheme classification
 - Minor
 - Major
- AQ modelling **only** for Large Scale Major applications (EIAs)
- Minor/Major – Type 1 & 2
- Large Scale Major – Type 3

AQ SPD Mitigation

- Construction dust mitigation statement
- Zero emissions recharging infrastructure (building regs)
- Cycle parking facilities (transport policy)
- Low NOx gas boilers
- Outdoor space located away from busy roads
- Green infrastructure and planting
- Large Scale Major developments offset emissions through s106

Lot 2 DEFRA AQ Grant Scheme 2023-2024

- **DEFRA focus on PM2.5**
- Improve our understanding of PM2.5 concentrations in NNC
- Limit value reducing from 20 $\mu\text{g}/\text{m}^{-3}$ to 12 $\mu\text{g}/\text{m}^{-3}$ by 2028
- Application submitted in September 2023
- Successful LAs notified in early 2024
- Unsuccessful – we get useful feedback for a bid in 2024-2025

Lot 2 DEFRA AQ Grant Scheme

- NNC application to be managed by Ricardo
- 4 year project
- 10 air quality sensors monitoring PM2.5, PM10 and NO2 over a one year period
- 40 locations will be monitored
- In residential areas, schools, hospitals and care homes.

Lot 2 DEFRA AQ Grant Scheme

- A bespoke website will be created to raise public awareness about air pollution
 - Sensor data presented
 - Monthly information posts about reducing pollutants i.e. domestic burning
 - Monthly social media posts
- Sensor data accuracy $\pm 50\%$

Any questions?



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2023 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995
Local Air Quality Management, as amended by the
Environment Act 2021

Date: September, 2023

Information	North Northamptonshire Details
Local Authority Officer	Catherine Clooney
Department	Environmental Protection Manager
Address	North Northamptonshire Council Sheerness House 41 Meadow Road Kettering Northamptonshire NN16 8TL
Telephone	0300 126 3000
E-mail	Catherine.Clooney@northnorthants.gov.uk
Report Reference Number	2023 ASR
Date	20/09/2023

Executive Summary: Air Quality in Our Area

Air Quality in North Northamptonshire

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children, the elderly, and those with existing heart and lung conditions. There is also often a strong correlation with equalities issues because areas with poor air quality are also often less affluent areas^{1,2}.

The mortality burden of air pollution within the UK is equivalent to 29,000 to 43,000 deaths at typical ages³, with a total estimated healthcare cost to the NHS and social care of £157 million in 2017⁴.

In April 2021, Corby Borough Council, Kettering Borough Council, East Northamptonshire District Council and Borough Council of Wellingborough merged to become North Northamptonshire Council, a new unitary authority. This will bring new opportunities to how air quality is managed in the area with the intention of harmonising and uniting the diffusion tube network and ASR process.

In North Northamptonshire, sources of air pollution include recent developments, industry and transportation. There has been notable growth and regeneration in the Corby area in recent years, including the demolition of coal fire power station and former steelworks and the several residential developments. The area surrounding Wellingborough has also experienced high levels of residential development in recent years. The eastern part of the district is predominantly rural. In this area, as well as across the entire district, Nitrogen dioxide (NO₂) is the key pollutant of concern in the borough, which is primarily produced by road traffic. In 2022, pollutant concentrations were compliant in Kettering, Corby,

¹ Public Health England. Air Quality: A Briefing for Directors of Public Health, 2017

² Defra. Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

³ Defra. Air quality appraisal: damage cost guidance, March 2023

⁴ Public Health England. Estimation of costs to the NHS and social care due to the health impacts of air pollution: summary report, May 2018

Wellingborough and East Northamptonshire and as such there are no plans to introduce an AQMA in any of these areas.

In 2022, North Northamptonshire undertook monitoring at 107 non-automatic (diffusion tube) sites. This report includes the latest NO₂ results from diffusion tube monitoring carried out across the whole area and shows the trends over the last five years. The results of the monitoring highlight an overall decreasing trend in that time. However, the trend between 2020 and 2022 can often contradict this, with some increases in concentrations monitored in some locations. This is likely due to an increase in traffic in 2021 and 2022 compared to the restrictions on activity in 2020 due to the COVID-19 pandemic. 2022 concentrations are however below pre-pandemic levels. No concentrations exceeding the AQS objective value of 40 µg/m³ were recorded in North Northamptonshire in 2022.

Actions to Improve Air Quality

Whilst air quality has improved significantly in recent decades, there are some areas where local action is needed to protect people and the environment from the effects of air pollution.

The Environmental Improvement Plan⁵ sets out actions that will drive continued improvements to air quality and to meet the new national interim and long-term PM_{2.5} targets. The National Air Quality Strategy⁶ provides more information on local authorities' responsibilities to work towards these new targets and reduce PM_{2.5} in their areas. The Road to Zero⁷ details the approach to reduce exhaust emissions from road transport through a number of mechanisms; this is extremely important given that the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

As North Northamptonshire Council (NNC) does not have any AQMAs, there is no requirement for a formal AQAP. However, in line with policy guidance, the council are in the process of drafting a Local Air Quality Strategy and several actions have already been

⁵ Defra. Environmental Improvement Plan 2023, January 2023

⁶ Defra. Air quality strategy: framework for local authority delivery, April 2023

⁷ DfT. The Road to Zero: Next steps towards cleaner road transport and delivering our Industrial Strategy, July 2018

taken by the Council to improve air quality. Actions taken chiefly relate to decreasing traffic related NO₂ pollution through promoting alternative travel, and as a consequence of action on climate change.

The Voi Scooter project successfully replaced 201,812 car trips with trips using electric scooters in 2022, which resulted in a reduction in 87,200 Kg of carbon equivalent. Voi also supported Clean Air Day on 15th June by offering a free 30 minutes of free travel by e-scooters.

North Northamptonshire also continues to support projects which aim to reduce emissions and improve air quality, such as the East Northamptonshire Greenway Project. The East Midlands Air Quality Network (EMAQN) 'Air Quality and Emissions Mitigation - Guidance for Developers' also continues to be implemented. The EMAQN guidance is technical planning guidance which aims to improve air quality across the East Midlands, through preventing new emission sources and encouraging emissions reductions.

Conclusions and Priorities

The air quality in North Northamptonshire is generally good and concentrations remain below the AQS objectives. Although the five-year trend decreases overall, some increases in concentrations can be seen between 2020 and 2022. This is not unexpected, with the increases in traffic after the 2020 COVID-19 pandemic.

As there are no plans to introduce an AQMA in North Northamptonshire, there remains no requirement to publish an AQAP. That said, the Council are in the process of developing a Local Air Quality Strategy and measures to improve air quality continue to be implemented, with a focus on emission reduction through development control and working with partner authorities and agencies to encourage electric vehicle and electric bicycle usage. Moving forward, the priorities for North Northamptonshire are:

- To continue monitoring and the review of air quality in line with national air quality objectives;
- Develop and adopt a Local Air Quality Strategy;
- Continue the streamlining process commenced since the creation of the unitary authority to improve air quality reporting and actions;

- Work together with other departments of the Council i.e. planning and Highways, to manage local air quality and raise awareness on its role in achieving a sustainable environment;
- Work with other agencies and authorities to minimise the impact of developments on neighbouring authorities;
- Raise awareness and reduce the impacts of PM_{2.5} on air quality and health in cooperation with Defra;
- Continue to review all planning applications that are referred to the Environmental Protection team in terms of national and EMAQN guidance, ensuring any impacts upon local air quality are quantified;
- Ensure new developments encourage and facilitate low emission and alternative/active transport; and
- Promote initiatives to reduce emissions of air pollution across the district through partnerships with schools, businesses and communities.
- As several areas within North Northamptonshire are developing rapidly it will remain important to monitor air quality and any new sources of pollution.

Local Engagement and How to get Involved

Air quality continues to move up the political agenda as there is a greater understanding of the issues and complexities around the quality of the air we all breathe. Industry, agriculture, transport, planning and individuals are being encouraged to look at interventions, behavioural changes and practical actions to improve air quality.

The primary source of air pollution in the North Northamptonshire is NO₂ arising from transport sources. There are many transport alternatives the public can use to help improve air quality:

- **Walking, cycling or electric scooter** – these are the most environmentally friendly modes of transport as well as the added benefit of keeping fit and healthy;
- **Public transport** – the use of public transport reduces the number of private vehicles on the roads, easing congestion therefore reducing concentrations of roadside pollutants;
- **Car-sharing** – if a similar journey is shared with another individual car-sharing is a good way at reducing the number of private vehicles as well as reducing the cost of

commuting, if sharing fuel costs This can be promoted via travel plans through the workplace and within schools; and

- **Alternative fuel / more efficient vehicles** – Choosing a vehicle that meets the specific needs of the owner, fully electric, hybrid fuel and more fuel-efficient cars are available. If residents are considering swapping to an electric vehicle, the government offers up to 75% grant funding towards the cost of installing electric vehicle charge points at domestic properties through the Electric Vehicle Home charge Scheme (EVHS). For information on how to apply, please see the gov.uk website.

An additional way to improve air quality is by considering alternatives to garden waste disposal other than burning and burning smokeless fuels. The public can also assist by reporting pollution incidents within the North Northamptonshire area.

For more information on what the Council is doing to improve air quality in the North Northamptonshire, please get in contact with the local Environmental Health Officer, or go to <https://www.northnorthants.gov.uk/environment>

Local Responsibilities and Commitment

This ASR was prepared by the Environmental Health Department of North Northamptonshire Council with the support and agreement of the following officers and departments:

Catherine Clooney (Environmental Health)

This ASR has not yet been signed off by a Director of Public Health.

If you have any comments on this ASR please send them to Catherine Clooney at:

North Northamptonshire Council

Sheerness House

41 Meadow Road

Kettering

Northamptonshire

NN16 8TL

0300 126 3000

Catherine.Clooney@northnorthants.gov.uk

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1 Local Air Quality Management

This report provides an overview of air quality in North Northamptonshire during 2022. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995), as amended by the Environment Act (2021), and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in order to achieve and maintain the objectives and the dates by which each measure will be carried out. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by North Northamptonshire to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England are presented in Table E.1.

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority should prepare an Air Quality Action Plan (AQAP) within 18 months. The AQAP should specify how air quality targets will be achieved and maintained and provide dates by which measures will be carried out.

North Northamptonshire Council currently does not have any declared AQMAs. A local Air Quality Strategy is under development to prevent and reduce polluting activities.

Maps of North Northamptonshire Council's monitoring locations are available in Appendix D.

2.2 Progress and Impact of Measures to address Air Quality in North Northamptonshire

Defra's appraisal of last year's ASRs concluded that:

- Despite there being no AQMA in the North Northamptonshire, measures to improve air quality have still been implemented with a high level of detail. This has been through the Northamptonshire Transportation Plan and the Northamptonshire Climate Change Strategy. This is commended and measures to improve air quality should continue to be developed and reported.
- The additional report containing a review of LAQM within the former administrative areas of Corby, East Northamptonshire, Kettering and Wellingborough is provided. This report includes recommendations that the LA should extend their diffusion tube network and include particulate monitoring and continue to develop measures to improve air quality. Trends are clearly presented and discussed and a robust comparison with air quality objectives is provided.
- Minimal measures have been included within the ASR to improve PM2.5. Future ASR's should include additional measures and review the climate change strategy and transport plan to review measures that have the potential to improve PM2.5 emissions.
- When reviewing table B.1, it is noted that the monthly monitoring result in January for C11 is much higher than the remaining periods in the month. Data should be reviewed for anomalous data and commentary provided as to whether there was a reason concentration were higher.
- The ASR does not indicate if changes were made to the monitoring network in 2021. 2021 Appraisal indicated that additional monitoring sites should be deployed on silver street in Wellingborough, however there is no indication that this has been addressed in the 2022 ASR. Future ASR's should address all comments made during the appraisal.
- It is not clear if all monitoring has been undertaken in accordance with Defra calendar. One of the monitoring sites in Corby is stated to have been exposed longer than the calendar dates, but it is assumed the rest have been undertaken in accordance with the calendar. This should be made clear in future ASR's

North Northamptonshire has no active AQMAs and subsequently has produced no AQAPs to date. In line with policy guidance, NNC in the process of drafting a Local Air Quality

Strategy. Local authorities are encouraged to take early preventative action to improve local air quality, avoid exceedances and reduce the long-term health impacts associated with air pollution. Local authorities should consider prevention and reduction of polluting activities in preference to only taking steps to reduce air pollution once exceedances have been identified. This approach may also enable local authorities to adopt measures that reduce the need for costly interventions at a later date.

Despite not having a formal AQAP, North Northamptonshire has taken forward a number of direct measures during the current reporting year of 2022 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.1. 21 measures are included within Table 2.1, with the type of measure and the progress North Northamptonshire have made during the reporting year of 2022 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.1.

Although an AQAP does not exist, air quality in the district is addressed through the Northamptonshire Transportation Plan (2012) and the Northamptonshire Climate Change Strategy (2020-2023). Since forming in 2021 North Northamptonshire has committed to becoming carbon neutral by 2030.

The Council's Environmental Protection team has air pollution regulatory responsibilities which they will continue to enforce, including:

- Inspect all its permitted processes under the Environmental Permitting (England and Wales) Regulations 2016, (EPR) to ensure compliance, that these permits are updated as and when appropriate' and operation conditions are up-to-date with the latest guidance.
- Enforce the Clean Air Act 1993 and to encourage local businesses to dispose of waste in a responsible manner, in order to prevent or minimise the emissions of dark smoke. All complaints regarding smoke or associated odour are investigated, enforced and / or information is provided to the perpetrator.

As the primary source of pollution in North Northamptonshire Council is traffic related NO₂, a number of air quality measures relate to promoting transport alternatives.

Physical activity and healthy lifestyle choices are encouraged; and Development mitigation measures encourage active travel. Work has been undertaken on the East Northamptonshire Greenway, which makes for attractive and safer walking and cycling routes in the heart of the Nene Valley. The Kettering Local Cycling and Walking

Infrastructure Plan (LCWIP) provides a long-term, evidence-based approach to developing local cycling and walking networks over a 10-year period, and the report was completed in June 2022. Further LCWIPs covering Corby, Wellingborough and Higham Ferrers & Rushden LCWIP's are expected in 2023.

Electric Vehicle (EV) charging points continue to be installed throughout the council area. Many car parks already have EV charging points and in addition Liberty Charge, funded by Innovate UK has installed on-street charging sockets in towns across North Northamptonshire through the Virgin Media Park and Charge project. The Office for Low Emission Vehicles (OLEZ) project has also successfully installed electric vehicles charging points across the borough and additional funding has been secured in 2023 for more charging points.

The Council have also enabled the installation of on-street charging points at 12 locations across 6 towns as well as in some of its car parks. Further work is planned with an additional 18 locations scheduled to go ahead this year. Development of a strategy is underway which will set out plans for a step-change in charging infrastructure to keep pace with expected growth in EV ownership.

The Voi Scooter project aims to expanded electric scooter use in UK towns to encourage tan uptake in this mode of transport with a focus on replacing car journeys in North Northamptonshire. The Voi Scooter project successfully replaced 201,812 car trips with trips using electric scooters in 2022, which resulted in a reduction in 87,200 Kg of carbon equivalent. The areas where this project is ongoing is Corby, Kettering, Rushden and Higham Ferrers and Wellingborough. To coincide with Clean Air Day, Voi offered 30 minutes of free travel by e-scooters to users across the UK.

An additional project to reduce the need for road transport is the Starship Delivery Robots, that utilises fully electronic autonomous robotic technology for neighbourhood delivery services in parts of the Higham Ferrers, Rushden, and Wellingborough areas. The project started in July 2022 and as of May 2023 have saved 16,500 vehicle miles attributing to 6,700 Kg CO₂e.

All new planning applications continue to be directed to the requirements of the EMAQN 'Air Quality and Emissions Mitigation - Guidance for Developers'. The requirements of EMAQN ensure there is a consistent and thorough approach to the impact the proposed development may have on air quality and recommends mitigation measures to offset any development.

A Joint Strategic Needs Assessment (JSNA) was undertaken by the former Northamptonshire County Council, which concluded that air pollution is estimated to account for 3.9% of number of years lost due to ill-health, disability or early death (DALYs) in Northamptonshire. An estimated £2,569 per person per year is spent on dealing with NO₂ in the health and social care system. This rises to £7,569 per person per year for PM. A ‘plan on a page’ was produced.

A ‘plan on a page’ prioritises: securing clean growth and innovation that tackle emissions from industry, vehicles, products, combustion and agriculture and support both improvements in air quality and decarbonisation; protecting the environment by monitoring the impacts of air pollution on natural habitats; reduce nitrogen oxides emissions from transport; reduce PM_{2.5}, Sulphur dioxide and Non-methane volatile organic compounds emissions at home; reduce emissions of ammonia from farming; and reduce emissions from industry.

Figure 2.1 - County JSNA 'Plan on a Page'

Public Health Plan on a Page: Commissioning for Outcomes (Air Quality)			
Vision:			
<ul style="list-style-type: none"> Improving air quality to reduce hazardous health impacts that air pollution can have across a person’s lifetime, the associated health inequalities, and its burden on NHS social care costs To ensure that local air quality action plan to reduce air pollution remains robust and relevant to make Northamptonshire cleaner and healthier and attractive place to live, visit, work and play. 			
Priorities: Secure clean growth and innovation that tackle emissions from industry, vehicles, products, combustion and agriculture and support both improvements in air quality and decarbonisation; protecting the environment by monitoring the impacts of air quality on natural habitats; reduce nitrogen dioxide emissions from transport; reduce PM _{2.5} , Sulphur dioxide and non-methane volatile organic compounds emissions at home; reduce emissions of ammonia from farming; and reduce emissions from industry			
Our Approach			
Whole System Approach: Air quality is just one factor influencing the management of urban environments and travel patterns. Others include: economic development and retail, planning, tourism,/visitor strategies, access to services including healthcare and access to education.	Addressing existing problems and preventing new ones: A number of areas in the county have identified/designated Air Quality Management Areas, where air quality is worse than the recommended legal limits. Further such areas may be created due to future housing	Behavioural change: Assist relevant partners to address air quality and increase sustainable travel, including: environmental health teams, planning departments, transport and highways and major organisations/employers	Evidence based approach: There is increasing scientific evidence of the health impacts of air quality, particularly for vulnerable people such as the elderly, the very young and those with certain health conditions, even at pollution levels within legal limits. Explore new evidence of

	growth/development and the associated increase in travel		effective approaches to reduce and mitigate risks	
Achieved through: <ul style="list-style-type: none"> Partnership working (health, local government, roads, planning, workplaces, schools) across the system and for all ages. Clear leadership on air quality issues 	Achieved through: <ul style="list-style-type: none"> Targeted efforts in known problem areas. Preventative measures to avoid further Air Quality Management Areas being required 	Achieved through: <ul style="list-style-type: none"> Social marketing Influencing policy Partnership creation and advocacy Health Promotion Northamptonshire Health Protection Committee to monitor air quality issues 	Achieved through: <ul style="list-style-type: none"> Joint Strategic Needs Assessment (JSNA) Return on Investment (ROI) tools Evaluation 	
Our Commitment/Enablers				
Reducing inequalities: services which mitigate inequalities and work to overcome variation-by location, approach and policy	System partnerships: engage and co-produce with partners/stakeholders e.g. NHS, schools, prisons, workplaces and local government	Continued investment in advocacy and policy and programmes to increase active travel and use of green spaces	Engagement and co-production of research aligning with evidence, evaluation to monitor service delivery and quality	Embed Health in all Policies: a common way of influencing the wider determinants of health: transport policy, economic development policy, fuel and poverty management and town centre management
Measures of Success				
<ul style="list-style-type: none"> All areas meet legal air quality limit values Adoption of sustainability policies and actions among partners 	<ul style="list-style-type: none"> Improved infrastructure for cycling/ walking Increased rates of active/sustainable travel Reductions in traffic congestion 	<ul style="list-style-type: none"> Improved air quality measures at key sampling sites Increased awareness in organisations and the public Reduced respiratory disease in high traffic areas 		

With the merger of the four authorities in 2021, a review was conducted into the air quality reporting conducted within each area to ascertain the strengths and weakness of the respective authorities' LAQM work, so that best practices could be taken forward with North Northamptonshire. This review has resulted in the addition of new monitoring sites with the East Northamptonshire and Wellingborough areas.

Table 2.1 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	Transport plan to promote walking, cycling and public transport in order to support the modal shift away from the private car.	Policy Guidance and Development Control	Other Policy	2020	2025	NNC	-	-	-	-	Ongoing	-	Publish a cycle strategy, decrease transport CO ₂ emissions	Cycling Strategy has Local Government CO ₂ Emissions published on Gov.UK. Kettering Local Cycling and Walking Infrastructure Plan (LCWIPs)	Council's 'Action on Climate Change' 2020-2025; Kettering Local Cycling and Walking Infrastructure Plan (LCWIPs) Public Consultation
2	Encourage lower carbon transport alternatives and increase the proportion of low carbon fuelled vehicles.	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	2020	2025	NNC	-	-	-	-	Ongoing	-	Measure occurrences of charging	2020/21 charging episodes had decreased by 27.5% from 2019/20, which we believe is due to the restrictions imposed by the COVID-19 lockdowns. Starship Delivery Robots started in July 2022 and as of May 2023 have saved 16,500 vehicle miles attributing to 6,700 Kg CO ₂ e.	Council's 'Action on Climate Change' 2020-2025
3	Work with taxi companies and licence holders to consider low carbon vehicles	Promoting Low Emission Transport	Taxi emission incentives	2020	2025	NNC	-	-	-	-	Ongoing	CO ₂ /NO ₂	Number of Electric vehicles	There are now 6 LEVC Hackney Carriages licenced in Corby. There was previously 9 in 2019, we estimate this has been reduced due to lack of business through COVID-19.	Council's 'Action on Climate Change' 2020-2025
4	Promote low carbon fleet and staff vehicles schemes in the business sector	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	2020	2025	NNC	-	-	-	-	Ongoing	CO ₂ /NO ₂	Number of Electric/hybrid vehicles	Corby Borough Council had 1 Hybrid and 18 electric vehicles in their fleet at the end of 2020	Council's 'Action on Climate Change' 2020-2025
5	Measure home energy conservation act requirements as part of statutory Home Energy Conservation Act 1995	Policy Guidance and Development Control	Other Policy	2017	2023	NNC	-	-	-	-	Ongoing	-	Home energy conservation measures	Report published May 2021 – next report due 2023	Council's HECA Report
6	East Midlands Air Quality Network – Engaged	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality	2016	2016	Regional local authorities – environmental health, planning, public health and transport colleagues; Public Health England	-	NO	Funded	< £10k	Completed - Ongoing	Reduced emissions from transport; reduced exposure to air pollution	Attendance at regional meetings. Completion of Work Plan - health improvement, source reduction, exposure reduction	Ongoing – meet twice per year and share information in between meeting dates	-
7	Implement East Midlands Air Quality Planning Guidance; link to other local and regional policies	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2018	2018	Regional local authorities – environmental health, planning, public health and transport colleagues; Public Health England	-	NO	Funded	< £10k	Ongoing	Reduced emissions from transport; reduced exposure to air pollution	Guidance embedded in local and regional policy	Document has been approved and published by PHE. Local implementation now required. Ongoing discussions with	COVID-19 presented issues to implementation timeframes but now in development. NNC currently revising this supplementary

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
														Planners to see how this will be done	planning document to cover the whole area.
8	Installing Electric Vehicle Charging Points	Promoting Low Emission Transport	Other	2018	2023	Local Authority Environmental Health	OLEZ	NO	Funded	£10k - 50k	Ongoing	Reduced emissions from transport	Number of EV charging points	OLEV application has been approved Procurement completed and installation is underway	-
9	Environmental Permitting – Risk Rating Inspections	Environmental Permits	Introduction/increase of environment charges through permit systems and economic instruments	2016	2017	Local Authority Environmental Health	Permitting Annual Fees	NO	Funded	£10k - 50k	Ongoing	Reduced industrial emissions	Inspection frequency dependant on risk – higher risk premises are inspected more frequently. Penalty in risk rating for contributing to local air quality issues	Implementation ongoing	Staff numbers and competence/skills for higher risk installations
10	Enforcement of Environmental Permit Conditions	Environmental Permits	Other measure through permit systems and economic instruments	2016	2016	Local Authority Environmental Health	Permitting Annual Fees	NO	Funded	£10k - 50k	Ongoing	Reduced industrial emissions	Enforcement of conditions of permits as required	Implementation ongoing	Staff numbers and competence/skills for higher risk installations
11	Planning conditions requiring construction/demolition management plans to include dust suppression AND enforce dust/mud controls where no planning condition exists through legislation	Policy Guidance and Development Control	Other Policy	2016	2016	Local Authority Environmental Health and Planning	-	NO	Funded	< £10k	Ongoing	Improved dust mitigation reducing PM ₁₀ , PM _{2.5} locally and reducing nuisance complaints	Planning conditions/Interaction with developers in response to complaints or proactive visits	Implementation on-going	
12	Age policy for Taxis	Promoting Low Emission Transport	Taxi licensing conditions	2016	2016	Local Authority Environmental Health	-	NO	Not Funded	< £10k	Completed - Ongoing	Reduced traffic emissions including PM ₁₀ and PM _{2.5}	Number of taxis licensed	Ongoing. Hackney cabs and private hire vehicles are restricted by an age policy that requires vehicles to be less than four years old	Waiting for Government Guidance to be issued that will require more stringent emission controls - EURO 6
13	Health and Wellbeing Officer/Sports Development Officer in Post	Alternatives	Promotion of cycling and walking	2016	2016	NNC	-	NO	Funded	£10k - 50k	Ongoing	Reduced emissions from transport; reduced exposure to air pollution	Increased physical activity	Healthy Walks Programme - volunteer lead monthly walk. Promotion of physical activity on website. Supporting One-You PHE Campaign	-
14	VOI Scooter Project	Promoting Low Emission Transport	Public Vehicle Procurement Prioritising uptake of low emission vehicles	-	-	VOI technology	VOI technology	No	Funded	-	Implemented	1.84kg PM _{2.5}	-	Total number of rides since launch is approximately 70k.	-
15	East Northamptonshire Greenway Project	Promoting Travel Alternatives	Promotion of cycling	-	-	NNC	-	No	-	-	Implemented	-	-	Begun to develop walking and cycling routes in the Nene Valley	-
16	Northamptonshire Climate Change Strategy	Policy Guidance and Development Control	Low Emissions Strategy	-	-	NNC	-	No	-	-	Implemented	-	-	Completed	-
17	Climate Task and Finish Group	Policy Guidance and Development Control	Other policy	-	-	NNC	-	-	-	-	-	-	-	Group set up by NNC to facilitate actions to improve climate change.	-
18	Joint Strategic Needs Assessment (JSNA)	Policy Guidance and Development Control	Other policy	2020	2021	NNC	County	No	Funded	Unknown	Ongoing	Exposure to pollutants	'Plan on a Page' outcomes	Completed, recommendations to be followed up	Brings together information from many different sources and partners relating to

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
															the population of Northamptonshire
19	LAQM Audit & Streamlining Air Quality Processes & AQ Strategy	Policy Guidance and Development Control	Other policy	2021	2022	NNC	Internal	No	Funded	<£10k	Implemented	N/a	Implementing audit recommendations	Completed audit. Now producing AQ Strategy.	Facilitating merger of processes
20	Air Quality Officer post	Policy Guidance and Development Control	Other policy	2020	2023	NNC	AQ Grant	Yes	Funded	£20-40k	Ongoing	N/a	Officers in post	Still recruiting	Availability of staff
21	SAMHE: Schools' air quality monitoring for health and education	Public Information	Via other mechanisms	2022	Ongoing	NNC	Internal	No	Funded	Unknown	Ongoing	NO ₂	Monitors indoor schools, Idling Vehicles outside Schools / enforcement notices	The project wants to establish a network of air quality monitors in schools across the UK to help us better understand schools' indoor air quality. Includes anti-idling campaign too.	Parent buy-in

2.3 PM_{2.5} – Local Authority Approach to Reducing Emissions and/or Concentrations

As detailed in Policy Guidance LAQM.PG22 (Chapter 8), local authorities are expected to work towards reducing emissions and/or concentrations of PM_{2.5} (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that PM_{2.5} has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

North Northamptonshire does not currently monitor for concentrations of PM_{2.5} or PM₁₀. However, the following measures address PM_{2.5}:

- Environmental Protection team are consulted and comment on planning applications in respect to potential air quality issues generated by traffic, dust and construction.
- Investigation of nuisance complaints for dust and smoke and encouragement of smokeless fuels.
- Encouragement of the planting of trees for new transport developments to reduce concentrations of PM_{2.5} in certain areas.
- Good practice advice is provided on how to operate open house fire or log-burners, promoting the Woodsure Ready to Burn Scheme.
- Local highways and roads are wet swept as part of a proactive maintenance scheme to reduce the amount of dust build up that could become mobile in warmer weather;
- There are smoke control areas (SCA) in Corby. Environmental Health enforce reduction in PM_{2.5} concentrations from chimney smoke. Trading standards regulate non-compliance for these declared smoke control areas. Should smoke be emitted from a residential chimney within an SCA, nuisance procedures continue to operate under Part 3 of the Environmental Protection Act 1990.

NNC has a webpage dedicated to smoke control covering both domestic and industrial burning: <https://www.northnorthants.gov.uk/environment/smoke-and-bonfires>.

The Public Health Outcomes Framework (PHOF) indicator DO1 – Fraction of mortality attributable to particulate (PM_{2.5}) is a useful indicator to determine the impact of PM_{2.5} in a region. The DO1 value for 2021 was 5.95% for North Northamptonshire, slightly higher than

the average D01 value for England at 5.50%, indicating the fraction of mortality caused by particulate air pollution in North Northamptonshire is slightly above average.

3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance

This section sets out the monitoring undertaken within 2022 by North Northamptonshire and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2018 and 2022 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

North Northamptonshire Council did not undertake any automatic (continuous) monitoring in 2022.

3.1.2 Non-Automatic Monitoring Sites

North Northamptonshire Council undertook non-automatic (i.e. passive) monitoring of NO₂ at 107 sites during 2022. Table A. 1 in Appendix A presents the details of the non-automatic sites.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g. annualisation and/or distance correction), are included in Appendix C.

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for bias, annualisation (where the annual mean data capture is below 75% and greater than 25%), and distance correction. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO₂)

Table A. 2 in Appendix A compares the ratified and adjusted monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40µg/m³. Note that the

concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment). The Data trends are shown for each diffusion tube in Figures A. 1 – A. 12., ENC 34-40 have been excluded from these figures due to the lack of historical data meaning there is as yet no trend.

For diffusion tubes, the full 2022 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 does not include any distance corrected values, which were not required.

During the monitoring period of 2022, no sites recorded annual concentrations above the objective value of 40 $\mu\text{g}/\text{m}^3$. As no sites have monitored concentrations greater than 60 $\mu\text{g}/\text{m}^3$, it is considered unlikely that the 1-hour mean objective was exceeded at any sites within North Northamptonshire.

The highest recorded raw monthly mean NO_2 concentration, prior to bias adjustment, in 2022 was 51.5 $\mu\text{g}/\text{m}^3$, which occurred at Site RW4 in Kettering. The highest bias annual mean concentration occurred at the same site, at 32.1 $\mu\text{g}/\text{m}^3$. The overall trend between 2018 and 2022 is a decreasing one. However, there is an overall increase in NO_2 concentrations between 2020 and 2021 with an average increase of 1.4 $\mu\text{g}/\text{m}^3$. As previously mentioned, this is likely due to the recovery of vehicular traffic numbers post COVID-19 lockdowns. After 2021, the decreasing trend continues into 2022, though some sites experienced an increase in NO_2 of up to 10.4 $\mu\text{g}/\text{m}^3$, the average change in concentration was a decrease of 0.5 $\mu\text{g}/\text{m}^3$. Versus 2020, 2022 concentrations have increased on average by 0.9 $\mu\text{g}/\text{m}^3$, which is by no means a return to pre-pandemic concentrations.

3.2.2 Particulate Matter (PM_{10})

No PM_{10} monitoring was carried out in North Northamptonshire during 2022.

3.2.3 Particulate Matter ($\text{PM}_{2.5}$)

No $\text{PM}_{2.5}$ monitoring was carried out in North Northamptonshire during 2022.

Appendix A: Monitoring Results

Table A. 1 - Details of Non-Automatic Monitoring Sites

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
1N	Elizabeth Street	Roadside	488424	288706	NO ₂	No	22.0	1.0	No	3.4
2N	Occupation Road	Roadside	488354	289329	NO ₂	No	0.0	11.0	No	3.1
3N	High Street, Old Village	Roadside	489380	288833	NO ₂	No	0.0	6.0	No	3.6
4N	Scott Road	Roadside	489399	288605	NO ₂	No	7.0	1.0	No	2.0
5N	Weldon Road	Roadside	489997	288821	NO ₂	No	0.0	15.0	No	3.1
6N	Little Stanion/A43/A6116 Roundabout	Roadside	490981	287322	NO ₂	No	180.0	3.0	No	3.3
7N	Priots Hall/A43 Roundabout	Roadside	492992	289919	NO ₂	No	168.0	1.0	No	3.3
8N	Kirby Road, Gretton	Urban Background	490063	294032	NO ₂	No	0.0	15.0	No	3.5
9N	Berryfield Road, Cottingham	Urban Background	484133	290194	NO ₂	No	0.0	13.0	No	3.4
10N	Danesholm Road/A6003	Urban Background	485788	287272	NO ₂	No	89.0	5.6	No	3.3
11N	Oldland Road	Roadside	487675	287373	NO ₂	No	68.0	2.3	No	3.4
12N	Beanfield Avenue	Roadside	487039	288292	NO ₂	No	5.0	2.0	No	3.4
13N	Lakeside Health Centre	Roadside	487546	288816	NO ₂	No	317.0	1.5	No	3.4
14N	George Street	Roadside	488135	288494	NO ₂	No	84.0	1.0	No	3.2
15N	Westcott Way	Roadside	488180	288325	NO ₂	No	9.0	7.0	No	-
16N	Shannon Court	Roadside	488122	287817	NO ₂	No	0.0	10.0	No	3.4
17N	Gainsborough Rd	Roadside	488387	288122	NO ₂	No	12.0	1.0	No	3.2
ENC 1	Oakleas Rise (no.37) Thrapston	Urban Background	499867	278066	NO ₂	No	1.0	1.5	No	3.0

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
ENC 2	Traffic light on bridge, Bridge St (no.34)	Roadside	499161	278629	NO ₂	No	3.0	1.7	No	2.5
ENC 3	Huntingdon Rd	Roadside	500208	278510	NO ₂	No	18.0	3.0	No	2.8
ENC 4	Market Rd, corner of Grove Road (no.32)	Roadside	499573	278515	NO ₂	No	1.0	1.5	No	2.7
ENC 5	Junction Way (no.36)	Urban Background	499792	277873	NO ₂	No	N/A	1.6	No	2.5
ENC 6	Brick Kiln Road	Roadside	499119	273561	NO ₂	No	14.0	2.0	No	2.3
ENC 7	Wheelwright Close (no. 8)	Urban Background	500193	273219	NO ₂	No	5.0	1.0	No	2.9
ENC 8	London Road adj to 60 Titty Ho	Roadside	499103	272329	NO ₂	No	2.0	2.4	No	2.5
ENC 9	High Street	Roadside	494525	270591	NO ₂	No	5.0	1.6	No	2.5
ENC 10	Kestrel Close (opp no.23)	Urban Background	496068	269885	NO ₂	No	5.0	37.0	No	2.6
ENC 11	Elizabeth Way (no.34)	Roadside	496320	269420	NO ₂	No	8.0	1.6	No	3.0
ENC 12	High St	Roadside	495920	268317	NO ₂	No	6.0	1.3	No	2.9
ENC 13	High St outside 18/20	Kerbside	495962	268388	NO ₂	No	6.0	0.9	No	2.7
ENC 14	Higham Rd (no.16)/Washbrook Rd junction	Roadside	495587	267402	NO ₂	No	7.0	1.9	No	2.5
ENC 15	Beaconsfield Terrace	Roadside	495711	267120	NO ₂	No	3.0	1.6	No	2.6
ENC 16	Newton Road (no.42)	Roadside	496039	266643	NO ₂	No	7.0	1.8	No	2.4
ENC 17	Newton Road (no.18)	Roadside	495924	266621	NO ₂	No	1.0	1.5	No	2.7
ENC 18	Park Place (nr entrance)	Roadside	495883	266560	NO ₂	No	3.0	1.5	No	2.9
ENC 19	Newton Rd	Roadside	495849	266613	NO ₂	No	2.0	1.3	No	2.9
ENC 20	Newton Road Country	Roadside	497127	266143	NO ₂	No	13.0	2.3	No	2.4

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
ENC 21	A6/Spire Way Roundabout	Roadside	496682	267872	NO ₂	No	N/A	3.3	No	2.2
ENC 22	Hayden Road	Urban Background	496772	266967	NO ₂	No	10.0	1.6	No	2.6
ENC 23	Farnham Drive (no.64)	Roadside	494895	265669	NO ₂	No	12.0	2.1	No	2.8
ENC 24	Washbrook Road crossroads (217 Wellingborough Road)	Roadside	494963	266988	NO ₂	No	3.0	1.7	No	2.5
ENC 25	Washbrook Road crossroads (218 Wellingbrough Rd)	Roadside	494936	267014	NO ₂	No	5.0	1.6	No	2.6
ENC 26	Ditchford Road	Roadside	493108	267347	NO ₂	No	N/A	1.5	No	2.2
ENC 27	Wentworth Drive (opp no.19)	Roadside	503209	289307	NO ₂	No	10.0	1.5	No	2.6
ENC 28	North St (no.58)	Roadside	504272	288433	NO ₂	No	3.0	1.8	No	2.8
ENC 29	St Osyths Lane	Roadside	504222	288110	NO ₂	No	1.3	1.1	No	2.8
ENC 30	5 Laamas Cottages	Roadside	497862	289284	NO ₂	No	7.0	1.3	No	2.8
ENC 31	Top Road Glaphorn	Roadside	501961	290525	NO ₂	No	15.0	1.5	No	2.1
ENC 32	Woodfield, Collyweston	Urban Background	499960	302429	NO ₂	No	6.0	1.9	No	2.4
ENC 33	123 Northampton Road	Roadside	494761	267915	NO ₂	No	3.0	1.5	No	2.5
ENC 34	23 Woodpecker Way Thrapston	Kerbside	500479	278305	NO ₂	No	1.0	1.8	No	2.6
ENC 35	179 Finedon Road	Roadside	493887	271326	NO ₂	No	2.0	1.4	No	2.6
ENC 36	Opp 194a Bedford Road	Roadside	496732	264589	NO ₂	No	8.0	1.2	No	2.5
ENC 37	Fox Pub entrance lamppost	Roadside	502420	281455	NO ₂	No	17.0	2.7	No	2.6
ENC 38	Clopton Roundabout	Roadside	503390	282825	NO ₂	No	21.0	1.2	No	2.6
ENC 39	A605, 1 Elmington Cottages	Roadside	505177	289583	NO ₂	No	6.0	1.6	No	2.6

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
ENC 40	Slate Drift Collyweston	Urban Background	500094	303197	NO ₂	No	7.0	7.5	No	2.5
KT1	Newlands Street O/S Wilko's	Façade	486783	278948	NO ₂	No	2.7	2.7	No	2.4
KT2	London Road juncBowling Green Road	Roadside	486887	278246	NO ₂	No	2.3	2.6	No	2.4
KT3	Victoria Street	Roadside	486974	278895	NO ₂	No	1.7	1.5	No	2.7
KT4	London Road cemetery	Urban background	486956	278338	NO ₂	No	69.9	2.0	No	2.5
KT5	Eden Street/Eskdail St	Roadside	486925	279028	NO ₂	No	1.9	1.6	No	2.4
KT6	Montagu St o/s Pauls	Roadside	486951	278904	NO ₂	No	3.1	0.5	No	2.3
KT7	Montagu Street o/sBostons Diner	Roadside	486869	278877	NO ₂	No	1.3	0.4	No	2.3
KT8	Stamford Road o/s J. Witness	Roadside	487049	278942	NO ₂	No	3.2	2.6	No	2.4
KT9	Bowling Green Road o/s no 9	Roadside	486793	278254	NO ₂	No	10.7	1.3	No	2.4
KT10	London Road/Southlands	Roadside	486954	278099	NO ₂	No	3.9	0.5	No	2.4
KT11	Woodcroft Way by flats	Roadside	487406	277653	NO ₂	No	5.7	2.0	No	2.1
KT12	Bowling Green Road o/s Council offices	Roadside	486787	278276	NO ₂	No	7.3	0.6	No	2.4
KT13	Sheep Street O/S Westfield Kitchens	Roadside	486648	278233	NO ₂	No	6.4	3.4	No	2.4
KT14	o/s 47 Bowling Green Road	Roadside	486718	278236	NO ₂	No	3.7	1.7	No	2.4
KT15	O/S Simpson & Partners	Roadside	486799	278850	NO ₂	No	5.6	2.0	No	2.4
KT16	St Mary's Road Junc Bowling Green Road	Roadside	486929	278204	NO ₂	No	18.4	1.4	No	2.4

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
KT17	opp 1 St Mary's Road	Roadside	486972	278223	NO ₂	No	5.9	1.0	No	2.3
KT18	London Rd o/s pocket park	Roadside	486910	278240	NO ₂	No	42.3	2.9	No	2.4
KT19	London Rd o/s cemetery	Roadside	486890	278322	NO ₂	No	14.1	2.0	No	2.4
KT20	o/s 15 London Road	Roadside	486846	278497	NO ₂	No	6.1	0.4	No	2.4
KT21	Horsemarket Bus Stop	Roadside	486786	278599	NO ₂	No	19.5	0.8	No	2.3
KT22	Silver Street opp Café Culture	Roadside	486778	278779	NO ₂	No	4.0	0.8	No	2.3
KT23	112 London Road	Roadside	487146	277860	NO ₂	No	4.1	2.8	No	2.4
KT24	O/S 157 St Marys Rd	Roadside	487718	278679	NO ₂	No	6.2	1.5	No	2.2
KT25	O/S 144 Windmill Ave	Roadside	487751	278505	NO ₂	No	19.5	2.3	No	2.3
KT26	O/S 141 Windmill Ave	Roadside	487725	278388	NO ₂	No	11.3	0.8	No	2.2
KT27	Windmill Ave Junc Barton Rd	Roadside	487893	277471	NO ₂	No	18.4	1.7	No	2.1
KT28	Lower St O/S flats junc Northfield Ave	Roadside	486153	278930	NO ₂	No	8.0	3.2	No	2.4
KT29	O/S St Edwards Church London Rd	Roadside	486894	278216	NO ₂	No	5.0	2.3	No	2.5
KT30	Pytchley Road o/s No 6	Roadside	487563	277433	NO ₂	No	24.0	3.0	No	2.5
KT31	Northfield Av opp Carpet Right	Roadside	486161	279067	NO ₂	No	7.1	1.2	No	2.6
KT32	Northampton Road/Drill Hall Court flats	Roadside	486398	278274	NO ₂	No	1.3	4.0	No	2.5
KT33	Hawthorn Road o/s School	Roadside	486871	277840	NO ₂	No	3.0	2.4	No	2.3
BL1	Higham Rd junc Finedon Rd	Roadside	490048	274399	NO ₂	No	2.0	5.4	No	2.4

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
RW1	Opposite Old Bank	Roadside	481465	281208	NO ₂	No	2.1	1.6	No	2.3
RW2	Post Office High St	Façade	481550	281233	NO ₂	No	1.8	1.8	No	2.4
RW3	O/S Wheelwright House Squires Hill	Roadside	481498	281096	NO ₂	No	1.5	2.8	No	2.3
RW4	O/S ST Flooring	Façade	481481	281149	NO ₂	No	0.3	2.1	No	2.4
RW5	O/S Something Special Bridge St	Roadside	481515	281217	NO ₂	No	2.5	0.5	No	2.3
W1	Silver Street	Urban Centre	489131	267820	NO ₂	No	0.0	2.9	No	2.9
W2	Alma Street	Kerbside	489382	266144	NO ₂	No	0.3	1.7	No	2.5
W3	Northampton Road	Roadside	487831	267169	NO ₂	No	2.4	3.8	No	2.6
W4	Finedon Road	Kerbside	489868	268204	NO ₂	No	2.3	1.5	No	2.4
W5	Butlin Court	Roadside	490336	266433	NO ₂	No	0.5	1.5	No	2.6
W6	Mill Road	Urban Background	490002	268946	NO ₂	No	0.0	3.1	No	2.6
W7	Ultra Close	Roadside	490351	267400	NO ₂	No	4.5	2.8	No	2.9
W8	Kettering Road	Roadside	488431	274049	NO ₂	No	0.0	3.4	No	2.5
W9	Market Street	Urban Background	489226	267829	NO ₂	No	N/A	3.4	No	2.9
W10	Irthlingborough Road	Roadside	492372	271928	NO ₂	No	2.3	1.5	No	2.4
W11	Broad Green	Roadside	488788	268215	NO ₂	No	-	2.3	No	2.7

Notes:

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

(2) N/A if not applicable.

Table A. 2 - Annual Mean NO₂ Monitoring Results: Non-Automatic Monitoring (µg/m³)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
1N	488424	288706	Roadside	100.0	100.0	33.8	21.6	17.6	16.8	17.6
2N	488354	289329	Roadside	100.0	100.0	18.3	15.5	13.1	12.3	12.9
3N	489380	288833	Roadside	100.0	100.0	20.6	20.2	16.4	16.9	17.1
4N	489399	288605	Roadside	100.0	100.0	25.9	24.6	24.3	15.1	15.1
5N	489997	288821	Roadside	100.0	100.0	26.2	24.3	20.3	19.8	20.2
6N	490981	287322	Roadside	100.0	100.0	-	20.9	17.6	17.8	16.4
7N	492992	289919	Roadside	100.0	100.0	-	17.9	16.1	16.7	16.7
8N	490063	294032	Urban Background	92.3	92.3	12.6	14.5	9.8	9.4	8.0
9N	484133	290194	Urban Background	100.0	100.0	9.6	9.3	6.7	6.6	6.9
10N	485788	287272	Urban Background	100.0	100.0	-	18.4	19.2	15.8	18.5
11N	487675	287373	Roadside	100.0	100.0	-	25.5	21.9	26.9	22.6
12N	487039	288292	Roadside	100.0	100.0	-	17.2	14.3	14.7	15.9
13N	487546	288816	Roadside	100.0	100.0	-	18.6	16.7	16.4	17.5
14N	488135	288494	Roadside	100.0	100.0	31.9	28.7	22.0	24.4	24.0
15N	488180	288325	Roadside	82.7	82.7	17.8	15.3	22.1	23.9	25.4
16N	488122	287817	Roadside	100.0	100.0	20.0	17.5	14.1	14.2	14.2
17N	488387	288122	Roadside	100.0	100.0	22.6	20.9	16.0	16.4	16.5
ENC 1	499867	278066	Urban Background	100.0	100.0	17.5	16.3	12.3	12.9	12.5
ENC 2	499161	278629	Roadside	100.0	100.0	22.2	20.8	14.5	14.9	15.5
ENC 3	500208	278510	Roadside	100.0	100.0	20.8	21.8	16.0	18.4	18.0
ENC 4	499573	278515	Roadside	92.3	92.3	17.1	16.9	11.4	12.0	12.0
ENC 5	499792	277873	Urban Background	100.0	100.0	19.7	20.2	14.0	15.0	14.2
ENC 6	499119	273561	Roadside	100.0	100.0	29.8	29.8	19.2	23.7	20.5
ENC 7	500193	273219	Urban Background	100.0	100.0	13.5	13.2	12.1	9.8	10.6
ENC 8	499103	272329	Roadside	100.0	100.0	16.8	16.0	12.1	13.5	12.7
ENC 9	494525	270591	Roadside	100.0	100.0	20.3	20.1	14.9	15.8	14.7
ENC 10	496068	269885	Urban Background	100.0	100.0	21.4	19.9	14.3	15.6	15.1
ENC 11	496320	269420	Roadside	100.0	100.0	18.3	18.1	13.0	13.6	13.5
ENC 12	495920	268317	Roadside	100.0	100.0	32.8	32.1	24.4	25.3	24.9
ENC 13	495962	268388	Kerbside	100.0	100.0	36.4	36.3	26.4	26.6	26.2
ENC 14	495587	267402	Roadside	100.0	100.0	33.3	32.3	23.7	25.6	25.4
ENC 15	495711	267120	Roadside	100.0	100.0	28.0	26.1	20.9	23.6	23.6
ENC 16	496039	266643	Roadside	100.0	100.0	22.1	20.6	15.1	16.1	15.6
ENC 17	495924	266621	Roadside	100.0	100.0	33.4	32.6	26.0	28.0	27.0

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
ENC 18	495883	266560	Roadside	100.0	100.0	16.6	17.9	11.9	12.9	20.1
ENC 19	495849	266613	Roadside	100.0	100.0	33.2	29.9	24.1	25.7	16.0
ENC 20	497127	266143	Roadside	92.3	92.3	15.7	16.1	11.5	11.0	14.8
ENC 21	496682	267872	Roadside	90.4	90.4	23.2	21.4	16.3	18.0	19.2
ENC 22	496772	266967	Urban Background	100.0	100.0	16.6	16.6	12.0	12.4	12.2
ENC 23	494895	265669	Roadside	92.3	92.3	15.5	14.8	9.8	11.0	10.0
ENC 24	494963	266988	Roadside	90.4	90.4	36.8	36.8	26.9	29.7	26.6
ENC 25	494936	267014	Roadside	92.3	92.3	34.6	32.3	24.4	27.1	26.9
ENC 26	493108	267347	Roadside	100.0	100.0	24.0	21.0	15.6	17.3	16.9
ENC 27	503209	289307	Roadside	100.0	100.0	11.2	10.9	7.6	7.7	8.0
ENC 28	504272	288433	Roadside	100.0	100.0	21.4	19.5	13.5	15.0	14.7
ENC 29	504222	288110	Roadside	100.0	100.0	21.2	17.3	12.2	12.6	13.1
ENC 30	497862	289284	Roadside	90.4	90.4	13.3	11.8	9.1	9.5	9.8
ENC 31	501961	290525	Roadside	100.0	100.0	9.9	10.0	6.9	7.1	6.9
ENC 32	499960	302429	Urban Background	100.0	100.0	11.5	10.7	8.2	8.2	8.4
ENC 33	494761	267915	Roadside	100.0	100.0	-	20.1	15.9	19.0	15.8
ENC 34	500479	278305	Kerbside	92.3	92.3	-	-	-	-	13.8
ENC 35	493887	271326	Roadside	84.6	84.6	-	-	-	-	14.1
ENC 36	496732	264589	Roadside	84.6	84.6	-	-	-	-	15.8
ENC 37	502420	281455	Roadside	92.3	92.3	-	-	-	-	16.3
ENC 38	503390	282825	Roadside	92.3	92.3	-	-	-	-	15.9
ENC 39	505177	289583	Roadside	92.3	92.3	-	-	-	-	17.9
ENC 40	500094	303197	Urban Background	92.3	92.3	-	-	-	-	11.0
KT1	486783	278948	Façade	100.0	100.0	28.1	24.4	18.0	20.4	18.3
KT2	486887	278246	Roadside	92.3	92.3	38.3	37.3	26.9	30.9	28.2
KT3	486974	278895	Roadside	100.0	100.0	26.6	27.3	19.9	23.3	22.4
KT4	486956	278338	Urban background	100.0	100.0	15.6	15.2	11.4	13.2	12.3
KT5	486925	279028	Roadside	100.0	100.0	21.8	26.1	20.7	22.8	23.4
KT6	486951	278904	Roadside	100.0	100.0	28.0	30.0	22.1	24.8	25.0
KT7	486869	278877	Roadside	90.4	90.4	29.4	30.0	23.4	26.6	24.9
KT8	487049	278942	Roadside	92.3	92.3	27.3	29.6	22.0	25.3	24.9
KT9	486793	278254	Roadside	100.0	100.0	38.0	35.0	26.4	29.8	27.5
KT10	486954	278099	Roadside	100.0	100.0	35.8	32.9	23.9	28.6	27.3
KT11	487406	277653	Roadside	100.0	100.0	22.7	22.0	15.3	17.9	17.8
KT12	486787	278276	Roadside	100.0	100.0	-	34.1	23.9	30.1	28.5
KT13	486648	278233	Roadside	100.0	100.0	-	25.3	18.8	22.2	20.9

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
KT14	486718	278236	Roadside	100.0	100.0	-	29.9	21.9	25.6	23.9
KT15	486799	278850	Roadside	100.0	100.0	-	26.3	20.0	22.9	24.1
KT16	486929	278204	Roadside	100.0	100.0	-	30.4	20.7	24.6	22.6
KT17	486972	278223	Roadside	100.0	100.0	-	25.7	18.6	22.9	21.7
KT18	486910	278240	Roadside	100.0	100.0	-	28.3	22.5	24.6	24.1
KT19	486890	278322	Roadside	100.0	100.0	-	29.1	22.6	25.9	24.1
KT20	486846	278497	Roadside	90.4	90.4	-	25.1	18.9	22.3	21.4
KT21	486786	278599	Roadside	76.9	76.9	-	28.8	18.9	22.7	22.1
KT22	486778	278779	Roadside	100.0	100.0	-	30.2	22.2	25.0	24.6
KT23	487146	277860	Roadside	100.0	100.0	-	28.6	21.3	23.4	22.1
KT24	487718	278679	Roadside	100.0	100.0	-	28.5	18.9	22.6	20.6
KT25	487751	278505	Roadside	90.4	90.4	-	24.6	17.9	19.3	19.3
KT26	487725	278388	Roadside	100.0	100.0	-	25.8	17.7	21.7	19.7
KT27	487893	277471	Roadside	50.0	50.0	-	39.5	25.4	20.5	30.9
KT28	486153	278930	Roadside	100.0	100.0	-	-	23.3	23.9	23.3
KT29	486894	278216	Roadside	90.4	90.4	-	-	24.3	23.6	23.4
KT30	487563	277433	Roadside	100.0	100.0	-	-	22.9	21.1	20.2
KT31	486161	279067	Roadside	100.0	100.0	-	-	24.7	23.2	22.5
KT32	486398	278274	Roadside	84.6	84.6	-	-	26.5	26.8	23.9
KT33	486871	277840	Roadside	82.7	82.7	-	-	16.5	14.6	15.2
BL1	490048	274399	Roadside	92.3	92.3	-	-	16.3	15.4	14.8
RW1	481465	281208	Roadside	100.0	100.0	34.8	32.6	21.7	26.1	26.1
RW2	481550	281233	Façade	100.0	100.0	29.9	28.5	21.3	25.8	23.9
RW3	481498	281096	Roadside	100.0	100.0	-	28.2	18.4	21.5	21.1
RW4	481481	281149	Façade	100.0	100.0	-	42.0	28.8	33.4	32.1
RW5	481515	281217	Roadside	100.0	100.0	-	29.9	19.8	22.3	21.9
W1	489131	267820	Urban Centre	100.0	99.2	35.8	42.3	30.2	32.2	30.2
W2	489382	266144	Kerbside	100.0	99.2	22.7	28.6	20.5	22.9	20.8
W3	487831	267169	Roadside	84.0	83.8	22.8	25.8	18.8	20.5	20.0
W4	489868	268204	Kerbside	100.0	99.2	18.9	25.2	16.1	16.0	15.3
W5	490336	266433	Roadside	100.0	99.2	20.2	21.4	15.9	16.5	16.5
W6	490002	268946	Urban Background	100.0	99.2	15.7	18.7	13.8	14.0	13.5
W7	490351	267400	Roadside	100.0	99.2	25.1	27.8	20.6	22.0	22.0
W8	488431	274049	Roadside	100.0	99.2	21.6	24.2	17.0	17.0	15.1
W9	489226	267829	Urban Background	100.0	99.2	21.0	23.3	15.8	17.0	18.4
W10	492372	271928	Roadside	87.6	87.4	25.6	31.6	21.1	24.0	22.7

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2022 (%) ⁽²⁾	2018	2019	2020	2021	2022
W11	488788	268215	Roadside	100.0	99.2	24.3	29.8	21.4	24.3	22.3

Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.

Diffusion tube data has been bias adjusted.

Reported concentrations are those at the location of the monitoring site (bias adjusted and annualised, as required), i.e. prior to any fall-off with distance correction.

Notes:

The annual mean concentrations are presented as $\mu\text{g}/\text{m}^3$.

Exceedances of the NO₂ annual mean objective of $40\mu\text{g}/\text{m}^3$ are shown in **bold**.

NO₂ annual means exceeding $60\mu\text{g}/\text{m}^3$, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

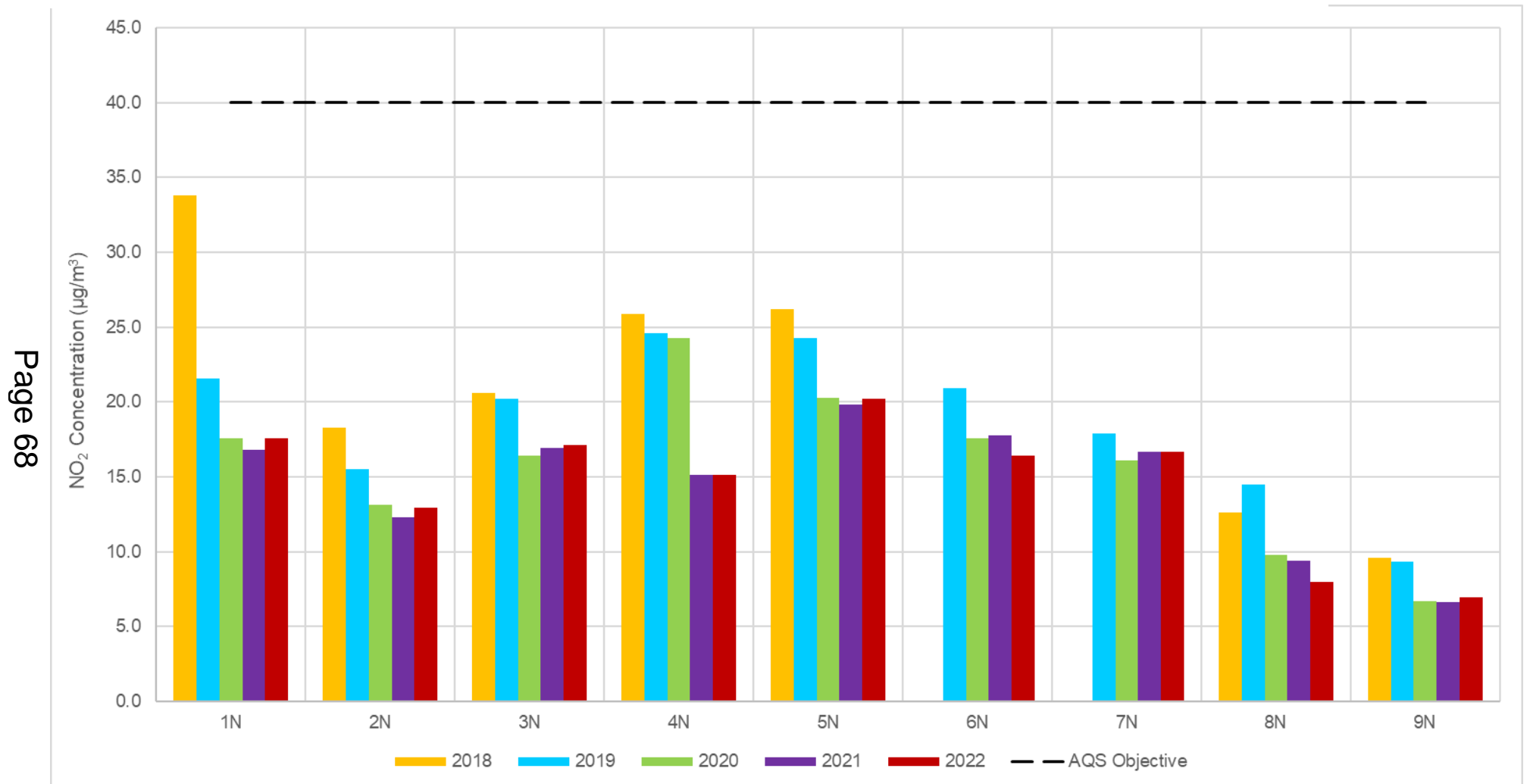
Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

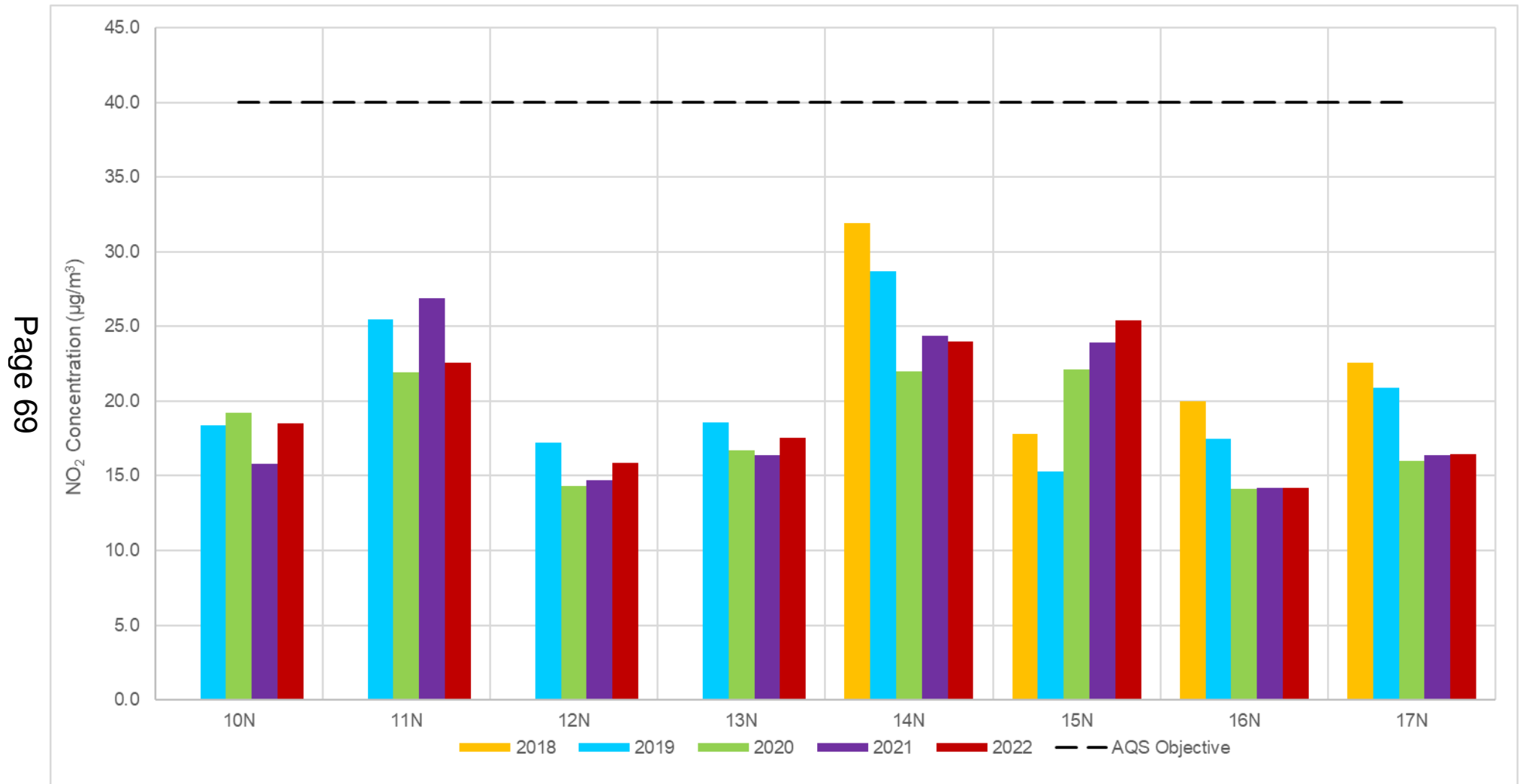
(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%). Wellingborough tubes started a week later in January, hence difference in data captures.

Figure A. 1 – Trends in Annual Mean NO₂ Concentrations in Corby (1)



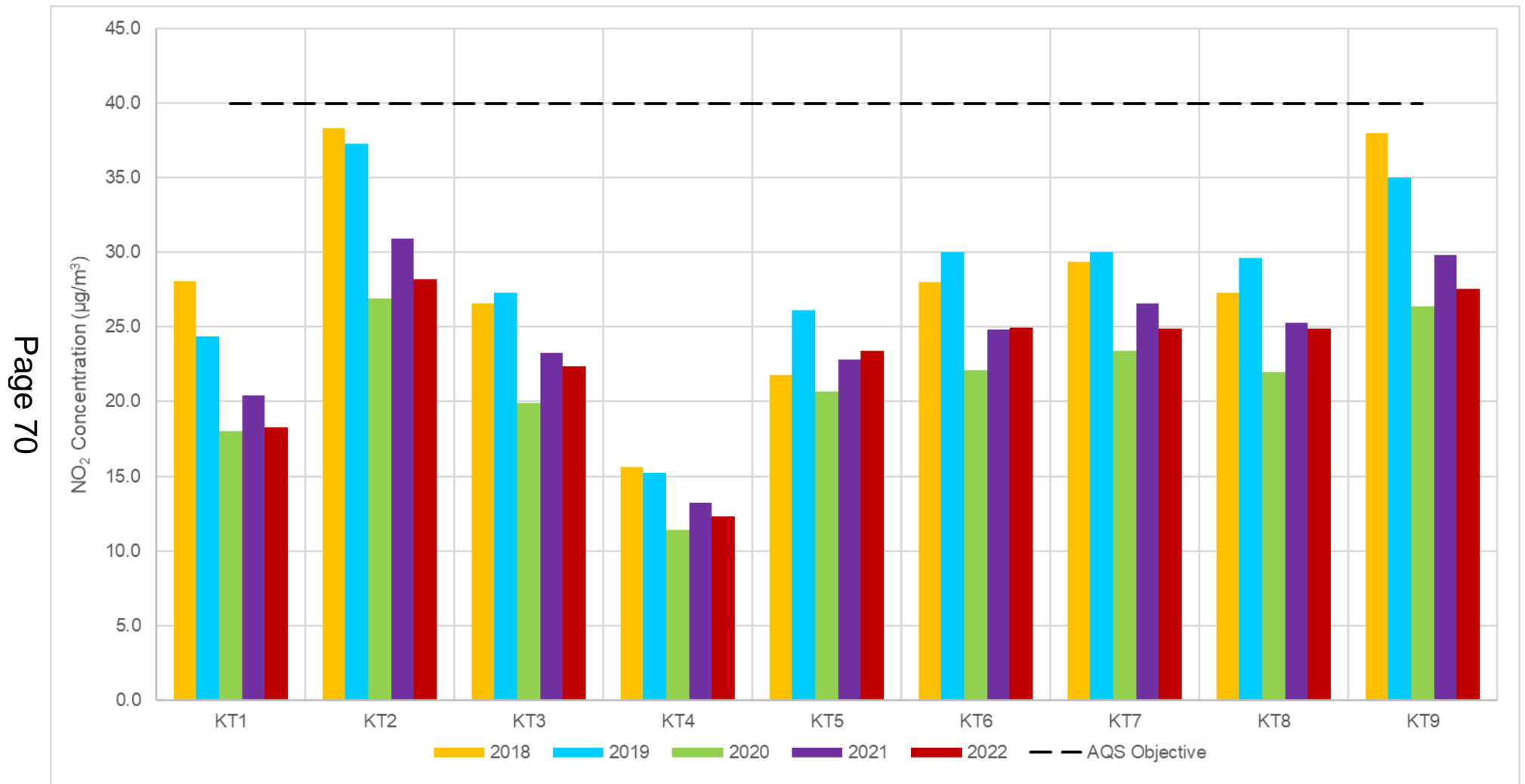
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Figure A. 2 – Trends in Annual Mean NO₂ Concentrations in Corby (2)



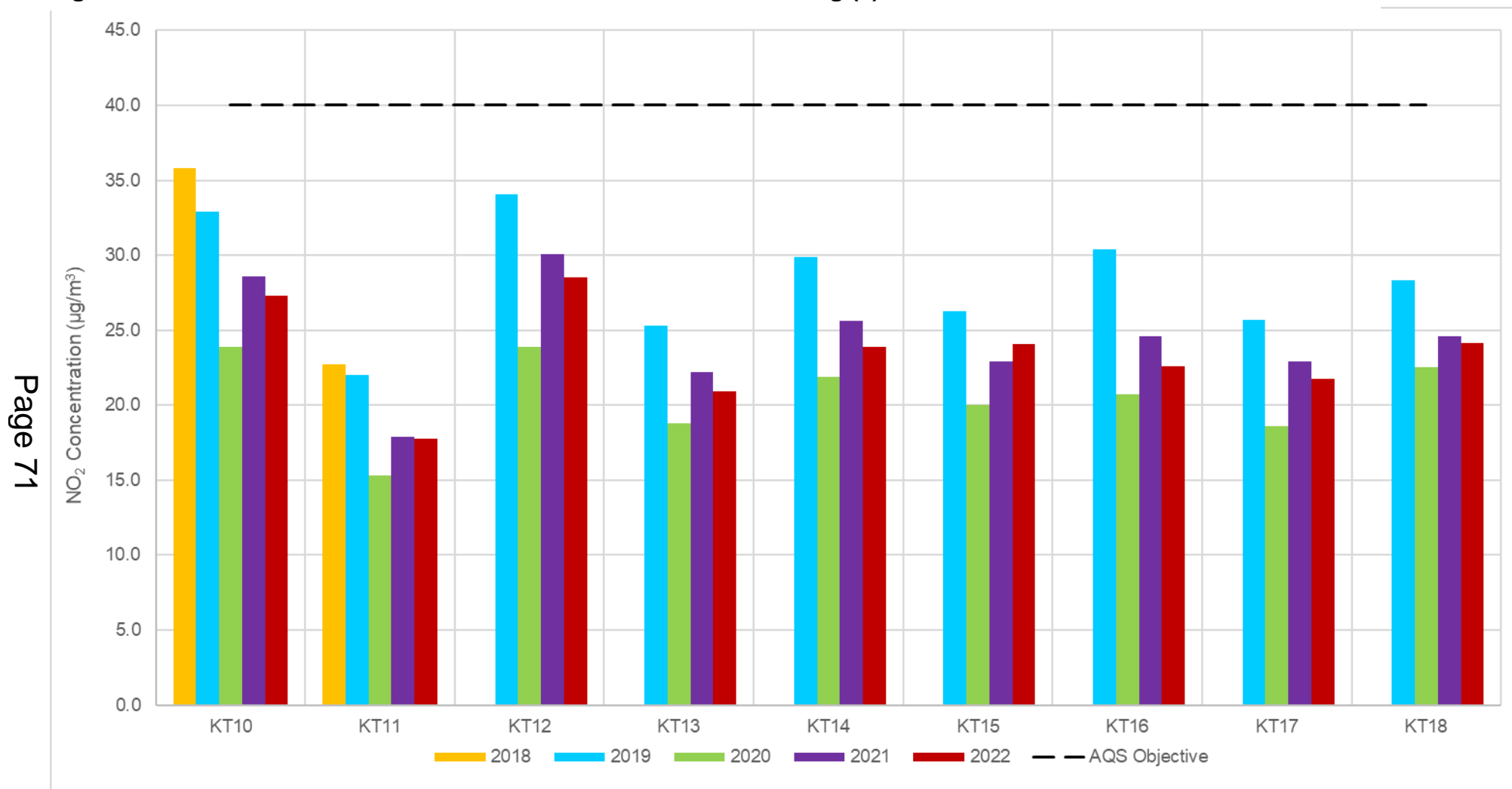
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Figure A. 3 – Trends in Annual Mean NO₂ Concentrations in Kettering (1)



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Figure A. 4 – Trends in Annual Mean NO₂ Concentrations in Kettering (2)



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Figure A. 5 – Trends in Annual Mean NO₂ Concentrations in Kettering (3)

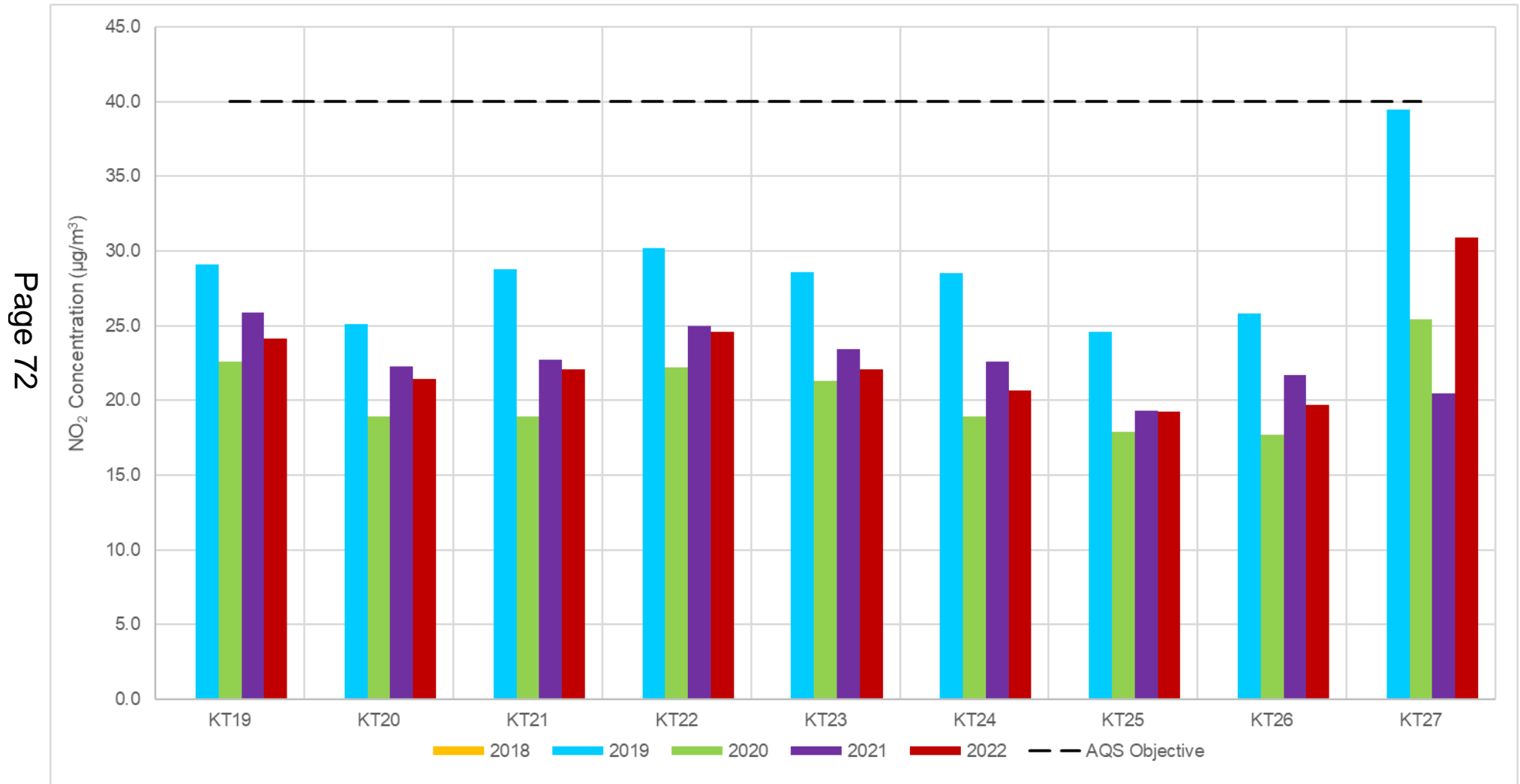
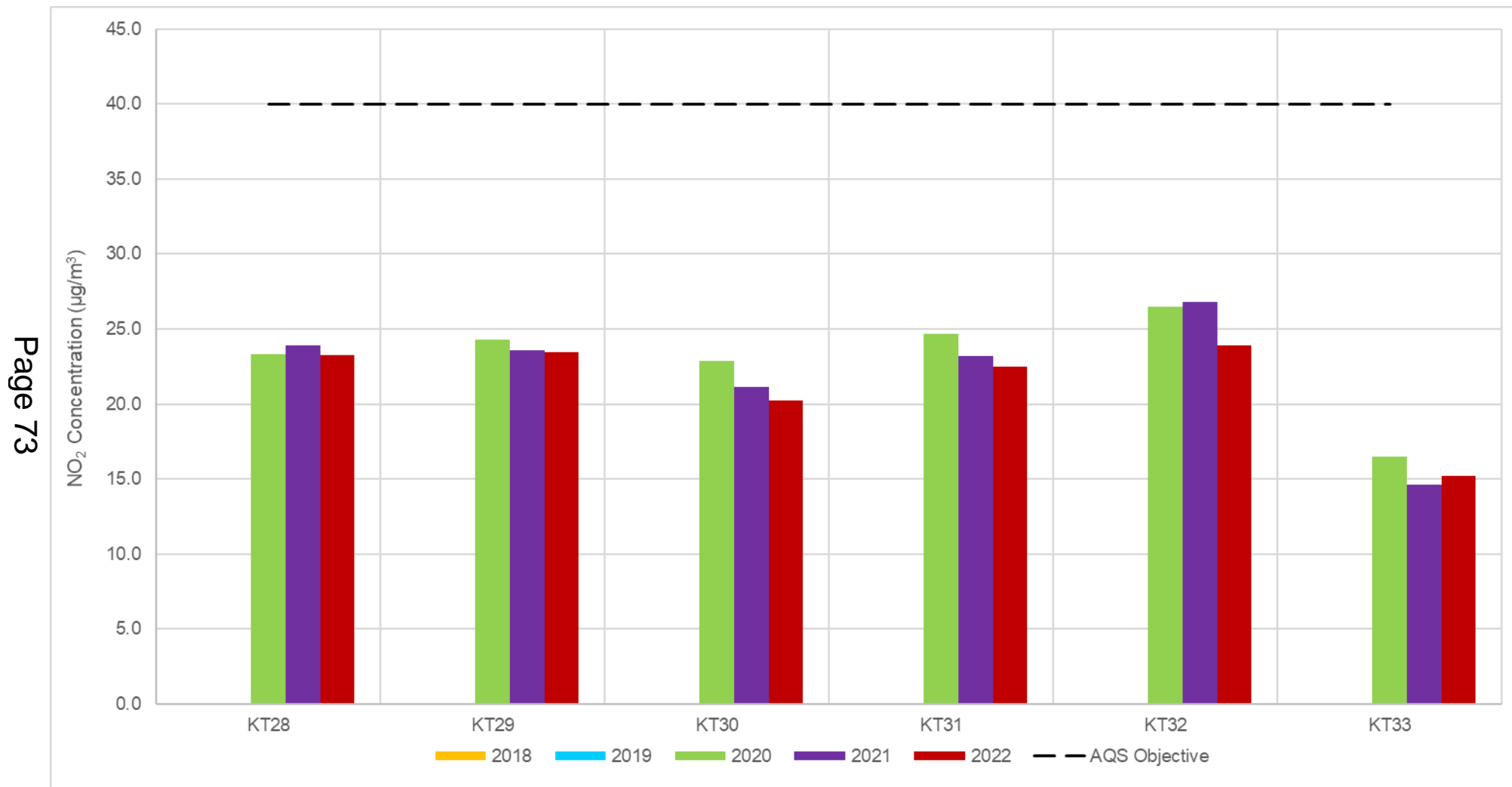
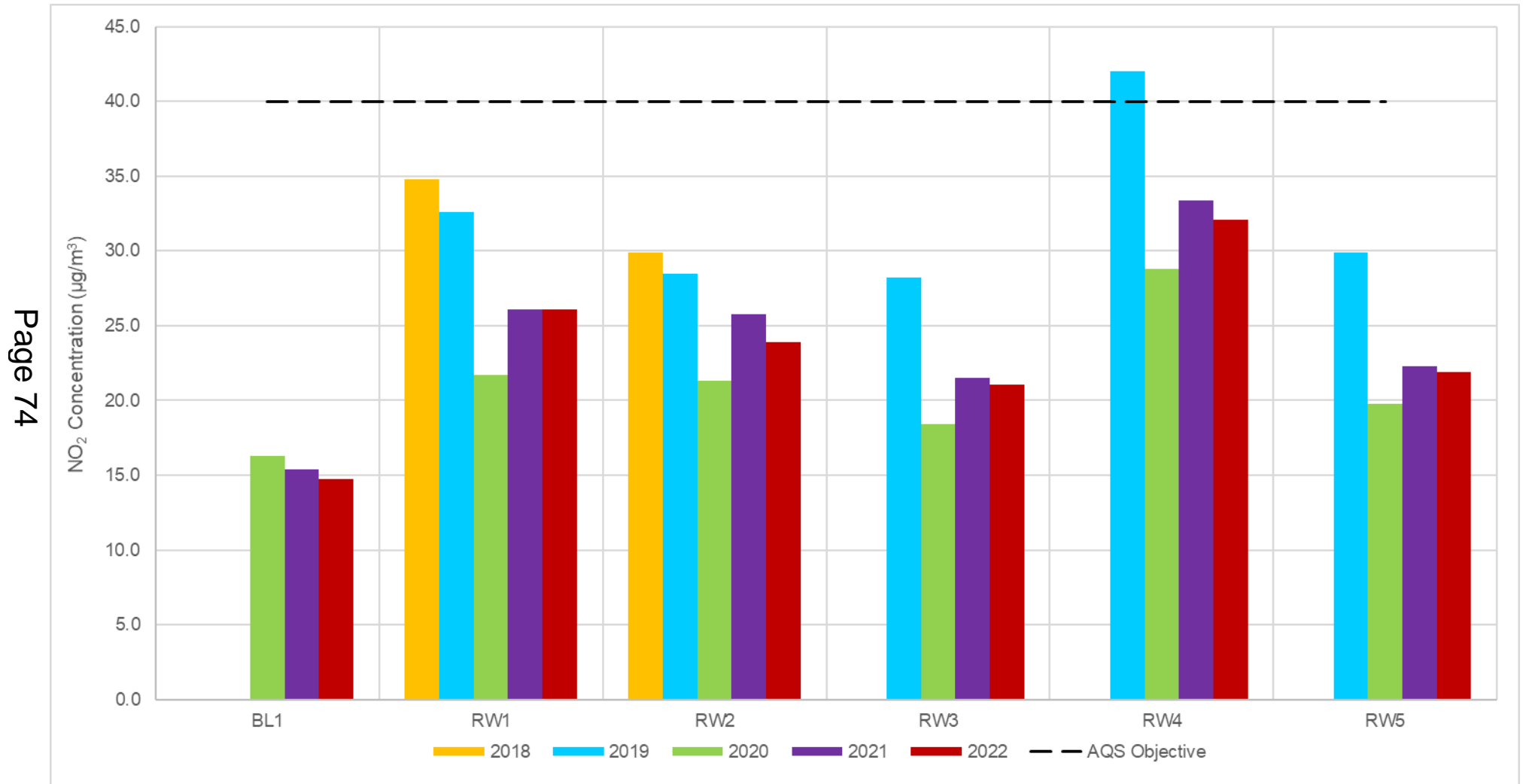


Figure A. 6 – Trends in Annual Mean NO₂ Concentrations in Kettering (4)



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Figure A. 7 – Trends in Annual Mean NO₂ Concentrations in Burton Latimer and Rothwell



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Figure A. 8 – Trends in Annual Mean NO₂ Concentrations in East Northamptonshire (1)

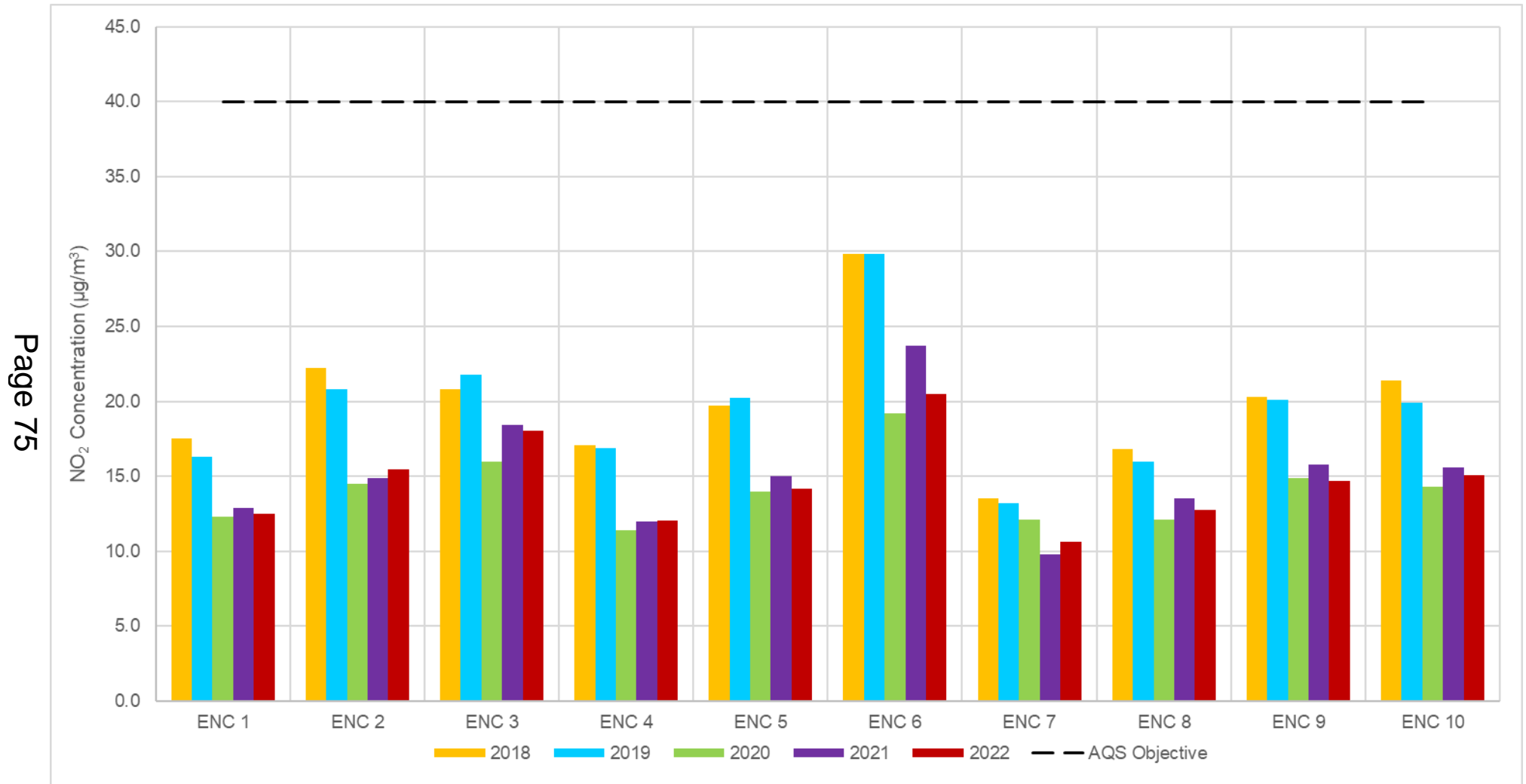


Figure A. 9 – Trends in Annual Mean NO₂ Concentrations in East Northamptonshire (2)

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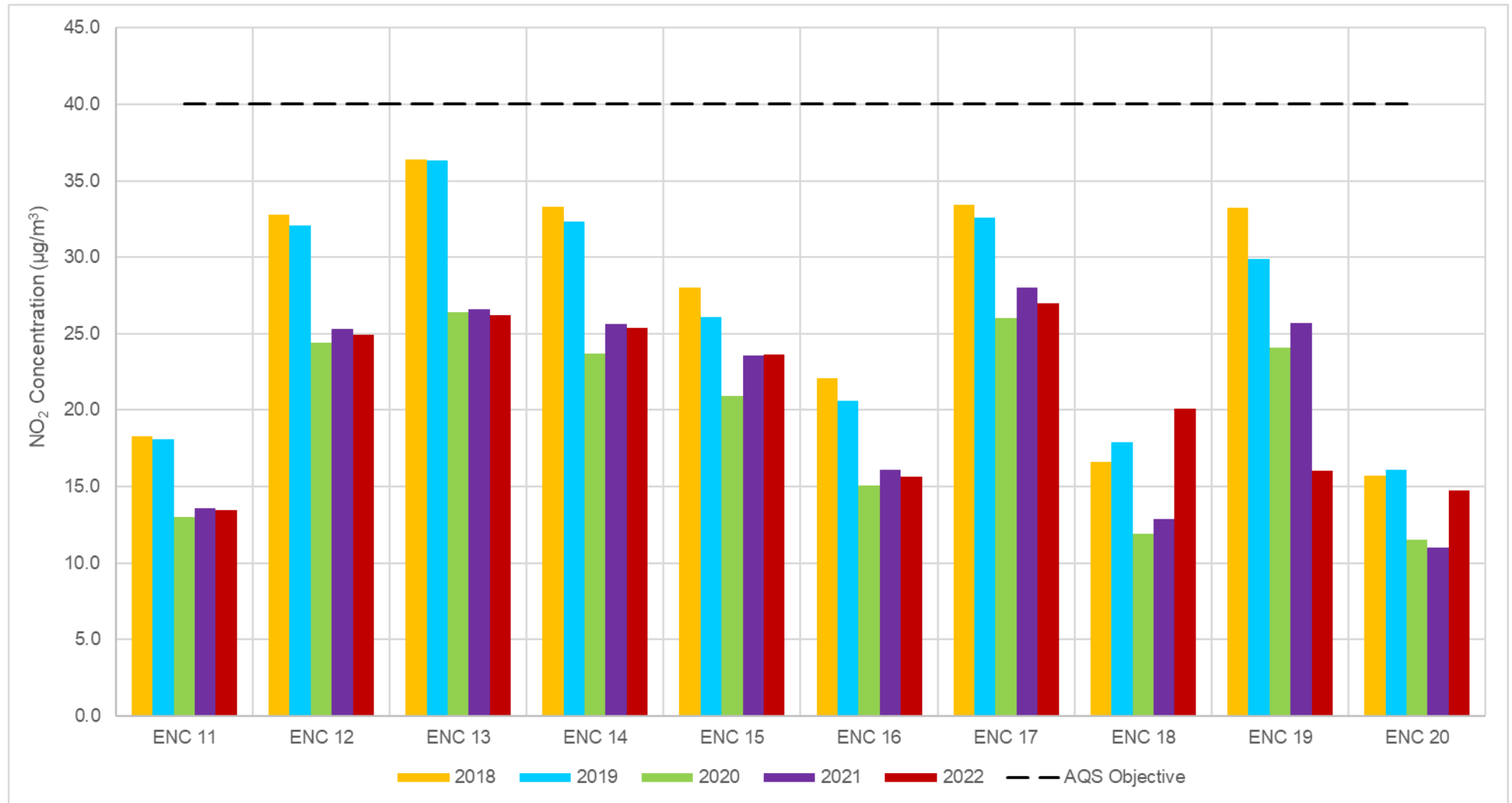
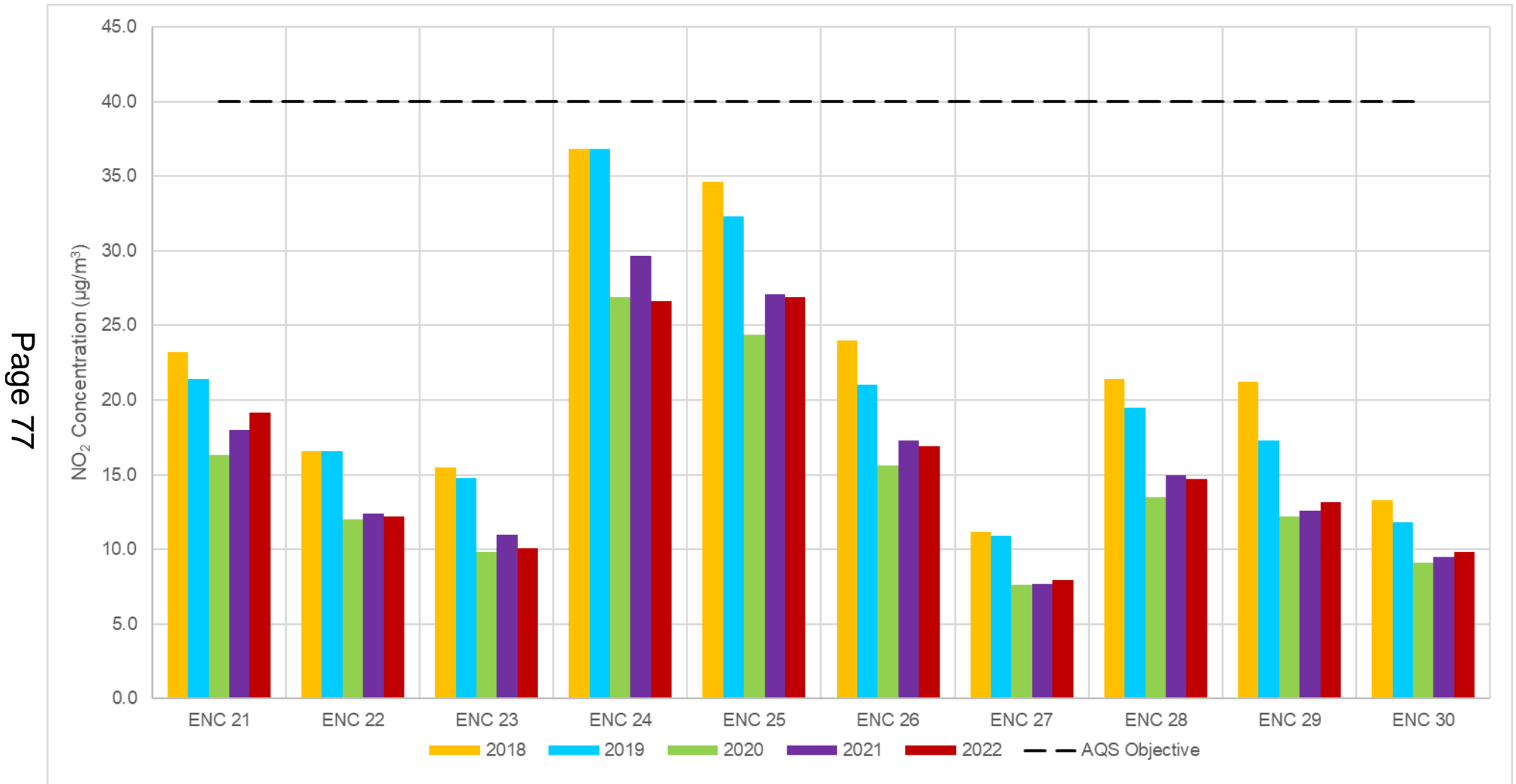


Figure A. 10 – Trends in Annual Mean NO₂ Concentrations in East Northamptonshire (3)



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Figure A. 11 – Trends in Annual Mean NO₂ Concentrations in East Northamptonshire (4)

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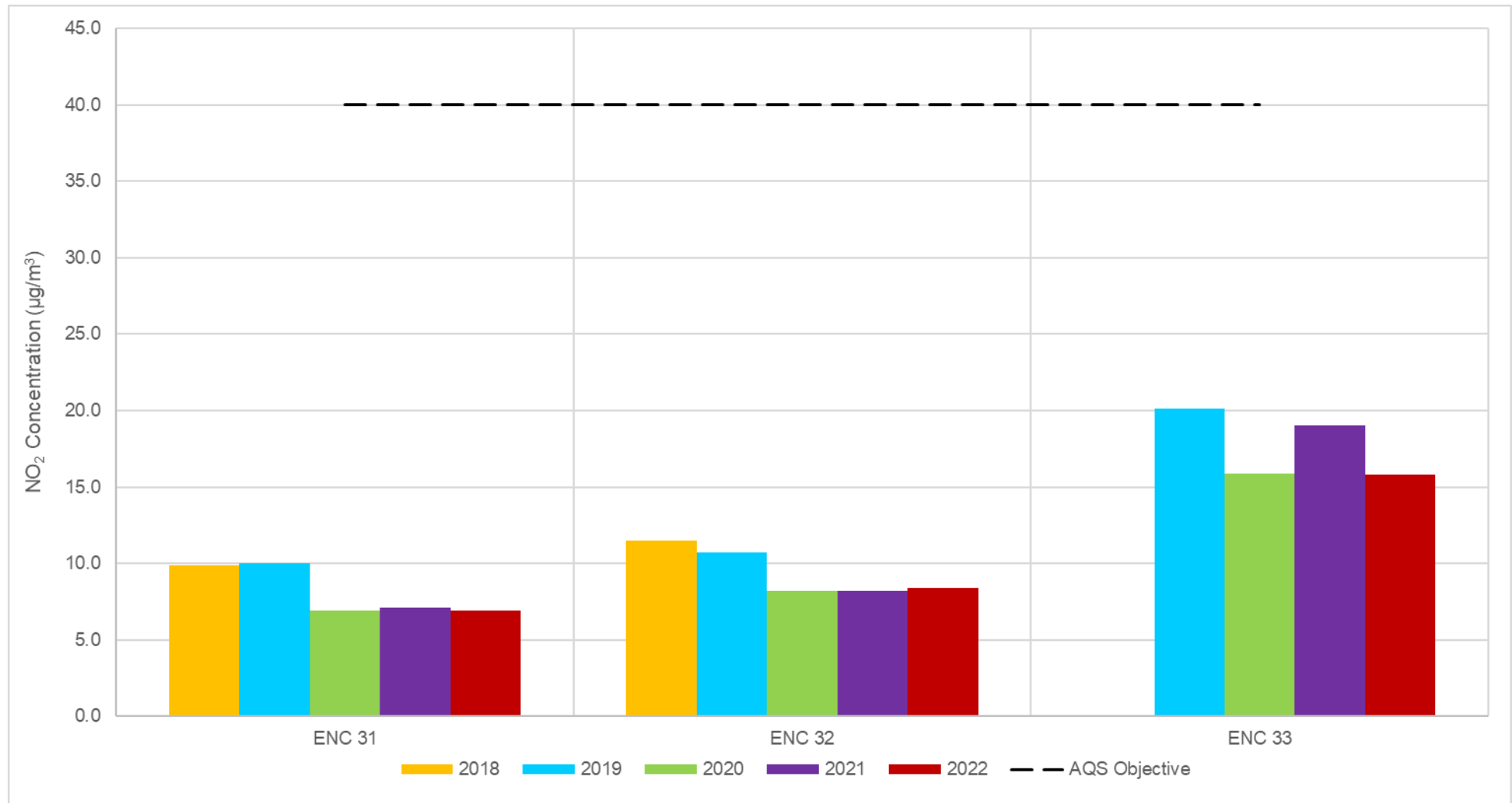
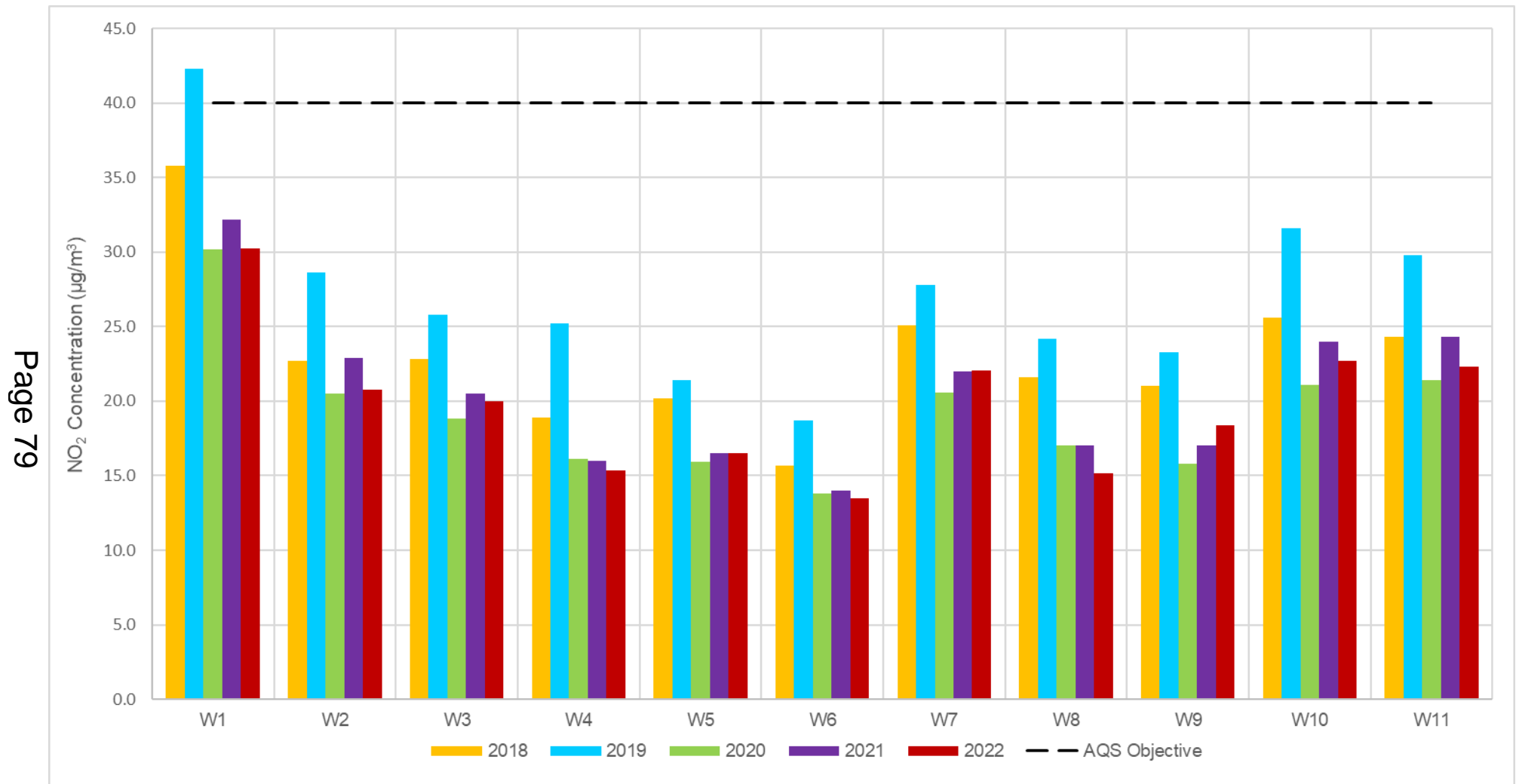


Figure A. 12 – Trends in Annual Mean NO₂ Concentrations in Wellingborough (1)



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Appendix B: Full Monthly Diffusion Tube Results for 2022

Table B.1 – NO₂ 2022 Diffusion Tube Results (µg/m³)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.83)	Comment
1N	488424	288706	31.4	23.3	26.4	10.0	16.4	18.0	17.1	16.9	20.3	23.6	23.1	27.6	21.2	17.6	
2N	488354	289329	22.9	13.6	20.8	7.1	12.6	11.5	13.1	12.1	16.2	17.4	18.8	20.6	15.6	12.9	
3N	489380	288833	28.6	19.5	25.9	10.2	16.8	17.1	16.8	18.0	21.5	22.8	24.7	25.5	20.6	17.1	
4N	489399	288605	27.9	19.4	25.4	7.9	12.4	11.2	13.9	13.0	16.7	21.7	23.3	25.9	18.2	15.1	
5N	489997	288821	38.8	26.5	27.9	11.4	20.4	20.2	20.5	18.9	22.9	26.4	29.7	28.6	24.4	20.2	
6N	490981	287322	27.9	19.5		9.9	15.8	15.9	15.0	19.8	20.6	22.5	24.6	26.0	19.8	16.4	
7N	492992	289919	31.5	20.2	23.5	6.1	16.9	15.8	14.8	12.9	19.1	25.0	28.6	26.8	20.1	16.7	
8N	490063	294032	19.8	9.9	13.4	4.9	7.1	5.5	6.1	6.3	9.2	10.0	13.2		9.6	8.0	
9N	484133	290194	15.7	7.9	10.5	3.3	5.5	4.7	5.7	5.2	7.5	7.9	9.9	16.5	8.4	6.9	
10N	485788	287272	30.6	19.2	23.1	9.3	20.5	22.2	20.0	19.2	23.3	26.8	27.3	26.5	22.3	18.5	
11N	487675	287373	39.4	29.2	31.7	12.9	24.8	24.3	25.6	24.0	29.9	26.7	27.3	31.0	27.2	22.6	
12N	487039	288292	28.3	16.5	23.5	7.8	11.8	9.6	10.7	12.8	17.1	45.4	20.8	25.4	19.1	15.9	
13N	487546	288816	31.5	23.6	26.4	9.2	16.4	16.5	17.2	16.2	18.9	24.2	25.9	27.2	21.1	17.5	
14N	488135	288494	37.2	24.5	38.4	17.0	26.0	23.7	26.2	31.0	31.4	27.7	30.1	34.0	28.9	24.0	
15N	488180	288325	33.6	24.2	33.7	16.2	30.9	32.5	31.5	30.8		36.5	36.6		30.6	25.4	
16N	488122	287817	20.3	14.3	25.0	8.5	13.8	12.9	14.3	14.8	17.3	20.0	20.8	22.9	17.1	14.2	
17N	488387	288122	31.4	18.8	27.4	9.9	15.7	13.7	15.5	15.5	18.5	21.8	23.9	26.1	19.8	16.5	
ENC 1	499867	278066	24.1	15.2	19.7	11.1	11.2	9.8	9.9	10.1	12.8	17.1	18.9	20.7	15.1	12.5	
ENC 2	499161	278629	26.5	15.9	20.5	17.7	16.2	16.4	16.2	14.8	17.8	18.4	19.9	23.0	18.6	15.5	
ENC 3	500208	278510	29.1	22.1	26.6	18.9	15.4	17.4	16.9	17.3	21.9	23.2	26.5	25.3	21.7	18.0	
ENC 4	499573	278515	24.7	13.9	17.4	11.0	9.9	9.8	8.3	9.5		15.9	17.6	21.2	14.5	12.0	
ENC 5	499792	277873	23.7	18.4	21.4	13.0	14.2	15.2	14.4	13.0	12.6	18.9	21.6	18.1	17.1	14.2	
ENC 6	499119	273561	36.4	11.1	31.8	24.8	21.4	6.8	24.8	27.9	27.2	24.2	28.3	31.8	24.7	20.5	
ENC 7	500193	273219	21.9	12.3	12.7	9.0	7.4	20.5	6.9	7.5	10.9	12.1	14.0	18.5	12.8	10.6	
ENC 8	499103	272329	22.7	14.7	17.1	12.8	10.9	11.0	11.3	12.0	14.8	16.3	18.0	22.5	15.3	12.7	
ENC 9	494525	270591	26.3	16.6	24.0	16.0	13.2	11.3	12.0	13.6	15.9	19.9	19.8	23.6	17.7	14.7	
ENC 10	496068	269885	28.6	16.0	21.3	16.5	13.9	12.0	13.9	18.3	20.0	16.8	17.6	23.4	18.2	15.1	
ENC 11	496320	269420	26.7	14.8	21.6	14.4	10.6	9.9	9.7	12.0	16.1	17.0	19.6	22.2	16.2	13.5	
ENC 12	495920	268317	42.1	28.8	31.1	27.8	24.1	23.6	24.3	23.6	33.8	30.9	32.1	38.3	30.0	24.9	
ENC 13	495962	268388	43.7	34.3	27.5	25.4	25.6	27.6	27.8	25.2	29.2	34.5	37.0	40.8	31.6	26.2	
ENC 14	495587	267402	34.6	25.3	37.0	31.6	24.9	26.1	26.9	30.7	31.8	29.6	32.8	35.9	30.6	25.4	
ENC 15	495711	267120	34.4	23.3	34.8	26.3	21.4	22.6	23.7	24.5	31.6	31.2	31.9	35.9	28.5	23.6	
ENC 16	496039	266643	28.0	19.3	22.6	15.8	12.6	12.3	13.5	13.4	17.6	19.1	24.1	27.6	18.8	15.6	
ENC 17	495924	266621	42.4	37.3	31.8	26.6	26.0	31.0	29.0	26.6	30.5	30.1	40.4	37.9	32.5	27.0	
ENC 18	495883	266560	26.4	25.7	33.1	28.1	24.8	25.8	9.6	30.4	34.0	14.3	16.5	21.9	24.2	20.1	
ENC 19	495849	266613	39.0	14.3	14.5	10.2	9.5	8.2	25.2	9.2	13.6	26.0	28.6	33.6	19.3	16.0	
ENC 20	497127	266143	23.7		23.0	16.6	19.6	21.5	9.5	17.0	25.5	14.6	17.0	7.8	17.8	14.8	
ENC 21	496682	267872	35.2	21.3	28.1	20.2	18.3	17.9	17.8	19.4	23.2	25.8	26.8		23.1	19.2	
ENC 22	496772	266967	26.8	14.3	16.8	11.4	9.1	10.0	9.0	10.2	13.3	15.4	18.1	22.1	14.7	12.2	
ENC 23	494895	265669		11.0	19.5	10.9	8.0	7.3	7.9	9.3	11.3	12.8	14.3	20.9	12.1	10.0	
ENC 24	494963	266988	21.1	34.3	42.0	29.7	26.4	28.6	30.1	25.9	36.3		40.6	38.2	32.1	26.6	
ENC 25	494936	267014	42.0	31.0	35.3	26.2	25.8	28.2	32.8	28.3	38.0	31.0		38.0	32.4	26.9	
ENC 26	493108	267347	30.5	17.7	26.6	15.4	13.2	15.3	16.1	15.5	19.6	21.4	26.1	26.9	20.4	16.9	
ENC 27	503209	289307	18.3	10.3	14.1	6.9	5.5	5.3	5.0	5.4	7.8	9.6	12.2	14.6	9.6	8.0	
ENC 28	504272	288433	23.9	17.3	20.8	14.3	13.2	13.9	13.4	12.9	16.9	19.5	22.9	23.7	17.7	14.7	
ENC 29	504222	288110	23.4	14.7	19.9	13.7	11.2	11.8	12.0	12.2	14.8	15.2	19.7	21.4	15.8	13.1	
ENC 30	497862	289284	20.3	12.2	12.5	7.9		12.4	7.7	7.5	10.0	12.0	13.1	14.9	11.8	9.8	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.83)	Comment
ENC 31	501961	290525	14.8	8.2	10.7	6.0	6.1	5.3	5.5	5.4	7.4	8.9	10.9	11.2	8.4	6.9	
ENC 32	499960	302429	18.0	10.2	12.8	7.2	7.1	5.7	6.5	6.1	8.9	10.6	12.2	15.5	10.1	8.4	
ENC 33	494761	267915	28.5	18.8	21.4	17.8	15.5	13.0	15.1	18.0	21.0	17.3	18.8	23.9	19.1	15.8	
ENC 34	500479	278305		17.2	21.4	14.3	13.0	13.1	12.0	13.0	15.9	19.2	21.4	22.1	16.6	13.8	
ENC 35	493887	271326			21.5	16.9	12.4	13.1	13.6	14.0	19.9	16.6	18.1	23.3	17.0	14.1	
ENC 36	496732	264589		24.0	18.8	14.5	9.3	8.1		10.7	15.6	25.5	31.8	32.1	19.0	15.8	
ENC 37	502420	281455		22.3	24.3	15.7	15.4	15.9	13.7	16.2	17.8	22.6	26.5	26.2	19.7	16.3	
ENC 38	503390	282825		17.0	25.3	18.4	15.6	15.8	15.7	17.8	18.9	20.7	21.9	23.5	19.2	15.9	
ENC 39	505177	289583		20.2	21.7	19.6	18.7	18.8	19.0	20.8	24.0	24.1	24.8	25.6	21.6	17.9	
ENC 40	500094	303197		15.7	18.2	9.9	10.5	8.5	8.6	9.3	11.9	17.2	18.4	17.6	13.3	11.0	
KT1	486783	278948	30.8	22.4	25.3	19.8	17.5	16.6	17.9	20.0	24.6	21.9	22.6	24.5	22.0	18.3	
KT2	486887	278246	45.2	33.7	34.8	27.0	28.0	31.5	29.8	31.3		35.8	36.7	40.0	34.0	28.2	
KT3	486974	278895	31.2	25.8	30.8	26.8	20.4	21.4	22.5	26.5	29.1	27.7	29.9	31.7	27.0	22.4	
KT4	486956	278338	25.7	15.8	16.0	11.8	11.3	11.1	9.8	10.4	14.8	16.6	15.9	19.4	14.9	12.3	
KT5	486925	279028	34.5	30.6	26.3	22.2	24.6	25.9	22.4	21.7	29.7	33.4	33.0	33.8	28.2	23.4	
KT6	486951	278904	34.1	26.9	31.9	28.5	23.7	26.3	22.4	30.8	29.6	35.4	35.3	36.2	30.1	25.0	
KT7	486869	278877	38.9	28.0	32.3	28.5	25.7	24.5	26.7	29.7	29.1		33.8	33.1	30.0	24.9	
KT8	487049	278942	35.8	30.3	32.7	29.1	25.1	24.4	24.8	29.0	30.0	33.6		35.1	30.0	24.9	
KT9	486793	278254	42.4	32.2	36.8	32.0	27.4	29.0	27.5	32.8	35.0	34.4	32.1	36.7	33.2	27.5	
KT10	486954	278099	41.5	31.5	34.3	30.4	27.8	28.7	30.6	29.1	38.7	33.7	33.9	34.2	32.9	27.3	
KT11	487406	277653	29.5	21.1	25.0	18.4	15.5	16.7	17.5	17.7	22.6	23.1	22.8	27.0	21.4	17.8	
KT12	486787	278276	44.8	31.0	39.0	32.8	28.6	29.5	30.6	32.0	36.5	35.8	35.1	37.0	34.4	28.5	
KT13	486648	278233	34.9	19.7	29.6	22.5	19.8	17.4	22.1	22.5	31.0	28.0	23.5	31.0	25.2	20.9	
KT14	486718	278236	37.0	22.1	32.5	28.8	22.6	23.9	26.8	28.3	35.7	29.0	28.6	30.6	28.8	23.9	
KT15	486799	278850	40.0	25.8	33.1	27.6	21.6	19.3	24.4	29.4	29.8	31.1	32.9	33.2	29.0	24.1	
KT16	486929	278204	42.3	19.8	29.8	19.9	24.7	23.5	24.2	22.1	33.5	29.4	25.3	32.0	27.2	22.6	
KT17	486972	278223	36.9	23.5	30.0	21.1	20.2	21.0	22.4	18.0	33.2	29.2	27.2	31.5	26.2	21.7	
KT18	486910	278240	37.4	29.3	28.4	28.8	25.1	24.6	25.7	24.5	33.4	28.4	27.7	35.7	29.1	24.1	
KT19	486890	278322	44.4	31.4	26.4	22.9	24.7	23.9	24.2	21.3	33.4	31.0	29.5	36.1	29.1	24.1	
KT20	486846	278497	38.1	22.3	28.1	19.9		20.1	21.0	21.0	29.2	28.2	26.4	29.6	25.8	21.4	
KT21	486786	278599	29.5	18.8		29.7	22.1	19.9			29.1	28.1	30.0	32.0	26.6	22.1	
KT22	486778	278779	40.2	31.2	28.8	25.8	24.6	24.2	22.7	24.7	28.1	32.7	34.7	37.5	29.6	24.6	
KT23	487146	277860	33.7	26.8	28.4	24.3	21.3	21.1	24.1	21.2	31.1	27.5	27.3	32.2	26.6	22.1	
KT24	487718	278679	37.1	23.4	26.7	24.1	19.1	19.1	16.9	19.0	27.2	27.1	27.5	31.3	24.9	20.6	
KT25	487751	278505	31.1	18.8	27.8	23.8		17.2	14.9	17.2	23.7	24.6	26.3	30.2	23.2	19.3	
KT26	487725	278388	35.3	25.6	24.5	20.7	19.5	19.2	17.3	14.4	27.9	25.5	24.1	30.9	23.8	19.7	
KT27	487893	277471		29.0		23.6	25.2	29.2		28.5			35.1		28.4	30.9	
KT28	486153	278930	36.4	25.2	28.7	23.8	25.8	24.6	26.8	25.7	34.0	28.1	27.3	30.2	28.0	23.3	
KT29	486894	278216	35.3	21.8	35.6	27.1	22.5	22.7	24.4	28.1	30.4		30.0	32.7	28.2	23.4	
KT30	487563	277433	28.2	18.4	29.4	25.1	18.6	18.4	20.9	25.9	26.7	26.9	24.5	28.9	24.3	20.2	
KT31	486161	279067	37.9	25.8	29.0	25.5	21.3	19.7	22.2	25.5	29.9	28.0	28.8	31.7	27.1	22.5	
KT32	486398	278274			33.2	27.0	23.5	24.6	21.6	29.5	32.6	34.5	37.3	23.7	28.8	23.9	
KT33	486871	277840	27.5	16.8	21.4	15.3		10.4		12.8	18.7	18.5	19.1	22.8	18.3	15.2	
BL1	490048	274399	27.5	16.0		17.4	13.5	12.3	14.2	15.2	21.8	17.3	17.3	23.1	17.8	14.8	
RW1	481465	281208	41.3	32.2	34.5	29.0	26.2	24.1	30.5	27.8	37.0	29.7	33.5	31.1	31.4	26.1	
RW2	481550	281233	37.1	23.4	32.2	32.4	25.0	22.6	25.8	31.4	32.1	28.9	26.3	28.6	28.8	23.9	
RW3	481498	281096	30.0	22.9	29.0	23.9	19.5	20.2	20.6	26.0	27.5	27.3	29.6	28.0	25.4	21.1	
RW4	481481	281149	51.5	37.6	36.2	32.6	35.2	36.5	34.5	32.4	43.6	41.2	40.5	42.6	38.7	32.1	
RW5	481515	281217	32.3	25.3	30.3	28.0	20.7	20.2	21.2	26.5	24.3	27.9	29.8	30.4	26.4	21.9	
W1	489131	267820	44.8	33.3	42.3	31.6	32.5	36.5	37.7	31.3	39.5	26.4	48.8	37.7	36.4	30.2	
W2	489382	266144	35.3	26.7	30.9	18.0	22.6	19.0	19.7	22.0	27.4	28.1	27.8	27.9	25.0	20.8	
W3	487831	267169			29.4	20.6	19.8	20.2	22.4	19.7	27.0	30.9	28.9	26.9	24.1	20.0	
W4	489868	268204	25.2	20.8	23.5	16.2	12.8	15.4	11.9	14.2	16.5	25.2	20.0	23.4	18.5	15.3	
W5	490336	266433	24.5	20.6	26.7	17.7	15.8	14.9	16.8	21.2	22.3	17.9	20.2	20.0	19.9	16.5	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.83)	Comment
W6	490002	268946	22.4	17.6	22.4	13.6	12.1	10.8	11.4	13.3	17.6	17.4	19.2	19.5	16.3	13.5	
W7	490351	267400	35.5	27.6	28.8	21.4	23.8	23.5	23.2	24.0	30.4	27.5	31.7	26.5	26.5	22.0	
W8	488431	274049	22.7	19.3	21.4	16.0	13.0	14.5	15.2	15.7	18.1	21.8	21.0	21.7	18.2	15.1	
W9	489226	267829	26.4	22.6	27.4	14.9	16.0	14.4	15.9		20.0	48.0	25.6	22.4	22.2	18.4	
W10	492372	271928	30.6	24.5	34.4	27.4	26.1	23.4	26.3	28.9	29.8	25.3	25.4	25.4	27.3	22.7	
W11	488788	268215	30.8	26.5	35.3	23.5	23.0	23.2	24.2	24.3	28.2	28.7	29.8	29.0	26.9	22.3	

- All erroneous data has been removed from the NO₂ diffusion tube dataset presented in Table B.1
- Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22
- Local bias adjustment factor used.
- National bias adjustment factor used.
- North Northamptonshire confirm that all 2022 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

Notes:

Exceedances of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

See Appendix C for details on bias adjustment and annualisation.

Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC

New or Changed Sources Identified Within North Northamptonshire During 2022

North Northamptonshire has not identified any new sources relating to air quality within the reporting year of 2022.

Additional Air Quality Works Undertaken by North Northamptonshire During 2022

North Northamptonshire has not completed any additional works within the reporting year of 2022 that have not already been mentioned.

QA/QC of Diffusion Tube Monitoring

Diffusion tubes were provided by Gradko during the 2022 monitoring year with the preparation method of 20% TEA in Water. Gradko international laboratory takes part in the LAQM Air PT scheme. Their most recent received score was 100% for May to June 2022 (AR050).

The diffusion tube survey has been completed in adherence with the 2022 Diffusion Tube Monitoring Calendar. However, diffusion tubes in Wellingborough were exposed for slightly longer than the Defra recommended timescales. This is due to the changes to the fixings as a result of health and safety risk assessments.

Diffusion Tube Annualisation

Annualisation is required for any site with data capture less than 75% but greater than 25%. In addition, any sites with a data capture below 25% do not require annualisation.

Annualisation was required for one site in North Northamptonshire; KT27. Annualisation was undertaken in line with LAQM.TG22 with the calculation method detailed in Table C.2.

The following urban background automatic monitors were used to the inform the annualisation process:

- Coventry;
- Leamington Spa;
- Leicester University; and
- Northampton.

All other diffusion tube monitoring locations within North Northamptonshire recorded data capture of 75% therefore annualisation was not required.

Table C. 1 - Annualisation Summary (concentrations presented in $\mu\text{g}/\text{m}^3$)

Site ID	Annualisation Factor Leamington Spa	Annualisation Factor Northampton Spring Park	Annualisation Factor Leicester University	Annualisation Factor Coventry Allesley	Average Annualisation Factor	Raw Data Annual Mean	Raw Annualised Annual Mean
KT27	1.3431	1.2531	1.2916	1.3448	1.3082	28.4	37.2

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2022 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG22 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

North Northamptonshire have applied a national bias adjustment factor of 0.83 to the 2022 monitoring data, as no local factors could be calculated, and as per

Figure C. 1. A summary of bias adjustment factors used by North Northamptonshire over the past five years is presented in Table C. 2 **Error! Reference source not found.** Version 3/23 of the national bias adjustment factor spreadsheet was used in 2022. Prior to 2021, the separate borough areas of Corby, Kettering, East Northamptonshire and Wellingborough used the same diffusion tubes and used national bias adjustment factors.

Table C. 2 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2022	National	03/23	0.83
2021	National	03/22	0.84
2020	National	03/21	0.81
2019	-	-	-
2018	-	-	-

Figure C. 1 – National Diffusion Tube Bias Adjustment Factor Spreadsheet, 2022

National Diffusion Tube Bias Adjustment Factor Spreadsheet				Spreadsheet Version Number: 03/23						
Follow the steps below in the correct order to show the results of relevant co-location studies Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet This spreadsheet will be updated every few months; the factors may therefore be subject to change. This should not discourage their immediate use.								This spreadsheet will be updated at the end of June 2023 LAQM Helpdesk Website		
The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.				Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.						
Step 1: Select the Laboratory that Analyses Your Tubes from the Drop-Down List		Step 2: Select a Preparation Method from the Drop-Down List		Step 3: Select a Year from the Drop-Down List		Step 4: Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor* shown in blue at the foot of the final column. If you have your own co-location study then see footnote 1. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHhelpdesk@bureauveritas.com or 0800 0327953				
If a laboratory is not shown, we have no data for this laboratory.		If a preparation method is not shown, we have no data for this method at this laboratory.		If a year is not shown, we have no data.						
Analysed By	Method To undo your selection, choose (All) from the pop-up list	Year To undo your selection, choose (All)	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m³)	Automatic Monitor Mean Conc. (Cm) (µg/m³)	Bias (B)	Tube Precision	Bias Adjustment Factor (A) (Cm/Dm)
Gradko	20% TEA in water	2022	KS	Marylebone Road Intercomparison	12	52	42	22.8%	G	0.81
Gradko	20% TEA in Water	2022	UB	Plymouth City Council	12	18	18	3.2%	G	0.97
Gradko	20% TEA in water	2022	UC	Belfast City Council	12	26	20	30.7%	G	0.76
Gradko	20% TEA in water	2022	R	Belfast City Council	12	47	36	28.1%	G	0.78
Gradko	20% TEA in water	2022	R	Belfast City Council	12	25	22	14.0%	G	0.88
Gradko	20% TEA in water	2022	R	Belfast City Council	12	36	28	29.0%	G	0.78
Gradko	20% TEA in water	2022	R	Brighton & Hove City Council	10	37	23	62.8%	G	0.61
Gradko	20% TEA in water	2022	UB	Hertsmere Borough Council	12	16	15	7.1%	G	0.93
Gradko	20% TEA in water	2022	R	Southampton City Council	12	36	28	30.6%	G	0.77
Gradko	20% TEA in water	2022	UC	Southampton City Council	12	28	24	15.4%	G	0.87
Gradko	20% TEA in water	2022	R	Southampton City Council	12	34	31	8.4%	G	0.92
Gradko	20% TEA in water	2022	R	Worcestershire	11	13	12	4.2%	G	0.96
Gradko	20% TEA in water	2022	R	Lancaster City Council	13	34	27	25.8%	G	0.79
Gradko	20% TEA in water	2022	R	Lancaster City Council	12	28	24	15.2%	G	0.87
Gradko	20% TEA in water	2022	Overall Factor* (27 studies)						Use	0.83

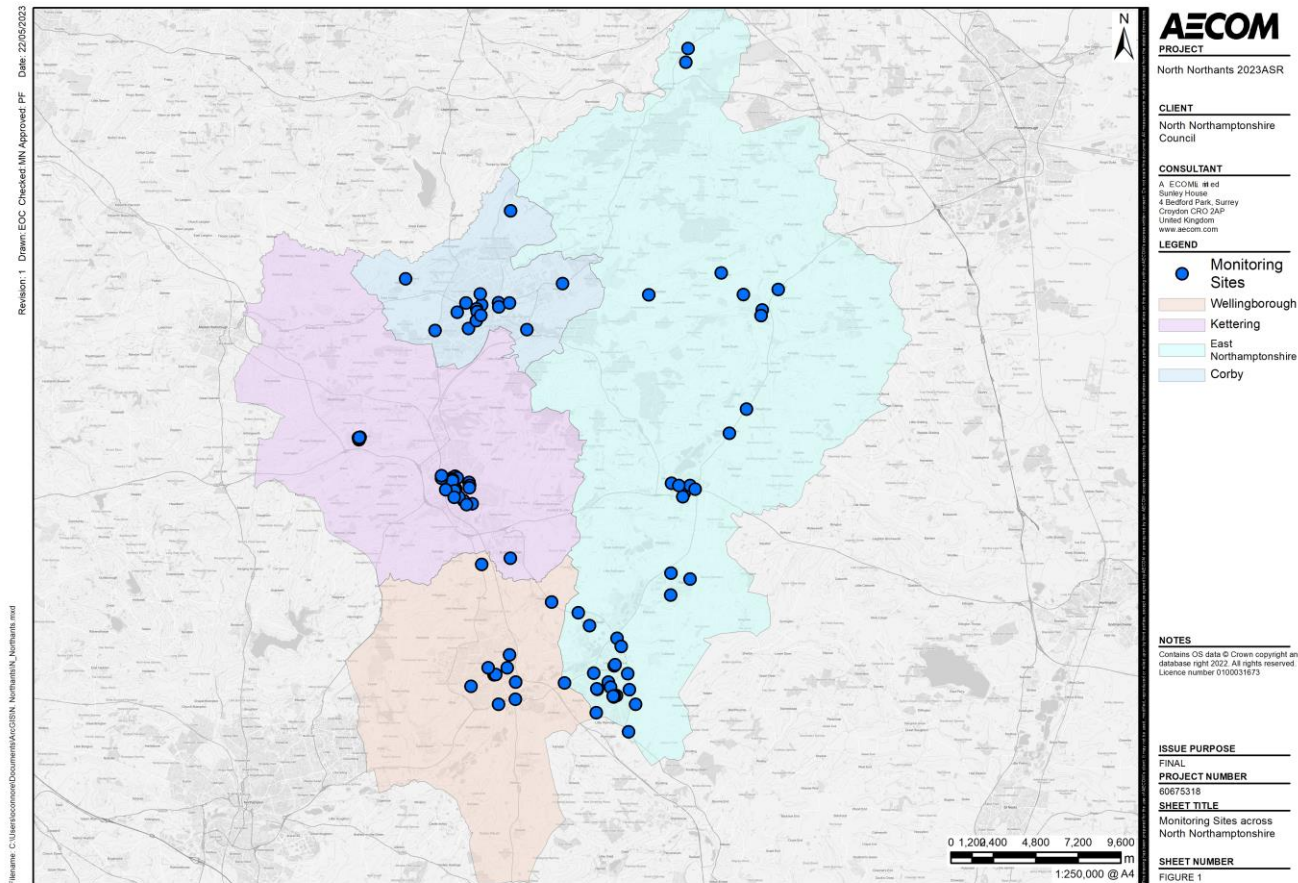
NO₂ Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO₂ concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO₂ fall-off with distance calculator available on the LAQM Support website.

No diffusion tube NO₂ monitoring locations within North Northamptonshire required distance correction during 2022, due to the low concentrations monitored.

Appendix D: Map(s) of Monitoring Locations and AQMAs

Figure D.1 – Map of Non-Automatic Monitoring Sites across North Northamptonshire



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Figure D.2 - Map of Non-Automatic Monitoring Sites in Corby

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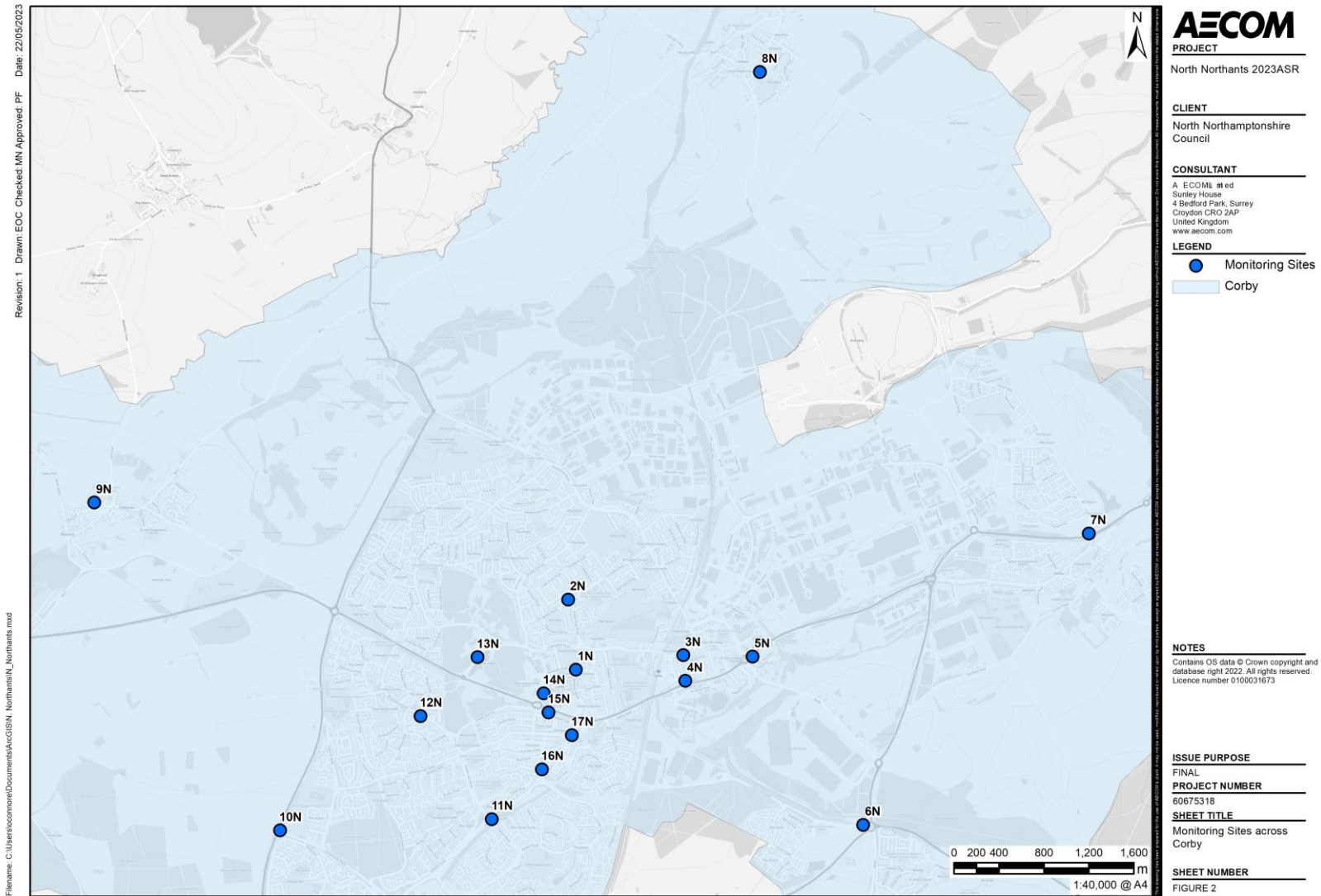


Figure D.3a - Map of Non-Automatic Monitoring Sites in East Northamptonshire (North)

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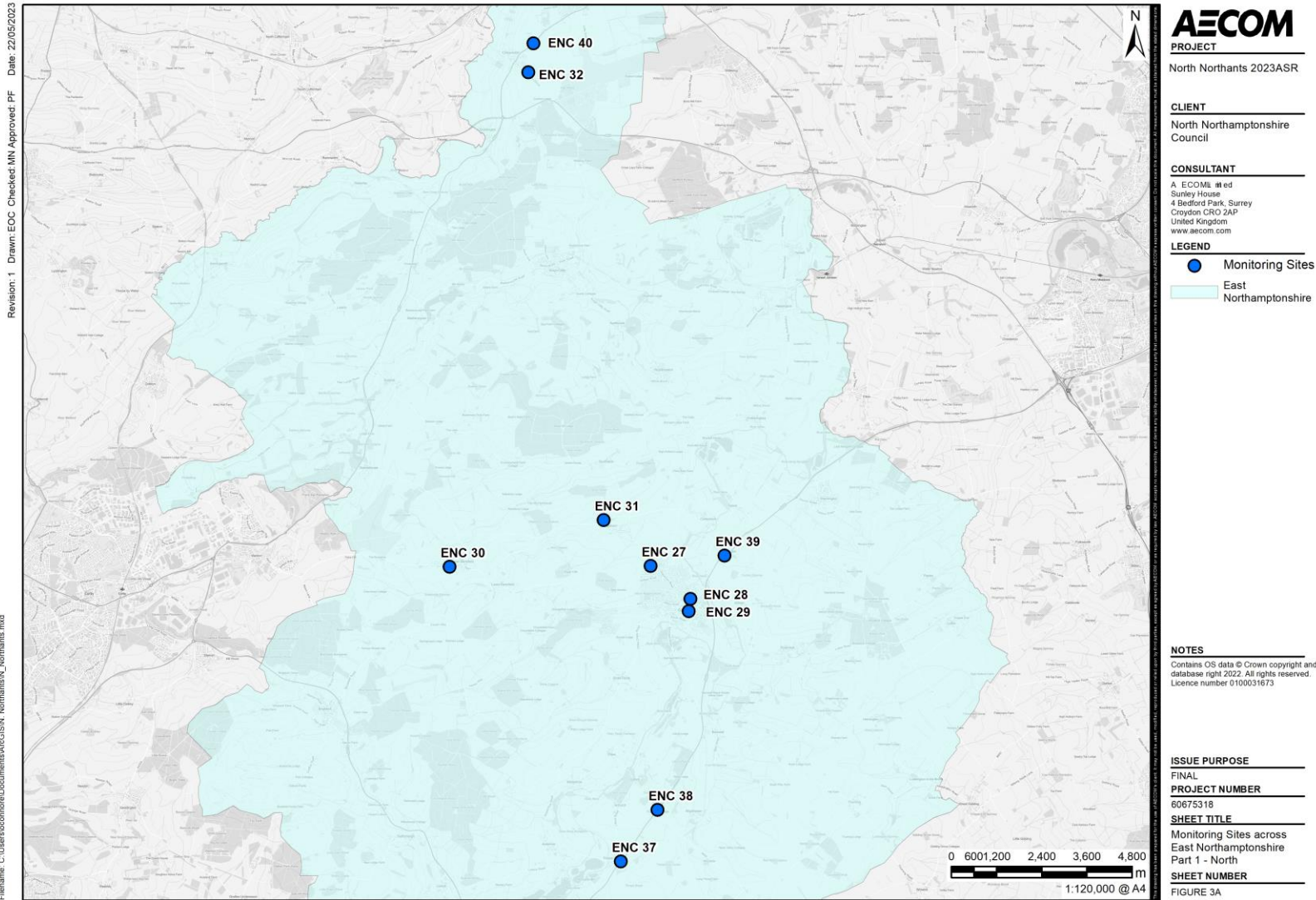


Figure D.4b - Map of Non-Automatic Monitoring Sites in East Northamptonshire (South)

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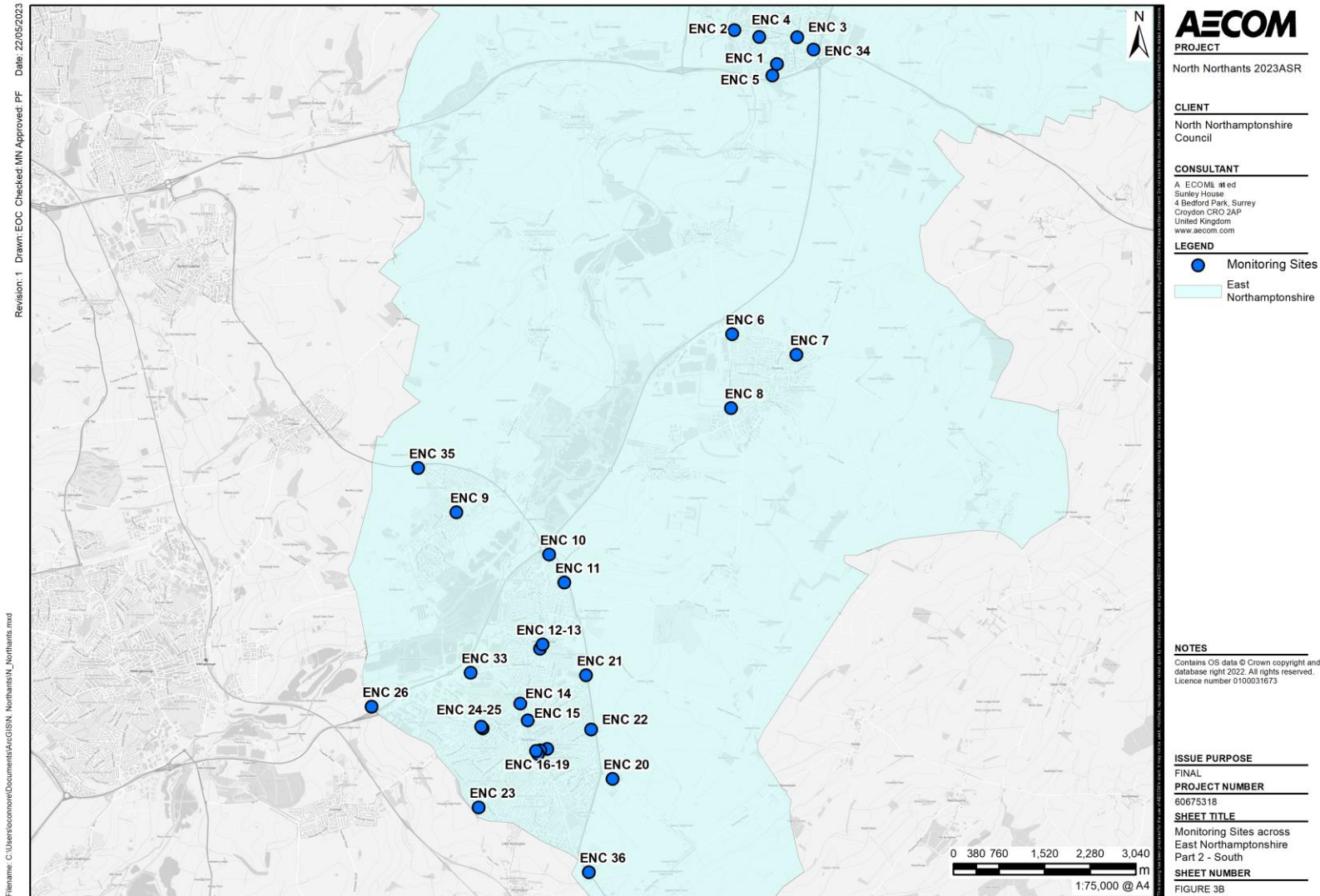


Figure D.5a - Map of Non-Automatic Monitoring Sites in Rothwell

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Revision: 1 Draw: EOC Checked: MN Approved: PF Date: 22/05/2023

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CLIENT
North Northamptonshire Council

CONSULTANT
AECOM Limited
Sunley House
4 Bedford Park, Surrey
Croydon CR0 2AP
United Kingdom
www.aecom.com

LEGEND
● Monitoring Sites
Kettering

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ISSUE PURPOSE
FINAL
PROJECT NUMBER
60675318
SHEET TITLE
Monitoring Sites across
Kettering Part 1 - Rothwell
SHEET NUMBER
FIGURE 4A

Figure D.6b - Map of Non-Automatic Monitoring Sites in Kettering Town Centre

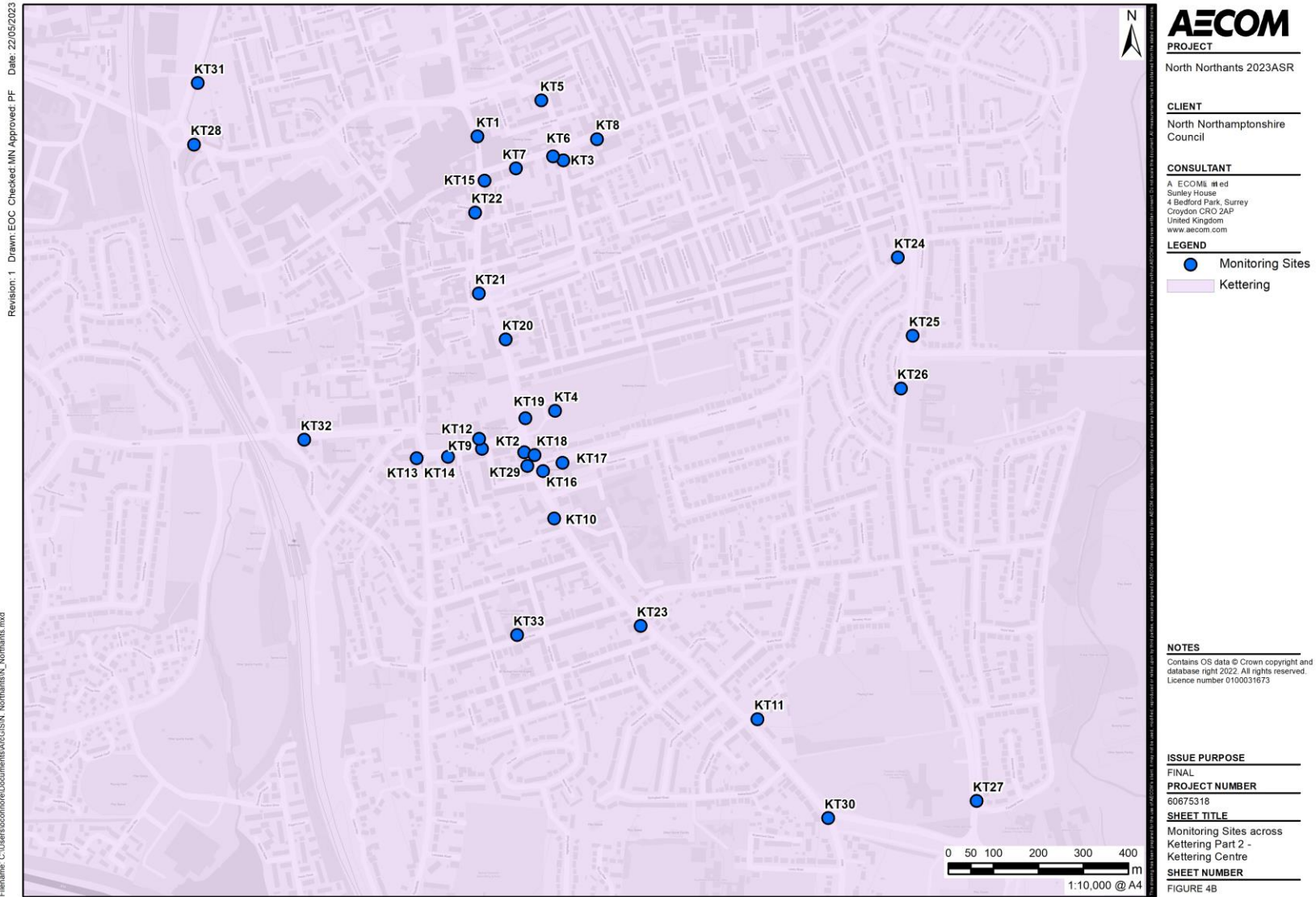
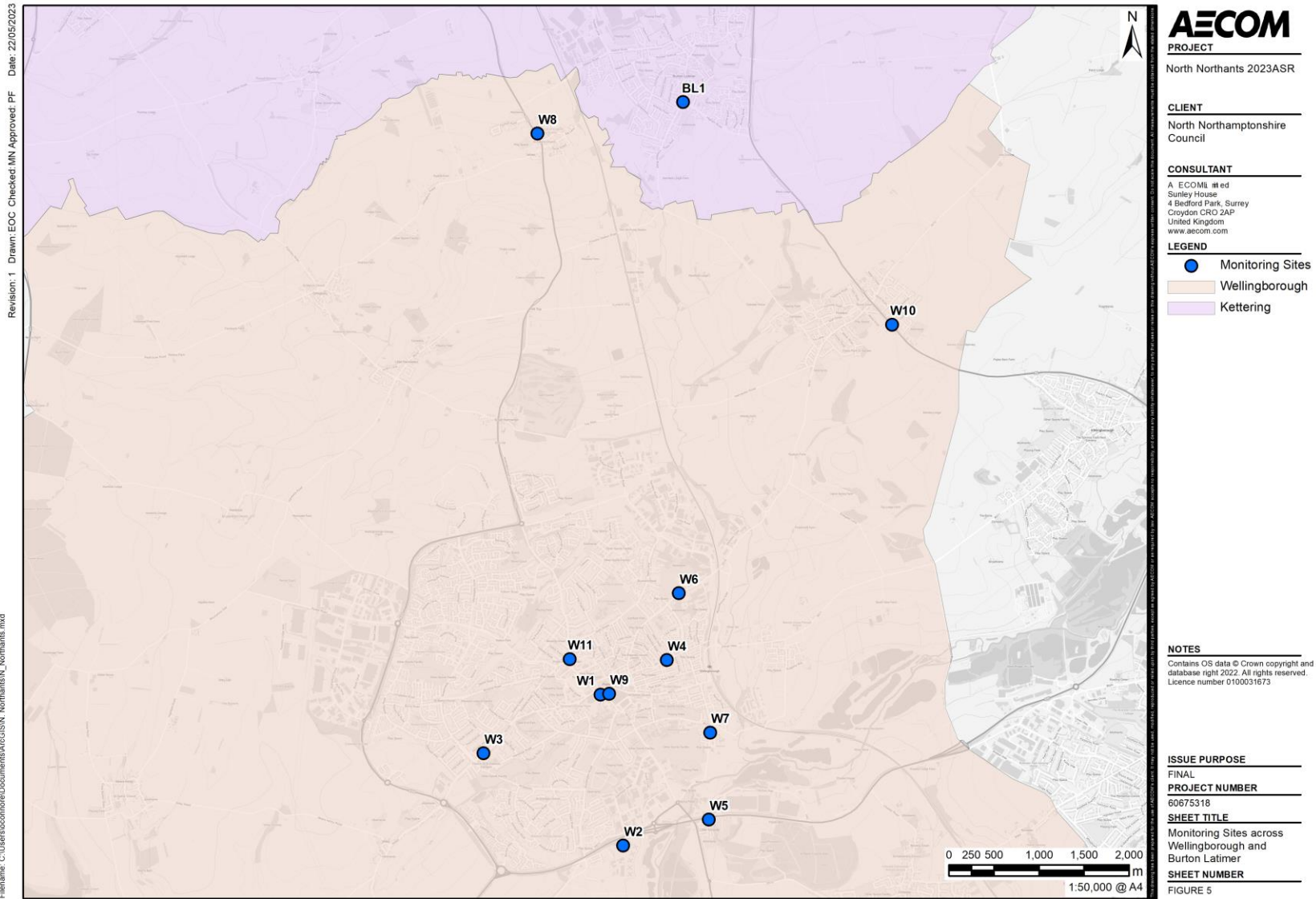


Figure D.7 - Map of Non-Automatic Monitoring Sites in Wellingborough and Burton Latimer



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England⁸

Pollutant	Air Quality Objective: Concentration	Air Quality Objective: Measured as
Nitrogen Dioxide (NO ₂)	200µg/m ³ not to be exceeded more than 18 times a year	1-hour mean
Nitrogen Dioxide (NO ₂)	40µg/m ³	Annual mean
Particulate Matter (PM ₁₀)	50µg/m ³ , not to be exceeded more than 35 times a year	24-hour mean
Particulate Matter (PM ₁₀)	40µg/m ³	Annual mean
Sulphur Dioxide (SO ₂)	350µg/m ³ , not to be exceeded more than 24 times a year	1-hour mean
Sulphur Dioxide (SO ₂)	125µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean
Sulphur Dioxide (SO ₂)	266µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean

⁸ The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

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
ASR	Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by National Highways
EMAQN	East Midlands Air Quality Network
EU	European Union
EVHS	Electric Vehicle Homecharge Scheme
FDMS	Filter Dynamics Measurement System
JSNA	Joint Strategic Needs Assessment
LAQM	Local Air Quality Management
NNC	North Northamptonshire Council
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO ₂	Sulphur Dioxide

References

- Local Air Quality Management Technical Guidance LAQM.TG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Local Air Quality Management Policy Guidance LAQM.PG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
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- Public Health England. Estimation of costs to the NHS and social care due to the health impacts of air pollution: summary report, May 2018
- Defra. Clean Air Strategy, 2019
- DfT. The Road to Zero: Next steps towards cleaner road transport and delivering our Industrial Strategy, July 2018



LOCAL AIR QUALITY STRATEGY



**North
Northamptonshire
Council**

Cover Photos

Main photo: man trialing e-Scooter in front of the Corby council offices

Left photo: Electric Vehicle charging sign

Middle photo: Green wall

Right photo: Solar panels on a roof

Local Authority Officer	Catherine Clooney
Department	Environmental Protection
Address	North Northamptonshire Council Sheerness House 41 Meadow Road Kettering Northamptonshire NN16 8TL
Telephone	0300 126 3000
Email	Catherine.Clooney@northnorthants.gov.uk
Report Reference number	
Date	November 2023

1.0 Summary

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. 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 equalities issues, because areas with poor air quality are also often the less affluent areas. The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion. North Northamptonshire council is committed to reducing the exposure of people in North Northamptonshire to poor air quality in order to improve health.

North Northamptonshire prioritises: securing clean growth and innovation that tackle emissions from industry, vehicles, products, combustion and agriculture and support both improvements in air quality and decarbonisation; protecting the environment by monitoring the impacts of air pollution on natural habitats; reduce nitrogen oxides emissions from transport; reduce PM_{2.5}, Sulphur dioxide and Non-methane volatile organic compounds emissions at home; reduce emissions of ammonia from farming; and reduce emissions from industry.

In this local air quality strategy (LAQS) 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 in Europe), 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 North Northamptonshire's direct influence.

Responsibilities and Commitment

This LAQS was prepared by Catherine Clooney of North Northamptonshire Council with the support and agreement of the following officers and departments:

- Public Health
- Planning Policy
- Transport Planning
- Carbon Management

This LAQS has been approved by:

<insert details of high-level Council members who have approved the AQS e.g. Head of Transport Planning, Head of Public Health, with e-signature>.

This LAQS <has/has not> been signed off by a Director of Public Health. <Specify which body has signed off the AQAP>

This LAQS will be subject to an annual review, appraisal of progress and <reporting to the relevant Council Committee (specify if relevant)>. Progress each year will be reported in the Annual Status Reports (ASRs) produced by North Northamptonshire council.

If you have any comments on this LAQS please send them to Catherine Clooney at:
Catherine.Clooney@northnorthants.gov.uk

Local Air Quality Strategies Info – to be deleted

2.14 Local authorities are encouraged to take early preventative action to improve local air quality, avoid exceedances and reduce the long-term health impacts associated with air pollution. Local authorities should consider prevention and reduction of polluting activities in preference to only taking steps to reduce air pollution once exceedances have been identified. This approach may also enable local authorities to adopt measures that reduce the need for costly interventions at a later date.

2.15 Those authorities who have not had to designate AQMAs and produce AQAPs will from 2023 be required to draw up a local Air Quality Strategy. These strategies will not have a set format and authorities will be able to draw on content within their ASRs and local transport plans to produce them.

Local Air Quality Strategy

4.28 The relevant Policy Guidance documents recommend that all authorities, particularly those that have not declared / do not expect to declare AQMAs but have identified areas close to the air quality objectives, should consider drawing up a local air quality strategy.

4.29 Progress Reports provide the opportunity for the authority to report on the development of its strategy, or (where a strategy is in place) on progress with implementation of any specific measures within the strategy.

The following questions could be addressed:

- To what extent has the authority developed an air quality strategy?
- If completed, how far has it been implemented?
- How accessible is the strategy (for example, deposited in local libraries and/or published on the internet)?
- When will the strategy next be reviewed?

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1.1 Introduction

This Local Air Quality Strategy (LAQS) has been produced voluntarily at the request of the Department for Food and Rural Affairs, (DEFRA) as part of the Local Air Quality Management, (LAQM), framework. It outlines the action the council will take to ensure that air quality remains below objective values across North Northamptonshire.

Furthermore, updated Local Air Quality Management Policy Guidance (PG22) and Technical Guidance (TG22) were published in August 2022. These guidance documents set out how local authorities monitor and take action to improve air quality in their local area as well as new challenges.

DEFRA are legally required to update the National Air Quality Strategy. They opened a consultation on their Revised National Air Quality Strategy, which ran for 10 days. The revised strategy was published on 30 April 2023 and renamed Policy Paper, [Air quality strategy: Framework for Local Authority Delivery](#). It fulfils a statutory requirement of the Environment Act 1995 as amended by the Environment Act 2021, that DEFRA publishes an Air Quality Strategy setting out air quality standards, objectives, and measures for improving ambient air quality every 5 years.

The policy paper is DEFRA's strategic framework specifically for local authorities and other partners. It sets out our powers, responsibilities, and further actions the government expects local authorities to take. Actions outlined in the policy paper which are relevant to NNC have been considered in this document.

North Northamptonshire has no active AQMAs but the council has taken forward a number of direct measures in their ASR, in pursuit of continuing to improve local air quality. Details of all measures completed, in progress or planned are set out in Table 2.

In addition to this LAQS, air quality in the borough is addressed through the Northamptonshire Transportation Plan (2012) and the Northamptonshire Climate Change Strategy (2020-2023). Since unitary authority was formed in 2021 North Northamptonshire has committed to becoming carbon neutral by 2030.

2.0 Summary of Current Air Quality in North Northamptonshire

Part IV of the Environment Act 1995 requires local authorities in England to review air quality in their area and designate air quality management areas if improvements are necessary. The council submits an annual air quality status report, (AQR), to DEFRA which provides an overview of air quality in North Northamptonshire, based on from the previous year's monitoring results. Diffusion tube monitoring is consistently below air quality objective values in North Northamptonshire and so an Air Quality Management Area, (AQMA), has not been required to be designated. DEFRA have requested that all local authorities produce an annual Air Quality Strategy.

In North Northamptonshire, sources of air pollution include recent developments, industry and transportation. There has been notable growth and regeneration in the Corby area in recent years, including the demolition of coal fire power station and former steelworks and the several residential developments. The area surrounding Wellingborough has also experienced high levels of residential development in recent years. The eastern part of the district is predominantly rural. In this area, as well as across the entire district, Nitrogen dioxide (NO₂) is the key pollutant of concern in the borough, which is primarily produced by road traffic. In 2020, pollutant levels were low in Kettering, Corby, Wellingborough and East Northamptonshire and as such there are no plans to introduce an AQMA in any of these areas.

Of the seven pollutants for which air quality objectives have been set, only nitrogen dioxide is monitored by North Northamptonshire Council. In 2022, every monitoring location in the area was significantly below the air quality objective level.

Please refer to the current ASR from North Northamptonshire. All the Annual reports are on the council's website: [Air quality | North Northamptonshire Council \(northnorthants.gov.uk\)](https://www.northnorthants.gov.uk/air-quality). Nitrogen dioxide has been monitored in North Northamptonshire since 1997. In 2022, North Northamptonshire undertook monitoring at 100 non-automatic (diffusion tube) sites and no concentrations exceeding the AQS objective value of 40 µg/m³ were recorded.

Even though air quality in North Northamptonshire does not exceed the objectives, improvement of air quality remains ongoing, as it is known that health effects can occur

even when pollution is below the objective levels. The area is served by several Highways England controlled main trunk roads.

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3.0 North Northamptonshire’s Air Quality Priorities

3.1 Public Health Context

A Joint Strategic Needs Assessment (JSNA) was undertaken by the former Northamptonshire County Council, which concluded that air pollution is estimated to account for 3.9% of number of years lost due to ill-health, disability or early death (DALYs) in Northamptonshire. An estimated £2,569 per person per year is spent on dealing with NO₂ in the health and social care system. This rises to £7,569 per person per year for PM. A ‘plan on a page’ was produced, which is shown in Table 1.

A ‘plan on a page’ prioritises: securing clean growth and innovation that tackle emissions from industry, vehicles, products, combustion and agriculture and support both improvements in air quality and decarbonisation; protecting the environment by monitoring the impacts of air pollution on natural habitats; reduce nitrogen oxides emissions from transport; reduce PM2.5, sulphur dioxide and Non-methane volatile organic compounds emissions at home; reduce emissions of ammonia from farming; and reduce emissions from industry.

Table 1. Northamptonshire County JSNA 'Plan on a Page'

Public Health Plan on a Page: Commissioning for Outcomes (Air Quality)			
<p>Vision:</p> <ul style="list-style-type: none"> Improving air quality to reduce hazardous health impacts that air pollution can have across a person’s lifetime, the associated health inequalities, and its burden on NHS social care costs To ensure that local air quality action plan to reduce air pollution remains robust and relevant to make Northamptonshire cleaner and healthier and attractive place to live, visit, work and play. 			
<p>Priorities: Secure clean growth and innovation that tackle emissions from industry, vehicles, products, combustion and agriculture and support both improvements in air quality and decarbonisation; protecting the environment by monitoring the impacts of air quality on natural habitats; reduce nitrogen dioxide emissions from transport; reduce PM2.5, Sulphur dioxide and non-methane volatile organic compounds emissions at home; reduce emissions of ammonia from farming; and reduce emissions from industry</p>			
Our Approach			
<p>Whole System Approach: Air quality is just one factor influencing the</p>	<p>Addressing existing problems and preventing new ones: A number of areas</p>	<p>Behavioural change: Assist relevant partners to address air quality and increase</p>	<p>Evidence based approach: There is increasing scientific evidence of</p>

management of urban environments and travel patterns. Others include: economic development and retail, planning, tourism,/visitor strategies, access to services including healthcare and access to education.	the county have identified/designated Air Quality Management Areas, where air quality is worse than the recommended legal limits. Further such areas may be created due to future housing growth/development and the associated increase in travel	sustainable travel, including: environmental health teams, planning departments, transport and highways and major organisations/employers	the health impacts of air quality, particularly for vulnerable people such as the elderly, the very young and those with certain health conditions, even at pollution levels within legal limits. Explore new evidence of effective approaches to reduce and mitigate risks	
<p>Achieved through:</p> <ul style="list-style-type: none"> Partnership working (health, local government, roads, planning, workplaces, schools) across the system and for all ages. Clear leadership on air quality issues 	<p>Achieved through:</p> <ul style="list-style-type: none"> Targeted efforts in known problem areas. Preventative measures to avoid further Air Quality Management Areas being required 	<p>Achieved through:</p> <ul style="list-style-type: none"> Social marketing Influencing policy Partnership creation and advocacy Health Promotion Northamptonshire Health Protection Committee to monitor air quality issues 	<p>Achieved through:</p> <ul style="list-style-type: none"> Joint Strategic Needs Assessment (JSNA) Return on Investment (ROI) tools Evaluation 	
Our Commitment/Enablers				
<p>Reducing inequalities:</p> <p>services which mitigate inequalities and work to overcome variation-by location, approach and policy</p>	<p>System partnerships:</p> <p>engage and co-produce with partners/stakeholders e.g. NHS, schools, prisons, workplaces and local government</p>	<p>Continued investment in advocacy and policy and programmes to increase active travel and use of green spaces</p>	<p>Engagement and co- production of research aligning with evidence, evaluation to monitor service delivery and quality</p>	<p>Embed Health in all Policies: a common way of influencing the wider determinants of health: transport policy, economic development policy, fuel and poverty management and town centre management</p>
Measures of Success				
<ul style="list-style-type: none"> All areas meet legal air quality limit values Adoption of sustainability policies and actions among partners 	<ul style="list-style-type: none"> Improved infrastructure for cycling/ walking Increased rates of active/sustainable travel Reductions in traffic congestion 	<ul style="list-style-type: none"> Improved air quality measures at key sampling sites Increased awareness in organisations and the public Reduced respiratory disease in high traffic areas 		

3.2 Planning and Policy Context

The current Local Plan for North Northamptonshire includes the Joint Core Strategy and supporting area-based plans. The Joint Core Strategy adopted in July 2016 provides the strategic planning policies for the future development of the area from 2016 to 2031. Information regarding Planning Policy within North Northamptonshire can be found on the website: [North Northamptonshire Strategic Plan | North Northamptonshire Council \(northnorthants.gov.uk\)](https://www.northnorthants.gov.uk/strategic-plan).

Local Area Plans can be found here [North Northamptonshire Local Plans | North Northamptonshire Council \(NorthNorthants.gov.uk\)](https://www.northnorthants.gov.uk/local-plans)

The need to consider the effects of development on air quality, and how developments can contribute towards improvements, is identified as a key challenge to ensuring sustainable development.

The former Wellingborough district council's Air Quality and Emissions Mitigation Guidance for Developers is in operation and was produced in conjunction with East Midlands Air Quality Network. North Northamptonshire is currently revising this supplementary planning document to cover the whole area. The approach in the document seeks to minimise or offset road transport emissions wherever practicable by securing reasonable emission mitigation while also seeking to counter the cumulative impacts arising from all developments and maximise potential benefits to health and the environment.

It has been well established that air pollution is associated with several adverse health impacts. In addition to this, it is recognised as a contributing factor in the onset of heart disease and cancer. 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 equalities issues, because areas with poor air quality are also often the less affluent areas.

The council's priorities are emission reduction through development control and working with partner authorities and agencies to encourage electric vehicle and electric bicycle usage.

3.3 Priorities

- Priority 1 - Raise awareness regarding the impacts of PM_{2.5} on air quality and health.
- Priority 2 - Ensure new developments encourage and facilitate low emission and alternative/active transport;
- Priority 3 - Ensure transport infrastructure delivery takes account of emissions
- Priority 4 - Work with other agencies and authorities to minimise the impact of developments on neighbouring authorities;
- Priority 5 - Reduce particulate matter (PM₁₀ & PM_{2.5}) across the local authority area, in cooperation with DEFRA.

The Council's Environmental Protection team has air pollution regulatory responsibilities which they will continue to enforce, including:

- Inspect all its permitted processes under the Environmental Permitting (England and Wales) Regulations 2016, (EPR) to ensure compliance, that these permits are updated as and when appropriate' and operation conditions are up-to-date with the latest guidance.
- Enforce the Clean Air Act 1993 and to encourage local businesses to dispose of waste in a responsible manner, in order to prevent or minimise the emissions of dark smoke. All complaints regarding smoke or associated odour are investigated, enforced and / or information is provided to the perpetrator.

4.0 Development and Implementation of North Northamptonshire's AQS

The actions NNC takes can be considered under these broad topics:

- Policy guidance and development control
- Promoting low emission transport
- Promoting travel alternatives
- Alternatives to private vehicle use
- Public information
- Transport planning and infrastructure
- Freight and Delivery Management
- Environmental Permits
- Vehicle fleet efficiency
- Promoting low emission plant

4.1 Consultation and Stakeholder Engagement

The following stakeholder engagement was undertaken:

- Press release / Articles in local newspapers
- Parish and Town Council consultations
- All neighbouring local authorities
- Internal consultation with the Local Planning Authority, Environmental Services and Public Health
- North Northamptonshire Council website
- DEFRA

4.2 Steering Group

We don't really have an environmental steering group to oversee cross departmental cooperation, but this would be a good idea. Due to the composition outlined below, I am not sure if an EAP would suffice. Does NNC have an environmental steering committee? To oversee cross departmental cooperation? If not, delete this section.

North Northamptonshire Council has a Climate Change, Environment and Growth Executive Advisory Panel; which is comprised of a cross-party meeting of councillors. Meeting monthly, the panel helps shape various work and policy in areas such as active travel, air quality management and environmental improvements, such as our own Pollinator Strategy.

To ensure that air quality actions are adopted across the council's departments a steering committee

5.2 Local Air Quality Strategy Measures

This strategy outlines the actions that are proposed by North Northamptonshire Council to be delivered between 2023 and 2028 in order to maintain reduced concentrations of air pollutants and exposure to air pollution. Resulting in positively impacting on the health and quality of life of residents and visitors to the area.

The council has developed actions that can be considered under these broad topics:

- Policy guidance and development control
- Promoting low emission transport
- Promoting travel alternatives
- Transport planning and infrastructure
- Freight and Delivery Management
- Environmental Permits
- Vehicle fleet efficiency
- NNC aims to be Carbon Neutral by 2030
- Decarbonisation projects

Table 2. shows the North Northamptonshire AQS measures and the following additional information:

- i. a list of the measures that form the strategy
- ii. the responsible individual and departments / organisations who will deliver this action
- iii. the expected benefit in terms of pollutant emission and / or concentration reduction
- iv. the timescale for implementation
- v. how progress will be monitored.

Please see future Annual Status Reports listed on [Air Quality | North Northamptonshire Council](#) webpage, for regular annual updates on the implementation of these measures.

5.1 NO₂ reduction measures

The primary source of air pollution in North Northamptonshire council is traffic related NO₂, and consequently the majority of air quality measures relate to promoting transport alternatives.

5.1.1 Transport Measures

North Northamptonshire Electric Vehicle Infrastructure Strategy

The transition to electric vehicles is key to reducing air pollution and an essential part of our journey to net-zero. As at the end of Q1 2023 (the most recent DVLA data for EV sales), there are 237,800 registered vehicles across North Northants, of which 3,112 (1.3%) are pure electric vehicles. Electric vehicle sales in North Northants have increased circa 50% year on year for the past 10 years (consistent with EV sales across the UK as a whole). The development of an electric vehicle charging infrastructure is critical to supporting the growing number of electric vehicles, especially for residents without off-road parking (those with off-road parking can install a charge point at home). North Northants currently has 139 electric vehicle charging points (at end Q1 2023), of which 23 have been installed on-street by NNC as part of the Innovate UK supported VPACH (Virgin Media Park and Charge) project, with installation underway for a further 23 going live in 2023, and consultation planned for a further 17 (8 of which will be Rapid chargers).

NNC was awarded £2.9 million to develop our EV charging network. In August 2023 the council issued a draft 'North Northants Electric Vehicle Infrastructure Strategy' (NNEVIS) for public consultation. Targets in the draft strategy include ensuring that public charging points are available in all 12 towns by the end of 2025 and almost doubling the number of public charging points to at least 250 by the same date.

Smart and Connected Corby

North Northamptonshire Council (NNC) is seeking to develop a network of smart sensors in areas around Corby town centre to detect motorised and non-motorised travel, providing anonymously gathered data, to enable it to be made available via a publicly accessible platform. The data will be used to shape transport policies and will be an additional source of air pollution monitoring. This project is being combined with the Town Centre to Train Station link road along Oakley Road. The Vivacity sensors procured will monitor and report on cumulative data over time on various classifications of motorised and non-motorised movement 24 hours a day, 7 days a week, 365 days a year. The sensor captures all road users in its field of view and can differentiate between the different types, known as a classified count. The sensors (see Figure 2-1) contain a camera and the processor which allows the collection of anonymous data. This data is sent to the cloud-based database and the video is discarded at the sensor. Sensors will also be used to detect and report on pollution in various areas in Corby.

The Greenway Project

An additional project to encourage alternative transport is the East Northamptonshire Greenway project. This project is working to create walking and cycling routes in the Nene Valley. The Greenway is being developed in phases, some of which are already completed, and others will follow within the next few years. The Greenway will help connect East Northamptonshire's communities to a central route that will run from Wellingborough Railway Station in the south, to Peterborough railway station in the north, and vice-versa. It will link open spaces together with opportunities for informal recreation and alternative means of transport to services and facilities. The project will also provide safe routes for young people who walk and cycle to school. The Greenway is predominantly for walkers and cyclists, and in parts horse riders are welcome where the route is a bridleway.

Local Cycling and Walking Infrastructure Plans (LCWIP)

LCWIPs provide a long-term, evidence-based approach to developing local cycling and walking networks, usually over a 10-year period. NNC is making it safer, easier and more attractive to walk, wheel, cycle or scoot by developing three LCWIPs to cover the major urban areas of North Northamptonshire. Kettering (including Burton Latimer) now has an approved LCWIP. The LCWIP for Corby has been developed and consulted upon and is programmed to be approved in early 2024. The other LCWIP for the Wellingborough/Rushden area is currently in the process of being developed, based upon initial stakeholder consultation feedback.

Public Transport

Having effective and efficient public transport can reduce vehicle journeys into towns and other destinations. This in turn reduces traffic congestion and vehicle emissions. The former county council and present NNC Transportation team has implemented the following public transport options which serve North Northamptonshire.

- **Door-to-door Transport** – designed to help those who are unable to use traditional transport. This may be because of age, disability, or a lack of a bus service in that area: [Door-to-door Webpage | North Northamptonshire Website](#)
- **Bus service** details for the county including journey planners: [Bus Timetables: North Northamptonshire Council Website](#)

Bus Service Improvement Plan

The BSIP sets out the high-level vision and key interventions to deliver it, along with the Enhanced Partnership (EP) plan which will contain detail of how the interventions will be delivered, so both documents combined will make up a strategy for bus service improvements within North Northamptonshire.

The BSIP was developed in collaboration with bus operators and stakeholders such as bus users, other service providers and local business groups. The areas that the BSIP will consider around service provision and improvement such as (but not limited to):

- more frequent services, utilising things such as turn-up-and-go services;
- faster and more reliable services, including considering things such as bus priority;
- ticket costs;
- provision levels, particularly in the evening and at weekends and to rural locations;
- easier to understand information such as having simpler routes, common numbering, co-ordinated timetable change dates, better publicity, and comprehensive information online;
- ensure services are easier to use considering things such as common ticketing, simpler fares, contactless payment and better integration with other modes of transport and each other, including more bus-rail interchanges and inter-bus transfers.

Smart Move Northamptonshire

North Northamptonshire Council's transport team in partnership with West Northamptonshire facilitated the Smart Move Northamptonshire website [Home | Northamptonshire County Council \(smartmovenorthamptonshire.net\)](https://www.smartmovenorthamptonshire.net) The website is the transport information hub for live Northamptonshire bus and train times in real-time, information on electric vehicles, car clubs, cycle hire, journey planners and more for residents, workers and visitors.

In August 2023 North Northamptonshire Council published the Sustainable Travel to Education Strategy for consultation. The strategy sets out how we will work with others to encourage to travel to school or college in a healthy, sustainable and safe way. With a key target of all schools having a school travel plans by 2033.

This strategy hopes to deliver change for children and young people. Interventions are intended as being engaging, collaborative and transformational with a children and young people first approach.

Traffic Management Schemes

The following road schemes are currently under development in North Northamptonshire:

- A43 Northampton to Kettering - The A43 between Northampton and Kettering suffers from congestion hotspots, journey time delay and road safety issues due to vehicles trying to overtake. To tackle these problems, it is proposed to dual the A43 all the way between the A45 and the A14.
- A509 Isham bypass – The scheme has been developed to address existing traffic issues in Isham and to accommodate anticipated traffic growth in the coming years. The scheme proposes a dual carriageway, starting from the Symmetry Park roundabout, running in a southerly direction west of the village of Isham, and re-joining the A509 Kettering Road midway between Hill Top and Great Harrowden.
- A6 between junction A14 and A45 – This scheme has been developed to address key points of congestion on the highway network at peak times and improve road safety for all users.

5.1.2 Carbon Reduction Measures

Carbon Management Plan

The council established a plan to become carbon neutral by 2030. To achieve this, the following areas are being addressed:

1. Council owned buildings – evaluating and making changes to our estate to meet carbon neutral requirements.

2. Non-domestic energy performance for our buildings.
3. NNC Fleet is on track to becoming carbon neutral by 2030.
 - a. Short term (1-2 years)
 - Obtaining a Fleet De-carbonisation Report
 - New fleet replacements consider zero emission vehicles and non-fossil fuel alternatives where practicable
 - Conduct pilots of electric HGV vehicles for refuse collection rounds.
 - Introduce staff awareness as part of driver trainer and assessment courses
 - Review the cost benefit analysis of introducing alternative low carbon fuels supplies for the council's bunkered fuel supply
 - Review and fit charging infrastructure on key sites
 - Replace leased vehicles with carbon neutral alternatives where possible. This will likely be possible from 2027 onwards due to contractual commitments
 - b. Medium term (2-5 years)
 - Ensure all hired cars and vans are carbon neutral
 - Explore replacing/improving the carbon efficiency of specialist vehicles, such as gritters and refuse collectors
 - Infrastructure ready and in place for carbon neutral fleet
 - Driver training operating & maintaining new technology
 - c. Long term (5 years +)
 - Carbon neutral fleet
 - Consider alternatives where practical for specialist vehicles – based on new technology availability
4. Procurement and supply chains will become zero carbon by 2030.
5. Behaviour – staff are trained in carbon literacy.
6. Carbon sequestration – improves biodiversity and planting trees traps carbon
7. Carbon offsetting – includes running pilot schemes for employing renewable energy sources in our estate, or large-scale renewable energy sites.

Electric Scooter Project

The Voi Scooter project aims to expand electric scooter use in UK towns to encourage uptake in this mode of transport with a focus on replacing car journeys in North Northamptonshire.

The most up to date data shows that between April 2021 and March 2022, 244,081 car trips were replaced, and a reduction of 85,300 Kg CO2 was attributed to this. The areas where this project is ongoing is Corby, Kettering, Rushden and Higham Ferrers and Wellingborough.

Starship Robots Project

[Robot Deliveries | Starship Technologies](#), a provider of autonomous delivery services, has partnered with North Northamptonshire Council and the Co-op to bring the benefits of autonomous grocery delivery to local residents across Wellingborough, Higham Ferrers and Rushden. The robots are lightweight and travel at the speed of a pedestrian (no faster than 4mph). They use a combination of sensors, artificial intelligence and machine learning to travel on pavements and navigate around any obstacles, while computer vision-based navigation helps them map their environment to the nearest inch. The service commenced in July 2022. This service reduces the need for travel to a supermarket.

5.1.3 Taxi Licensing Measures

Vehicles must be no older than four years from the first day of registration on initial application to North Northamptonshire Council for a Private Hire or Hackney Carriage Vehicle Licence.

The Council is able to act directly on emissions from taxis and public hire vehicles and so the following will come into effect at the specified periods below, and supersedes any other conflicting requirements:

- New and replacement vehicle licence applications between the date of this policy coming into force and 31 March 2025 must meet Euro 6 emission standards.

- No new applications for vehicles fuelled by diesel only or petrol only will be processed after 31 March 2025
- No licences for vehicles fuelled by petrol only or diesel only will be renewed after 31 December 2030. This overrides the upper age policy so whatever the age of the vehicle, the licence will not be renewed when the licence expires after this date.
- All private hire licences for petrol only and diesel only fuelled vehicles will expire on 31 December 2030.

5.1.4 Home Energy Conservation Act 1995 (HECA)

HECA requires all local authorities (LA's) in England to submit reports to the Secretary of State demonstrating what energy conservation measures they have adopted to improve the energy efficiency of residential accommodation within that LA's area. This covers measures to improve properties in the owner-occupier, private rented sector, and social rented sector.

The most recent report is available on the council's website, [Housing Reports | North Northamptonshire Council](#)

6.3 Particulate Matter PM10 and PM2.5

DEFRA has requested local authorities to assist them in extending smoke control legislation. Corby has smoke control areas (SCA) in its area. Environmental Health enforce smoke from chimneys to reduce PM2.5 concentrations and trading standards regulate non-compliance for these declared smoke control areas. Should smoke be emitted from a residential chimney within an SCA, nuisance procedures continue to operate under Part 3 of the Environmental Protection Act 1990 and this legislation can also be used.

NNC has a webpage dedicated to chimney smoke covering both domestic and industrial burning: [Smoke and Bonfires | North Northamptonshire Council](#)

NNC disseminates the current smoke guidance issued by DEFRA, including the 'Ready to Burn' information: [Ready to Burn | Department of Environment, Food and Rural Affairs](#)

[Add NNC decision about whether they will extend SCAs and adopt civil penalties for non-compliance.]

Construction is a major source of particulate matter pollution and because of this, our updated Air Quality and Emissions Planning Guidance document strengthens the previous requirement for construction dust management plans on all large-scale major schemes to dust mitigation for all dust creating construction.

Table 2. Air Quality Strategy Measures

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated /Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / emission from Measure	Key Performance Indicator	Progress to Date	Comments/ Barriers to Implementation
1	Transport plan to promote walking, cycling and public transport in order to support the modal shift away from the private car.	Policy Guidance and Development Control	Other Policy	2020	2025	North Northamptonshire Council	-	-	-	-	Ongoing	-	Local Walking and Cycling Infrastructure Plan	Stakeholder engagement for Kettering has been completed. A draft is being consulted on. Wellingborough, Rushden & High Ferrers and Corby are being planned.	Funding has been ringfenced and all projects are on time.
2	Encourage lower carbon transport alternatives and increase the proportion of low carbon fuelled vehicles	Promoting Low Emission Transport		2020	2025	North Northamptonshire Council	-	-	-	-	Ongoing	-	Measure occurrences of charging	In progress	The new Local Transport Plan is in formation. Consultation spring 2024, adoption autumn 2024.

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3	Work with taxi companies and licence holders to consider low carbon vehicles	Promoting Low Emission Transport		2020	2025	North Northamptonshire Council	-	-	-	-	Ongoing	CO ₂ /NO ₂	Move towards NetZero taxis		
4	Promote zero carbon council fleet	Promoting Low Emission Transport		2020	2030	North Northamptonshire Council	-	-	-	-	Ongoing	CO ₂ /NO ₂	Number of Electric/hybrid vehicles		NNC Fleet is on track to becoming carbon neutral by 2030.
5	Measure home energy conservation act requirements as part of statutory Home Energy Conservation Act 1995	Policy Guidance and Development Control	Other Policy	2017	Ongoing	North Northamptonshire Council	-	-	-	-	Ongoing	-	Home energy conservation measures	Report published May 2021	HECA Report for NNC is available here Housing Reports North Northamptonshire Council

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6	East Midlands Air Quality Network – Engaged	Policy Guidance and Development Control	Regional Groups Co-ordinating programmes to develop Area wide Strategies to reduce emissions and improve air quality	2016	Ongoing	Regional local authorities – environmental health, planning, public health and transport colleagues; Public Health England	-	No	Funded	< £10k	Completed - Ongoing	Reduced emissions from transport; reduced to exposure to air pollution	Attendance at regional meetings. Completion of Work Plan - health improvement, source reduction, exposure reduction	Ongoing – meet twice per year and share information in between meeting dates	-
7	Implement North Northamptonshire Air Quality and Emissions Supplementary Planning Document; link to other local and regional policies	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2018	Ongoing	Regional local authorities – environmental health, planning, public health and transport colleagues; Public Health England	-	No	Funded	< £10k	Ongoing	Reduced emissions from transport; reduced exposure to air pollution	Guidance embedded in local and regional policy	NNC is currently updating their AQ SPD and will be consulted on in 2024.	-
8	Installing Electric Vehicle Charging Points	Promoting Low Emission Transport	Other	2018	Ongoing	Local Authority Climate Change Team	OLEZ	No	Funded	£10k - 50k	Ongoing	Reduced emissions from transport	Number of EV charging points	In autumn 2023 the North Northamptonshire Electric Vehicle Infrastructure Strategy went to consultation.	In addition to the charging points already put in place, the strategy identifies more locations for installation.

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9	Environmental Permitting – Risk Rating Inspections	Environmental Permitting	Introduction/increase of environment charges through permit systems and economic instruments	2016	Ongoing	Local Authority Environmental Health	Permitting Annual Fees	No	Funded	£10k - 50k	Ongoing	Reduced industrial emissions	Inspection frequency dependent on risk – higher risk premises are inspected more frequently. Penalty in risk rating for contributing to local air quality issues	NCC has a duty to implement this, so it is ongoing	Staff numbers and competence/skills for higher risk installations
10	Enforcement of Environmental Permit Conditions	Environmental Permitting	Other measures through permit systems and economic instruments	2016	Ongoing	Local Authority Environmental Health	Permitting Annual Fees	No	Funded	£10k - 50k	Ongoing	Reduced Industrial Emissions	Enforcement of conditions of permits as required	Implementation ongoing	Staff numbers and competence/skills for higher risk installations
11	Planning conditions requiring construction/demolition management plans to include dust suppression AND enforce dust/mud controls where no planning condition exists through legislation	Policy Guidance and Development Control	Other Policy	2016	2016	Local Authority Environmental Health and Planning	-	No	Funded	< £10k	Ongoing	Improved dust mitigation reducing PM ₁₀ , PM _{2.5} locally and reducing nuisance complaints	Planning conditions/Interaction with developers in response to complaints or proactive visits	Implementation on-going	Environmental Health is a consultee and recommends conditions

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12	Age policy for Taxis A unified policy has been written for North Northamptonshire.	Promoting Low Emission Transport	Taxi licensing conditions	2016	2016	Local Authority Environmental Health	-	No	Not Funded	< £10k	Completed - Ongoing	Reduced traffic emissions including PM10 and PM2.5	Number of taxis licensed	Ongoing	NNC published a Hackney Carriage and Private Hire Licensing Policy in April 2023. This defines the permissible age of vehicles and emissions requirement.
13	Health and Wellbeing Officer/Sports Development Officer in Post	Alternatives	Promotion of cycling and walking	2016	2016	North Northamptonshire	-	No	Funded	£10k - 50k	Ongoing	Reduced emissions from transport; reduced exposure to air pollution	Increased physical activity	Healthy Walks Programme - volunteer lead monthly walk. Promotion of physical activity on website. Supporting One-You PHE Campaign	Walking sports programmes are listed here Home - Northamptonshire Sport Wellbeing Walks Officer advertised September 2023.
14	VOI Scooter Project	Promoting Low Emission Transport	Public Vehicle Procurement, prioritising uptake of low emission vehicles	-	-	VOI technology	VOI technology	No	Funded	-	Implemented	1.84kg PM2.5	-	Total number of rides since launch is approximately 70k.	-
15	Greenway Project	Promoting Travel Alternatives	Promotion of cycling	-	-	North Northamptonshire Council	-	No	-	-	Implemented	-	-	Begun to develop walking and cycling routes in the Nene Valley	-

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	North Northamptonshire Parking Strategy	Policy Guidance and Development	EV Parking	2024		North Northamptonshire Council	North Northamptonshire Council							Public opinion on parking is currently being consulted on. This will assist the formation of the strategy.	Consultation of the Strategy will be late 2023/early 2023.
16	Northamptonshire Climate Change Strategy	Policy Guidance and Development Control	Low Emissions Strategy	-	-	North Northamptonshire Council	-	No	-	-	Implemented	-	-	North Northamptonshire Council (NCC)	-
17	Climate Task and Finish Group	Policy Guidance and Development Control	Other policy	-	-	North Northamptonshire Council	-	-	£1M	-	-	-	-	Group set up by NNC to facilitate actions to improve climate change	The Carbon Management Plan has been published. It sets out how the council will become carbon neutral by 2030
18	Joint Strategic Needs Assessment (JSNA)	Policy Guidance and Development Control	Other policy	2020	2021	North Northamptonshire Council	North Northamptonshire Council	No	Funded	Unknown	Ongoing	Exposure to pollutants	'Plan on a Page' outcomes	Recommendations are being followed up	Brings together information from many different sources and partners relating to the population of Northamptonshire
19	SAMHE air quality sensors in schools	Policy Guidance and Development Control	Other policy	2023											

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20	Air Quality Officer post	Policy Guidance and Development Control	Other policy	2020	2023	North Northamptonshire Council	AQ Grant	Yes	Funded	£20-40k	Ongoing	N/a	Officers in post	Still recruiting	Availability of staff
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QAP	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
EPR	Environmental Permitting (England and Wales) Regulations 2016
EU	European Union
LAQM	Local Air Quality Management
LAQS	Local Air Quality Strategy
LGR	Local Government Review
LGV	Large Goods Vehicles
NBC	Northampton Borough Council
NCC	Northamptonshire County Council
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
SCA	Smoke Control Area
NNC	North Northamptonshire Council

Appendix A: NNEVIS List of Policies and Actions

Policy 1

Provision will be made for an extensive EV charging network across North Northamptonshire which provides confidence to switch to electric vehicles and meets future need.

- NNC will encourage residents with off-street parking to install EV charging infrastructure through awareness campaigns and other activity.
- NNC will liaise with businesses and other employers to encourage the deployment of EVCPs and, if not already done so, consider developing a strategy for transitioning their fleet to EVs.
- NNC will encourage owners of commercial car parks²⁰ and managers of housing stock of all types of tenure to deploy public EV charging infrastructure in safe and accessible spaces, with pricing transparency.
- NNC will work with landowners, businesses, public sector, and other stakeholders to understand the timing of their implementation for EV charging to align overall plans and forecasts.
- NNC will encourage continued private sector investment in public EVCPs at train stations, supermarkets, filling stations and other commercially operated venues.
- NNC will seek to improve the availability of rapid and ultra-rapid EV charging on and near the strategic road network and important link roads across North Northamptonshire.
- NNC will liaise with National Highways, the body responsible for the national road network, to ensure that chargepoints not only meet their strategic objectives but are also deployed, to the extent possible, in the most efficient locations to assist residents and businesses.
- NNC will develop standards for the provision of public EV charging. This will include reliability, open access, safety, and security e.g., lighting and location, and access for those with restricted mobility.

Policy 2

Provision will be made for a hierarchy of solutions to EV charging for residents, businesses, and visitors without access to off-street parking which prioritises the creation

of off-street Charging Hubs in public NNC car parks. Parking bays associated with EV charging will be managed to encourage both destination and overnight EV charging and for all types of EV ownership, including private vehicles, shared or car club vehicles, and taxis. EV Charging Hubs will be introduced at the Councils' major visitor attractions. NNC will assess the suitability of public car parks as locations for Charging Hubs and related provision.

- NNC will consider opportunities for installing solar canopies and energy storage systems at selected Charging Hubs.
- NNC will identify suitable locations for Mobility Hubs which will include EV charging infrastructure.
- NNC will identify suitable sites for Charging Hubs at local visitor attractions.
- NNC will encourage the use of technology, including sensors, to support detection, education, and enforcement of unauthorised parking in bays reserved for EV use only.
- NNC estimates that there are about 600 car parks in North Northamptonshire of which about 550 are privately owned.
- NNC will collaborate with local councils, National Health Service bodies, and other public sector organisations to better understand their ambitions and plans and help inform future provision of EV charging infrastructure and complementary initiatives which promote the use of EVs.
- NNC will provide the opportunity for local town and parish councils to put forward potential sites for deploying a public EV charging facility.

Policy 3

Provision will be made for EV charging in on-street locations to help meet future demand, provide the necessary penetration, ensure availability to charge conveniently and close to homes, stay ahead of the curve, and support earlier transition to EV ownership.

- NNC will identify where locations are needed for on-street charging to serve clusters of properties without access to off-street parking or suitable alternatives.
- NNC will align the process of identifying and consulting on sites, and associated parking restrictions, to enable a more joined-up engagement with statutory bodies and local residents.

- NNC will seek to streamline the Section 50 process e.g., with common requirements and standards, and by aggregating obligations for suppliers installing and operating multiple charge points.

Policy 4

Provision will be made to consider and support the creation of one or more charging Superhubs in an appropriate strategic location(s).

- NNC will investigate the potential to create a Charging Superhub in the North Northamptonshire area.

Policy 5

Provision will be made to encourage smart charging technologies to optimise the capacity of the energy network to support EV charging infrastructure.

- NNC will consult with National Grid on the assessment of locations for Charging Hubs and on-street EVCPs and to understand any constraints to the deployment of EV charging infrastructure.
- NNC will investigate opportunities to trial and introduce smart charging technologies in the area.

Policy 6

All new development proposals for housing, leisure, business, commercial, retail, supermarket or other developments which create places of work and generate travel demand will include provision for EV charging infrastructure which is able to meet future needs.

- NNC will encourage developers to rise to the challenge of ensuring that these homes are built to the best low carbon standards, embracing renewable energy, and supporting widespread EV take-up.
- NNC will seek to directly influence EV chargepoint provision in new developments to ensure that this is sufficient for future requirements and to improve provision of EV charging facilities, zero emission travel, and other complementary policy approaches in support of the wider Net Zero living, including the incorporation of e-

mobility hubs for shared transport in all major developments, including 'garden communities'.

Policy 7

Provision will be made for shared electric transport to provide an alternative and flexible alternative to ownership, including through the provision of dedicated parking spaces and charging infrastructure for EVs.

- NNC will continue to support trials and other opportunities to provide shared electric transport.
- NNC will encourage commercial investment in chargepoint infrastructure near to, and at, taxi ranks.
- NNC will work with local bus companies to encourage a transition to EVs.
- NNC will explore opportunities for introducing other forms of shared transport to meet the needs of residents, businesses, and visitors. This will include EV car clubs, electric cargo bikes, and other forms of zero-emission transport.
- NNC will seek to allocate dedicated parking areas and/or bays for shared transport. This will include considering dedicated bays for e-car clubs.
- NNC will investigate how it can facilitate and encourage use of electric cargo bikes to support local deliveries. NNC will investigate the potential to pilot one or more shared community EV projects, enabled through local chargepoint provision.

Policy 8

Provision will be made at NNC offices for EV charging infrastructure to provide charging for users of the premises.

- NNC will install additional EVCPs at its main offices in Corby, Kettering, Thrapston, and Wellingborough.
- NNC will deliver a managed transition of its fleet to EVs where feasible and transitioning to other sustainable fuels for HGV fleet where EV technology is not suitable or too costly.
- NNC will install EVCPs at NNC depots to charge the fleet.
- NNC will consider opportunities for renewable energy generation at its depots e.g., the use of solar canopies and/or the road surfaces, and battery storage to complement the provision of EV infrastructure.

Policy 9

Public and private funding will be sought for investment in EV infrastructure and to support the development of a self-sustaining charging network. Opportunities will be identified to generate revenue streams which will enable further investment to grow the EV charging network, improve the service, and support complementary initiatives.

- NNC will seek to maximise the use of external funding opportunities for investment in EV infrastructure including the current Local Electric Vehicle Infrastructure fund (LEVI) and other funds from the Office for Zero Emission Vehicles (OZEV), government departments and other agencies.
- NNC will consider the use of other public funding, including internal sources, to attract additional investment.

Policy 10

Provision will be made to encourage and support EV uptake through trials, campaigns, public engagement, collaboration, and other initiatives.

- NNC will engage with residents, businesses, and other stakeholders to understand any concerns and use their knowledge of the area to identify potential locations for EVCPs.
- NNC will maintain a Request an Interest for a Chargepoint site 21 to enable sites to be identified by local residents and businesses.
- NNC will supply and promote information about public EV charging in North Northamptonshire and increase awareness of the benefits of EVs to the public through their online and other communication channels.
- NNC will ensure that information on the location, speed and availability of chargepoint infrastructure is readily available to the public.
- NNC will encourage operators to shift to cleaner vehicles.
- NNC will continue to encourage the use of other electric vehicles, including electric bikes, electric scooters²², delivery robots, and keep on top of emerging technologies, to ensure infrastructure remains fit for purpose and meets the needs and demands of users.

- NNC will participate in collaborations with the private sector through trials to familiarise residents and users with innovative technology and raise public awareness.



AIR QUALITY & EMISSIONS

Technical Planning Guidance



**North
Northamptonshire
Council**

Summary

This technical guidance document aims to provide clarity and advice in relation to air quality in a planning context and encourages good practice through mitigating impacts. The objective of mitigation is to focus on emissions reductions to ensure health guideline values are not breached. The planning system has an important role to play in driving forward improvements in local air quality, minimising exposure to pollution, and improving the health and well-being of the population.

To ensure the prompt review of details submitted for mitigating air pollution applicants, developers and air quality consultants are advised to read this document prior to submitting a planning application. Consideration of air quality in the development design will lead to lower emissions and an ambient environment. Good design at the outset is the most effective and straightforward way to a low emission development.

The Environment Act 2021 established a legally binding duty on the UK government to bring forward at a new air quality target for 2.5 micro gram particulate matter (PM2.5) in secondary legislation. Therefore, in addition to addressing vehicle emissions, the assessment and control of dust impacts during demolition and construction of a development must also be considered.

The adopted Technical Planning Guidance will be a material consideration in determining planning applications in North Northamptonshire to supplement the policies within the adopted Local Plans. As such it will be given significant weight in the decision-making process in relation to air quality matters. It should also be read in conjunction with the Air Quality Strategy for North Northamptonshire.

This technical planning guidance has been prepared in conjunction with the East Midlands Air Quality Network (EMAQN) and West Yorkshire Low Emission Strategies Planning Guidance. This document supplements the National Planning Policy

Framework (NPPF)¹ and addresses air pollution as a material planning consideration. This guidance will be reviewed and updated as national and local policy changes.

The document deals primarily with the air quality impacts from traffic and construction emissions. However, point source emissions such as generators, incinerators, power plants and other potentially significant industrial/commercial sources of air pollution, use of biomass boilers are addressed through the pollution prevention and control regulations. Separate guidance is available to assist developers when considering air emissions from biomass boilers². The government's position on Net Zero emissions needs to be taken into account for any biomass proposals.

This document seeks to minimise or offset road transport emissions wherever practicable, by securing reasonable emission mitigation. When mitigation is the objective rather than modelling, the cumulative impacts arising from all developments are reduced.

A key theme of the National Planning Policy Framework (NPPF) is that developments should enable future occupiers to make green vehicle choices and it explicitly states that low emission vehicle infrastructure, including electric vehicle re-charging, should be provided. This document seeks to develop consistent EV re-charging standards for new developments across North Northamptonshire.

In April 2023 DEFRA published an [Air Quality Strategy Framework for Local Authority Delivery | GOV.UK](#)³. This policy paper outlines measures that local authorities are required to take to reduce air pollution in their area. The main emphasis has been placed on reducing fine particulate matter and therefore any development which involves creating dust during construction must submit a dust management plan.

This guidance will be updated when the government releases emissions targets and

¹ [National Planning Policy Framework | GOV.UK](#)

² [Biomass Policy Statement | GOV.UK](#)

³ [Policy Paper: Air Quality Strategy for Local Authority Delivery | GOV.UK](#)

implementation policies for Net Zero emissions.

This document provides guidance that is not exhaustive; if you have any questions or wish to discuss the requirements of a specific scheme, please contact the Environmental Protection team at North Northamptonshire council:

North Northamptonshire

Corby area: envhealth.cbc@northnorthants.gov.uk

East Northamptonshire area: envprotect.enc@northnorthants.gov.uk

Kettering area: environmentalprotection.kbc@northnorthants.gov.uk

Wellingborough area: envprotection.bcw@northnorthants.gov.uk

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1. Air Quality in North Northamptonshire

North Northamptonshire Council reviews and assesses the air quality across its area to identify if there are any breaches of the National Air Quality Objectives. The council has a network of diffusion tubes which monitor NO₂ at 100 locations. Monitoring results in North Northamptonshire are consistently well below the national objective of 40 µg/m³. Each year the results are collated in our Annual Status Report and can be accessed on the Air Quality webpage.

[Air Quality | North Northamptonshire Council](#)

In recent years NO₂ concentrations have also generally declined across the UK. However, since 2012 an unprecedented amount of land has been developed in rural areas which creates traffic congestion in towns. For this reason, the focus on tackling air pollution is through mitigation.

1.1 Air Pollution and Planning Policy – National Context

Local authorities have a statutory duty to work towards compliance with health-based Air Quality Objectives for key pollutants in the National Air Quality Regulations. Therefore, the impact on air quality is a material consideration in making planning decisions.

The National Planning Policy Framework (NPPF; 2019) states that planning policies and decisions should contribute to and enhance the natural and local environment. Development should, wherever possible, help to improve local environmental conditions such as air quality. Planning 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. 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. An Air Quality Action Plan is a legal requirement for councils with an Air Quality Management Area, which sets out the councils' planned actions to meet the National Air Quality Objectives.

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.

A key consideration in the NPPF is the cumulative impact of development on pollution levels; therefore, this guidance seeks to simplify assessment and mitigation procedures through a standardised development scheme classification, according to potential scheme impact, while recommending the types of appropriate and reasonable mitigation measures that should be designed into each scheme classification. Mitigation is more important than modelling.

The process outlined below provides an indicative step by step approach to dealing with planning applications that have the potential to create relevant exposure to road transport emissions (nitrogen dioxide (NO₂) and particulate matter (PM_{10/2.5})) for future occupants of a development, or where the proposed development scheme has the potential to increase concentrations of pollutants in the surrounding area arising from road transport emissions (see flow chart – Figure 2 below).

A basic hierarchy of principles is used as the basis for mitigating the operational air quality impacts associated with development schemes.

1.2 Air Pollution and Planning Policy – Local Context

This is current developer guidance set out simplified guidance for dealing with air quality and is aimed at all those involved in the submission and determination of planning applications where air quality needs to be addressed.

North Northamptonshire Joint Core Strategy and (2011-2031) makes reference to air quality in policy 8 (e) i. and ii.

Policy 8 (e)

Ensure quality of life and safer and healthier communities by:

- i. Protecting amenity by not resulting in an unacceptable impact on the amenities of future occupiers, neighbouring properties or the wider area, by reason of noise, vibration, smell, light or other pollution, loss of light or overlooking;
- ii. Preventing both new and existing development from contributing to or being adversely affected by unacceptable levels of soil, air.

At the time of publication of this document the North Northamptonshire Local Plan is being developed, which incorporates Corby, East Northamptonshire, Kettering and Wellingborough. When the timeline for publication is available on the [North Northamptonshire Local Plan | North Northamptonshire Council](http://northnorthants.gov.uk) (northnorthants.gov.uk) webpage.

1.3 Role of Building Control

The Building Regulations are a major driving force for the construction of sustainable buildings and infrastructure. These are regulated through Building Control Bodies (BCB) either with the Local Authority BCB or a private BCB. All new developments, material changes of use and alterations and additions to existing buildings must comply with Building Regulations. For the purposes of the reduction of air pollution these parts are relevant:

- Part F: Minimising the ingress of external pollutants

- Part L1 and L2: Conservation of Fuel and Power, including solid fuel heating systems
- Part S: Infrastructure for Charging Electric Vehicles
 - for parking spaces associated with a residence or dwelling
 - for parking spaces associated with new buildings other than residential or mixed use.
 - Guidance is provided for the minimum standards for charging points, cable routes and location of these.

At the time of writing this document further radical new standards have been proposed and will be in operation by 2025 which will require not only to improve the energy efficiency of existing homes and other buildings but will also ensure our new homes are fit for the future, by reducing emissions from new homes by at least 75%.

1.4 Role of the Environmental Protection Team

Environmental Protection (EP) are consulted on planning applications for new developments within the area of North Northamptonshire. EP consider a number of environmental issues, including air quality, before making a recommendation to the Planning department.

Typically, this recommendation is that the application either be approved, approved subject to appropriate conditions, or refused. The recommendations made by EP are not binding on the Planning department, who will consider all relevant issues concerning a planning application, but air quality is a material planning consideration that must be taken into account in the decision-making process.

In addition to making recommendations to the Planning department, EP can provide advice to applicants and their consultants prior to the submission of a planning application and/or the preparation of an air quality statement.

The EP department also has responsibilities to observe legislation and policy published by the UK government. DEFRA has a duty to reduce airborne concentrations of fine particulate matter and therefore any development which involves creating dust during construction must submit a dust management plan.

1.4 Clean Air Act Authorisations

Applicants should be aware that a Clean Air Act 1993 Chimney height approval needs to be sought where a furnace is burning liquid or gaseous matter at a rate of 366.4 kilowatts or more or burning pulverised fuel or any solid matter at a rate of more than 45.4 kilograms or more an hour.

Flues associated with this plant should therefore be at the recommended heights above nearby buildings and installed at least 3m above any general access areas and should meet discharge velocities above the recommended minimum.

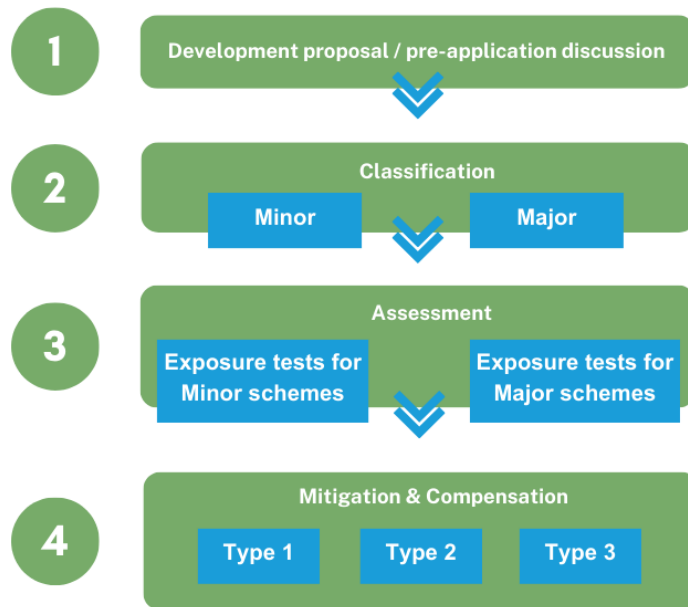
With the move towards Net Zero emissions and impending government policy changes, the long-term operational use of CHP and biomass boilers needs consideration.

2. Assessment and Mitigation

Incorporating mitigation measures into scheme designs is standard practice. This approach helps to counteract incremental increases in air pollution associated with cumulative development over time. Mitigation applies to all developments irrespective of whether they are in an AQMA or not. Figure 1 outlines the air quality assessment process.

Figure 1: Assessment and Mitigation Flow Chart

Air Quality Assessment Process



2.1 Step 1 – Pre-Application Discussion

It is important that the planning authority's requirements regarding scheme sustainability and the planning application validation process are clarified at the earliest stage possible.

For this reason pre-application discussions involving planning management, air quality and public health professionals should take place at the outset to ensure an optimum scheme design and avoid unnecessary delays in the planning process. This is particularly pertinent in

relation to large scale major schemes.

If an EIA is required for the proposed development, then air quality assessment (modelling) will be undertaken as part of the EIA process. The air quality assessments will include the consideration of potential increased exposure for relevant receptors affected by the development, (Appendix 2). An air quality assessment is not required for developments which do not trigger an EIA.

The developments which include processes which emit air pollution must be permitted through either the environment agency ([A1 installations](#)⁴) or the local authority ([A2 and B installations](#)⁵). The applicant is advised to check these websites for Processes may include:

- Industrial installations;
- Biomass boilers;
- Combined Heat and Power (CHP) plant; and
- Landfill sites, quarries, minerals extractions etc.

NorthNorthants:

[Environmental Permits | North Northamptonshire Council](#)

Follow the council link to Environmental Permitting, Permitted Processes, Inspection and Regulation.

2.2 Step 2 – Classification of the Development

In order to meet or maintain air quality objective levels or Net Zero, the assessment of the impacts of development on air quality are focused towards emissions mitigation.

To simplify the assessment process and align with planning thresholds for developments, a development is classified as either a minor or major development.

⁴ [A1 Installations | Environmental Permits | GOV.UK](#)

⁵⁵ [Local Authority Environmental Permits | GOV.UK](#)

The Town and Country Planning (Development Management Procedure) (England) Order 2010 defines minor and major developments as:

Minor development means—

- (i) development of an existing dwellinghouse, or development within the curtilage of such a dwellinghouse, for any purpose incidental to the enjoyment of the dwellinghouse as such;
- (ii) the extension of an existing building used for non-domestic purposes where the floorspace created by the development does not exceed 250 square metres; and
- (iii) the alteration of an existing building where the alteration does not increase the size of the building.

Major development means development involving any one or more of the following—

- a) the winning and working of minerals or the use of land for mineral-working deposits;
- b) waste development;
- c) the provision of dwellinghouses where —
 - (i) the number of dwellinghouses to be provided is 10 or more; or
 - (ii) the development is to be carried out on a site having an area of 0.5 hectares or more and it is not known whether the development falls within sub-paragraph (c)(i);
- d) the provision of a building or buildings where the floor space to be created by the development is 1,000 square metres or more; or
- e) development carried out on a site having an area of 1 hectare or more;

2.3 Step 3 – Exposure Assessment

Applicants need to consider whether the development will expose future occupiers to unacceptable levels of air pollution, defined as the exceedance of an air quality standard at the receptor location, and ensure that their development's potential

benefits to air quality and health are maximised.

Currently, in North Northamptonshire it is unlikely that developments will introduce future occupiers to areas of poor air pollution as a result of traffic pollution. However, applicants must assess exposure when they are introducing a more sensitive use (residential, school, children's nursery, care homes) to an area which is impacted by commercial or industrial air pollutants.

The determination of relevant exposure, where a short-term objective allows a number of exceedances of the standard because of considerations of feasibility and practicability, should be ascertained through reference to the Council's latest review and assessments of air quality;

[Air Quality | North Northamptonshire Council](#)

Data can be checked on a case-by-case basis with the Environmental Protection Team at the Council during the pre-application stage.

2.3.1 Scheme Design

A major goal of urban planning is to make towns more livable by improving the quality of life for its residents. Reducing the exposure of the future residents to air pollution should be considered at the scheme design phase, particularly when the public are being introduced to areas of exceeding limit values. The following mitigation through design measures should be explored:

- Can the curtilage of a residential building be set back beyond the pollutant exceedance zone?
- Can the scheme be designed to place residential units at the rear of the development or on higher floors?

- Can vegetative barriers, including appropriate tree species, offer some degree of separation from the road? (While several reports^{6 7} have highlighted some potential for certain vegetation species to reduce particulate concentrations, they also indicate a limited effectiveness in reducing exposure to nitrogen dioxide (NO₂) in the urban area)
- Can design of built forms avoid the creation of canyons, allowing a greater degree of pollutant dispersal?
- Mechanical ventilation should not automatically be seen as providing effective mitigation against exposure to air pollution and should be scrutinised carefully (eg, inlet location and level of pollutant attenuation, together with energy, maintenance and noise considerations). Windows which can be opened have a positive effect on wellbeing and mental health.

2.3.2 Air Quality Impact Assessment

For all developments classified as Minor or Major, where relevant exposure is not a concern, an air quality assessment (AQA) is not required.

An AQA is required for all large-scale major developments that trigger an EIA, a protocol for which is provided in Appendix 2. The protocol includes details of how to undertake an emissions assessment for a development and a calculation of damage costs.

2.3.3 Evaluation of the Development

Following the development classification, mitigation is then proposed to make the development sustainable for each classification. Mitigation is divided into three types

⁶ Trees & Sustainable Urban Air Quality: Using Trees to Improve Air Quality in Cities [Lancaster University | Urban Trees](#)

⁷ [Why Plant Trees? | Woodland Trust](#)

and these are outlined in section 2.3.4.

Table 1 below summarises the type of assessment, mitigation and/or compensation required for each of the development classifications.

Table 1: Summary of the Air Pollution Mitigation Requirements

Development Classification	Assessment Required	Mitigation	Compensations
Minor	Exposure	Type 1	
Major	Exposure	Type 1 and 2	
EIA	AQ Impact Assessment	Type 1 and 2	Type 3

2.3.3 Step 4 – Mitigation and Compensation

It is envisaged that by securing reasonable emission mitigation on each scheme, where appropriate, the cumulative impact effects arising from overall development can be minimised.

This guidance assumes that minor schemes should not have a significant impact on air quality if the appropriate Type 1 and 2 mitigation, as outlined, is incorporated into development proposals. Where appropriate mitigation has been incorporated, such schemes can be considered as being sustainable in air quality terms.

In addition to Type 1 and Type 2 mitigation, large scale major schemes may require additional Type 3 mitigation which is determined in scale by the calculation of emission damage costs associated with the scheme.

The largest source of PM10 and PM2.5 in the industrial sector in 2021 was construction and demolition. Construction activities that contribute to air pollution include: land clearing, operation of diesel engine exhausts, demolition and burning. All construction sites generate high levels of dust (typically from concrete, cement, wood, stone, silica) and this can carry for large distances over a long period of time. These

types of construction must be appropriately mitigated through construction management plans.

In 2023 the Institute of Air Quality Management published an updated guidance document on the assessment of dust from demolition and construction. This publication shall be adhered to in proposed developments to ensure that dust management plans are implemented appropriately.

The required mitigation is summarised below, and further detail is provided in the following section:

Table 2: Summary of the Potential Air Pollution Mitigation

Type 1	<ul style="list-style-type: none"> • Adherence to the IAQM⁸ Best Practice Guidance for all demolition and construction works. Dust mitigation is required for all dust generating activities for both minor and major planning applications. • Compliance with Parts F (ingress of pollution), L and S (EV charging infrastructure) of the Building Regulations. • All gas-fired boilers to meet a minimum standard of 40mg NOx/kWh or consideration of Net Zero heat sources • Provision of cycle storage infrastructure • Green Infrastructure: where it can be shown that such infrastructure will reduce exposure from air pollution
Type 2	<ul style="list-style-type: none"> • Code of Construction Practice Construction Environmental Management Plan (CEMP) to be incorporated into Major and EIA developments and agreed with Council Officers. • NRMM Specifications • Construction Environmental Management Plan (CEMP) • Provide a fleet emission reduction strategy, including low emission fuels and technologies, including ultra-low emission service vehicles • Active travel (cycling/walking) infrastructure including, but not limited to: <ul style="list-style-type: none"> ○ Developing cycle routes or pedestrianised areas and infrastructure to support low emission modes of transport; ○ improved facilities to encourage cycling or other non-motorised travel (shower facilities, secure cycle storage etc) and signage; • Measures to support public transport infrastructure and promote use • Measures to support cycling and walking infrastructure • Measures to support the uptake of EVs in Northamptonshire • Measures to support car clubs and integrate with electric car clubs

⁸ [Construction Dust Guidance 2023 | IAQM](#)

-
- Type 3**
- Additional measures that may be required by either planning condition or Planning Obligation by a Section 106 Agreement to make the site acceptable, using reasonable endeavours.
-

Note: The Type 2 & 3 mitigation measures presented in this guidance are not exhaustive lists and should be seen as defaults. Innovative solutions to air quality mitigation are encouraged.

2.4 Mitigation

The type of mitigation agreed will be informed by:

- Specific needs identified in site specific spatial policy allocations
- Outcomes from the Transport Statement/ Assessment
- Defra air quality guidance

2.4.1 Type 1 Mitigation

(a) Construction Dust Emissions

The National Planning Policy Framework makes it clear that unavoidable dust emissions are controlled, mitigated or removed at source. The creation of dust contributes to particulate air pollution as well as nuisance and mitigation for all developments is required. In light of the UK government's change of the PM_{2.5} target value to 10 ug/m³ all dust generating activities must be mitigated within the site boundary of the planning application.

It is the responsibility of the applicant to ensure that the contractors and subcontractors comply with dust mitigation proposals. The dust mitigation statement or plan must be given to contractors and subcontractors. Having mitigation in place alleviates any nuisance issues.

For minor developments which create dust the applicant must submit a statement identifying site activities that create dust and how to mitigate it.

Many construction tasks create dust, consider the duration of the activity and the potential to become airborne. High dust levels are caused by one of more the following:

- **demolition activities**
- **equipment** – using high energy tools, such as cut-off saws, sanding, grinders, wall chasers and grit blasters produce a lot of dust in a very short time
- **work method** – dry sweeping can make a lot of dust when compared to vacuuming or wet brushing
- **time** – the longer you work the more dust there will be

The Health and Safety Executive publish have produced an information sheet on construction dust, with information on the health impacts⁹.

The mitigation guidance and requirements are outlined in section 3.1 Construction Phase - Emissions Mitigation and Assessment.

(b) Zero Emissions Re-charging Infrastructure Plan

A key theme of the NPFF is that developments should enable future occupiers to make green vehicle choices and it explicitly states that low emission vehicle infrastructure, including electric vehicle (EV) re-charging, should be provided. This guidance seeks to develop consistent EV re-charging standards for new developments in Northamptonshire.

At the time of adopting this technical planning document electric vehicles are more readily available than other zero emissions fuels so this guidance will refer to

⁹ [Information Sheet on Construction Dust | HSE](#)

applicants being required to submit an electric vehicle re-charging infrastructure plan.

Electric or hybrid-electric powered vehicles currently form a smaller percentage of the total number of vehicles on the road. However, moving towards 2030 electric/hybrid vehicles there will be more uptake. New combustion engine cars and vans will not be sold after 2030 and hybrids will not be sold after 2035. The UK government announced that electric motoring will also become cheaper than petrol or diesel equivalents, with price parity expected in the mid-2020s¹⁰.

- Step 1 will see the phase-out date for the sale of new petrol and diesel cars and vans brought forward to 2030.
- Step 2 will see all new cars and vans be fully zero emission at the tailpipe from 2035.

Between 2030 and 2035, new cars and vans can be sold if they have the capability to drive a significant distance with zero emissions (for example, plug-in hybrids or full hybrids). It is essential that EV recharging infrastructure is in place to accommodate this change.

The Building Regulations comprehensively set out the requirement for EV charging points and infrastructure and this must be adhered to.

Approved Document S: infrastructure for charging electric vehicles became valid from 15 June 2022 and all relevant developments must comply with this.

[Approved Document S | Building Regulations | GOV.UK](#)

The IET '*Code of Practice for EV Charging Equipment Installation*' provides details of charging points and plugs specifications; for both exterior and garage situations.¹¹

¹⁰ [Transitioning to Zero Emission Cars and Vans 2035 Delivery Plan | GOV.UK](#)

¹¹ Code of Practice for Electric Vehicle Charging Equipment Installation 3rd Edition - [EV Charging Standards | The Institute of Engineering and Technology](#)

Zero emissions vehicle fuel technology for vehicles is progressing and should other forms of fuel become easily available for adoption then these can be proposed by the applicant. Electric vehicles have been promoted by the government, but alternative technologies such as the hydrogen fuel cell are available. If other fuels become easy to adopt and incorporate into a scheme, then they can be proposed in the zero emissions re-charging infrastructure plan.

(c) Heating and Hot Water Generating Appliances

While the main sources of air pollutants are dominated by road transport and large combustion plants; homes and the choice of heating and hot water systems also have an impact on air pollution. Levels of oxides of nitrogen (NO_x) vary considerably across the UK, with levels in urban areas and close to major roads many times greater than in rural areas. Emissions from heating systems have a greater impact in areas where there is a high population density, but improved air quality benefits health in both urban and rural settings. All gas-fired boilers must meet a minimum standard of 40 mg NO_x/kWh.

It should be noted that Maximum BREEAM credits can be gained for low NO_x technology.

(d) Outdoor Private and Communal Space

Private gardens, roof gardens, communal gardens and terraces are a feature in most residential developments and some commercial developments. The location of outdoor space in relation to sources of air pollution (for example busy roads and boiler flues) is an important consideration. Exposure should be minimised through appropriate positioning and orientation of the space away from busy roads and combustion sources.

(e) Green Roofs, Walls and Planting

Unlike nitrogen dioxide pollution, fine particle pollution travels further distances. The UK government target for PM2.5 to be achieved by 2028 acknowledges the impact fine particles have on health. As well as increasing biodiversity, plants can play a role in trapping fine particles (PM10 and PM2.5) found in the air we breathe. Research indicates that plants with small leaves (which disrupt the flow of air) and fine hairs on their surface work best; however, leaves which cover a large surface or are grooved also provide surfaces upon which particles can be trapped. For more information and the types of plants which may be beneficial¹². To help improve air quality, developers are encouraged to source trees and plants which have these characteristics to include in open spaces, and on green walls and roofs. Information on green screens can be found on the LondonAir website¹³.

[Decide if you want this section included in the SPD] Planning policy what are the current requirements for amenity space?

(f) Cycle parking and facilities

The promotion of cycling and other methods of active travel are one of the core principles of the NPPF and it is increasingly being seen as a vital part of any local authority plans to tackle congestion, improve air quality, promote physical activity and improve accessibility.

Provision for cycling is better when integrated with spatial planning of development, and with integrated planning for movement in all its forms. The guidance below covers general advice for street planning as well as some focused on cycling specifically.

'Manual for streets¹⁴' provides guidance that aims to reduce the impact of motor vehicles on residential streets through intelligent design which gives a high priority to the needs of pedestrians, cyclists and users of public transport. These philosophies

¹² [Designing Vegetation Barriers | Nature Journal of Science](#)

¹³ [Green Screen Report | LondonAir](#)

¹⁴ [Manual for Streets | Department for Communities and Local Government](#)

are built on further in 'Manual for streets 2'¹⁵ which demonstrates through guidance and case studies how they can be extended beyond residential streets to encompass both urban and rural situations.

'Handbook for cycle-friendly design'¹⁵ from Sustrans provides technical design guidance starting from network planning, through infrastructure features and construction design, and including management and maintenance. Whilst 'Making Space for Cycling'¹⁶ is a guide for new development and street renewal in existing urbanised areas, prepared by CycleNation. It covers the design principles required, from main roads down to local streets, as well as complementary measures such as cycle parking.

Department for Transport have also composed guidance in the form of Local Transport Notes.^{17,18}

2.4.2 Type 2 Mitigation Measures

Type 2 mitigation should be incorporated into scheme design where appropriate, in addition to Type 1 measures.

Table 5: Examples of Type 2 Mitigation for Scheme Sustainability

Standard mitigation plus:	
Residential	<ul style="list-style-type: none"> • Construction Environmental Management Plan (CEMP) • Non-road mobile machinery (NRMM) adoption • Measures to support public transport infrastructure and promote active travel • Using green infrastructure¹⁹ in particular trees to absorb dust and other pollutants

¹⁵ Sustrans Design Manual Handbook for cycle-friendly design April 2014 [Handbook for Cycle Friendly Design | Sustrans](#)

¹⁶ Cambridge Cycling Campaign - Making Space for Cycling: A guide for new developments and street renewals [Making Space For Cycling | Cambridge Cycling Campaign](#)

¹⁷ Local transport notes [Department for Transport | Local Transport Notes](#)

¹⁸ [Department for Transport | Shared Routes Cyclists and Pedestrians](#) - Shared use routes for pedestrians and cyclists (LTN 1/12)

¹⁹ Urban Air Quality, The Woodland Trust, April 2012 [Woodland Trust | Urban Air Quality](#)

- A Welcome Pack available to all new residents online and as a booklet, containing information and incentives to encourage the use of sustainable transport modes from new occupiers
- Eco-driver training and provision of eco-driver aid to all residents
- Measures to support the Northamptonshire Electric Vehicle Plan
- EV recharging infrastructure within the development (wall mounted or free standing in-garage or off-street points)
- Car club provision within development or support given to local car club/EV car clubs
- Designation of parking spaces for low emission vehicles
- Measures to improve cycle paths to link cycle network
- Adequate provision of secure cycle storage
- Measures to support cycling and walking infrastructure

Commercial
As above plus:

- Differential parking charges depending on vehicle emissions
- Public transport subsidy for employees
- All commercial vehicles should comply with either current or previous European Emission Standard
- Fleet operations should provide a strategy for considering reduced emissions, low emission fuels and technologies
- Use of ultra-low emission service vehicles
- Support local walking and cycling initiatives
- On-street EV recharging
- Contributing funding to measures, including those identified in air quality action plans and low emission strategies, designed to offset the impact on air quality arising from new development

Additional mitigation

- Contribution to low emission vehicle refuelling infrastructure
- Low emission bus service provision or waste collection services
- Bike/e-bike hire schemes
- Contribution to renewable fuel and energy generation projects
- Incentives for the take-up of low emission technologies and fuels

Note: The above list is not exhaustive and further options may be suggested where appropriate and justified, depending on the scale of development and air quality issues within the local area.

(a) Cycling Infrastructure

The promotion of cycling and other methods of active travel are one of the core principles of the NPPF and it is increasingly being seen as a vital part of any local authority plans to tackle congestion, improve air quality, promote physical activity and improve accessibility.

Provision for cycling is better when integrated with spatial planning of development, and with integrated planning for movement in all its forms. The guidance below covers general advice for street planning as well as some focused on cycling specifically.

'Manual for streets²⁰' provides guidance that aims to reduce the impact of motor vehicles on residential streets through intelligent design which gives a high priority to the needs of pedestrians, cyclists and users of public transport. These philosophies are built on further in

'Manual for streets 2²¹' which demonstrates through guidance and case studies how they can be extended beyond residential streets to encompass both urban and rural situations.

'Handbook for cycle-friendly design²²' from Sustrans provides technical design guidance starting from network planning, through infrastructure features and construction design, and including management and maintenance. Whilst 'Making Space for Cycling²³' is a guide for new development and street renewal in existing urbanised areas, prepared by CycleNation. It covers the design principles required, from main roads down to local streets, as well as complementary measures such as cycle parking. Cambridge city council have published a cycle parking guide.²⁴

Department for Transport have also composed guidance in the form of Local Transport Notes.^{25,26}

(b) Non-Road Mobile Machinery (NRMM) Specifications

²⁰[Manual for Streets | Department for Communities and Local Government](#)

²¹ [Manual for Streets 2 | Department for Communities and Local Government](#)

²² Sustrans Design Manual Handbook for cycle-friendly design April 2014 [Handbook for Cycle Friendly Design | Sustrans](#)

²³Cambridge Cycling Campaign - Making Space for Cycling: A guide for new developments and street renewals [Making Space for Cycling | Cycling Spaces A Guide for New Developments](#)

²⁴ [Cambridge Council | Parking Guide for New Developments](#)

²⁵[Local Transport Notes | Department for Transport](#)

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/3808/ltn-2-08.pdf

²⁶[Department for Transport | Shared Use Routes for Pedestrians and Cyclists LTN 1/12](#)

NRMM of net power between 37kW and 560kW will be required to meet the standards based upon the engine emissions standards.

From 1 September 2020 the following changes will apply:

- (a) NRMM used on any construction or demolition site within the Northamptonshire

urban area will be required to meet Stage IIIB as a minimum.

- (b) NRMM used on any major classified development will be required to meet Stage IV of the Directive as a minimum.

The requirements may be met using the following techniques;

- (a) Reorganisation of NRMM fleet
- (b) Replacing equipment (with new or second hand
- (c) equipment which meets the policy)
- (d) Retrofit abatement technologies
- (e) Re-engining.

All eligible NRMM should meet the standards above unless it can be demonstrated that the machinery is not available or that a comprehensive retrofit to meet both PM and NOx

emission standards is not feasible.

Note: until the UK government publishes specifications for NRMM then the European standards will apply.

2.4.3 Type 3 Mitigation Measures

Type 3 emission mitigation are bespoke and proportional to the calculated damage cost. This type of mitigation is only required in the case of large scale developments; in addition to Type 1 and 2 measures having been applied. In some cases the calculated value of the air quality impact may be used on projects to 'offset' the emissions from the proposal.

The process by which these measures are calculated and chosen can be found in [Appendix 3](#).

3. Construction Phase - Emissions Mitigation and Assessment

3.1 Construction Phase Assessment

Continuous day to day works and use of machinery on site, coupled with numerous vehicle movements to and from site, can result in demolition and construction sites emitting high volumes of dust and emissions to atmosphere. Construction is a significant source of particulates (PM10/PM2.5) and Nitrogen Dioxide (NO2) pollution.

Air pollution harms the environment and human health and wellbeing. Poor air quality can cause serious health problems, shorten life and reduces the quality of life for all exposed to it. In June 2012 the World Health Organisation (WHO) confirmed that fumes from diesel engines are carcinogenic. Its research determined that exposure causes lung cancer and tumours to the bladder. The latest evidence suggests that construction and demolition activity is responsible for 15 per cent of air pollutant emissions.

Construction and demolition activities can result in the following air quality impacts:

- Visible dust plumes;
- Dust deposition;
- Elevated PM10 and PM2.5 concentrations
- Increased concentrations of Nitrogen Dioxide (NO2).

Air pollutants result from dust generating activities on-site such as the breaking-up of materials and the movement of soil and materials, as well as from the exhaust of diesel powered machinery and vehicles, both static and non-road mobile machinery (NRMM). Vehicles accessing and travelling across the site can also generate dust.

For major developments the demolition and construction phases of development proposals lead to both nuisance dust and elevated fine particulate matter concentrations (PM10 and PM2.5). Each scheme is evaluated on what activities are being undertaken. Meteorological conditions cannot easily be predicted. However, dust emissions increase during dry and windy conditions.

In the case of a major development an assessment of the air quality effects of the construction phase is required. Guidance published by the Institute of Air Quality Management^{Error! Bookmark not defined.} (IAQM) sets out the methodology for assessing the impacts on air quality from the construction phase of any development.

The guidance, produced in consultation with the construction industry, considers the potential for dust emissions from the following activities:

- Demolition
- Earthworks (soil stripping, ground levelling, excavation)
- Construction, and
- Track out (the transportation of soil from the site onto public roads)

For each of these activities, the guidance considers three separate dust effects:

- Annoyance due to dust soiling
- Harm to ecological receptors
- The risk of human effects due to a significant increase in exposure to PM10 and PM2.5

The methodology takes into account the scale (classed as small, medium, large) to which the above effects are likely to be generated and the distance of the closest receptors in determining the significance of effects arising from construction.

Demolition and construction subcontractors must be given the approved plans and mitigation proposals and adhere to them.

3.2 Construction Phase Mitigation

The IAQM Guidance on the assessment of dust from demolition and construction or alternatively the London Best Practice Guidance²⁷ should be used to inform the choice

²⁷ The Control of Dust and Emissions from Construction and Demolition, Best Practice Guidance. Available at [Control of Dust and Emissions | London.gov.uk](https://www.london.gov.uk/infrastructure/transport/air-quality/control-dust-emissions)

of mitigation measures required during construction. Mitigation plans need to incorporate dry and windy conditions into them.

4. Scheme Mitigation Statement

Each development requires a brief mitigation statement; outlining the measures proposed (Type 1-3) depending on development scale.

This would also include the mitigation measures suggested from the IAQM Guidance on the assessment of dust from demolition and construction^{Error! Bookmark not defined.} or London Best Practice Guidance²⁷, to minimise dust and other emissions to atmosphere during the construction phase.

In addition, in the case of major developments, the statement should include an assessment of impacts and mitigation measures associated with the construction phase, as assessed as part of the wider development's detailed air quality assessment (see [Appendix 2](#)).

- The calculated damage cost (Major proposals).
- Proposed mitigation measures.
- Estimated mitigation cost (Major proposals) that is equivalent to the value of the emissions calculation (appropriate to the type and size of development and local policy requirements);
- A proposed demolition/construction management plan that includes:
 - A brief project description and likely sources of dust emissions;
 - Measures to be adopted to minimise dust emissions;
 - Emergency measures to be adopted in the event of unforeseen circumstances;
 - Incident logging and reporting procedures.

[Appendix 4](#) provides a comprehensive list of dust and fumes pollution which should be included in the scheme mitigation statement.

Appendix 1: Electric Vehicle Charging Point Specification

EV ready domestic installations

- Cable and circuitry ratings should be of adequate size to ensure a minimum continuous current demand for the vehicle of 16A and a maximum demand of 32A (which is recommended for Eco developments).
- A separate dedicated circuit protected by an RCBO should be provided from the main distribution board, to a suitably enclosed termination point within a garage, or an accessible enclosed termination point for future connection to an external charge point.
- The electrical circuit shall comply with the Electrical requirements of BS7671: 2008 as well as conform to the IET code of practice on Electric Vehicle Charging Equipment installation 2012 ISBN 978-1-84919-515-7.
- If installed in a garage all conductive surfaces should be protected by supplementary protective equipotential bonding.

For vehicle connecting points installed such that the vehicle can only be charged within the building, e.g. in a garage with a (non-extended) tethered lead, the PME earth may be used. For external installations the risk assessment outlined in the IET code of practice must be adopted, and may require an additional earth stake or mat for the EV charging circuit. This should be installed as part of the EV ready installation to avoid significant on cost later.

EV ready commercial installations

Commercial and industrial installations may have private 11,000/400 V substations where a TN-S supply may be available, simplifying the vehicle charging installation design and risk analysis. It is therefore essential for developers to determine a building's earthing arrangements before installation.

Commercial vehicles have a range of charge rates and it is appropriate to consider a 3-phase and neutral supply on a dedicated circuit emanating from a distribution board. More than one EV charging station can be derived from a source circuit, but each outlet should be rated for a continuous demand of 63Amps. No diversity should be applied throughout the EV circuitry. Three phase RCBOs should be installed and the supply terminated in a switched lockable enclosure. If an external application (for example car park or goods yard) is selected, the supply should be terminated in a feeder pillar equipped with a multi-pole isolation switch, typically a 300mA RCD, a sub-distribution board (if more than one outlet is fed from the pillar). If an additional earthing solution is required, the earth stake can be terminated within this pillar. See IET guideline risk assessment.

Provided by Andrew Whittles, Low Emission Strategies Ltd.

Appendix 2 Air Quality Assessments

Introduction

The purpose of an air quality assessment is to determine the predicted impact of a development on local air quality, public health and/or the local environment, to help determine the appropriate level of mitigation from a development. The assessment should be carried out by a developer's air quality consultant.

Air Quality Assessment Process

For consistency, air quality assessments for developments should, where possible, follow similar methodologies.

Local authorities will work with developers by providing guidance on the suitability of such measures, which should be incorporated at the early design stage of any proposal.

Guidance on the methodologies to be used for air quality assessments is also available in the Defra's Technical Guidance Note^{Error! Bookmark not defined.}, and other guidance available from the Defra and IAQM webpages²⁸.

Key Components of an Air Quality Assessment

The assessment will require dispersion modelling utilising agreed monitoring data, traffic data and meteorological data. The modelling should be undertaken using recognised, verified local scale models by technically competent personnel and in accordance with LAQM TG16^{Error! Bookmark not defined.}. The study will comprise:

1. The assessment of the existing air quality in the study area for the baseline year with agreed receptor points and validation of any dispersion model;

²⁸ Environmental Protection UK and the Institute of Air Quality Management - Land-Use Planning & Development Control: Planning For Air Quality (January 2017). Available at [Air Quality Planning Guidance | IAQM](#)

2. The prediction of future air quality without the development in place (future baseline or do-nothing);
3. The prediction of future road transport emissions and air quality with the development in place (with development or do-something).
4. The prediction of future road transport emissions and air quality with the development (with development or do-something) and with identified mitigation measures in place.
5. Sensitivity test allowing for no improvement in traffic and background emissions.

The assessment report should include the following details:

A. Detailed description of the proposed development, including:

- Identify any on-site sources of pollutants;
- Overview of the expected traffic changes;
- The sensitivity of the area in terms of objective concentrations;
- Local receptors likely to be exposed; and
- Pollutants to be considered and those scoped out of the process.

B. The relevant planning and other policy context for the assessment.

C. Description of the relevant air quality standards and objectives.

D. The basis for determining significance of effects arising from the impacts.

E. The assessment method details including model, input data and assumptions:

For traffic assessment;

- Traffic data used for the assessment;

- Emission data source;
- Meteorological data source and representation of area;
- Baseline pollutant concentration including any monitoring undertaken;
- Background pollutant concentration;
- Choice of base year;
- Basis for NO_x:NO₂ calculations;
- A modelling sensitivity test for future emissions with and without reductions;

For point source assessments:

- Type of plant;
- Source of emission data and emission assumptions;
- Stack parameters – height, diameter, emission velocity and exit temperature;
- Meteorological data source and representation of area;
- Baseline pollutant concentrations;
- Background pollutant concentrations;
- Choice of baseline year;
- Basis for deriving NO₂ from NO_x.

F. Model verification for all traffic modelling following Defra guidance Error! Bookmark not defined.

G. Identification of sensitive locations:

H. Description of baseline conditions:

I. Assessment of impacts:

- Comparisons between results of modelling the 'with development' scenario and 'no development' conditions;
- Descriptions of the impacts at the individual receptors should be provided;
- Comment on the sensitivity of the results to input choices

J. Description of demolition/construction phase impacts:

K. Cumulative impacts and effects:

L. Mitigation measures:

M. Summary of the assessment results:

- Impacts during the construction phase of the development (usually on dust soiling and PM10 concentrations);
- Impacts on existing receptors during operation (usually on concentrations of nitrogen dioxide, PM10 and PM2.5);
- Impacts of existing sources on new receptors, particularly where new receptors are being introduced into an area of high pollution;
- Any exceedances of the air quality objectives arising as a result of the development, or any worsening of a current breach (including the geographical extent);
- Whether the development will compromise or render inoperative the measures within an Air Quality Action Plan, where the development affects an AQMA;
- The significance of the effect of any impacts identified; and
- Any apparent conflicts with planning policy.

Model verification involves a comparison of the predicted versus measured concentrations, and allows an adjustment to be made to account for systematic errors. Such errors may include traffic flow uncertainties, vehicle emission estimates and estimated background concentrations. Model verification will be important, especially where predicted concentrations are close to the objective and should be based on the most appropriate available.

Air Quality Monitoring

In some case it will be appropriate to carry out a short period of air quality monitoring as part of the assessment work. This will help where new exposure is proposed in a

location with complex road layout and/or topography, which will be difficult to model or where no data is available to verify the model. Monitoring should be undertaken for a minimum of six months using agreed techniques and locations with any adjustments made following Defra technical guidance^{Error! Bookmark not defined.}.

Magnitudes of Change within an AQMA

Contrary to the values given in the EPUK document 'Development Control: Planning for Air Quality,' This authority considers 0.4 µg/m³ to be a substantial change and the following revised table must be used;

Magnitude of Change Annual Mean

Large ≥1.0 µg/m³

Medium 0.6 – 0.99 µg/m³

Small 0.3 – 0.59 µg/m³

Imperceptible 0 – 0.29 µg/m³

Informative on AQA modelling

The applicant shall be aware of the following:

- ADMS-Roads output files must be provided to the local authority on validation of the planning application.
- AQ modelling must be based transport related inputs which have been approved by the local authority's Transport Assessment team.
- It is essential that junctions and heavily congested roads are modelled accurately and this is reflected in the choice of relevant node spacing and vehicle speed inputs.
- Where under predictions occur, nodes must be scrutinised and where necessary vehicle speeds adjusted to reflect queuing.
- It is the responsibility of the applicant to ensure that their appointed consultants' modelling verification is robust and adjustment factors clearly explained and justified, calculations and graphs must be provided at validation.
- Margin of error must not exceed 4 (refer to LAQM guidance as best practice).
- A cumulative assessment of major committed developments in the area must be incorporated into the modelling.

- Any other scenarios should be considered which are relevant to this site.

Assessment of the Air Quality Impacts of Construction

Guidance published by the IAQM^{Error! Bookmark not defined.} sets out the methodology for assessing the impacts of air quality from the construction phase of any development.

The guidance, produced in consultation with the construction industry, considers the potential for dust emissions from the following activities:

- Demolition
- Earthworks (soil stripping, ground levelling, excavation)
- Construction, and
- Track out (the transportation of soil from the site onto public roads)

For each of these activities, the guidance considers three separate dust effects:

- Annoyance due to dust soiling;
- Harm to ecological receptors; and
- The risk of human effects due to a significant increase in exposure to PM₁₀

The methodology takes into account the scale (classed as small, medium, large) to which the above effects are likely to be generated and the distance of the closest receptors in determining the significance of effects arising from construction.

Appendix 3: Valuing Impacts on Air Quality for Type 3 Mitigation Measures

Emissions Assessment and Mitigation Calculation

For development schemes that have the potential for a Large detrimental impact on air quality, this guidance specifies an assessment procedure to evaluate the likely change in relevant concentrations and emissions arising from the scheme using the guidance produced by HM Treasury and Defra.

Two approaches are used to value changes in air quality, dependent on the nature of the change. They are:

- the ***impact pathway approach***, which is used in the majority of instances to value the consequences of changes in air quality such as on health, crops and buildings; and
- the ***abatement cost approach***, which is used in the limited instances where the change in air quality is likely to affect compliance with a legally binding obligation (whether causing, removing or changing the extent of non-compliance).

Chart 1.A (over) illustrates how to identify the appropriate approach.

The *abatement cost approach*²⁹ is relevant for the minority of situations where the breach of legally binding obligations is an issue. In such instances, it is still only those changes in air quality in excess of the relevant obligation that should be valued using this approach. Changes below the obligation should be valued using the *impact pathway approach*.

The *impact pathway approach* (I-PA) is the central methodology for appraisal. It values the air quality impacts of proposed decisions by estimating how changes in the

²⁹ [Air Quality Economic Analysis | GOV.UK](#)

ambient concentrations of air pollutants affect a range of health and environmental outcomes.

Full I-PA modelling is therefore quite resource and time intensive, requiring the estimation of emissions, dispersion, population exposure and outcomes. **Damage costs** have been developed to enable proportionate analysis when assessing the scale of air quality impacts where they are less significant. They are derived from the I-PA methodology to offer approximations of the value using representative modelling. The full I-PA uses bespoke analysis to provide a fuller assessment, suitable for cases where air quality impacts are significant. (See Appendix 2 Air Quality Assessment).

When total air quality impacts are estimated to be less than £50 million (in present value terms) it is recommended that **Damage Costs are used.** Where total air quality impacts are estimated to be in excess of £50 million a full *impact pathway assessment* should be considered in consultation with Defra.

It is considered that the damage cost approach will be sufficient in the majority of cases; thus the remaining of this Appendix will concentrate on this method of impact assessment.

Damage Costs Calculation

As part of the assessment procedure a simple calculation is proposed to allow the quantification of any emission changes – the pollution impact of a scheme can then be monetised using the pollutant damage costs (per tonne) specified by the Defra Inter-Governmental Department on Costs and Benefits (IGCB)³⁰.

Taking into account Type 1 and 2 Mitigation Measures built into the scheme

The emissions calculator or toolkit (below) provides a basic emission calculation; however, the proposal should already include some mitigation measures e.g. alternative fuels or technology (LPG, EV etc.), and these need to be taken into

³⁰ [Air Quality Economic Analysis | GOV.UK](#)

account during the damage costs calculation. The “advanced options” within the toolkit can accommodate inputs for alternative fuels.

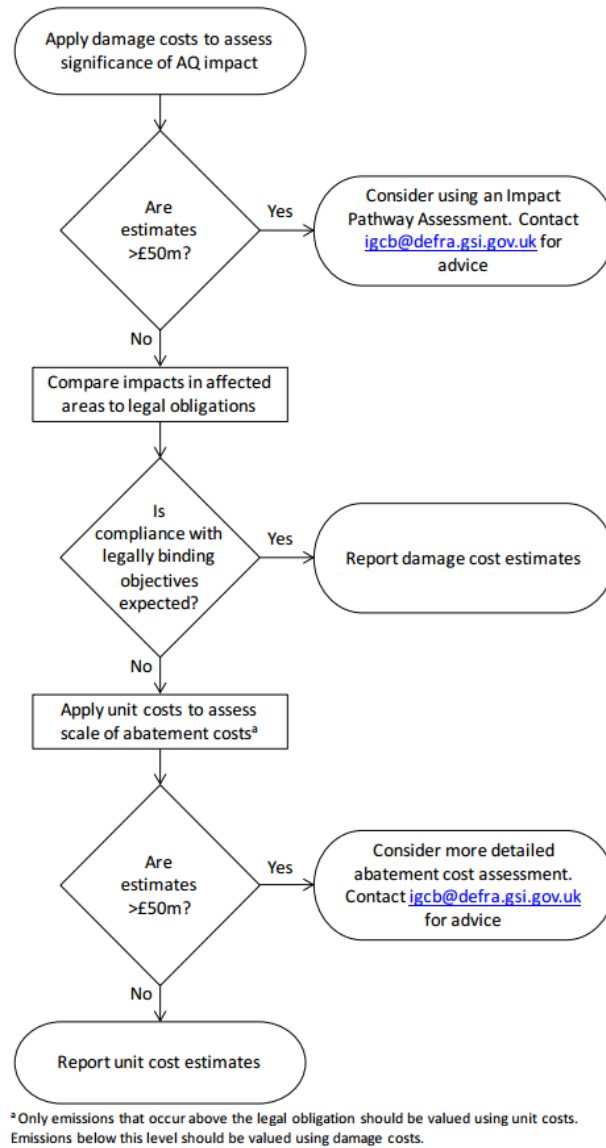


Figure 1: Overview of air quality valuation methodologies³¹

Calculating Emissions

The emissions calculator provides a calculation to determine the amount of pollutant emissions a development is likely to produce. This in turn, by multiplying the damage

³¹ HM Treasury and Department for Environment, Food and Rural Affairs (Defra)-. *Valuing impacts on air quality: Supplementary Green Book guidance* (May 2013) Available at Air Quality Green Book | GOV.UK

cost for the key pollutants (PM₁₀ and NO_x see below), determines the amount (value) of mitigation that is expected to be spent on measures to mitigate those impacts.

The calculation uses the most current Defra Emissions Factor Toolkit³² (EFT) to estimate the additional pollutant emissions from a proposed development. This will provide the relevant pollutant emissions outputs for the mitigation calculation, which is then multiplied to provide an exposure cost value. This value is used for costing the required emissions mitigation for the development (Example shown in Figure 6 below).

The emissions assessment and corresponding mitigation calculation follows this process:

1. An emissions assessment calculates additional trips^{33, 34} generated by the development.
2. The emissions are calculated for pollutants of concern (NO_x & PM₁₀)
3. Using Defra IGCB Air Quality Damage Costs¹⁹ for the specific pollutant emissions, the calculation then provides a resultant damage cost calculation.
4. The emissions total is then multiplied x 5, to provide a 5 year exposure cost value i.e.
5. The resulting 5-year exposure cost value, is the value that is to be used to implement mitigation measures within the development.

Example EFT Output = 32.55 kg/annum (NO_x) & 3.795 kg/annum (PM)

³² Defra Emissions Factor Toolkit: [LAQM Emissions Factor Toolkit | GOV.UK](#)

³³ Trip rates can be sourced from transport assessment or local authority/transport authority.

³⁴ Trip length uses the National Travel Survey:2011 - UK average = 7.1miles/10km [National Travel Survey Statistics | GOV.UK](#)

= 0.0325 tonnes/annum (NOx) & and 0.003795 tonnes/annum
(PM10)

X £25,252/tonne (NOx) + £58,125/tonne (PM10)

= £820.69 + £220.58

X 5 (years)

= £4,103.45 + £1,102.90

Total = £5,206.35

Figure 2: Example calculation based on a development with 10 domestic properties

Type 3 Mitigation/Compensation Measures

By establishing the damage costs arising from development scheme emission changes it is possible to assess any additional mitigation or compensation that is required to make the scheme acceptable. A suite of mitigation/compensation measures termed Type 3 mitigation is shown in Table 10.

Table 1: Examples of Type 3 Additional Mitigation and/or Compensation Required for Scheme Acceptability

Mitigation/ Compensation Options	<ul style="list-style-type: none">• On-street EV recharging.• Contribution to low emission vehicle refuelling infrastructure.• Car clubs.• Low emission bus service provision.• Low emission waste collection services.• Bike/e-bike hire schemes.• Bike infrastructure.• Contribution to renewable fuel and energy generation projects.• Incentives for the take-up of low emission vehicle technologies and fuels.• Air Quality Monitoring programmes.• Other sustainable transport provision as appropriate to the development.• Contribution towards other public transport improvements.
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Note: Where Type 3 mitigation is required, the planning authority and developer will agree measures that are appropriate and in scale and kind to the development. Such measures may be taken forward by condition, where possible, or through the use of a Section 106 Agreement.

The planning authority will need to take into account of any Type 3 mitigation measures that are included on a Community Infrastructure Levy (CIL) list.

The list in Table 8 is not exhaustive and further options may be suggested where authorities feel it is appropriate, depending on the scale of development and air quality issues within an area.

The mitigation options selected for a development should be relevant and appropriate to:

- Any local policies including Air Quality Action Plans, which may determine the mitigation priorities for a scheme that the local authority may wish to see be incorporated within a particular scheme.
- Any local air quality concerns; to assist in the remediation of potential cumulative air pollution impacts of the development on the local community.
- The type, size and activity of the development.

Appendix 4: Dust Control Mitigation Measures

1. Site layout

When planning construction works developers shall:

- Locate machinery and dust generating activities away from off-site sensitive receptors.
- Create a physical distance and/or barriers between dust/emission generating activities and receptors.
- Install solid screens/barriers around dust generating activities and stockpiles. These should be as high as the
- relevant stockpiles in question as a minimum.
- Cover, seed, fix, or compact and profile stockpiles to prevent wind whipping.
- Remove loose small grain materials as soon as possible.
- Site maintenance
- Developers should keep the construction sites in good order. Measures required include;
- The site or construction area should be bunded to prevent runoff. Runoff and mud should be contained and managed as it leads to re-suspended dust on haul routes and highways when it dries and pollutes local waterways and sewers when washed off.
- Hoardings, fencing, barriers and scaffolding should be regularly cleaned using wet methods to prevent re-suspension of particulate matter. Developers should collect used water and maximise the re-use of recycled and non-potable water.
- Regular checks for soiling due to dust of buildings within 100 m of the site boundary should be carried out with cleaning, using wet methods, carried out where and when visible dust deposition can be seen to be occurring.
- Require a change of shoes and clothes by staff and visitors before going off-site.
- Provide personal cleaning facilities such as showers and boot cleaners on site.
- Hard surface all major haul routes, inspect and repair them regularly and keep clean from debris at all times.

2. Transport to site

To reduce dust and particulates associated with vehicles, e.g. exhaust emissions, re-suspension or wind blow dust, all developers should carry out the following controls:

- All vehicles should switch off engines when not in use – no idling vehicles.
- Fixed wheel and/or vehicle washing on leaving site e.g. drive through, under vehicle jets or hand held jet washers.
- All loads entering and leaving site to be covered.
- Hard surfacing and effective wet cleaning of haul routes.
- Enforced a 5mph speed limit on site.
- Use fixed or mobile irrigators or sprinkler systems to effectively damp internal haul routes and external roads up to 100m from site entrance(s) a minimum of once a day.

3. Idling Impact

During the peak excavation works, a major development may require 6 muck away vehicles an hour. If each vehicle is stationed for 5 minutes and left idling, this would equate to 30mins per hour and over the 10 hour working day would equate to 5 hours of unnecessary vehicle exhaust fumes being emitted per day. Enforcing no engine idling will also save money on fuel costs.

The site shall be managed so that vehicles do not have to wait to park safely. However, should vehicles have to wait they should not idle. If a vehicle is stationary for more than a minute, turning off the engine is required by The Road Traffic (Vehicle Emissions) (Fixed Penalty) (England) Regulations 2002.

4. Site activities

4.1. Diesel or petrol generators

Even modern diesel or petrol powered plant items emit higher levels of PM and NO_x than electric equivalents. Therefore, wherever possible, renewable, mains or battery powered plant items should be used.

4.2. Cutting, grinding and sawing

Cutting, grinding and sawing should not be conducted on-site and pre-fabricated, pre-cut materials and modules should be brought to site. In cases where on site cutting, grinding and sawing must take place on site this must be done using equipment fitted with functional dust arrestment/suppression. Alternatively a water efficient spray over the material as it is being cut will greatly reduce the amount of dust generated.

<http://www.hse.gov.uk/pubns/cis36.pdf>

When scrubbing best practice is to: pre-wet work surfaces; screen off work areas; and wet sweep away all arisings.

4.3. Mobile crushing plant

Crushing is an inherently noisy and dusty activity. Developers shall formally notify the local authority if a crusher is to be used on site. Mobile crushing plants are authorised as Local Authority Pollution Prevention & Control (LAPPC) processes under the Environmental Protection Act 1990 by the authority where they are registered (rather than the authority in whose area in which they are used). This is required even if they are only on site for a few days.

Developers must keep a copy of the LAPPC permit on-site and adhere to the conditions of use at all times. It is mandatory to use best available techniques in accordance with the relevant Process Guidance note at all times.

Crushing plant and the discharge from crushers and grading screens should be enclosed in a temporary shed and have a fine spray of water fed into the top of the crusher hopper at all times whilst in use.

4.4. Concrete batching

As for mobile crushing plants, construction sites with concrete batching plants will likely be categorised as medium or high risk. Developers should treat such plant as a permitted LAPPC process under the Environmental Protection Act 1990, even if temporary, and employ the following best practice: Notify the local authority a concrete batcher is to be used on site; use best available techniques identified in the Process Guidance note; and carry out these processes in an enclosure, wherever possible.

4.5. Chutes, conveyors and skips

Skips, chutes and conveyors should be completely covered or enclosed to ensure that dust does not escape. Drop heights should be minimised to control the fall of materials.

5. Damping down

Developers will need to wash or dampen haul routes both within and outside the site. This is particularly important for sites close to residential properties or other sensitive receptors and during dry or breezy conditions. Developers should consider the environmental and economic benefits of using a groundwater source on site, as opposed to bringing drinking quality water onto site for the purpose of dust suppression. Where possible the source of water should be sustainable and the re-use be optimised.

- Clean road edges and pavements using wet cleaning methods.
- Use wet cleaning methods and mechanical road sweepers on all roads within 100m of the site entrance at least once a day.
- Consider using fixed or mobile sprinkler or irrigator systems.
- Where possible, use a sustainable source of water.
- Contact the Environment Agency for advice regarding recycling any collected material or handling run-off water according to their legal requirements.
- Provide hard-standing areas for vehicles and inspect and clean these areas daily.
- Stockpiles and storage mounds

Developers should avoid long-term stockpiles on site unless they are designed and planned to perform the function of visual or noise screening. If they are necessary, the following measures should be in place:

- Make sure that stockpiles exist for the shortest possible time.
- Do not build steep sided stockpiles or mounds or those that have sharp changes in shape. Profile to minimise wind whip.
- Whenever possible site stockpiles away from the site boundary, sensitive receptors, watercourses and surface drains.

- Wherever possible, enclose stockpiles, keep them securely sheeted or employ irrigators.
- When siting stockpiles take into account the predominant wind direction to reduce the likelihood of affecting off-site receptors.
- Seed, re-vegetate or turf long term stockpiles to stabilise surfaces or use surface binding agents that have been approved by the Environment Agency.
- Re-use hardcore material to avoid unnecessary vehicle trips.
- Erect fences or use windbreaks such as trees, hedges and earth-banks of similar height and size to the stockpile to act as wind barriers and keep these clean using agreed wet methods regularly.
- Store fine or powdery material (under 3mm in diameter) inside buildings or enclosures.

6. Sand Blasting

The work area should be close-sheeted to reduce dust nuisance from grit. Routine checking is required to ensure that the sheeting remains sound and sealed during the operation. Particular attention should also be given to the working platform to ensure that it is properly sheeted and sealed to contain dust.

<http://www.hse.gov.uk/pubns/guidance/cn7.pdf>

- Non-siliceous grit should be used to prevent long-term irreversible lung damage from silica dust to workers.
- Adequate PPE and sheeting should be provided when sand blasting any structure painted with lead based paint.
- Please refer to the Control of Lead at Work Regulations 2002.

<http://www.hse.gov.uk/pubns/priced/l132.pdf>

In cases where water is used for large scale cleaning and blasting projects the requirements of Environment Agency and Thames Water Utilities Ltd must be complied with.

All grit must be prevented from falling into or ending up in rivers or watercourses.
Please refer to the Water Resources Act 1991.

7. Fumes

The contractor shall take all necessary precautions to prevent the occurrence of smoke emissions or fumes from site plant or stored fuel oils to prevent the emissions or fumes drifting off-site. Plant shall be well maintained and measures taken to ensure that it is throttled down or turned off when not in use.

8. PPG6

PPG6 'Construction and demolition sites: prevent pollution' guidance document was withdrawn on 14 December 2015 however, it can still be referenced as a good guide to pollution control; [PPG6 Construction and Demolitions Sites | GOV.UK](#)

Acknowledgement: London Borough of Southwark

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A. Application Summary (ref: C19952)

Application for: **Lot 2**

Lead local authority name:	North Northamptonshire Council
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Main Contact	
Name:	<i>Catherine Clooney</i>
Job role:	<i>Environmental Protection Manager</i>
Email:	<i>Catherine.clooney@northnorthants.gov.uk</i>
Telephone:	01933 231962
Secondary Contact	
Name:	<i>Ciara Longman</i>
Email:	<i>Ciara.longman@northnorthants.gov.uk</i>
Telephone:	07747614369

For joint applicants only- As outlined in section **1.6 Number of Applications Permitted**, and **2.19 Joint Proposals and Collaboration** of the ITA

List partner applicants below:
Click or tap here to enter text.

Funding request: Up to a maximum value of £650,000 for a sole applicant and £1 million for joint applicants (section **1.9 Funding Criteria** of the ITA). Please note that the figures provided here should match the figures given in **Annex B - Finance Template**

Value applied for	£	% Of total bid
CDEL	142,000	50
RDEL	104,000	34
Matched funding	38,880	16
Total project cost	284,880	15.78

Submission summary

Please provide a short summary (**MAX 150 words**) outlining the activities funding is requested for:

North Northamptonshire has smoke control areas. It is intended that this project will run for four years and focusses on behaviour change with regards to PM2.5. It has been well established that PM2.5 travels wider distances than larger particulates. Consequently, sensors will be used to delineate PM2.5 concentrations in and around sensitive receptor locations including schools, hospitals, care homes and residential areas. The sensors will also record NO2 and PM10. All of the data will be made available and easy to understand on a bespoke public website. The main aim is to educate the public to reduce exposure. The information includes preventing domestic emissions of PM2.5, information for residents and visitors about pollution levels and health impacts. A monthly communications campaign will be coordinated

with NNC's comms team to maintain public awareness. It is essential that engagement with the public continues to ensure the messaging remains in the public consciousness. NNC is committed to maintaining this communication campaign. Please provide a short summary (**MAX 150 words**) outline the expected air quality improvements AND/ OR other benefits of the proposed project:

This project will be undertaken over a 4 year period involving monitoring with monthly updates and messaging. A long time period is crucial to maintaining the behaviour change narrative. It is well established that behaviour change doesn't happen quickly and the partnership between the Council and Ricardo will ensure that up to date information is disseminated each month. Messaging is focussed on the theory of change model as effective messaging is based over a longer period of time. Messaging will involve, use of alternatives to wood burning, cost effective heating, adverse health impacts, sustainability impacts and carbon impacts. This project will involve one year measurements at 40 locations. The results will assist in targeting areas where exceedences occur and what regulatory actions will need to be taken.

Variations

An Applicant may submit one Variation per Application. Applications must meet the conditions outlined in section **1.8 Variations** and **2.20 Variant Applications** of the ITA for the Variation to be considered.

Has a variant application been submitted for this project and entered as required into the online application portal?

No

Project duration

Please provide an estimated start and end date for the project (this can be subject to change) as outline in section **1.2 Timetable** of the ITA:

Start date:	04/03/2024
End date:	06/03/2028

Targeted pollutants

Please confirm which pollutants the project will target:

<input checked="" type="checkbox"/> NO2	<input checked="" type="checkbox"/> PM 2.5
<input checked="" type="checkbox"/> Other (please list) PM10	

Project Measures

Please tick all measures below that your proposed project will cover

<input type="checkbox"/> Health Disparities	<input checked="" type="checkbox"/> Monitoring	<input type="checkbox"/> Driver efficiency
<input checked="" type="checkbox"/> Schools	<input type="checkbox"/> Modelling	<input type="checkbox"/> Traffic Management
<input type="checkbox"/> Active Travel	<input checked="" type="checkbox"/> Remote sensing	<input type="checkbox"/> Alternatives to private vehicle use
<input checked="" type="checkbox"/> Public Information	<input checked="" type="checkbox"/> Domestic combustion	<input type="checkbox"/> Low emission vehicles
<input checked="" type="checkbox"/> Communications	<input checked="" type="checkbox"/> Smoke control areas	<input type="checkbox"/> Public Transport
<input type="checkbox"/> Indoor air quality	<input checked="" type="checkbox"/> Behavioural Change	<input type="checkbox"/> Retrofits/ vehicle electrification

<input type="checkbox"/> Digital Platforms	<input type="checkbox"/> Enforcement	<input type="checkbox"/> Other (please list all) <i>Click or tap here to enter text.</i>
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Please tick all relevant emissions sources that the proposed project will cover

<input type="checkbox"/> Private cars	<input type="checkbox"/> HGVs	<input checked="" type="checkbox"/> Domestic burning
<input type="checkbox"/> Taxis	<input type="checkbox"/> Non-road mobile machinery (NRMM)	<input type="checkbox"/> Boats and waterways
<input type="checkbox"/> Buses	<input type="checkbox"/> Industry	<input type="checkbox"/> Biomass
<input type="checkbox"/> Trains	<input type="checkbox"/> Ports	<input type="checkbox"/> Other (please list all) <i>Type here</i>
<input type="checkbox"/> Delivery freight		

Will air quality monitoring be undertaken throughout the project?

Yes

If monitoring equipment or sensors are to be purchased as part of the project, please outline the name of sensors and the number planned to purchase and pollutant(s) the sensor will monitor:

10x Praxis cube which monitors PM2.5, PM10 and NO2

B. Eligibility and expectations

Applicant Status

I can confirm that the lead and any joint applicant named in this form is an English local authority. *(Any person or organisation not an English local authority will only be permitted to participate as a sub-contractor to an eligible Applicant submitting a sole or joint bid.)*

Lot Eligibility

Please check **one** of the following 3 options, section **1.5 Eligibility** of the ITA refers:

This is an application for **Lot 1** and the Applicant (and any Joint Applicant) has not been required at any point, to develop a local NO2 plan following the receipt of a Ministerial Direction under the 2017 Plan for tackling roadside NO2 concentrations. Note this includes full local plans only and not Targeted Feasibility Studies. Local authorities who have been required to develop Targeted Feasibility Studies only are eligible to apply.

This is an application for **Lot 1** and the Applicant (and any Joint Applicant) has completed their local NO2 Plan following the receipt of a Ministerial Direction under

the 2017 Plan for tackling roadside NO2 concentrations and that the Applicant has NOT been directed to carry out further measures as a result.

This application is for a project that will primarily undertake measures to improve knowledge and information about air quality and steps individuals can take to reduce their exposure to air pollution, and/or projects that include measures that deal with particulate matter. The application is therefore submitted under **Lot 2** of the ITA for which all local authorities are eligible to apply.

Number of Applications

I can confirm that the LA has complied with the number of permitted applications as outlined in **1.6 Number of Applications Permitted** of the ITA:

Reporting and Review Meetings

Section **1.12 Reporting and Review Meetings** of the ITA refers.

I confirm that the applicant named will contact Defra at the point that there are any concerns about the delivery of the project.

I confirm that all Defra reporting requirements will be complied with including quarterly reports, final report, finance reconciliation and the appropriate use of the Defra logo to acknowledge receipt of funding from Defra.

Fraud and Error

I confirm due diligence will be undertaken at all stages of the application and project delivery to prevent against fraud and error.

C. Current AQMAs and Air Quality Reporting Status

Air Quality Management Areas (AQMAs)

Please declare, in the table below, the number of AQMAs held by the lead and partner local authorities and the name of the AQMAs the project proposal will impact (if it will impact all, please state all). Further detail such as maps of AQMAs can be submitted as part of your response to **Q05 Strategic Alignment**.

LA Name (Please enter the lead LA first and add partner LAs as necessary)	Number of AQMAs	Name of AQMAs the project proposal will impact.
Lead Local Authority		
Not Applicable	<i>Click to enter text.</i>	<i>Click to enter text.</i>
Partner Local Authorities		
<i>Click to enter text.</i>	<i>Click to enter text.</i>	<i>Click to enter text.</i>
<i>Click to enter text.</i>	<i>Click to enter text.</i>	<i>Click to enter text.</i>
<i>Click to enter text.</i>	<i>Click to enter text.</i>	<i>Click to enter text.</i>

Reporting Status:

Air Quality Annual Status Report (ASR)

Please confirm the date the most recent annual status report was completed and submitted to Defra by the lead LA and partner applicants:

LA Name (Please enter the lead LA first and add partner LAs as necessary)	Date submitted to Defra/ GLA	Date approved by Defra/ GLA	If relevant, confirm extension deadline
Lead Local Authority			
North Northamptonshire Council	12/06/2023	28/08/2023	<i>Click to enter a date.</i>
Partner Local Authorities			
<i>Click to enter text.</i>	<i>Click to enter a date.</i>	<i>Click to enter a date.</i>	<i>Click to enter a date.</i>
<i>Click to enter text.</i>	<i>Click to enter a date.</i>	<i>Click to enter a date.</i>	<i>Click to enter a date.</i>
<i>Click to enter text.</i>	<i>Click to enter a date.</i>	<i>Click to enter a date.</i>	<i>Click to enter a date.</i>

Air quality action plans (AQAP)

For further information please refer to guidance in section 1.4 of the ITA, an AQAP is not required for all project proposals.

Please select one of the following:

Detail of AQAPs are provided in the AQAP Status table below

If details of AQAP have **not** been submitted, please explain why:

Our Local Air Quality Strategy is in Draft format and waiting to be approved by Committee for consultation.

AQAP status

Please complete for lead and partner applicants for joint projects (please add extra rows as needed for all partner local authorities):

LA Name (Please enter the lead LA first and add partner LAs as necessary)	AQAP Status	Date of last AQAP	Date for next AQAP review
Lead Local Authority			
Not applicable	Choose an item.	Click to enter a date.	Click to enter a date.
Partner Local Authorities			
Click to enter text.	Choose an item.	Click to enter a date.	Click to enter a date.
Click to enter text.	Choose an item.	Click to enter a date.	Click to enter a date.
Click to enter text.	Choose an item.	Click to enter a date.	Click to enter a date.

How does the project link to measures identified in the AQAP? (Please insert rows for each local authority to match the AQAP status table above) (A narrative explaining the link between the project and the AQAP should be discussed as part of Q05 - Strategic Alignment in the main application):

LA Name (Please enter the lead LA first and add partner LAs as necessary)	Does the project link directly to measures identified in the AQAP	Please confirm which measures will be impacted and list where in the AQAP the action has been identified i.e. action or paragraph/page number.)
Lead Local Authority		
North Northamptonshire Council	Click to select	Click to enter text.
Partner Local Authorities		
Click to enter text.	Click to select	Click to enter text.
Click to enter text.	Click to select	Click to enter text.

<i>Click to enter text.</i>	<i>Click to select</i>	<i>Click to enter text.</i>
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Smoke control areas

If applying for a PM focused project; is there a smoke control area within your local authority?

Yes

If YES, please provide details of the smoke control area(s)

Corby, Northamptonshire

D. Previous Air Quality Grant Awards

Has the lead local authority received funding from Defra's air quality grant fund since (and including) 2018/2019?

Click to select

If yes, please confirm the award and reporting status in the table below

Grant Year	Was funding received?	Value received	Is this project complete?	Date project completed - leave blank for live projects	Is quarterly reporting up to date and sent to Defra?	Has the final report been submitted (due 6 months after project completion)
2019/20	<i>Click to select</i>	<i>Enter Amount</i>	<i>Click to select</i>	<i>Click to enter a date.</i>	<i>Click to select</i>	<i>Click to select</i>
2020/21	<i>Click to select</i>	<i>Enter Amount</i>	<i>Click to select</i>	<i>Click to enter a date.</i>	<i>Click to select</i>	<i>Click to select</i>
2021/22	<i>Click to select</i>	<i>Enter Amount</i>	<i>Click to select</i>	<i>Click to enter a date.</i>	<i>Click to select</i>	<i>Click to select</i>
2022/23	<i>Click to select</i>	<i>Enter Amount</i>	<i>Click to select</i>	<i>Click to enter a date.</i>	<i>Click to select</i>	<i>Click to select</i>

E. Finance Information

I can confirm that a completed Annex B Finance Template for project and staff costs has been supplied as part of this application as outlined in **Q07 Value for Money**

I can confirm that the local authority finance team has been consulted when applying for the 2022/23 Air Quality Grant in accordance with sections **1.9 Funding Criteria** and **1.14 Project Expenditure** of the ITA.



Department
for Environment
Food & Rural Affairs

Policy paper

Air quality strategy: framework for local authority delivery

Published 28 April 2023

1. Introduction

This document is our strategic framework for local authorities and other partners. It sets out their powers, responsibilities, and further actions the government expects them to take.

Air quality has improved in England over recent decades. However, it continues to be the biggest environmental risk to public health, with children, the elderly and the already vulnerable most affected. Poor air quality also has consequences for crop yields and, particularly in the case of ammonia and oxides of nitrogen (NO_x), significant impacts for the natural environment and biodiversity.

Local government has an essential role to play in delivering cleaner air for communities and nature right across England. They have many of the powers and local insight to tackle issues that cause pollution locally. Local authorities (the lower tier in two-tier areas, and unitary authorities) already have a duty to address air quality exceedances in their area. This includes declaring Air Quality Management Areas and publishing Air Quality Action Plans setting out the measures they will take to come back into compliance. We also expect local authorities to take preventative action, through a local Air Quality Strategy, rather than waiting for a legal limit to be breached.



Our priorities are:

1. Planning reforms helping to deliver on air quality.
2. Building capacity in local councils through training, guidance and knowledge sharing.
3. Reducing emissions from industrial sources through improved enforcement of environmental permits.
4. Reducing pollution from domestic burning through smoke control areas and cleaner fuels.
5. Raising awareness within local communities of air quality impacts and how to reduce them.
6. Boosting active travel and public transport to improve air quality.

1.1 About the Air Quality Strategy

This document sets out a framework to enable local authorities to deliver for their communities and contribute to our long-term air quality goals, including our ambitious new targets for fine particulate matter (PM2.5).

It fulfils the statutory requirement of the Environment Act 1995 as amended by the Environment Act 2021 to publish an Air Quality Strategy setting out air quality

standards, objectives, and measures for improving ambient air quality every 5 years.

It does not replicate or replace our other air quality guidance documents relevant to local authorities, a summary of which is set out in Annex B. The clean air chapter of our [Environmental Improvement Plan 2023](#) builds on and updates the 2019 Clean Air Strategy, setting out our delivery plan to achieve our targets.

1.2 Who the Air Quality Strategy is for

All local authorities in England, including upper tier authorities (where they exist) and those in London, must have regard to this document. This reflects the fact that where there are two tier authorities, county councils are expected to contribute to district council air quality plans and strategies. In particular, we expect this strategy to be relevant where local authorities are preparing Air Quality Action Plans to address local exceedances. Last year, we expanded this duty to have regard to this strategy to National Highways.

1.3 Air quality standards and objectives

The UK has a longstanding framework to improve air quality, consisting of 2 main pillars – emissions and concentrations.

Emissions are a measure of how much pollution is released into the air, and concentrations are the levels at which pollution is present in the air. While the two are closely linked, concentrations are also affected by emissions from neighbouring countries, natural sources, and weather patterns. It is therefore important that we have a legislative framework incorporating both. The full list of pollutants and concentrations is set out at Annex A.

Concentration limits apply both nationally, where they are the responsibility of national government, and locally, where they are the responsibility of the relevant local authority. In areas with two tiers of local government (districts and counties), the air quality duties sit at the lower tier. In unitary areas, the single authority holds responsibility. In two-tier areas, county councils have a duty to contribute improvements to air quality where relevant.

1.3.1 National air quality regulations

Our national-level air quality regulations for concentrations consist of the Air Quality Standards Regulations 2010, which set limits for several pollutants, including nitrogen oxides, particulate matter, and others. We are compliant with these standards, except for concentration limits for nitrogen oxides. We are delivering our 2017 [air quality plan for nitrogen dioxide \(NO₂\) in the UK](#) to bring areas into compliance.

Under the Environment Act 2021, we have also set 2 new legally-binding long-term targets to reduce concentrations of fine particulate matter, PM_{2.5}. The two new targets are an annual mean concentration of 10 micrograms per metres cubed (µg/m³) or below and a reduction in average population exposure by 35% by 2040, compared to a 2018 baseline. These targets will help drive reductions in the worst PM_{2.5} hotspots across the country, whilst ensuring nationwide action to improve air quality for everyone.

We also set out an interim target for each long-term target in our [Environmental Improvement Plan](#) which will ensure we drive early action and do not delay improvement.

Finally, under the National Emission Ceilings Regulations 2018, we have legally-binding emission reduction commitments to reduce the amount of 5 key pollutants released into the air each year, compared to a 2005 baseline. This arises from our membership of the international Convention on Long-Range Transboundary Air Pollution, in which we were a founding member in 1979 and continue to play a leading role.

The 5 pollutants are:

- fine particulate matter (PM_{2.5})
- oxides of nitrogen (NO_x)
- sulphur dioxide (SO₂)
- ammonia (NH₃)
- non-methane volatile organic compounds

We are compliant with emission reduction commitments for 4 of the 5 key pollutants, except for PM2.5 in 2021. We were below our 2020 to 2029 emission ceiling for PM2.5 in 2020 but emissions increased following the lifting of COVID-19 restrictions. We also have legally-binding emission reduction commitments for 2030 for these 5 pollutants. We set out our delivery plan for achieving emissions reductions in our [Environmental Improvement Plan](#).

1.4 Local Air Quality Management Framework

The Local Air Quality Management Framework underpinned by the Environment Act 1995 sets local limits put into place through the Air Quality (England) Regulations 2000 (as amended in 2002). The framework requires relevant local authorities to assess the quality of their air and, if it does not comply with relevant concentration limits, put in place a plan to remedy the problem.

1.5 Air pollutants of particular concern

We expect most action will be directed towards the 3 pollutants which have the majority of impact - fine particulate matter, nitrogen oxides and ammonia. Other pollutants include non-methane volatile organic compounds which are found in many household products and can impact on indoor air quality.

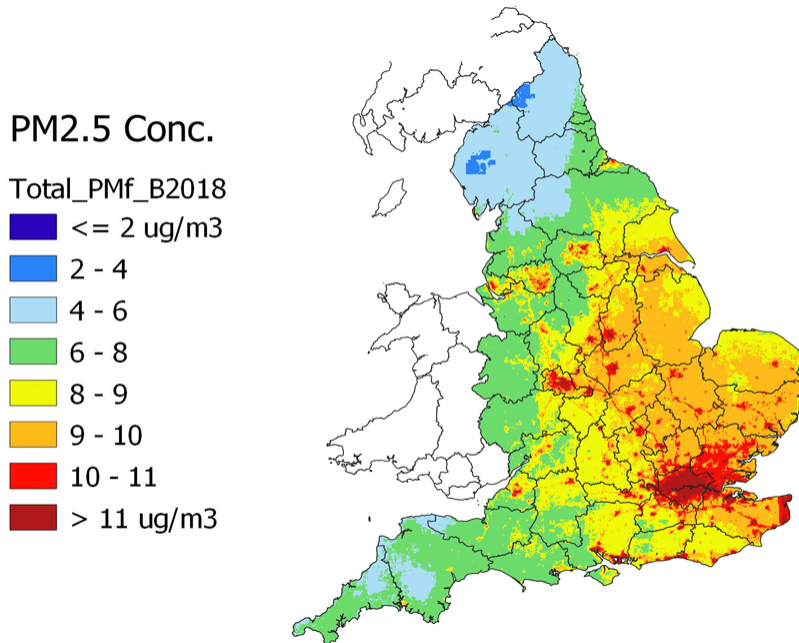
Fine particulate matter – PM2.5

Particulate matter is everything in the air that is not a gas. The size of airborne particles governs their behaviour. The legislation encompasses both PM10 (particles under 10 micrometres comprising both fine and coarse particulate matter) and PM2.5, (particles under 2.5 micrometres or fine particulate matter). This strategy focuses on PM2.5; recognising this has widespread impact.

PM2.5 is either emitted directly from sources, known as primary PM2.5, or formed in the air from chemical reactions between other pollutants, known as secondary PM2.5. Primary PM2.5 is emitted from human activities, like burning fuels, braking and various industrial processes, as well as from natural sources like sea spray and dust. Domestic combustion contributed 27% of emissions in 2021 and industrial combustion of biomass fuels accounts for 18%^{[\[footnote 1\]](#)}.

A portion of the PM2.5 present in our air originates in other countries, with southeast England particularly affected. Correspondingly, some PM2.5 emitted in the UK travels abroad.

Map of modelled PM2.5 concentrations across England in 2018, the base year for the PM2.5 targets (produced by Imperial College London).



Concentrations range from the lowest (in blue) to the highest (in red). Key features in the map are:

- the gradient from southeast to northwest across the country is due to the difference in natural and transboundary contributions which are higher in the southeast due to emissions from the European continent and shipping
- the highest concentrations are in large urban areas, due to emissions from activities within major towns and cities

Nitrogen oxides – NO_x (nitrogen dioxide, NO₂, and nitric oxide, NO)

Nitrogen oxides are gases which are generally emitted from high-temperature combustion processes. We deal with nitrogen dioxide and nitric oxide together as “NO_x” because they convert between each other in the air very quickly.

The main sources of NO_x in the UK are road transport (27% in 20213) and other transport (aviation, rail, shipping) (14% in 20213). Read Annex A for details.

NO_x can impact human health, usually recognised for exacerbating asthma and other respiratory diseases. It also damages biodiversity by depositing reactive nitrogen into plants and soil.

Ammonia (NH₃)

Ammonia is a reactive gas which impacts biodiversity. It also reacts with other chemicals in the air to form particulate matter. Its main source in the UK is agriculture (87% in 2021) - read Annex A for details.

Actions for local partners: 1

- All English local authorities (including county councils), the Environment Agency, and designated relevant public authorities, must have regard to this strategy when exercising functions of a public nature that could affect the quality of air.

2. How air quality fits with health, economic growth, nature, and net zero

This section sets out the co-benefits delivered by air quality improvements.

Actions for local partners: 2

- Air quality is a public health issue. Local air quality action (including Local Air Quality Action Plans, Air Quality Strategies, local communication, and public awareness campaigns) should involve Directors of Public Health at every stage, with collaboration encouraged between lower and upper tier authorities.
- Local authorities should robustly assess the monetised benefits of air quality interventions, implementing those which boost healthy life expectancy and are economically beneficial to their area. The government publishes evidence damage costs for pollutants, which local authorities can use to support economic assessment of air quality interventions.

- Actions to reduce air pollution impacting biodiversity form an integral part of local authorities' duty to conserve and enhance biodiversity under the Natural Environment and Rural Communities Act, as well as have regard to the impact on biodiversity in their policy formation as set out in the Environment Act 2021.
- Local authorities should integrate climate change mitigation and adaptation measures with measures which improve air quality, being mindful to avoid trade-offs and tensions where possible.

2.1 Air quality and health

Poor air quality is the biggest environmental threat to public health. Air quality interventions should be designed in a way which takes account of the disparities in exposure to and impacts from poor air quality.

In 2017, the government, jointly with the Local Government Association, published [guidance for directors of public health](#) on the role they should play in addressing air quality. The Public Health Outcomes Framework includes an indicator on mortality attributed to particulate matter, which local authorities should seek to improve. In 2023, legally-binding targets were agreed relating to population exposure to PM2.5.

Case study: Health professionals becoming Air Quality Champions in Islington, London

Islington were supported by the Defra Air Quality Grant Scheme in 2021 to train General Practitioners (GPs) and health professionals as Air Quality Champions. This helped patients, including in hard to reach or vulnerable populations, reduce their exposure.

In partnership with Global Action Plan, Islington council provided online teaching on the causes and health impacts of air pollution to 17 GPs, nurses, and allied health professionals, enabling them to cascade learning to 113 more practice staff. GPs from one practice also engaged in a citizen science project using air quality monitors during their daily commute.

Half of all patients (52%) who received advice on improving air quality from their GP said that it made them want to understand more about air pollution and changed their behaviour. Ventilating while cooking or cleaning and walking more were the most popular actions.

A community communication campaign reached one quarter of the patient population. Patients who had seen this information were twice as likely to take action compared to those who only received advice from their health professional.

The materials developed through the project were shared with national groups such as the Royal College of General Practitioners and are freely available for download on the [Global Action Plan website](#).

2.2 Air quality and economic growth

By making people less healthy, poor air quality harms productivity and increases costs to society through medical and social care.

Reducing poor air quality has direct, proven economic benefits, in many cases even when the up-front cost over intervention is high. It is estimated that reducing PM2.5 concentrations by 1 µg/m³ increases GDP by 0.8% on average in Europe^{[footnote 2](#)}.

2.3 Air quality and biodiversity

Poor air quality, particularly ammonia and NO_x, is a major contributor to the long-term decline of biodiversity in the UK.

Approximately 93.5% of England's sites of special scientific interest (SSSIs) exceed the lower critical ammonia level set to protect sensitive plants, such as mosses and lichens. Eight sensitive habitat types in England exceed nitrogen critical loads across 98.5% to 100% of their area. These include woodlands and peatlands - two habitats integral to meeting the UK's net zero target.

Local authorities must exercise their functions in a way which conserves and enhances biodiversity under section 40 of the Natural Environment and Rural Communities Act 2006.

Tackling pollutants which impact on biodiversity is an integral part of this. Through the Environment Act 2021, local authorities are required to produce local nature recovery strategies. Whilst local nature recovery strategies will not be a primary delivery mechanism for air quality measures, air quality impacts on habitats should be considered during their preparation, where relevant. They should be considered in combination with protected sites strategies and shared nitrogen action plans to form an holistic approach to alleviating impacts of air pollution on nature.

2.4 Air quality and net zero

In 2019, the UK became the first major economy in the world to legislate to end our domestic contribution to man-made climate change. Many sources of greenhouse gases, like transport and heat generation, also contribute to poor air quality. However, some measures to reduce greenhouse gas emissions are in tension with improving air quality, and these interactions must be carefully considered.

The government published our [2030 Strategic Framework for International Climate and Nature Action](#), setting out how we will meet the linked global challenges of climate change and biodiversity loss.

3. Framework for action

This section sets out the existing Local Air Quality Management framework under the Environment Act 1995 and the range of powers which local authorities have available to them^{[\[footnote 3\]](#)}. Whilst London Boroughs do follow the Local Air Quality Management Framework set out in the Environment Act, responsibility for air quality within London is devolved from the Secretary of State to the Mayor of London under the Greater London Authority Act 1999. London Boroughs therefore also follow separate London Local Air Quality Management guidance.

Actions for local partners: 3

- Under the Local Air Quality Management framework, local authorities must assess their air quality for the specified pollutants and submit their Annual Status Reports.
- Local authorities must declare an Air Quality Management Area if concentrations are above legal limits or are likely to breach limits.
- Each Air Quality Management Area must be accompanied by an Air Quality Action Plan, setting out measures to fix the problem, and dates by which they will be carried out.
- Where causes of, or contributors to, an Air Quality Management Area fall within the control of another relevant body, those bodies should contribute measures to the Air Quality Action Plan and carry out those measures.
- All local authorities are expected to take proactive action to improve air quality, whether or not they have an Air Quality Management Area. Local authorities without an Air Quality Management Area, should specify proactive measures they will take in their Air Quality Strategy.
- Local authorities' Air Quality Strategies should be informed by their monitoring and assessments. Air Quality Strategies should set out an enforcement strategy which prioritises reduction of population exposure, including in areas experiencing disproportionately high levels of pollution.
- Directors of Public Health should be involved in the preparation of Air Quality Action Plans and Air Quality Strategies.

3.1 Local Air Quality Management Framework

Assessment of air quality

Through the Local Air Quality Management system local authorities must assess air quality in their area against air quality objectives. They must submit an Annual Status Report reporting on their air quality actions, including progress implementing Air Quality Action Plans and local Air Quality Strategies. The list of pollutants that must be assessed is set out in Annex A, but those of particular concern are NO_x and PM₁₀. PM_{2.5} is not included in this assessment.

Air Quality Management Areas and Air Quality Action Plans

Where local authorities identify an exceedance of objectives, or a likely exceedance, they must designate an Air Quality Management Area.

Where an Air Quality Management Area is designated, local authorities must produce an Air Quality Action Plan describing the pollution reduction measures required and the dates by which each measure will be carried out.

The expectation is that local authorities and their partners deliver air quality improvements within reasonable timeframes. Local authorities should consider prevention and reduction of polluting activities in preference to only taking steps to improve air quality once exceedances have been identified.

To assist local authorities with their Air Quality Action Plan, the action toolbox in the Local Air Quality Management Technical Guidance 2022 provides a list of potential actions that can be taken to tackle local air quality issues along with their impact on reducing air pollution. For instance, where an exceedance of an air quality objective is linked to a particular junction with congestion, a local authority could consider making changes to traffic light timings to reduce the build-up of traffic or change priorities to allow some vehicles to pass through junctions quicker than others.

Case study: Improving local traffic flow in West Suffolk

West Suffolk Council identified that an existing pedestrian crossing, adjacent to an Air Quality Management Area, was causing significant disruption to traffic flows on a busy A road.

Following public consultation and technical surveys, an intelligent crossing enabled to react to traffic and pedestrian flows to keep traffic moving smoothly was relocated in December 2019, with associated air quality benefits measurable from January 2020. West Suffolk Council have reported substantial reductions of pollution within the Air Quality Management Area as a result of the project. The relocation of the crossing is considered to contribute to a 7.8% reduction in levels of nitrogen dioxide in the area and the council are now on track to revoke the Air Quality Management Area 2 years earlier than otherwise anticipated.

The project has also created a safe walking route for residents to access the nearby school and village hall, encouraging active travel and physical activity further improving local air quality and benefiting the wellbeing of the community.

Air Quality Strategies

Where a local authority is not required to declare an Air Quality Management Area they are expected to develop and publish a local Air Quality Strategy. The content of each strategy will be determined locally but should be produced in consultation with the director of public health and set out the steps the local authority will take to improve local air quality.

Air Quality Partners

Local authorities will not always have control over the sources of emissions affecting their area. To promote effective local action, a wider range of bodies has been brought into the process of creating and delivering Air Quality Action Plans including neighbouring local authorities, the Environment Agency, and National Highways. These bodies are eligible to be declared Air Quality Partners by the local authority responsible for the area which is exceeding relevant pollution levels.

Where a source within the control of a relevant body is causing or contributing to an exceedance causing an Air Quality Management Area to be declared, the relevant body can be declared an Air Quality Partner by the relevant local authority responsible for the area in exceedance. Defra has set out detailed guidance on the process in our Local Air Quality Management policy guidance. Air Quality Partners must propose measures they will take to contribute to the Air Quality Action Plan and include a date by when they will be carried out.

3.2 Local action to reduce PM2.5

As well as meeting local objectives, local authorities play a role in contributing to national targets. The government recognises that as a regional pollutant, many of the sources of PM2.5 are outside of local authority control. However, there are sources of PM2.5 over which local authorities do have control. Therefore, while PM2.5 is not currently part of the Local Air Quality Management framework, the government still expects all local authorities to effectively use their powers to reduce PM2.5 emissions from the sources which are within their control.

We have set 2 new legally binding PM2.5 targets, each with an interim target:

- 10 µg/m³ annual mean concentration PM_{2.5} nationwide by 2040, with an interim target of 12 µg/m³ by January 2028
- 35% reduction in average population exposure by 2040, with an interim target of a 22% reduction by January 2028, both compared to a 2018 baseline

Our annual mean concentration target will drive action in the worst-polluted areas. Our population exposure reduction target requires concentrations be driven down everywhere, including where they are already below 10 µg/m³. As a regional pollutant, PM_{2.5} also travels long distances and increases background levels across a wide area. It is therefore important that all local authorities across England act and can collaborate accordingly.

We have been clear in guidance to local authorities since 2016 that we expect local authorities to use their powers to reduce PM_{2.5}. We still have not seen sufficient action from the majority of local authorities. In light of the new targets, if we consider further action to be insufficient, we will consult on introducing a standalone legal duty on local authorities to take action to reduce PM_{2.5} emissions.

Actions for local partners: 4

- All local authorities should support the delivery of national PM_{2.5} targets by taking action to reduce emissions from sources within their control.
- If the government considers local action has not gone far enough, we will consider introducing a statutory duty on local authorities.

3.3 Local transparency and accountability

The public rightly expect timely and accurate information in environmental matters, including in air quality.

Local authorities have a duty to publish air quality information regularly and transparently. Often this is hard to read, buried deep on council websites, years out of date, or is simply missing. The government is currently improving the UK-

Air website and other air quality web services. We will work with local authorities to ensure that local air quality information is more easily accessible.

In our Environmental Improvement Plan, we committed to re-align regional air quality zones in line with local government boundaries to drive effective coordinated action. We want to make it easier for local authorities to identify their role in addressing areas of non-compliance which are monitored under England's Air Quality Standards Regulations 2010. This will empower local authorities to deliver localised solutions as key delivery partners in meeting our legal limits and targets.

The public rightly expect timely and accurate information in environmental matters, including in air quality.

Actions for local partners: 5

- Local authorities must fulfil their statutory duties to make high quality, accurate air quality information available to the public in a timely fashion.

Actions for the UK government: 1

- The government will align air quality reporting zones with local government boundaries, to empower councils, increase transparency and accountability.
- The government will work with local authorities to improve the UK-Air website and other air quality web services.

Case study: Access to local air quality information in Boston, Lincolnshire

Residents of Boston can access relevant and clear information on local air quality and the steps their local authority is taking to reduce air pollution on the local authority website ([Air Quality in Boston - Boston Borough Council](#)).

As well as including links to statutory documents such as Annual Status Reports and Air Quality Actions Plans, the council use this webpage to provide information on the health impacts associated with air quality.

The information allows residents to understand the actions the council has taken to address the issues in the Air Quality Management Area such as :

- the provision of a bypass to redistribute HGV traffic
- the installation of 23 electric vehicle charging points to support the transition to low emission vehicles
- diverting green waste from bonfires through the promotion of green waste services

3.4 Audit of use of local authority powers

As set out in our Environmental Improvement Plan, Defra will audit local authority action on air quality, including the powers available and any barriers to delivery. We will carry out this audit collaboratively with local authorities, expert bodies, and the wider public. We want to ensure that local authorities, who are well-placed to decide how to clean up their air, have the necessary tools at their disposal and examine the reasons for why these are not being used to improve air quality in poorly performing areas.

3.5 The Local Air Quality Management Framework: annual process

Monitoring and assessment

Local authorities are required to monitor and assess the quality of the air in their district.

Annual Status Report

Local authorities publish their monitoring and assessment annually, and update on the measures they have taken since the last Annual Status Report.

Air Quality Management Areas

Local authorities not meeting AQ objectives, or likely not to meet them, declare Air Quality Management Areas, and prepare Air Quality Action Plans.

Air Quality Strategy

Local authorities without Air Quality Action Plans should set out the actions they're going to take to improve air quality in their area.

Delivery phase

All local authorities take the actions they've set out in their Air Quality Action Plans and Air Quality Strategies.

4. Summary of powers available to local authorities

Local authorities' functions should, as far as practicable, be exercised in a way which improves air quality. This section sets out the range of powers already available to local authorities and further action which the government intends to take. We will continue to work with local authorities to raise awareness on how to use these powers.

Actions for local partners: 6

- Local authorities' functions should be exercised in a way which improves and maintains air quality.

4.1 Domestic burning

Domestic burning of solid fuels accounted for 27% of PM2.5 in 2021.

Actions for local partners: 7

- Local authorities should keep the boundaries of existing Smoke Control Areas under review, especially if development has taken place outside of the boundaries. They should consider whether it would be beneficial to declare a new Smoke Control Area.
- Local authorities with Smoke Control Areas are expected to enforce restrictions which apply within those areas.
- All local authorities should enforce solid fuels regulations by ensuring that fuel being sold for domestic purposes has the "Ready to Burn" logo. Local authorities should ensure that no retailers are selling coal for indoor domestic burning from 1 May 2023.

Actions for the UK government: 3

- The government will look to strengthen the effect of Smoke Control Areas. We will consult on tougher stove standards for Smoke Control Areas, potentially lowering the smoke limit for newly installed stoves from 5g smoke per hour.
- We will consult on tougher emission standards for Manufactured Solid Fuels reducing both smoke emissions and sulphur levels.
- We will explore policies to incentivise a shift from older, more polluting devices towards newer appliances which meet our tough new emission standard.
- We will provide updated guidance, templates, and information to support local authorities in reducing emissions from domestic burning.

Smoke control areas

Within [smoke control areas](#) rules apply, setting out that smoke must not be emitted from chimneys, which means using only approved fuels or exempt appliances.

Given the increase in popularity of domestic burning, local authorities should keep the boundaries of their smoke control areas under review^[footnote 4]. Local authorities without an smoke control area can declare one through a streamlined process^[footnote 5]. It is also now possible to bring waterways in scope of an existing or new smoke control area, subject to local consultation.

We expect that in most cases, providing information to householders will be sufficient to address smoke emissions in smoke control areas. However, where this is not the case, we expect local authorities to enforce the smoke control area. The Environment Act 2021 streamlined enforcement of smoke control areas by making breaches a civil rather than criminal offence. We have supported these changes with new funding to local authorities over this spending review period. Local authorities with smoke control areas should set a policy stipulating the level of the fine, between £175 and £300. Proceeds from fines can be used towards enforcement costs^[footnote 6]. We will be providing template enforcement materials for local authority officers to use, including information to reduce smoke emissions and warning letters to be issued ahead of any fines.

Where persistent smoke causes a nuisance, local authorities should issue an abatement notice under section 80 of the Environmental Protection Act 1990 to prevent further nuisance. Breaching an abatement notice is a criminal offence punishable with fines. Following changes made under the Environment Act 2021, these provisions now also apply to nuisance smoke from chimneys inside smoke control areas, in addition to smoke from chimneys outside smoke control areas and smoke from other sources such as bonfires, which were already covered.

We are not considering a ban on domestic burning in England. The UK government recognises that some households are reliant on solid fuel burning as a primary source for heating, hot water, and cooking, with this in mind government is not seeking to ban burning. This is particularly pertinent in light of the current focus on energy security, and the global rise in energy prices.

Solid Fuels Regulations

Local authorities are also responsible for enforcing legislation restricting the sale of the most polluting fuels used in domestic burning. The Air Quality (Domestic Solid Fuels Standards) (England) Regulations 2020 restrict the sale of wet wood for domestic burning, limit the emission of sulphur and smoke from manufactured solid fuels, and phase out the sale of smoky coal (also known as traditional house coal, or bituminous coal).

The regulations introduce a mandatory certification scheme demonstrating that wood sold in volumes under 2m³ is dry (not more than 20% moisture).

Manufactured solid fuels sold for use in domestic burning must have a sulphur content below 2% and emit less than 5g smoke per hour. Local authorities should check that fuel being sold for domestic purposes has the required “Ready to Burn” logo and certification number. From 1 May 2023, retailers are banned from selling coal (bagged or loose) for domestic burning.

4.2 Industrial emissions

Industrial emissions have decreased significantly but are still a large source of pollution. The Environment Agency and local authorities are key delivery partners in achieving further reductions of pollution from this source.

Industrial emissions have decreased significantly but are still a large source of pollution. The Environment Agency and local authorities are key delivery partners in achieving further reductions of pollution from this source.

Industrial installations are subject to an environmental permitting regime which sets emission limit values and other conditions permit holders must meet. Large installations are subject to the UK best available techniques regime, through which standards are developed and agreed by regulators and industry and published as best available techniques conclusions.

Large installations and medium combustion plant are permitted and regulated by the Environment Agency. Where a large industrial installation or medium combustion plant is causing or contributing to exceedances requiring an Air Quality Management Area, local authorities should liaise with the Environment Agency to ensure compliance at industrial sites they are responsible for regulating. In their role as an air quality partner, the Environment Agency should contribute measures which will reduce the pollution for inclusion in any Air Quality Action Plan.

Across England, both medium and smaller industrial sites are permitted by local authorities. Medium-sized sites (Part A2 sites) are subject to UK best available techniques, and therefore local authority regulators are required to reflect UK best available techniques standards when issuing new permits and are required to update existing permits within 4 years of new UK best available techniques conclusions being published.

Smaller sites (Part B sites, Solvent Emission Activities and Small Waste Incineration Plant) operate in accordance with process guidance notes issued by Defra. These smaller sites are more numerous and more likely to be located closer to or in residential areas. If an industrial site permitted by a local authority is responsible for, or contributing to, an air quality management area, the local authority should enforce granted environmental permits and check industrial sites' compliance with legal limits.

Local authorities should make sure that regular monitoring of permit conditions takes place and appropriate enforcement is taken when conditions are not met. Local authorities should seek to recover the costs of any remediation they are required to put in place due to non-compliance with permit conditions.

Appropriate action should be taken against those who fail to comply with the requirement to obtain a permit.

The Environment Agency is a statutory consultee for specific types of development under the planning regime. Where planning and permitting decisions rely on and consider similar or the same information, these data processes should be aligned to avoid duplication as far as possible.

Actions for local partners: 8

- When undertaking enforcement activity, local authorities should focus on areas where exposure is highest, and industrial activities are taking place nearby to, or in, residential areas.
- Local authorities should take a robust, proportionate enforcement approach.
- Local authorities should seek to recover remediation costs where appropriate.
- Where information provided for planning and permitting decisions is similar, it should be aligned.

Actions for the UK government: 4

- We will continue to roll out the UK best available techniques framework for large and medium industry, and develop it further to cover new technologies
- We are exploring a similar approach for smaller industrial installations, allowing out-dated regulatory standards to be updated more frequently.
- We will consider closer alignment between the Local Air Quality Management and permitting regimes, so that swifter, more complementary action can be taken to resolve local air quality issues.
- We will consider how to boost local authority regulatory capacity and capability including exploring how the fees and charges system can be improved to provide better cost recovery.

4.3 Transport and non-road mobile machinery

Transport is a key emitter of air pollution and delivering emission reductions from this source will be vital in reaching our air quality targets. Local authorities have

an important role to play, with powers over local transport and a strategic planning function.

Actions for local partners: 9

- Local authorities should ensure air quality is considered within Local Transport Plans, in line with guidance published by the government.
- Local authorities should consider rolling out traffic management schemes using existing powers to improve air quality, whilst taking into account the views of local residents and businesses.
- Local authorities should work closely with ports and airports to reduce air quality impacts, particularly where they are in an Air Quality Management Area.
- Where the biodiversity of a protected site is being damaged by nitrogen deposition from road transport, the local authority should take action to reduce this source of pollution and prevent damage.
- Local authorities are encouraged to promote the use of cleaner NRMM as part of construction and environment management plans for development they grant planning permission for and consider incentivising cleaner construction equipment through tendering processes where there is clear evidence of air quality issues.

Actions for the UK government: 5

- We will require that an increasing proportion of car and van sales from each manufacturer are zero tailpipe emission from 2024 onwards.
- We are investing in research programmes to develop methods to prevent or reduce emissions from non-exhaust vehicle sources, such as brake and tyre wear.
- Through Active Travel England, we will continue to support cycling and walking.
- We will consider actions to improve air quality on the Strategic Road Network as part of developing the next Road Investment Strategy 2025 to 2030.

Public transport

Improved bus networks help achieve both clean air and wider climate goals. The [national bus strategy](#) was published in March 2021 to encourage more people to travel by bus.

All local authorities are required to improve their local bus services using the powers set out in the Transport Act 2000, to meet the requirements of the National Bus Strategy and qualify for government funding. Local authorities must decide whether to deliver these improvements via a statutory enhanced partnership with their local bus operators or to pursue a franchising assessment to operate their buses through local service contracts.

Bus Service Improvement Plans have been developed by Local Transport Authorities in collaboration with local bus operators, community transport bodies and local businesses, services, and people.

Enhanced partnerships can work together to reduce congestion outside of sensitive sites such as hospitals, care homes and schools, by ensuring that bus routes are well connected to these sites.

The Strategic Road Network

We will consider actions to improve air quality on the Strategic Road Network as part of developing the next Road Investment Strategy 2025 to 2030.

National Highways will continue to work closely with Local Authorities in their role as a Relevant Public Authority to, where possible, identify and implement solutions to mitigate poor air quality.

Active travel

Enabling more people to make their local journeys by walking or cycling is an important part of improving air quality. Well-designed active travel schemes can deliver significant air quality benefits. Government is investing around £3 billion in active travel over the 5 years to 2025. This funding includes both dedicated funding and funding from wider sources such as the City Region Sustainable Transport Settlements and the Levelling Up Fund.

The government has also established a new executive agency, Active Travel England, to work with local authorities and help them deliver new footways, cycle lanes and pedestrian crossings. Active Travel England will also have a key role in

the planning system, helping to ensure that new developments are planned and designed in such a way as to maximise the potential for walking and cycling. Active Travel England has also announced a £32.9 million local Capability Fund, to boost capability in local authorities to deliver active travel schemes. This will increase the rollout of active travel schemes in local authorities outside London, training officers and councillors, supporting network design and planning, and public engagement and consultation.

Case Study: Active Travel

Travelling to education is the most common single purpose of walking journeys but there is huge potential to increase the proportion of children walking to school. Living Streets, with support from the Department for Transport, has been running the Walk to School Outreach (WTSO) project since 2017. It does so mainly through behaviour change interventions delivered in schools, including “WOW”, Living Streets’ year-round walk to school challenge, and by influencing local infrastructure decisions. An evaluation carried out in 2022 shows that walking rates increased by 48% among new WTSO project schools and increased walking rates were sustained in existing schools in 2021 to 2022. This represents around 13 million new walking trips and 4 million fewer school run car journeys in that academic year.

Vehicle idling

Local authorities have powers to issue fixed penalty notices of £20 (rising to £40 if not paid within 28 days) to drivers of vehicles idling unnecessarily.

Local authorities can choose to target anti-idling enforcement at sites and times where unnecessarily idling is known to be a particular problem such as schools at the start and end of the school day, or around areas which are particularly vulnerable to poor air quality such as hospitals.

Case Study: Research on influencing driver behaviour in Colchester, Essex

Colchester Borough Council were funded by the Defra Air Quality Grant scheme to conduct research into anti-idling schemes.

Undertaken in partnership with the University of Essex, a local trial sought to identify which anti-idling messages encouraged the largest number of drivers to switch off their engines, even when the signs were removed. Data was collected

from 150,705 vehicles making it the largest study into roadside signage of its kind in the UK and over the longest period.

The research found that roadside signage is a low maintenance and cost-effective way to influence driver behaviour, generating immediate results. The study recorded an 11% increase of drivers switching off their engines while waiting at crossings and junctions. The most effective of anti-idling messages were focused on the threat to health and subscribing to social norms. Drivers were less influenced by messaging that referred to their impact on air quality in the area or self-regulation.

The study also revealed that the signs that were displayed for longer periods were more effective, with no signs of signage fatigue. Colchester also found there was a positive spill over effect with people continuing to switch off their engines two weeks after the signage had been removed indicating that signs can be effective at forming habits.

Clean air zones

Local transport authorities have longstanding powers under the Transport Act 2000 to implement road user charging schemes. Clean air zones, which involve charging typically alongside non-charging measures, have also been rolled out by local councils in cities across England to deliver reductions in NO₂ concentrations as part of our NO₂ Plan, principally where other measures are not modelled to achieve compliance in the shortest possible time.

Through the NO₂ programme we have also funded a number of measures such as road and junction improvements, as well as a variety of vehicle upgrades, all improving air quality. Detailed guidance for local authorities is available in our [clean air zones framework](#).

Ports

The government is supporting ports to work with local authorities and communities to develop Ports Air Quality Strategies setting out proactive plans to reduce emissions from shore activities and visiting ships. This will help ports and local authority planners to understand and mitigate the air quality impact of maritime operations, especially within Air Quality Management Areas.

Airports

Every major commercial airport in the UK is required by law to have facilities for consultation, providing a forum for discussing airport-related issues – including air quality - with all those who may be affected by its operations.

Local authorities have an important representational role on these forums, particularly when they represent communities close to or affected by the airport's operations. Local air quality issues must be considered as part of these discussions.

Non-road mobile machinery

Non-road mobile machinery, such as construction equipment, can be a significant source of pollution in local areas.

Non-road mobile machinery is subject to placing-on-the-market standards, similarly to road vehicles, with increasingly stringent standards applied. These are known as emission stages, the most recent of which is 'Stage V'.

Local authorities are encouraged to promote the use of the cleanest construction equipment available and to encourage the use of zero emission machinery, such as electric equipment. This should form part of construction and environment management plans for development they grant planning permission for. Local authorities should also consider incentivising cleaner construction equipment through tendering processes where there is clear evidence of air quality issues. Local authorities should show flexibility where only a few units of the highest standard equipment are available, for instance in relation to specialised machinery.

Local authorities should also consider incentivising cleaner construction equipment through tendering processes for which they are responsible. For instance, if a local authority is issuing a tender for a road maintenance contract, it may be appropriate to ask bidders to demonstrate that their fleet is comprised mainly or wholly of equipment which meets the latest emission stages or is zero-emission.

In the Net Zero Growth Plan, the government announced its intention to publish a non-road mobile machinery decarbonisation strategy, with work starting on the strategy in 2023.

4.4 Agriculture

Agriculture is the largest source of ammonia and contributes to PM2.5 through chemical reactions in the atmosphere. While not having direct regulatory powers over agriculture, local authorities should work with the agricultural industry to minimise emissions from this source. This should include supporting innovation providing advice and engagement to work with farmers to make improvements where possible^[footnote 7].

Where local authorities hold agricultural land, they should have a clear policy covering how they will work with tenant farmers to manage land more sustainably and reduce ammonia emissions. All local authorities should encourage farmers (whether tenants or not) to follow the [Code of Good Agricultural Practice for Reducing Ammonia Emissions](#), produced by Defra in collaboration with the farming industry.

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, as per paragraph 186 of the National Planning Policy Framework. Local Planning Authorities should therefore consider the relevance of the impact of ammonia emissions on the environment when making local plans and may need to consider it as part of their strategic environmental assessment, including policies where it is considered necessary.

Depending on the local circumstances (and in light of any relevant national or local policies), ammonia emissions may be a material planning consideration for planning applications. This may include the reductions in ammonia emissions from development such as new or improved slurry stores and livestock housing applications. It is for the decision-maker to determine what is a relevant material consideration based on the individual circumstances of the case. Further guidance may be found in the Air Quality chapter of the [Planning Practice Guidance](#).

Actions for local partners: 10

- Local authorities should encourage tenant and other farmers to reduce ammonia emissions by following the Code of Good Agricultural Practice for Reducing Ammonia Emissions.

- The implications of development for ammonia emissions may be a material consideration in planning decisions. It is for the decision-maker to determine what is a relevant material consideration based on the individual circumstances of the case.

Actions for the UK government: 6

- The government will consult on bringing dairy and intensive beef farms within scope of environmental permitting.
- We will continue to issue funding to invest in slurry storage infrastructure to reduce ammonia emissions, with an increased budget of £33.9 million made available in April 2023 and two further rounds to follow.
- We will consult on new rules to reduce ammonia emissions from organic manure, including requirements for low emission techniques for slurry and digestate spreading.

4.5 Indoor Air Quality

Action to reduce emissions from domestic burning will help tackle indoor air pollution. Indoor air quality is also impacted by pollutants released indoors, including from cleaning products, furniture and as the result of damp. Markers of dampness and moisture in buildings such as visible mould, mould odour, or moisture in the walls have been associated with respiratory health outcomes, such as exacerbation of asthma, respiratory infections, and allergies.

Local authorities should ensure that environmental, planning, housing, health, and social care staff are aware best practice on indoor air quality. The [indoor air quality at home](#) guidance co-produced by Public Health England (now the UK Health Security Agency) and the National Institute for Health and Care Excellence on indoor air quality provides a summary of actions that can be taken to improve air quality in the home. This may include for instance advising the public on the importance of ventilation (such as using trickle vents, extractor fans and opening windows where possible) and tailoring advice to those who are already vulnerable such as pregnant women and babies under 12 months.

The government also recognises that there is a specific gap in guidance tailored to the housing sector. We will therefore review existing guidance on the health

impacts of damp and mould in homes, and issue new consolidated guidance tailored to the housing sector this year.

Actions for local partners: 11

- Local authority front line, public health, environmental and planning professionals should be familiar with best practice on indoor air quality, including around ventilation.
- Where social housing is provided by local authorities, guidance to tenants on ventilation could be provided.

Actions for the UK government: 7

- The government will develop new guidance on mould and damp for the housing sector.

4.6 Communicating air quality information

Local authorities are well placed to communicate relevant air quality information to residents.

Defra makes a wide range of air quality information available to the public through the [UK-Air website](#) and Twitter feed. This includes forecasting, measurements from our nationwide monitoring networks, and health. However, we know there is more to do, and are undertaking a review of how we communicate air quality information to ensure that members of the public, and vulnerable groups, have the information they need protect themselves and understand their impact.

We will support local authorities by providing template communications tools and assets which they can deploy in their own communications. As part of the 2023 Burn Better Campaign, Defra has already provided all local authorities with communications assets that raise awareness around better burning habits. We will ensure that communications assets created by local authorities using funding from the Air Quality Grant are made available to local authorities more widely.

Case study: Knowledge sharing across local authorities through the Air Quality Hub

Acting in collaboration as the Low Emission Partnership, City of York, Lancaster City, Mid Devon District and Bradford Metropolitan District Councils were funded by Defra' Air Quality Grant, to set up and manage an online air quality knowledge sharing platform for local authorities.

The [Air Quality Hub](#) was launched in November 2021 with over 170 people joining the online launch event. From its establishment, the AQ Hub has enabled air quality officers to network, readily share their experience on different air quality issues, contribute to case studies on measures addressing air pollution and share best practice or lessons learned.

Since then, the Low Emission Partnership have been building the site into a 'one stop shop' by creating a comprehensive library of resources from a number of organisations (such as Defra, UKHSA, DfT) and regularly adding advice notes (such as on the enforcement of Smoke Control Areas). Through provision of practical information and by facilitating efficient use of resources, the AQ Hub is helping to increase local authority capability and deliver air quality benefits throughout the country.

Actions for the UK government: 8

- The government has launched the Air Quality Information System review in December 2021. The remit of the two-year review is to provide a series of actionable, evidence-based improvements which could be made to the government's provision of air quality information.
- The government will develop a best practice guide on outdoor burning that can be provided to members of the public to help reduce emissions.
- The government will share communications assets and other material of wider relevance with local authorities to use in their own communications.

5. PM2.5 target implementation

5.1 PM2.5 target implementation

Under the Environment Act 2021, the government has set 2 ambitious, legally-binding targets to reduce concentrations of PM2.5:

- an annual mean concentration target for PM2.5 of 10 µg/m³ across England by 2040
- an average population exposure reduction target of 35% in 2040 compared to a 2018 baseline

Having set these targets, we are now turning to implementation including how other bodies should take them into account in decision-making to help achieve these targets, particularly as the population exposure reduction target is an important but novel approach to improving air quality.

Wider planning reforms are currently underway, being led by the Department for Levelling Up, Housing and Communities. Planning reforms are being partly delivered through the Levelling up and Regeneration Bill and partly through reviews of national planning policy. Proposals for potential reform to planning policy proposed by this strategy may be subject to various further government consultations as part of these wider reforms. This strategy does not pre-empt the outcomes of wider planning reforms, nor the outcome of any supporting government consultations. The government will continue considering this strategy, and responses to the consultation on it, as part of the wider planning reforms.

5.2 Design-stage emission prevention approach

Design-stage emission prevention means influencing the design of a scheme at an early stage, so the minimum amount of pollution is emitted during the scheme's life. Our ongoing planning reforms will place environmental issues at the heart of the reformed system. New approaches like Environmental Outcomes Reports will ensure environmental assessment is an effective tool for managing the effects of development on the natural environment. A reformed system will ensure decision-makers are equipped with the information they need to make informed choices that support sustainable development. Our aim is that this should drive the achievement of statutory environmental targets and the Environment Improvement Plan.

We will consider how promoters can demonstrate to the relevant authorities that emissions have been considered and designed out of a scheme, as far as possible. We will continue to consider how this approach should be integrated into local

plans, as well as the scope of the emissions and the type of plans or schemes that this approach might apply to.

To support the principle of design-stage emission prevention, we will develop and consult on approaches towards quantitative assessment including low emission benchmarks.

Low emission benchmarks are a series of published emission estimates based on best-practice design for a range of land-use types. Developers compare their scheme against these best-practice values.

The government will consider how to best promote the principles of design stage emission prevention in planning policy and guidance as it is reviewed, consulted upon, and updated following passage of the Levelling Up and Regeneration Bill through Parliament. This will include the Air Quality Planning Policy Guidance, and the various National Policy Statements which apply to Nationally Significant Infrastructure Projects.

Environmental Outcomes Reports

The government is making significant reforms to how environmental matters are considered in planning through the Levelling Up and Regeneration Bill. The bill will create Environmental Outcomes Reports which front-load environmental considerations into the design stages of both the strategic plan-making and planning application process. Schemes' Environmental Outcomes Reports will also include detail of how the plan or scheme contributes to other environmental outcomes. The government expects that this will include air quality, subject to an [ongoing consultation on the detail of Environmental Outcomes Reports](#).

The effects on the environment will be identified in the Environmental Outcomes Reports and discussed in the accompanying planning statement, which also discusses the design evolution of the scheme and how it complies with policy. This will provide a balanced justification for the development. The relevant authority will then be able to make a decision taking into account a comprehensive assessment of the environmental impacts of the plan or scheme. It is important for the local planning authority to be able to balance these factors when making the decision on whether to grant planning permission or not.

Actions for the UK government: 9

- We will consult further on the detail of a combined design stage emission prevention and quantitative assessment approach.
- The government will continue considering the responses to the recent National Planning Policy Framework consultation which closed on 2 March 2023.

6. Annex A: tables of pollutants and limits

6.1 Local Air Quality Management Framework

The [Air Quality \(England\) Regulations 2000 \(2002 as amended\)](#)

These pollutant limits apply locally under the Air Quality Management framework.

Pollutant	Objective	Averaging Period		
Nitrogen dioxide - NO ₂	200 µg/m ³ not to be exceeded more than 18 times per year	1-hour mean		
Nitrogen dioxide - NO ₂	40 µg/m ³	Annual mean		
Fine and coarse particulate	50 µg/m ³ not to be exceeded	24-hour mean		

matter - PM10	more than 35 times/ year			
Fine and coarse particulate matter - PM10	40 µg/m ³	Annual mean		
Sulphur dioxide (SO₂)	266 µg/m ³ not to be exceeded more than 35 times per year	15 minute mean		
Sulphur dioxide (SO₂)	350 µg/m ³ not to be exceeded more than 24 times per year.	1 hour mean		
Sulphur dioxide (SO₂)	125 µg/m ³ not to be exceeded more than 3 times per year	24 hour mean		
Benzene	16.25 µg/m ³	Running annual mean		
Benzene	5.00 µg/m ³	Annual mean		

1,3-butadiene	2.25 µg/m ³	Running annual mean		
Carbon monoxide	10.00 mg/m ³	Maximum daily running 8-hour mean		
Lead	0.5 µg/m ³	Annual mean		
Lead	0.25 µg/m ³	Annual mean		

6.2 Environment Act PM2.5

[The Environmental Targets \(Fine Particulate Matter\) \(England\) Regulations 2023](#)

Pollutant & metric	Target	Target year		
PM2.5 annual mean concentration	Interim target: 12 µg/m ³	2028		
PM2.5 annual mean concentration	Legally binding target: 10 µg/m ³	2040		

PM2.5 population exposure	Interim target: 22% reduction in exposure compared to 2018	2028		
PM2.5 population exposure	Legally binding target: 35% reduction in exposure compared to 2018	2040		

6.3 Air Quality Standards Regulations

[The Air Quality Standards Regulations 2010](#)

Pollutant limit values

Pollutant	Objective	Concentration measured as	Date to be achieved by (and maintained thereafter)
PM10	50 µg/m ³ not to be exceeded more than 35 times a year	24 hour mean	31 December 2004
PM10	40 µg/m ³	annual mean	31 December 2004
PM2.5	20 µg/m ³	annual mean	1 January 2020

PM2.5	Target of 20% reduction in concentrations at urban background	annual mean	Between 2010 and 2020
Nitrogen dioxide (NO2)	200 µg/m ³ not to be exceeded more than 18 times a year		1 January 2010
Nitrogen dioxide (NO2)	40 µg/m ³		1 January 2010
Ozone (O3)	100 µg/m ³ not to be exceeded more than 10 times a year	8 hour mean	

Critical levels for the protection of vegetation

Pollutant	Level	Averaging time
Oxides of nitrogen (NOx)	30 µg/m ³	One calendar year
Sulphur dioxide (SO2)	20 µg/m ³	Calendar year and winter (1st October to 31st March)

6.4 National Emission Ceilings Regulations

[The National Emission Ceilings Regulations 2018](#)

	2005 baseline	Reduction	2020 to 2029	Reduction	2030 onward

	(kilotonn e)	required by 2020	ceiling (kilotonn e)	required by 2030	ceiling (kilotonne)
NOx	1710	55%	769	73%	462
SO2	785	59%	322	88%	94
NMVOCs	1123	32%	763	39%	685
PM2.5	115	30%	81	46%	62
NH3	279	8%	2257	16%	235

7. Annex B: reference list of air quality documents

National strategies and plans

[Environmental Improvement Plan](#): we published our second Environmental Improvement Plan on 31 January 2023, setting out our 5-year delivery plan to improve the natural environment and work towards our long-term environmental targets.

[Clean Air Strategy 2019](#): our wide-ranging plan for clean air, setting out the actions we will take to reduce concentrations and emissions of air pollutants. The Clean Air Strategy remains the government’s strategy for air quality.

[Air quality plan for nitrogen dioxide \(NO2\) in the UK \(2017\)](#): our plan to achieve compliance with NO2 concentration limits across England

Air Pollution – 2022’s report laying out the scale of the challenge of reducing air pollution, the substantial progress that has been made and highlighting achievable solutions

[The Economics of Biodiversity: The Dasgupta Review](#): Final Report of the Independent Review on the Economics of Biodiversity led by Professor Sir Partha Dasgupta

[Gear Change: A bold vision for cycling and walking](#) and [Gear Change: One year on](#): DfT's plan which describes the vision to make England a great walking and cycling nation. It sets out the actions required at all levels of government to make this a reality.

Local guidance

[Local Air Quality Management Policy Guidance](#) is our policy guidance to air quality practitioners in English local authorities (except London)

[Local Air Quality Management Technical Guidance](#) is our technical guidance to air quality practitioners in local authorities across the UK (except London)

[Air Quality Hub](#) is an online air quality information and knowledge sharing resource for local authorities. Smoke control area guidance

[Smoke control area enforcement by local authorities in England](#). This guidance covers the rules which local authorities should apply in smoke control areas under the [Environment Act 2021](#).

[Smoke Control Area Interactive Map](#). This interactive map allows you to explore the location of Smoke Control Areas and exemptions in England. The data for the map has been provided to Defra by local authorities but may not include all designated smoke control areas in England at this stage. You should always contact your local council to confirm if you live in a smoke control area.

[Nuisance smoke: how councils deal with complaints](#) is guidance setting out how councils should deal with smoke from premises which is a statutory nuisance.

Indoor air quality guidance

[Indoor air quality at home \(nice.org.uk\)](#). This guidance covers indoor air quality in residential buildings. It aims to raise awareness of the importance of good air quality in people's homes and how to achieve this.

National statistics

Our national statistics: [Emissions of air pollutants](#) provides detail of emission sources across the UK.

The NAEI website provides the most granular data, broken down by source, activity, and fuel type ([Data - NAEI, UK](#)).

7. [Emissions of air pollutants in the UK - Summary](#) ↩
8. [The economic cost of air pollution: Evidence from Europe](#), Organisation for Economic Co-operation and Development (OECD) ↩
9. For more detail on the powers available, please refer to the [Local Air Quality Management Policy Guidance](#) relevant to their area. ↩
10. [Smoke Control Area Interactive Map](#) - based on information provided by local authorities about smoke control area boundaries ↩
11. Local authorities should contact Defra through the Local Air Quality Management Portal for guidance on establishing smoke control areas. ↩
12. Guidance for local authorities on [Smoke control area enforcement in England](#) ↩
13. [NFU helping local authorities work with farmers towards net zero](#) ↩



Indoor air quality at home

NICE guideline

Published: 8 January 2020

www.nice.org.uk/guidance/ng149

Your responsibility

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

All problems (adverse events) related to a medicine or medical device used for treatment or in a procedure should be reported to the Medicines and Healthcare products Regulatory Agency using the [Yellow Card Scheme](#).

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should [assess and reduce the environmental impact of implementing NICE recommendations](#) wherever possible.

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Overview

This guideline covers indoor air quality in residential buildings. It aims to raise awareness of the importance of good air quality in people's homes and how to achieve this.

See a [2-page visual summary on actions to improve indoor air quality](#).

[NICE has also produced a guideline on outdoor air pollution](#).

Who is it for?

- Environmental health practitioners
- Building control, housing and maintenance staff
- Healthcare professionals
- Public health professionals
- Planners and regulators involved with residential developments
- Architects, designers and builders
- Private property managers and private landlords
- Housing associations
- Voluntary sector
- Members of the public

Recommendations

People have the right to be involved in discussions and make informed decisions about their care, as described in [NICE's information on making decisions about your care](#).

[Making decisions using NICE guidelines](#) explains how we use words to show the strength (or certainty) of our recommendations, and has information about prescribing medicines (including off-label use), professional guidelines, standards and laws (including on consent and mental capacity), and safeguarding.

Box 1 People who may be particularly vulnerable and factors that increase the risk of ill health due to exposure to poor indoor air quality

People who may be vulnerable

People who may be particularly vulnerable to ill health as a result of exposure to poor indoor air quality include:

- people with a pre-existing health condition such as asthma, allergies, chronic obstructive pulmonary disease (COPD) and cardiovascular disease
- pregnant women and their unborn babies
- pre-school children
- older people
- people who live in poor-quality housing
- people exposed to tobacco smoke in their homes
- people who live in poverty.

Housing conditions

Housing conditions that put people at increased risk of exposure to poor indoor air quality include:

- location (external factors such as high levels of outdoor air pollution, or where noise or security risks mean residents do not open windows)
- physical infrastructure (such as small room size, inadequate ventilation and the building's layout and orientation)
- standard of housing (for example, with damp and mould or physical disrepair including flood damage or with unflued or poorly maintained fuel-burning appliances)
- overcrowding.

There are a number of activities that might contribute to poor indoor air quality (see the [section on advice and information for the general population](#)).

For the purposes of this guideline, the term 'local authorities' covers all types of local

authority in England; these are county councils, district councils, unitary authorities, metropolitan districts and London boroughs. Each local authority should decide which of the following recommendations are relevant to their local responsibilities.

1.1 Prioritising indoor air quality in local strategy or plans

These recommendations are for local authorities.

- 1.1.1 Embed a plan for improving indoor air quality in an existing strategy or plan to improve people's health. This could be a general air quality strategy if one exists. Otherwise, for example, include it in a strategy on housing, health and wellbeing, or inequalities.
- 1.1.2 Ensure the strategy or plan takes account of the housing conditions that put people at increased risk of exposure to poor indoor air quality and especially people who are particularly vulnerable to ill health as a result of such exposure (see [box 1](#)).
- 1.1.3 Emphasise the need for a balanced approach to ventilation, insulation and heating for good indoor air quality. (See the [sections on raising awareness of poor indoor air quality in the home](#) and [advice and information for the general population](#), and [NICE's guideline on winter deaths and illness and cold homes](#).)
- 1.1.4 Encourage joint working between local authority departments, across different local authorities, with local health and social care providers, and with voluntary, community and social enterprise organisations and other organisations with interest in indoor air quality, to improve air quality in people's homes (see the [sections on raising awareness of poor indoor air quality in the home](#) and [advice and information for the general population](#)).
- 1.1.5 Encourage the use of existing home visits to identify poor indoor air quality. For example, visits to people's homes by housing officers, environmental health practitioners, community health services, social workers, care workers, and fire and rescue services.

- 1.1.6 Encourage the use of local inspection protocols to identify poor indoor air quality during home visits. This may include visual inspections, checklists and the monitoring of pollutant levels. Use this information to identify other homes that may be at increased risk of poor indoor air quality.
- 1.1.7 Encourage joint working with external organisations to inform home improvement programmes and identify grants to combat poor indoor air quality.
- 1.1.8 Monitor progress against the goals of the strategy. Use audit data (see the recommendation on encouraging the use of existing home visits in this section) plus the lists in box 1 to identify people who may be vulnerable and properties that are at risk.

For a short explanation of why the committee made these recommendations and how they might affect practice, see the [rationale and impact section on prioritising indoor air quality in local strategy or plans](#).

Full details of the evidence and the committee's discussion are in:

- [evidence review 1: associations between individual or building characteristics and exposure levels](#)
- [evidence review 2: exposure to pollutants and health outcomes](#)
- [evidence review 4: effective strategies for raising awareness](#).

1.2 Referrals for a housing assessment

These recommendations are for local authorities.

- 1.2.1 Develop a structured process so that health and social care professionals and housing and local authority staff can use existing referral pathways to help people request a housing assessment if poor indoor air quality has been identified or is suspected, for example, by using the housing

condition factors in [box 1](#).

- 1.2.2 Advise health and social care professionals and housing and local authority staff on how to help people request a housing assessment if poor indoor air quality is identified or suspected, for example, by using the housing condition factors in [box 1](#).

For a short explanation of why the committee made these recommendations and how they might affect practice, see the [rationale and impact section on referrals for a housing assessment](#).

Full details of the evidence and the committee's discussion are in:

- [evidence review 1: associations between individual or building characteristics and exposure levels](#)
- [evidence review 2: exposure to pollutants and health outcomes](#).

1.3 Raising awareness of poor indoor air quality in the home

These recommendations are for local authorities.

- 1.3.1 Use existing communication strategies to ensure members of the public and relevant professionals (those involved in planning, designing, building, renovating and maintaining homes) are aware of:
- the causes of poor indoor air quality
 - how residents' activities can affect indoor air quality
 - how health is affected by poor indoor air quality
 - who is particularly vulnerable (see [box 1](#))
 - how to prevent or reduce poor indoor air quality.

1.3.2 Use existing professional development opportunities to ensure local authority staff who visit people in their homes (such as housing, healthcare and social care professionals):

- know about the sources of indoor air pollutants and how they can affect health
- can give general advice on how to avoid activities that increase the level of indoor air pollutants (see the [sections on advice and information for the general population](#) and [healthcare professionals](#))
- can give general advice on how to improve ventilation if the source of the pollutant cannot be controlled (see the [sections on advice and information for the general population](#) and [healthcare professionals](#))
- are aware that affordability may be a barrier to effective and efficient heating and ventilation
- know that tenants may not be allowed to repair or alter building fabric, fixtures or fittings
- know who can provide help with repairs and necessary improvements (for example, the local authority or a home improvement agency)
- can advise people on how to request a housing assessment (see the [section on referrals for a housing assessment](#)).

For a short explanation of why the committee made these recommendations and how they might affect practice, see the [rationale and impact section on raising awareness of poor indoor air quality in the home](#).

Full details of the evidence and the committee's discussion are in [evidence review 4: effective strategies for raising awareness](#).

1.4 Advice and information for the general population

These recommendations are for local authorities.

- 1.4.1 Advise people on how to reduce damp and condensation and prevent mould. For example, by:
- using background ventilation (such as trickle vents, or whole-house mechanical ventilation systems)
 - using mechanical ventilation (such as extractor fans), and opening windows where possible and safe to provide temporary increased ventilation
 - avoiding moisture-producing activities (such as air-drying clothes) indoors if possible, or improving ventilation if these cannot be avoided
 - repairing sources of water damage and ensuring that residual moisture is removed.
- 1.4.2 Advise people on how to use trickle vents correctly.
- 1.4.3 Tell people that the following activities may lead to poor indoor air quality and that they should think about increasing ventilation (by using extractor fans in the bathroom or kitchen, or opening windows if possible and safe):
- using cookers, especially gas cookers
 - using open solid-fuel fires
 - using candles
 - using free-standing gas heaters
 - using cleaning products, household sprays or aerosols and paints
 - having a bath or shower
 - air-drying clothes in the home.
- 1.4.4 Advise private and social tenants to contact their landlord if:
- ventilation is not adequate (for example, if the ventilation system is not working, trickle vents are blocked or damaged, extractor fans in the kitchen or bathroom are not working, or if excessive noise from the fans discourages their use)

- repairs are needed to prevent water from entering their building
 - improvements to heating or insulation are needed to prevent condensation.
- 1.4.5 Advise private and social tenants to contact their local authority if no action is taken to improve ventilation or carry out repairs (see the [government guides on private renting](#) and [council housing](#), and the [Guide for tenants: Homes \[Fitness for Human Habitation\] Act 2018](#)).
- 1.4.6 Advise people not to use unflued paraffin heaters in the home.
- 1.4.7 Advise people to follow the product instructions when using, for example, candles, paints, glues and solvents, to minimise exposure to pollutants.
- 1.4.8 Advise people to choose low-emission materials (for example, products with a low volatile organic compound [VOC] or formaldehyde content and emissions) if furniture or flooring needs replacing.
- 1.4.9 Advise people installing a new cooker about the need for ventilation, especially for gas cookers.
- 1.4.10 Advise people not to use gas cookers to heat a room.
- 1.4.11 Encourage people not to smoke in the home (see [NICE's guidelines on stop smoking interventions and services](#) and [smoking: stopping in pregnancy and after childbirth](#)).

Also see the section on healthcare professionals' advice for women who are pregnant or who have given birth in the past 12 months (see the [section on healthcare professionals](#)) and the section on advice for property managers and landlords (see the [section on rental properties](#)).

For a short explanation of why the committee made these recommendations and how they might affect practice, see the [rationale and impact section on advice and information for the general population](#).

Full details of the evidence and the committee's discussion are in:

- [evidence review 1: associations between individual or building characteristics and exposure levels](#)
- [evidence review 2: exposure to pollutants and health outcomes](#)
- [evidence review 3.1: material and structural interventions](#).

1.5 Healthcare professionals

People with asthma, other respiratory conditions or cardiovascular conditions

- 1.5.1 Explain that indoor air pollutants (including nitrogen dioxide, damp, mould, [particulate matter](#) and VOCs) can trigger or exacerbate asthma, other respiratory conditions or cardiovascular conditions.
- 1.5.2 If a person has repeated or worsening respiratory symptoms such as a cough or wheezing, ask about their housing conditions. If these are a concern, help them request a housing assessment from the local authority (see the [section on referrals for a housing assessment](#)).
- 1.5.3 Advise people whose asthma is triggered by household sprays, air fresheners or aerosols to:
- avoid using them
 - use non-spray alternatives.

Also see the section on advice and information for recommendations about ventilation and controlling sources of pollution (see the [section on advice and information for the general](#)

[population](#)) and [NICE's guideline on asthma](#).

People who are allergic to house dust mites

1.5.4 Advise people who are allergic to house dust mites how to reduce their exposure to them. This includes:

- avoiding second-hand mattresses if possible
- using allergen barriers such as mattress and pillow covers
- washing bedding regularly.

Also see the section on advice and information for recommendations about ventilation and controlling sources of pollution (see the [section on advice and information for the general population](#)) and [NHS advice on allergen avoidance](#).

Women who are pregnant or who have given birth in the past 12 months and partners and people who live with them

1.5.5 Ask about the person's housing conditions. If housing factors are a health concern, for example, because of damp or lack of ventilation, help them request a housing assessment from the local authority (see the [section on referrals for a housing assessment](#)).

1.5.6 Advise women who are pregnant that they are at increased risk of ill health from exposure to poor indoor air quality. Advise people who care for babies under 12 months old that the baby is at increased risk. Both groups should:

- reduce their use of household sprays, air fresheners and other aerosols, and always follow product instructions
- if possible, avoid or reduce activities that produce particulate matter such as using open solid-fuel fires or candles
- always keep the room well ventilated during these activities.

See also [recommendations 1.4.3, 1.4.4, 1.4.6 and 1.4.8](#).

- 1.5.7 Explain that other people's tobacco smoke is a risk to a woman who is pregnant and her baby, before and after birth. Advise not smoking in the home or around the woman and her baby. (Also see [NICE's guideline on smoking: stopping in pregnancy and after childbirth.](#))

For a short explanation of why the committee made these recommendations and how they might affect practice, see the [rationale and impact section on healthcare professionals.](#)

Full details of the evidence and the committee's discussion are in:

- [evidence review 1: associations between individual or building characteristics and exposure levels](#)
- [evidence review 2: exposure to pollutants and health outcomes](#)
- [evidence review 3.2: occupant behaviour interventions.](#)

1.6 Regulators and building control teams

- 1.6.1 Update existing standards, for example building regulations, or develop new ones for indoor air quality. Base them on current safe limits set for pollutants in residential developments. See, for example, [World Health Organization guidelines on selected pollutants \(2010\)](#) and [dampness and mould \(2009\)](#), and the [Public Health England indoor air quality guidelines for selected VOCs \(2019\)](#).
- 1.6.2 Use existing building regulation enforcement activities to improve indoor air quality. Ensure enforcement takes place within the specified timelines. (See the [government's Building Regulations 2010](#) and [Housing health and safety rating system operating guidance](#), and the [Planning Portal's failure to comply with the building regulations.](#))

For a short explanation of why the committee made these recommendations and how they might affect practice, see the [rationale and impact section on regulators and building control teams](#).

Full details of the evidence and the committee's discussion are in:

- [evidence review 1: associations between individual or building characteristics and exposure levels](#)
- [evidence review 2: exposure to pollutants and health outcomes](#).

1.7 Architects and designers

Avoiding sources of pollutants

- 1.7.1 Consider specifying building materials and products that only emit a low level of formaldehyde and VOCs. Use existing labelling schemes or other available information on product emissions (for example, on product labels) to make these specifications.
- 1.7.2 Design or specify heating systems that minimise indoor exposure to [particulate matter](#).

Heating and ventilation

- 1.7.3 Adopt a whole-building approach to heating and ventilation to ensure indoor air quality is maintained while achieving standards for energy use. (Also see [NICE's guideline on winter deaths and illness and cold homes](#).)
- 1.7.4 Ensure design strategies include provision for removing indoor air pollutants, for example by:
- specifying kitchen extractor fans or cooker hoods that extract to the outside, and are easily accessible for cleaning or maintenance, with simple instructions for residents

- when safe and appropriate to do so, specifying that all habitable rooms are provided with windows that are openable and that windows or openings meet the [purge ventilation](#) requirements (see the [Ministry of Housing, Communities and Local Government's advice on ventilation](#)).

1.7.5 Design ventilation systems to reduce or avoid exposure to outdoor air pollution. For example:

- ensure windows that open face away from sources of outdoor air pollution, such as busy roads
- fit mechanical systems with filtration to protect against outdoor pollutants. (Also see the [government clean air strategy 2019](#).)

1.7.6 When building dwellings or refurbishing them to improve thermal performance, ensure there is permanent, effective ventilation.

For a short explanation of why the committee made these recommendations and how they might affect practice, see the [rationale and impact section on architects and designers](#).

Full details of the evidence and the committee's discussion are in:

- [evidence review 1: associations between individual or building characteristics and exposure levels](#)
- [evidence review 2: exposure to pollutants and health outcomes](#)
- [evidence review 3.1: material and structural interventions](#)
- [evidence review 3.3: ventilation design and use](#).

1.8 Builders, contractors and developers

These recommendations apply both to building new homes and renovating or refurbishing existing homes.

1.8.1 Ensure products and materials comply with building regulations, design

specifications and the manufacturer's guidance on installation and commissioning.

- 1.8.2 Use materials that emit a low level of formaldehyde and VOCs as specified. If materials need to be substituted, only use products with the same or lower emission levels.
- 1.8.3 Ensure all heating and ventilation is installed and commissioned in accordance with the manufacturer's instructions and meets building regulation requirements.
- 1.8.4 Ensure all installed heating and ventilation systems are easily accessible for regular maintenance.
- 1.8.5 Ensure any variations to the heating and ventilation specification comply with design specifications and building regulations (see the [Ministry of Housing, Communities and Local Government's advice on ventilation](#)).

For a short explanation of why the committee made these recommendations and how they might affect practice, see the [rationale and impact section on builders, contractors and developers](#).

Full details of the evidence and the committee's discussion are in [evidence review 3.1: material and structural interventions](#).

1.9 Rental properties

These recommendations are for local authorities and cover both private and public rented housing.

Regulations

- 1.9.1 Use existing regulatory powers to:
 - reduce people's exposure to pollutants in their homes by ensuring identified problems such as damp and mould are fixed promptly

- ensure homes have suitable and efficient heating and ventilation (see the [Ministry of Housing, Communities and Local Government's advice on ventilation and housing health and safety rating system operating guidance](#), and [NICE's guideline on winter deaths and illness and cold homes](#)).

1.9.2 Where a housing assessment has identified problems in private or public rented housing that may contribute to poor indoor air quality, ensure the property has:

- heating appliances and ventilation systems that:
 - comply with design and performance requirements
 - are correctly installed and tested
 - keep properties warm and ventilated without excessive heat loss or draughts
- ventilation that prevents the build-up of pollutants, including:
 - trickle vents
 - working mechanical ventilation systems, such as extractor fans, in bathrooms and kitchens
 - windows that open (but not onto busy roads or other major sources of outdoor air pollution)
- cooking appliances that:
 - comply with design and performance requirements
 - are correctly installed and tested.

1.9.3 Where a housing assessment has identified water damage in private or public rented housing, ensure that any water damage is repaired as soon as possible and the property has properly dried out.

Property management

1.9.4 Advise property managers and landlords to:

- develop and undertake maintenance programmes for heating and ventilation systems
- provide clear, easy-to-understand instructions telling residents how to use the heating and ventilation systems effectively.

1.9.5 Advise property managers and landlords about:

- the health risks associated with poor indoor air quality
- methods to control and minimise identified sources of indoor air pollution (see the [section for architects and designers](#))
- their responsibilities for maintaining the property.

1.9.6 Advise property managers and landlords to:

- use low-pollutant-emission items when replacing furniture or flooring (for example, furniture or flooring with a low formaldehyde content and emission)
- ensure rooms are well ventilated and that the manufacturer's guidelines for use of materials are followed
- ensure there is adequate ventilation provision before installing a new cooker (especially a gas cooker).

For a short explanation of why the committee made these recommendations and how they might affect practice, see the [rationale and impact section on rental properties](#).

Full details of the evidence and the committee's discussion are in:

- [evidence review 1: associations between individual or building characteristics and exposure levels](#)
- [evidence review 2: exposure to pollutants and health outcomes](#)
- [evidence review 3.1: material and structural interventions](#)
- [evidence review 3.2: occupant behaviour interventions](#)
- [evidence review 4: effective strategies for raising awareness](#).

Terms used in this guideline

This section defines terms that have been used in a particular way for this guideline. For other definitions, see the [NICE glossary](#) or, for public health and social care terms, the [Think Local, Act Personal Care and Support Jargon Buster](#).

Particulate matter

Particulate matter (also referred to as PM or particle pollution) is a complex mixture of solid or liquid particles suspended in air. These particles can vary in size, shape and composition. Indoor particulate matter can be generated through cooking, combustion (including candles, open solid-fuel fires, unvented space heaters or paraffin heaters) and smoking.

Purge ventilation

Manually controlled ventilation of rooms or spaces at a relatively high rate to rapidly dilute pollutants or water vapour, for example by opening a window or using a fan.

Recommendations for research

The guideline committee has made the following recommendations for research.

Key recommendations for research

1 Health impact of air pollutants at home

What is the health impact of exposure to individual air pollutants alone or combined with each other in the home?

For a short explanation of why the committee made the recommendation for research, see the [rationale on raising awareness of poor indoor air quality in the home and advice and information for the general population](#).

Full details of the evidence and the committee's discussion are in:

- [evidence review 1: associations between individual or building characteristics and exposure levels](#)
- [evidence review 2: exposure to pollutants and health outcomes](#)
- [evidence review 3.1: material and structural interventions](#).
- [evidence review 4: effective strategies for raising awareness](#).

2 Effective interventions to improve indoor air quality for people without pre-existing health conditions

What is the effectiveness and cost effectiveness of interventions to improve indoor air quality at home for people without pre-existing health conditions?

For a short explanation of why the committee made the recommendation for research, see the [rationale on advice and information for the general population and healthcare professionals](#).

Full details of the evidence and the committee's discussion are in:

- [evidence review 1: associations between individual or building characteristics and exposure levels](#)
- [evidence review 2: exposure to pollutants and health outcomes](#)
- [evidence review 3.1: material and structural interventions](#)
- [evidence review 3.2: occupant behaviour interventions](#).

3 Air exchange rate and the quality of indoor air at home

What is the minimum air exchange rate to minimise the health effects of poor indoor air quality in the home?

For a short explanation of why the committee made the recommendation for research, see the [rationale on architects and designers](#).

Full details of the evidence and the committee's discussion are in:

- [evidence review 1: associations between individual or building characteristics and exposure levels](#)
- [evidence review 2: exposure to pollutants and health outcomes](#)
- [evidence review 3.1: material and structural interventions](#)
- [evidence review 3.3: ventilation design and use](#).

4 Impact of building materials on indoor air quality

What are the emission profiles of indoor air pollutants released from building materials in a lived-in home environment?

For a short explanation of why the committee made the recommendation for research, see the [rationale on architects and designers](#).

Full details of the evidence and the committee's discussion are in:

- [evidence review 1: associations between individual or building characteristics and exposure levels](#)
- [evidence review 2: exposure to pollutants and health outcomes](#)
- [evidence review 3.1: material and structural interventions](#)
- [evidence review 3.3: ventilation design and use](#).

5 Raising awareness of the health risks of damp and mould at home

What interventions are effective and cost effective at raising awareness of the health risks of damp and mould in the home?

For a short explanation of why the committee made the recommendation for research, see the [rationale on raising awareness of poor indoor air quality in the home](#).

Full details of the evidence and the committee's discussion are in [evidence review 4: effective strategies for raising awareness](#).

Other recommendations for research

Damp and mould in the home

How can damp and mould in the home be prevented?

How is damp and mould in the home best identified?

How is damp and mould in the home best fixed?

How can tenants be best made aware of whose responsibility it is to make any changes needed as a result of damp and mould in the home?

To find out why the committee made the research recommendations about damp and mould, see [evidence review 4: effective strategies for raising awareness](#).

Rationale and impact

These sections briefly explain why the committee made the recommendations and how they might affect practice. They link to details of the evidence and a full description of the committee's discussion.

Prioritising indoor air quality in local strategy or plans

[Recommendations 1.1.1 to 1.1.8](#)

Why the committee made the recommendations

Local authority strategies

The committee noted that local authorities have a duty of care to ensure both public sector and private homes are maintained to a 'decent' standard. The committee also noted that local authorities are responsible for ensuring people's health and wellbeing.

Limited evidence showed that exposure to poor indoor air quality is linked to a range of health problems. These include respiratory conditions such as a cough, wheezing or asthma, and allergic symptoms such as a runny nose or eye irritation.

Local authorities that have been declared an 'air quality management area' must have an air quality action plan ([government clean air strategy 2019](#)). The committee agreed that indoor air quality would fit within this plan, where it exists. Otherwise, they agreed it could be embedded within one of several existing, health-related local authority strategies.

Vulnerable groups and factors that affect indoor air quality

Poor indoor air quality is a risk to everyone's health. But evidence showed that some groups are more at risk than others (see [box 1](#)).

For example, people living in poor-quality housing – including housing with damp or with inadequate heating due to fuel poverty or housing that may need remedial work – are at

increased risk. They may not have the resources to carry out the necessary work or may have to wait a while for landlords or property managers to carry it out. This could leave them exposed to pollutants for longer.

Good evidence showed that homes with damp and those in need of repair are both linked to an increased risk of health problems. (Homes with serious damp and mould are likely to be classified as having a category 1 hazard by the [Ministry of Housing, Communities and Local Government's housing health and safety rating system](#).)

There was no evidence on the effect of poor indoor air quality on older people. But the committee agreed, based on their experience, that older people may spend longer than average at home and so may be at increased risk of exposure. People with existing health problems such as asthma or chronic obstructive pulmonary disease (COPD) are also more likely to be affected by poor indoor air quality.

Pregnant women, those who have recently given birth, and pre-school children are also at increased risk from damp and other indoor pollutants. This is partly because pregnant women and those who have recently given birth may have compromised immune systems, and pre-school children are likely to spend more time at home.

The committee agreed that location is a risk factor because if the property is near a busy road, for example, then opening windows to improve ventilation may be counterproductive. It is also important to consider other pollutant sources associated with building location, such as nearby open fires, bonfire and firework events, agricultural sources, industrial sources or railway lines, as outlined in the [government clean air strategy 2019](#).

Evidence also showed that overcrowding increases moisture in the air from everyday activities such as cooking and washing. This creates damp conditions. In addition, in properties where rooms are used for both living and sleeping (for example, in bedsits or studio flats), poor indoor air quality can have a greater impact. That is because residents are exposed to it for a greater proportion of time and smaller dwellings have less space in which to dilute pollutants. Local authorities should assess crowding and space using the [housing health and safety rating system of the Housing Act 2004](#).

Heating and ventilation can help to maintain good air quality. The committee agreed to stress that the balance has to be right, and remedial or maintenance works for any property should be assessed individually. For example, insulating the home to prevent cold without thinking of ventilation might lead to increased humidity and condensation, which in

turn results in damp. But the committee concluded that because buildings vary so much (for example, in terms of age, type, location and state of repair), it wouldn't be practical to make any specific recommendations in this area.

Joint working, inspection protocols and home visits

There was evidence on the benefits of home visits by healthcare professionals to prevent or reduce indoor air pollution. The committee were also aware of examples of shared decision making on health and funding in England.

There was a lack of evidence on the benefits of joint working and local inspection protocols to prevent or reduce indoor air pollution. But the committee agreed to recommend these actions because:

- Staff who visit vulnerable people in their homes are ideally placed to report on poor housing conditions, particularly if there are inspection protocols in place.
- Sharing this information, subject to local data-sharing arrangements, would speed up the process of assessment and remedying the poor housing conditions.

Home improvements

Based on their knowledge of current practice in England, the committee agreed that local authorities would benefit from working with local home improvement agencies who provide home improvement grants to vulnerable groups. The committee also considered the benefits of working with professional organisations such as the Chartered Institution of Building Services Engineers, the Chartered Institute of Environmental Health, the Royal Institute of British Architects, the Chartered Institute of Architectural Technologists and the Royal Town Planning Institute. These organisations would be able to provide practical information to support home improvements, which may include information on grants available. Not only would it free up resources, but it would also allow them to work with local partners to emphasise the importance of maintaining good air quality in the home.

Collecting data and monitoring progress

Based on their experience, the committee agreed that it would be helpful if local authorities regularly checked existing and new strategies to ensure air quality in the home is being given priority.

This could include monitoring buildings for signs of poor indoor air quality and checking whether data collected during home visits and local inspections identify vulnerable people and other neighbouring or similar types of properties that may be at risk.

How the recommendations might affect practice

Local authorities regularly update their strategies. But additional resources (in terms of staff time and meetings) may be needed to include indoor air quality in an existing strategy and ensure it is implemented.

Because making indoor air quality a public health priority will improve people's health, this will lead to resource savings elsewhere. For example, by reducing the need for enforcement teams to intervene. There may also be additional economic benefits to the local economy and wider social benefits including improved educational outcomes and contributing to the achievement of government policies supporting policies such as Best Start in Life.

Local health and wellbeing boards are already in place to review current and future health and social care needs. So the costs of staff time and meetings associated with multi-agency working are expected to be minimal. Also, increased collaboration with home improvement agencies could mean that local authority resources set aside for issues related to indoor air quality could be reallocated.

Staff who visit people in their homes may need training to identify problems with indoor air quality and give advice on how to prevent or resolve such problems. Incorporating this training into existing continuous professional development could help minimise costs. But the visits may take longer if staff give advice and they may also result in additional enforcement activities.

Using building control or enforcement teams to collect and use performance data may have resource implications. For example, staff time, communication, and meetings for cross-team working. But improved health outcomes and resource savings elsewhere in the system (for example, by reducing the need for enforcement teams to intervene) might offset costs. The committee also considered the impact of not taking action. This may increase the risk of any future litigation arising from 'unhealthy' homes.

There were limited data on the link between someone who was at high risk and their level of exposure, so the committee had to estimate this.

Some benefits that were identified could not be quantified. So the overall benefits are likely to have been underestimated. The committee concluded that interventions could offer good value for money, but that this will depend on local factors.

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Referrals for a housing assessment

[Recommendations 1.2.1 and 1.2.2](#)

Why the committee made the recommendations

There are several ways tenants can request a housing assessment:

- Tenants in local authority housing can follow their complaints procedure, take action themselves or go to the Housing Ombudsman.
- Tenants in housing association housing can follow their complaints procedure and can contact the Housing Ombudsman or Environmental Health.
- Tenants in private rented properties can contact Environmental Health or take action themselves.

Private homeowners can also contact the local authority for advice if they are worried about the condition of their home. In the committee's experience, many people – including professionals working in housing services – don't know about these processes.

The committee also agreed that health and social care staff who visit people in their homes, and healthcare professionals who have concerns, need to be able to help people request a housing assessment. This is especially important for people who may be particularly vulnerable to ill health as a result of exposure to poor indoor air quality due to their housing conditions (see [box 1](#)). There was no evidence on how effective this would be. But the committee agreed it would ensure staff can make every contact count and could improve people's health.

Based on their experience, the committee agreed that there might be barriers preventing tenants from requesting a housing assessment. For example, they might be concerned about eviction, or about a possible increase in rent due to maintenance and repairs of heating and ventilation systems.

How the recommendations might affect practice

Housing assessment pathways already cover some of the causes of poor indoor air quality. For example, professionals such as heating engineers are given instructions on how to identify signs of poor ventilation (see [NICE's guideline on winter deaths and illness and cold homes](#)).

Minimal additional resources would be needed to extend this to health and social care professionals and public service staff (for example, fire and rescue service professionals, ambulance service staff) who visit people in their homes. Healthcare professionals may need training on how poor air quality affects health, how to identify poor indoor air quality and how to take steps to mitigate its effects. This could be incorporated within existing training pathways, including professional training and accreditation examinations.

If more professionals are made aware of how to make referrals, this could lead to more housing assessments and more remedial work or legal actions. But local authorities have budgets for regular maintenance and upkeep of their properties. In addition, if legal action is taken to enforce standards in private properties, these costs will be recovered if the action is successful.

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Raising awareness of poor indoor air quality in the home

[Recommendations 1.3.1 and 1.3.2](#)

Why the committee made the recommendations

Good evidence showed that exposure to poor indoor air quality is linked to a range of health problems. This includes respiratory conditions such as a cough, wheezing or asthma, and allergic symptoms such as a runny nose or eye irritation. Certain groups are more vulnerable, either because of their personal circumstances or because of where they live. Because poor indoor air quality is a hidden health threat, raising awareness is a first step in reducing the risk of long-term health issues, especially for vulnerable groups.

In the committee's experience, professionals such as care workers and health visitors, and

the public, are generally unaware of the factors affecting indoor air quality. The same applies to private and social landlords, and those who regulate them.

Similarly, the committee agreed that not all professionals who see people in their home know who is likely to be most vulnerable to poor indoor air quality. And they will not necessarily know how to get help for those who cannot afford repairs or modifications.

Evidence showed that advice given on sources of poor indoor air quality could reduce people's risk of exposure. This includes general advice on using ventilation systems, barriers to heating and ventilation, and more specific advice about particular situations and activities, including how to get a housing assessment.

The committee noted that people on a low income, particularly in poorly insulated homes, may not be able to afford effective heating and may try to make their homes airtight to keep heat in. This, in turn, can mean the ventilation is less effective. They also may not be able to afford to heat all rooms to a constant temperature, or may only use heating occasionally (for example, when expecting a home visit). Both approaches can cause damp and condensation.

The committee were also aware of the increased risk for those who cannot afford remedial work or have to rely on landlords or property managers to do the work. In both cases, this could leave them exposed to pollutants while they wait for it to be done. The committee pointed out that there are enforcement powers that local authorities can use to ensure compliance with regulations. (See the [recommendation on using existing building regulation enforcement activities in the section on regulators and building control teams](#) and also the [Ministry of Housing, Communities and Local Government's Housing health and safety rating system operating guidance](#).)

Most of the evidence focused on homes where a problem had already been identified. The committee agreed that research is needed on how to give people information on identifying the sources of the problem in the first place. Also, the committee considered that further research on the health impact of pollutants, alone or in combination with each other, would help identify the pollutant or combination of pollutants that have the largest impact on people's health. This research would also provide useful information to help raise awareness around indoor air pollutants. (See the [research recommendations on the health impact of air pollutants at home, effective interventions to improve indoor air quality in the healthy population, air exchange rate and good air quality, health impact of building materials, and effective strategies for raising awareness](#).)

How the recommendations might affect practice

The [government clean air strategy 2019](#) already outlines how the government and local authorities need to raise awareness of poor indoor air quality. These recommendations support the strategy and should have minimal additional impact.

Resident satisfaction from improved health outcomes should result in resource savings elsewhere in the system and will offset costs. For social landlords, improved tenant satisfaction reduces both the time properties are left vacant and the likelihood of compensation claims.

It is not expected that any extra resources would be needed. Staff may need training on raising awareness of poor indoor air quality and in giving advice in a language the tenant understands. But incorporating this into existing general training and continuous professional development could minimise costs. Improved health outcomes leading to potentially fewer hospital visits, GP visits, or visits from community nurses should result in resource savings elsewhere in the system and will offset costs.

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Advice and information for the general population

[Recommendations 1.4.1 to 1.4.12](#)

Why the committee made the recommendations

The committee looked at evidence for specific interventions such as air filtering systems or air purifiers. But they agreed that buildings vary so much that it wouldn't be practical to make any specific recommendations in this area.

Evidence showed that giving people advice on specific pollutants and their sources can help them reduce the pollution levels in their homes and improve their health. Evidence also showed that giving people advice on how to reduce or prevent indoor air pollution is cost effective for people who are already ill, because it can prevent their condition worsening. So this can lead to savings for the NHS.

The committee agreed that local authority staff are in a good position to give this advice because they are in contact with members of the public who use their services, including

social housing. (They also have a regulatory responsibility for privately rented properties.)

There is clear evidence of a link between gas cookers and increased levels of nitrogen dioxide, and between open solid-fuel fires and increased levels of particulate matter. Exposure to these is linked to poor health, especially if there isn't sufficient ventilation to prevent the build-up of pollutants.

Based on their experience, the committee agreed that rooms should be well ventilated when cooking to prevent moisture and condensation. The committee also agreed that gas cookers should not be used for heating rooms because this can result in the build-up of moisture and indoor air pollutants (for example, nitrogen dioxides).

Although there was no evidence on candles, the committee, based on their experience, extrapolated from the evidence on particulate matter from other combustion sources and from the [Chief Medical Officer annual report 2017: health impacts of all pollution](#). This stated that candles were one of a number of large combustion sources of pollutants alongside heating, cooking and open solid fuel fires. The committee therefore agreed that candles should not be used unless the room is well ventilated.

There was insufficient evidence on the health effects of indoor air pollutants in the home. The committee agreed that research on the relative health impact of individual pollutants alone or combined with each other, would help give people better information to understand and avoid harms associated with indoor air pollution (see the [research recommendation on the health impact of air pollutants at home](#)).

Evidence showed that poor housing in need of repair (for example, houses with damp) puts people's health at risk. Again, the committee agreed it was important to emphasise the significance of ventilation not only when washing or cooking, but also during other moisture-producing activities, for example, air-drying clothes indoors. The committee agreed that it is important for the local authority to take action if landlords do not carry out repairs or improve ventilation.

Evidence shows that paraffin heaters are linked with respiratory symptoms such as wheezing. These appliances are not in widespread use in England. But the committee agreed, based on their experience, that it was important to avoid using them at all indoors. They also agreed that paraffin heaters are more harmful than open solid-fuel fires, for example, because the latter are flued so that any harmful fumes should, in theory, be extracted outdoors.

Based on their experience, the committee were aware that many people do not know how and when to use ventilation systems. Ensuring a room is adequately ventilated is usually a key part of reducing exposure to volatile organic compounds (VOCs) especially while painting, renovating or decorating and using household products such as cleaning sprays and aerosols. The committee noted that there is a labelling scheme for paints in the UK. Although newer paints have a lower VOC content than older paints, the product advice is still to ensure good ventilation when using these products. The committee also agreed that people should be reminded to read the manufacturer's instructions and increase ventilation during these activities.

The evidence showed that flooring and furniture are often sources of VOCs or formaldehyde. Based on the evidence, the committee agreed it was important to highlight these dangers, because both can damage people's health.

Smoking and environmental tobacco smoke are always a health risk. The committee agreed it was important to encourage people not to smoke in their homes, and so they referred to NICE's guidance on smoking.

The committee agreed that research is needed on ways to improve indoor air quality for people who do not have pre-existing health conditions that put them at risk from poor indoor air quality (see the [research recommendation on effective interventions to improve indoor air quality in the healthy population](#)).

How the recommendations might affect practice

Local authorities will need to develop or update existing practice to provide people with information on how to improve indoor air quality and where to go for help. Staff might need training but incorporating this into existing continuous professional development could help minimise costs.

Improved health outcomes leading to higher resident satisfaction should result in resource savings elsewhere in the system and will offset costs. For example, by reducing the need for enforcement teams to intervene if a problem develops.

[Return to recommendations](#)

Healthcare professionals

Recommendations 1.5.1 to 1.5.7

Why the committee made the recommendations

Healthcare professionals frequently see people with pre-existing health conditions and women who are pregnant or have young children. The committee agreed that this puts them in an ideal position to give advice on how indoor air pollutants, as well as damp and mould, can affect their health.

People with asthma, other respiratory conditions or cardiovascular conditions

Evidence showed that people with respiratory or cardiovascular conditions or allergies are particularly affected by poor indoor air quality, including pollutants from damp and from open solid-fuel fires.

Good evidence showed that exposure to poor indoor air quality is linked to a range of health problems. These include respiratory symptoms and conditions such as a cough, wheezing or asthma, and allergic symptoms such as a runny nose or eye irritation.

Based on the evidence, the committee agreed that if people keep getting these types of symptoms – or they are getting worse – then they might be linked to the home environment.

People who are allergic to house dust mites

Evidence showed that allergen barriers like mattress and pillow covers can reduce exposure to house dust mite allergens. Evidence also showed that second-hand mattresses were associated with increased levels of house dust mites.

Women who are pregnant or who have given birth in the past 12 months and partners and people who live with them

Good evidence showed that damp homes and those in need of repair are both linked to an increased risk of health problems. (Homes with serious damp and mould are likely to be classified as having a category 1 hazard by the Ministry of Housing, Communities and Local Government's housing health and safety rating system.)

Pregnant women, those who have recently given birth, and young children are at increased risk from damp and other indoor pollutants. This is partly because these groups may have compromised or undeveloped immune systems, and also because young children are likely to spend longer than average at home. So the committee agreed that it was important to make sure they are living in a 'healthy' home that is well ventilated.

Women who are pregnant and babies under 12 months may be particularly vulnerable to pollutants such as VOCs. In addition, evidence suggested that exposure to VOCs during pregnancy was linked with coughing, wheezing and other health issues in the first years of the child's life. VOCs are found in products like aerosol sprays and glue.

Women who are pregnant and babies under 12 months may also be particularly susceptible to the effects of particulate matter – released from, for example, open solid-fuel fires. Based on this evidence, the committee agreed that using proper ventilation to disperse these pollutants is very important – as is reducing use of such appliances when this is feasible.

The committee did not look at evidence on environmental tobacco smoke because any level is considered unsafe. Instead they agreed to adapt recommendations from and cross-refer to NICE's guidance on smoking during pregnancy.

People without pre-existing health conditions

There was a lack of evidence on how indoor air pollutants affect people without pre-existing health conditions and how to improve air quality in their homes. So the committee made a research recommendation on this group (see the [research recommendation on effective interventions to improve indoor air quality in the healthy population](#)).

How the recommendations might affect practice

Most healthcare professionals might need training on how poor indoor air quality affects health and how to mitigate it. Incorporating this training into existing general training and continuous professional development could help minimise costs.

Asking about housing conditions and helping people request a housing assessment may increase consultation times. But this will be offset by future healthcare savings.

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Regulators and building control teams

[Recommendations 1.6.1 and 1.6.2](#)

Why the committee made the recommendations

There are no national regulations or guidelines to determine 'safe' levels of indoor air pollutants. But based on their experience, the committee agreed that standards such as the World Health Organization or Public Health England guidelines could be used.

Building regulations are generally used to enforce standards in new housing. Other local standards may be used for existing homes, for example, standards on repairs and property condition or room size. Using these regulations will ensure existing and new buildings meet air quality standards.

The committee noted that enforcement and prosecution practice may vary across local authorities. Reasons for this variation include capacity for follow-up visits and time taken to confirm non-compliance. They agreed to highlight the importance of meeting the government Building Regulations 2010 legislation and housing health and safety rating system operating guidance because this can improve people's health.

How the recommendations might affect practice

Increased use of building control or enforcement teams may have resource implications. For example, staff time for inspection, communication, follow-up and meetings. But improved health outcomes and resource savings elsewhere in the system (for example, by reducing the need for enforcement teams to intervene) might offset costs.

Using existing international guidelines will minimise the resource impact of developing new standards or updating existing ones.

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Architects and designers

Recommendations 1.7.1 to 1.7.6

Why the committee made the recommendations

Avoiding sources of pollutants

Evidence showed that some building materials can emit high levels of pollutants. There was no evidence on building materials and products that emit a low level of VOCs and formaldehyde. The committee agreed that specifying low-emission materials could help protect people's health. But because of the lack of evidence, they could only suggest professionals consider their use on a case-by-case basis when drawing up specifications.

The committee also noted that there are no national labelling schemes for building materials or consumer products in England (apart from a scheme for paints). They also noted government plans to set up a voluntary labelling scheme in England, as outlined in the [government's clean air strategy 2019](#).

The committee noted the [Department for Education's Building bulletin BB101: ventilation, thermal comfort and indoor air quality 2018](#) and considered that its recommended performance levels could also be applied to homes.

Evidence showed that open solid-fuel fires emit particulate matter and are a major cause of poor indoor air quality. This evidence was limited, but the committee agreed that designing heating options that avoid them will help protect people's health.

Heating and ventilation

Ventilation affects indoor air quality, and its role in removing potential pollutants is critical.

Evidence showed a clear link between cooking with gas and pollutant levels – these are higher in the kitchen when cooking using gas than outdoor pollutant levels unless there is an air quality alert.

Evidence also showed that some causes of poor indoor air quality, such as condensation, are the result of poor thermal performance, high moisture levels combined with poor ventilation. The current focus on draught proofing and energy efficiency can add to the

problem.

Because buildings vary so much, the committee were unable to recommend specific types of ventilation or heating strategies. But they agreed it is important that design strategies achieve the correct balance between ventilation, energy efficiency and heating.

Outdoor pollutants entering through windows can contribute substantially to poor indoor air quality. This is particularly the case in deprived areas where housing is likely to be close to busy roads (see the [government's clean air strategy 2019](#)). The committee agreed that if opening windows is not safe or lets in more outdoor pollutants (for example, if the window faces a busy road) then other methods of ventilation or methods of preventing pollutant ingress without resorting to opening windows are needed. This includes mechanical systems with filtration to protect against outdoor pollutants including intelligent ventilation systems.

Building or refurbishing homes to improve heating without taking ventilation into consideration can affect the health of people who live in them. So the committee stressed the importance of balancing the need for heating and ventilation, and taking into account all factors affecting indoor air quality.

They noted that the [British Standards Institute standards for domestic retrofits and energy efficiency](#) could be a useful source of information for architects and designers.

The committee agreed that more research is needed about the benefits and harms of different air exchange rates, and the health risks associated with pollutants released from building materials over time in lived-in home environments. This would improve understanding of the minimum ventilation thresholds and appropriate building materials that designers and builders should use. (See the [research recommendations on air exchange rate and good air quality and health impact of building materials](#).)

How the recommendations might affect practice

The recommendations will reinforce current best practice. Architects and building designers should already be aware of the potential risks of the products and materials that they specify.

Balancing ventilation, insulation and heating is already best practice to maintain good air quality so there should be no additional resource impact.

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Builders, contractors and developers

[Recommendations 1.8.1 to 1.8.5](#)

Why the committee made the recommendations

In the UK, materials specified for use by builders, contractors and developers have to comply with existing building regulations and should be used according to the manufacturer's instructions. The same is true for heating and ventilation systems. Based on their collective experience, the committee felt that compliance with regulations and instructions can be variable, so they agreed it was important to highlight them.

There are regulations on pollutant threshold levels but information on the level of emissions from different materials is limited. Few regulations exist to guide the choice of materials according to their effect on indoor air quality.

In the committee's experience, it is common practice for builders to use substitute materials if the specified ones are not available. Members agreed that emission levels need to be taken into account in such cases, whether working on a new building or a refurbishment.

Evidence showed that people's health is affected if best practice and standards are not complied with during home renovations. This is most likely during works that do not require building regulation approval.

In the committee's experience, building regulation enforcement may vary across local authorities. The committee stressed the particular need for enforcing compliance with heating and ventilation regulations, because any imbalance can have a disproportionate effect on indoor air quality.

The committee also highlighted that heating and ventilation systems in the home should be installed by a recognised competent installer, so as to avoid issues of poor-quality installation, in ways that make them easily accessible for regular checks and maintenance.

How the recommendations might affect practice

The recommendations reinforce current best practice and will help local authorities meet their obligations to improve people's health and reduce health inequalities. Ensuring compliance will lead to cost savings in healthcare, because it will reduce the number of homes with poor indoor air quality and, in turn, improve residents' health.

Building regulations and standards already exist for enforcement teams. But building control teams may need to monitor their activities more closely, unless building work is under the control of an approved inspector. This may incur costs for local authorities and homeowners, particularly if issues are identified that need to be fixed. (Only local authorities have the power to enforce standards if things go wrong.)

Training on specifications and compliance will involve costs and time away from work. Incorporating this training into existing continuous professional development could help minimise costs. For small contractors and companies that do not run continuous professional development programmes, the cost will be offset by reducing the risk of future litigation that may arise from building 'unhealthy' homes.

[Return to recommendations](#)

Rental properties

[Recommendations 1.9.1 to 1.9.6](#)

Why the committee made the recommendations

Regulations

Local authorities have a responsibility for public health, improving wellbeing and reducing inequalities, and a duty of care to ensure public sector homes are maintained to a decent standard. This duty extends to private housing with hazards considered to be a serious and immediate risk to a person's health and safety (category 1 hazards). Homes with serious damp and mould, excess cold or excess heat are likely to be classified as having a category 1 hazard by the [Ministry of Housing, Communities and Local Government's housing health and safety rating system](#). Local authorities can also take action for hazards that are less serious or less urgent (category 2 hazards).

Local authorities have a range of enforcement options (see [Ministry of Housing, Communities and Local Government's housing health and safety rating system enforcement guidance: housing conditions](#)). The most commonly used enforcement option is an improvement notice, which requires work to be carried out within a defined time period to remove a category 1 or category 2 hazard. If the works are not carried out, the local authority may prosecute for not complying with the notice, and/or carry out the works itself and charge the owner.

The committee were aware that it is best practice to have heating and ventilation systems that meet performance requirements and are regularly maintained, which should include checking the airflow rates of extractor fans. The committee emphasised that some pollutants (such as damp and mould) and some hazards associated with poor indoor air quality (such as excess cold and excess heat) can only be dealt with if a problem has been identified and by ensuring that appropriate heating and ventilation systems are in place. But they agreed that this does not always happen – and so this needs to be stressed to all landlords as part of local authority advice to the public (see the [section on advice and information for the general population](#)) and implemented, if a housing assessment has identified a problem that may contribute to poor indoor air quality.

The committee agreed that best practice also involves repairing any water damage and removing its cause as soon as possible, to prevent mould and damp developing. Local standards may be used for existing homes, for example, landlord legislation or standards on repairs and property conditions or room size.

The committee were also aware of the increased risk for tenants who cannot afford remedial work or have to wait for landlords or property managers to do repairs (including to heating and ventilation systems). This could leave them exposed to pollutants while they wait for the work to be done.

Property management

Based on their experience, the committee agreed that if properties are properly equipped and maintained, this will control and reduce sources of indoor air pollution.

But they were concerned that property managers and landlords might not be aware of how mould, damp and other indoor air pollutants affect people's health. So they made a recommendation to advise on this and their general responsibilities to safely maintain their properties.

The evidence showed that flooring and furniture that contain flame retardants are often sources of VOCs or formaldehyde. Based on the evidence, the committee agreed it was important that these dangers were highlighted to property managers and landlords, because both can damage people's health.

How the recommendations might affect practice

Regulations

The recommendations will reinforce current best practice and the need to use existing regulatory powers to ensure homes are safe (see the [government's advice on renting out your property \[England and Wales\]](#)) and the [Ministry of Housing, Communities and Local Government's housing health and safety rating system operating guidance](#). Because many people on a low income live in rented accommodation, this will help address health inequalities. It will also help improve the health of other vulnerable groups and others who live in rented accommodation.

Property management

These recommendations will reinforce current best practice.

Property managers are legally obliged to carry out maintenance checks and the following have to be embedded in tenancy agreements:

- checks and maintenance of ventilation systems (including airflow rates of extractor fans)
- gas and electricity safety checks.

So, the impact on practice and resources should be minimal, although there may be costs for repair of any problems found during the checks.

Housing has an important effect on health and health inequalities, particularly when properties need repairs. These recommendations will help meet local authorities' obligations to tackle health inequalities.

[Return to recommendations](#)

Context

People spend up to 90% of their lives indoors and 60% of that time at home.

Indoor air pollutants come from many sources, including:

- building materials (including fittings and flooring)
- furniture and furnishings
- consumer products, including household and personal care products
- activities such as cooking and smoking
- biological sources, including mould, house dust mites, bacteria, pests and pet dander.

Exposure to indoor air pollutants including, for example, nitrogen dioxide, carbon monoxide, particulates, biological agents and volatile organic compounds (VOCs), is widespread and can cause respiratory and other conditions, and premature death in some people. Asthma is a common respiratory condition, with over 5 million people receiving treatment for it in the UK. Indoor air pollutants such as dust mite allergens, nitrogen dioxide and particulate matter are small enough to get into the lungs, making the airways inflamed and swollen. This can exacerbate asthma symptoms and trigger asthma attacks.

It is best practice to reduce pollutant sources and reduce emissions as much as possible, especially for those who are more vulnerable to health problems caused by poor indoor air quality. This includes children and people with respiratory and cardiovascular conditions ([Committee on the Medical Effects of Air Pollutants guidance on the health effects of air pollutants](#)).

Usually the most effective way to deal with indoor pollutants is to either remove the source or reduce emissions from it. If these are not possible, the pollutant can be diluted by ventilation (for example, opening windows) to reduce exposure. But outdoor pollutants also enter through windows or gaps in the structure and are a significant contributor to indoor air quality, particularly in deprived areas (see the [government's clean air strategy 2019](#)). [NICE has also produced a guideline on outdoor air pollution](#).

This guideline covers the whole population. But special consideration has been given to

those at increased risk of exposure to or adverse effects from poor indoor air quality.

Finding more information and resources

You can see everything NICE says on this topic in the [NICE Pathway on air pollution](#).

To find NICE guidance on related topics, including guidance in development, see the [NICE web page on environment](#).

For full details of the evidence and the guideline committee's discussions, see the [evidence reviews](#). You can also find information about [how the guideline was developed](#), including details of the committee.

NICE has produced [tools and resources to help you put this guideline into practice](#). For general help and advice on putting NICE guidelines into practice, see [resources to help you put guidance into practice](#).

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Accreditation



Corby Local Cycling and Walking Infrastructure Plan (LCWIP) Public Consultation

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Sally Crew – Transport Strategy Manager (Interim)

Agenda Item 5

Structure of Presentation

- What is an LCWIP
- Corby LCWIP overview
- Results from recent Corby LCWIP public consultation
- Brief update on other LCWIPs in North Northants

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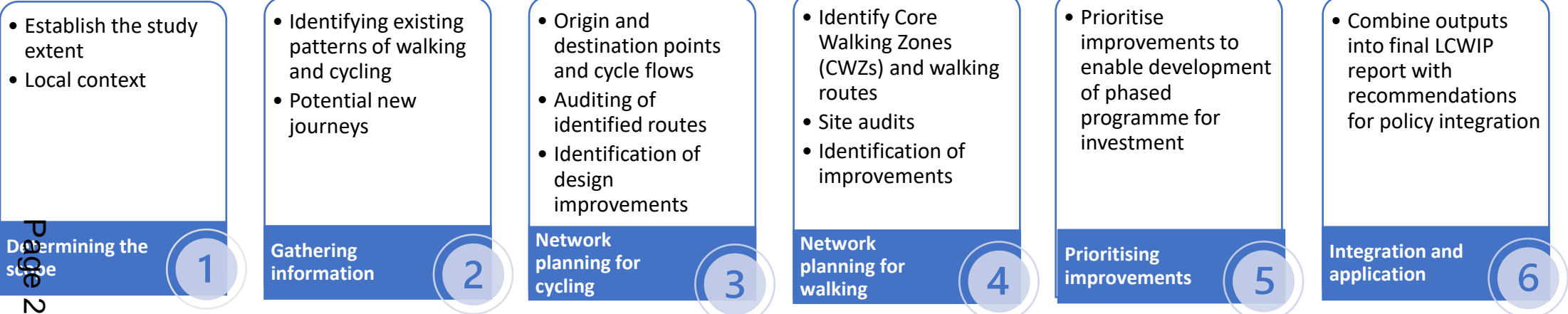
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Local Cycling and Walking Infrastructure Plans (LCWIPs)

- LCWIPs provide a long-term, evidence-based approach to developing local cycling and walking networks, usually over a 10 year period. LCWIPs are intended to assist Local Authorities to achieve the following:
 - Identify prioritised cycling and walking infrastructure improvements for future investment in the short, medium and long term
 - Ensure that consideration is given to cycling and walking within both local planning and transport policies and strategies; and
 - Make the case for future funding for walking and cycling infrastructure. LCWIPs are a vital element for the future Local Transport Plan.



LCWIP stages



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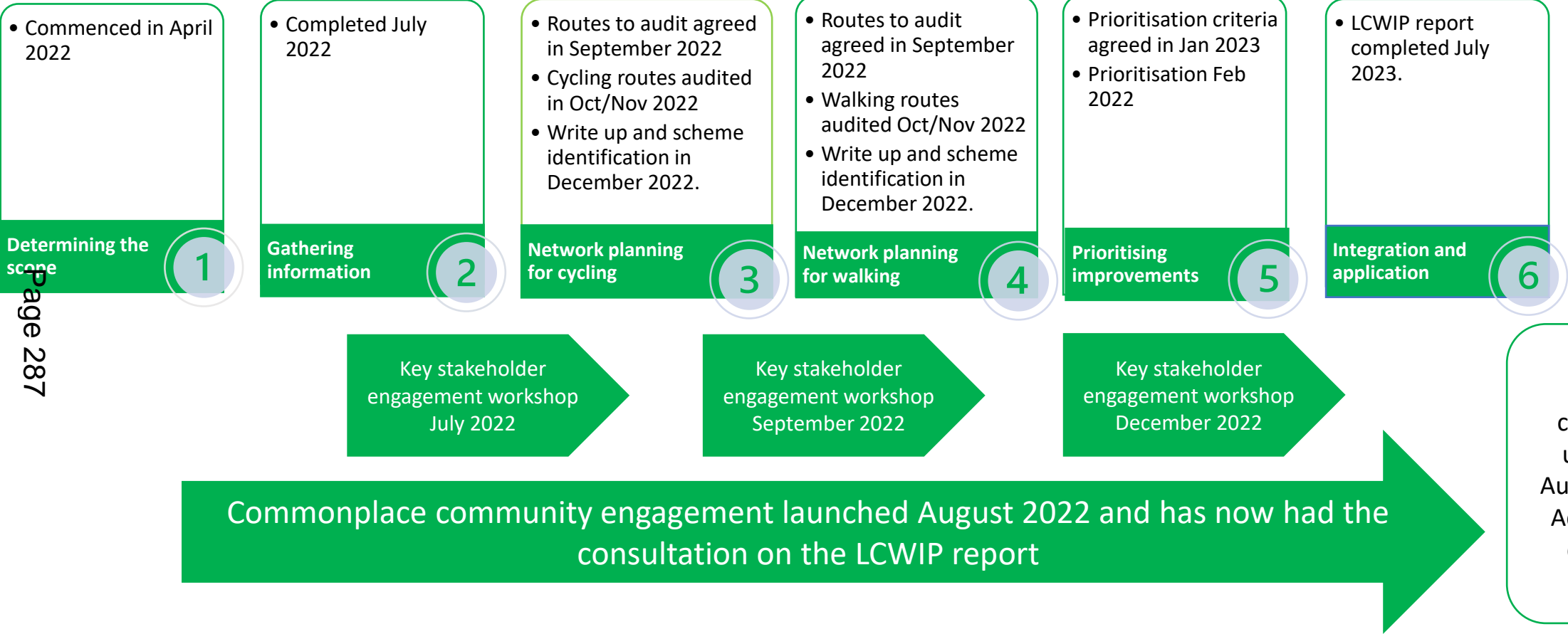
Key stakeholder engagement workshop

Key stakeholder engagement workshop

Community engagement

Public consultation, adoption and delivery

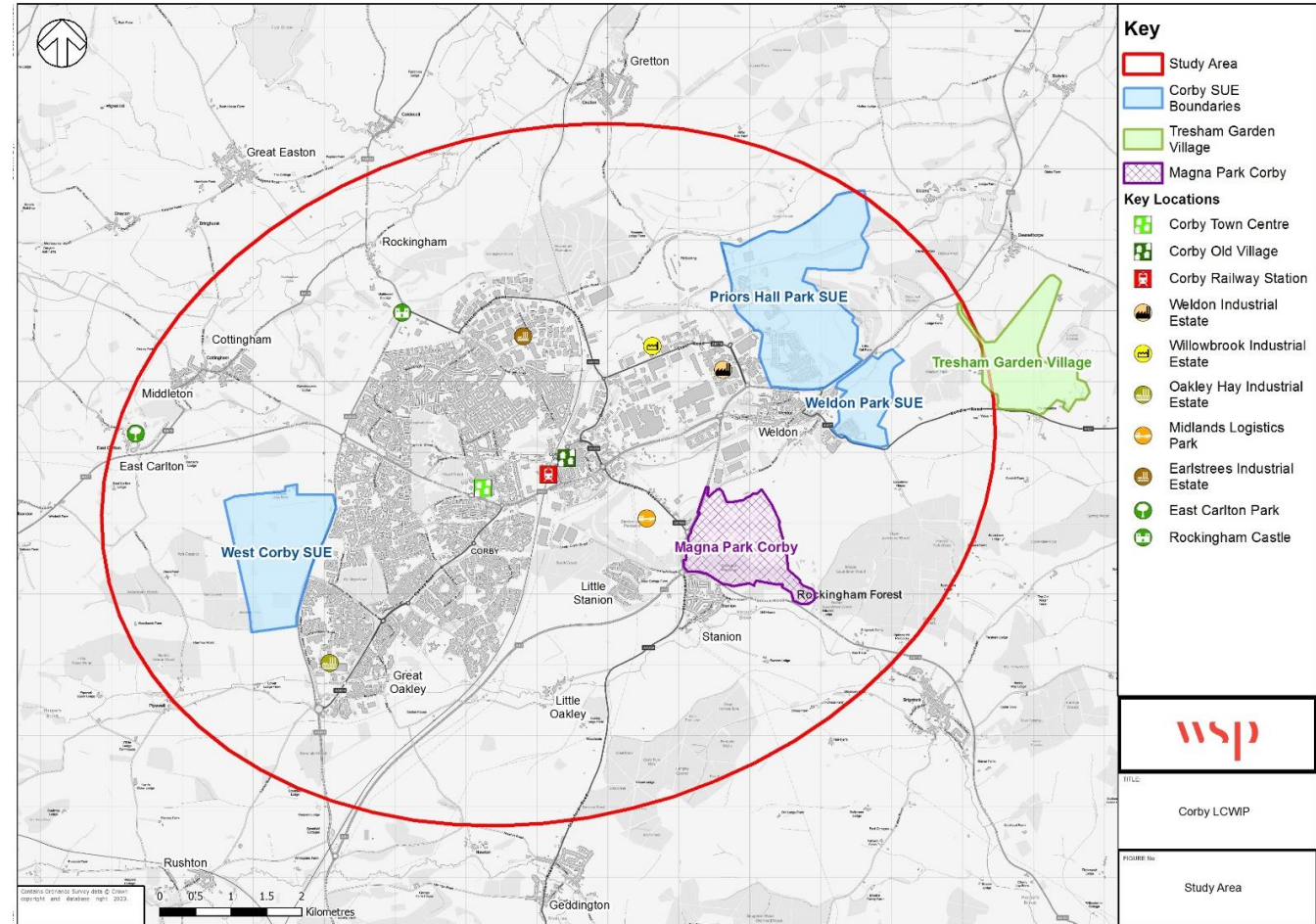
Progress overview for Corby LCWIP



Scope of Corby LCWIP

- Study extent based on including Weldon and the nearby Sustainable Urban Extensions (SUE's)
- Designed to link with Greenways strategy

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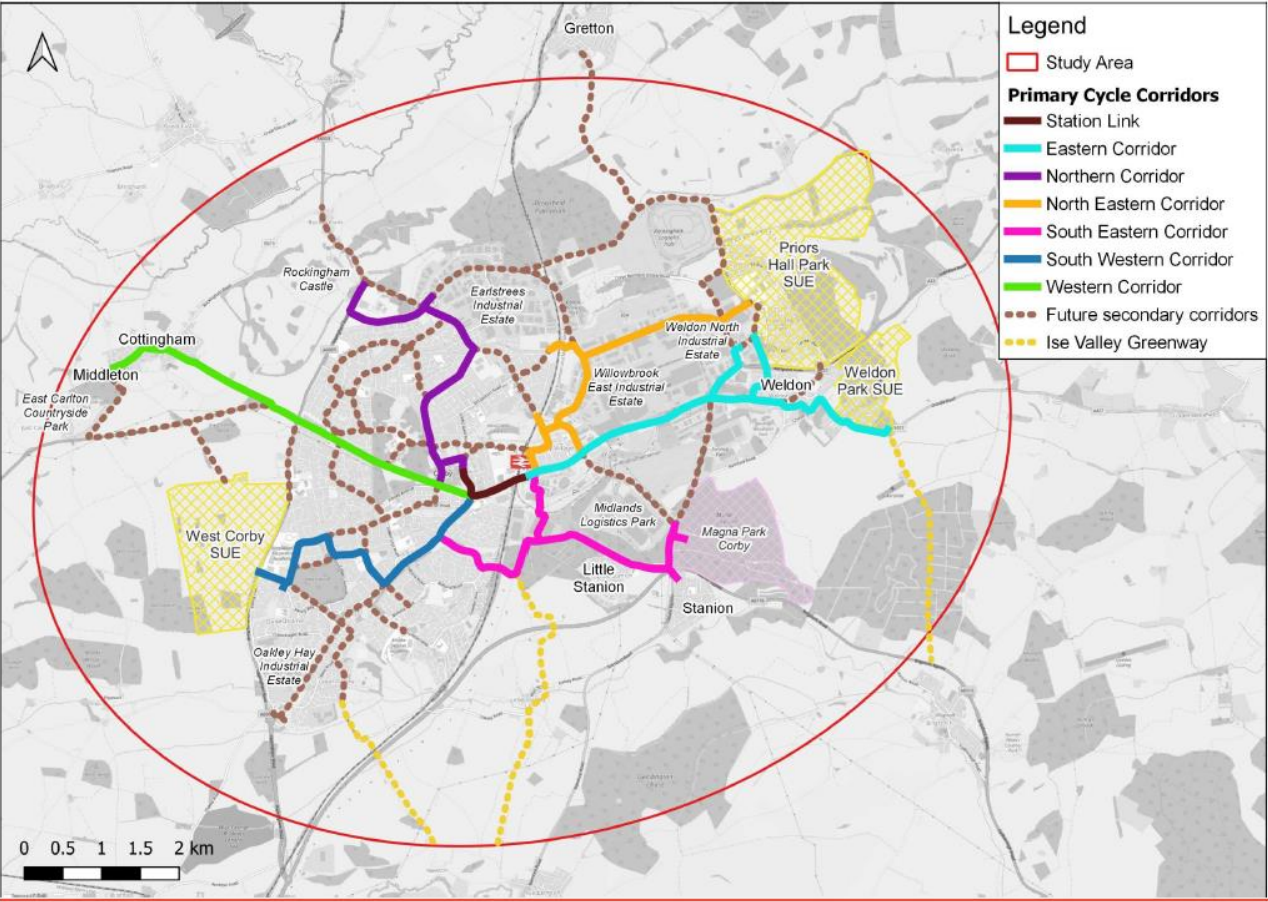


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Identified cycling routes

- A series of primary and secondary cycling routes listed. These provide a comprehensive and linked network for the plan area.
- Specific proposals for each primary route identified, in terms of type of facility, crossing provisions etc.
- Recent public consultation includes the proposals for each cycling route.

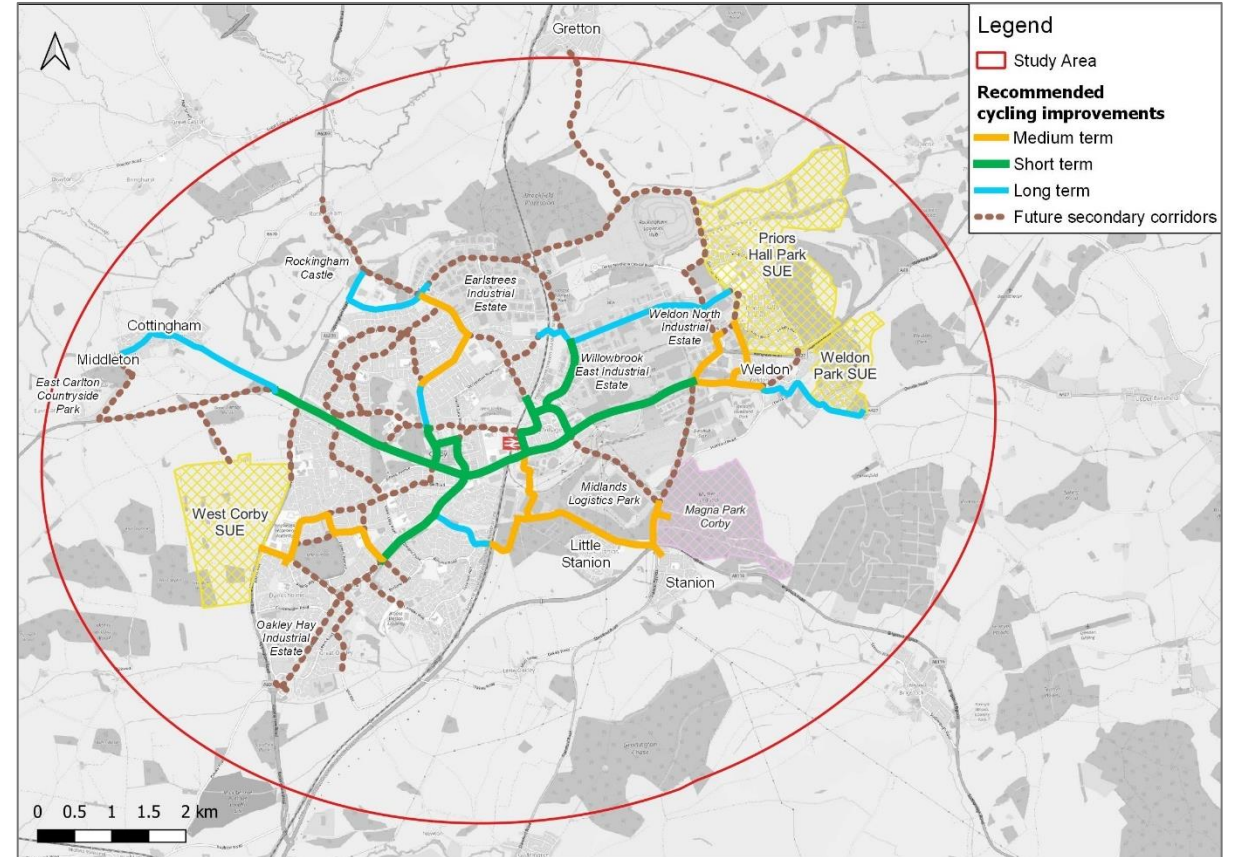
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Prioritisation of cycling routes

- Prioritisation framework developed, based on the DfT LCWIP guidance. This considers schemes effectiveness, policy alignment and local priorities, economic factors and deliverability.
- Cycling routes prioritised into short, medium and longer term proposals.
- Recent public consultation includes the identified relative priority accorded to each cycling route and asked for their priorities.

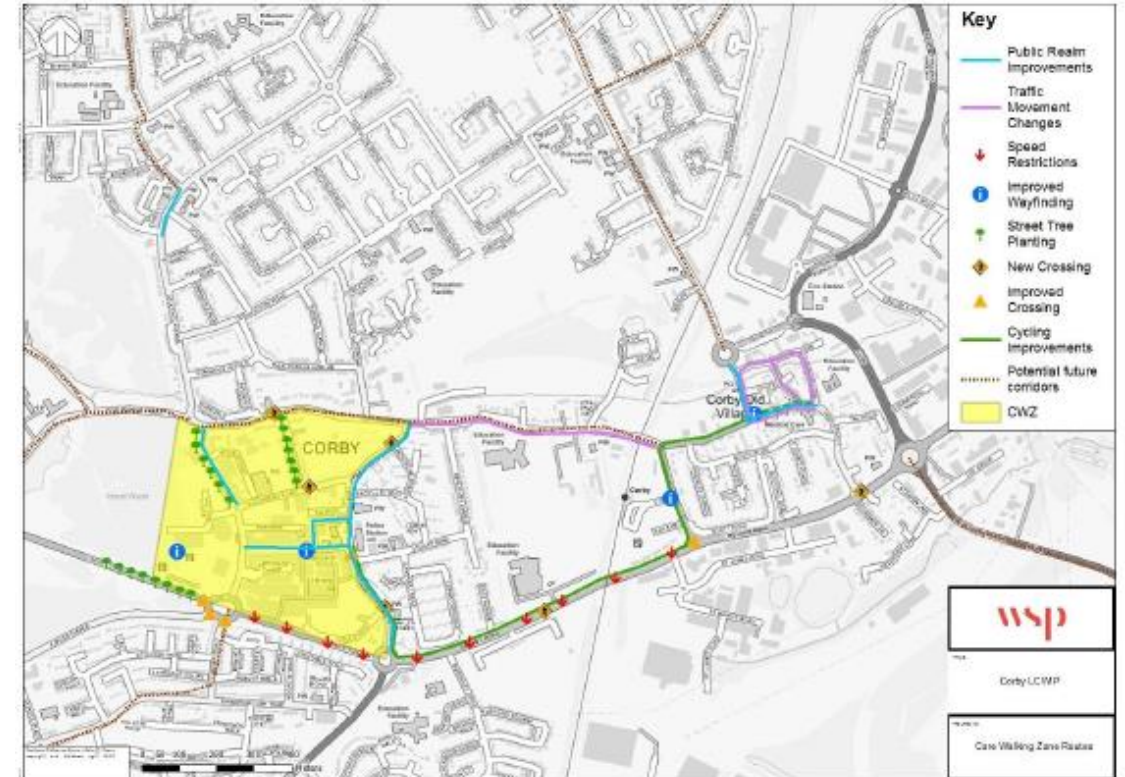
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Identified walking routes

- A core town centre walking zone and 11 walking routes identified
- Most of the recommended walking improvements align with the suggested Primary Cycle Network. Those improvements would be delivered together .
- The links which do not align are Corporation Street (CWZ2 & CWZ3), Richmond Road (CWZ 7) and High Street in Corby Old Village (W8, W9 & W10).
- A 'Liveable Neighbourhood' concept for Corby Old Village identified.

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What is the Corby Old Village – Liveable Neighbourhood?

The proposals for this area, focus on improving conditions for walking and include;

- Improved wayfinding, widened footways, additional and improving pedestrian crossings, providing dropped kerbs and tactile paving.
- Public realm improvements such as seating, lighting,
- Reducing vehicle speeds

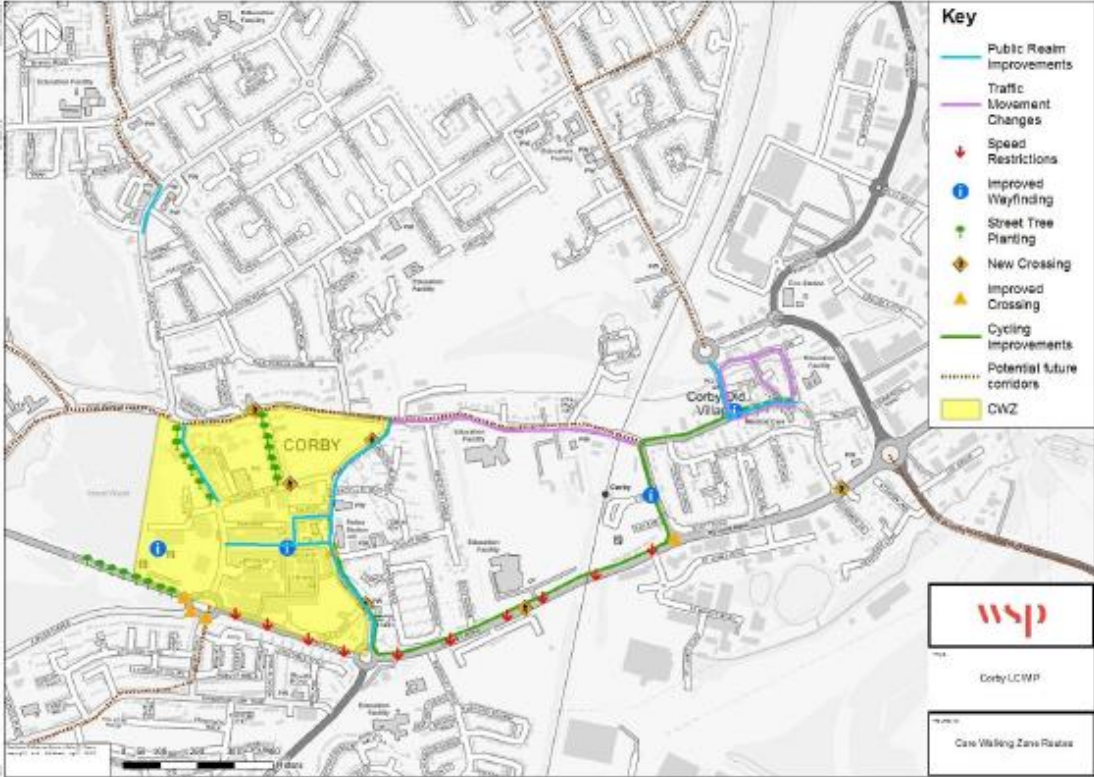
The idea of an area based approach or Liveable Neighbourhoods in Corby Old Village was presented at the third stakeholder workshop organised in December 2022 and was generally well received and this support was reasserted in the public consultation.



Prioritisation of walking routes

- Prioritisation framework developed, based on the DfT LCWIP guidance. This considers schemes effectiveness, policy alignment and local priorities, economic factors and deliverability.
- Walking routes prioritised into short, medium and longer term proposals.
- Recent public consultation includes the proposals for each walking route and their priority.

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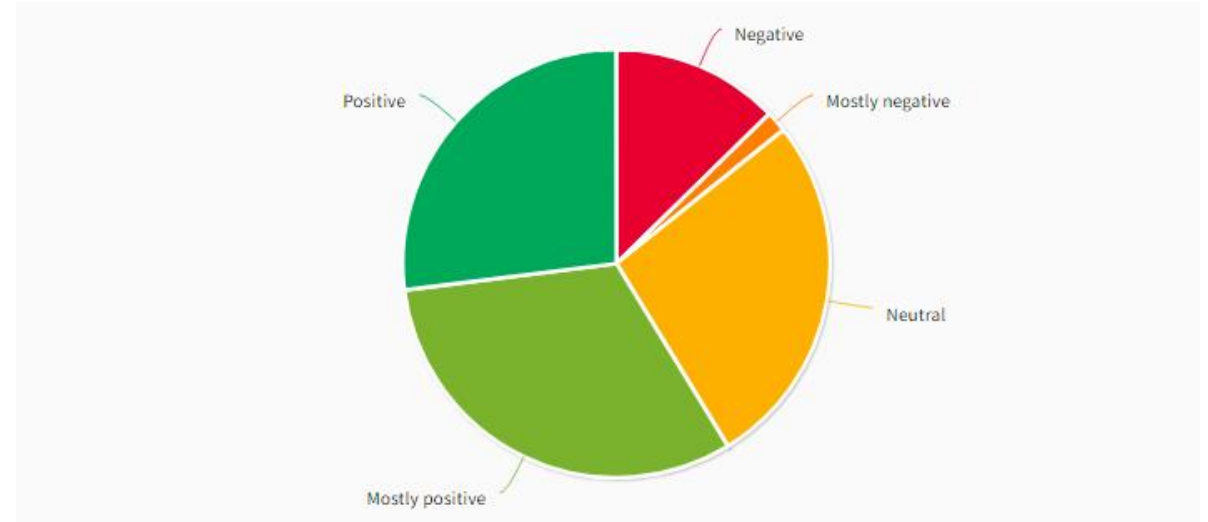


You said, Corby LCWIP

How do you feel about this overall plan?

- 59% of respondents were either positive or mainly positive with the overall LCWIP
- 27% were neutral and
- 14% were negative or mostly negative with the LCWIP.

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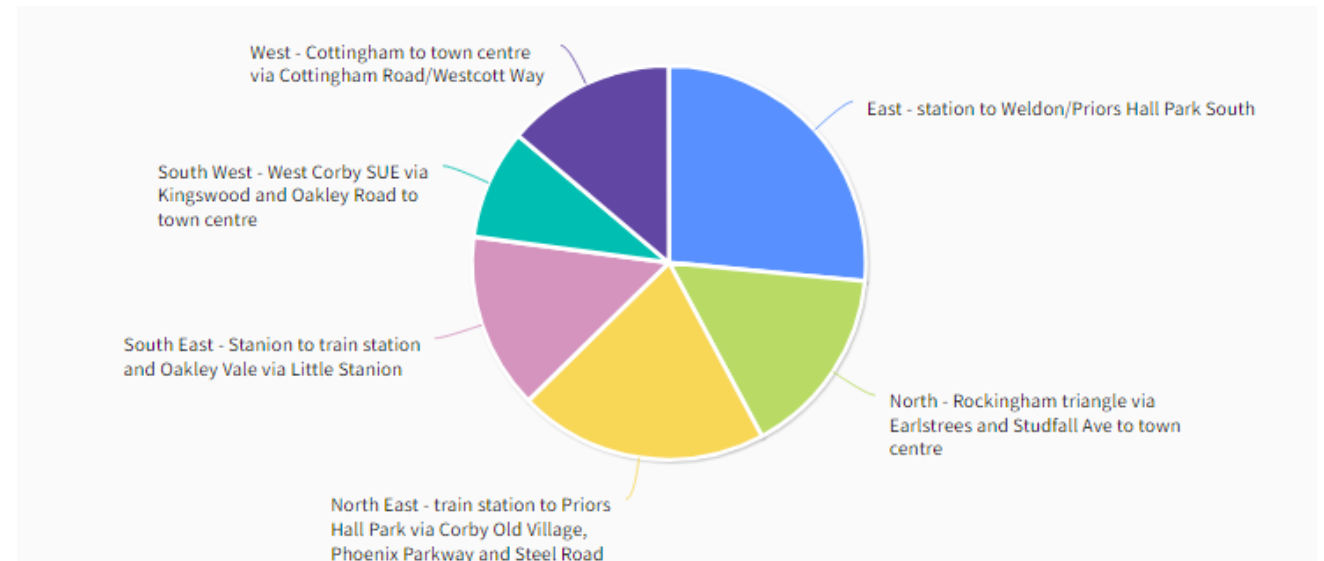
You said, Corby LCWIP, overall comments cycling

General comments on cycling included

- Support for a safe, high quality connected network, particular support for crossings of high traffic routes and providing separation from traffic.
- Need to consider needs of all the community particularly those with mobility needs and children when designing infrastructure, need for clearly identified infrastructure (shared, priority, etc)
- Funding should be to be redirected to improving road conditions and general maintenance
- For cycling infrastructure to be delivered alongside new development in the area. Comments noted the developers occurring in and around Weldon (particularly Priors Hall) and the need for crossings highlighting the A43.
- The need to established safe, connected and timely cycling improvements to support access to Weldon Village Academy School.
- Call for identified secondary routes to be prioritised including access to Gretton, Cottingham with Rockingham road specifically identified.

You said, Corby LCWIP, prioritised cycle routes

The figure shows each of the 6 cycle routes and the proportion of responses which identified them as a priority. The most commonly identified routes for priority broadly corresponds with those identified within the LCWIP report .



You said, Corby LCWIP, overall comments walking

General comments on walking included

- Support for walking routes with calls for improved street lighting and kept in a good condition
- Funding should be to be redirected to improving and maintaining existing footways.
- General support for improvements in Corby Old Village.
- There are currently no safe walking routes from Weldon, with calls for a route from Stanion and Little Stanion to Weldon new Secondary School utilising Stamford Rd.
- Call for improvements in Gretton as well as a direct route from Corby Station through Tresham College/ Corby

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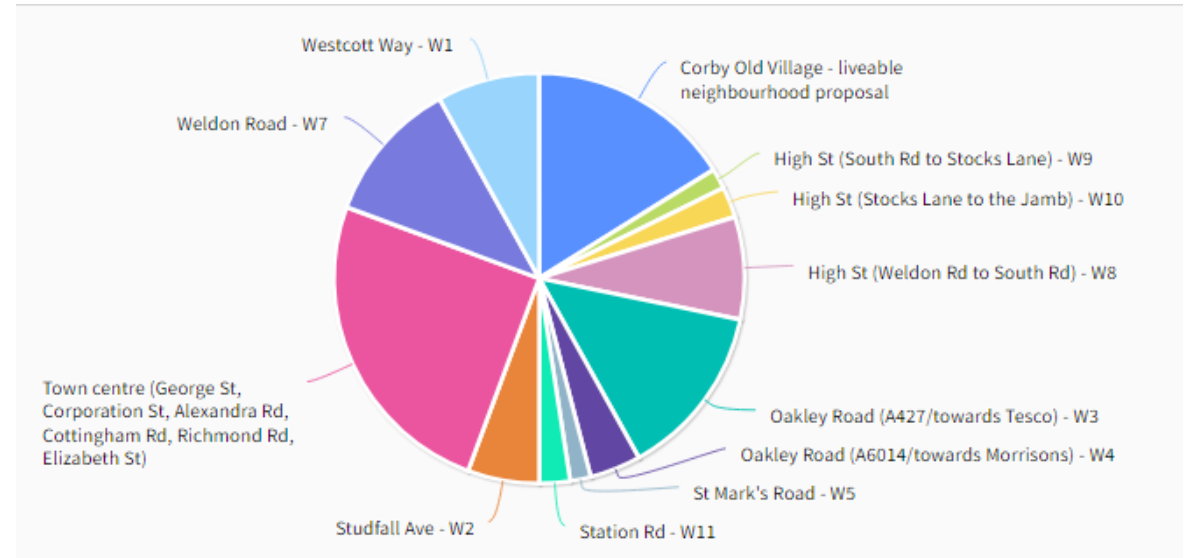


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You said, Corby LCWIP, prioritised walking routes

The LCWIP identified 13 different routes including area-based routes in the town centre and the establishment of a liveable neighbourhood proposal. The figure shows the proportion of responses which identified each route as a priority.

The most commonly identified routes for priority broadly corresponds with those identified within the LCWIP report .



Corby LCWIP Next Steps

The feedback on the Corby LCWIP has been considered and it will be progressed towards adoption by the Executive in early 2024.

Once adopted and published, initial design work for the highest priority routes will be progressed. The comments received will be provided to the design teams that take forward the development of the initial LCWIP proposals.

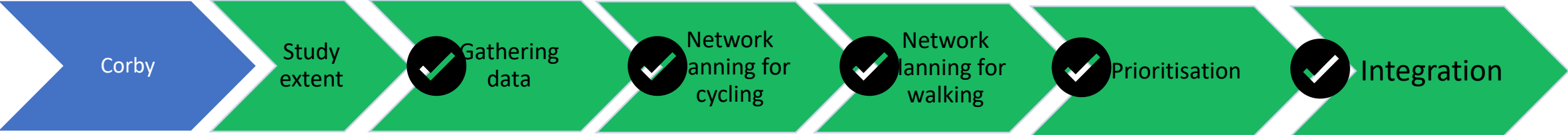
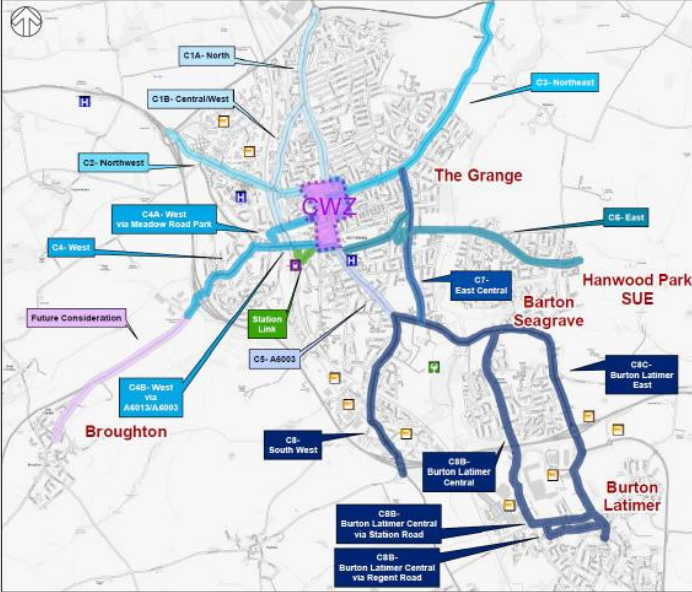
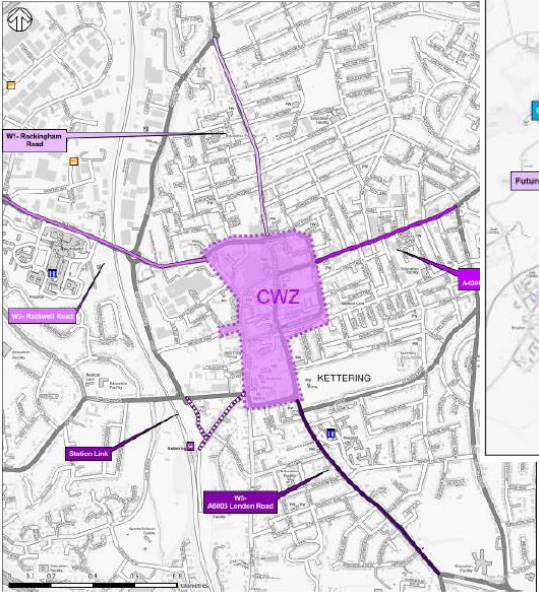
The initial design work will enable future funding bids to be made to deliver the Corby LCWIP.



Kettering LCWIP

- LCWIP approved by NNC Executive in September 2023.
- Initial design work has been commissioned for the highest priority routes. This will enable future funding bids to be made.

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Wellingborough LCWIP

- Analysis previously undertaken by Sustrans and Active Planning
- Initial stakeholder engagement commenced April 2023. Responses suggested inclusion with Higham Ferrers and Rushden in a single LCWIP rather than separate LCWIPs.

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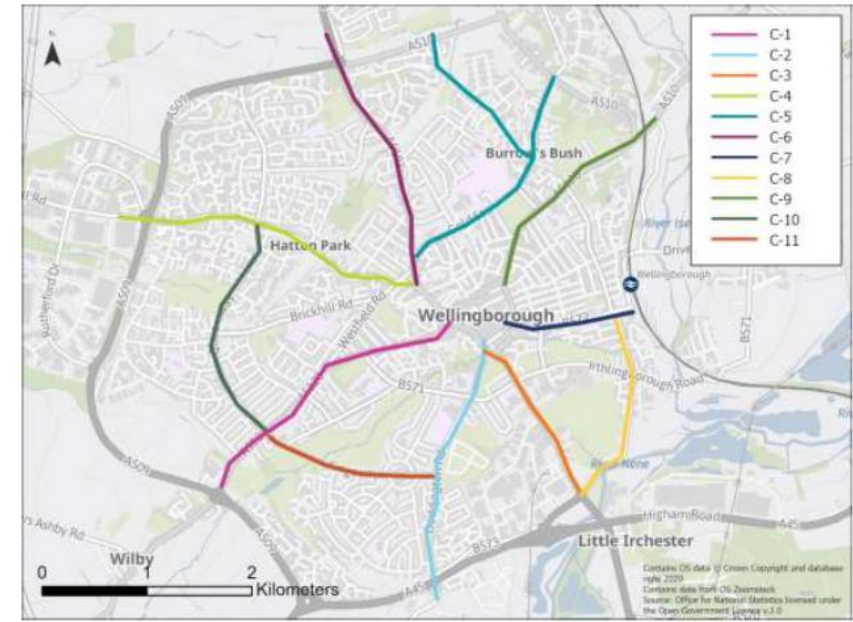
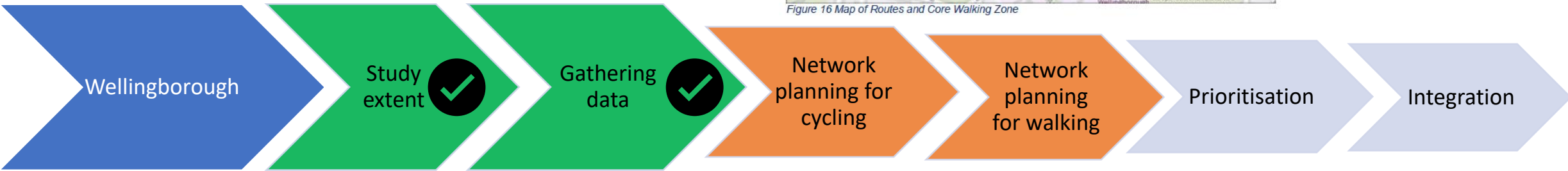


Figure 16 Map of Routes and Core Walking Zone



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Higham Ferrers and Rushden LCWIP

- Initial stakeholder engagement workshop undertaken in July 2023.
- Focus upon linkages with Greenways Strategy.
- Responses included for a wider area to be covered by the plan.
- Single wider LCWIP for Wellingborough, Rushden and Higham Ferrers to be developed.

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Questions



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