17 September 2021
Reference: *1021096 L01C 600 Woodstock Avenue Glendenning ENV - Preliminary Review.doc*

Charter Hall Holdings Pty Ltd
Level 20, 1 Martin Place
Sydney, NSW, 2000

RE: 600 Woodstock Avenue Glendenning – Noise Monitoring Results and Assessment Criteria

Acoustic Works was engaged by Charter Hall Holdings Pty Ltd to provide a preliminary review of the proposed material recovery facility located at 600 Woodstock Avenue, Glendenning. The purpose of this review is to present the unattended noise survey results and determine the assessment criteria at the nearest sensitive receivers for the State Significant Development Application.

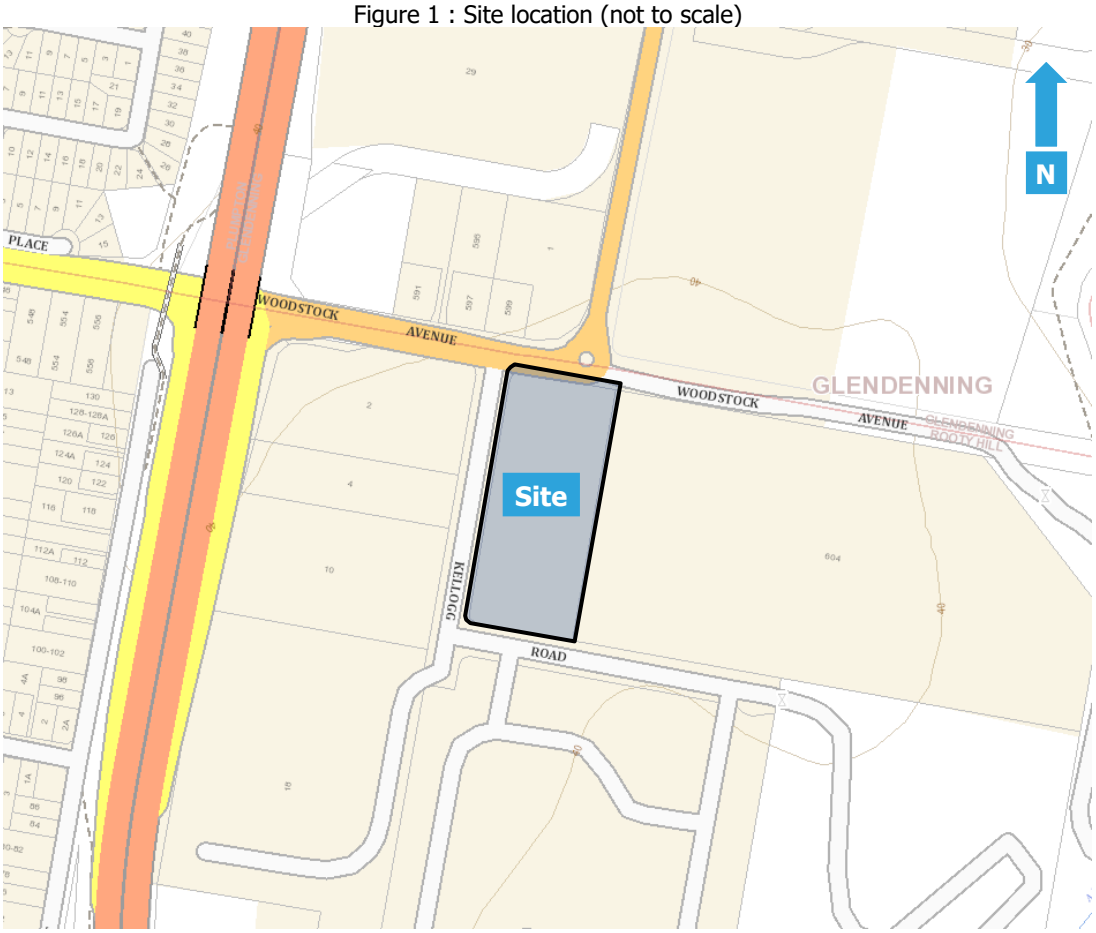
1. SITE DESCRIPTION

The site is described by the following:

600 Woodstock Avenue, Glendenning
Lot 67 on DP804292

Refer to Figure 1 for site location.

Figure 1 : Site location (not to scale)



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A comprehensive site survey was conducted on the 30th August 2021 and identified the following:

- An industrial premises currently occupies the site.
- The surrounding area consists of industrial land use.
- Residential receivers are located on the western side of the M7.

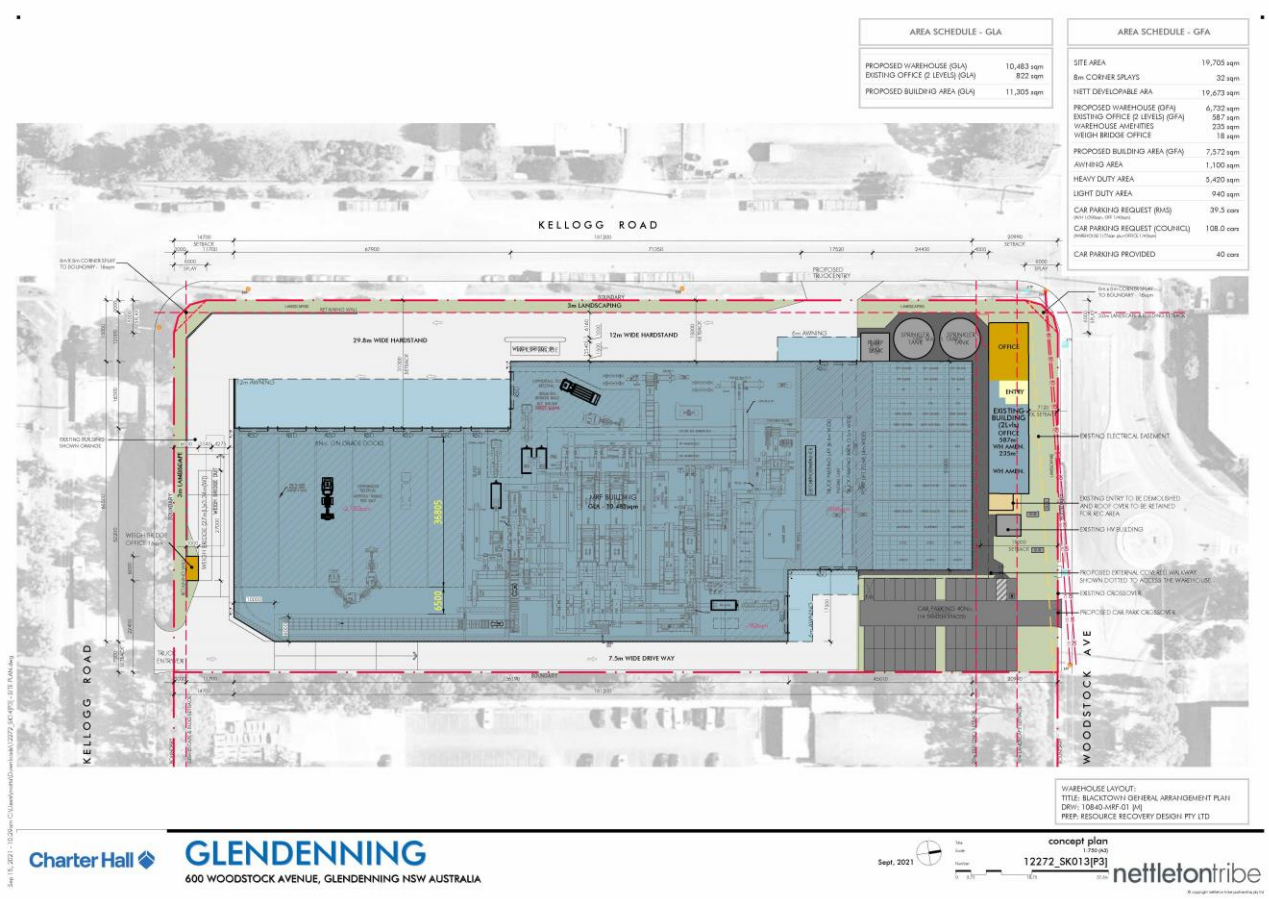
2. PROPOSAL

The proposal is to construct a material recovery facility comprised of the following:

- Total site area of 1.98Ha.
- Existing office building shall be retained.
- 6 commingled receival bays.
- 1 OCC receival bay.
- 1 outbound glass silo/bay.
- Weighbridges.
- Workshop.
- 40 car parking spaces.
- Proposed 24/7 operating hours.
- Site access via Woodstock Avenue and Kellogg Road.

The proposed development plan for the site is shown in Figure 2.

Figure 2 : Proposed Development Plan



3. MEASURED NOISE LEVELS

Placement of a noise monitor at the residential sensitive receivers was not possible due to current Covid-19 restrictions. Data from a previous noise survey between 28th June and 6th July 2021 was utilised to determine the criteria at the nearest residential receivers. The environmental noise monitor was placed at 23 Bungalow Road, Plumpton to measure ambient noise levels at the location shown in Figure 3. Note that residential receivers in close proximity to the M7 would be exposed to higher background noise than the monitor location, therefore the measured noise levels in Table 1 would be considered conservative.

Figure 3: Noise Monitoring Location

A summary of the measured background noise levels at the noise monitoring location are presented below with Rating Background Levels (RBL) calculated in accordance with the NSW Noise Policy for Industry. Any periods of inclement weather or extraneous noise were omitted from the measured data prior to determining the overall results.

Table 1: Measured L90 Noise Levels

Day	Date	Background L90 dB(A)		
		Day (7am-6pm)	Evening (6pm-10pm)	Night (10pm-7am)
Monday	28/06/21	-	41	37
Tuesday	29/06/21	40	40	32
Wednesday	30/06/21	39	36	33
Thursday	01/07/21	38	38	30
Friday	02/07/21	39	41	36
Saturday	03/07/21	39	39	31
Sunday	04/07/21	37	38	36
Monday	05/07/21	39	40	39
RBL		39	39	34

4. RECEIVER LOCATIONS

The nearest sensitive receiver locations were identified as follows;

1. The Westlink M7 Motorway separates the site from residential dwellings to the west.
2. Woodstock Avenue separates the site from industrial premises to the north.
3. An industrial premises is located adjacent the eastern site boundary.
4. Kellogg Road separates the site from an industrial premises to the south.
5. Kellogg Road separates the site from industrial premises to the west.

Figure 4: Receiver Locations

5. NOISE CRITERIA

5.1 Blacktown City Council

The site is located within Blacktown City Council local government area. Therefore, reference was made to Blacktown Development Control Plan 2015 which states the following:

> *"7.2.3 Noise pollution*
> *Any machinery or activity considered to create a noise nuisance must be adequately soundproofed in accordance with the provisions of the Protection of the Environment Operations Act 1997.*
>
> *The Environment Protection Authority may require certain premises to be licensed under the Protection of the Environment Operations Act 1997.*
>
> *The use of mechanical plant and equipment may be restricted where sites are located near a residential area. Developments located near residential areas should be designed so that the development does not cause a noise nuisance."*

5.2 Noise Policy for Industry

Assessment of noise in accordance with NSW EPA Noise Policy for Industry (2017) has two main components: intrusiveness and amenity criteria. These are compared to each other (after conversion of amenity noise level to LAeq,15min equivalent level) to determine the overall project noise trigger level.

5.2.1 Intrusiveness Noise Level

The intrusiveness noise level is based on the $L_{Aeq\ (15\ min)}$ associated with commercial activity being less than or equal to the measured L_{A90} Rating Background Level + 5dB as per section 2.3 of the policy. A modifying factor should also be added where appropriate to allow for tonality, impulsiveness, and intermittency or low frequency effects.

5.2.2 Amenity Noise Level

The amenity noise level is determined in accordance with Section 2.4 of the policy based on the land use and relevant noise criteria specified in Tables 2.2 and 2.3.

The Noise Policy for Industry sets out acceptable noise levels for various locations. Determination of which residential receiver category applies is described in Table 2.3 of the policy.

Table 2: Receiver Category (Table 2.3 of the Noise Policy for Industry)

Receiver category	**Typical planning zoning – standard instrument**	**Typical existing background noise levels**	**Description**
Rural residential	RU1 – primary production RU2 – rural landscape RU4 – primary production small lots R5 – large lot residential E4 – environmental living	Daytime RBL <40 dB(A) Evening RBL <35 dB(A) Night RBL <30 dB(A)	**Rural** – an area with an acoustical environment that is dominated by natural sounds, having little or no road traffic noise and generally characterised by low background noise levels. Settlement patterns would be typically sparse. Note: Where background noise levels are higher than those presented in column 3 due to existing industry or intensive agricultural activities, the selection of a higher noise amenity area should be considered.
Suburban residential	RU5 – village RU6 – transition R2 – low density residential R3 – medium density residential E2 – environmental conservation E3 – environmental management	Daytime RBL<45 dB(A) Evening RBL<40 dB(A) Night RBL <35dB(A)	**Suburban** – an area that has local traffic with characteristically intermittent traffic flows or with some limited commerce or industry. This area often has the following characteristic: evening ambient noise levels defined by the natural environment and human activity.
Urban residential	R1 – general residential R4 – high density residential B1 – neighbourhood centre (boarding houses and shop-top housing) B2 – local centre (boarding houses) B4 – mixed use	Daytime RBL> 45 dB(A) Evening RBL> 40 dB(A) Night RBL >35 dB(A)	**Urban** – an area with an acoustical environment that: • is dominated by 'urban hum' or industrial source noise, where urban hum means the aggregate sound of many unidentifiable, mostly traffic and/or industrial related sound sources • has through-traffic with characteristically heavy and continuous traffic flows during peak periods • is near commercial districts or industrial districts • has any combination of the above.

To determine the appropriate receiver category, the following observations were made:

- Residential receiver 1 is located within an R2 Low Density Residential zone which corresponds with typical planning zoning of the suburban category.
- The measured RBL values presented in Section 3 correspond with the typical existing background noise levels of the rural category during the day and the suburban category during the evening and night period.
- The acoustic environment of the surrounding area has through-traffic with characteristically heavy and continuous traffic flows during peak periods and is near an industrial district. This corresponds with the typical description of the urban category.

Therefore, the nearest residential receivers would be assessed against the suburban criteria.

5.2.3 Modifying Factors

The Noise Policy for Industry includes correction factors such as tonal noise, low-frequency noise, intermittent noise and duration. Where two or more modifying factors are present, the maximum adjustment to a noise source level is 10dBA (excluding duration correction).

5.2.4 Project Noise Trigger Level

To determine the project trigger noise level, the amenity noise level must first be standardised to an equivalent LAeq 15min in order to compare to the intrusiveness noise level. This is done in accordance with section 2.2 of the policy as follows;

$$L_{Aeq,15min} = L_{Aeq,\ period} + 3dB$$

To ensure that industrial noise levels (existing plus new) remain within the recommended amenity noise levels for an area, a project amenity noise level applies for each new source of industrial noise. Project amenity noise level for industrial developments = recommended amenity noise level minus 5dB(A).

Therefore, based on the measured data presented in Section 3, the project specific noise limits are determined.

5.2.5 Amenity noise levels in areas near an existing or proposed cluster of industry

Section 2.4.2 of the policy states *"Where an existing cluster of industry, for example, an industrial estate or port area, is undergoing redevelopment and/or expansion and the development constitutes a single premises addition or expansion, with no other redevelopment planned in the foreseeable future, the project amenity noise level approach procedure in Section 2.4 can be applied"*.

The proposed development is located within an existing cluster of industry and involves converting an existing industrial premises to a materials recovery facility. Therefore, no amenity noise level correction for cluster of industry would be required.

5.2.6 Sleep Disturbance Noise Level

Sleep disturbance is based on the maximum noise level of events from premises during the night-time period. The Noise Policy for Industry defines sleep disturbance as a noise from a premise at a residential location that exceeds:

- $L_{Aeq,15min}$ 40 dB(A) or the prevailing RBL plus 5 dB, whichever is the greater, and/or
- L_{AFmax} 52 dB(A) or the prevailing RBL plus 15 dB, whichever is the greater,

5.2.7 Sleep Disturbance

The sleep disturbance noise levels are as follows:

Table 3: Sleep Disturbance Criteria

Time Period	Receiver 1	
	Criteria $L_{eq(15min)}$ dBA	Criteria L_{AFmax} dBA
Night (10pm-7am Mon-Sat; 10pm-8am Sun)	40	52

5.2.8 Intrusiveness Noise Criteria

The intrusiveness noise levels are as follows;

Table 4: Intrusiveness Noise Levels

Time period	Criteria $L_{eq\ (15min)}$ dBA	
	Receiver 1	*Receivers 2 to 5
Day (7am-6pm Mon-Sat; 8am-6pm Sun)	44	N/A
Evening (6pm-10pm)	44	N/A
Night (10pm-7am Mon-Sat; 10pm-8am Sun)	39	N/A

*Note intrusiveness criteria only applies to residential receivers

5.2.9 Amenity Criteria

Based on Section 2.2 and 2.4 of the policy, the amenity noise levels are as follows;

Table 5: Amenity Noise Levels

Time period	Criteria $L_{eq\ (15min)}$ dBA	
	Receiver 1	Receivers 2 to 5
Day (7am-6pm Mon-Sat; 8am-6pm Sun)	53	70
Evening (6pm-10pm)	43	70
Night (10pm-7am Mon-Sat; 10pm-8am Sun)	38	70

5.2.10 Project Specific Noise Criteria

The project noise trigger level is the lower (that is, the most stringent) value of the intrusiveness and amenity noise levels. Therefore the project noise trigger levels are as follows:

Table 6: Project Criteria

Time period	Criteria $L_{eq\ (15min)}$ dBA	
	Receiver 1	Receivers 2 to 5
Day (7am-6pm Mon-Sat; 8am-6pm Sun)	44	70
Evening (6pm-10pm)	44	70
Night (10pm-7am Mon-Sat; 10pm-8am Sun)	38	70

Note the above criteria would be considered conservative due to the noise monitoring data utilised.

5.3 NSW Road Noise Policy 2011

The NSW Road Noise Policy outlines the criteria for any increase in the total traffic noise level at the location due to a proposed project or traffic generating development. Therefore the following criteria applies:

Table 7: Road traffic noise assessment criteria for residential land uses

Road Category	Type of project/development	Total traffic noise level – dB(A)	
		Day (7am to 10pm)	Night (10pm to 7am)
Freeway/arterial/sub-arterial roads and transitways	Existing Residences affected by **additional traffic** on existing freeways/arterial/sub-arterial roads generated by land use developments	$L_{Aeq,15hour}$ 60 (external)	$L_{Aeq,9hour}$ 55 (external)

In addition to the assessment criteria outlined in Tables 3-5 of the NSW Road Noise Policy, any increase in the total traffic noise level at a location due to a proposed project or traffic-generating development must be considered. Residences experiencing increases in total traffic noise level above the relative increase criteria in Table 6 of the policy should also be considered for mitigation as described in Section 3.4 of the policy. Table 6 of the Road Noise Policy is presented below:

Table 8: Relative increase criteria for residential land uses

Road Category	Type of project/development	Total traffic noise level increase – dB(A)	
		Day (7am to 10pm)	Night (10pm to 7am)
Freeway/arterial/sub-arterial roads and transitways	New road corridor/redevelopment of existing road/land use development with the potential to generate additional traffic on existing road	Existing traffic $L_{Aeq(15hr)}$ + 12dB (external)	Existing traffic $L_{Aeq(9hr)}$ + 12dB (external)

For other existing sensitive land uses (as outlined in Table 4 of the policy) the relative increase criteria should be applied to the respective $L_{Aeq,period}$ for that land use type, except for open space. For projects where the main subject is a local road, the relative increase criterion does not apply.

6. DISCUSSION

A review of the proposed material recovery facility was conducted. The ambient background noise measurements utilised in the assessment are presented in Section 3. The relevant noise criteria for the project were established as nominated in Section 5.

We trust this information meets with your current requirements. Should you have any queries, please do not hesitate to contact us.

Yours faithfully,

Andrew Hiscox
Acoustic Consultant
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