Borough Council of
King's Lynn &
West Norfolk

Borough Council of King's Lynn and West Norfolk

Draft Air Quality Action Plan 2024-2029

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

Date: January 2024

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Executive Summary

This Air Quality Action Plan (AQAP) has been produced as part of our statutory duties required by the Local Air Quality Management framework. It outlines the action we will take to improve air quality in the Borough Council of King's Lynn and West Norfolk (BCKLWN) over the next 5-years (2024-2029) or until the AQMAs are revoked. It replaces the previous plan that was adopted in 2015[1].

Projects have been delivered through the previous action plan that have contributed towards improving air quality in King's Lynn. They include the following: -

- Improvements at the King's Lynn transport (bus-rail) interchange in the town centre that incentivises the use of public transport and active travel.
- Urban traffic control and selective vehicle detection systems being implemented to help reduce congestion and pollution levels in the town centre and where the AQMA's are located.
- Installed electric vehicle (EV) charging points within Council owned car parks across the district (18 double charging points installed to date and a further 8 to be commissioned) to help assist local residents with no off-street parking provision the opportunity to charge their electric vehicle overnight at one of the selected sites. The previously installed 50kW rapid EV charging points (4) have recently been replaced with newer units.

Air pollution affects us all. It is associated with impacts on lung development in children, heart disease, stroke, cancer, exacerbation of asthma and increased mortality, among other health effects[2]. Critically, 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[3,4].

The annual mortality of human-made air pollution in the UK is roughly equivalent to between 28,000 and 36,000 deaths every year at typical ages[5]. It is estimated that

[1] Air Quality Action Plan, 2015; https://www.west-norfolk.gov.uk/downloads/download/346/air_quality_information_documents
[2] Chief Medical Officer, Air Pollution 2022; https://www.gov.uk/government/publications/chief-medical-officers-annual-report-2022-air-pollution
[3] Environmental equity, air quality, socioeconomic status and respiratory health, 2010
[4] Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006; https://uk-air.defra.gov.uk/assets/documents/reports/cat09/0701110944_AQinequalitiesFNL_AEAT_0506.pdf
[5] Defra. Air quality appraisal: damage cost guidance, July 2021

between 2017 and 2025 the total cost to the NHS and social care system of air pollutants (fine particulate matter and nitrogen dioxide), for which there is more robust evidence for an association, will be £1.6 billion[5,6].

The associated health costs associated with air pollution require a change with measures that not only tackle the pollution hot spots but more generally also focus on population-wide measures. This means at times going beyond existing air quality objectives which recognises the no observed safe level for some pollutants. As a consequence, this action plan includes a new measure to develop an air quality project for the area to help facilitate these wider health-based improvements.

Actions have been considered under the following short-listed topics:

- Planning policy and development control interventions;
- Promoting travel alternatives and providing infrastructure improvements;
- Vehicle fleet efficiencies / improvements;
- Traffic management improvements;
- Public Information

Our priorities are set out below based on these topics focussed on a traffic-reduction approach since this is the principal source of the nitrogen dioxide (NO_2) in the Air Quality Management Areas (AQMAs) as set out in source apportionment study by Bureau Veritas (2017[19]). The study and measures are described in more detail in Sections 3.3 and 3.4. The AQAP measures are summarised within Table 5.1 where costs and targets are also set out:

- **Priority-1: To increase active travel**: A modal shift to other, more sustainable forms of transport is considered a critical part of the plan, as it will lead to a reduction in private car use, improve air quality and also help to create a healthy community.
- **Priority-2: Bus service improvements**: Public transport (bus) service improvements comprise the next priority with a range of measures identified within the Bus Service Improvement Plan (BSIP). A reduction in the nitrogen oxide (NOx) emissions through bus engine improvements are also sought.

[6] Office for Health Improvement and Disparities; https://www.gov.uk/government/publications/air-pollution-applying-all-our-health/air-pollution-applying-all-our-health

- **Priority-3: Transport Management:** Prioritising transport management / infrastructure improvements for the centre of King's Lynn to help facilitate a modal shift to more active travel is also a priority. The plans have been progressed to a high level as part of the King's Lynn Area Transport Strategy[7]. The work includes improvements to the town centre's gyratory system in favour of cycling/walking/public transport and also a regeneration of the South Gates area. Other complimentary transport management measures include the development of a comprehensive car-parking strategy.
- **Priority-4: Review of new planning developments:** Minimising emissions from new developments through best practice principles is also an important aspect of the plan.
- **Priority-5: Public Information**; A range of interventions are also necessary to better engage the public on air quality necessary to encourage behaviour change.
- **Priority-6: Air Quality Project**: The final element to this AQAP is to develop a local air quality project focussed on particulate matter of less than 10 & 2.5 microns (PM_{10} & $PM_{2.5}$).

In this AQAP we outline how we plan to reduce levels of Nitrogen Dioxide within both Air Quality Management Areas.

Responsibilities and Commitment

This Air Quality Action Plan (AQAP) was prepared by the Environmental Quality section of the Borough Council under the Directorship of Environment & Planning with the support and agreement of:

- Norfolk County Council's local highways and public health departments.

This AQAP will need to be agreed and adopted by Council following consultation.

This AQAP will be subject to an annual review and appraisal of its progress as part of our statutory Local Air Quality Management review and assessment duties.

[7] Norfolk County Council LTP4, 2021: https://www.norfolk.gov.uk/what-we-do-and-how-we-work/policy-performance-and-partnerships/policies-and-strategies/roads-and-travel-policies/local-transport-plan

If you have any comments or suggestions on this AQAP, please send to:

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1 Introduction

This report outlines the actions that the Borough Council of King's Lynn and West Norfolk will deliver over the next 5-years (2024-29) in order to reduce concentrations of air pollutants and exposure to air pollution; thereby positively impacting on the health and quality of life of residents and visitors to the borough council's area.

It has been developed in recognition of the legal requirement on the local authority to work towards Air Quality Strategy (AQS) objectives under Part IV of the Environment Act 1995 and relevant regulations made under that part and to meet the requirements of the Local Air Quality Management (LAQM) statutory process[8,9].

It also considers the Environment Act 2021 and associated regulations in relation to $PM_{2.5}$ which will be developed as part of the wider air quality project measure that sits within this plan. Additional provisions proposed by Clean Air (Human Rights) Bill whilst potentially significant can be considered if enacted.

This Plan will be reviewed every five years at the latest, or on revocation, whichever is the sooner. Progress on measures set out within this Plan will also be reported annually within this Council's Annual Status Report (ASR).

[8] Defra, LAQM PG-22; https://laqm.defra.gov.uk/air-quality/featured/england-exc-london-policy-guidance/
[9] Defra, LAQM TG-22; https://laqm.defra.gov.uk/air-quality/featured/uk-regions-exc-london-technical-guidance/

2 Summary of Current Air Quality in Borough Council of King's Lynn & West Norfolk

2.1 Background:

There are two Air Quality Management Areas (AQMA's) designated in King's Lynn due to exceedances in nitrogen dioxide (NO_2) over the long-term (annual mean) objective of 40ug/m^3 namely:

2.1.1 Railway Road AQMA:

This initial AQMA was declared on the 01st of November 2003 and extended only to a relatively small area along Railway Rd (A148) in the town centre of King's Lynn.

A subsequent further detailed assessment was carried out in 2005 when it was observed that NO_2 exceeded the objective more widely and the area required expanding. An order was made on 02nd of February 2007 that varied the original and for the AQMA to extend to all residential properties along Railway Road, Blackfriars Road, and down to the London Road ending at the Southgates (see Figure C.1, Appendix C).

Concentrations of NO_2 vary spatially (see Figures C.3 and C.4, Appendix C) but are observed highest around monitoring site 2 area where traffic opens up into multiple lanes within a street canyon with stop-start traffic. Site 2 is also only a short distance from the Albion Road junction where buses leave the interchange and join the gyratory system.

2.1.2 Gaywood Clock AQMA

Gaywood Clock AQMA was declared following a further detailed assessment carried in 2008 following the extended declaration to the Railway Rd AQMA and came into effect 6th April 2009. It is also formed around residential properties along the A148 that links to Railway Rd but centred around a junction at Gaywood Clock (see Figure C.2, Appendix C). Spatial distribution of annual mean concentrations around the junction is shown in Figure C.5.

There are a number of schools plus King's Lynn Queen Elizabeth Hospital that are all connected to this junction. The Parkway development will also connect to this junction via Queen Mary Rd.

2.2 Current Air Quality Results:

As explained in this Council's latest 2023 ASR on Air Quality:

- *No exceedances of the National Air Quality Strategy standards were identified for Nitrogen Dioxide (NO2) during 2022.*
- *This is the third year running where compliant results have been observed with no exceedances of the NO2 annual mean objective.*
- *Trends in NO2 following the first Covid lock-down year of 2020 showed a marked reduction of around 20% in the annual mean NO2 concentrations.*
- *No exceedances of PM10 objectives level were noted during 2022.*
- *No exceedances of the PM2.5 annual mean level were noted during 2022.*
- *Monitoring results are not in excess of the air quality objectives outside of the existing AQMA's and therefore we are not proposing to amend or designate a new AQMA.*

The concern had been the extent of traffic rebound following Covid, but annual mean concentrations have subsequently remained relatively constant (see Figures C.6 and C.7) with results less than 36µg/m^3 i.e., less than 10% of the NO_2 objective (40µg/m3) for at least the last 3-years.

Revocation of the AQMAs (or part of) are recognised as potential options if similar trends are observed over the longer-term. These options will be discussed in more detail in the next ASR. For further details of the current status of air quality please refer to the 2023 ASR[10].

[10] BCKLWN, ASR 2023, https://www.west-norfolk.gov.uk/downloads/download/346/air_quality_information_documents

3 BCKLWN's Air Quality Priorities

3.1 Public Health Context

The evidence base on public health impacts from air quality has grown substantially culminating with the Chief Medical Officer's report for 2022 dedicated solely to air pollution[2]. Air pollution is best thought of as a mixture of gases and particles, all of which may interact and have greater effect if combined.

The pollutant with the strongest epidemiological link to health outcomes is $PM_{2.5}$. This has the ability along with other pollutants like NO_2 to go deep into the lungs and absorbed into the blood stream. Nitrogen dioxide and the focus of this AQAP is inter-linked as it reacts in the atmosphere in the presence of other pollutants to form additional secondary $PM_{2.5}$.

NO_2 is harmful to human health as it causes irritation of eyes, nose and throat but also respiratory problems from asthma with the potential for reduced lung function at high levels[2].

$PM_{2.5}$ is used as the basis for understanding the context of air pollution through the Public Health Outcomes Framework (PHOF) indicator 3.01[11]. This indicator derives the proportion of mortalities and associated loss in life years that can be attributed to air pollution as a population weighted average in the area[12]. Similar to the Environment Act 2021 targets on $PM_{2.5}$, the PHOF indicator is based on modelled concentrations from urban background stations. We do not have direct responsibility to control these concentrations, but many of our measures such those as set out within this AQAP have the potential to reduce $PM_{2.5}$.

The intention of the PHOF indicator is in raising awareness of the effect of air pollution on public health and to encourage promotion of the need for actions to reduce air pollution through a partnership between all delivery organisations, such as documented within the Joint Strategic Needs Assessment for the area.

Marking an important change in the context of public health were recommendations made in the coroner's report (2021[13]) into the death of Ella Adoo-Kissi-Debrah. The

[11] Public Health Outcomes Framework; https://www.gov.uk/government/collections/public-health-outcomes-framework
[12] PHE, 2014, Estimating Local Mortality Burdens with Particulate Matter Air Pollution; https://www.gov.uk/government/publications/estimating-local-mortality-burdens-associated-with-particulate-air-pollution
[13] Judiciary Report to Prevent Future Deaths, 2021; https://www.judiciary.uk/wp-content/uploads/2021/04/Ella-Kissi-Debrah-2021-0113-1.pdf

report highlighted that it should be considered as a potential significant contributory factor to health outcomes. The AQ project (AQAP Measure 6.1) recognises this as it aims to review levels of fine particulate matter (PM_{10} and $PM_{2.5}$) across the district and assess through relevant health datasets.

To minimise potential impacts from new developments, health damage costs of $PM_{2.5}$ and NOx can be used to estimate the degree of mitigation and whether any residual offsetting is necessary. This option is explained more fully in Section 3.2 below.

To help raise the public awareness and disparities with air quality we also have new measures (Measures 5.1 and 5.2) aimed at promoting behaviour change including improved air quality monitoring and information systems.

Indoor air quality is also recognised as an emerging issue and is to be considered especially as approximately 80-90% of our time is now spent indoors. The Covid-19 epidemic has shown us the importance of clean indoor air as well as ambient.

We will work closely in consultation with public health officials and also any others including the Norfolk AQ Group in further defining this role and developed under the air quality project work in accordance with LAQM policy guidance[8].

3.2 Planning and Policy Context

The planning system can play a crucial role in managing and improving air quality and helping with the transition towards a low emission, more sustainable future. Planning policy is a key factor for local authorities in carrying out their air quality functions; close cooperation between planning and air quality officers is therefore essential.

The National Planning Policy Framework (NPPF, 2021) sets out national planning policies and principles for England and how these are expected to be applied. We have regard to the following: -

- Section 174(e) that prevents new and existing development from unacceptable risks or levels of air pollution and wherever possible to improve air quality; a principle in line with IAQM's development control guidance (2017[14]). Improving air quality is also consistent with National Air Quality

[14] IAQM, https://iaqm.co.uk/guidance/

Strategy (2023[15]) for local authority functions to be exercised in a way that improve and maintain air quality.

- Section 186 that sets out that 'opportunities to improve air quality or mitigate impacts from new developments should be identified' and which 'sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas' (AQMAs), and ensure that policy / decisions are 'consistent with the local air quality action plan (AQAP)'.
- Section 112 that sets out a hierarchy of preference towards more sustainable methods of transport and wherever significant amounts of movement are identified the development will be required to provide a travel plan.
- Section 112(e) for electric vehicle charging infrastructure, that in addition to the Building Regulations in Approved Document Part-S, should be designed as 'safe, accessible and convenient' for all anticipated users.

The Council has the following local policies that relate to air quality including:

- Policy DM-11 (Environment) which sets out that development should 'protect and enhance the amenity of the wider environment including air quality.'
- Policy CS-11 (Transport) sets out a priority first approach towards local cycling and walking infrastructure and public transport in line with the above NPPF Section 112. This aligns to our Priority 1 Measures. Policy CS-11 also sets out that transport assessments and travel plans are required wherever significant traffic impacts are likely and consistent with to the NPPF.
- Policy CS-08 (Sustainable Development) requires all new development to be of high-quality design which includes measures such as 10% reduction in buildings SAP CO_2 emissions from major developments through renewable / decentralised systems. This policy also favours a reduction of on-site emissions through generation of cleaner energy systems.

  The emerging Local Plan aims to adopt Polices CS-11 and DM-11 under policies LP-21 and LP-13 respectively.

[15] National Air Quality Strategy, 2023, https://www.gov.uk/government/publications/the-air-quality-strategy-for-england/air-quality-strategy-framework-for-local-authority-delivery

There are also Norfolk CC guidelines that we refer to on transport interventions such as travel plans[16], transport assessments[17] and parking guidelines[18] which includes a section on electric vehicle charging infrastructure.

In terms of this AQAP:

- Previous AQAP Measures (2 and 3) are not taken forward within this updated version with reasons given in Appendix B Table B.1.
- Measure 5.1 (To consider AQ from new developments). This is considered an important measure and has been updated. The council's ASR will provide an update on this measure annually (number of planning applications considered for air quality in the year).

3.3 Source Apportionment

3.3.1 Source Apportionment of the AQMA's

The AQAP measures presented in this report are intended to be targeted towards the predominant sources of emissions within the borough council's area. Principal sources are shown by a NO_2 source apportionment study by Bureau Veritas (2017[19]). The study was based on DfT traffic count data (DfT, 2016[20]) from road links selected within King's Lynn. The proportion of NO_2 and NOx was calculated using Defra's Emission Factor Toolkit (EFT v.8) when based on the relative proportions of cars and taxi's, LDV's, buses and coaches and HGVs within these road links.

Apportioning the NO_2 and NOx was presented for all modelled receptor locations but also locations with highest concentrations to compare any variation spatially. Results are shown in Figures 3.1 and 3.2 below:

[16] NCC Travel Plan Guidance; https://www.norfolk.gov.uk/rubbish-recycling-and-planning/planning-applications/highway-guidance-for-development/travel-plans
[17] NCC, Safe, Sustainable Development; https://www.norfolk.gov.uk/rubbish-recycling-and-planning/planning-applications/highway-guidance-for-development/publications
[18] NCC, Parking Guidelines, 2022; https://www.norfolk.gov.uk/rubbish-recycling-and-planning/planning-applications/highway-guidance-for-development/publications
[19] BCKLWN, 2017, Source Apportionment Study; https://www.west-norfolk.gov.uk/downloads/download/346/air_quality_information_documents
[20] Dept. of Transport Road Traffic Statistics; https://roadtraffic.dft.gov.uk/manualcountpoints/70303

Fig 3.1: Source Apportionment for Railway Rd AQMA

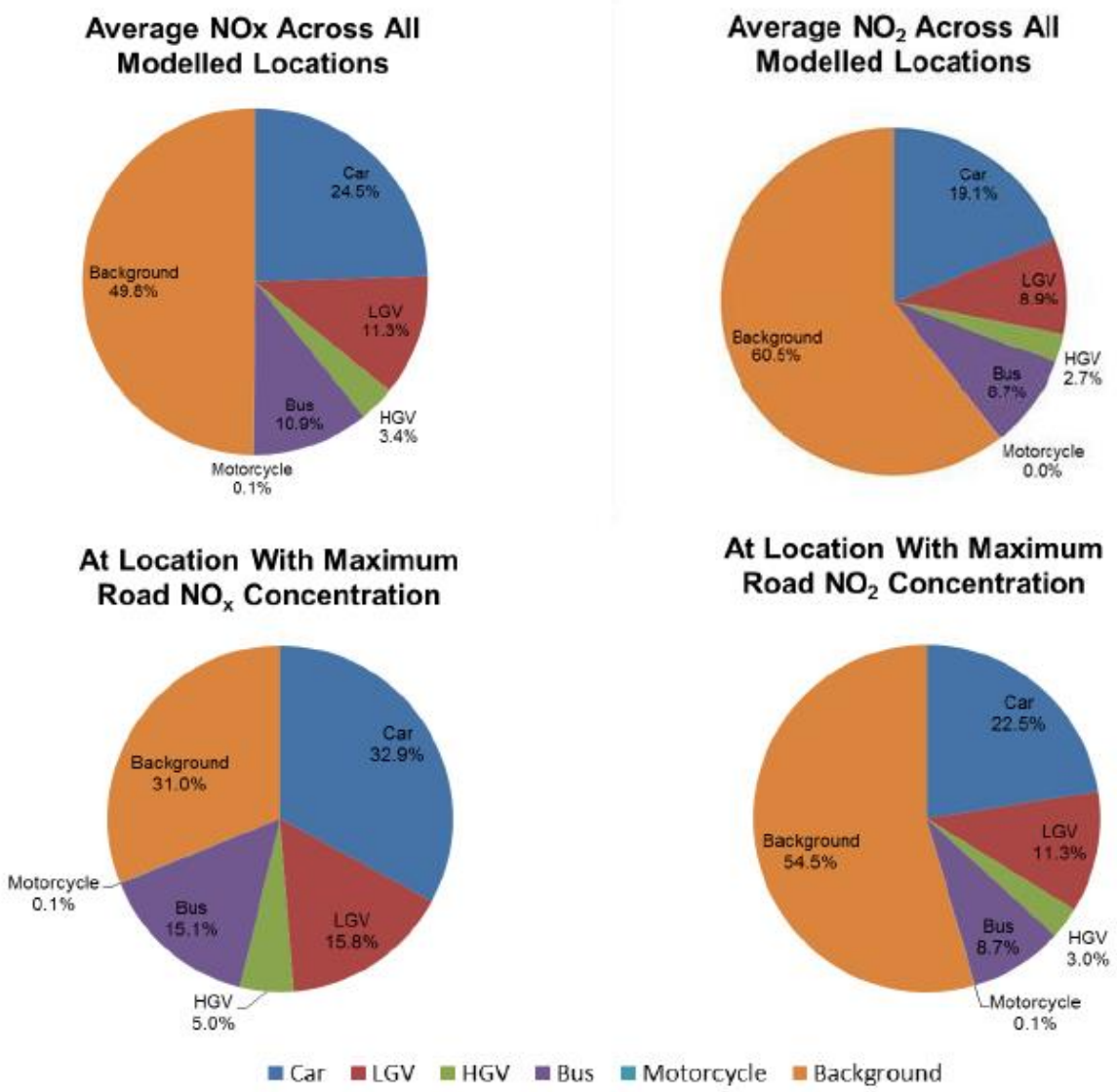
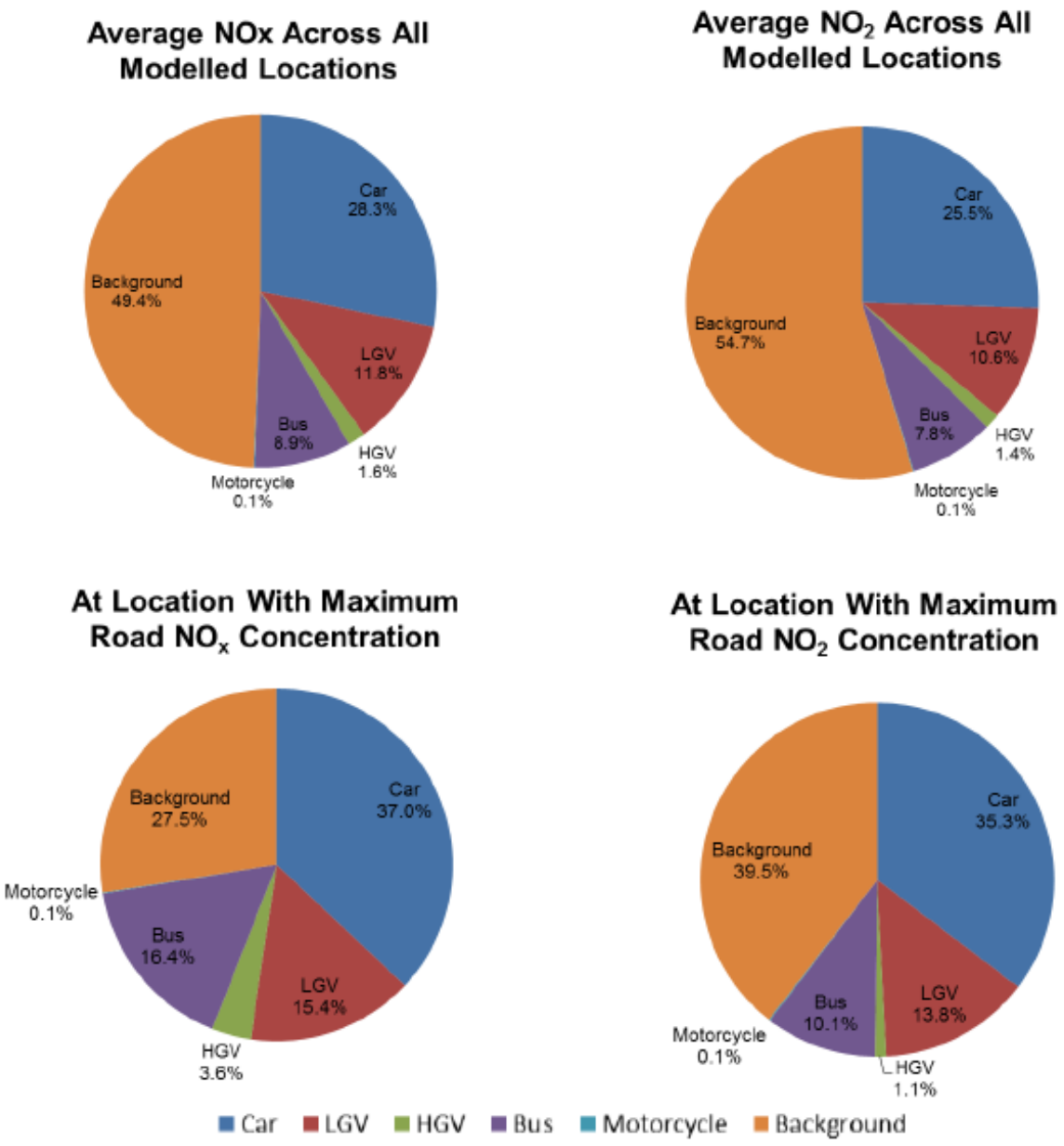


Fig 3.2: Source Apportionment for Gaywood Clock AQMA



When considering % reductions it is preferable to refer to the proportions as NOx than NO2 due to the primary emission from vehicles is in the form of NOx. The relationship between the NOx:NO2 concentrations is also non-linear. AQAP measures within Table 5.1 have been prioritised by NOx.

In terms of the source apportionment study:

- When based on all locations the predominant source for the NOx was from other sources that the main road links modelled i.e., suggestive of a wider

pollution source. The air quality project will review wider emissions that are within local authority control.

- At the locations with highest NOx concentration the proportion from vehicles predominated with around two-thirds of the total NOx being attributed to vehicles. In particular, cars formed the largest proportion of NOx and NO2 when compared to all vehicles. Measures therefore aimed at traffic reduction have been prioritised within this revised AQAP in Table 5.1.
- Whilst the largest contribution in terms of vehicle NOx was from cars, buses contributed to around half of this NOx. With such a high proportion of total road-NOx being attributed to buses is reason to specifically target this source group through Measure 2.2 (low NOx emission buses).

3.3.2 Source apportionment of PM_{10} and $PM_{2.5}$

A source apportionment study for particulate matter is not necessary for this AQAP as it is based on measures primarily aimed at reducing NO_2. However, we intend to carry out a source apportionment study into particulate matter emissions across the district as part of the Measure 6.1 (to help develop the West Norfolk air quality project).

3.4 Required Reduction in Emissions

There is no requirement to express NO_2 ($\mu g/m^3$) required reduction as results are currently compliant.

3.5 Key Priorities

Priory 1 – Accelerating modal shift to public and active transport.

Measures associated with traffic reduction are the priority as transport was identified as the predominant source of NO_2 in the AQMAs from the source apportionment study. These will also be associated with ancillary benefits to climate change policies, as road transport according to the DfT (2021[21]) is the largest contributor to UK *domestic* greenhouse gas (GHG) emissions, and responsible for 27% in 2019. Locally this was reported as slightly higher at 29% in 2018[22].

In order to reduce this sector, we need to encourage and facilitate active travel for short journeys (or as part of a longer journey) where practicable, in combination with a reduced need to travel. AQAP measures 1.1 – 1.6 are focussed on a modal shift away from private vehicles towards public transport and active travel. The measures are underpinned by the Local Cycling and Walking Infrastructure Plan for King's Lynn.

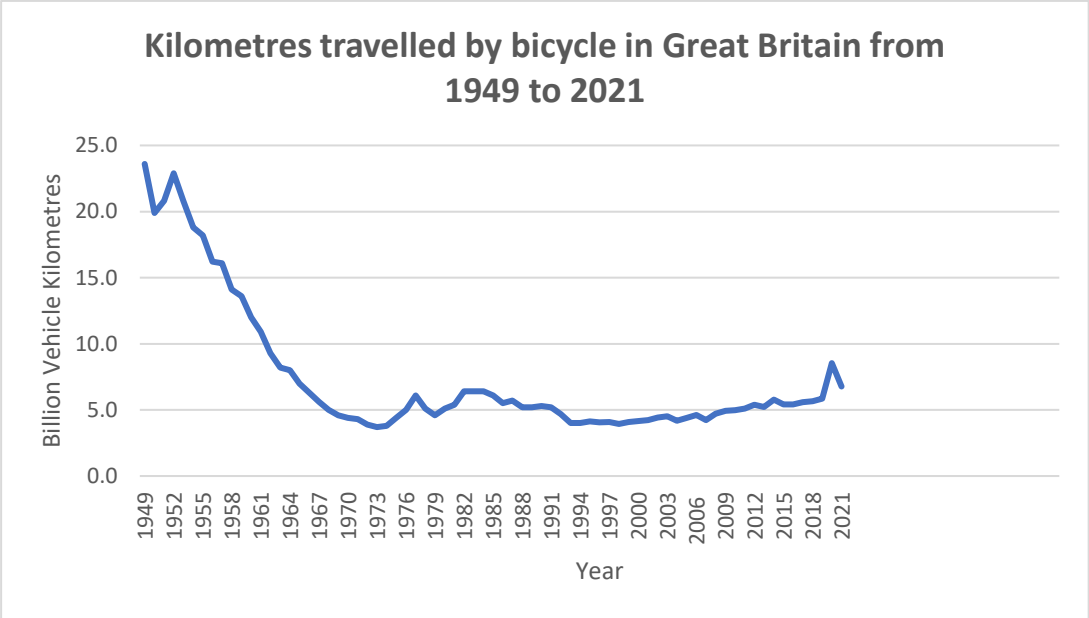
Every vehicle trip that can be replaced by walking, cycling or public transport helps free up limited road space for trades and public transport including buses, taxis, internet deliveries, tradespeople, carers, and food distribution. The journeys below five miles represent 58% of all private car journeys in U.K. in 2019 (DfT, 2021) and provide the biggest opportunity for switching short car journeys to cycling and walking.

This was reinforced by the Chief Medical Officer's Annual Report dedicated to air quality for 2022 (CMO, 2022[2]) which highlighted that by reversing some of the decline in bicycle trips (Figure 3.3) would have substantial health benefits due to physical activity being built into the normal day in addition to a reduction in air pollution.

[21] Dept. of Transport, Decarbonising Transport – A Better Greener Britain; https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1009448/decarbonising-transport-a-better-greener-britain.pdf

[22] BCKLWN Climate Change emissions; https://www.west-norfolk.gov.uk/info/20095/energy_and_climate_change/920/west_norfolk_emissions

Fig 3.3: Reduction in active travel 1949-2021



Moreover, during the pandemic many workplaces adopted measures to help staff work from home yet only 1182 active travel plans are reported as being registered with the nationally accredited Modeshift Stars scheme[23]. So, whilst engine technology improvements will help, more needs to be done, especially when domestic GHG emissions from transport as reported by DfT (2021) have been broadly flat for the last 30 years. This council for example plans to adopt a green travel plan as part of its post Covid recovery plan (Measure 1.2) and climate change initiatives.

In addition, around the Gaywood Clock AQMA there are a number of schools plus the main hospital for King's Lynn (Queen Elizabeth Hospital) situated directly off from the junction. Prioritising active travel plans for the schools and Hospital will therefore benefit the AQMA.

This Council also has an Active and Clean Connectivity Plan[24] comprising three key elements; to develop two active travel hubs in the area; deliver priority schemes within the local cycling and walking infrastructure plan (LCWIP[25]) and to work with a number of businesses to help facilitate workplace travel plans. Working with local businesses on the plans will also help to help understand any barriers for wider

[23] Modeshift Stars; https://modeshift.org.uk/modeshift-news/modeshift-stars-accreditation-hits-record-numbers/
[24] https://www.visionkingslynn.co.uk/projects/active-and-clean-connectivity/
[25] NCC, LCWIP; https://www.norfolk.gov.uk/-/media/norfolk/downloads/what-we-do-and-how-we-work/policy-performance-and-partnerships/policies-and-strategies/roads-and-transport/kings-lynn-lcwip-main-report-february-2022.pdf

implementation. The borough council has secured £6.7m towards the Active & Clean Connectivity Programme through Towns Fund and the Norfolk Business Rates Pool.

Priority 2 – Public Transport improvements:

To help with the move towards more active travel, bus service improvements for the area are identified within Measure 2.1. Reducing NOx contributions from buses in King's Lynn is also proposed in Measure 2.2 as bus emissions contribute a high proportion of the total road-NO_x. Measure 2.2 is currently unfunded.

Priority 3 – Transport Management Improvements:

To help improve air quality and enable the required mode shift to public transport and active travel modes, a number of transport infrastructure improvements are planned for the centre of King's Lynn. Funding (£24m) has been secured by Norfolk CC to implement transformational schemes with the town centre's gyratory system and at the Southgates, which will provide significant infrastructure improvements for buses, walking, cycling and public realm to encourage modal shift (AQAP Measures 3.1 and 3.2).

In addition, to help manage parking in the area this council will also develop a car parking strategy for the area (Measure 3.3) and where air quality is to be considered.

Priority 4 – Review of new planning developments:

To help prevent new developments from contributing to the problem and improve air quality, the priority is also to seek mitigation wherever possible in accord with NPPF Section 174(e). We will endeavour to identify any additional measures to mitigate emissions at an early stage. Local authorities are guided by the National Air Quality Strategy (2023[15]) to robustly assess the monetised effects of air quality interventions.

Any obligations will be proportionate to the nature and scale of the development proposed and the level of concern about air quality. Emissions ($PM_{2.5}$ and NOx) can be assigned a value based on their damage cost estimates from Defra (2023[26]) typically over a 30-year time frame to reflect lifetime of development. Any mitigation / offsetting is to be determined on a case-by-case basis.

[26] Air Quality Appraisal, Damage Cost Guidance; https://www.gov.uk/government/publications/assess-the-impact-of-air-quality/air-quality-appraisal-damage-cost-guidance

Priority 5 – Public awareness:

Following the inquest into the death of Ella Roberta Adoo-Kissi-Debrah on 21st April 2021 the coroner's report (2021[13]) raised low public awareness of information on air quality as an area of concern. Public awareness of air quality but critically what can be done to improve was also considered poor as explained by Public Accounts Committee report (2022[27]) on tackling air quality breaches.

A range of interventions are to be developed to better engage the public on air quality as listed with Measures 5.1, 5.2, of which improved air quality monitoring systems forms part.

Priority 6 – West Norfolk Air Quality Project:

An air quality project is the final priority of this AQAP as it will set out measures for how we will facilitate improvements in air quality district-wide with emphasis on particulate matter (PM_{10} & $PM_{2.5}$).

[27] Public Accounts Committee, 2022, Tackling local air quality breaches;

4 Development and Implementation of BCKLWN AQAP

4.1 Consultation and Stakeholder Engagement

In updating this AQAP we have worked with other local authorities, agencies, businesses and the local community to improve local air quality. Schedule 11 of the Environment Act 1995 requires local authorities to consult the bodies as listed in Table 4.1.

In addition, we will undertake a public consultation of the draft AQAP through the council's website, social media plus also hold drop-in workshops at King's Lynn and Gaywood libraries.

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

Table 4. 1– Consultation Undertaken

Yes/No	Consultee
Yes	Secretary of State
No [a]	Environment Agency
Yes	Norfolk County Council (local Highways Authority, Public Health)
No[b]	National Highways Authority
Yes	all neighbouring local authorities
Yes	bodies representing local business interests and other organisations as appropriate;

(a) Note: Source apportionment study of the AQMA's did not show any permitted activities that are regulated by the Environment Agency as contributing to NOx emissions in the AQMAs.

(b) HA are not affected by the Measures.

4.2 Steering Group

Governance of the AQAP comprises the following sections with responsibilities as set out below. Updates to transport related measures can be reported though the KLATS group:

a) Overall responsibility for the AQAP:

Environmental Quality, BCKLWN

b) Directorship:

Environment & Planning, BCKLWN

c) Corporate Senior Management Team:

Borough Council of King's Lynn and West Norfolk

d) Cabinet Member

Environment (Air Quality Strategy) portfolio holder

e) West Norfolk Transport Infrastructure Steering Group

Joint Member Steer (BCKLWN / Norfolk CC)

f) King's Lynn Area Transport Strategy Group (KLATS)

Joint working group between BCKLWN & Norfolk CC and relevant advisers

g) Public Health

Norfolk CC, Public Health, Community and Environmental Services

h) Local Highways Authority

Norfolk CC

5. AQAP Measures

Table 5.1 shows the BCKLWN AQAP measures. It contains:

- a list of the actions that form part of the plan.
- the responsible individual and departments/organisations who will deliver this action.
- estimated cost of implementing each action (overall cost and cost to the local authority)
- expected benefit in terms of pollutant emission and/or concentration reduction based on NOx:
    - **Low** – Action focussed on a small proportion of NOx.
    - **Medium** – Action focussed on a measure with the potential to have more significant impact on NOx emissions than those shown as low.
- the timescale for implementation
- how progress will be monitored

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

Table 5.1: Air Quality Action Plan Measures:

Priority & Measure No.	Measure	Category	Classification	Estimated Year of Introduction	Estimated Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Target Reduction in Pollutant / Emission from Measure	KPI	Progress to Date	Comments / Potential Barriers to Implementation
1.1	Improve active travel promotion to schools	Promoting Travel Alternatives	School Travel Plans	2024	On-going	NCC Schools	NCC	No	Partially Funded	Unknown - TBC	Planning	NO2 / PM2.5 - Low	No. of Schools with active travel plan measures.	Measure being planned.	There are c.7 schools that link to the Gaywood Clock AQMA junction making a mode shift towards more sustainable travel options a priority. School travel plans have been previously successful, but support has since stopped leaving schools to manage. NCC to offer some options to help enable active travel including school streets (timed road closures), primary school bike/walk/scoot (BWS) project etc.
1.2	Review and update the BCKLWN Travel Plan	Promoting Travel Alternatives	Workplace Travel Planning	2024	On-going	BCKLWN Sustrans	BCKLWN	No	Funded	Unknown - TBC	Planning	NO2 / PM2.5 - Low	Outcome(s) to be agreed from adopted / active TP	TP is being developed as part of post Covid Recovery Plan	Council's corporate green travel plan forms part of Climate Change Strategy. Actions focus on raising awareness of the benefits of active travel to work, removing barriers and implementing a cycle to work scheme. Surveys will monitor progress. To progress business travel (non-grey fleet). Council lease cars, including Mayors' are already PHEV / BPHEV.
1.3	Development of other workplace / business travel plans	Promoting Travel Alternatives	Encourage / Facilitate home working	2024	On-going	BCKL-WN Private business	A&CC Town Deal project	No	Partially Funded	£50k - £100k	Planning	NO2 / PM2.5 - Low	No. of Business TP's signed-up	Working with 6 companies	BCKLWN to work with a number of businesses to help implement workplace travel plans but also to assess any barriers to implementation. Outcomes include identification of prime locations for E-bike/Scooter or Travel Hubs.
1.4	Development of Active Travel Hubs	Transport Planning and Infrastructure	Intensive active travel campaign & infrastructure	2024	On-going	BCKLWN NCC	A&CC Town Deal project	No	Partially Funded	£1m - £10m	Planning	NO2 / PM2.5 - Low	No. of Active Travel Hubs	2 Active Travel Hubs to be delivered	Phase-1 comprises the Nar Ouse Enterprise Zone in South King's Lynn (50 space carpark, 6 EV charge points, secure cycle provisions and bus lay-by with potential for development on neighbouring site). Phase-2 comprises a travel hub within the existing Baker Lane Carpark with additional secure cycling provisions.

1.5	Implement the local cycling and walking infrastructure plan (LCWIP)	Promoting Travel Alternatives	Intensive active travel campaign & infrastructure	2024	On-going	NCC BCKLWN	A&CC Town Deal project	No	Partially Funded	£1m - £10m	Planning	NO2 / PM2.5 - Low	Extent of Infrastructure / No. of LCWIP schemes.	Medium - term completion 2023-30 KLATS	LCWIP Measures have gone out to public consultation in Feb 2022. LCWIP is to provide better N-S and E-W connectivity and improved access to rail and bus stations. Some of these measures are funded (£3m) through the Active & Clean Connectivity Plan (A&CC); others require external funding.
1.6	Support Use of West Lynn Ferry	Promoting Travel Alternatives	Promote use of rail and inland waterways	2024	On-going	BCKLWN NCC	TBC based on successful business case	No	Not Funded	Unknown - TBC	Planning	NO2 / PM2.5 - Low	Continued operation of Ferry Service with funding where necessary to support	Feasibility study funded.	Provide enhanced & safe access to the West Lynn Ferry throughout the day / year to provide a more usable service. KLWN and NCC jointly funded feasibility study into ferry infrastructure improvements
2.1	Work with Norfolk County Council to help deliver their Bus Service Improvement Plan (BSIP)	Transport Planning and Infrastructure	Public transport improvements- interchanges stations and services	2024	On-going	NCC BCKLWN Bus Operators	DfT Bus Back Better	No	Partially Funded	Unknown - TBC	Planning	NO2 / PM2.5 Low - Medium	TBC	Funding secured	NCC has a Bus Service Improvement Plan (BSIP) under the governments Bus Back Better (BBB) initiative. A range of infrastructure and support measures have been identified that have DfT funding.
2.2	Help to deliver the roll out of low NOx buses in King's Lynn	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	2024	On-going	NCC BCKLWN Bus Operators	TBC based on successful business case	No	Not Funded	Unknown - TBC	Planning	NO2 / PM2.5 - Medium	TBC	TBC	Following review of NO2 source apportionment study in 2017 by Bureau Veritas it showed buses account for almost half of road NOx from cars but are a fraction of the total number within the AQMA's. Securing low NOx buses will help to reduce any disproportionate effect
3.1	Review changes to the road system within the King's Lynn Town Centre gyratory system (Railway Rd AQMA).	Traffic Management	UTC, Congestion management, traffic reduction	2024	2030 (Medium Term Plan)	NCC BCKLWN	NCC Levelling Up Fund	No	Partially Funded	£1m - £10m	Planning	Reduction in NO2/PM2.5 is dependent on AQ Modelling against preferred option(s)	Continued NO_2 monitoring, with aim for downward trends	Plans at high level. Estimated cost £5.5m	Highest concentration of NO_2 in King's Lynn occurs along Railway Rd within the Gyratory System of the Town Centre. Plan is to redesign the gyratory system with improved cycle and walking as needed for the town centre and a re-routing of buses. AQ modelling of options forms part of the business plan. A joint KLWN/NCC governance structure has been set up to take the project forward. Project team includes professional advisers WSP and BDP and includes key stakeholders like Historic England

3.2	Review traffic related changes as part of the Southgates Masterplan	Traffic Management	UTC, Congestion management, traffic reduction	LTP4 Medium Term Scheme 2024	LTP4 Medium Term Scheme 2030	NCC BCKLWN	NCC Levelling Up Fund	No	Partially Funded	> £10m	Planning	Reduction in NO2/PM2.5 is dependent on AQ Modelling against preferred option(s)	Continued NO_2 monitoring, with aim for downward trends	Plans at high level. Estimated cost £21m	A joint KLWN/NCC governance structure has been set up to take the project forwards. Project team includes professional advisers WSP and BDP and includes key stakeholders like Historic England..
3.3	Develop and implement a comprehensive Car-Parking Strategy for King's Lynn	Traffic Management	UTC, Congestion management, traffic reduction	LTP4 Short Term Scheme 2024	On-going	BCKLWN NCC	BCKLWN	No	Funded	Unknown - TBC	Planning	NO2 / PM2.5 - Low	TBC	Draft Strategy	Air quality matters are to be considered within draft car parking strategy.
3.4	Review measures to improve traffic flows through Gaywood Clock AQMA.	Traffic Management	UTC, Congestion management, traffic reduction	LTP4 Medium Term Scheme 2024	LTP4 Medium Term Scheme 2030	NCC BCKLWN	LTP	No	Funded	Unknown - TBC	Planning	NO2 / PM2.5 - Low	Optimise queue lengths at Gaywood Clock junction	LTP4	Air Quality Management Area to be reviewed as per ASR 2023. Levels in the Gaywood Clock AQMA have been below the NO2 annual mean objective for more than 5 years.
4.1	To consider air quality from new developments and secure mitigation	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Revised procedure 2022	On-going	BCKLWN	Developer	No	Partially Funded	£100k - £500k	Implementation	Aim is to achieve reduction in NO2/PM2.5 ALARP	No of planning application considered per year	On-going	Measure previously targeted applications within or adjacent to AQMA. In practice any development of potential material concern for air quality is within scope. Planning procedure ensures that effective mitigation is secured from each development in accordance with best practice IAQM guidance. The procedure is kept up to date with best practice examples with reference to AQ Hub. Potential barrier to successful implementation can be the acceptance of health damage costs from NO2 and PM2.5 when negligible impacts are predicted.
5.1	Promote behaviour change from individuals and employers	Public Information	Via the Internet	2024	On-going	NCC Public Health BCKLWN	NCC	No	Partially Funded	Unknown - TBC	Implementation	NO2 / PM2.5 - Low	Increased awareness	Unknown	Engage the public through a behaviour change programme, including the use of social media to be more aware of taking personal responsibility for reducing air pollution through a number of measures (anti-idling, working with schools, Clean Air Day, Defra Burn Better, Breathe Better and indoor AQ).

5.2	Improve Public Awareness (Air Quality Monitoring and Information)	Public Information	Via the Internet	2024	On-going	NCC Public Health BCKLWN	BCKLWN	No	Partially Funded	Unknown - TBC	Implementation	NO2 / PM2.5 - Low	Increased Awareness of Air Quality	Draft Strategy	Raising public awareness is recognised as an important function of the air quality work of which improved air quality monitoring forms part. To investigate options to raise public awareness of air quality in light of changing public health context as informed by improved AQ monitoring and information systems.
6.1	To develop an Air Quality Project to review the impact of PM10 and PM2.5 across the district.	Public Information	Via the Internet	2024	On-going	NCC Public Health BCKLWN	DEFRA BCKLWN NCC	Yes	Funded	Unknown - TBC	Planning	NO2 / PM2.5 - Low	Completion of project		Develop a project to review, monitor and reduce levels of PM10 & PM2.5. To work with Public Health and any others in defining the role.

Appendix A: Response to Consultation

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

Consultee	Category	Response
TBC	TBC	TBC

Appendix B: Reasons for Not Pursuing Action Plan Measures

Table B.1 Action Plan Measures Not Pursued and the Reasons for that Decision:

Action category	Action description	Reason action is not being pursued (including Stakeholder views)
Measure No.2	With regard to National Planning Policy Framework, include air quality considerations in the Local Plans and adopt an air quality Development Management Policy.	Air quality policy is adopted through policies DM-11 and CS-11. Emerging local plan is to adopt DM-11 and CS-11 into new policies (LP-21 and LP-13). Local plans consider air quality.
Measure No.3	With regard to National Planning Policy Framework, adopt Norfolk Technical Guidance on Air Quality and provide pre-application advice on planning applications	Aim was to refer to development control guidance produced locally through Norfolk AQ group. The measure is not being pursued as the local guidance document has since been superseded by the updated IAQM (2017) guidance on development control.
Measure No.5	New access road (Hardings Way).	Measure included option to open Hardings Way to some additional vehicles that would otherwise travel along the London Rd and through the AQMA. This measure is not being pursued following completion of a feasibility study completed by WSP in 2020 that concluded it would not be a viable option to open the road to general through traffic. The route still provides essential bus / accessible vehicle only route and forms part of NCN No.1 (a priority route in the LCWIP). It is popular for walking / cycling. Changing the use would be considered retrograde and against national policy of supporting public transport, walking and cycling.
Measures No.7 and No.8	Implementation of Urban Traffic Control system (UTC) at principal junctions within AQMA and adjacent to AQMA	Aim of the measure was to reduce emissions within the AQMA from stop/start driving through improved traffic light / detection systems. The measure is not being pursued as an additional specific intervention as both the UTC and also Selective Vehicle Detection Systems have been implemented.

		Traffic control systems will form part of revised traffic management measures (Nos.3.1 and 3.2) and therefore not necessary to have stand-alone measure.
Measure No.9	Decriminalisation of parking. Review of parking controls and enforcement in AQMAs and King's Lynn Town Centre (Linked to 4, 10, 11 & 12)	Measure consolidated into Measure No.3.3 (To Develop Comprehensive Car Parking Strategy for King's Lynn).
Measure No.10	Variable car parking rates (Linked to 4, 9, 11 & 12)	Measure consolidated into Measure No.3.3 (To Develop Comprehensive Car Parking Strategy for King's Lynn).
Measure No.11	Variable message signs (Linked to 4, 9, 10 & 12)	Measure has been completed with real-time parking signs to direct people to where spaces are located.
Measure No.12	Investigate potential for residents only parking in or close to AQMAs (Linked to 4, 9, 10 & 11)	Measure consolidated into Measure No.3.3 (To Develop Comprehensive Car Parking Strategy for King's Lynn).

Appendix C:

Figure C.1: Map of Railway Rd AQMA and location of monitoring sites

Figure C.2: Map of Gaywood Clock AQMA and location of monitoring sites

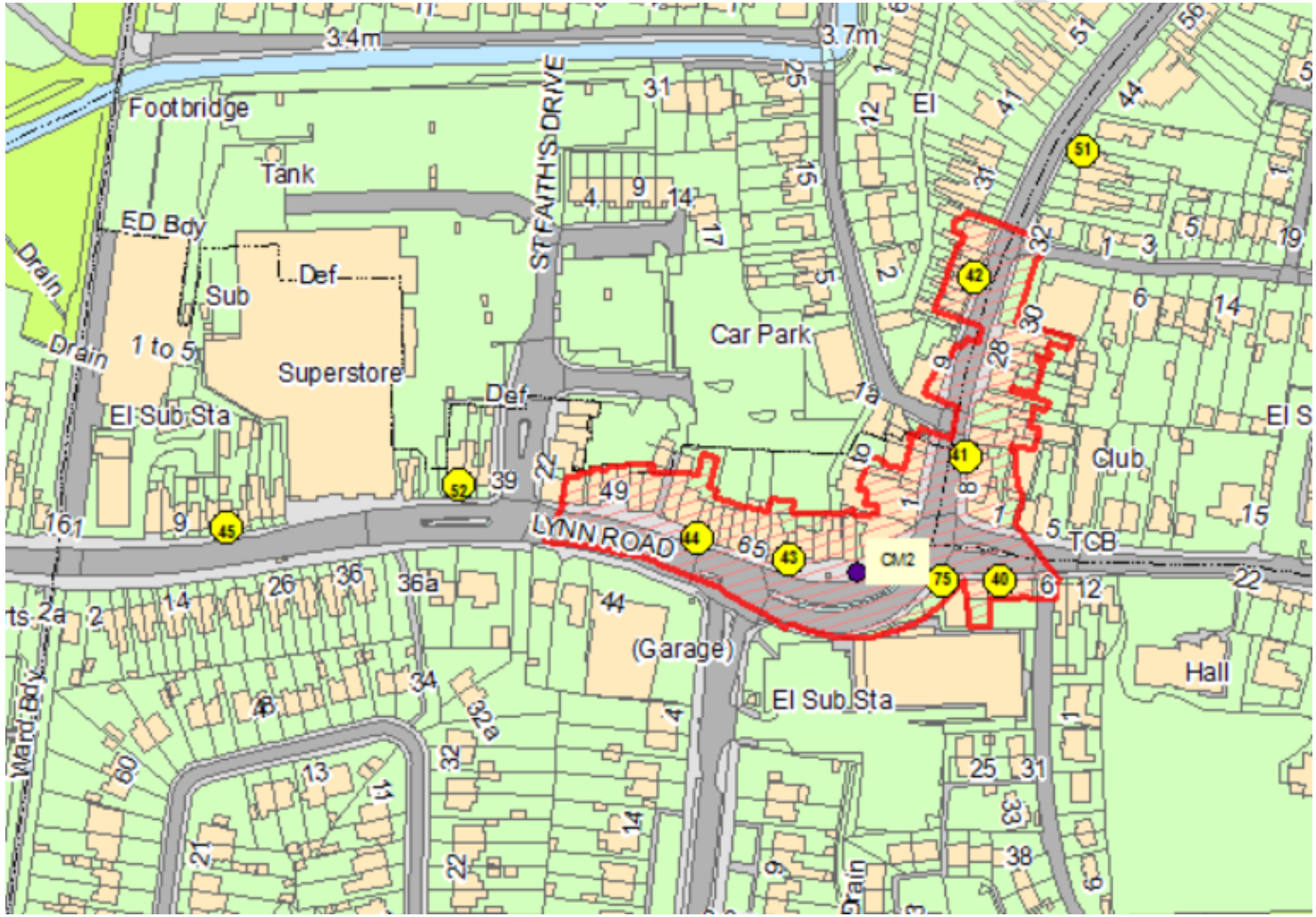


Figure C.3: Spatial Distribution of NO2 (annual mean ug/m^3) around Railway Rd AQMA

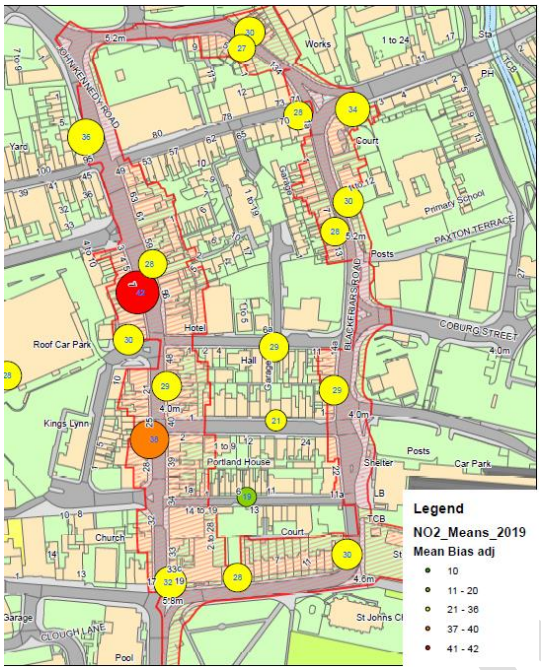


Figure C.4: Spatial Distribution of NO2 (annual mean ug/m^3) around southern section of the Railway Rd AQMA

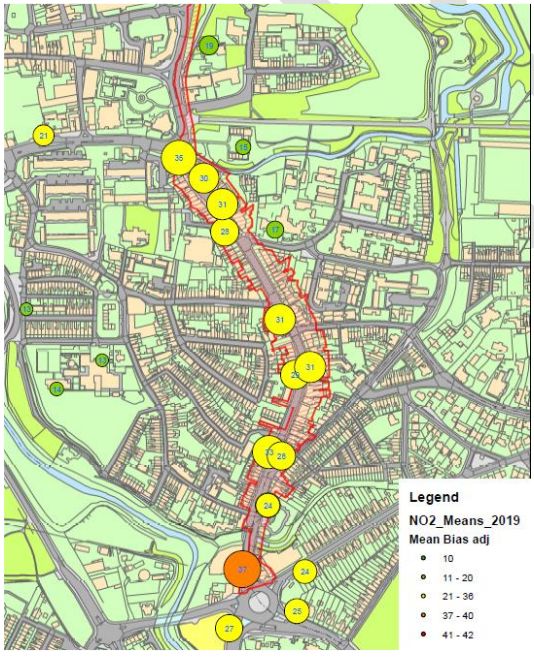


Figure C.5: Location of Gaywood Clock AQMA and spatial distribution by diffusion tube results (as 2019 annual mean µg/m^3).

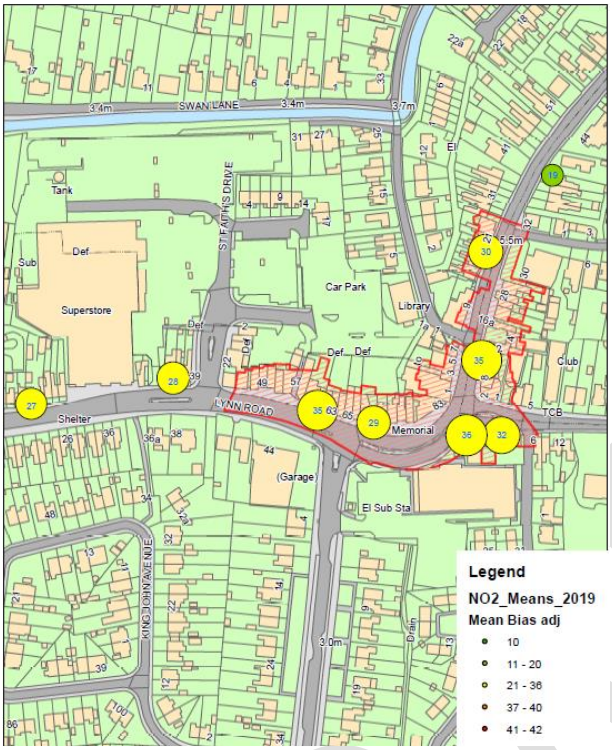


Figure C.6; NO2 Trends in NO2 annual mean (µg/m3) around Railway Rd AQMA;

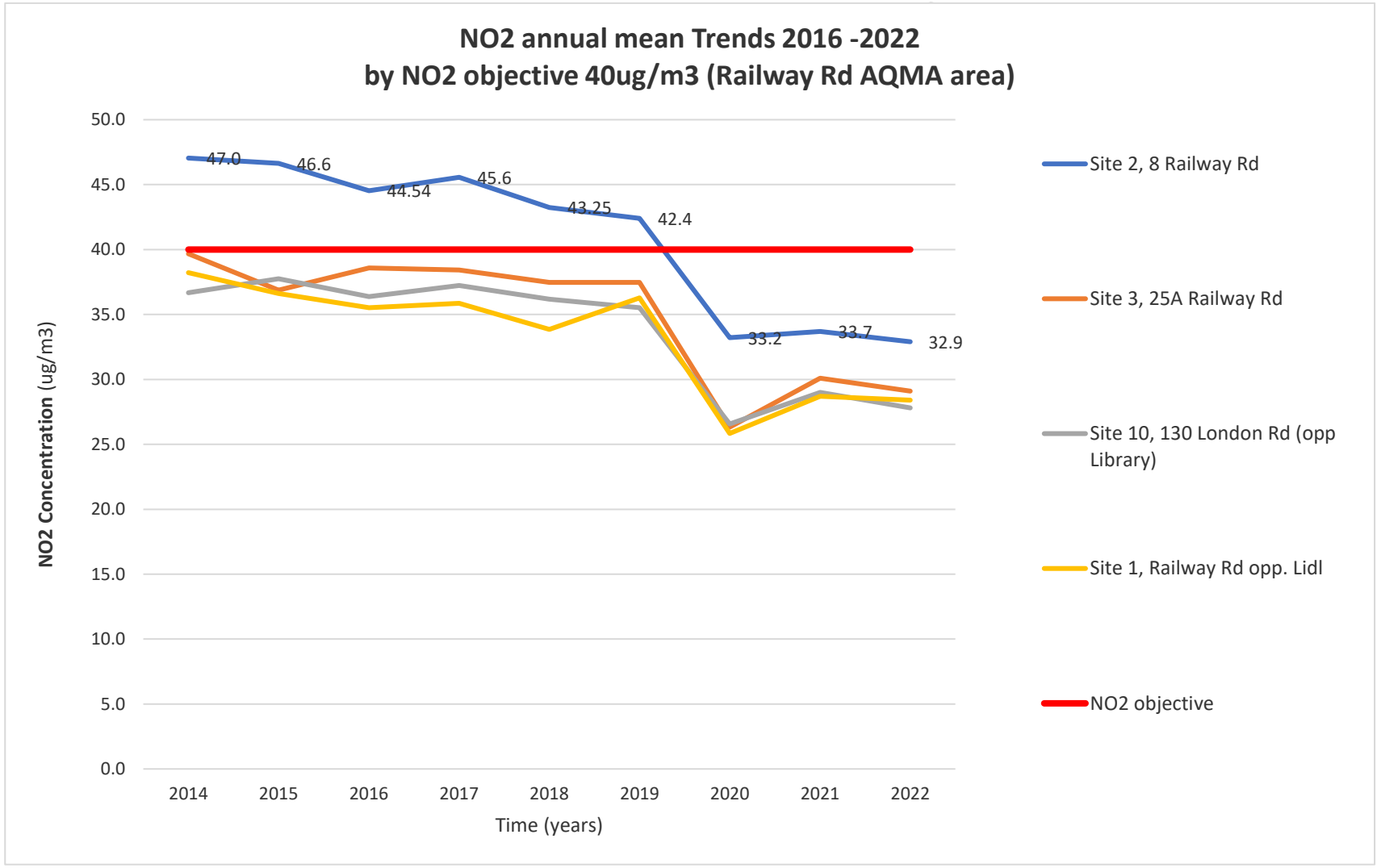
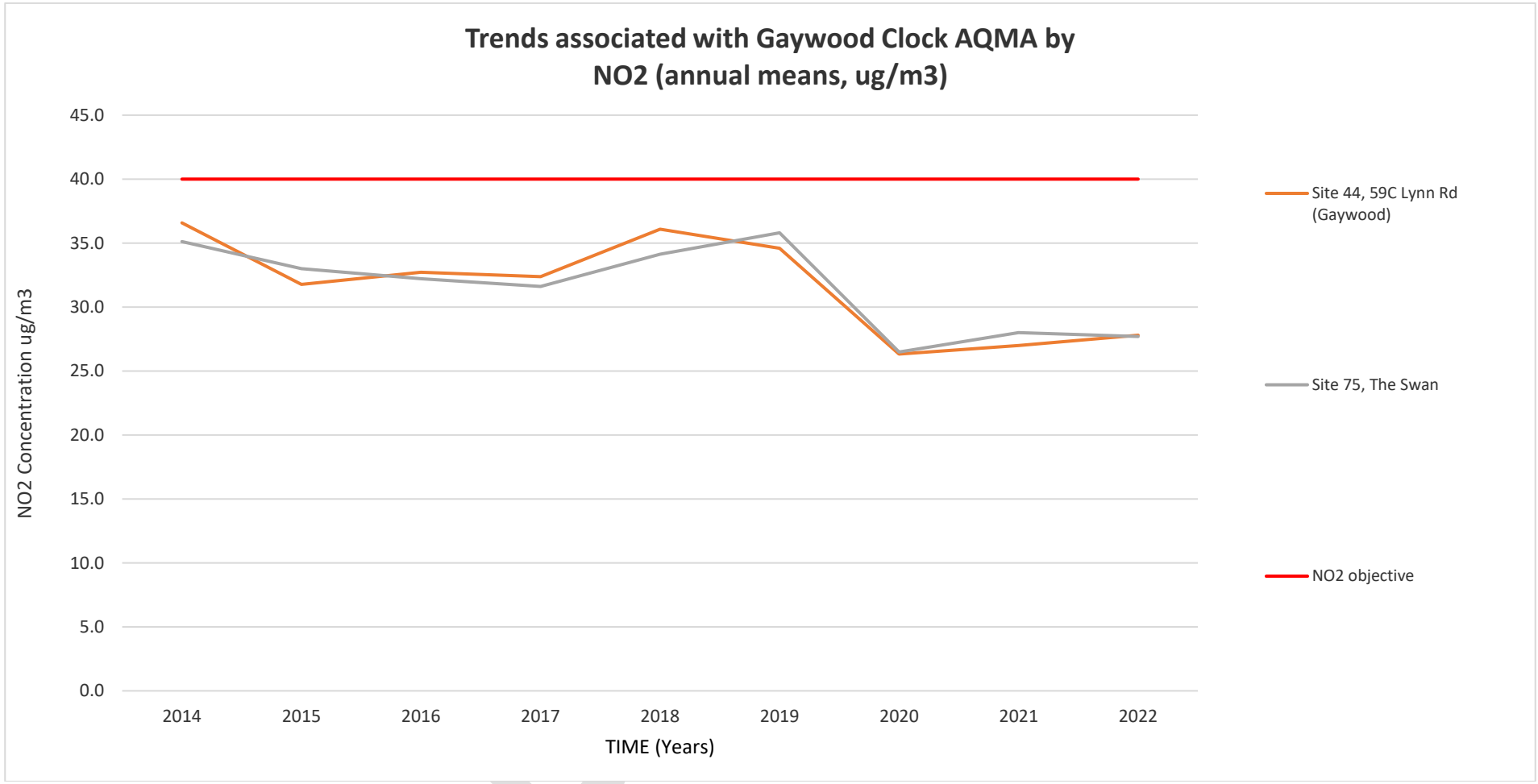


Figure C.7: NO2 Trends in NO2 annual mean (µg/m3) around Gaywood Clock AQMA;



Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
AQS	Air Quality Strategy
ASR	Annual Status Report
BCKLWN	Borough Council of King's Lynn and West Norfolk
BSIP	Bus Service Improvement Plan
Defra	Department for Environment, Food and Rural Affairs
EV	Electric Vehicle charging
EU	European Union
LAQM	Local Air Quality Management
LCWIP	Local Cycling and Walking Infrastructure Plan
NPPF	National Planning Policy Framework
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
PHOF	Public Health Outcomes Framework
SAP	Standard Assessment Procedure