



Gloucestershire
COUNTY COUNCIL



**Gloucester South West Bypass
(Llanthony Road) Improvements**
Road Traffic Noise Assessment Addendum

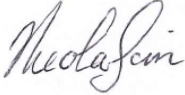


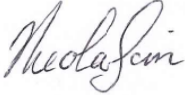


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Contents

1	Introduction	1
1.1	Background to this scheme	1
1.2	Purpose and scope of report.....	1
2	Methodology	2
2.1	Assessment methodology	2
2.2	Traffic data	2
3	Assessment and mitigation	3
3.1	Operational assessment	3
3.2	Operational mitigation.....	3
3.3	Construction assessment.....	4
3.4	Construction mitigation	4
3.5	Noise insulation regulations eligibility	5
3.6	WebTag.....	5
4	Summary	6
5	References	7

Tables

Table 1: Tempo traffic growth factors	2
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1 Introduction

1.1 Background to this scheme

- 1.1.1 Amey has been requested by Gloucestershire County Council (GCC) (the Client) to provide an addendum to the Traffic Noise (RTN) Assessment undertaken by White Young Green (WYG) (August 2017) (**Ref 1**) in respect of the A430 Llanthony Road, Gloucester, Road. The WYG report concluded that the widening of the road results in a negligible adverse impact for the surrounding noise sensitive receptors on Hemmingsdale Road and Sudmeadow Road, if no other alterations were to be made to the surrounding area. However, with the removal of the City Business Centre, a significant physical noise screen for the rear gardens and rear facades of the houses along Hemmingsdale Road and Sudmeadow Road will be removed, significantly increasing the noise levels affecting these receptors.
- 1.1.2 The WYG Report recommended the provision of a 3m high noise barrier/fence against the south-eastern edge of the rear gardens of the properties on Hemmingsdale Road and Sudmeadow Road.
- 1.1.3 The opening year for the altered road has been changed from 2018 to 2022.

1.2 Purpose and scope of report

- 1.2.1 The report details any changes in assessed noise from the WYG Report associated with the change in the opening year, and reviews the proposed mitigation specified in the WYG Report taking account of comments received from the Client.

2 Methodology

2.1 Assessment methodology

- 2.1.1 The assessment compared the predicted noise generated by the traffic in 2018 and 2022, and determines the 'difference' between the two as a percentage change in the predicted noise. The assessment makes reference to the guidance contained in the Design Manual for Roads and Bridges (DMRB) HD213/11 (**Ref 2**), which suggests that a 25% increase, or 20% decrease, in total traffic volumes, associated with a 1 dB change in noise levels, may be perceptible in the short term and, hence, may be considered "significant". The assessment also reviewed the previously determined considerations with respect to qualification for insulation under the Noise Insulation Regulations, 1975 (**Ref 3**) and option-analysis with respect to WebTAG assessment guidelines (**Ref 4**).
- 2.1.2 There are no additional baseline conditions, changes to the study area or the proposed road alignment from that previously stated in the WYG report.

2.2 Traffic data

- 2.2.1 Amey's S-Paramics micro simulation model for the A430 Llanthony Road widening scheme improvements was used in the WYG Report. The traffic data was fully validated and appropriate parameters were suitable for use.
- 2.2.2 With the estimated opening year being moved from 2018 to 2022 a review of the applicability of the traffic data representing opening year 2018 to 2022 has been completed. Ian Sanders, Amey's Transport Planning Team (2nd August 2018) calculated growth factor for traffic between 2018 and 2022 of 4.43% for urban Gloucester, incorporating National Transport Model and local TEMPRO growth factors.
- 2.2.3 Consequently, the opening year results for 2018 are equally applicable to 2022. The growth factors are shown in Table 1. For this assessment, the growth factor for the area Gloucester 004 (ID E02004639) was selected.

Table 1: Tempro traffic growth factors

Level	Area	Local Growth Figure
Region	South West	1.0405
County	Gloucestershire	1.0393

Level	Area	Local Growth Figure
Authority	Gloucester	1.0481
E02004639	Gloucester 004	1.0443

3 Assessment and mitigation

3.1 Operational assessment

3.1.1 DMRB HD213/11 Section A1.8 ii) states that *"A change in noise level of 1dB $L_{A10, 18h}$ is equivalent to a 25% increase or 20% decrease in traffic flow assuming other factors remain unchanged and a change in noise level of 3dB $L_{A10, 18h}$ is equivalent to a 100% increase or a 50% decrease in traffic flow"*. Consequently, it was considered that traffic growth of 3% is unlikely to significantly change the noise levels for nearby sensitive receptors located within the study area.

3.1.2 Therefore, it is concluded that the day time noise levels will still result in a significant adverse impact for the residential receptors identified within the previous noise report, due to the demolition of the City Business Centre.

3.2 Operational mitigation

3.2.1 Within the original road traffic noise assessment prepared by WYG it was recommended that a 3m acoustic barrier should be constructed along the western edge of the rear gardens of the residential properties along Hemmingsdale Road and Sudmeadow Road.

3.2.2 After submission of the planning documents and discussions with all disciplines, the Client determined that the acoustic noise fence should be removed from the mitigation proposals; as the height and location is not desirable as it would be visually intrusive and the vacant land from the demolition of the City Business Centre will be redeveloped in the near future.

3.2.3 Hence, a predicted significant adverse noise impact will remain until such time as the former Business Centre site is re-developed, but the noise impact due to the improvements of the road itself remains as previously predicted, i.e. negligible, for the sensitive receptors within the study area.

3.3 Construction assessment

- 3.3.1 In terms of construction noise and vibration impacts, there are no amendments to section 5.2 of the WYG Noise Assessment. Assessment methodology is still consistent with BS5288-1:2009+A1:2014 (**Ref 5**). All findings do not include any acoustic barriers adjacent to the sensitive receptors and all results remain valid. The conclusions are based on typical construction plant that would be required to undertake the works. The surrounding sensitive receptors were predicted to experience significant impact in regards to noise and vibration during the demolition of the City Business Centre.
- 3.3.2 The precise details of the construction phase and methods have not been determined yet, therefore no quantitative analysis was considered. However, it is known that, other than the demolition works, no piling, heavy vehicle movements or compaction will occur near the residential receptors.
- 3.3.3 Further details of the working methods can be implemented through the appropriate Construction Environmental Management Plan.

3.4 Construction mitigation

- 3.4.1 Mitigation measures that are required for the period of construction including the road improvements and the demolition of the Business Centre are detailed below.
- The use of "Best practicable means" as defined in Section 72 of the Control of Pollution Act 1974 (**Ref 6**) and compliance with the recommendations given in BS5288-1:2009+A1:2014.
 - All plant equipment will be adequately maintained to minimise noise emission. Ensure all plant has been silenced where appropriate, no vehicles left idling on site and no vehicles parked close to residential receptors.
 - Specific noise control practices shall be agreed between the contractor and the local authority if appropriate. Haul routes within the site should be planned, maintained and avoid steep gradients where practicable.
 - Any noisy works including demolition should take place during the day time, including Saturday mornings, if necessary, with no noisy works on Sundays or bank holidays. Any deviation from these working times should be discussed with the Local Authority.

- During the demolition of the building ensure temporary screening is in place for the surround sensitive receptors in order to reduce the impacts on noise and vibration and to minimise the views of the construction site. Barriers should be a uniform panel, with no holes or gaps on even ground at a height and width more than enough to cut off the sight of the source from the receiver.
- Ensure that no site compounds are located near to any receptors. This includes generators and compressors positioned as far from noise sensitive receptors as possible.
- Ensure that all staff and operatives are briefed on the equipment to minimise nuisance from site activities.
- The contractor shall ensure that all residents and surrounding businesses are kept informed about any disturbance such as unavoidable noise and vibration disruption. Information shall be provided well in advance by media and by letter drop to properties directly adjacent to the works.
- The site shall have a procedure in place in the event of complaint being made. The site manager should make their details (telephone number) known to the residents who can take immediate action to rectified the complaint.
- All complaints concerning the works/activities must be recorded within a register and made available to the Local Authority, if requested. The register shall provide all information from details of the complaint, date, times to measures put in place to ensure the complaint has been dealt with.

3.5 Noise insulation regulations eligibility

- 3.5.1 It was concluded that the changes in traffic data, to include the opening year of 2022, demonstrated that no receptors are eligible for noise insulation as per the Noise Insulation Regulations 1975.

3.6 WebTag

- 3.6.1 Changes in traffic data (increasing by 3%) does not significantly affect any of the WebTag analysis options previously determined. Therefore, the WebTag proposal being taken forward is the option for full demolition of City Business Centre with no proposed barrier as stated in Appendix E of the WYG Noise Assessment.

4 Summary

- 4.1.1 To conclude, the findings of the noise assessment prepared by WYG to accompany the planning application for the improvements along the A430 Llanthony Road, Gloucester are valid and in line with the DMRB guidance; the WYG report calculated that the road improvement scheme itself would give rise to a negligible adverse noise impact for adjacent noise sensitive receptors. The change in opening year from 2018 to 2022 does not alter the overall significance detailed in the original report, due to the change in traffic flows being limited to 4.43%; this is significantly below the 25% traffic volume change necessary to produce a potentially perceptible change in noise levels of 1dB.
- 4.1.2 However, the demolition of City Business Centre is required for the road alignment, resulting in a predicted significant adverse impact on the adjacent residential receptors on Hemmingsdale Road and Sudmeadow Road.
- 4.1.3 The 3m acoustic barrier recommended by WYG, although reducing noise levels in rear gardens and at ground-floor rear facades of the adjacent properties, would not reduce the predicted significant adverse impact on the first-floor rear facades. Additionally, the height of the barrier, so close to the properties, will be visually intrusive. In view of this consideration, alongside the conclusion (by the Client) that the vacant land will be re-developed in the near future, the Client determined that the 3m barrier should be removed from the scheme.
- 4.1.4 The outcomes of the Noise Insulation and WebTAG assessments, as previously determined by WYG, remain valid.

5 References

- Ref. 1 WHITE YOUNG GREEN (WYG), (August 2017) *Llanthony Road, Gloucester Road Traffic Noise Assessment. Report No. A1009194*
- Ref. 2 HIGHWAYS AGENCY, Transport Scotland et al (2014), Design Manual for Roads and Bridges (DMRB) Volume 11, Section 3, Part 7, HD 213/11 "Noise and Vibration".
- Ref. 3 GREAT BRITAIN (1975), The Noise Insulation (Scotland) Regulations 1975.
- Ref. 4 DEPARTMENT OF TRANSPORT, TAG Unit A3 Environmental Impact Appraisal (Dec 2015) Available from <https://www.gov.uk/transport-analysis-guidance-webtag>
- Ref. 5 BRITISH STANDARD INSTITUTION (2009+A1 2014), BS 5228 *Code of practice for noise and vibration control on construction and open sites – Part 1 Noise and Part 2 Vibration.*
- Ref. 6 GREAT BRITAIN (1974), The Control of Pollution Act 1974