

Low Transport Neighbourhoods (LTNs) and Air Quality – Interim Report (28.06.21)

Environment Protection, Place Directorate

1. Introduction

Air quality monitoring for the LTN initiative began in November 2020, although the project commenced earlier in the year. Environmental Protection team was asked to produce an interim report covering monitoring period from Nov. 2020 to Feb. 2021. Nitrogen dioxide (NO₂) concentration level were measured using diffusion tubes methodology that is identical to the Council's regular air quality monitoring programme. Although monthly NO₂ concentration levels at different LTN monitoring locations have been compared with both the representative baseline NO₂ monitoring locations within the Council's regular monitoring and the NO₂ annual mean air quality objective limit value (EU limit value of 40 micrograms per cubic metre, (40µg/m³)) – see Graph1, ***it's important to note that this limit value applies to only the annualised and bias corrected mean values and not monthly values, in accordance with the Defra LAQM Technical Guidelines (TG16).***

2. Legislative and AQ monitoring framework – Local Air Quality Management (LAQM)

- Air Quality Standard Regulations 2010 and the EU Directives 2008/50/EC and 2004/107/EC on ambient air quality.
- LBE's conventional AQ monitoring regime has 61 diffusion tubes at 55 locations, in addition to 3 continuous monitoring stations.
- LBE introduced (Nov. 20) 13 additional diffusion tubes to monitor impact of LTNs on local air quality.
- Agreed time frame to produce an interim report (May 21) after collecting 6 month's monitoring data (better data capture).
- Defra LAQM guidelines (TG16) requires 'annualisation' (correction) for low (<75%) data capture rate.
- Defra LAQM guidelines (TG16) require 'bias' – only available in April of following year.
- Data presented in this interim report covers 4-month period (Nov.20 – Feb. 21).

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3. Results Summary

- Bias corrected nitrogen dioxide (NO₂) mean concentration levels have been compared with the annual mean air quality objective (EU limit value)/standard and there are no exceedances at any of the monitoring locations set out in the phase 1 LTNs – see Graph 1.
- Bias corrected nitrogen dioxide (NO₂) mean concentration levels have been compared with the baseline monitoring data relevant to each of the LTNs, where the former is generally lower (see column headed ‘% change..’ Table 1) than the corresponding baseline values (see charts 1-7). Baseline nitrogen dioxide concentration levels may be higher than concentration levels at the corresponding LTN monitoring locations nearby. Such a scenario would be perfectly normal as that would reflect emissions from the traffic volume as well as different categories of vehicles that pass-by at/near that location.
- Note that the EU limit value of 40µg/m³ has not been presented in bar charts 2 and 3 (pages 9 and 10 respectively) deliberately, to prevent over-cramming due to too many data bars, although the same limit applies to annualised and bias corrected nitrogen dioxide concentration levels.

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Table 1 – Nitrogen dioxide concentration level at different LTNs monitoring locations with respective baseline

Low traffic neighbourhood or Baseline Reading	Diff Tube ID	Diff Tube Location	Nov. 20	Dec. 20	Jan. 21	Feb. 20	NO2 Mean Conc. Level ($\mu\text{g}/\text{m}^3$)	NO2 Ann. & Bias Corr. Mean Conc. Level ($\mu\text{g}/\text{m}^3$)	% Change in NO2 Ann. & Bias Corr. Mean Conc. Level Rel. to Baseline (%)
Baseline	Baseline - Nearest tube EA24	213 Northfields Ave, West Ealing, W13 9QU	46.4	30.4	42.2	32.5	37.9	28.0	N/A
LTN 21: West Ealing South	LTN21/3	Windmill Road, at/near the Junction with Swyncombe Avenue	44.8	32.6	40.7	43.3	40.4	24.1	-14%
Baseline	Baseline - Nearest tube EA23	158 South Ealing Road, Ealing, W5 4QL	56.2	39.4	67.4	57.4	55.1	40.8	N/A
LTN 32: Junction Road	LTN32/1	Windmill Road, near the junction with Darwin Road	44.7	38.4	45.7	45.1	43.5	29.8	-27%
LTN 32: Junction Road	LTN32/2	South Ealing Road, near the junction with Darwin Road	No data	34.4	36.2	33.8	34.8	28.9	-29%
LTN 8: Olive Road	LTN08/1	South Ealing Road, near the Co-Op	49.5	36.5	42.7	36.4	41.3	28.3	-31%
LTN 8: Olive Road	LTN08/2	Popes Lane, near the junction with Olive Road	43.8	41.4	36.9	39.1	40.3	27.6	-32%
LTN 35: Mattock Lane	LTN35/3	St Mary's Road/South Ealing	No data	33.8	42.9	No data	38.4	31.8	-22%

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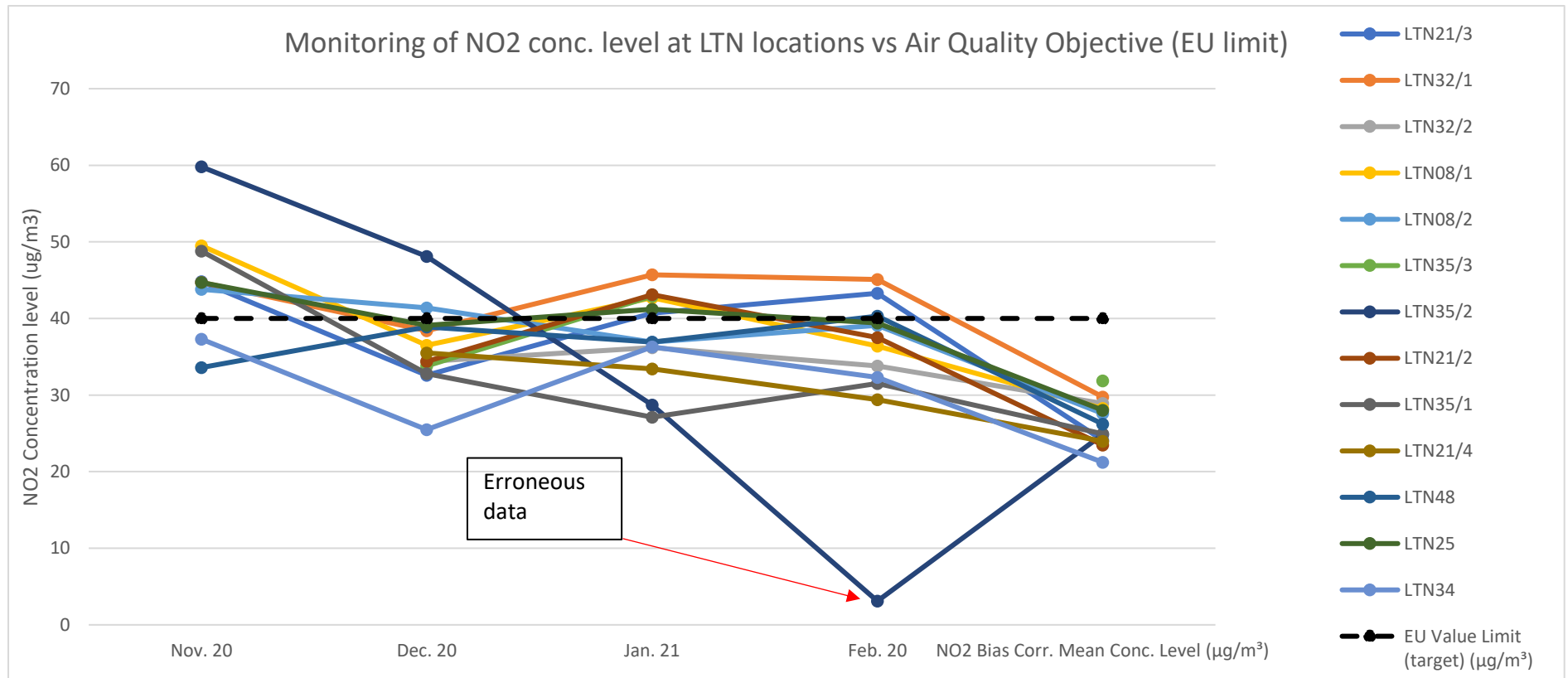
Low traffic neighbourhood or Baseline Reading	Diff Tube ID	Diff Tube Location	Nov. 20	Dec. 20	Jan. 21	Feb. 20	NO2 Mean Conc. Level ($\mu\text{g}/\text{m}^3$)	NO2 Ann. & Bias Corr. Mean Conc. Level ($\mu\text{g}/\text{m}^3$)	% Change in NO2 Ann. & Bias Corr. Mean Conc. Level Rel. to Baseline (%)
		Road, near the junction with Church Lane							
Baseline Reading	Baseline - Nearest tube EA2	1 Kirn Road, West Ealing, W13 0UB	30.4	42.1	50.9	40.6	41.0	30.3	N/A
LTN 35: Mattock Lane	LTN35/2	Northfield Avenue, roughly level with Sherwood Close	59.8	48.1	28.7	3.1	34.9	24.8	-18%
LTN 21: West Ealing South and LTN 20: West Ealing North	LTN21/2	Uxbridge Road, near the junction with Leeland Terrace	No data	34.4	43.1	37.5	38.3	23.5	-23%
LTN 35: Mattock Lane and LTN 30: Loveday Road	LTN35/1	Uxbridge Road, near the junction with Culmington Road	48.8	32.8	27.1	31.5	35.1	24.9	-18%
Baseline Reading	Baseline - Nearest tube EA6	200 Uxbridge Road, Hanwell, W7 3TB	54.8	42.6	49.2	44.1	47.7	35.3	N/A
LTN 21: West Ealing South	LTN21/4	Lower Boston Road, by Hanwell Green	No data	35.5	33.4	29.4	32.8	24.0	-32%
Baseline Reading	Baseline - Nearest tube EA14	25 Lady Margaret Road, Southall, UB1 2RA	46.3	41.7	45	34.2	41.8	30.9	N/A

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LTN 48: Adrienne Avenue	LTN48	Lady Margaret Road, btw Woodstock Avenue & Kenilworth Gardens	33.6	38.9	36.9	40.3	37.4	26.2	-15%
Baseline Reading	Baseline - Nearest tube EA51	88 High Street, Acton, W3 6QX	58.7	47.8	61.9	52.8	55.3	40.9	N/A
LTN 25: Acton Central	LTN25	Churchfield Road, btw Alfred Road and Myrtle Road	44.7	39.1	41.2	39.4	41.1	28.0	-32%
Baseline Reading	Baseline - Nearest tube EA45	98 Western Avenue, Acton, W3 7TZ	45.2	39	46.8	40.6	42.9	31.7	N/A
LTN 34: Bowes Road	LTN34	East Acton Lane, btw Friars Place Lane & Beechwood Grove	37.3	25.5	36.3	32.3	32.9	21.2	-33%
EU Limit Value	N/A	N/A	40.0	40.0	40.0	40.0	N/A	40.0	N/A

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Graph 1 – Nitrogen dioxide concentration level at different LTN monitoring locations compared with the EU limit value



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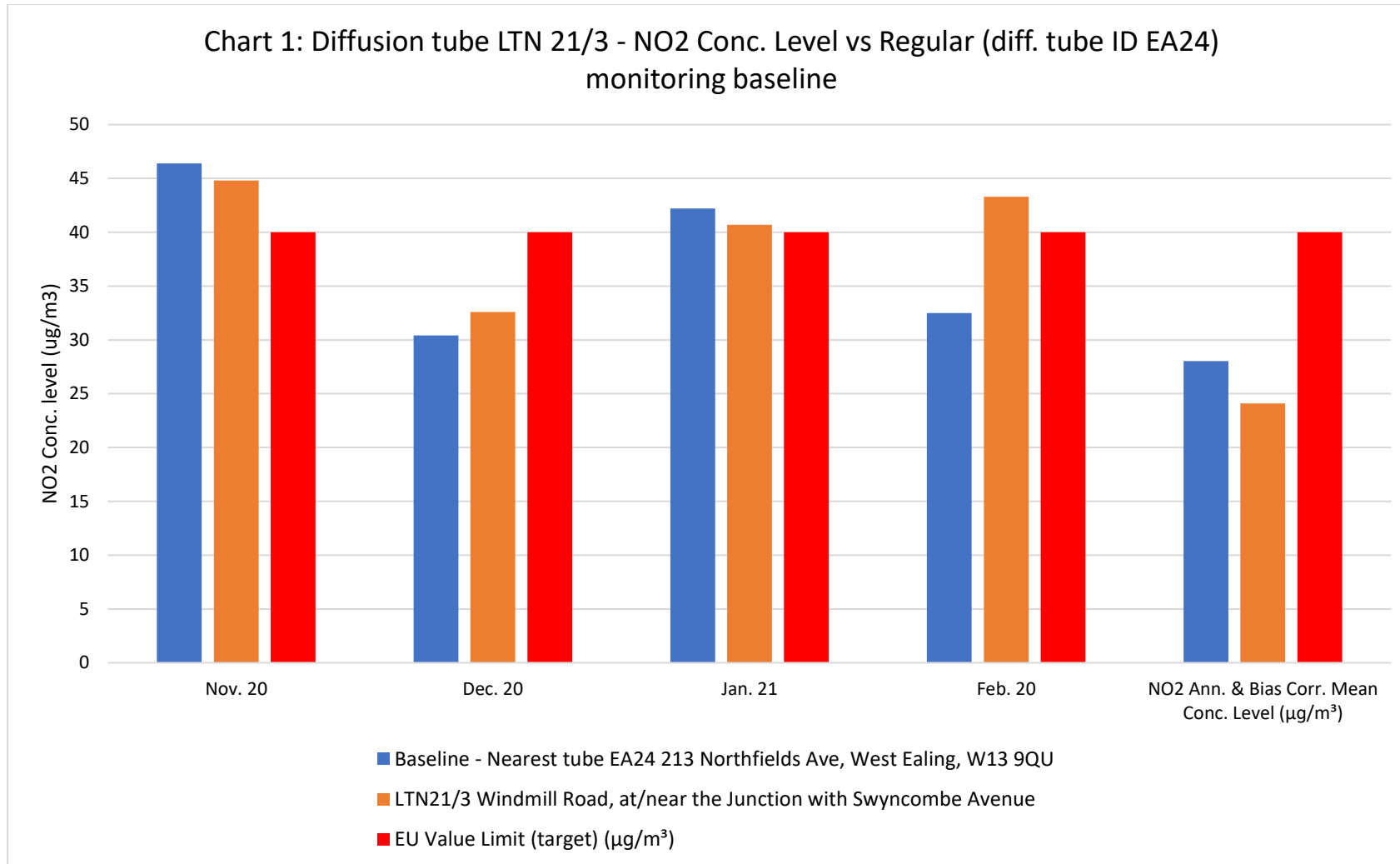
1. Comment and conclusion

The annualised and bias corrected NO₂ baseline and LTN monitored mean concentration levels are below the EU limit value (legal limit). It's important to recognise that change in nitrogen dioxide (NO₂) concentration levels resulting from introduction of LTN's has not led to any exceedances of the air quality objective owing to any potential vehicle traffic displacement. As the monitoring period for this interim report is less than a year that is usually recommended to account for seasonal variations, a final report will be produced using 12-month monitoring data and published in due course. Nonetheless, monitoring data to date demonstrate that NO₂ mean concentration levels from both the LTN initiative and the baseline NO₂ concentration levels from the regular monitoring programme, over the same period, are below the EU limit value of 40micrograms per cubic metre (40µg/m³).

End

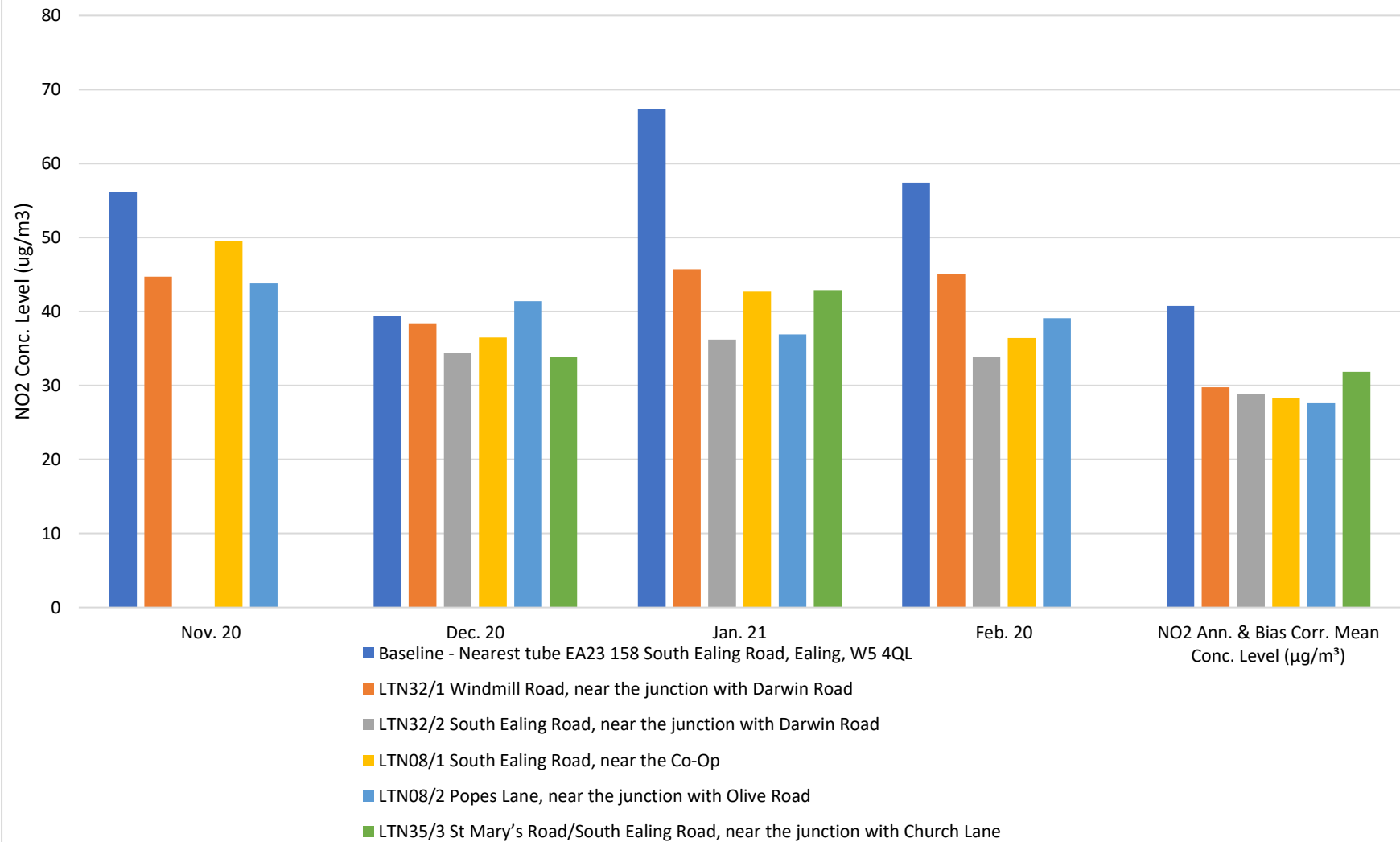
NB If you have further queries on air quality data related to LTNs, please write to: pollution-technical@ealing.gov.uk

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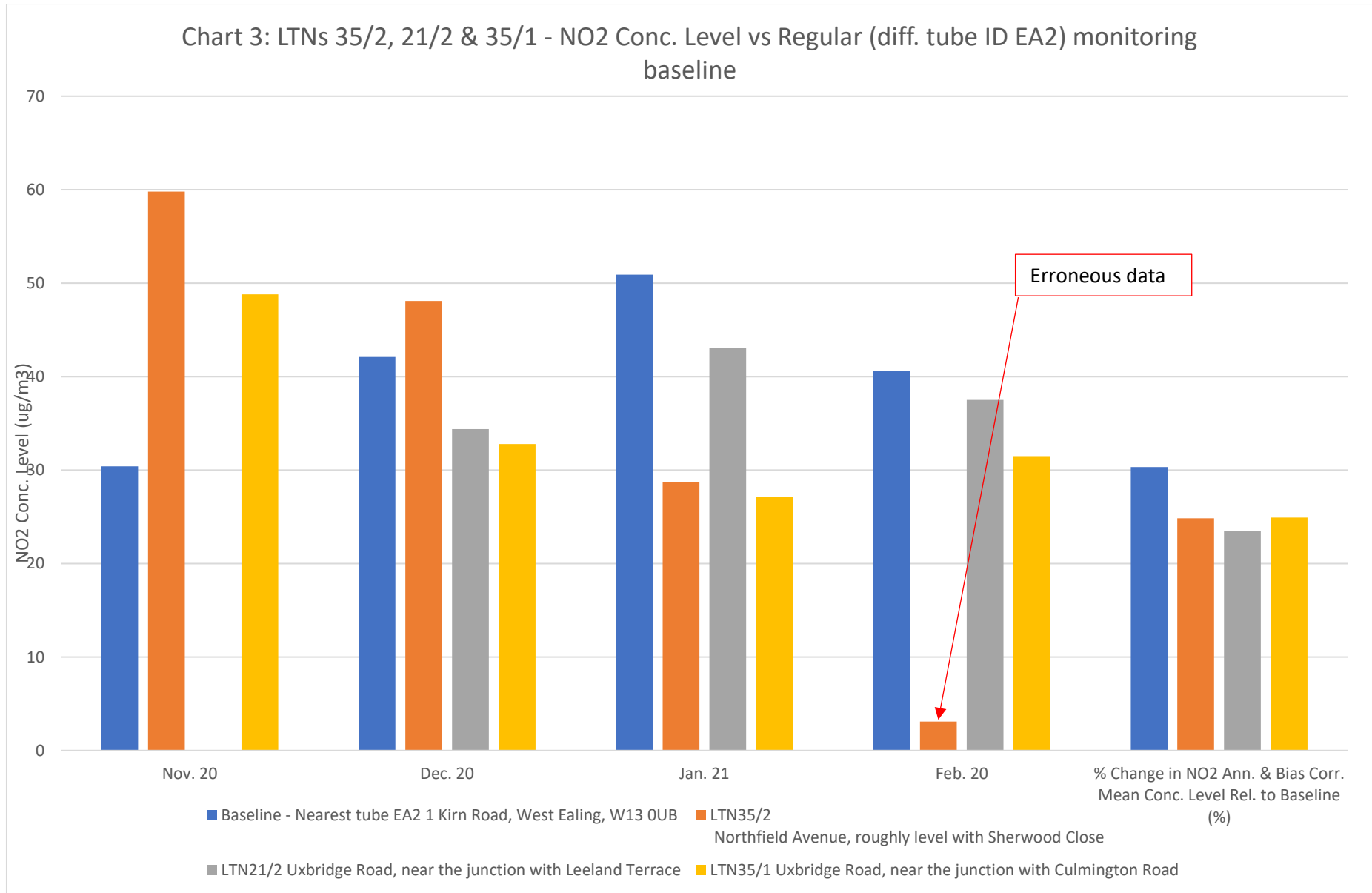


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Chart 2: Diffusion tubes LTN 32/1, 32/2, 08/1, 08/2 & 35/3 - NO₂ conc. level vs Regular (diff. tube ID EA23) monitoring baseline

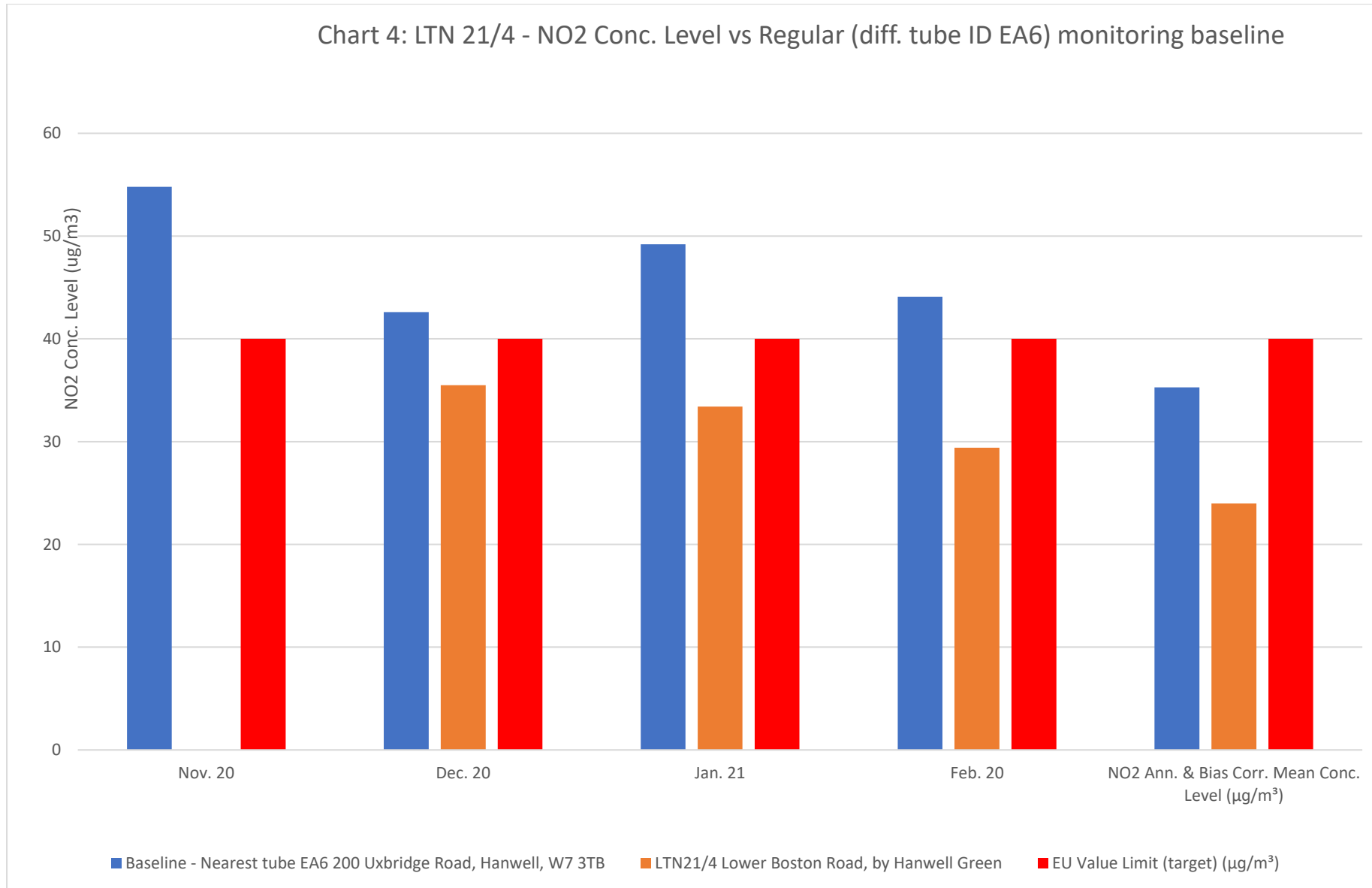


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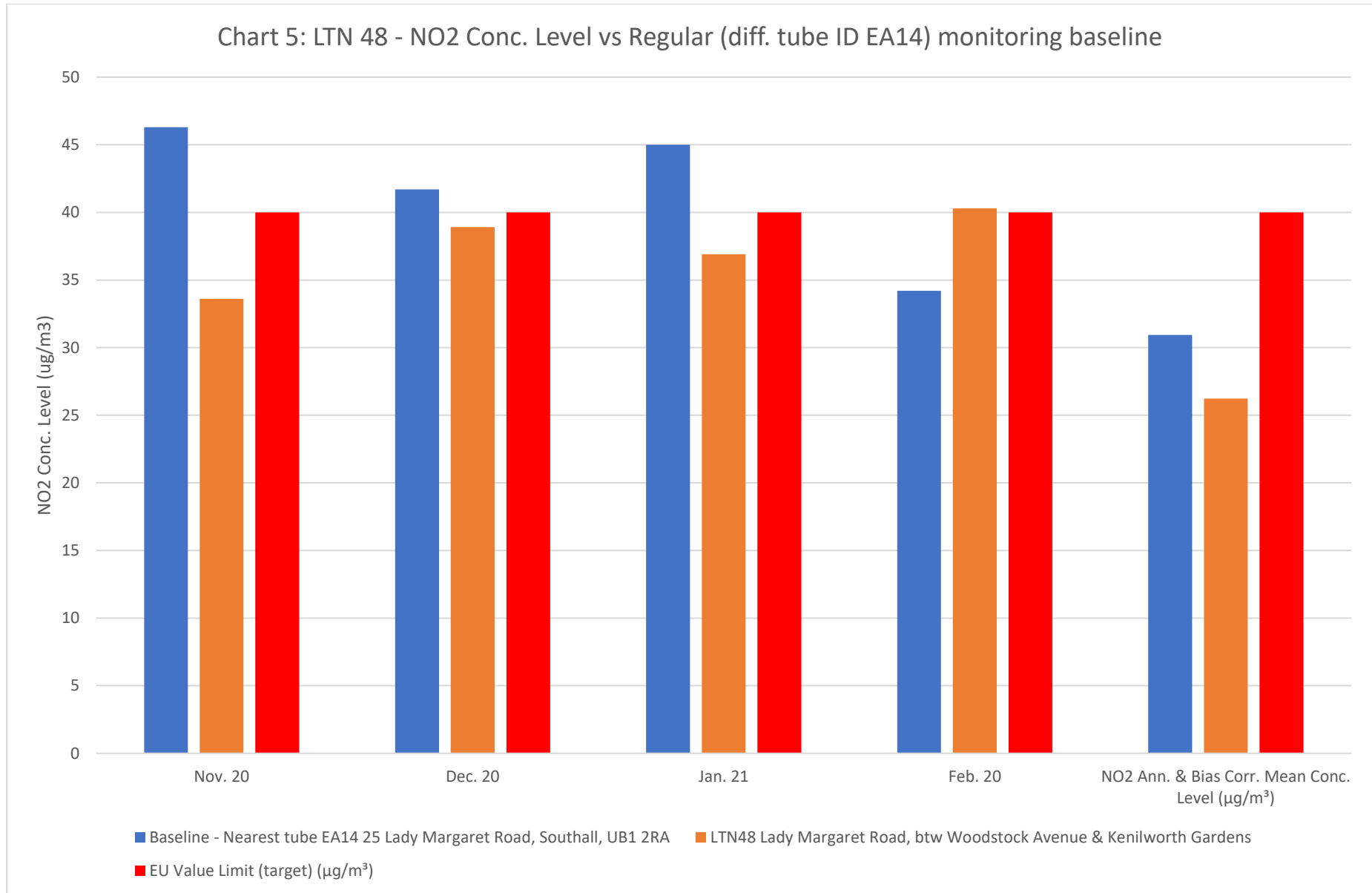


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Chart 4: LTN 21/4 - NO2 Conc. Level vs Regular (diff. tube ID EA6) monitoring baseline

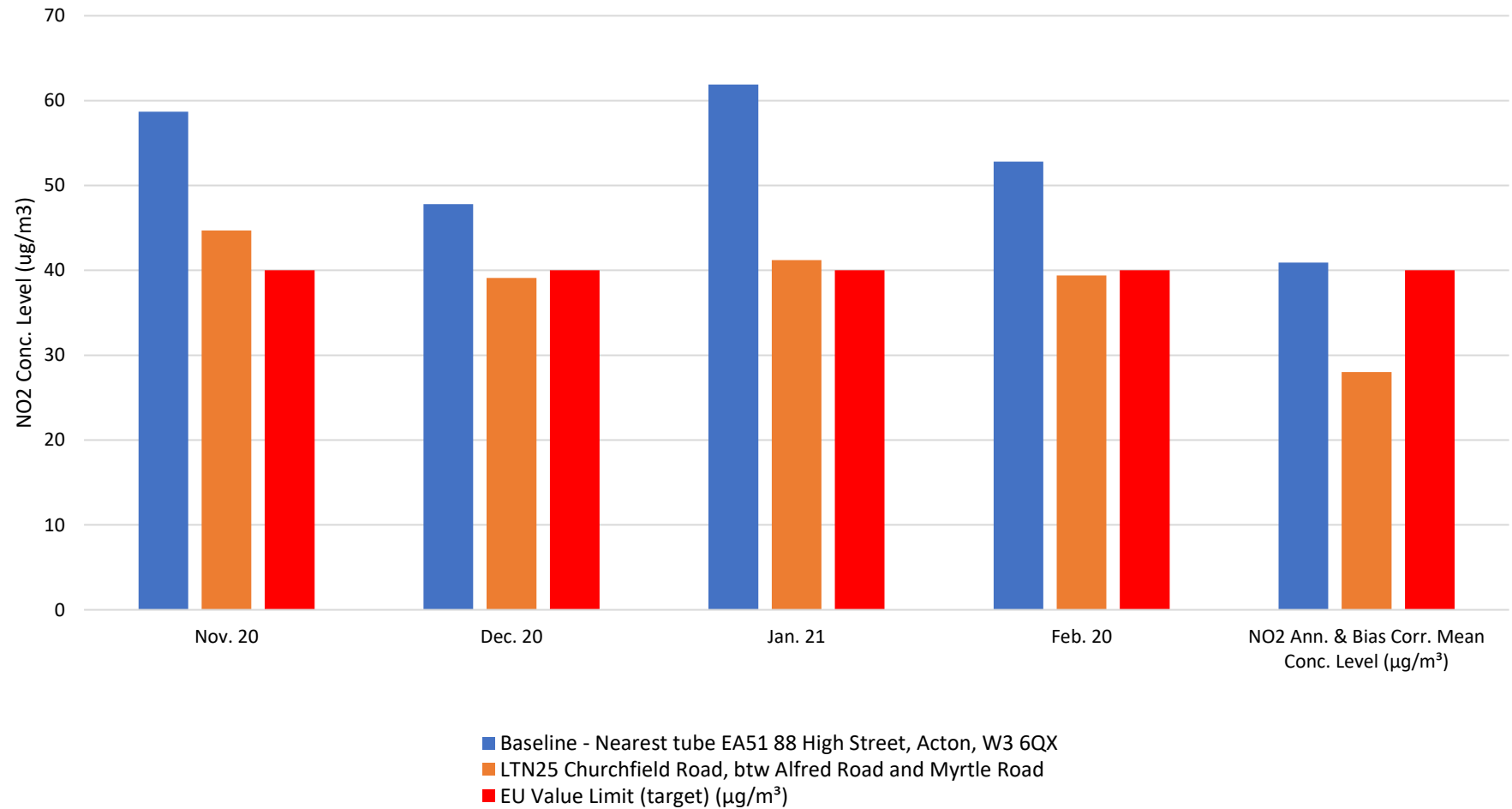


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Chart 6: Diffusion tube LTN 25 - NO2 Conc. Level vs Regular (diff. tube ID EA51) monitoring baseline



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