FATHOM BREWING

181 SAFETY BAY ROAD
SHOALWATER

ACOUSTIC ASSESSMENT

OCTOBER 2026

OUR REFERENCE: 37396-1-26407

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ACOUSTIC ASSESSMENT

SHOALWATER

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FATHOM BREWING

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A NOISE CONTOUR PLOT

EXECUTIVE SUMMARY

Herring Storer Acoustics have been commissioned to carry out an acoustical assessment of noise emissions associated with the Fathom Brewery to accompany the application for an increase in the number of allowable patrons to be hosted in the alfresco area.

Noise emissions associated with patrons externally within the development, have been calculated to comply with the relevant assigned noise levels at all applicable times – noting that music in this area is to be at background noise level only. The music level has been assumed at 75 dB(A) throughout the external areas.

Live music is not proposed to be hosted either inside or outside the venue.

The above holds true for:

Current numbers (60 patrons).
Proposed number of patrons (100 patrons).

With a maximum number of patrons in the alfresco area being 120.

Hence, the number of patrons able to be hosted in the alfresco area of the venue can be increased to a maximum of 120 and still comply with the Environmental Protection (Noise) Regulations 1997.

1.0 INTRODUCTION

Herring Storer Acoustics have been commissioned to carry out an acoustical assessment of noise emissions associated with the Fathom Brewing venue at 181 Safety Bay Road, Shoalwater.

It is understood that it is proposed to increase the venue capacity in the alfresco area from 60 patrons to 100 patrons.

The objectives of the study were to:

- Measure noise levels associated with existing patron numbers to calibrate the existing noise model for the venue.
- Increase the external patron numbers within the model to the proposed 100 (from 60).
- Assess the predicted noise levels associated with the increase in number of patrons received at the closest noise sensitive premises, for compliance with the *Environmental Protection (Noise) Regulations 1997*.
- If exceedances are predicted, investigate possible noise control options that will reduce noise emissions to achieve compliance with the regulations.

The work was commissioned to accompany the development application for increase in patron numbers.

2.0 CRITERIA

The *Environmental Protection (Noise) Regulations 1997* stipulate the allowable noise levels at any noise sensitive premises from other premises. The allowable noise level is determined by the calculation of an influencing factor, which is added to the baseline criteria set out in Table 1 of the Regulations. The baseline assigned noise levels are listed in Table 2.1.

TABLE 2.1 – ASSIGNED NOISE LEVELS

Premises Receiving Noise	Time of Day	Assigned Level (dB)		
		$L_{A\ 10}$	$L_{A\ 1}$	$L_{A\ max}$
Noise sensitive premises within 15 metres of a dwelling	0700 - 1900 hours Monday to Saturday	45 + IF	55 + IF	65 + IF
	0900 - 1900 hours Sunday and Public Holidays	40 + IF	50 + IF	65 + IF
	1900 - 2200 hours all days	40 + IF	50 + IF	55 + IF
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holidays	35 + IF	45 + IF	55 + IF

Note: The L_{A10} noise level is the noise that is exceeded for 10% of the time.
The L_{A1} noise level is the noise that is exceeded for 1% of the time.
The L_{Amax} noise level is the maximum noise level recorded.

It is a requirement that noise from the site be free of annoying characteristics (tonality, modulation and impulsiveness) at other premises, defined below as per Regulation 9.

"impulsiveness" means a variation in the emission of a noise where the difference between L_{Apeak} and $L_{Amax\ Slow}$ is more than 15dB when determined for a single representative event.

"modulation" means a variation in the emission of noise that –

(a) is more than 3dB $L_{A\ Fast}$ or is more than 3dB $L_{A\ Fast}$ in any one-third octave band;
(b) is present for more at least 10% of the representative assessment period; and
(c) is regular, cyclic and audible;

"tonality" means the presence in the noise emission of tonal characteristics where the difference between –

(a) the A-weighted sound pressure level in any one-third octave band; and
(b) the arithmetic average of the A-weighted sound pressure levels in the 2 adjacent one-third octave bands,

is greater than 3 dB when the sound pressure levels are determined as $L_{Aeq,T}$ levels where the time period T is greater than 10% of the representative assessment period, or greater than 8 dB at any time when the sound pressure levels are determined as $L_{A\ Slow}$ levels.

Where the above characteristics are present and cannot be practicably removed, the following adjustments are made to the measured or predicted level at other premises.

TABLE 2.2 – ADJUSTMENTS FOR ANNOYING CHARACTERISTICS

Where tonality is present	Where modulation is present	Where impulsiveness is present
+ 5 dB	+ 5 dB	+ 10 dB

Where the noise emission is music, then any measured level is adjusted according to Table 2.3 below.

TABLE 2.3 – ADJUSTMENTS TO MEASURED MUSIC NOISE LEVELS

Where **impulsiveness** is not present	Where **impulsiveness** is present
+10 dB(A)	+15 dB(A)

The nearest noise sensitive premises considered in our assessment are as shown in Figure 1 below.

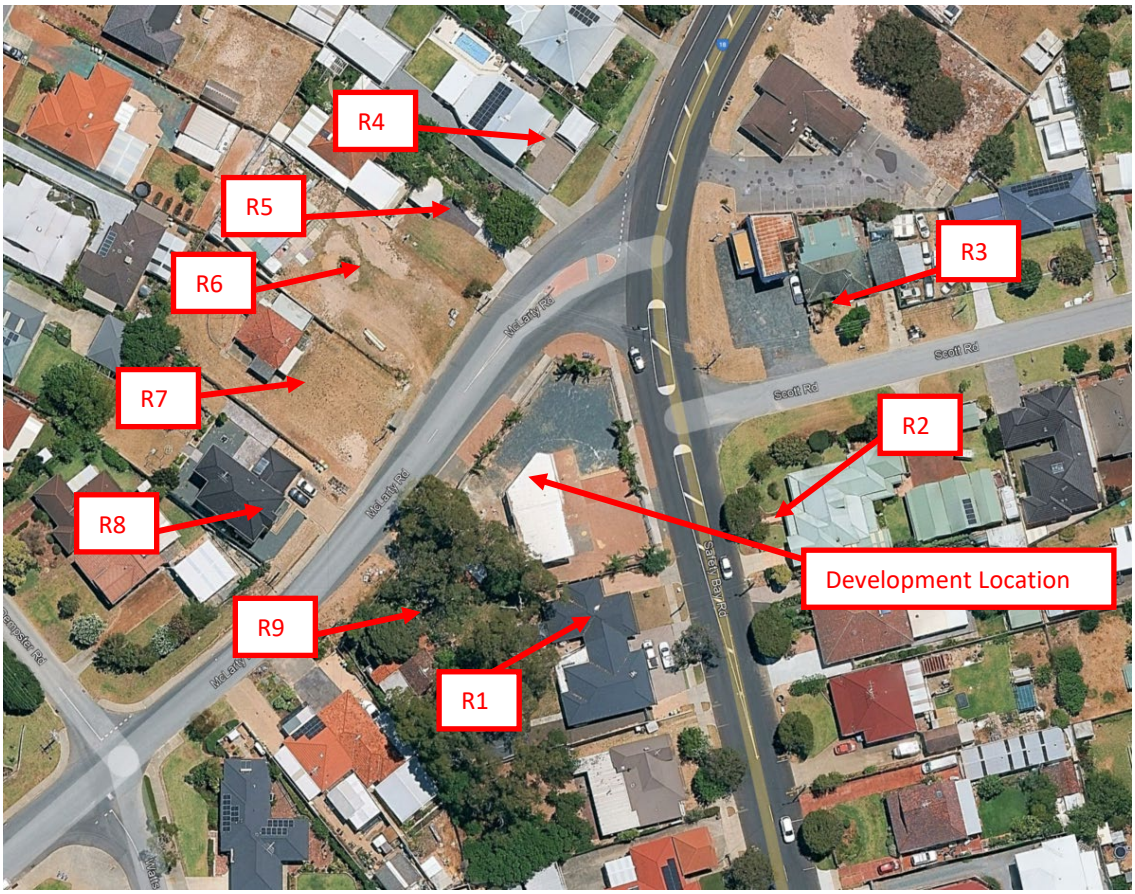


FIGURE 1 – DEVELOPMENT LOCATION AND SURROUNDS

The influencing factors at the identified noise sensitive premises has been determined, with the calculation based on the following.

Secondary Road within inner Circle
Safety Bay Road + 2 dB

Commercial Premises within Inner Circle
20% + 1 dB

Hence, the influencing factor at the residential premises considered in our assessment has been calculated at 3 dB.

It is noted that some nearby noise sensitive premises are double storey, or elevated above standard single storey construction. This has been included in our noise model, with the highest noise level reported here (in the instance of multiple storeys at a residence) for clarity.

Therefore, Table 2.4 below summarises the Assigned Noise Levels at the nearest residential premises.

TABLE 2.4 - ASSIGNED OUTDOOR NOISE LEVELS: R1 TO R8

Premises Receiving Noise	Time of Day	Assigned Level (dB)		
		L_{A10}	L_{A1}	L_{Amax}
Noise sensitive premises within 15 metres of a dwelling	0700 - 1900 hours Monday to Saturday	48	58	68
	0900 - 1900 hours Sunday and Public Holidays	43	53	68
	1900 - 2200 hours all days	43	53	58
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holidays	38	48	58

Note: L_{A10} is the noise level exceeded for 10% of the time.
L_{A1} is the noise level exceeded for 1% of the time.
L_{Amax} is the maximum noise level.

3.0 MEASUREMENTS

Noise level measurements were undertaken during the afternoon of Friday 2nd October 2026 (around 4pm – 5pm).

During this time, the alfresco area was determined to be representative of current maximum occupancy (i.e. 60 patrons with the alfresco area).

The noise level measurements confirmed the modelling that accompanied the original development approval for the venue as being representative of the noise impact to the surrounds – being conservative (i.e. over estimate) noise impacts by 1 or 2 dB if anything.

4.0 METHODOLOGY

Noise modelling of the noise propagation from the proposed development was carried out using the environmental noise modelling computer program, "SoundPlan".

Input data for computer modelling included:

- Design of development as per drawings in Appendix A.
- EPA standard weather condition for the day and night periods (see Table 4.1).
- Sound power levels, as summarised in Table 4.2.

TABLE 4.1 - WEATHER CONDITIONS

Condition	Day Period	Night Period
Temperature	20 °C	15 °C
Relative humidity	50%	50%
Pasquil Stability Class	E	F
Wind speed	4 m/s*	3 m/s*

* From source to receiver

TABLE 4.2 – SOUND POWER LEVELS OF NOISE SOURCES

DESCRIPTION	dB(A)
Patron Noise	
External Patrons – seated/eating	60/m^2

The patron noise level is akin to the seated dining alfresco dining, which is what is proposed to be associated with the venue.

Background music alone should be played in these external areas, with music noise levels set such that it is not audible outside of the premises above patron noise levels. The noise level of music has been set at 75 dB(A) throughout the area so that the music level can be considered to be conversation level.

The location of the alfresco patrons – and speakers, are shown in Figure 2 below, with the area in yellow the noise source location. The noise source has been modelled as an "area" of noise in terms of modelling. This ensures a more accurate noise model, as the use of single point locations can falsely indicated attenuation due to the location.

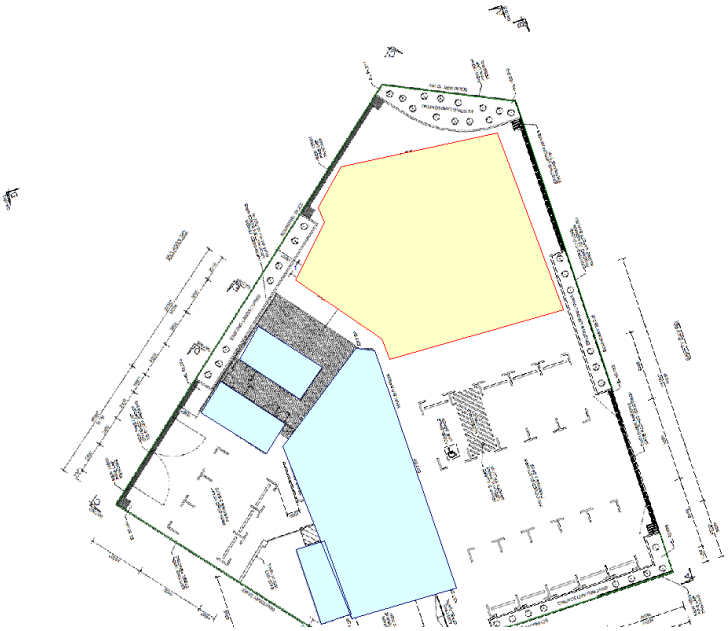


FIGURE 2 – ALFRESCO PATRONS AND BACKGROUND MUSIC LOCATION

It is noted that live music, is not possible in the external area. It is noted that live music is not proposed to be host inside the venue either.

It is noted that a barrier wall to the alfresco areas, has been included in our calculations. The fencing has been assumed to be 1.8m high above ground level.

The patron numbers have been modelled at the existing 60 – and confirmed through the measurements undertaken on 2nd October 2026. Additionally, the increase in patron numbers to 100 has been undertaken.

For information purposes, the maximum number of patrons that can be accommodated in the alfresco area and still comply with the relevant assigned noise levels has also been calculated.

Hence, the following three scenarios have been assessed:

Scenario 1: 60 Patrons in external areas (conversation level music).
Scenario 2: 100 Patrons in external areas (conversation level music).
Scenario 3: 120 Patrons in external areas (conversation level music).

The operational hours of the development, in regards to the licenced area, is understood to be 7 days per week, 11am to 9pm. Hence, this precludes the “night” period.

5.0 RESULTS

Noise levels at the identified noise sensitive premise associated with the proposed development are as listed below in Table 5.1. Noise contours associated with patrons in the alfresco areas and mechanical services has been included in Appendix B.

The adjustment for music characteristics is not applicable to the patron noise emissions as any music noise source would not significantly contribute to noise emissions at the identified noise sensitive premises, therefore, would not be characterised as music.

TABLE 5.1 – CALCULATED NOISE LEVELS AT NOISE SENSITIVE PREMISES

Location	Scenario		
	1 – 60 Patrons Only Externally (conversation level music)	2 – 100 Patrons Only Externally (conversation level music)	3 – 120 Patrons Only Externally (conversation level music)
R1	40	42	43
R2	38	40	41
R3	35	37	38
R4	37	39	40
R5	37	39	40
R6	36	38	39
R7	37	39	40
R8	33	35	36
R9	26	28	29

( ) Includes +5 dB(A) penalty for tonality.
[ ] Includes +10 dB(A) penalty for impulsiveness.

6.0 ASSESSMENT

Noise levels associated with the development have been examined for the potential to contain annoying characteristics in accordance with the *Environmental Protection (Noise) Regulations 19*97.

With the restrictions to music in place for the external areas, there are no adjustments applicable to the calculated noise levels, as patron noise from the external areas would be the most significant noise source – hence any adjustment for music noise emissions would not be applicable.

Therefore, Tables 6.1 to 6.3 summarises the assessment of the calculated noise levels against the pertinent Assigned Noise Levels for each scenario considered.

TABLE 6.1 – ASSESSMENT – SCENARIO 1 – PATRONS IN EXTERNAL AREAS
CURRENT NUMBERS – 60 PATRONS

Location	Assessable Noise Level, dB(A)	Applicable Times of Day	Applicable L_{A10} Assigned Level (dB)	Exceedance to Assigned Noise Level (dB)
R1	40	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R2	38	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R3	35	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R4	37	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R5	37	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R6	36	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R7	37	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R8	33	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R9	26	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A

TABLE 6.2 – ASSESSMENT – SCENARIO 2 – PATRONS IN EXTERNAL AREAS
PROPOSED INCREASE IN NUMBERS – 100 PATRONS

Location	Assessable Noise Level, dB(A)	Applicable Times of Day	Applicable L_{A10} Assigned Level (dB)	Exceedance to Assigned Noise Level (dB)
R1	42	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R2	40	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R3	37	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R4	39	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R5	39	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R6	38	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R7	39	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R8	35	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R9	28	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A

TABLE 6.3 – ASSESSMENT – SCENARIO 3 – PATRONS IN EXTERNAL AREAS
MAXIMUM PATRON NUMBERS POSSIBLE– 120 PATRONS

Location	Assessable Noise Level, dB(A)	Applicable Times of Day	Applicable L_{A10} Assigned Level (dB)	Exceedance to Assigned Noise Level (dB)
R1	43	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R2	41	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R3	38	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R4	40	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R5	40	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R6	39	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R7	40	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R8	36	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A
R9	29	Day	48	Complies
		Sunday / Public Holiday Day Period	43	Complies
		Evening	43	Complies
		Night	38	N/A

7.0 CONDITIONS FOR COMPLIANCE TO BE ACHIEVED

As can be seen from the assessment in Section 5, noise level emissions associated with the proposed development are capable of complying with the relevant stipulated assigned noise levels, under the following conditions:

Patrons Externally

Noise emissions associated with patrons externally within the development, have been calculated to comply with the relevant assigned noise levels at all applicable times – noting that music in this area is to be at background noise level only. The music level has been assumed at 75 dB(A) throughout the external areas.

No live music is able to be hosted in the external area of the development.

The above holds true for:

Current numbers (60 patrons).
Proposed number of patrons (100 patrons).

With a maximum number of patrons in the alfresco area being 120.

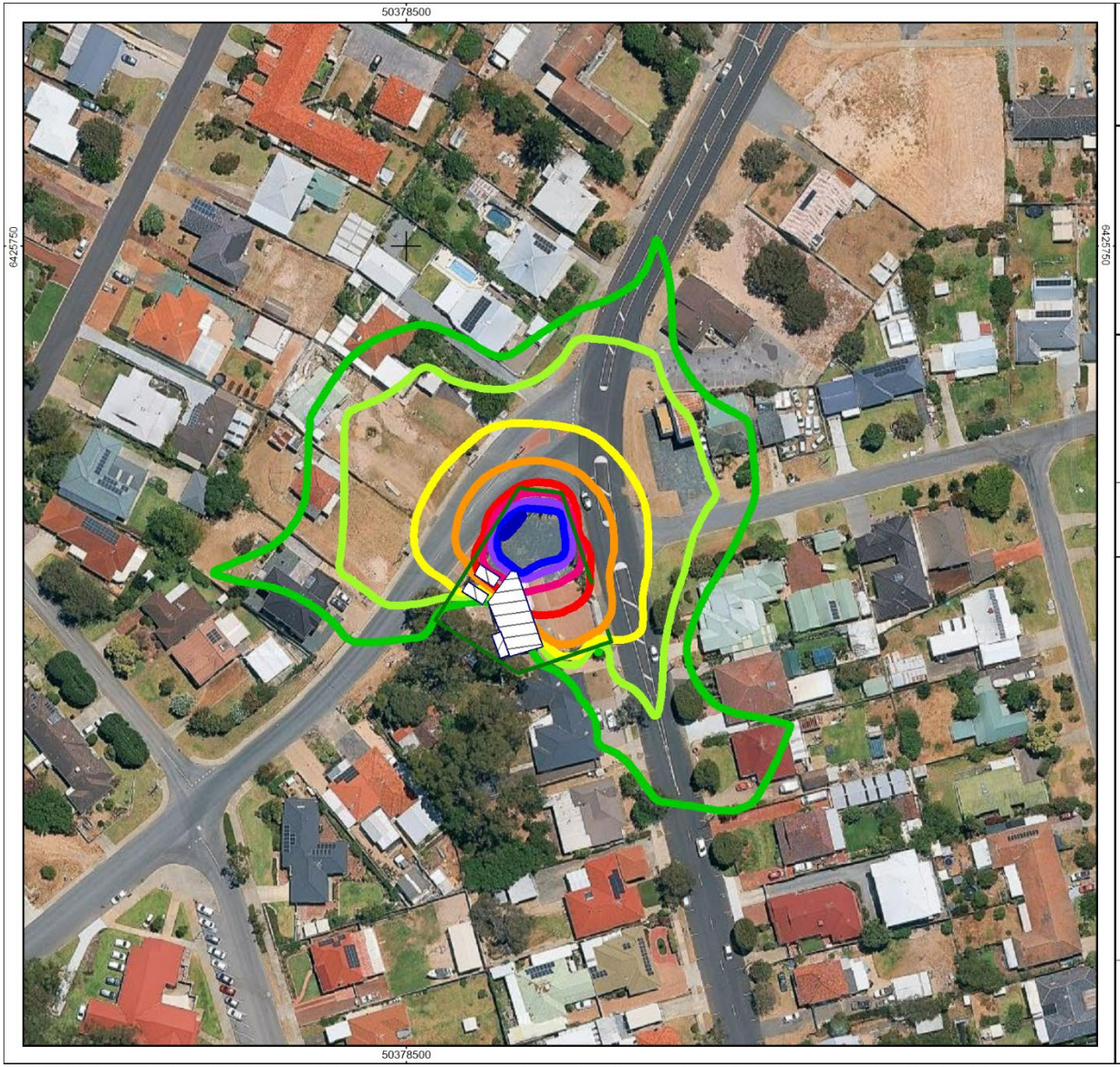
8.0 CONCLUSION

Based on the above assessment, noise level emissions associated with the proposed development are able to comply with the relevant assigned noise levels stipulated by the *Environmental Protection (Noise) Regulations 1997.*

It is noted that for the above finding to hold true, the operational restrictions measures listed above must be followed.

APPENDIX A

NOISE CONTOUR PLOTS



Customer:
Fathom Brewing
Project: Fathom Brewing
Project-No. 26407

Map
1

Alfresco Patrons - Current Number (60 Patrons)

Calculation in 1.5 m above ground

Project engineer: George Watts
Created: 19/10/2026
Processed with SoundPLAN 9.1, Update 13/10/2026

Levels LA10
in dB(A)

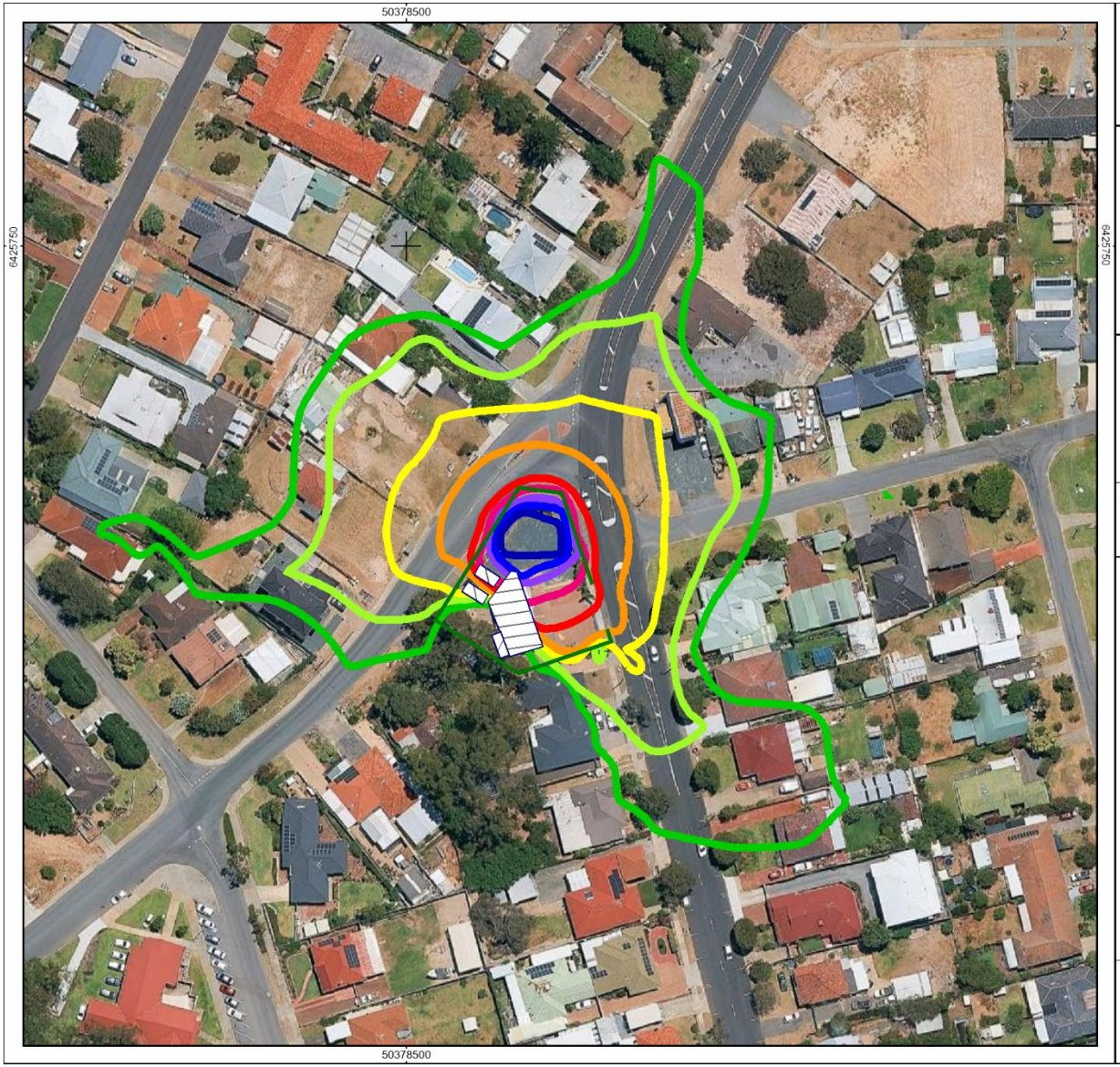
- = 30
- = 35
- = 40
- = 45
- = 50
- = 55
- = 60
- = 65
- = 70

N

Length scale 1:1000
0 5 10 20 30 40 m

HERRING STORER ACOUSTICS

SoundPLANnoise 9.1 C:\Data\ActiveProjectsGW\26407 - Fathom Brewing Proposed Increase in Patron Numbers\Fathom Brewing Data\25346 - Azzacca Kitchen and Brewing\Azacca Brewery and Kitchern\AlfrescoPatronsFathomBrewingGNM1.sgs



Customer:
Fathom Brewing
Project: Fathom Brewing
Project-No. 26407

Map
2

Alfresco Patrons - 100 Patrons

Calculation in 1.5 m above ground

Project engineer: George Watts
Created: 19/10/2026
Processed with SoundPLAN 9.1, Update 13/10/2026

Levels LA10
in dB(A)

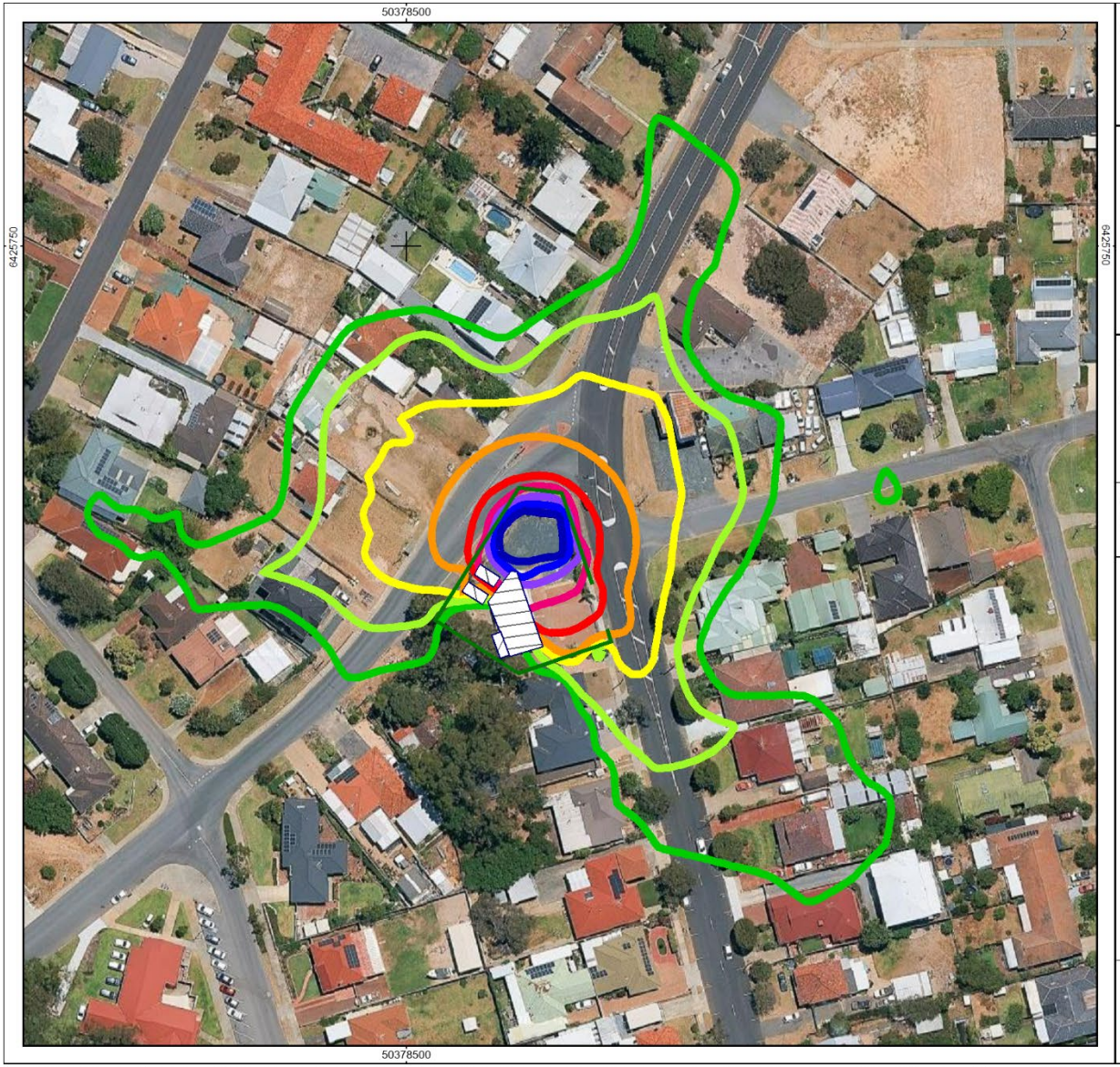
- = 30
- = 35
- = 40
- = 45
- = 50
- = 55
- = 60
- = 65
- = 70

N

Length scale 1:1000
0 5 10 20 30 40 m

HERRING STORER ACOUSTICS

SoundPLANnoise 9.1 C:\Data\ActiveProjectsGW\26407 - Fathom Brewing Proposed Increase in Patron Numbers\Fathom Brewing Data\25346 - Azzacca Kitchen and Brewing\Azacca Brewery and Kitchern\AlfrescoPatronsFathomBrewingGNM2.sgs



Customer:
Fathom Brewing
Project: Fathom Brewing
Project-No. 26407

Map
3

Alfresco Patrons - 120 Patrons (maximum)

Calculation in 1.5 m above ground

Project engineer: George Watts
Created: 19/10/2026
Processed with SoundPLAN 9.1, Update 13/10/2026

Levels LA10
in dB(A)

- = 30
- = 35
- = 40
- = 45
- = 50
- = 55
- = 60
- = 65
- = 70

N

Length scale 1:1000
0 5 10 20 30 40 m

HERRING STORER ACOUSTICS

SoundPLANnoise 9.1 C:\Data\ActiveProjectsGW\26407 - Fathom Brewing Proposed Increase in Patron Numbers\Fathom Brewing Data\25346 - Azzacca Kitchen and Brewing\Azacca Brewery and Kitchern\AlfrescoPatronsFathomBrewingGNM3.sgs