Appendix H Noise Assessment

TECHNICAL NOTE

Job Name: Chichester

Job No: 43682

Note No: TECH01

Date: 04/10/2018

Prepared By: Zoe Richardson

Subject: **Chichester Local Plan Developments - Noise Impact Assessment**

Item	Subject
1.	**Introduction** This technical note presents the findings of a noise impact assessment undertaken of the likely change in noise levels due to changes in traffic flows as a result of developments included within the preparation of the Chichester Local Plan Review: 2016 – 2035. The objectives of the assessment are to: • Identify whether the traffic flow increases predicted to occur as a result of developments included within the Local Plan are likely to result in noise impacts sufficient to merit further investigation. • The assessment is based on data provided by the Transport consultant (PBA). A short description of the proposed developments included within this assessment is located in Section 1.4 of the '*Transport Study of Strategic Development Options and sustainable Transport Measures'* produced by PBA. The note forms part of the assessment undertaken for the Chichester Local Plan: Key Policies 2014 - 2019 – Transport Study.
2.	**Guidance and Proposed Assessment Criteria** <u>Design Manual for Roads and Bridges</u> The Design Manual for Roads and Bridges (DMRB) is considered as the regulatory standard for the design of a new road or improvements to an existing road. In particular, Volume 11 Section 3 Part 7 (HA 213/11 – Revision 1) sets out the method for assessing noise and vibration associated with road traffic. DMRB provides guidance on the selection of the scheme assessment area, the relevant assessment years and quantifies the noise and vibration impacts generated by changes in road traffic.

DOCUMENT ISSUE RECORD

Technical Note No	Rev	Date	Prepared	Checked	Reviewed (Discipline Lead)	Approved (Project Director)
43682/TECH01	-	26/09/2018	ZR	MB	MB	
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	Significance Criteria The assessment of road traffic noise follows the assessment methodology detailed in DMRB HD 213/11. The assessment considers the change in noise levels due to changes in road traffic flows from the proposed developments. The assessment is based on AAWT 18-hour traffic flows. In accordance with the Calculation of Road Traffic Noise (CRTN), roads with flows of < 1,000 have not been included within this assessment. The assessment determines which roads are likely to result in changes in noise levels sufficient to require a detailed assessment. The threshold criteria used for this is a change in magnitude of 3 dB $L_{A10,18\ hr}$ or more. The Local Plan includes developments which are to be completed between 2014 and 2029. It is assumed that the developments included within the plan are to be gradually completed over the plan period. As such, the assessment criteria is based on the long term change in noise level as defined by DMRB. The impact of the proposed developments on the noise climate of the surrounding area is assessed based on the change in noise levels at noise sensitive receptors due to a change in the volumes of road traffic on the existing road network generated by the Developments. Table 2.1 details the magnitude of impact due to road traffic noise changes arising from operational road traffic noise. Table 2.1: Change in Noise Levels Due to Operational Road Traffic Noise **Change in Long-term Ambient Noise Level Due to Operational Traffic ($L_{A10,18\ h}$ dB)** / **Magnitude of Impact** 0 / No Change 0.1 to 2.9 / Negligible 3 to 4.9 / Minor 5 to 9.9 / Moderate 10 + / Major
3.	**Assessment** The assessment considers the potential noise effects associated with the change in traffic flows in relation to the operational phases of the developments included within the Local Plan. The change in noise level has been calculated at existing noise sensitive receptors located adjacent to the assessed road links. The following scenarios have been modelled: • 2035 Do-Minimum (i.e. future year baseline without the developments in place); • 2035 Do-Something (i.e. future year with the developments in place); and • 2035 Do-Something with transport Mitigation (i.e. future year with developments in place and potential mitigation). As per CRTN, roads with flows of <1,000 have not been included within the assessment. The absolute levels detailed in Table 4.1 and 4.2 assume that traffic from the road link under assessment is the dominant sound source. For roads with flows of around 1,000, ambient noise from other roads/sources may also contribute to the ambient sound level

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at any receptors and as such the overall change in sound level may be less than indicated in the tables.

Existing Road Network

Based on the 18-hour Annual Average Weekly Traffic (AAWT) information provided by the project transport consultant, PBA, Figures 1 to 5 present the results of the assessment for a comparison of the 2035 Do-minimum scenario to the 2035 Do-something scenario. Roads have been highlighted where a greater than 3 dB change in $L_{A10,\ 18\ hr}$ noise levels is expected.

Table 4.1. presents the calculated absolute noise level for both scenarios. The calculated change in noise level is also detailed along with the subsequent magnitude of impact.

Table 4.1: Change in Noise Levels Due to Operational Road Traffic Noise

Road Name	Link Name	Calculated Absolute Noise Level (dB)		Calculated Change in Noise Level (dB)	Magnitude of Impact
		2035 Without Development	2035 With Development		
Bracklesham Lane	2626_40190	51.8	64.2	12.5	Major
Moutheys Lane	3160_40146	50.7	60.2	9.4	Major
Clay Lane	4647_4746	54.7	62.9	8.2	Major
Clay Lane	4647_4747	55.7	63.1	7.4	Major
Clay Lane	3454_4747	55.7	63.1	7.4	Major
Station Road	2653_2757	53.5	60.8	7.3	Major
Clay Lane	2757_40146	55.3	62.3	7.0	Major
Clay Lane	3454_40146	53.4	59.7	6.3	Major
Broad Road	1854_40168	51.8	57.6	5.8	Major
Bell Lane	2626_2834	60.1	65.5	5.4	Major
Southbrook Road	2659_2661	52.8	58.1	5.3	Major
Fishbourne Road (East)	4746_4845	58.5	63.7	5.3	Major
B2146	2659_2757	55.0	60.0	5.0	Major
Cheesemans Lane	1864_40135	60.0	64.3	4.3	Minor
Cheesemans Lane	1861_40166	60.3	64.3	4.0	Minor
Cheesemans Lane	1861_40135	60.6	64.4	3.9	Minor
Woodmancote Lane	1362_40157	52.8	56.7	3.9	Minor
Old Farm Lane / Whitechimney Row / East Street	1260_40136	57.2	60.8	3.7	Minor
A27	50223_50225	59.8	63.1	3.6	Minor
Tangmere Road	50225_50226	61.6	65.2	3.5	Minor
Pound Farm Road	7348_8002	56.7	60.2	3.5	Minor
Pound Farm Road	7048_8002	57.5	60.6	3.1	Minor

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Figures 6 to 10 present the results of the assessment for a comparison of the 2035 Do-minimum scenario to the 2035 Do-something with mitigation scenario. Roads have been highlighted where a greater than 3 dB change in $L_{A10,\ 18\ hr}$ noise levels is expected.

Table 4.2. presents the calculated absolute noise level for both scenarios. The calculated change in noise level is also detailed along with the subsequent magnitude of impact.

Table 4.2: Change in Noise Levels Due to Operational Road Traffic Noise with Mitigation

Road Name	Link Name	Calculated Absolute Noise Level (dB)		Calculated Change in Noise Level (dB)	Magnitude of Impact
		2035 Without Development	2035 With Development		
Bracklesham Lane	40190_2626	46.5	59.5	13.0	Major*
Clay Lane	4647_4746	55.0	59.7	4.0	Minor*
Station Road	2757_2653	53.3	59.3	3.9	Minor*
Whitchimney Row/Old Farm Lane	40136_1260	57.2	60.9	3.9	Minor
Clay Lane	40146_2757	55.1	59.4	3.4	Minor*
Clay Lane	4747_4647	56.0	60.1	3.4	Minor*
Clay Lane	3454_4747	56.0	60.1	3.4	Minor
Green Pond Corner	40041_40044	66.0	69.4	3.2	Minor

*Roads with flows just over 1,000

The roads presented above in Tables 4.1 and 4.2 exceed the threshold criteria and therefore merit further investigation.

With the mitigation measures the number of links exceeding 3 dB is significantly reduced, with one major and the remaining minor impacts predicted.

Further assessment could be undertaken to determine potential for reducing the exceedances further. It is advised that any further assessments should also include for baseline sound surveys. Measures in the form of traffic calming and low noise surface treatments could be reviewed as part of any future design.

New Development Roads

Several of the proposed developments include new roads. As activity on these roads is dependent upon developments progressing and ambient noise levels are not known, it is not possible to calculate the change in noise levels at nearby receptors.

Where the new roads are proposed and attached to new developments, it is expected that a full assessment of the area and the surrounding sound climate would be undertaken as part of the planning application for the development.

4. Summary

The assessment has demonstrated that a number of existing roads are likely to be above the DMRB threshold and therefore merit further investigation. It should be noted that the number of links exceeding the threshold is significantly reduced with the introduction of transport mitigation measures.

For new roads associated with the proposed development there are likely to be changes in noise levels. However, these should be fully assessed during the planning applications to determine the level of impact based on the existing sound climate of the area.

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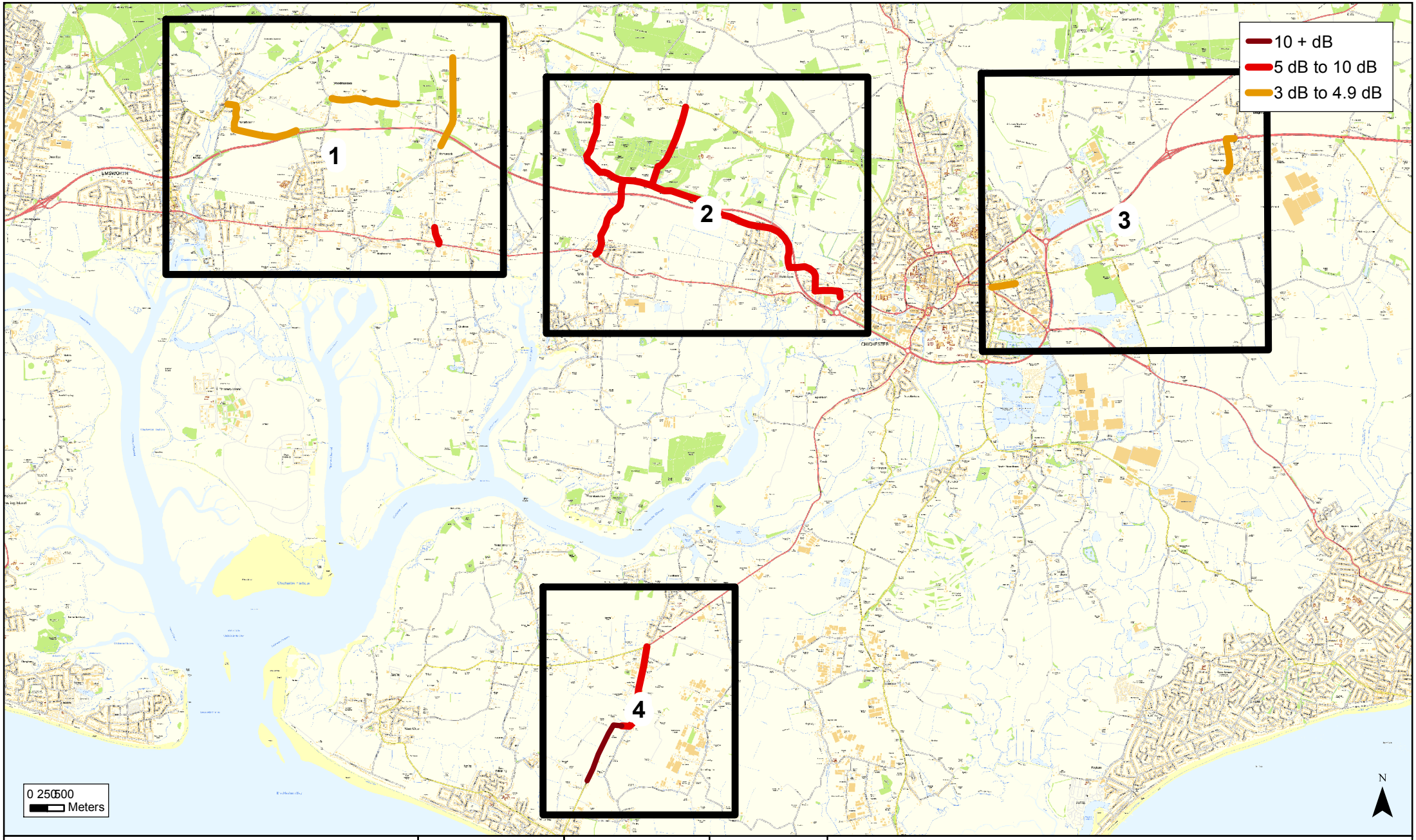

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Overview

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Figure 1 | Rev A

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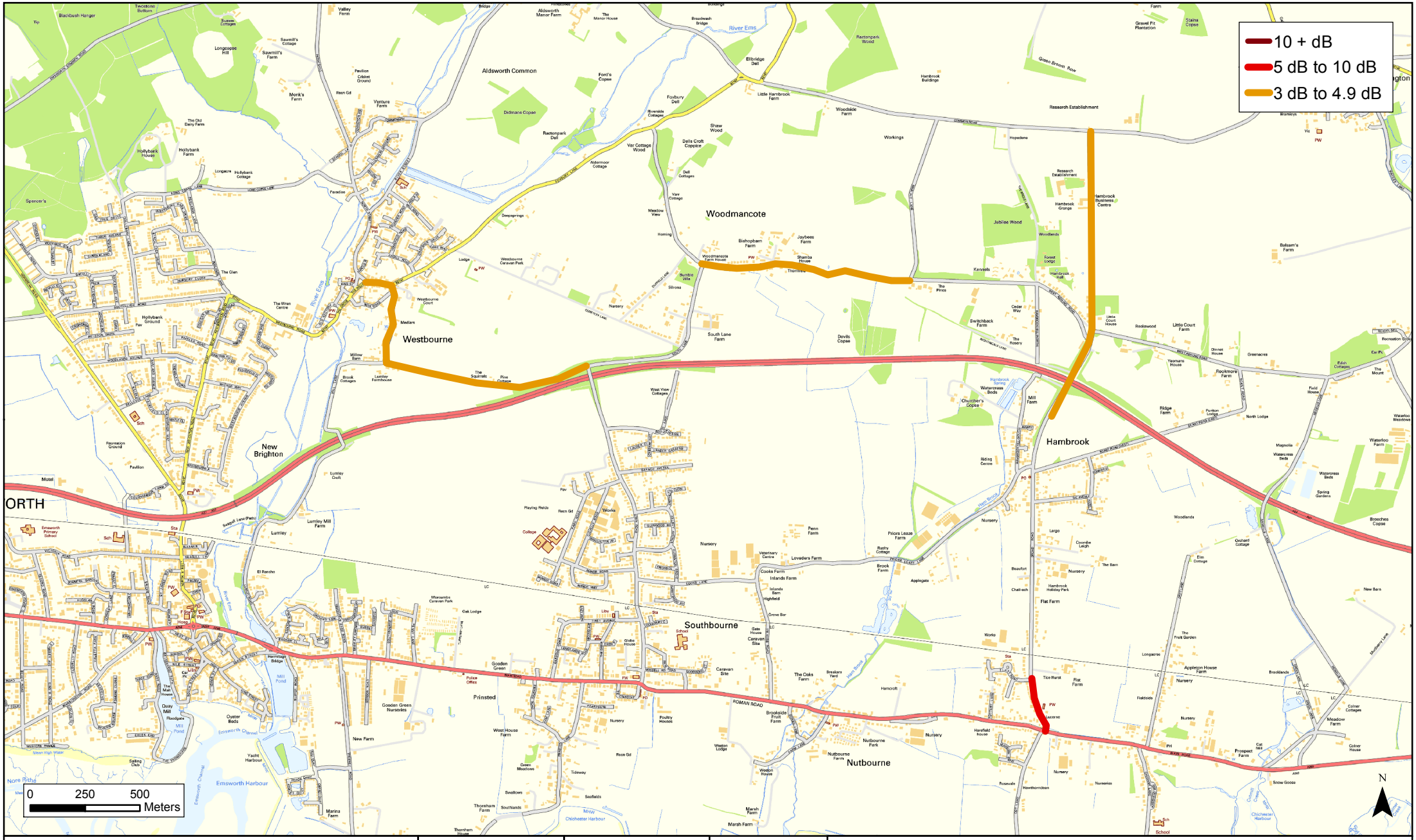

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View 1

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Figure 2 | Rev A

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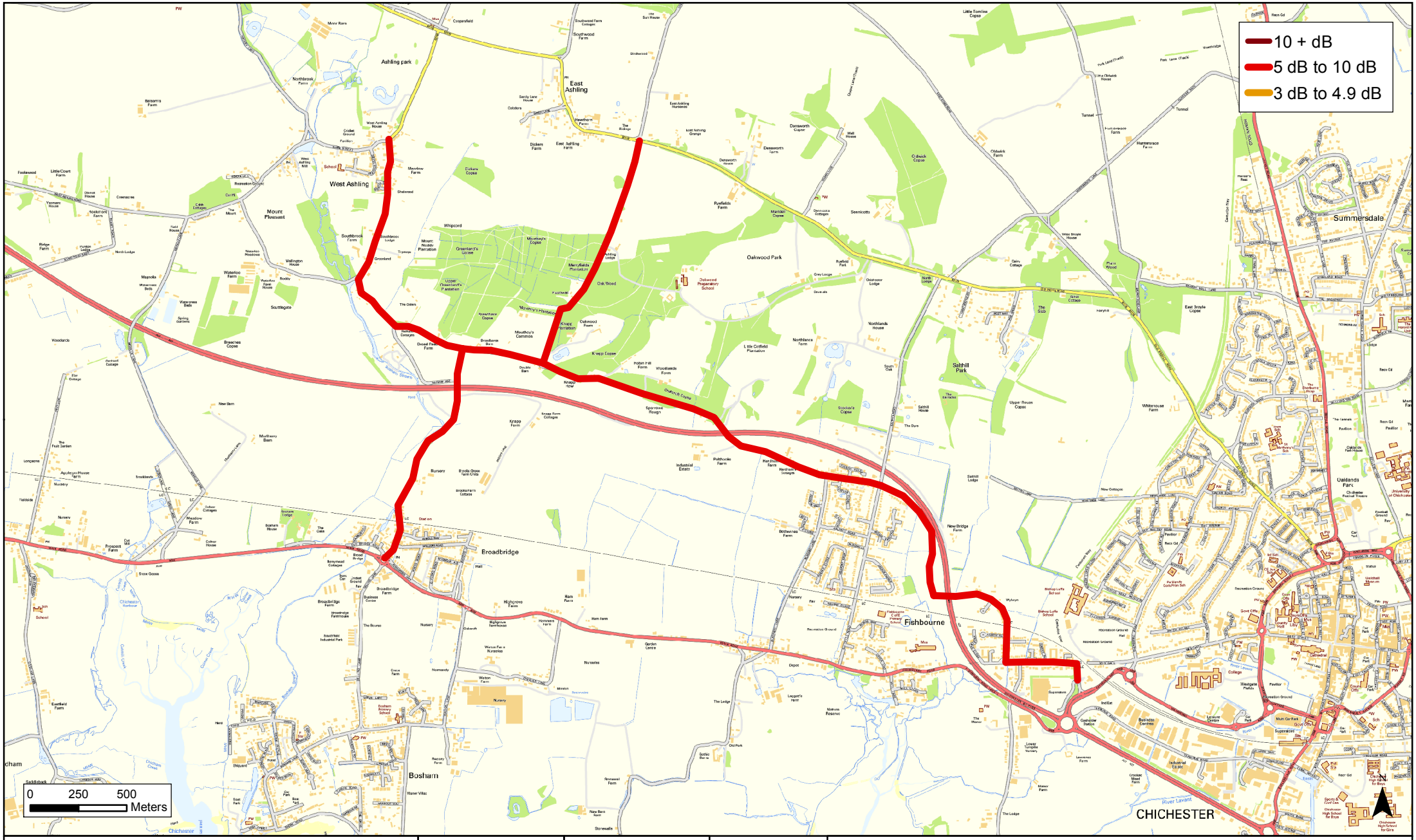

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View 2

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Figure 3 | Rev A

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Figure 4 | Rev A

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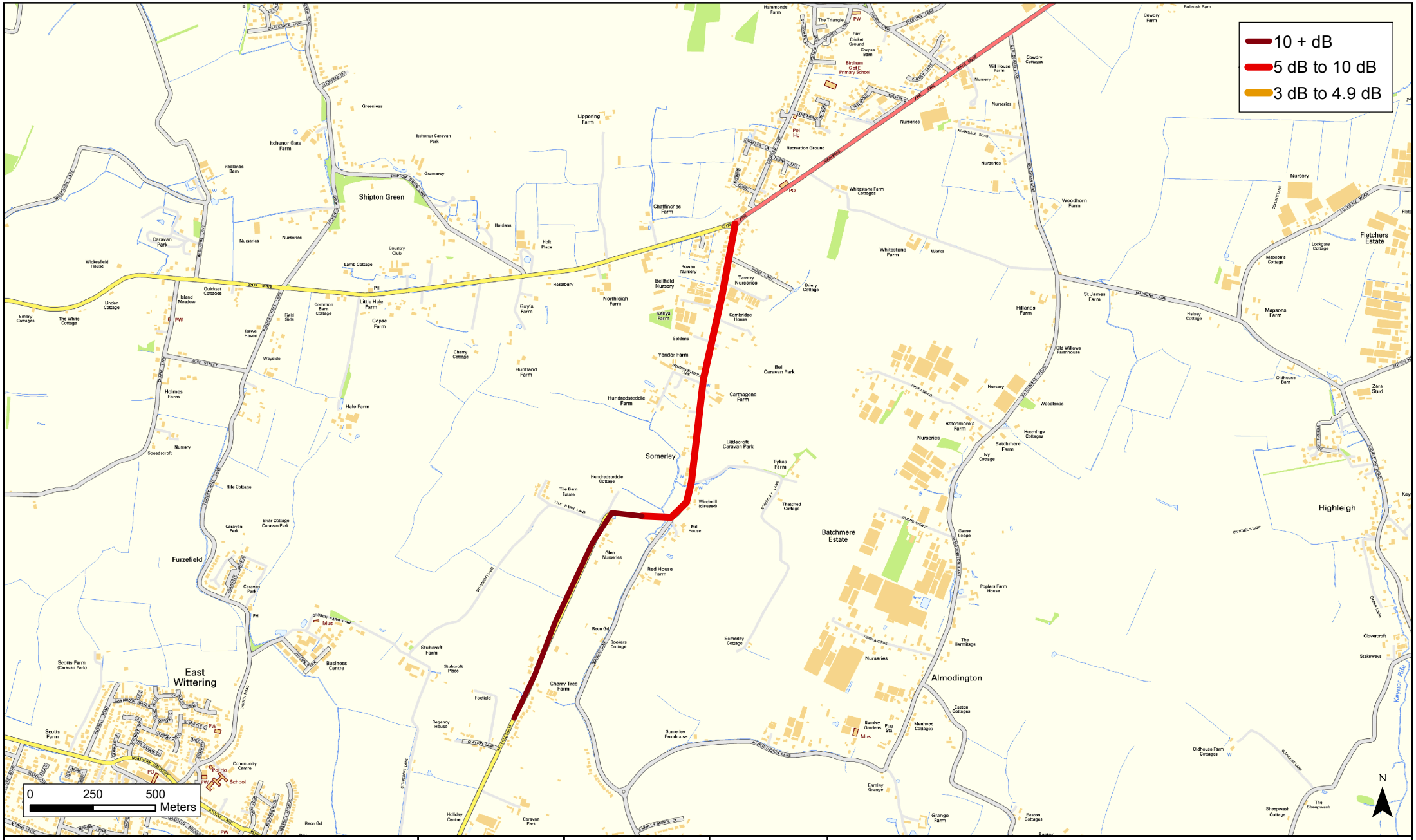

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View 4

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Figure 5 | Rev A

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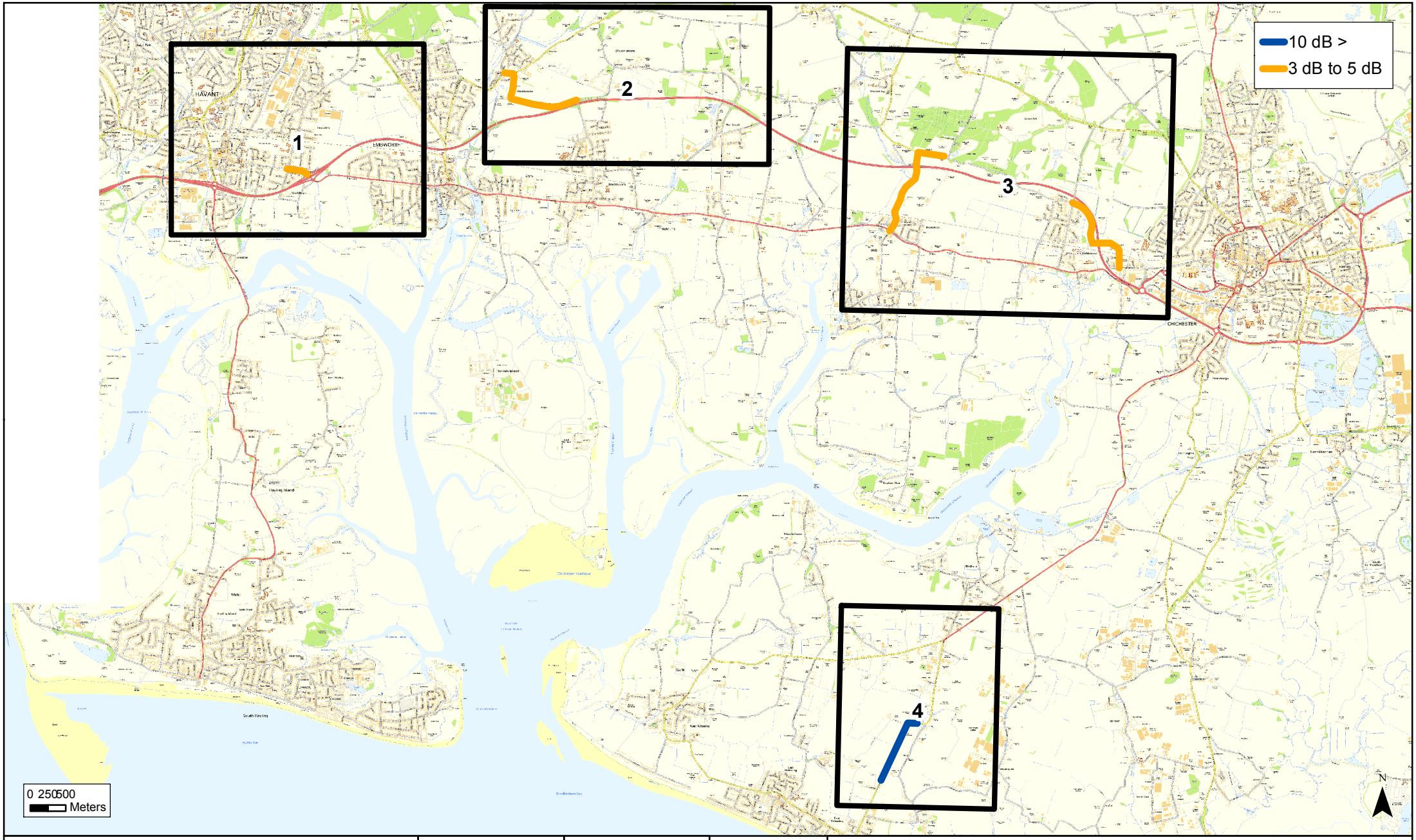

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Overview - 2035 Mitigated Scenario 1

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Figure 6 | Rev A

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View 1 - 2035 Mitigated Scenario 1 Appendix H - Noise Assessment

Figure 7 | Rev A

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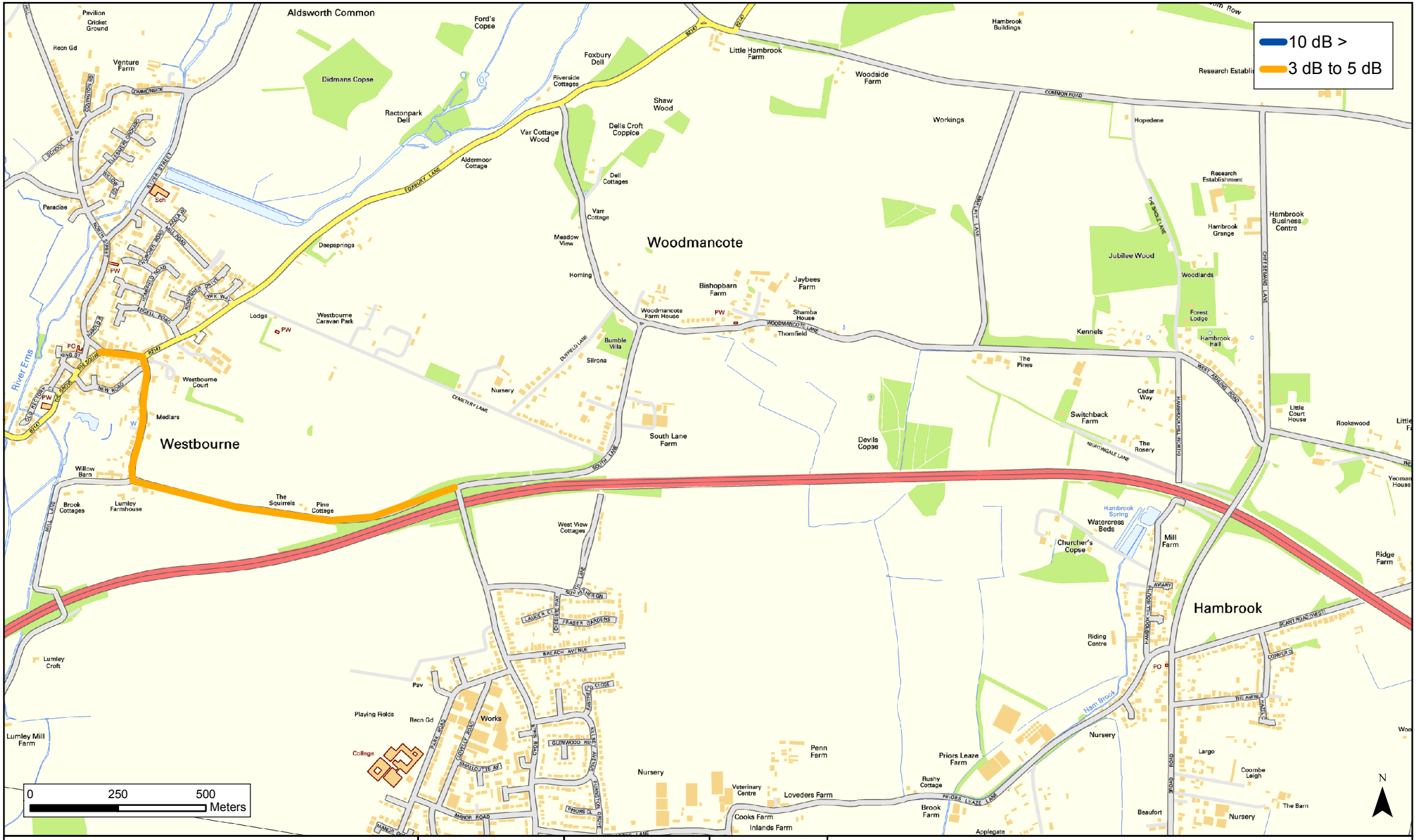

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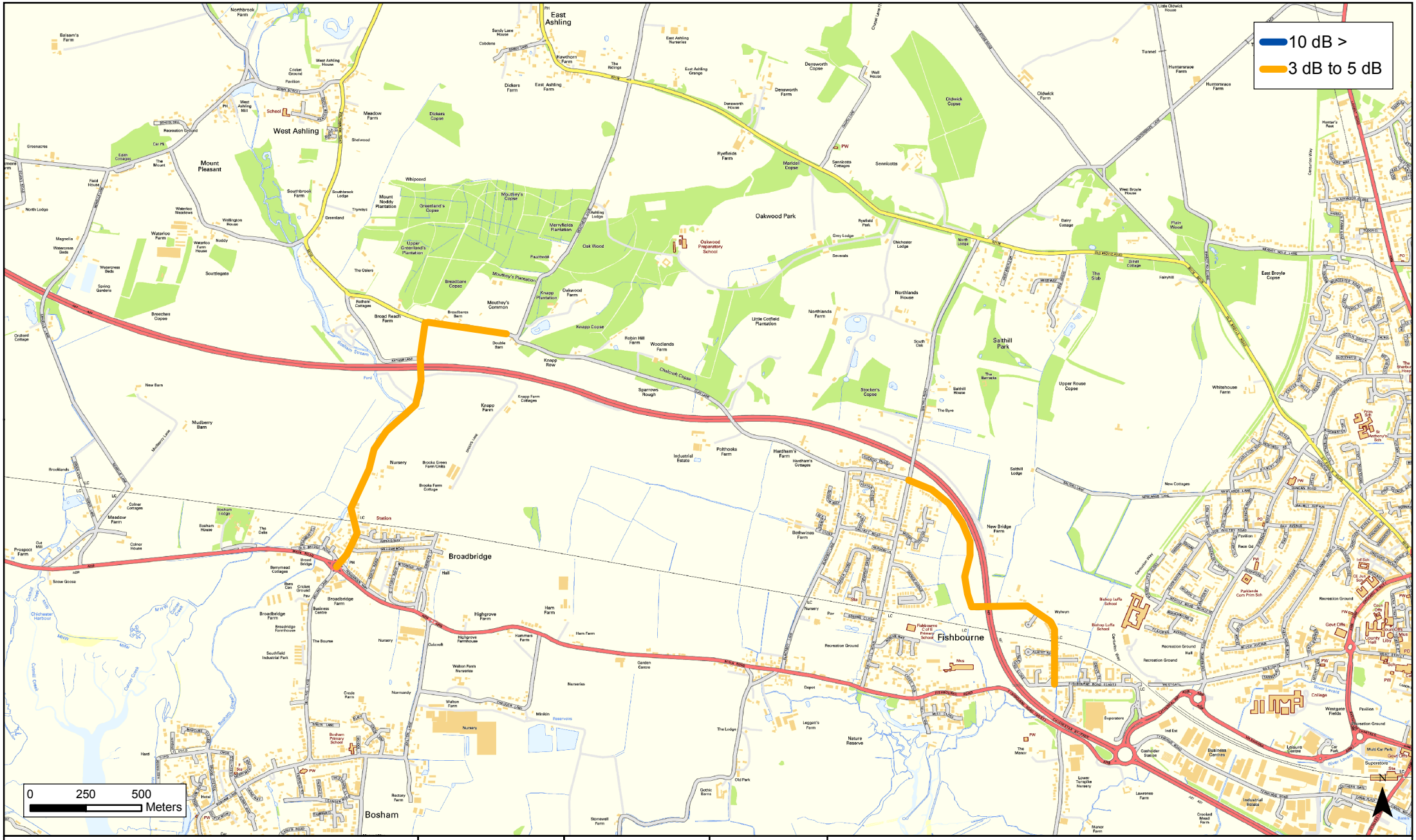

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View 3 - 2035 Mitigated Scenario 1 Appendix H - Noise Assessment

Figure 9 | Rev A

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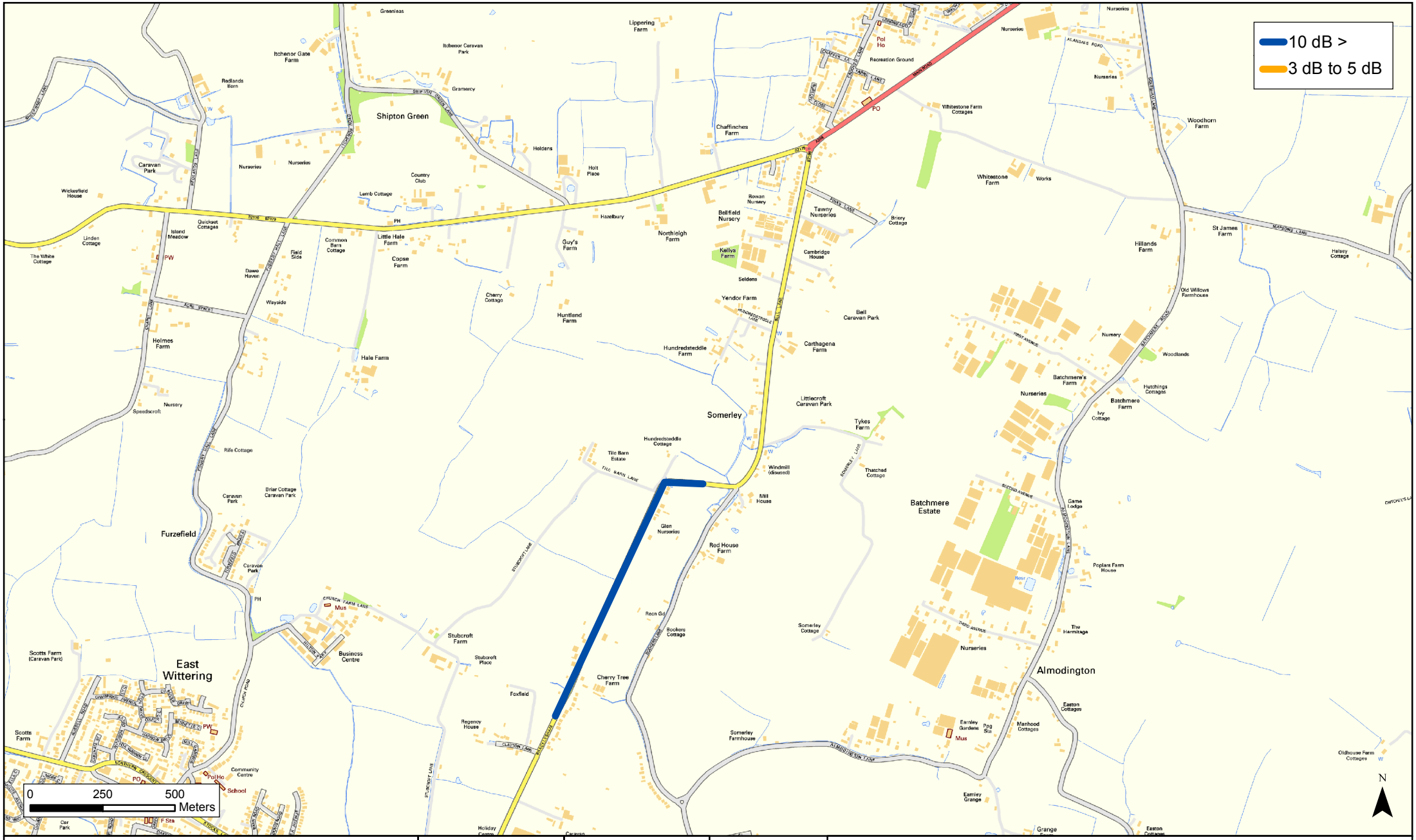

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View 4 - 2035 Mitigated Scenario 1 Appendix H - Noise Assessment

Figure 10 | Rev A