

# Comment on revised air quality assessment for Willow Trees, 111 High Street Newington (20/505059/FULL)

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21/06/22

1. The Centre for Health Services Studies at The University of Kent was previously asked to comment on a variety of housing applications in Newington including the proposal to construct 20 dwellings at “Willow Trees” 111 High Street (20/505059/FULL). Specifically we provided comments on the AQA constructed by enSAFE Consultants [1]. The applicant has since revised the submission and reduced the number of dwellings to 10 and have included a new AQA [2].
2. The new AQA suffers from the same problems as the previous one, namely that the initial (unadjusted) model is poor. Table B7 on page 46 of [2] compares monitored road NO<sub>x</sub> with modeled NO<sub>x</sub> and shows percentage differences between 1% and 44% (13.48 ug/m<sup>3</sup>). The average % difference is 23.75.
3. Box 7.17 on page 7-135 of LAQM-TG(16) [3] outlines the procedure for “*Initial Comparison of Modelled and Monitored Total NO<sub>2</sub> Concentrations*”. This procedure should be examined before moving onto Box 7.18 because Lustre compares NO<sub>2</sub> values in Table 12 and not NO<sub>x</sub>.
4. Box 7.17 outlines several conditions via the directive “If your checks confirm that:” and, relative, here requires that:
  - A. *there is no systematic under or over prediction;*
  - B. *predictions at sites where monitoring shows concentrations are close to the objective show good comparison; and*
  - C. *the majority of results are within 25% (as a minimum - preferably within 10%) of monitored concentrations*
5. If these conditions are not met, the guidance goes on to state that “*you will need to consider altering the model inputs and rerunning in order to improve the results of the comparison and verification*”.
6. It is our view that the initial model is not accurate enough to proceed to the adjustment step.
7. enSafe acknowledges this inaccuracy when it states on page 47 of [2] that:

*“it is difficult to have the model represent these specific localised conditions. It is also important to note that the accuracy of diffusion tubes monitoring is considered to be +/- 20% and as such, this can make it difficult to accurately represent this variance within the model.”*

8. We are in agreement with enSafe here, in that line-source emission models such as that used are not good at predicting reality accurately. So the question that should be asked is, why should the local authority accept such models as evidence when even the authors of such models admit their inaccuracy?
9. In summary, the air quality assessments recommendations are based on a model with a poor initial accuracy and so we cannot draw any firm conclusions as to the impact of this individual development or its contribution cumulatively.

### **Bibliography**

- [1] enSAFE consultants, 'Air Quality Assessment at 111 Newington High Street, SWALE. AQ109475'. Nov. 06, 2020 [Online]. Available: Search SBC planning portal for 20/505059/FULL: <https://pa.midkent.gov.uk/online-applications/>
- [2] enSAFE consultants, 'AIR QUALITY ASSESSMENT FOR 111 NEWINGTON HIGH STREET, SWALE AQ77444r1', May 2022 [Online]. Available: Search SBC planning portal for 20/505059/FULL: <https://pa.midkent.gov.uk/online-applications/>
- [3] DEFRA, 'Local Air Quality Management Technical Guidance (TG16) - April 2021'. 04/21 [Online]. Available: <https://laqm.defra.gov.uk/documents/LAQM-TG16-April-21-v1.pdf>