

Appendix 1 – Technical basis for the revocation of the 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 NO₂ 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 NO₂ concentrations being lower than 36µg/m³ (i.e. within 10% of the annual mean NO₂ 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 NO₂ 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 NO₂ 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/m³, and, additionally has shown annually averaged results below 38µg/m³ - the figure DEFRA advocate in their guidance to take into account uncertainty in the monitoring methodology. The table and figure detail the annual NO₂ means for the past five years recorded within the Ewell High Street AQMA.

Table 1 - Summary of recorded concentrations - Ewell High Street AQMA

Diffusion Tube ID	NO ₂ Diffusion Tube location description	2024 Annual Mean (µg/m ³)	2023 Annual Mean (µg/m ³)	2022 Annual Mean (µg/m ³)	2021 Annual Mean (µg/m ³)	2020 Annual Mean (µg/m ³)
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 calculated 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 2 - Analysis of NO₂ reduction

Diffusion Tube ID	r^2	Peak	2024	Percent reduction from peak
EE10	0.5626	67.9	26.1	61.6
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	55.8

These results confirm the strong association between the passage of time and the reduction of measured NO₂ as well as the significance of the reduction taken as a comparison between the measured peak and 2024 values.

NO₂ 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 NO₂ 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.

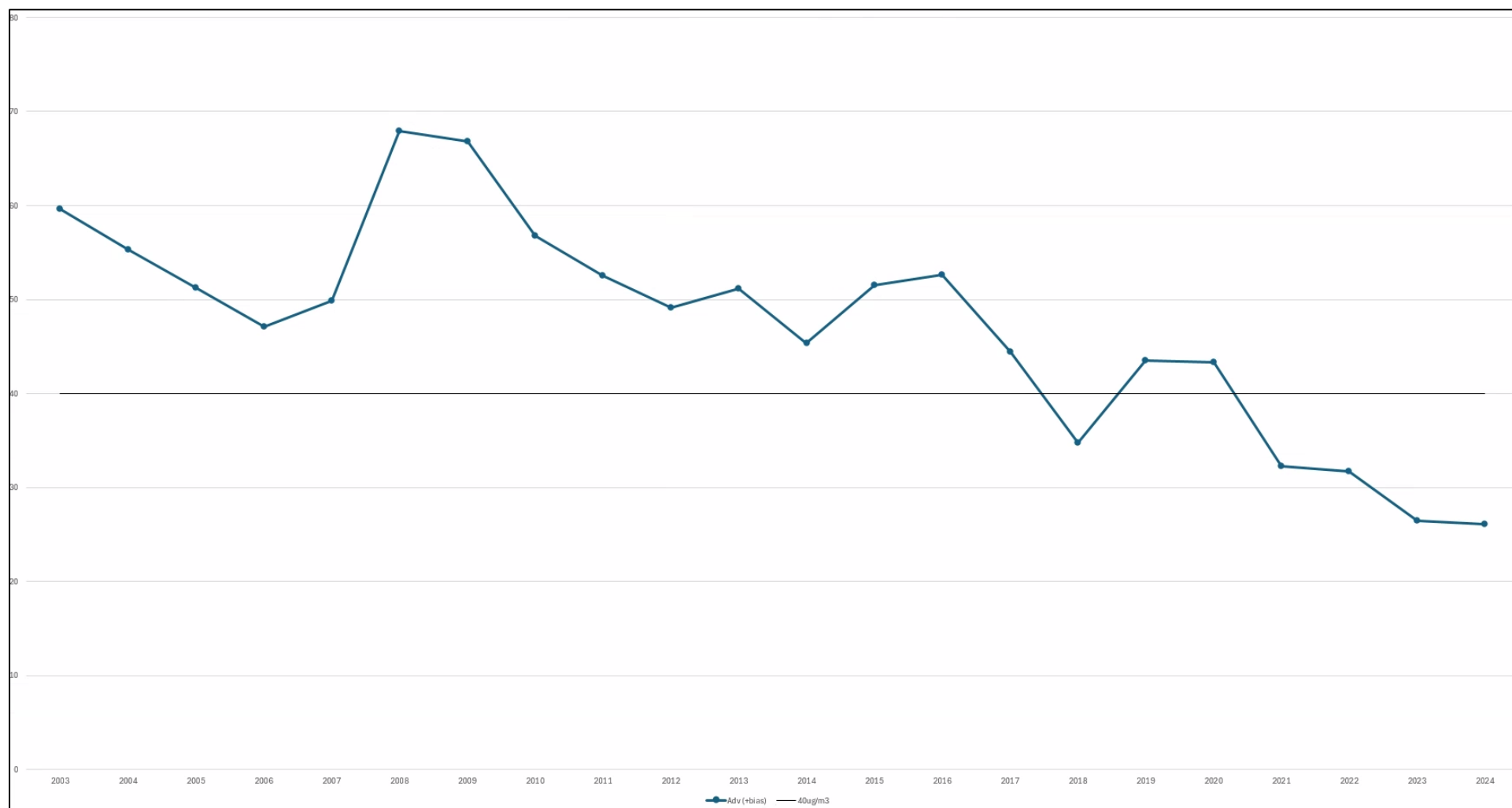


Figure 1 - EE10 annual average (with bias adjustment) 2003 to 2024

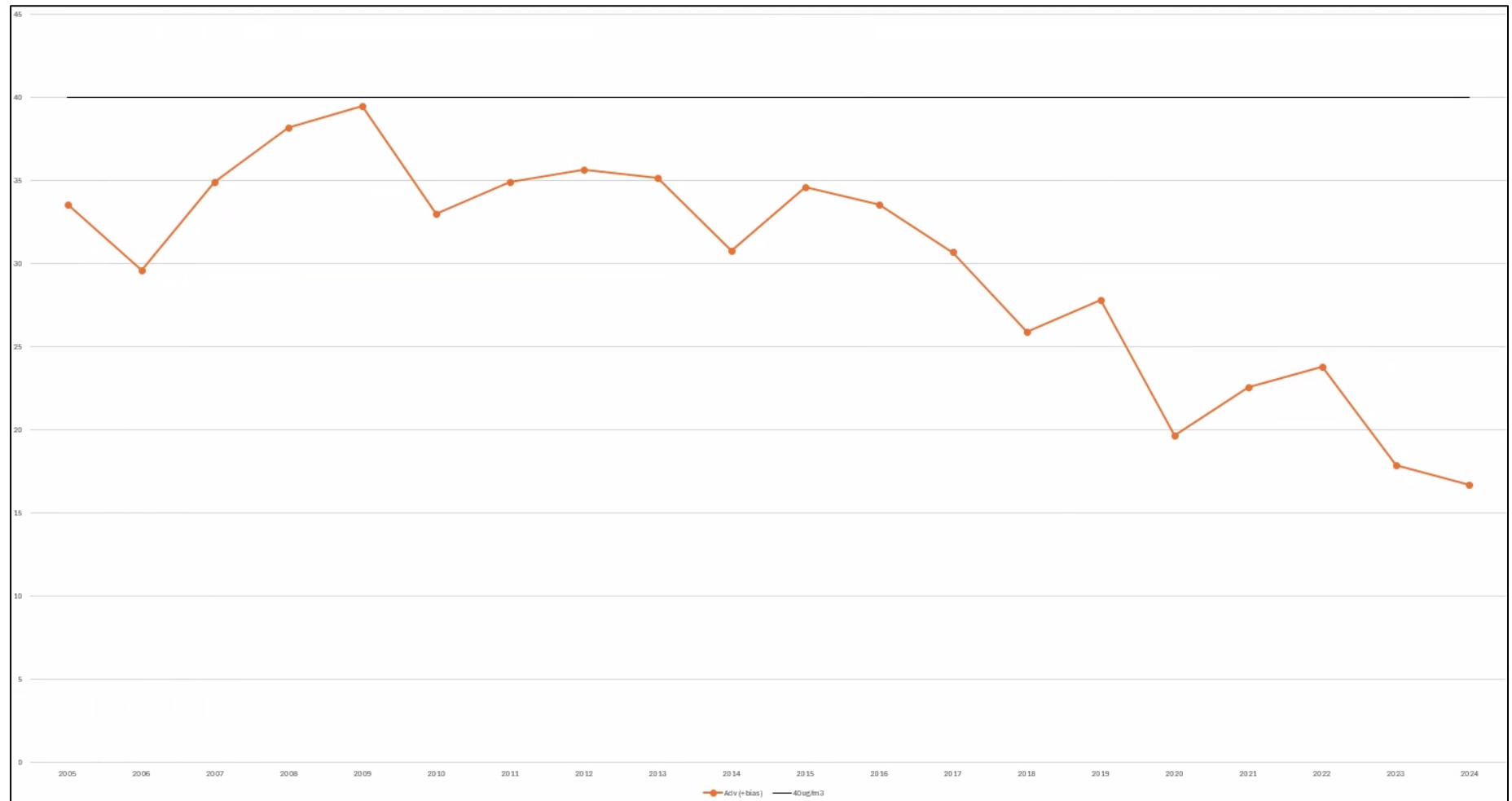


Figure 2 - EE16 annual average (with bias adjustment) 2005 to 2024

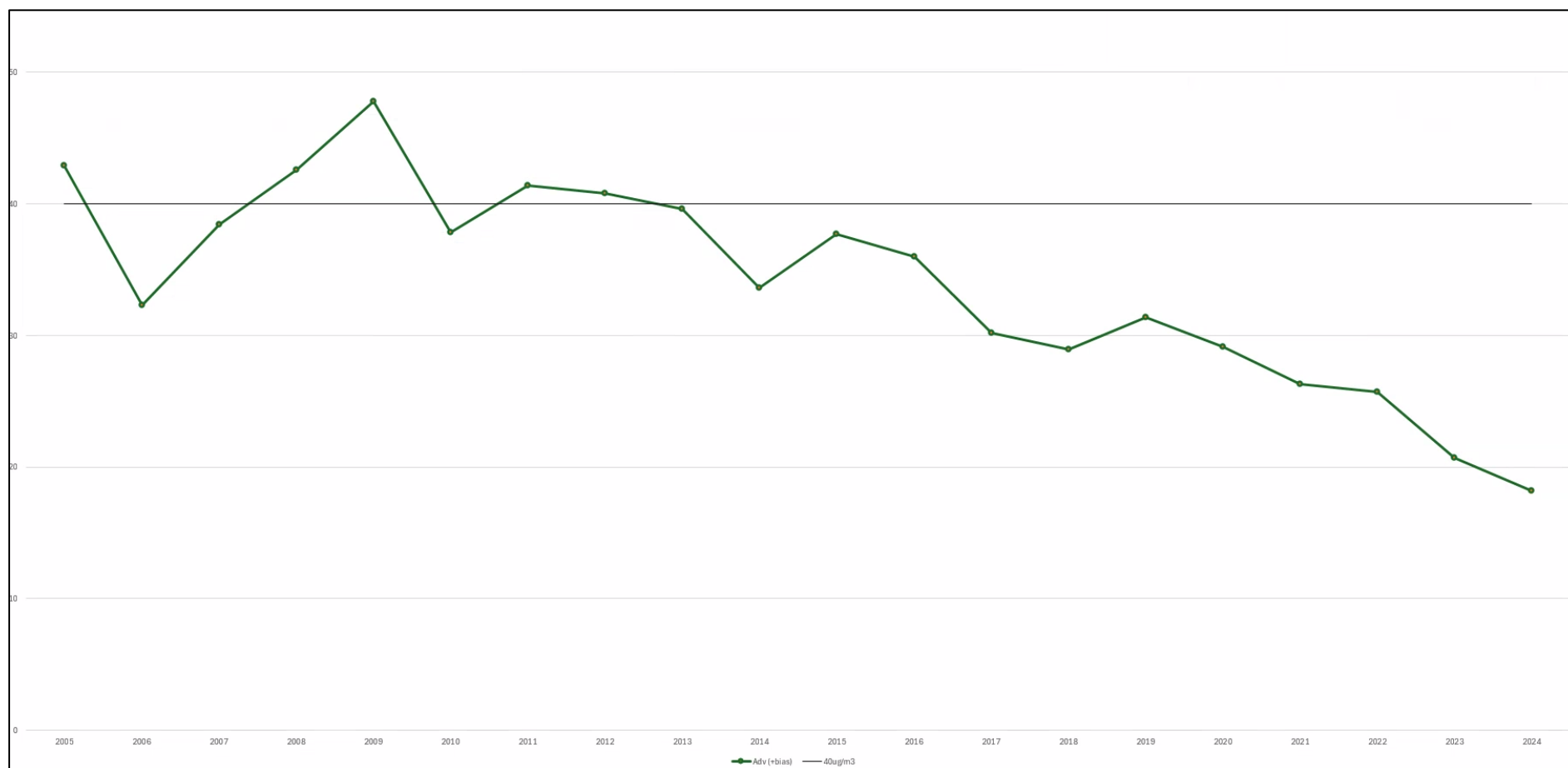


Figure 3 - EE17 annual average (with bias adjustment) 2005 – 2024

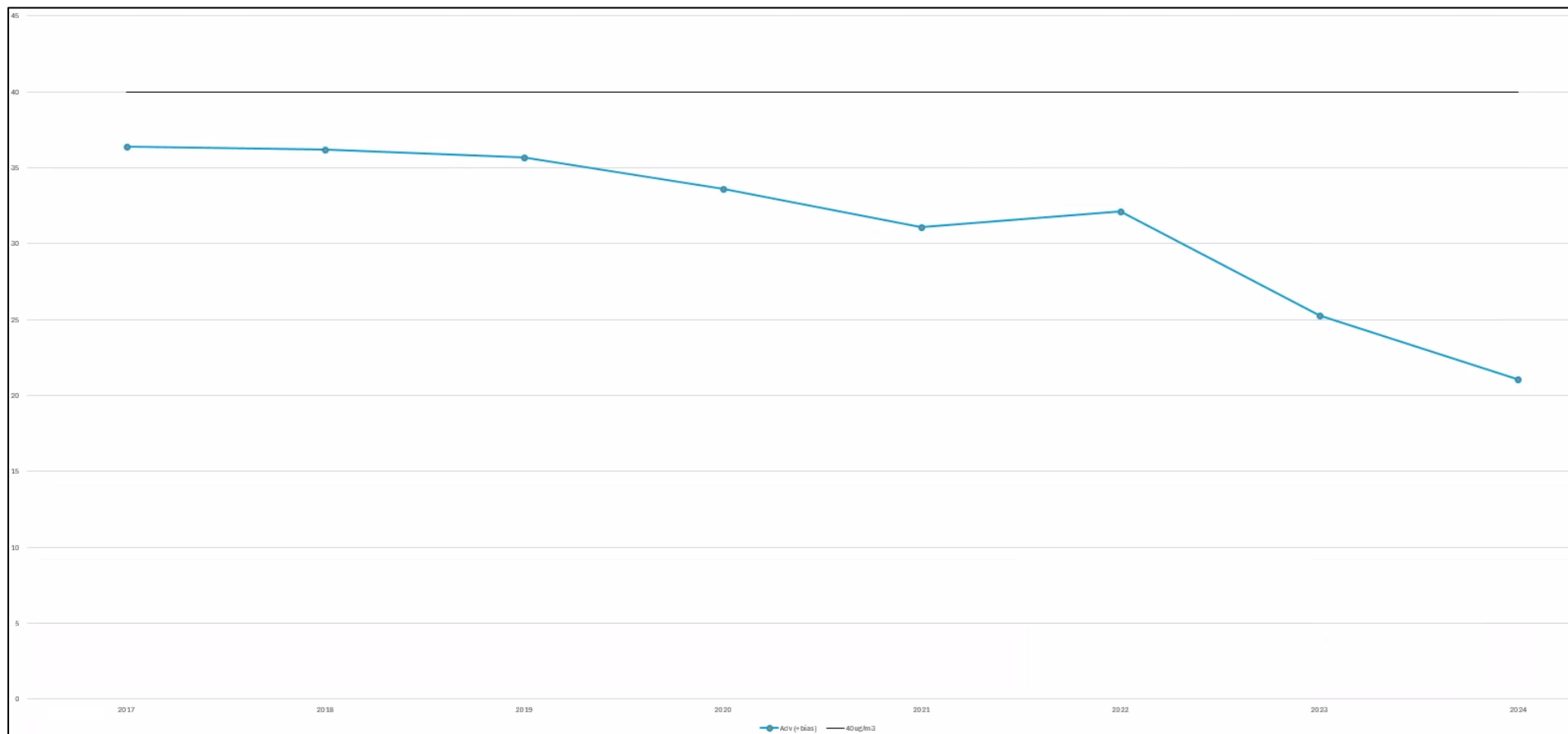


Figure 4 - EE50 annual average (with bias adjustment) 2017-2024

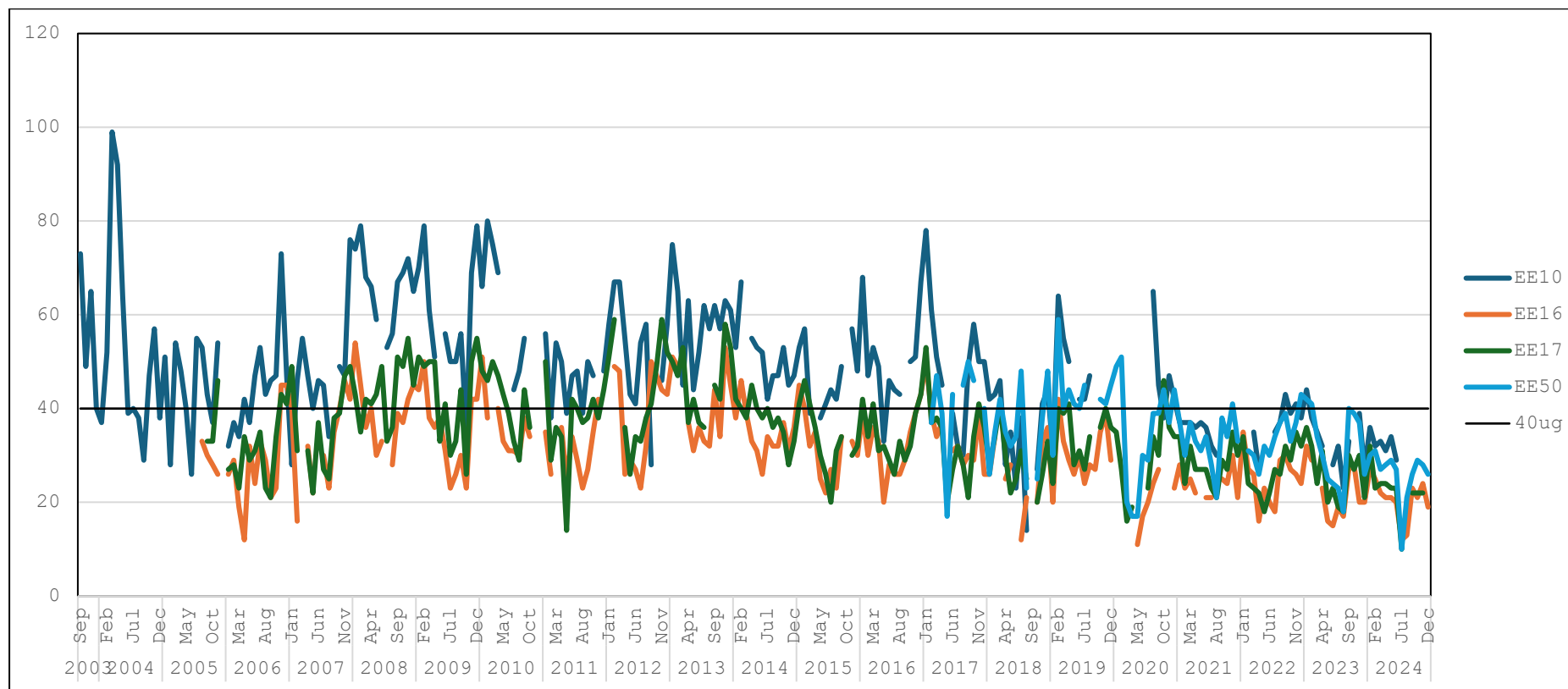


Figure 5 - Temporal presentation of monthly NO₂ concentrations 2003 - 2024

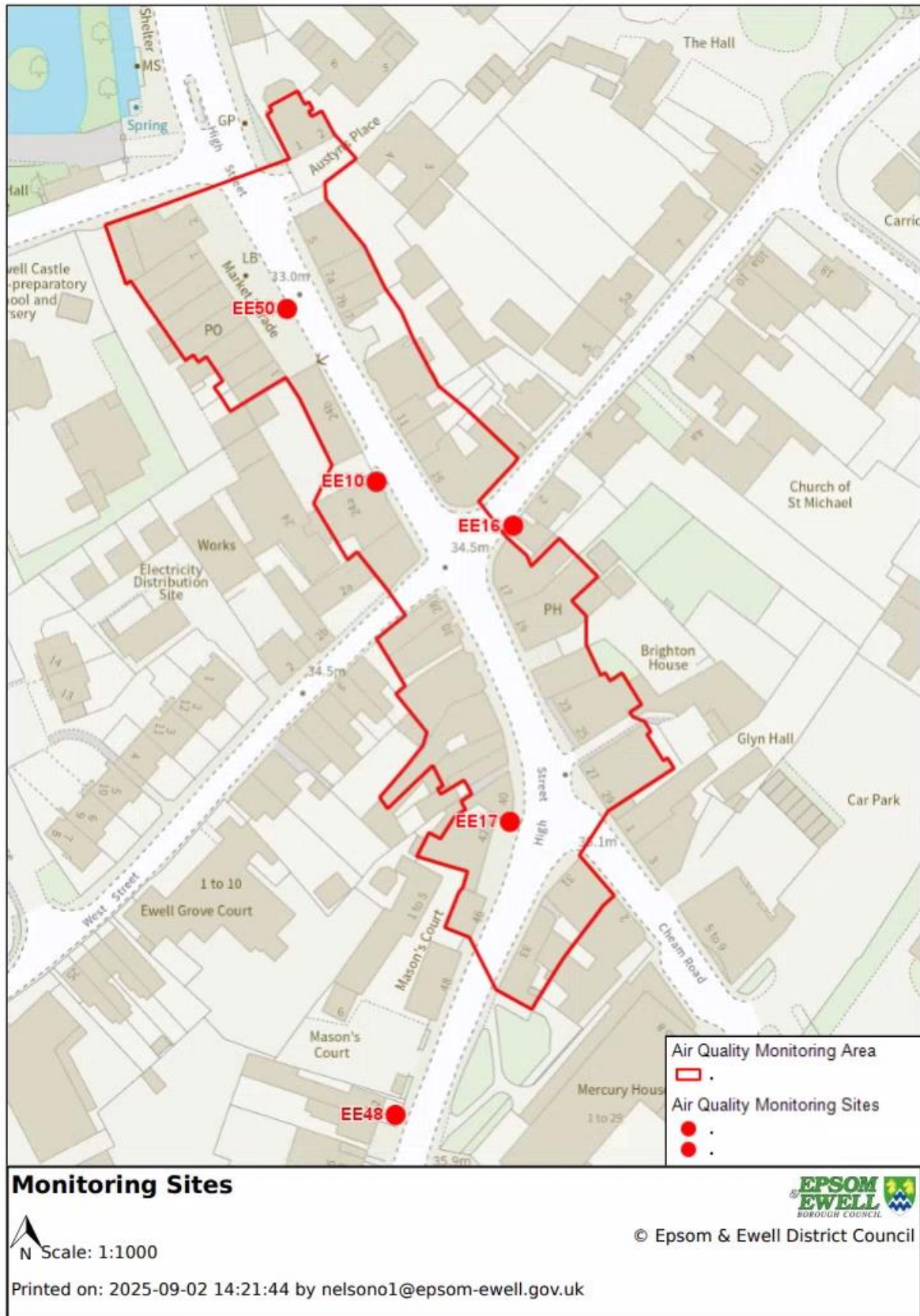


Figure 6 - Locations of monitoring sites in Ewell Village