

# 7 NOISE

## Introduction

- 7.1 This chapter presents the results of the noise impact assessment of the proposed wood processing facility at Berth 31 in the Port of Barry. The assessment and chapter has been prepared by 24 Acoustics Ltd.
- 7.2 This chapter is intended to be read with the full noise impact assessment, which is provided in Appendix \*\* to this chapter.

## Scope of the Assessment

## Geographical Scope

7.3 The relevant receptors are considered to be the existing and proposed residential properties in the vicinity of the proposed development site which are located to the north-west. Figure 1 in the full noise impact assessment identifies the key receptor properties.

## Technical Scope

7.4 The assessment has considered the noise impact from plant and machinery associated with the importation of waste timber, associated sorting, screening and shredding and the export via both HGV and ship.

## Temporal Scope

7.5 The assessment has considered the noise impact over all identified distinct periods of operation. This includes importation, exportation and processing, screening and shredding of material during the day (07:00-23:00 hours) 7 days a week and export of processed material by ship at night.

### Assessment Methodology

### Environmental Legislation, Standards & Guidelines

- 7.6 Section 3 of the full noise impact assessment in Appendix \*\* provides full details of the environmental legislation, standards and guidelines used for the noise impact assessment.
- 7.7 TAN 11 (Noise) [Reference 1] refers to the us of British Standard 4142:1990 for the assessment of industrial noise affecting residential receptors. This has been superceded by BS 4142:2014+A1:2019 [Reference 2] The standard advocates a comparison between the prevailing typical L<sub>A90</sub> background noise level and the LAeq source noise level. For rating purposes, if the noise source is tonal, or impulsive, in character, a rating correction of up to 15 dBA is applied. Several methods of determining the rating penalty are described. The standard states that a difference between the rating level and the background level of around +10 dBA is an indication of a 'significant adverse impact', depending on the context and a difference of around +5 dBA is likely to be an indication of an adverse impact again depending on the context. Where the rating level does not exceed the background noise (sound) level, this is an indication of the specific sound source having a low impact (depending upon the context).



## Approach to the Assessment

- 7.10 The assessment has been carried out using the following methodology:
  - Ambient noise surveys have been undertaken at two residential receptor locations around the site;
  - Source-term data for the plant has been obtained from measurements undertaken by 24 Acoustics on similar site operations (including those operated by South West Wood Products);
  - The noise emission from the operations associated with the proposed operations have been calculated using the propagation guidance of ISO 9613 and this has established the noise level from the proposed operations at each receptor.

# Assessment Criteria

7.11 The assessment has been performed at each receptor for each phase of operation using the absolute and relative noise impact criteria defined in the Government's mineral planning guidance criteria (described above).

## Significance Criteria

7.12 Based upon the review of the standards and guidance described above, the following operational noise impact magnitude scale has been derived.

Impact Magnitude, Operational Noise Level, dB LAeq								
Substantial Moderate		Slight	Negligible					
10 or more dB	Between 1 and 8	Between 0 and 9	> 10 dB below					
above	dB above the	dB below	representative					
representative representative		representative	L <sub>A90</sub> background					
L <sub>A90</sub> background	L <sub>A90</sub> background	L <sub>A90</sub> background	noise level					
noise level	noise level	noise level						
(whichever is								
lower)								

## Table 7.1: Operational Noise Impact Criteria



# **Baseline Conditions**

- 7.13 There are a number of residential properties which are located relatively near to the proposed development site. Ambient noise surveys have been undertaken at two residential receptor locations, as described below.
  - Location 1: Junction between Wilfred & Robert Street
  - Location 2: Northern site boundary as close as practicable to the proposed new housing development off Ffordd y Mileniwn.
- 7.14 Figure 1 of the technical report in Appendix 1 shows the noise survey locations in graphical format.
- 7.15 The noise survey results are shown graphically in Appendix B of the full technical report in Appendix \*\* of this chapter and are summarised in Table 7.2 below.

December/ Survey	Time of Day and Representative Background Noise Level				
Location & Time of week	Daytime 07:00- 23:00 hrs	Night 23:00- 07:00			
		<b>UD L</b> A90, 15 min			
1. Week	59	37			
1. Weekend	52	34			
2. Week	47	39			
2. Weekend	45	39			

# Table 7.2: Summary of Noise Survey Results, Hurst Farm and Station Road (07:00 to 18:00 hours, weekdays and 08:00 to 12:30 Saturdays)

# **Identification & Evaluation of Potential Impacts**

### **Development Phases**

- 7.16 The proposed operation will involve the importation of waste timber by HGV, associated processing, shredding and screening, storage prior to export by HGV and ship (on an approximately equal basis). These operations will occur during the day, 7 days a week between the hours of 07:00 and 23:00. Operations at night will be limited to ship loading using a transfer conveyor which will be fed by a single wheeled loader.
- 7.18 Source-term sound power level data for the plant to be used has been determined from measurements undertaken on similar sites, from manufacturer's operational sound power data and from 24 Acoustics' database of similar plant. The sound power level data used in the assessment is shown in Appendix \*\* together with a description of the survey methodology for the sound power levels that were determined on site.

## Summary of Potential Impacts

7.19 Acoustic modelling of the operation has been undertaken and this has calculated the noise level from each phase at each of the identified residential receptors (based on the first and second pass assessments). Table 7.3 below



summarises the results of the modelling (taking into account that any three of the proposed operations could coincide).

	Operational Period and Range of Predicted Noise Levels						
Receptor Property	Daytime 07:00- 23:00 hrs dB Lag 1 hour	Night 23:00- 07:00 hrs dB Lag 15 mins					
New Housing	46	34					
Rear Hilary Rise	45	33					
Wilfred Street	46	35					

## Table 7.3: Results of Calculated Receptor Noise Levels

7.20 Tables 7.4-7.6 compare the predicted operational noise levels to the measured prevailing background noise levels in accordance with the rating methodology of BS 4142:2014+A1:2019.

# Table 7.4: Noise Impact Assessment, Proposed New Housing

	Noise Level and Periods of Proposed Operation				
	Daytime Hours Night time Hour			ne Hours	
	Week	Week	Week	Week	
Typical Background	50	52	27	24	
Noise Level, dB LA90, 1 hour/ 15 min	59	52	57	54	
Specific Source	46	46	24	24	
Noise Level, dB L <sub>Aeq, 1 hour</sub>	40	40	54	54	
Rating Character	12	12	12	13	
Correction, dB	+3	+3	+3	+3	
Rating Noise	40	40	27	27	
Level, dB	49	49	57	57	
BS 4142	10	2	0	13	
Assessment Level, dB	-10	-3	0	+3	

### Table 7.5: Noise Impact Assessment, Rear of Hilary Rise

	Noise Level and Periods of Proposed Operation			
	Daytime Hours Night time Hou			ne Hours
	Week	Week	Week	Week
Typical Background Noise Level, dB L <sub>A90, 1 hour/15 min</sub>	47	45	39	39
Specific Source Noise Level, dB L <sub>Aeq, 1 hour</sub>	45	45	33	33
Rating Character Correction, dB	+3	+3	+3	+3
Rating Noise Level, dB	48	48	36	36
BS 4142 Assessment Level, dB	+1	+3	-3	-3



	Noise Level and Periods of Proposed Operation				
	Daytime Hours Night time Hour			ne Hours	
	Week	Week	Week	Week	
Typical Background Noise Level, dB L <sub>A90, 1 hour/15 min</sub>	47	45	39	39	
Specific Source Noise Level, dB L <sub>Aeq, 1 hour</sub>	46	46	35	35	
Rating Character Correction, dB	+3	+3	+3	+3	
Rating Noise Level, dB	49	49	38	38	
BS 4142 Assessment Level, dB	+2	+4	-1	-1	

### Table 7.6: Noise Impact Assessment, Wilfred Street

7.21 The assessment indicates that the noise from the operations will be between 'low' and 'adverse' subject to context at all times. Relevant context in this case is the presence of the site for industrial use for many years.

Monitoring and Audit of Proposed Mitigation Measures

- 7.22 The assessment has indicated that there will be no significant noise impacts associated with the proposals. Regardless, at all times during the works the operator will be expected to:
  - Use best practicable means (as defined in Section 72 of the Control of Pollution Act, 1974) to reduce noise from the operations to a minimum, in agreement with the local planning authorities;
  - Maintain plant regularly, ensuring that any noise-reducing measures (such as silencers or enclosures) are properly fitted and used correctly;
  - Undertake to ensure that all drivers and operatives are provided with training to ensure that impulsive noise due to vehicle operations within the site is kept to a minimum;
  - Work with the local neighbours to keep them informed of the proposed working schedule, including the times and duration of any abnormally noisy activity that may cause concern.
- 7.23 The above has be drawn up in a detailed noise management plan which is included within Appendix **\*\*** of this ES.



# **Residual Impacts**

## Significance of Residual Impacts

7.24 Table 7.7 provides a summary of the residual effects. As can be seen from the table the residual effects throughout are considered to be slight: moderate. It is considered that there will be no significant (noise related) impacts to human health as a result of the proposals.

Table 1.1. Residual Lifects Table
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Environmental Effect	Sensitivity	Magnitude	Nature	Duration	Mitigation	Residual Significance	Level of Certainty	Rationale
Impact at new housing	Local	Negligible: moderate						
Impact at existing housing	Local	Slight: Moderate	Adverse Direct	Permanent	Adherence to an agreed noise management plan	Negligible: moderate	High	Survey data and acoustic modelling of operation

# **Conclusions & Requirements for Further Studies**

- 7.25 This chapter presents the results of the noise impact assessment of the proposed wood processing facility at Berth 31 in the Port of Barry. The assessment and chapter has been prepared by 24 Acoustics Ltd.
- 7.26 The assessment has been based upon background noise surveys undertaken at the nearest residential receptors and detailed acoustic calculations of the operational noise.
- 7.27 The assessment has indicated that noise from the operations will result in a noise impact which is between negligible and moderate, depending upon the receptor and time of day of the operation. A significant noise impact is not anticipated at any receptor at any time.