2025 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: July 2025

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Report Reference Number	EEBC_ASR_2025
Date	July 2025
Annex 1 – Proposal for revocation of Ewell High Street Air Quality Management Area	Prepared by Becca Richards, Apprentice Environmental Health Officer

Local Responsibilities and Commitment

This ASR was prepared by the Environmental Health Service of Epsom & Ewell Borough Council with the support and agreement of the Climate Change Officer.

This ASR has been approved by the Chair of the Council's Environment Committee.

On behalf of the Surrey County Council Director of Public Health, the Public Health team work closely with Surrey Air Alliance including District and Borough Council partners responsible for submitting Annual Statement Reports (ASR) on air quality within their area; to develop initiatives and implement actions to improve air quality across the county of Surrey, through collaboration and consultation.

If you have any comments on this ASR please send them to the Council via its email address contactus@epsom-ewell.gov.uk.

Executive Summary: Air Quality in Our Area

Epsom & Ewell in Surrey is one of the UK's smallest districts at only 34km^2, much of which is open green space, with a local population of 81,000, as per the 2021 Census. Bordered by Reigate & Banstead and Mole Valley, Greater London's Kingston upon Thames and Sutton districts and the borough is located within the M25. Historically Epsom is known for its horse racing, which continues today at Epsom Downs Racecourse; as the origin of Epsom Salts, and was more generally a market town with links to London, Dorking and Guildford. Today the towns of Epsom and Ewell and their surrounding areas are considered commuter belt, with direct train links to central London. Epsom being the last station traveling Southwest out of London, towards Guildford and Dorking, to be included in Transport for London's (TfL) Oyster Card scheme, as well as being part of several TfL bus routes. In August 2023 Greater London's Ultra Low Emission Zone (ULEZ) was expanded to follow Epsom & Ewell's Northern edge, bordering 8 of the 13 wards that make up the borough. The borough is predominantly residential with no large-scale manufacturing or agriculture. Because of this, locally, air pollution is predominantly associated with emissions from road transport and residential emissions.

Air Quality in Epsom & Ewell

Breathing in polluted air affects our health and costs the NHS and our society billions of pounds each year. Air pollution is recognised as a contributing factor in the onset of heart disease and cancer and can cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in hospital admissions and mortality.

Air pollution particularly affects the most vulnerable in society, children, the elderly, and those with existing heart and lung conditions. Low-income communities are also disproportionately impacted by poor air quality, exacerbating health and social inequalities.

Table ES 1 provides a brief explanation of the key pollutants relevant to Local Air Quality Management and the kind of activities they might arise from.

Table ES 1 - Description of Key Pollutants

Pollutant	Description
Nitrogen Dioxide (NO_2)	Nitrogen dioxide is a gas which is generally emitted from high-temperature combustion processes such as road transport or energy generation.
Sulphur Dioxide (SO_2)	Sulphur dioxide (SO_2) is a corrosive gas which is predominantly produced from the combustion of coal or crude oil.
Particulate Matter (PM_{10} and $PM_{2.5}$)	Particulate matter is everything in the air that is not a gas. Particles can come from natural sources such as pollen, as well as human made sources such as smoke from fires, emissions from industry and dust from tyres and brakes. PM_{10} refers to particles under 10 micrometres. Fine particulate matter or $PM_{2.5}$ are particles under 2.5 micrometres.

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 Plan sets out actions that drive continued improvements to air quality and to meet the new national interim and long-term targets for fine particulate matter (PM2.5), the pollutant most harmful to human health. The Air Quality Strategy[1] provides more information on local authorities' responsibilities to work towards these new targets and reduce fine particulate matter in their areas. The Road to Zero[2] details the Government's approach to reduce exhaust emissions from road transport through a number of mechanisms, in balance with the needs of the local community. This is extremely important given that cars are the most popular mode of personal travel, and the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions. Epsom & Ewell Borough Council consider air quality as a portion of the wider issue of climate change and have taken a wide holistic approach on the improvement of air quality locally, aiming to reduce emissions both locally and from national grid energy generation. In 2020 the Council set

[1] Air quality strategy: framework for local authority delivery - GOV.UK

[2] Reducing emissions from road transport: Road to Zero Strategy - GOV.UK

the ambitious target to reduce the Council's own emissions to carbon neutral by 2035 and has to date successfully reduced operational carbon emissions by 14% since 2019.

In 2024 the Council consulted on and adopted its second Climate Change Action Plan with 52 measures to continue to address carbon emissions and air quality both directly and indirectly.

Epsom & Ewell Borough Council is a member of Surrey Air Alliance, a partnership that works across the 11 Surrey borough and district councils and Surrey County Council, to work as a unified group tackling air quality across the county, supporting awareness and education campaigns and engagement with local transport, education, and healthcare.

Annually the Council has also promoted Clean Air Night via social media, part of the public information campaign led by Global Action Plan centred around domestic burning and the Air Quality (Domestic Solid Fuels Standards) Regulations 2020.

Conclusions and Priorities

Owing to its suburban location, Epsom & Ewell Borough Council has historically focussed on nitrogen dioxide reduction arising mainly from road transport. Measured levels of NO_2 in the borough have been declining for a decade, with 2024 recording no locations in which the annual objective for NO_2 was exceeded. The Council had obtained permission from DEFRA to delay the submission of any fresh action plan in respect of the 2007 Ewell High Street AQMA to allow data from three non-covid affected years to be obtained. The data from between 2020 and 2024 robustly demonstrates the actions within this location have been successful in improving air quality to the degree the Council now proposes to revoke this AQMA and so will not be completing a new action plan. To support this proposal, detailed analysis of the position within this AQMA is set out in appendix 1 to this report.

There were no new developments in 2023 which would have had a significant impact on air quality.

How to get Involved

There are several volunteer action groups in the borough that the Council engage with to support wider improvement, such as Sustainable Epsom & Ewell, the Epsom & Ewell Cycling Action Group and the Epsom Common Association. Epsom & Ewell Borough Council regularly updates its climate change and air quality webpages showing all the

actions the Council has taken and provides guidance and signposting for residents who want to take action themselves. The Council's full Climate Change Action Plan is also accessible through the Council website.

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1 Local Air Quality Management

This report provides an overview of air quality in Epsom and Ewell during 2024. 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 Epsom & Ewell Borough Council 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.

A summary of AQMAs declared by Epsom & Ewell Borough Council can be found in Table . The table presents a description of the AQMA that is currently designated within the borough.

Appendix D: Map(s) of Monitoring Locations and AQMAs provides maps of the AQMA and also the air quality monitoring locations in relation to the AQMA. The air quality objective pertinent to the current AQMA designation is the NO_2 annual mean.

Monitoring within the AQMA has been continuous since its declaration in 2007 and has shown an overall improvement. Having collected three non-covid affected years' worth of data, we now propose to revoke the Ewell High Street Air Quality Management Area.

Table 1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Number of Years Compliant with Air Quality Objective	Name and Date of AQAP Publication	Web Link to AQAP
Ewell High Street Air Quality Management Area	09/07/2007	NO_2 Annual Mean	An area encompassing the section of High Street, Ewell from the junction with Spring Street to the junction with Cheam Road and continues a further 30 metres south on High Street Ewell	NO	63	26.1	4	Ewell High Street Air Quality Action Plan 2010	http://aqma.defra.gov.uk/action-plans/EEBC%20AQAP.pdf

☒ **Epsom & Ewell Borough Council confirm the information on UK-Air regarding their AQMA(s) is up to date**

☒ **Epsom & Ewell Borough Council confirm that all current AQAPs have been submitted to Defra**

2.2 Progress and Impact of Measures to address Air Quality in Epsom & Ewell

Defra's appraisal of last year's ASR acknowledged the improvement in air quality with all monitoring data reflecting a decrease in NO_2 levels across the borough, and the significant progress in reducing its carbon footprint. It welcomed the Council's commitment to consider revocation of the existing AQMA after the 2024 dataset was analysed.

Comments were received about the formatting of the maps included in the appendices and the desirability of showing a screenshot of the bias adjustment tool.

Additionally, DEFRA indicated that whilst modelling results for $PM_{2.5}$ was well-explained, there was a lack of detail around the specific measures being implemented to address concentrations of this pollutant. The Council has historically relied on existing NO2 and generic measures to address particulate concentrations as well as actions being delivered on a regional and national basis. However, it is clear that this is an area which, now NO_2 levels are in a sustained downward trend, is in need of momentum. This will be shaped by the Council's approach to a proposed further modelling exercise expected in 2026/2027 and any air quality strategy the Council must adopt following revocation of the single AQMA in its area. As far as possible however, the current approach to particulates is set out in this 2025 Annual Status Report.

Epsom & Ewell Borough Council has historically taken forward a number of direct measures during in pursuit of improving local air quality. Details of all measures completed are set out in Table .

More detail on these measures can be found in the Action Plan created during the early life of the AQMA. Key completed measures were:

- Removal of the formally marked parking bays from 53 to 67 High Street, Ewell
- Widening the road at 76 to 62 High Street, Ewell
- Alter the junction of Cheam Road . High Street, Ewell

Epsom & Ewell Borough Council concludes that the measures stated above and in Table have achieved compliance in the Ewell High Street AQMA and therefore proposes to revoke the declaration.

Table 2 – Progress on Measures to Improve Air Quality

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	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	Remove the formally marked parking bays from 53 to 67 High Street, Ewell	Transport, Planning and Infrastructure	Other	Jun-14	2015	Surrey County Council	Surrey County Council	NO	Funded	<£10k	Completed	5 µg/m3	Complete Y/N	Completed	Historic AQMA area actions
2	Widen the road at 76 to 62 High Street, Ewell	Transport, Planning and Infrastructure	Other	Jun-14	2015	Surrey County Council	Surrey County Council	NO	Funded	£10k - £50k	Completed	5 µg/m3	Complete Y/N	Completed	Historic AQMA area actions
3	Remove on-street car parking on Church Street junction, Ewell	Transport, Planning and Infrastructure	Other	-	2015	Surrey County Council	Surrey County Council	NO	Funded	<£10k	Completed	5 µg/m3	Complete Y/N	Completed	Historic AQMA area actions
4	Alter the junction of Cheam Road . High Street, Ewell	Transport, Planning and Infrastructure	Other	2015	2015	Surrey County Council	Surrey County Council	NO	Funded	£50k - £100k	Completed	5 µg/m3	Complete Y/N	Completed	Historic AQMA area actions
5	Place restrictions on delivery times and stopping on Hight Street, Ewell between Cheam Road and Spring Street junctions	Traffic Management	Workplace parking levy, Parking enforcement on highway	2015	2015	Epsom & Ewell Borough Council	Epsom & Ewell Borough Council	NO	Funded	<£10k	Completed	-	-	Completed	Historic AQMA area actions
6	Social media local engagement (Eg. Clean Air Night)	Public Information	Via Internet	-	Ongoing	Epsom & Ewell Borough Council, Surrey County Council, Surrey Air Alliance, Global Action Plan	Epsom & Ewell Borough Council, Surrey County Council	NO	Ongoing funding	<£10k	Ongoing	-	-	Ongoing	
7	Anti-Idling policy and enforcement	Traffic Management	Parking enforcement on highway	2022	Ongoing	Epsom & Ewell Borough Council	Epsom & Ewell Borough Council	NO	Funded	<£10k	Ongoing	NO_2	-	Ongoing	
8	Taxi Licencing emissions Policy	Vehicle Fleet Efficiency	Other	2022	Ongoing	Epsom & Ewell Borough Council	Epsom & Ewell Borough Council	NO	Funded	<£10k	Ongoing	NO_2	Taxi licencing uptake of incentives for low emissions vehicles	Ongoing	
9	Installing Photovoltaic (PV) cells to Council Owned Properties	Promoting Low Emission Plant	Shift to installations using low emissions fuels for stationary and mobile sources	2023	Ongoing	Epsom & Ewell Borough Council	Epsom & Ewell Borough Council	NO	Ongoing funding	£50k - £100k	Ongoing	-	Completed installation of PV cells to properties owned by the Council	Solar panels installed at Operational Depot. 90 PV solar panels installed on Epsom Play House	PV panels estimated to save 40+ tonnes of carbon a year
10	EEBC Fleet upgrade	Vehicle Fleet Efficiency / Promoting Low Emission Transport	Other / Company Vehicle Procurement – Prioritising uptake of	2023	Ongoing	Epsom & Ewell Borough Council	Epsom & Ewell Borough Council	NO	Ongoing funding	£50k - £100k+	Ongoing	-	Replacement of EEBC fleet vehicles with	Staff pool car electric replacement, 3 Meals-on-Wheels	Currently large fleet vehicles (HGVs) cannot be

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	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
			low emission vehicles										electric or hybrid equivalent	vans electric replacement	affordably/efficiently replaced
11	Planning policy related to climate change updates	Policy Guidance and Development Control	Other	2023	Ongoing	Epsom & Ewell Borough Council	Epsom & Ewell Borough Council	NO	Funded	<£10k	Ongoing	-	Planning applications for climate change related technology – e.g. ASHPs, photovoltaic panels, residential electric car chargers	Ongoing	Improved awareness of technology and wider climate change has increased planning applications for residential and commercial premises. Planning policy has been updated to support efforts by residents and businesses where appropriate.
12	Housing Grant/ Energy Efficiency Upgrade Support Scheme	Public Information	Other	2023	Ongoing	Epsom & Ewell Borough Council, Citizens Advice Bureau, Action Surrey	Epsom & Ewell Borough Council, Surrey County Council	NO	Funded	<£10k	Ongoing	-	Uptake of housing related grants for residential energy efficiency improvements	Ongoing	Housing officers working with CAB to support residents applying for government grants to improve their homes.
13	Installation of EV charging points in EEBC car parks	Promoting Low Emission Transport	Procuring alternate refuelling infrastructure to promote low emission vehicles, EV recharging, gas fuel recharging	2023	Ongoing	Epsom & Ewell Borough Council, Joju Solar	Epsom & Ewell Borough Council	NO	Ongoing funding	£50k - £100k	Ongoing	-	Installation of EV charging points	16 Installed charging points in EEBC owned car parks	Continual review of EV charging point usage and consideration of additional sites.
14	Installation of on street EV charging points	Promoting Low Emission Transport	Procuring alternate refuelling infrastructure to promote low emission vehicles, EV recharging, gas fuel recharging	2023	Ongoing	Epsom & Ewell Borough Council, Surrey County Council	Epsom & Ewell Borough Council, Surrey County Council	NO	Ongoing funding	£50k - £100k	Ongoing		Installation of on street EV charging points	10 Installed on street charging points	Continual review of EV charging point usage and consideration of addition sites.

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

As detailed in Policy Guidance LAQM.PG22 (Chapter 8) and the Air Quality Strategy[3], local authorities are expected to work towards reducing emissions and/or concentrations of fine particulate matter ($PM_{2.5}$). There is clear evidence that $PM_{2.5}$ (particulate matter smaller 2.5 micrometres) has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Epsom & Ewell Borough Council considers that the regional issue of particulate exposure is considerably more difficult for an individual local authority than the problem of roadside emissions of NO_2. This is reflected in the approach which places targets not on local government but on the national administration. Nevertheless, the Council recognises it has a role to play in limiting emissions of, and exposure to, fine particulates. Those measures identified in its action plan for the Ewell High Street AQMA and those more recent actions in respect of carbon reduction and energy efficiency contribute to particulate reduction locally, regionally and nationally.

Nationally derived background concentrations for the Epsom & Ewell Area[4] indicate that 5.6 percent of deaths per year are attributable to particulate air pollution compared with an England average of 5.2, both as at year 2023. This would indicate that there is a position whereby a fraction of mortality within the Epsom & Ewell area is being contributed to by particulate emissions and is reflected on the modelled background levels of 7.5 µg/m^3 compared with and England average of 7.0 µg/m^3. Although this is within the national objective of 10 µg/m^3, the council recognises:

- the scientific evidence that there is no safe level and that the World Health Organisation's recommended maximum exposure is 5 µg/m^3.
- The modelled levels outlined above are drawn from an averaged methodology and cannot resolve any very local hotspots, for example domestic solid fuel burning, nor seasonal variations.

[3] Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

[4] Fingertips | Department of Health and Social Care

Previous source apportionment work carried out as part of air quality dispersion modelling[5] demonstrated that the majority source of fine particulates is external to the borough emphasising the need to co-operate regionally.

However, despite the limitations in what can realistically be achieved by the Council alone, the Council participates in national clear air day through promotion and through its links with the Surrey Air Alliance has produced a video which will be promoted during the 2025 – 2026 time period highlighting ways for residents to limit particulate emissions from domestic sources. The Council's stance in respect of further measures will be set out in any future air quality strategy produced as a consequence of revoking the AQMA.

[5] Epsom & Ewell Borough Council 2020 Air Quality Annual Status Report

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

This section sets out the monitoring undertaken within 2024 by Epsom & Ewell Borough Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2020 and 2024 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Epsom & Ewell Borough Council did not operate any automatic monitoring sites in 2024.

3.1.2 Non-Automatic Monitoring Sites

Epsom & Ewell Borough Council undertook non- automatic (i.e. passive) monitoring of NO_2 at 25 sites during 2024. Table A. 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 (NO_2)

Error! Reference source not found. and Table A.1 in Appendix A compare the ratified and adjusted monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40µg/m^3. 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).

For diffusion tubes, the full 2024 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values only where relevant.

In 2024, monitoring performed by Epsom & Ewell Borough Council did not show any exceedance of air quality objectives either in the existing AQMA or across the borough as a whole. This is consistent with recent downward trends and it is now considered there is negligible risk of a return to the exceedances seen in previous decades. This represents a significant achievement for the Council and its partners together with the effect of national policies and those of the nearby Greater London region.

3.2.2 Particulate Matter (PM_{10})

Epsom & Ewell Borough Council did not carry out monitoring for particulate matter in 2023.

3.2.3 Particulate Matter ($PM_{2.5}$)

Epsom & Ewell Borough Council did not carry out monitoring for particulate matter in 2023.

3.2.4 Sulphur Dioxide (SO_2)

Epsom & Ewell Borough Council did not carry out monitoring for sulphur dioxide in 2023.

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)
EE1	EE1 The Clock tower-Roadside	Roadside	520732	160762	NO2	No	13.0	2.5	No	2.1
EE3	EE3 26 The Crescent-Background	Urban Background	519293	160026	NO2	No	9.0	2.0	No	2.0
EE6	EE6 Jct Kingston Rd/ Worcester Park Rd-Kerbside	Kerbside	520525	165040	NO2	No	8.2	6.8	No	2.1
EE7	EE7 Jct Ruxley Lane/Kingston Rd-Kerbside	Kerbside	520916	164636	NO2	No	4.2	6.8	No	2.3
EE9	EE9 Chessington Road, Ewell	Roadside	519830	163740	NO2	No	2.4	3.2	No	2.4
EE10	EE10 High Street, Ewell - kerbside	Kerbside	521998	162633	NO2	Yes - Ewell High Street AQMA	0.5	1.3	No	2.1
EE14	EE14 Hook Road Epsom-roadside	Roadside	520885	161308	NO2	No	3.4	1.6	No	2.0
EE16	EE16 Church Street/High Street Ewell	Roadside	522026	162624	NO2	Yes - Ewell High Street AQMA	0.1	1.1	No	1.7

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)
EE17	EE17 40A High Street Ewell	Roadside	522025	162563	NO2	Yes - Ewell High Street AQMA	0.1	2.0	No	2.2
EE22	EE22 High Street, Epsom - roadside	Roadside	520965	160871	NO2	No	3.0	0.5	No	2.3
EE36	EE36 Capitol Square, Church Street	Urban Centre	521069	160817	NO2	No	0.2	9.2	No	2.1
EE37	EE37 British Heart Foundation, High Street	Roadside	520726	160857	NO2	No	0.6	4.5	No	2.4
EE38	EE38 Station approach south	Roadside	520726	160857	NO2	No	0.1	2.8	No	1.8
EE39	EE39 The Parade	Roadside	520844	160729	NO2	No	0.2	3.3	No	2.1
EE42	EE42 High Street/East Street	Roadside	521004	160901	NO2	No	0.0	7.7	No	2.1
EE43	EE43 Kiln Lane	Roadside	521478	161447	NO2	No	0.3	5.5	No	2.3
EE45	EE45 Castle Parade	Roadside	522211	163103	NO2	No	0.4	8.3	No	2.1
EE46	EE46 Waterloo Road	Kerbside	520724	161027	NO2	No	4.6	0.6	No	2.1
EE47	EE47 Chessington Road	Roadside	520713	162968	NO2	No	0.2	4.7	No	1.9
EE48	EE48 Ewell High Street South	Roadside	522022	162502	NO2	Yes - Ewell High Street AQMA	0.4	1.7	No	2.1

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)
EE49	EE49 37 South Street, Epsom	Roadside	520580	160586	NO2	No	0.2	3.5	No	2.2
EE50	EE50 Major Plaice Ewell High Street	Kerbside	521975	162677	NO2	Yes - Ewell High Street AQMA	7.5	0.9	No	2.1
EE51	EE51 Station approach north	Roadside	520702	160872	NO2	No	3.0	3.3	No	1.8
EE52	EE52 77 London Road, Ewell	Roadside	522303	163213	NO2	No	0.5	4.6	No	1.8
EE53	EE53 115 London Road, Ewell	Roadside	522369	163289	NO2	No	0.0	14.5	No	1.8

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.1 – Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg/m^3)

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 2024 (%) (2)	2020	2021	2022	2023	2024
EE1	520732	160762	Roadside	100.0	100.0	23.0	22.2	24.1	19.5	18.2
EE3	519293	160026	Urban Background	100.0	92.5	14.1	13.6	14.0	11.2	10.7
EE6	520525	165040	Kerbside	100.0	90.6	27.8	27.6	28.4	20.4	19.4
EE7	520916	164636	Kerbside	100.0	90.6	28.0	29.7	29.7	22.1	19.3
EE9	519830	163740	Roadside	100.0	92.5	20.6	21.2	22.2	17.4	16.1
EE10	521998	162633	Kerbside	100.0	66.0	**44.0**	32.3	34.9	26.5	26.1
EE14	520885	161308	Roadside	100.0	92.5	20.8	21.5	21.9	17.4	15.1
EE16	522026	162624	Roadside	100.0	100.0	22.4	22.6	23.8	17.9	16.7
EE17	522025	162563	Roadside	100.0	81.1	29.1	26.3	25.7	20.7	18.2
EE22	520965	160871	Roadside	100.0	58.5	31.3	31.5	26.6	24.0	22.5

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 2024 (%) (2)	2020	2021	2022	2023	2024
EE36	521069	160817	Urban Centre	100.0	100.0	19.9	20.6	20.6	17.0	16.3
EE37	520726	160857	Roadside	100.0	84.9	25.4	26.5	28.2	21.9	19.7
EE38	520726	160857	Roadside	100.0	90.6	16.2	17.8	20.0	15.6	15.2
EE39	520844	160729	Roadside	100.0	83.0	21.5	23.0	24.3	19.3	17.7
EE42	521004	160901	Roadside	100.0	66.0	20.1	19.4	19.1	18.5	15.9
EE43	521478	161447	Roadside	100.0	100.0	21.7	22.6	23.2	19.3	15.4
EE45	522211	163103	Roadside	100.0	90.6	17.7	19.0	21.2	15.7	14.6
EE46	520724	161027	Kerbside	100.0	100.0	21.5	22.5	22.2	19.8	17.0
EE47	520713	162968	Roadside	100.0	100.0	19.2	21.2	21.9	17.9	16.7
EE48	522022	162502	Roadside	100.0	92.5	22.1	23.5	24.4	22.2	16.8
EE49	520580	160586	Roadside	100.0	100.0	25.5	28.6	30.9	25.0	22.1
EE50	521975	162677	Kerbside	100.0	100.0	33.6	31.1	32.1	25.3	21.1
EE51	520702	160872	Roadside	100.0	84.9	21.0	23.2	25.6	19.6	16.8

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 2024 (%) (2)	2020	2021	2022	2023	2024
EE52	522303	163213	Roadside	100.0	100.0	30.3	34.3	32.1	27.5	23.2
EE53	522369	163289	Roadside	100.0	100.0	16.0	18.2	18.4	15.1	15.7

☒ **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 µg/m^3.

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**.

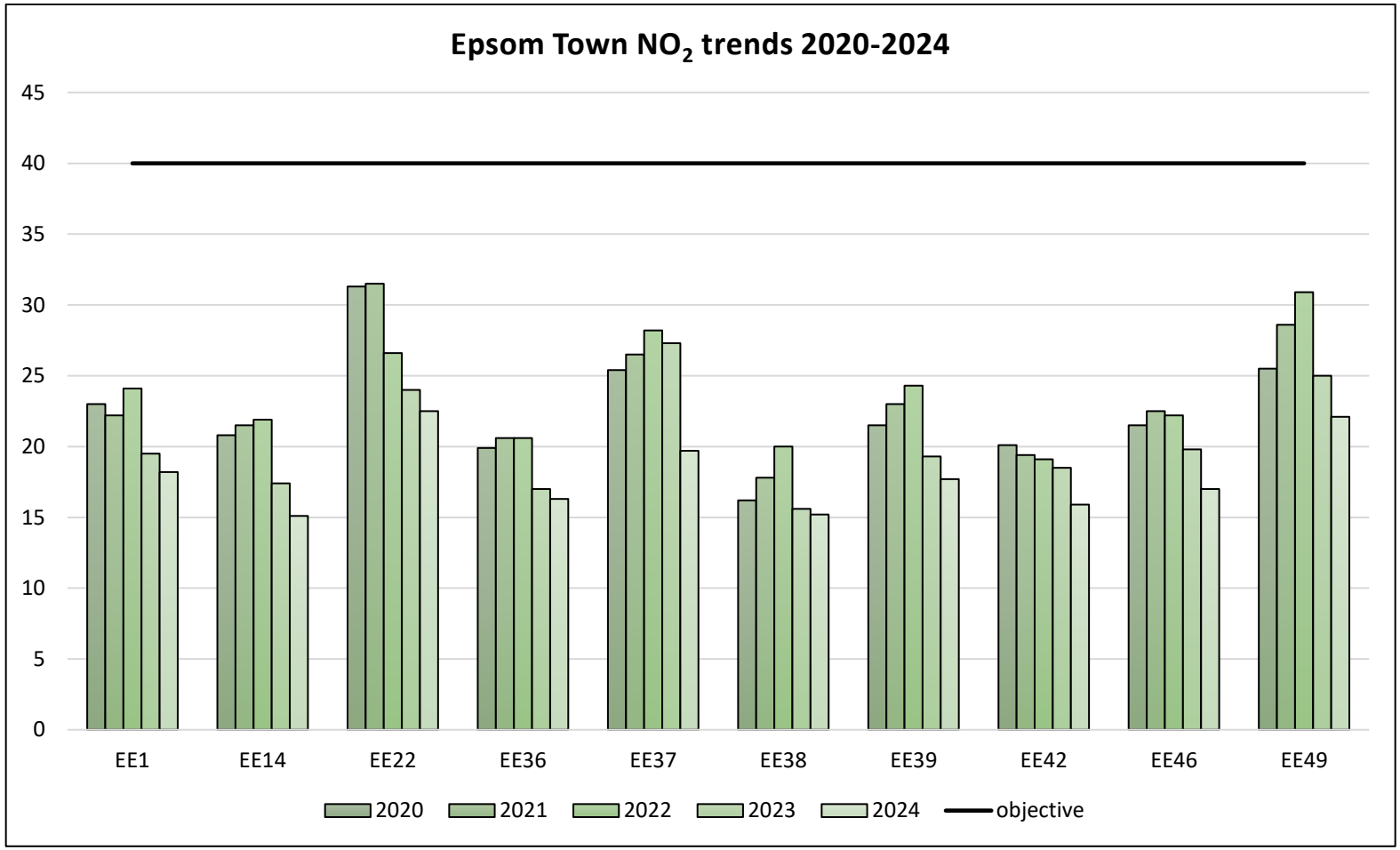
Means for diffusion tubes have been corrected for bias. All means have been "annualised" as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

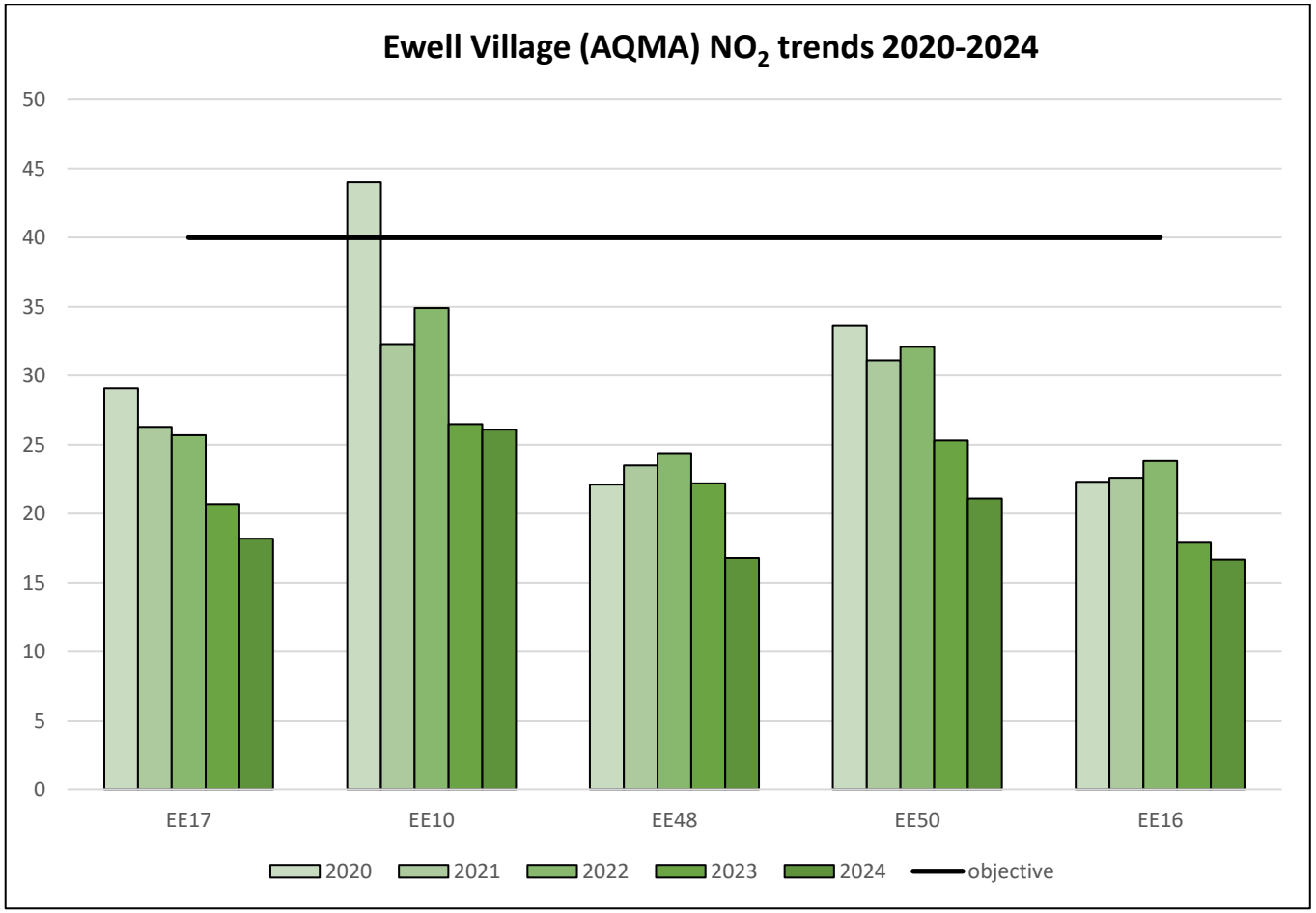
Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

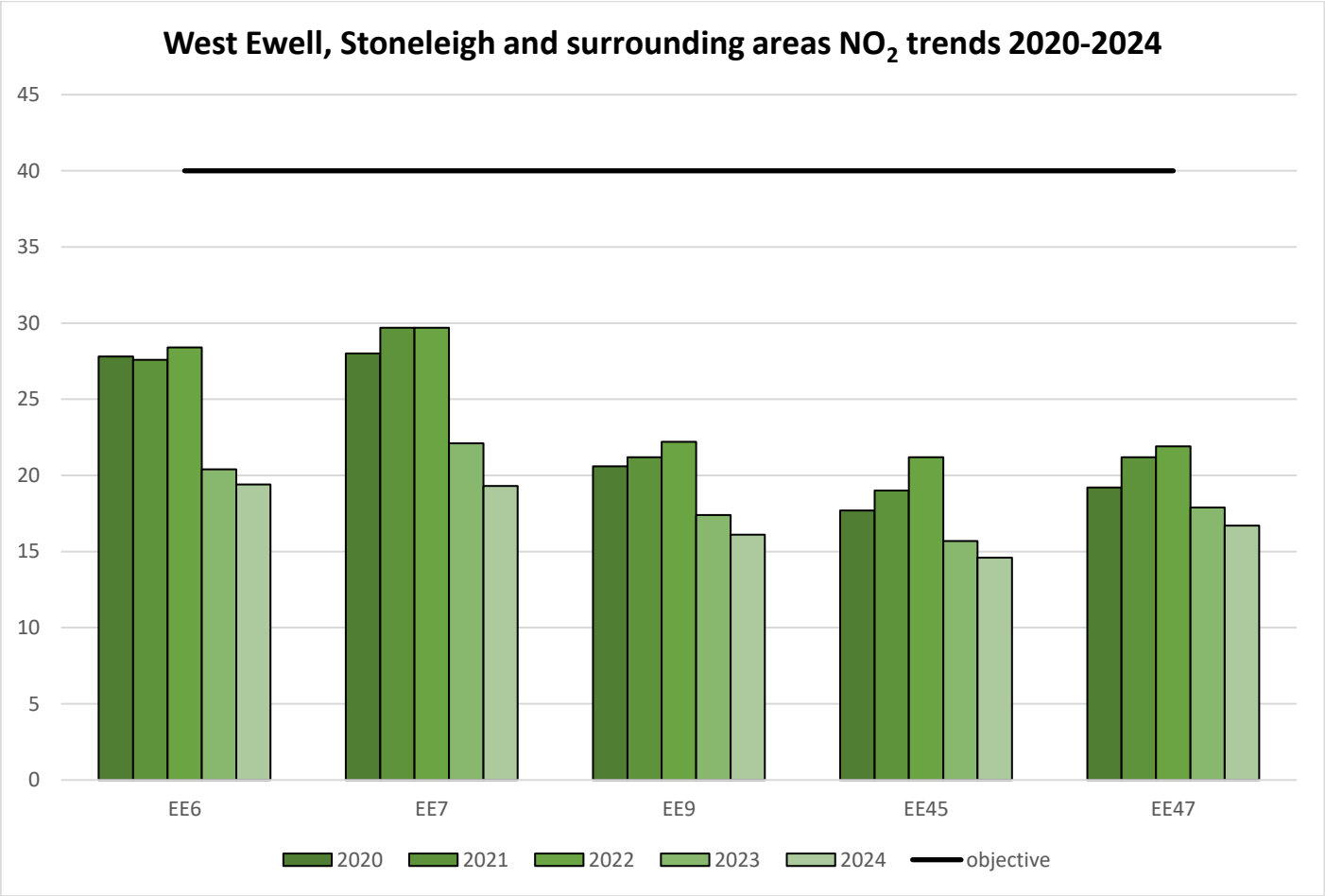
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(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%).

Figure A.1 – Trends in Annual Mean NO_2 Concentrations




Ewell Village (AQMA) NO2 trends 2020-2024
50
45
40
35
30
25
20
15
10
5
0
EE17
EE10
EE48
EE50
EE16
2020
2021
2022
2023
2024
objective


West Ewell, Stoneleigh and surrounding areas NO_2 trends 2020-2024
45
40
35
30
25
20
15
10
5
0
EE6
EE7
EE9
EE45
EE47
2020
2021
2022
2023
2024
objective

Appendix B: Full Monthly Diffusion Tube Results for 2024

Table B.1 – NO_2 2024 Diffusion Tube Results (µg/m^3)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	NO_2 Mean Concentrations (µg/m^3)												Simple Annual Mean (µg/m^3)			Comment
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Raw Data	Bias Adjusted (0.81) and Annualised	Distance Corrected to Nearest Exposure	
EE1	520732	160762	29.0	25.0	25.0	21.0	22.0	22.0	14.0	16.0	26.0	25.0	22.0	22.0	22.4	18.2	-	
EE3	519293	160026	18.0	13.0		20.0	11.0	10.0	7.0	8.0	14.0	13.0	17.0	14.0	13.2	10.7	-	
EE6	520525	165040	29.0	24.0	22.0	24.0	29.0	25.0	14.0	18.0	29.0		24.0	25.0	23.9	19.4	-	
EE7	520916	164636	31.0		26.0	23.0	26.0	25.0	14.0	13.0	26.0	24.0	28.0	26.0	23.8	19.3	-	
EE9	519830	163740	26.0	24.0	23.0	21.0	19.0		14.0	14.0	20.0	19.0	20.0	19.0	19.9	16.1	-	
EE10	521998	162633	36.0	32.0	33.0	31.0	34.0	29.0			27.0			27.0	31.1	26.1	-	Annualised
EE14	520885	161308	26.0	21.0	20.0		20.0	19.0	12.0	9.0	20.0	18.0	20.0	20.0	18.6	15.1	-	
EE16	522026	162624	27.0	25.0	22.0	21.0	21.0	20.0	12.0	13.0	23.0	21.0	24.0	19.0	20.7	16.7	-	
EE17	522025	162563	32.0	23.0	24.0	24.0	23.0	23.0	10.0		22.0	22.0	22.0		22.5	18.2	-	
EE22	520965	160871		24.0	20.0	32.0	32.0	31.0					28.0	28.0	27.9	22.5	-	Annualised
EE36	521069	160817	28.0	20.0	20.0	21.0	19.0	20.0	14.0	16.0	22.0	18.0	23.0	20.0	20.1	16.3	-	
EE37	520726	160857	30.0	26.0		25.0	22.0	24.0		16.0	27.0	22.0	27.0	24.0	24.3	19.7	-	
EE38	520726	160857	24.0	19.0	19.0	17.0	19.0	17.0	15.0		20.0	19.0	20.0	18.0	18.8	15.2	-	
EE39	520844	160729	28.0	23.0	23.0		21.0	25.0	17.0	15.0	24.0		21.0	22.0	21.9	17.7	-	
EE42	521004	160901	26.0	21.0	21.0	19.0				14.0	21.0		20.0	19.0	20.1	15.9	-	Annualised
EE43	521478	161447	29.0	18.0	15.0	18.0	20.0	20.0	14.0	14.0	22.0	17.0	20.0	21.0	19.0	15.4	-	

EE45	522211	163103	25.0	23.0	20.0	21.0		15.0	12.0	11.0	19.0	18.0	18.0	16.0	18.0	14.6	-	
EE46	520724	161027	29.0	22.0	22.0	23.0	22.0	21.0	14.0	11.0	24.0	21.0	21.0	22.0	21.0	17.0	-	
EE47	520713	162968	34.0	26.0	23.0	23.0	19.0	18.0	14.0	11.0	23.0	20.0	20.0	17.0	20.7	16.7	-	
EE48	522022	162502	24.0	22.0	22.0	20.0	20.0		16.0	15.0	22.0	22.0	25.0	20.0	20.7	16.8	-	
EE49	520580	160586	28.0	30.0	30.0	27.0	30.0	26.0	23.0	24.0	30.0	28.0	27.0	25.0	27.3	22.1	-	
EE50	521975	162677	30.0	31.0	27.0	28.0	29.0	27.0	10.0	21.0	26.0	29.0	28.0	26.0	26.0	21.1	-	
EE51	520702	160872		24.0	20.0	24.0	24.0		12.0	12.0	25.0	20.0	24.0	23.0	20.8	16.8	-	
EE52	522303	163213	34.0	32.0	28.0	31.0	34.0	41.0	21.0	18.0	30.0	25.0	21.0	28.0	28.6	23.2	-	
EE53	522369	163289	38.0	30.0	24.0	16.0	17.0	16.0	11.0	12.0	17.0	17.0	19.0	16.0	19.4	15.7	-	

☒ **All erroneous data has been removed from the NO_2 diffusion tube dataset presented in Table B.1**

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

☒ **National bias adjustment factor used**

☒ **Epsom & Ewell Borough Council confirm that all 2024 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System**

Notes:

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 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 Epsom and Ewell During 2024

Epsom & Ewell Borough Council has not identified any new or substantially changed sources relating to air quality within the reporting year of 2024.

Additional Air Quality Works Undertaken by Epsom & Ewell Borough Council During 2024

Epsom & Ewell Borough Council has not completed any additional works within the reporting year of 2024.

QA/QC of Diffusion Tube Monitoring

Diffusion Tube Annualisation

Epsom & Ewell Borough Council utilises diffusion tubes supplied and analysed by Lambeth Scientific Services, who use a 50% TEA in acetone method of preparation, following procedures in accordance with the Practical Guidance Documents.

The analysing laboratory participates in the AIR NO_2 Proficiency Testing Scheme for diffusion tubes with provides Quality Assurance / Quality Control (QA/QC).

Diffusion tube monitoring was completed in compliance with the 2024 Diffusion Tube Monitoring Calendar.

Table C.1 – Annualisation Summary (concentrations presented in µg/m^3)

Diffusion Tube ID	Factor Brighton Preston Park	Factor Hillingdon	Average Annualisation Factor	Raw Data Simple Annual Mean (µg/m^3)	Annualised Data Simple Annual Mean (µg/m3)
EE10	1.0251	1.0430	1.0340	31.1	32.2
EE22	0.9942	1.0027	0.9985	27.9	27.8
EE42	0.9573	0.9920	0.9746	20.1	19.6

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2024 ASR has 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.

Epsom & Ewell Borough Council has applied a national bias adjustment factor of 0.81 to the 2024 monitoring data. A summary of bias adjustment factors used by the council over the past five years is presented in Table C.2.

Table C.2 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	National	03/25	0.81
2023	National	06/24	0.8
2022	National	03/23	0.94
2021	County	-	0.97
2020	County	-	1.03

During the construction of this report a new version of the spreadsheet (06/25) became available suggesting a factor of 0.8. However the slightly greater March 2025 figure of 0.81 has been used since all of the calculations and presentation has been prepared using the March figure, and the very slight different it makes favours a more conservative evaluation.

Notes:

A single local bias adjustment factor has been used to bias adjust the 2024 diffusion tube results.

NO_2 Fall-off with Distance from the Road

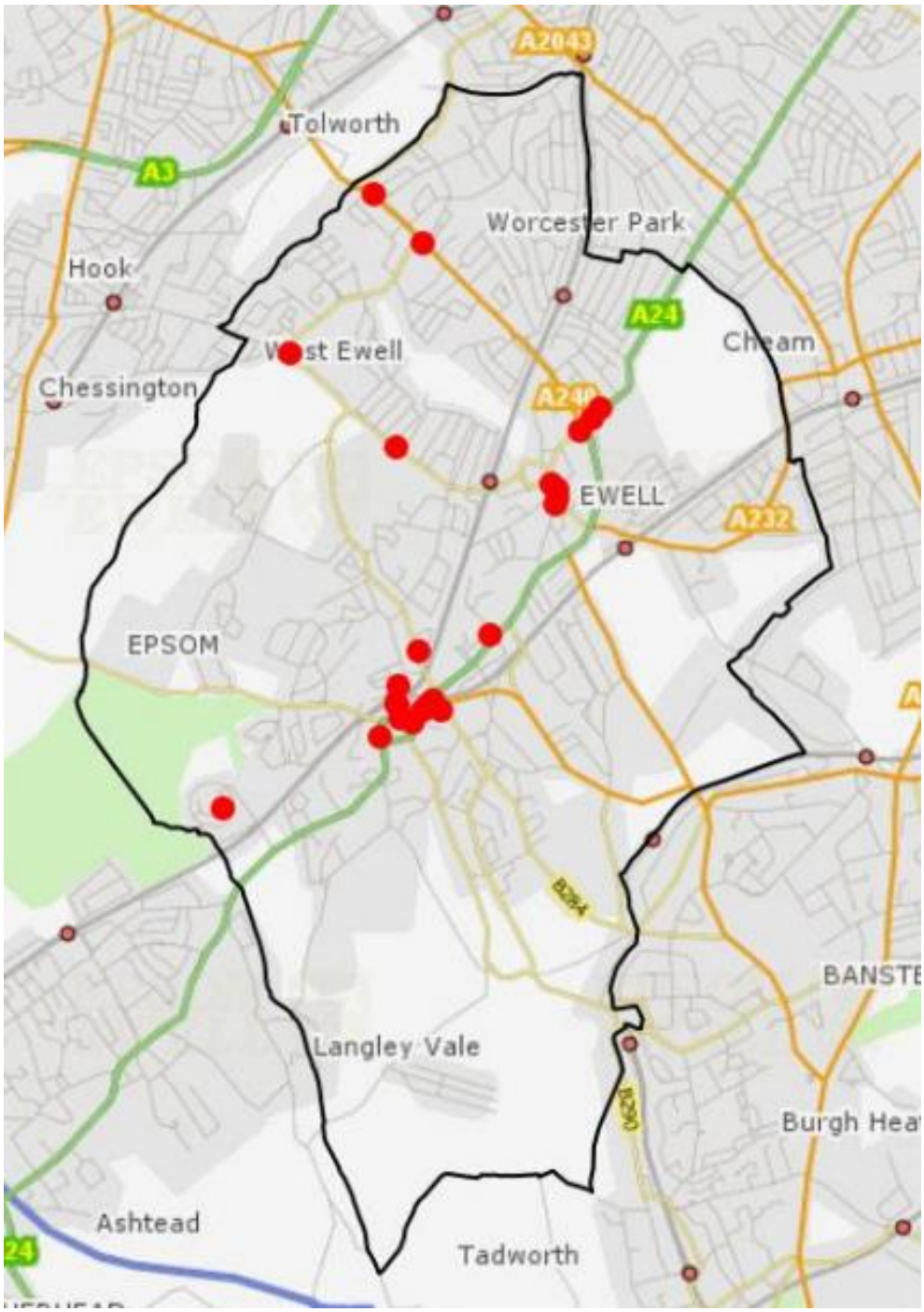
Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure

has been estimated using the Diffusion Tube Data Processing Tool/NO_2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO_2 concentrations corrected for distance are presented in Table B.1.

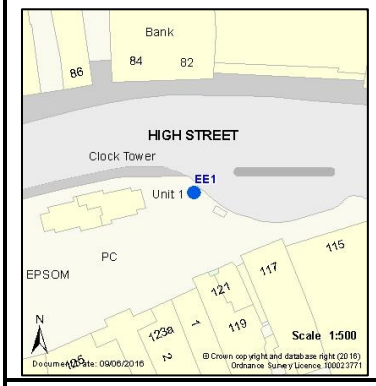
No diffusion tube NO_2 monitoring locations within the Epsom & Ewell Borough required distance correction during 2024.

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

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

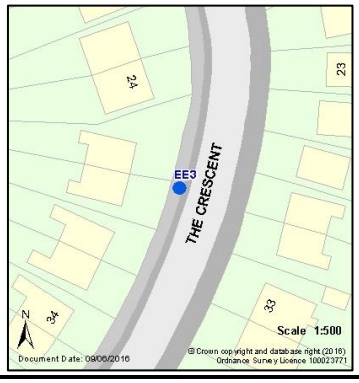


Map of non-automatic monitoring sites within Ewell High Street Air Quality Management Area



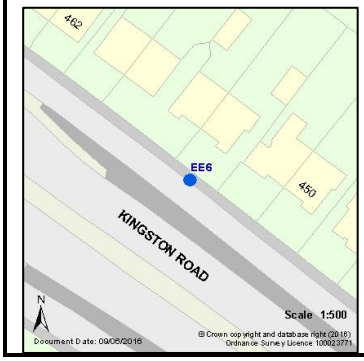
EE1

High Street, Epsom



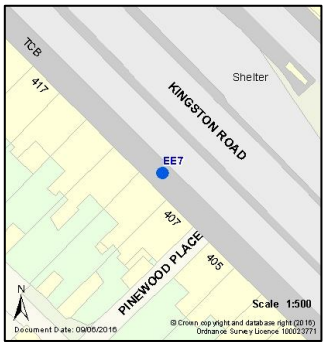
EE3

The Crescent, Epsom



EE6

Kingston Road, Worcester Park

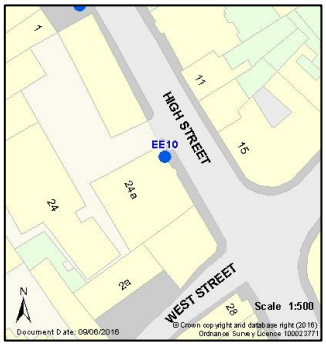


EE7

Kingston Road, Ewell

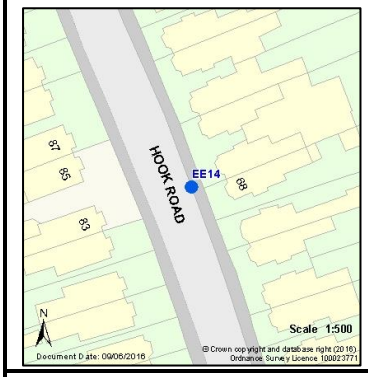
EE9

Chessington Road, Ewell



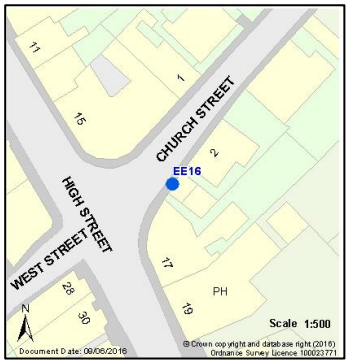
EE10

High Street, Ewell



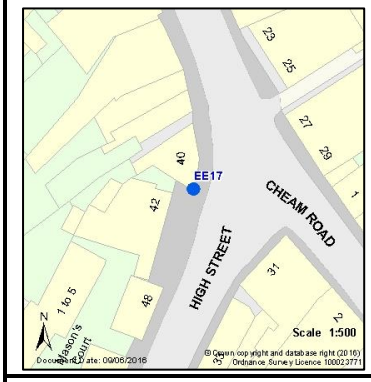
EE14

Hook Road, Epsom



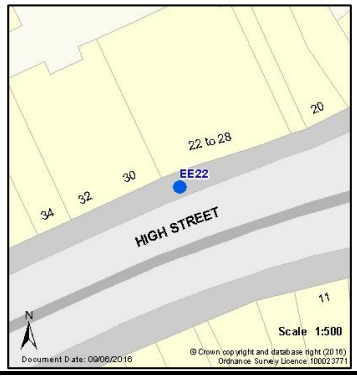
EE16

Church Street, Epsom



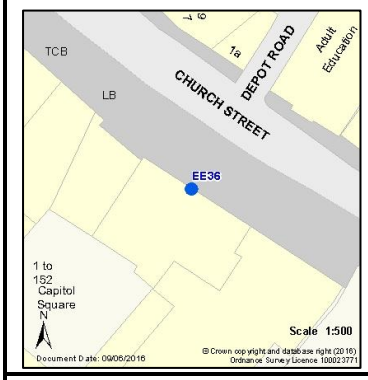
EE17

Junction High Street and Cheam Road, Ewell



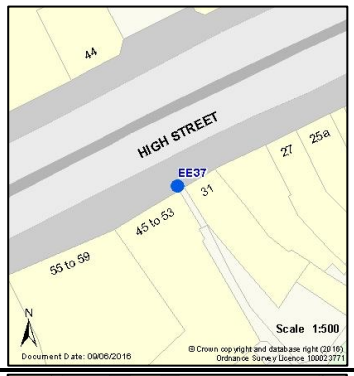
EE22

High Street, Epsom



EE36

Church Street, Epsom

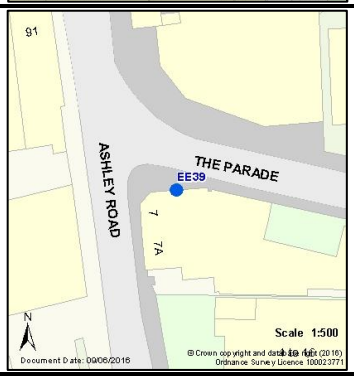


EE 37

High Street, Epsom

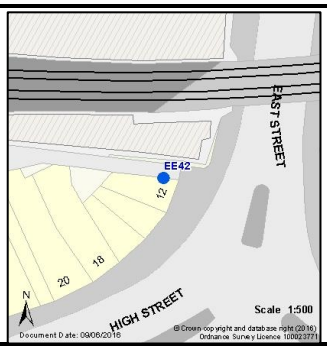
EE38

Station Approach South, Epsom



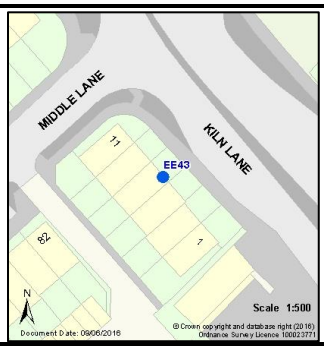
EE39

The Parade, Epsom



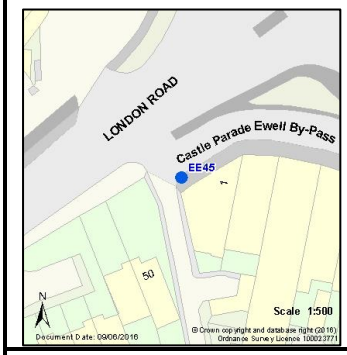
EE42

East Street, Epsom



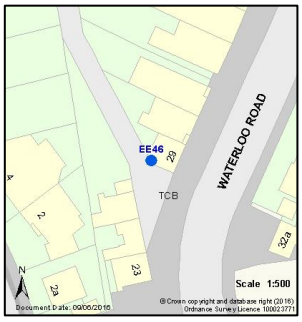
EE43

Kiln Lane, Epsom



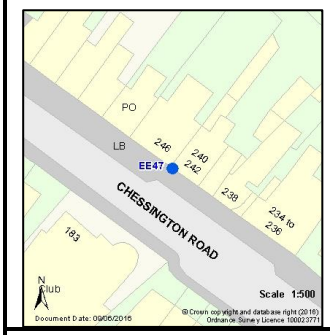
EE45

Castle Parade, Ewell



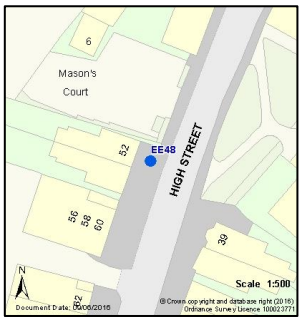
EE46

Waterloo Road, Epsom



EE47

Chessington Road, Ewell



EE48

High Street, Ewell

EE49

South Street, Epsom

EE50

High Street, Ewell

EE51

Station Approach North, Epsom

EE52

London Road, Ewell

EE53

London Road, Ewell

Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[6]

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

[6] The units are in microgrammes of pollutant per cubic metre of air (µg/m^3).

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
LAQM	Local Air Quality Management
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.
- Chemical hazards and poisons report: Issue 28. June 2022. Published by UK Health Security Agency
- Air Quality Strategy – Framework for Local Authority Delivery. August 2023. Published by Defra.

3.3 Annex 1 – Proposal for revocation of Ewell High Street Air Quality Management Area

Background

Part IV of the Environment Act 1995 (as amended by the Environment Act 2021) is included in legislation requiring Local Authorities to monitor and tackle air pollution. Local Air Quality Management (LAQM) Technical Guidance 2022 & LAQM Policy Guidance 22 (TG22 & PG22) provide guidance as to how Local Authorities should comply.

Section 3.57 of TG22 states:

"The revocation of an AQMA should be considered following three consecutive years of compliance with the relevant objective as evidenced through monitoring.
Where NO_2 monitoring is completed using diffusion tubes, to account for the inherent uncertainty associated with the monitoring method, it is recommended that revocation of an AQMA should be considered following three consecutive years of annual mean NO_2 concentrations being lower than 36µg/m^3 (i.e. within 10% of the annual mean NO_2 objective). There should not be any declared AQMAs for which compliance with the relevant objective has been achieved for a consecutive five-year period."

Air quality monitoring data for the Ewell High Street AQMA demonstrates that for the past four years the annual mean of NO_2 in the area of Ewell village meets relevant national air quality objectives and three of these years have been non COVID-19 affected. Consequently, a review of air quality was conducted.

Results

Air Quality has been monitored using NO_2 diffusion tubes within the Ewell High Street AQMA for many years. Results show the annual mean has consistently followed a downward trend and since 2021 have been below the national air quality objective of 40µg/m^3. The table and figure detail the annual NO_2 means for the past five years recorded within the Ewell High Street AQMA.

Table AN1 - Summary of recorded concentrations - Ewell High Street AQMA

Diffusion Tube ID	NO_2 Diffusion Tube location description	2024 Annual Mean (*µg/m3)*	2023 Annual Mean (*µg/m³)*	2022 Annual Mean (*µg/m³)*	2021 Annual Mean (*µg/m³)*	2020 Annual Mean (*µg/m³)*
EE10	High Street Ewell	26.1	26.5	34.9	32.3	44.0
EE16	Church Street / High Street Junction	16.7	17.9	23.8	22.6	22.4
EE17	40A High Street Ewell	18.2	20.7	25.7	26.3	29.1
EE50	Major Plaice Ewel High Street	21.1	25.3	32.1	31.1	33.6

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

In terms of the statistical significance of the decline, the Council has produced the coefficient of determination (r^2) of each of the monitoring sites within the AQMA based on the available annual mean data. Also presented in this table is the peak measured annual value compared to the 2024 recorded measurement and the percentage of that change.

Table AN2 - Analysis of NO_2 reduction

Diffusion Tube ID	r^2	Peak	2024	Percent reduction from peak
EE10	0.5626	67.9	26.1	62.5
EE16	0.6702	39.5	16.7	57.7
EE17	0.7115	47.8	18.2	61.9
EE50	0.846	36.4	21.1	42.0
Average	0.69758	47.9	20.5	56.0

These results confirm the strong association between the passage of time and the reduction of measured NO_2 as well as the significance of the reduction taken as a comparison between the measured peak and 2024 values.

NO_2 pollution in Epsom and Ewell is primarily linked to vehicle emissions. The sustained improvements in air quality within this area is mainly due to:

- Successful delivery of the Council's air quality action plan
- Improvements in the private vehicle fleet
- Improved public transport vehicle emissions
- Increase of electrical and hybrid vehicles
- Expansion of the London Ultra Low Emissions Zone (ULEZ)

As a policy of the Mayor of London, the ULEZ does not extend to the Epsom & Ewell Borough. However there are regional affects extending outside of Greater London driving improvements in the fleet more generally.

Conclusion

Section 83(2)(b) of the Environment Act 1995 states an AQMA should be revoked where an air quality review shows compliance and that this is expected to be maintained.

A review has taken place and the Council now concludes:

- The data recognises a sustained long-term improvement in NO_2 levels within the AQMA.
- The air quality standards have been achieved within the designated area for three non COVID-19 affected years.
- The air quality standards are likely to continue to be achieved within the designated area.

Accordingly, Officers will recommend the Council revoke the Epsom & Ewell Borough Council Ewell High Street Air Quality Management Area Order dated 9 July 2007.

Trend Graphs

In the graphs which follow, the national objective is marked with a solid horizontal line.

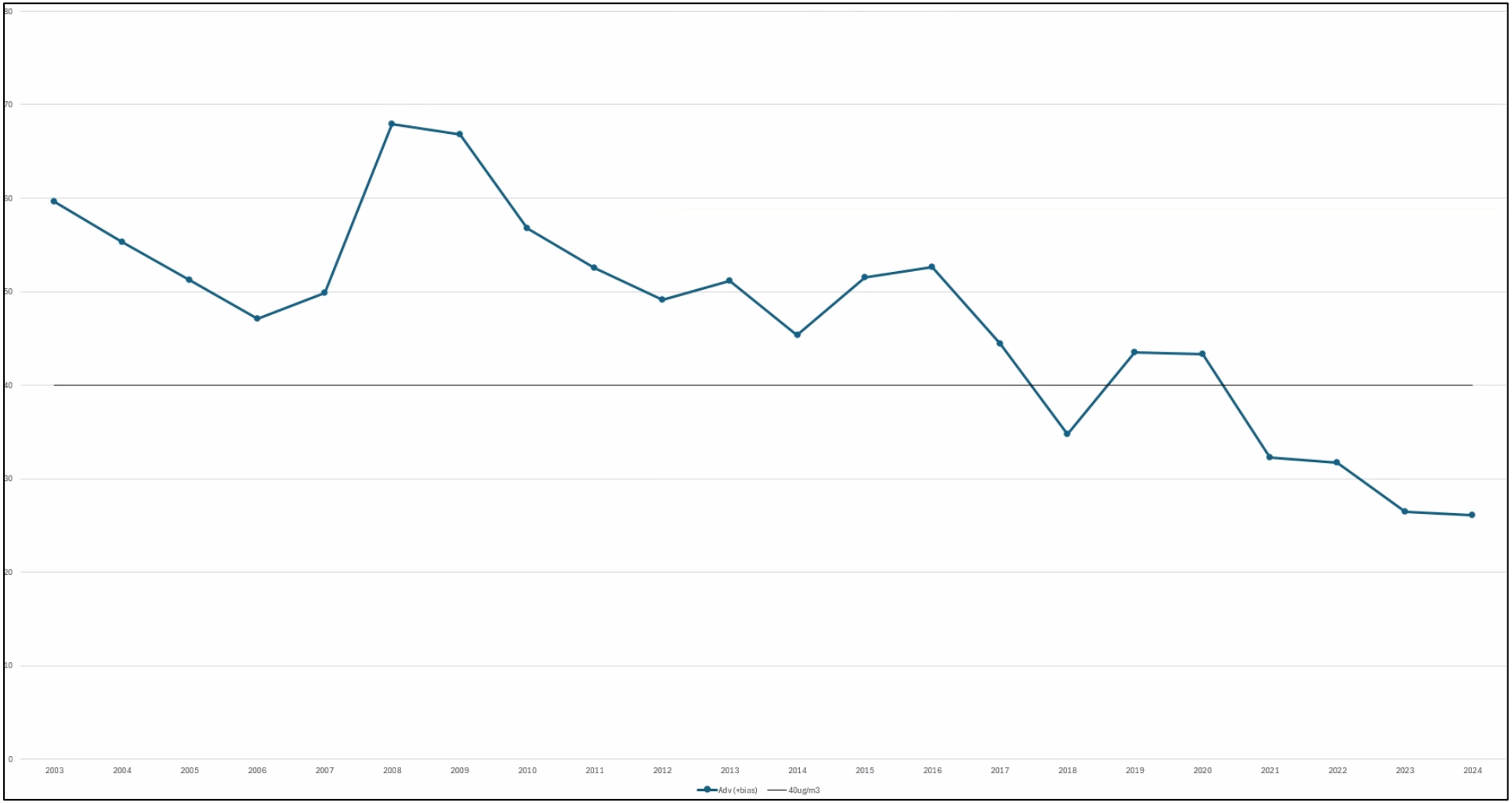


Figure 1 - EE10 annual average (with bias adjustment) 2003 to 2024

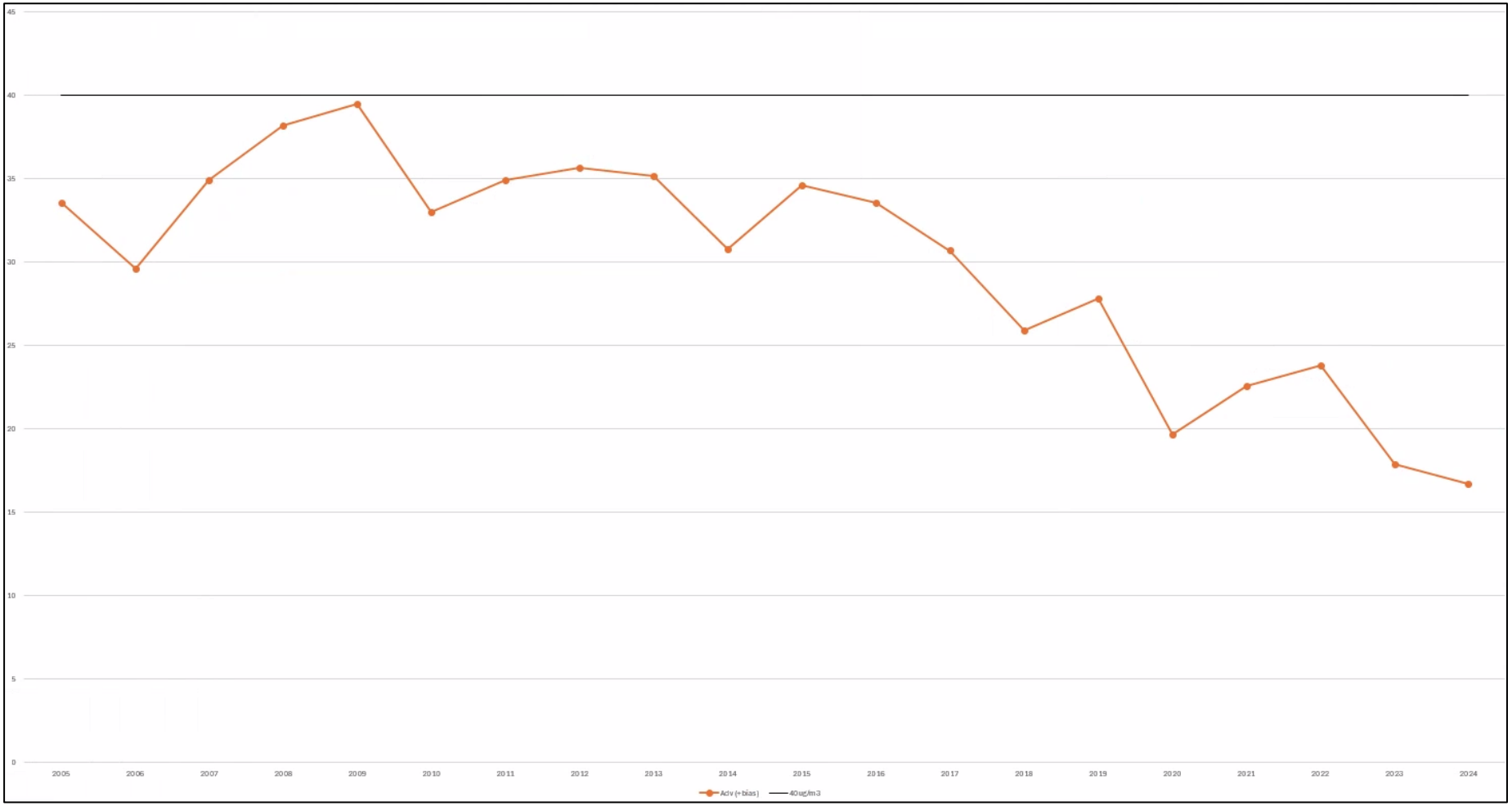


Figure 2 - EE16 annual average (with bias adjustment) 2005 to 2024

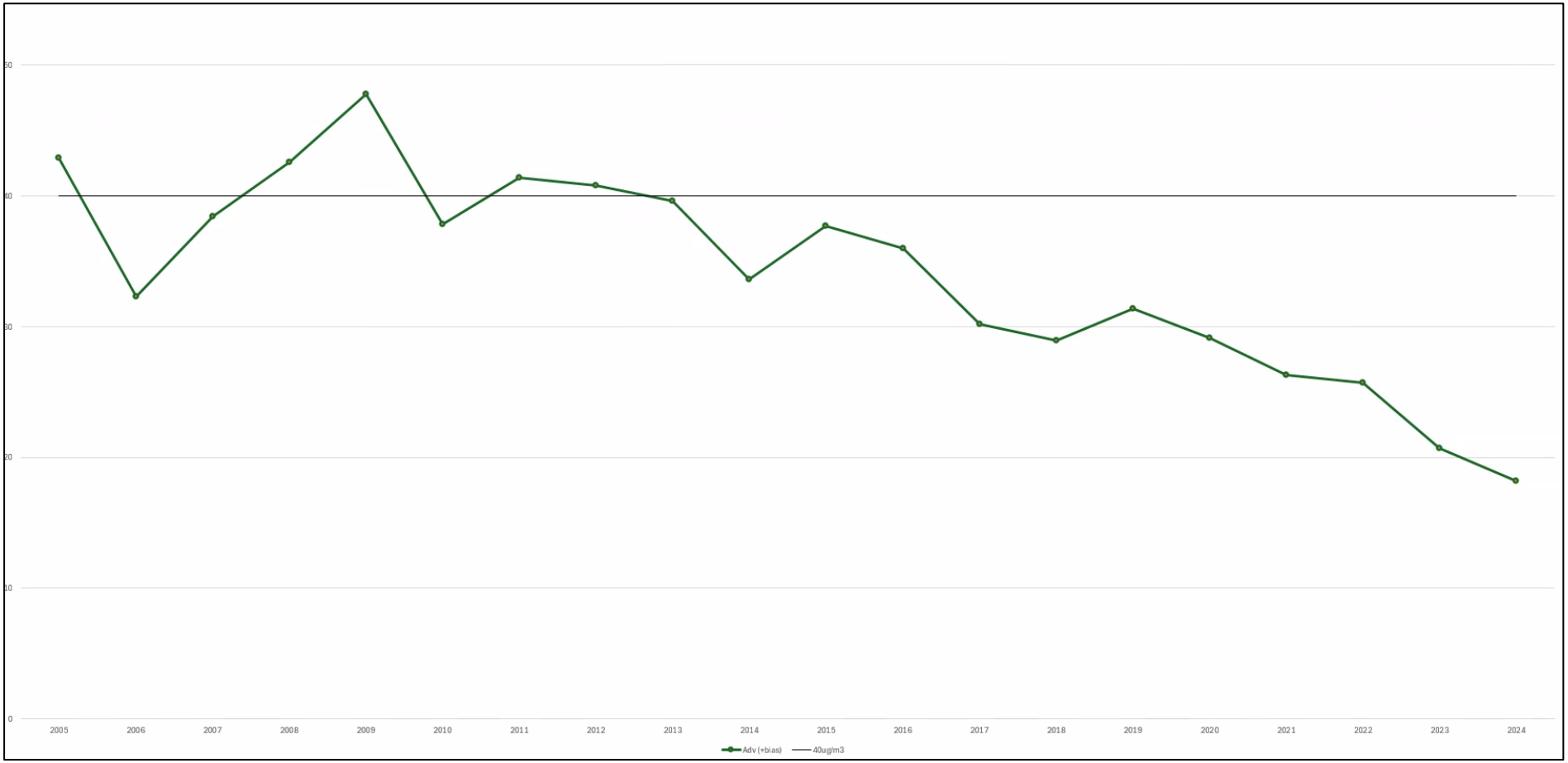


Figure 3 - EE17 annual average (with bias adjustment) 2005 – 2024

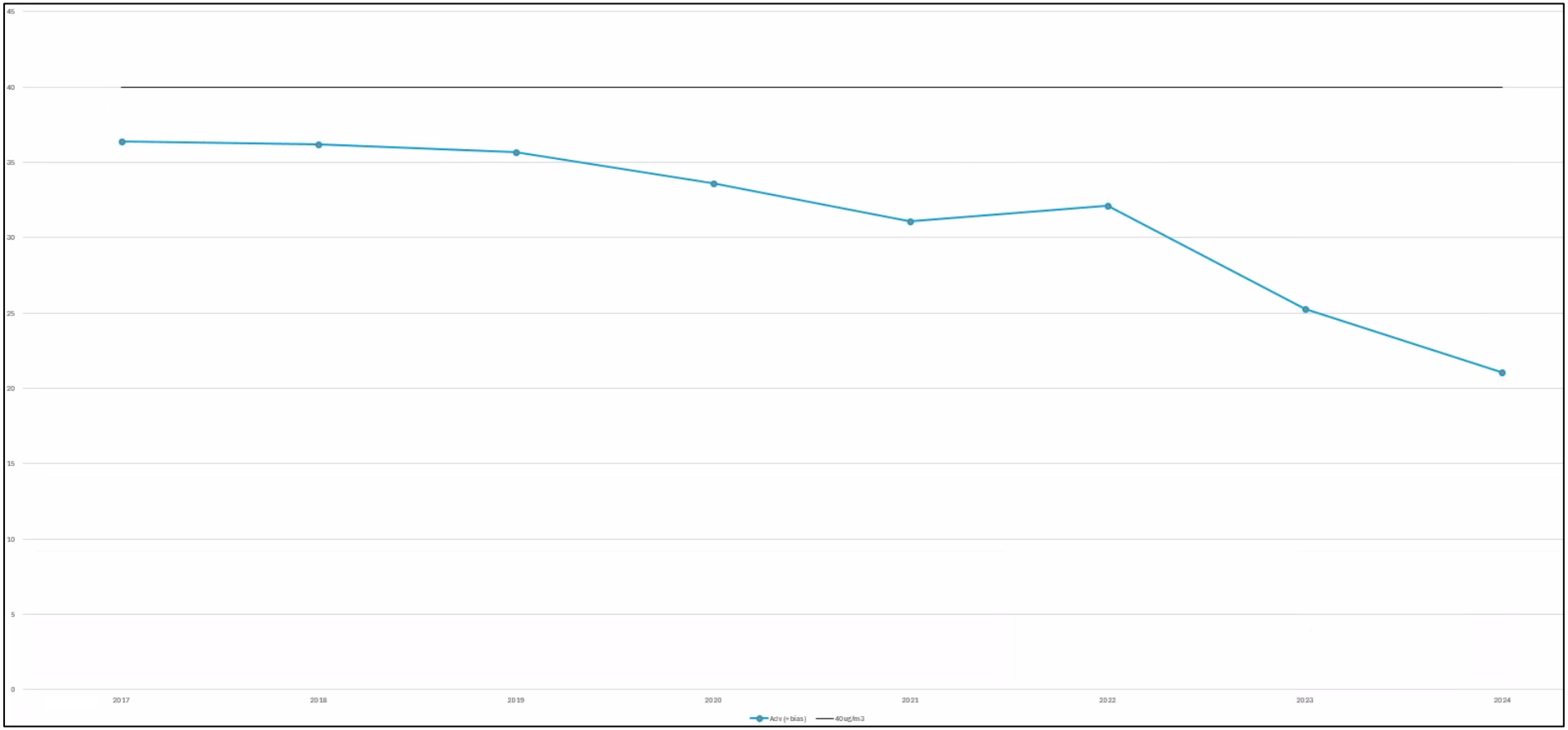


Figure 4 - EE50 annual average (with bias adjustment) 2017-2024

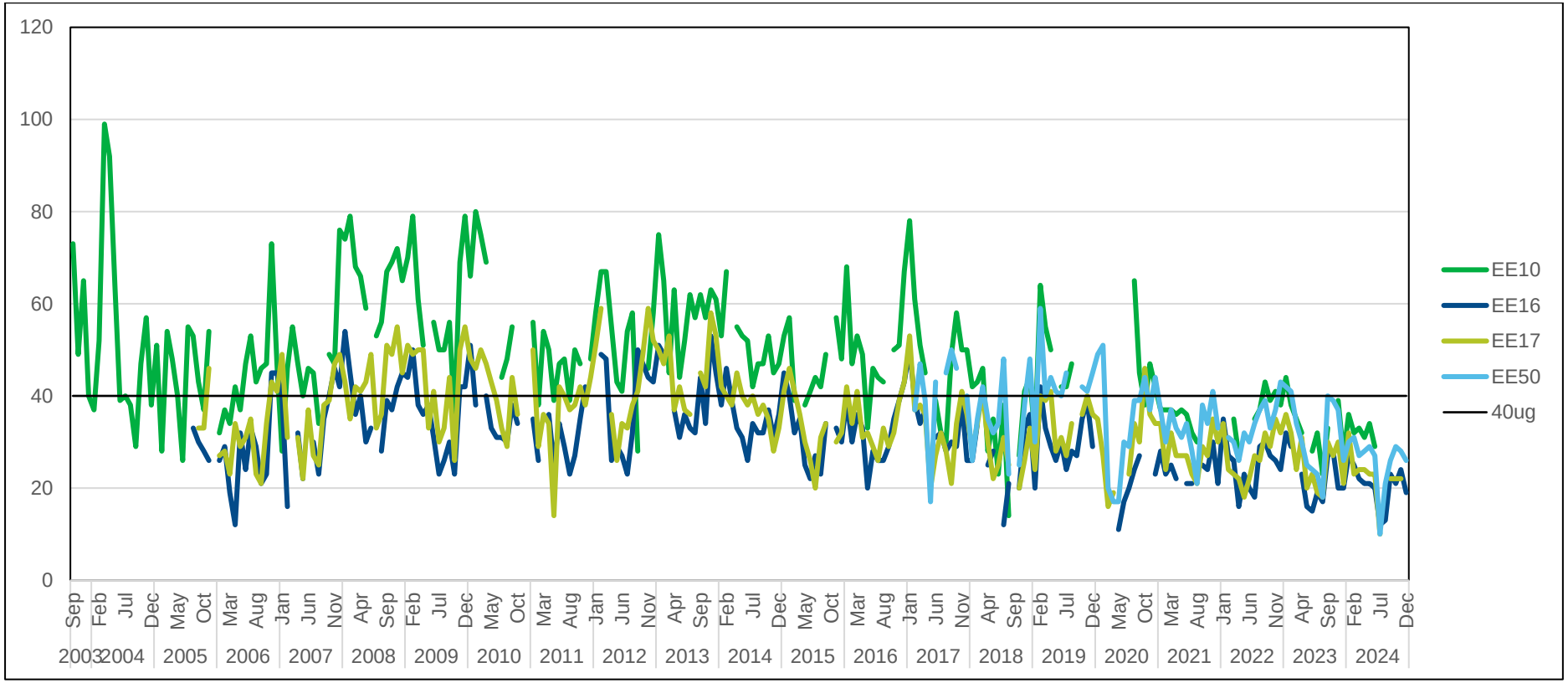


Figure 5 - Temporal presentation of monthly NO_2 concentrations 2003 - 2024