
The Cambridge South East Transport Order

Transport And Works Act 1992

Transport And Works (Applications And Objections Procedure) (England And Wales) Rules 2006

Appendix 7.6 – Noise – Traffic Data Analysis

Document Reference	CSET-10-22
Revision Number	00
Applicant	Cambridgeshire County Council
Date	January 2025

Introduction

- 7.1.1
- The ES noise assessment determined that in addition to the change in noise near the new bus links themselves, there was the potential for a significant effect on the road network due to the Proposed Development.
- 7.1.2
- The results of this assessment were reported in the Environmental Statement (ES) that was submitted to the client in 2023. Following this, the Proposed Development was put on hold for a number of months.
- 7.1.3
- The Proposed Development is now live again and the Project Team have determined that the Opening Year of the Proposed Development, which was 2026, is no longer viable. The traffic modelling for the Proposed Development has been updated, with new traffic flow data issued to enable the noise assessment of an Opening Year of 2029, as well as reissuing updated values for the Future Year, 2041.
- 7.1.4
- A sensitivity test has been carried out to determine whether the new data, with a revised assessment year, has the potential to affect the outcome of the noise assessment provided in the ES.
- 7.1.5
- If the sensitivity test were to indicate that the new traffic data could affect the outcome of the ES noise assessment, a more detailed study would be required.

Method

Prediction method

- 7.1.6
- The method for the sensitivity test used elements of the operational noise assessment method from DMRB LA 111 “Noise and Vibration”, as provided in the ES Chapter 7.
- 7.1.7
- The prediction method and traffic information requirements was used. The road traffic noise calculations were undertaken in accordance with the modified Calculation of Road Traffic Noise - 1988 (CRTN) method set out in DMRB LA 111 - 2020, using the following outputs from the traffic model.
 - Traffic flows in vehicles Annual Average Weekday Traffic (AAWT) 18 hour, the average number of vehicles over a year, on weekdays from 06:00 until midnight.
 - Traffic flows in vehicles Annual Average Day (07:00 to 19:00), Evening (19:00 to 23:00) and Night (23:00 to 07:00).
 - Percentage Heavy Duty Vehicles (HDV) content of total flow for the relevant time periods defined above.
 - Traffic speeds (kph) for the relevant time periods defined above.
- 7.1.8
- The operational noise assessment within the ES included a detailed noise model, carried out in accordance with CRTN. For the purposes of this sensitivity text, a noise model is not proportionate.
- 7.1.9
- However, CRTN provides a method for the prediction of the Basic Noise Level (BNL), which is the noise level at 10 m from the edge of a road, and the assessment was carried out by predicting the BNL on each road and comparing the results with the predicted BNL from the ES traffic.
- 7.1.10
- In addition, the short-term and long-term change in noise was predicted on each road link, for both the ES and new traffic data, and these were compared. The scenarios years under assessment were as follows:
 - Do Minimum scenario (without Proposed Development) in the opening year (DMOY).

- Do Minimum scenario (without Proposed Development) in the future assessment year (DMFY) (typically 15 years after opening).
- Do Something scenario (with Proposed Development) in the opening year (DSOY).
- Do Something scenario (with Proposed Development) in the future assessment year (DSFY).

- 7.1.11
- Where the following comparisons were made for both the ES traffic data and new traffic data:
 - DMOY against DSOY (short-term).
 - DMOY against DSFY (long-term with the Proposed Development).
 - DMOY against DMFY (long-term without the Proposed Development).

Assessment Method

- 7.1.12
- Once the predictions of BNL have been carried out, along with the short-term and long-term comparisons, for both the ES and new traffic data, the following values were used to assess potential noise impacts.

Table A7.6.1 Operational noise levels of significance for all receptors (daytime)

Effect Level	Façade dB LA10, 18h (Daytime)	Façade dB LAeq, 16h (Daytime)
Lowest Observed Adverse Effect Level (LOAEL)	≥ 55	≥ 53
Significant Observed Adverse Effect Level (SOAEL)	≥ 68	≥ 66

Table A7.6.2 Magnitude of noise level change

Impact Magnitude	Short-term noise change (dB)	Long-term noise change (dB)
Major	Greater than or equal to 5.0	Greater than or equal to 10.0
Moderate	3.0 to 4.9	5.0 to 9.9
Minor	1.0 to 2.9	3.0 to 4.9
Negligible	Less than 1.0	Less than 3.0

- 7.1.13
- Also taking into account that “where any Do Something absolute noise levels are above the SOAEL, a noise change in the short-term of 1.0dB or over results in a likely significant effect”.
- 7.1.14
- If the roads affected by the Proposed Development are different, this has the potential to affect the outcome of the operational noise assessment from the ES.

- 7.1.15

Finally, the new traffic data has the potential to change the size of the operational noise study area. Within the ES and in accordance with DMRB LA 111, the Study Area was defined as follows:
 - The area within 600 m of new road links or road links physically changed or bypassed by the project
 - The area within 50 m of other road links with potential to experience a short-term BNL change of more than 1.0dB(A) as a result of the project
- 7.1.16

If there are additional roads that meet these conditions, or roads that no longer meet these conditions, with the new traffic data, this has the potential to affect the outcome of the operational noise assessment from the ES.
- 7.1.17

Roads with fewer than 1000 vehicles per day were not included in the sensitivity assessment, as CRTN states that traffic flows below this value are unreliable, in relation to the prediction of noise.

Results

- 7.1.18

The new traffic data was used to carry out the sensitivity test, in order to determine whether the new data has the potential to affect the outcome of the noise assessment provided in the ES.
- 7.1.19

As stated in the method section above, outside the area 600 m from the project, the Study Area includes the “area within 50 m of other road links with potential to experience a short-term BNL change of more than 1.0dB(A) as a result of the Proposed Development.”
- 7.1.20

The sensitivity test determined that using the new traffic data would lead to a Study Area that is the same size as the ES Study Area, i.e. there would be no road links being added or removed from the Study Area due to the new traffic data.
- 7.1.21

The outcomes of the sensitivity test showed that there were no changes to the predicted BNLs within the traffic network that would lead to a change in the number or location of significant effects due to the change of assessment years.
- 7.1.22

Table A7.6.3 shows the road links that were predicted to lead to a significant change in noise in the ES, due to changes in traffic, with the revised changes due to the change in assessment years shown. Negligible changes, and those caused by the busway or bus traffic, have been ignored as there is no predicted change in bus traffic with the new traffic data.

Table A7.6.3 Comparison of traffic on road links with a significant effect in the ES

Road	DMOY against DSOY		DMOY against DSOY		DMOY against DMFY	
	ES Short-Term	New Short-Term	ES Long-Term	New Long-Term	ES Long-Term DM	New Long-Term DM
Park Terrace	+1.5dB	+1.5dB	+2.3dB	+2.4dB	+0.6	+0.7
Regent Street	+1.2dB	+1.3dB	+1.6dB	+1.7dB	+0.4	+0.6

- 7.1.23

It was predicted that on the two links affected by changes in traffic alone, the values were very similar and that the significance conclusions would be the same as provided in the ES.

Conclusion

- 7.1.24

The noise assessment within the ES determined that in addition to the change in noise near the new bus-only route itself, there was the potential for a significant effect on the road network due to the Proposed Development.
- 7.1.25

The traffic team have reissued traffic data for the new Opening Year of 2029, as well as updated values for the Future Year of 2041.
- 7.1.26

A sensitivity test on this data has been carried out, and it was determined that the new traffic data is unlikely to affect the outcome of the noise assessment that was provided in the ES.