

## PROJECT NOTE

| DOCUMENT CONTROL       |                                                |                   |                                |
|------------------------|------------------------------------------------|-------------------|--------------------------------|
| <b>DOCUMENT TITLE</b>  | HOYLAND 2029 SENSITIVITY TEST NOISE ASSESSMENT | <b>REVISION</b>   | R00                            |
| <b>DOCUMENT NUMBER</b> | 103210                                         | <b>ISSUE DATE</b> | 4 <sup>TH</sup> SEPTEMBER 2020 |
| <b>PROJECT NAME</b>    | LAND WEST OF SHEFFIELD ROAD, HOYLAND           | <b>AUTHOR</b>     | VINCE PARKER                   |
| <b>STATUS</b>          | DRAFT                                          | <b>CHECKED</b>    | DENI BUTTERFIELD               |
| <b>ISSUED TO</b>       | NEWLANDS DEVELOPMENTS LTD                      | <b>PASSED</b>     | VINCE PARKER                   |

- 1.1. Vanguardia has been appointed to undertake a sensitivity test to supplement the submitted noise impact assessment (ref VC-103210-EN-RP-0001-02), to support the hybrid planning application on land west of Sheffield road, Hoyland, Barnsley (planning ref 2020/0647).
- 1.2. This sensitivity test is a result of comments received from BMBC, who have requested an additional traffic assessment scenario to be considered. This additional assessment includes plots 4,5 & 6 and Hoylands south masterplan and all other plots previously considered operational in the year of 2029.
- 1.3. This Project Note presents the results of a sensitivity test assessment and considers the potential impact of the noise level change.
- 1.4. It is intended that this project note is read in conjunction with the noise impact assessment (ref VC-103210-EN-RP-0001-02 Dated 16<sup>th</sup> June 2020)

## ASSESSMENT METHODOLOGY

- 1.5. The methodology for this assessment uses the same approach as set out in the noise impact assessment. Paragraph 4.13 in the noise impact assessment presents the full assessment methodology. A summary of the methodology is found in the following paragraphs.
- 1.6. The potential change in road traffic noise has been predicted using the environmental noise modelling software IMMI. This incorporates the methodology for calculating road traffic noise (CRTN<sup>1</sup>).

<sup>1</sup> Calculation of Road Traffic Noise: 1988

- 1.7. CRTN calculates road traffic noise levels in terms of the  $L_{A10,18h}$  index. In order to compare these results to the noise exposure thresholds for the night-time period, the  $L_{A10,18h}$  values have been converted to  $L_{night}$  values using method 3 of the Defra commissioned report by TRL/Casella Stanger<sup>2</sup>.
- 1.8. The noise levels arising from a change in road traffic activity have been predicted at the noise sensitive receptor for the following:
- ‘Do Minimum’ (DM) i.e. without the proposed development and
  - ‘Do Something’ (DS) i.e. with the proposed development scenarios
- 1.9. The assessment of potentially significantly adverse road traffic noise effects has been based on a combination of the change in noise exposure between the DM and DS scenarios, and the resulting noise exposure.
- 1.10. For this sensitivity test, the DM 2029 scenario used in the noise impact assessment has been compared to a revised DS 2029 scenario which includes the additional traffic flows from plots 4,5,6 and the Hoyland South site, provided by Fore Consulting (the appointed traffic consultants)

## NOISE SENSITIVE RECEPTORS

- 1.11. The same receptors identified in the noise impact assessment have been used in this Project Note. The description of these receptors has been presented in Table 1 below:

**Table 1** Noise sensitive receptors used for the traffic assessment

|    | Residential Modelling Location    | Height (m) |
|----|-----------------------------------|------------|
| T1 | Sheffield Road / Regent Street GF | 1.5        |
|    | Sheffield Road / Regent Street FF | 4.5        |
| T2 | Hoyland Common Primary School     | 1.5        |
| T3 | Sheffield Road Crossroads GF      | 1.5        |
|    | Sheffield Road Crossroads FF      | 4.5        |
| T4 | Parkside Road GF                  | 1.5        |
|    | Parkside Road FF                  | 4.5        |

<sup>2</sup> Method for Converting the UK Road Traffic Noise Index  $L_{A10,18h}$  to the EU Noise Indices for Road Noise Mapping, TRL/Casella Stanger for Defra (2006)

| Residential Modelling Location |                         | Height (m) |
|--------------------------------|-------------------------|------------|
| T5                             | Parkside Farm GF        | 1.5        |
|                                | Parkside Farm FF        | 4.5        |
| T6                             | Tankersley Lane West GF | 1.5        |
|                                | Tankersley Lane West FF | 4.5        |
| T7                             | Green Lane Farm GF      | 1.5        |
|                                | Green Lane Farm FF      | 4.5        |

## ASSESSMENT OF IMPACTS

1.12. Using the revised DS 2029 traffic data, and the methodology described above, the daytime LAeq, 16 hour and night time LAeq, 8 hour road traffic noise levels have been derived at each receptor. The following tables present the comparisons between the 2029 DS scenario from the original noise impact assessment and the revised 2029 DS scenario that includes plots 4,5,6 and the Hoyland south site.

1.13. For the daytime assessment period, Table 2 below presents the predicted traffic noise level with and without plots 4,5,6 and the Hoyland south site, and the difference between them.

**Table 2** DS 2029 Daytime assessment comparison

| Ref | Address                           | Predicted Road Traffic Noise (LAeq,16h dB)                            |                                                                      |            |
|-----|-----------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------------------|------------|
|     |                                   | 2029 DS scenario<br>Without Plots 4,5,6 and the<br>Hoyland south site | 2029 DS scenario<br>With Plots 4,5 & 6 and<br>the Hoyland south site | Difference |
| T1  | Sheffield Road / Regent Street GF | 64.1                                                                  | 64.2                                                                 | +0.1       |
|     | Sheffield Road / Regent Street FF | 64.6                                                                  | 64.6                                                                 | 0          |
| T2  | Hoyland Common Primary School GF  | 62.0                                                                  | 62.0                                                                 | 0          |
| T3  | Sheffield Road Crossroads GF      | 65.8                                                                  | 66.0                                                                 | +0.2       |
|     | Sheffield Road Crossroads FF      | 65.8                                                                  | 65.9                                                                 | +0.1       |
| T4  | Parkside Road GF                  | 56.3                                                                  | 56.8                                                                 | +0.5       |
|     | Parkside Road FF                  | 57.7                                                                  | 58.2                                                                 | +0.5       |
| T5  | Parkside Farm GF                  | 53.4                                                                  | 55.2                                                                 | +1.8       |
|     | Parkside Farm FF                  | 54.7                                                                  | 56.3                                                                 | +1.6       |
| T6  | Tankersley Lane West GF           | 63.7                                                                  | 63.9                                                                 | +0.2       |
|     | Tankersley Lane West FF           | 65.3                                                                  | 65.5                                                                 | +0.2       |
| T7  | Green Lane Farm GF                | 52.6                                                                  | 53.6                                                                 | +1.0       |
|     | Green Lane Farm FF                | 54.4                                                                  | 55.4                                                                 | +1.0       |

1.14. Table 2 shows that when compared to the 2029 DS scenario in the noise impact assessment the sensitivity test scenario indicates an increase at most receptors, with receptors T5 and T7 showing the largest increase of up to 1.8 dB.

1.15. Table 3 below presents the noise level change and subsequent impact magnitude between the 2029 DM scenario and the two 2029 DS scenarios during the daytime assessment period.

**Table 3** Daytime impact magnitude

| Ref | Address                           | 2029 DS-DM Without Plots 4,5,6 and the Hoyland south site |                     | 2029 DS-DM With Plots 4,5,6 and the Hoyland south site |                     |
|-----|-----------------------------------|-----------------------------------------------------------|---------------------|--------------------------------------------------------|---------------------|
|     |                                   | Noise level change (dB)                                   | Impact magnitude    | Noise level change (dB)                                | Impact magnitude    |
| T1  | Sheffield Road / Regent Street GF | -1.7                                                      | Negligible Decrease | -1.6                                                   | Negligible Decrease |
|     | Sheffield Road / Regent Street FF | -1.6                                                      | Negligible Decrease | -1.6                                                   | Negligible Decrease |
| T2  | Hoyland Common Primary School GF  | -1.7                                                      | Negligible Decrease | -1.7                                                   | Negligible Decrease |
| T3  | Sheffield Road Crossroads GF      | -2.1                                                      | Minor Decrease      | -1.9                                                   | Minor Decrease      |
|     | Sheffield Road Crossroads FF      | -2.1                                                      | Minor Decrease      | -2.0                                                   | Minor Decrease      |
| T4  | Parkside Road GF                  | -3.3                                                      | Minor Decrease      | -2.8                                                   | Negligible Decrease |
|     | Parkside Road FF                  | -3.0                                                      | Minor Decrease      | -2.5                                                   | Negligible Decrease |
| T5  | Parkside Farm GF                  | -0.5                                                      | Negligible Decrease | +1.3                                                   | Negligible Increase |
|     | Parkside Farm FF                  | -0.4                                                      | Negligible Decrease | +1.2                                                   | Negligible Increase |
| T6  | Tankersley Lane West GF           | +0.6                                                      | Negligible Increase | +0.8                                                   | Negligible Increase |
|     | Tankersley Lane West FF           | +0.4                                                      | Negligible Increase | +0.6                                                   | Negligible Increase |
| T7  | Green Lane Farm GF                | -0.7                                                      | Negligible Decrease | +0.3                                                   | Negligible Increase |
|     | Green Lane Farm FF                | -0.1                                                      | Negligible Decrease | +0.9                                                   | Negligible Increase |

1.16. Table 3 indicates that at most receptors the predicted noise level does not significantly affect the impact magnitude. It is noted that at receptors T5 and T7 that the impact magnitude has moved from a negligible decrease to a negligible increase.

1.17. The predicted noise impact during the daytime assessment period from road traffic noise from all plots on the Hoyland West masterplan site and the Hoylands South site is not expected to cause a significant adverse effect at any receptor.

1.18. For the night-time assessment period, Table 4 below presents the predicted traffic noise level with and without plots 4,5,6 and the Hoyland south site, and the difference between them.

**Table 4** DS 2029 Night time assessment comparison

| Ref | Address                           | Predicted Road Traffic Noise ( $L_{Aeq,8h}$ dB)                       |                                                                      |            |
|-----|-----------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------------------|------------|
|     |                                   | 2029 DS scenario<br>Without Plots 4,5,6 and the<br>Hoyland south site | 2029 DS scenario<br>With Plots 4,5 & 6 and<br>the Hoyland south site | Difference |
| T1  | Sheffield Road / Regent Street GF | 56.5                                                                  | 56.5                                                                 | 0          |
|     | Sheffield Road / Regent Street FF | 56.9                                                                  | 56.9                                                                 | 0          |
| T2  | Hoyland Common Primary School GF  | 54.2                                                                  | 54.2                                                                 | 0          |
| T3  | Sheffield Road Crossroads GF      | 57.9                                                                  | 58.0                                                                 | +0.1       |
|     | Sheffield Road Crossroads FF      | 57.9                                                                  | 58.0                                                                 | +0.1       |
| T4  | Parkside Road GF                  | 50.7                                                                  | 51.0                                                                 | +0.3       |
|     | Parkside Road FF                  | 51.7                                                                  | 52.1                                                                 | +0.4       |
| T5  | Parkside Farm GF                  | 46.5                                                                  | 47.9                                                                 | +1.4       |
|     | Parkside Farm FF                  | 47.9                                                                  | 49.2                                                                 | +1.3       |
| T6  | Tankersley Lane West GF           | 59.7                                                                  | 59.8                                                                 | +0.1       |
|     | Tankersley Lane West FF           | 61.3                                                                  | 61.3                                                                 | 0          |
| T7  | Green Lane Farm GF                | 48.2                                                                  | 48.7                                                                 | +0.5       |
|     | Green Lane Farm FF                | 49.7                                                                  | 50.2                                                                 | +0.5       |

1.19. Table 4 shows that when compared to the 2029 DS scenario in the noise impact assessment the sensitivity test scenario indicates an increases at most receptors, with receptors T5 and T7 showing the largest increase of up to 1.4 dB.

1.20. Table 5 below presents the noise level change and subsequent impact magnitude between the 2029 DM scenario and the two 2029 DS scenarios during the night-time assessment period.

**Table 5** Night time impact magnitude

| Ref | Address                           | 2029 DS-DM Without Plots 4,5,6 and the<br>Hoyland south site |                     | 2029 DS-DM With Plots 4,5,6 and the<br>Hoyland south site |                     |
|-----|-----------------------------------|--------------------------------------------------------------|---------------------|-----------------------------------------------------------|---------------------|
|     |                                   | Noise level change<br>(dB)                                   | Impact magnitude    | Noise level change<br>(dB)                                | Impact magnitude    |
| T1  | Sheffield Road / Regent Street GF | -1.8                                                         | Minor Decrease      | -1.8                                                      | Minor Decrease      |
|     | Sheffield Road / Regent Street FF | -2.0                                                         | Minor Decrease      | -2.0                                                      | Minor Decrease      |
| T2  | Hoyland Common Primary School GF  | -1.5                                                         | Negligible Decrease | -1.5                                                      | Negligible Decrease |

| Ref | Address                      | 2029 DS-DM <b>Without</b> Plots 4,5,6 and the Hoyland south site |                     | 2029 DS-DM <b>With</b> Plots 4,5,6 and the Hoyland south site |                     |
|-----|------------------------------|------------------------------------------------------------------|---------------------|---------------------------------------------------------------|---------------------|
|     |                              | Noise level change (dB)                                          | Impact magnitude    | Noise level change (dB)                                       | Impact magnitude    |
| T3  | Sheffield Road Crossroads GF | -1.9                                                             | Minor Decrease      | -1.8                                                          | Minor Decrease      |
|     | Sheffield Road Crossroads FF | -2.0                                                             | Minor Decrease      | -1.9                                                          | Minor Decrease      |
| T4  | Parkside Road GF             | -3.3                                                             | Minor Decrease      | -3.0                                                          | Minor Decrease      |
|     | Parkside Road FF             | -3.1                                                             | Minor Decrease      | -2.7                                                          | Negligible Decrease |
| T5  | Parkside Farm GF             | -0.4                                                             | Negligible Decrease | +1.0                                                          | Negligible Increase |
|     | Parkside Farm FF             | -0.4                                                             | Negligible Decrease | +0.9                                                          | Negligible Increase |
| T6  | Tankersley Lane West GF      | +0.6                                                             | Negligible Increase | +0.7                                                          | Negligible Increase |
|     | Tankersley Lane West FF      | +0.4                                                             | Negligible Increase | +0.4                                                          | Negligible Increase |
| T7  | Green Lane Farm GF           | -3.6                                                             | Minor Decrease      | -3.1                                                          | Minor Decrease      |
|     | Green Lane Farm FF           | -3.0                                                             | Minor Decrease      | -2.5                                                          | Negligible Decrease |

1.21. Table 5 indicates that at most receptors this noise level change does not significantly affect the impact magnitude. It is noted that at receptor T5 the impact magnitude has moved from a negligible decrease to a negligible increase.

1.22. The predicted noise impact during the night time assessment period from road traffic noise from all plots on the Hoyland West masterplan site and the Hoylands South site is not expected to cause a significant adverse effect at any receptor.

## CONCLUSION

- 1.23. Vanguardia has been appointed to undertake a sensitivity test to supplement the submitted noise impact assessment (ref VC-103210-EN-RP-0001-02) to support the hybrid planning application on land west of Sheffield road, Hoyland, Barnsley (planning ref 2020/0647).
- 1.24. The sensitivity test includes an assessment of the traffic noise impact as a result of vehicle movements related to all plots operational on the Hoyland West masterplan site and vehicle movements from the Hoyland south site.
- 1.25. This Project Note presents the noise level change and impact magnitude presented in the noise impact assessment (ref VC-103210-EN-RP-0001-02) and compares this change to that predicted from the sensitivity test.
- 1.26. During the day and night-time assessment periods there is an increase in the noise level change between the DS and DM scenarios with the additional vehicle movements from the additional plots and the Hoyland South site at most receptors.
- 1.27. When considering the absolute noise levels and the noise level change at each receptor, no significant adverse effect is expected to occur at any receptor as a result of the increased vehicle movements associated with the sensitivity test during either the day or night time assessment periods.

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