Title:	**Noise Assessment Report Addendum: Additional Receivers**
Project:	Hastings Generation Project Environmental Noise Impact Assessment
Client:	Esso

Wood Doc No	AU00659-01-FN2	**Wood Job No.**	AU00659-01

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1 INTRODUCTION

Esso are seeking to obtain regulatory planning approval for the Hastings Generation Project (The Project). The Hastings Generation Project is to be located at an ExxonMobil owned site adjourning the existing Long Island Point (LIP) facility. Noise from The Project has the potential to impact noise sensitive areas (hereby referred to as NSRs/noise sensitive receivers) surrounding the proposed operations.

Noise impacts at four of the closest noise sensitive receivers were previously assessed, based on noise modelling and background noise monitoring of The Project, as contained in the report document *Rpt01-AU00659-Rev1-26.Nov.2021 Hastings Generation Project Environmental Noise Impact Assessment*. The assessment results from this report indicate that noise emissions (*effective noise levels*) due to the operation of The Project would fall below the noise limits at all noise sensitive receivers identified in the assessment and are thus compliant with the relevant regulations.

A Request for Further Information (RFI) was made by the Victorian Department of Environment, Land, Water and Planning (DELWP) for the application in the letter *PA2201534_HGF DELWP RFI Letter 090322*, which included *Item 5. Amended Acoustic Assessment* concerning potential noise impacts to additional receptors (noise sensitive receivers). These receivers include dwellings at:

- 34 Cemetery Road, Hastings, VIC, 3915;
- 7 Beach Drive, Hastings, VIC, 3915;
- 22 Beach Drive, Hastings, VIC, 3915; and
- 47 Beach Drive, Hastings, VIC, 3915.

This report addendum presents both a justification as to why these receivers were not considered (individually) in the assessment report, and additionally an extension of the assessment to validate this justification with assessment results for these receivers.

1.1 Scope

The scope for this addendum to the noise assessment report is to:

- Provide short discussion on choice of representative noise sensitive receivers for the assessment (**Section 2**) and
- Present noise assessment results for the four additional noise sensitive receivers (denoted as NSRs 5 – 8 in Table 3-1), following identical methodology to that described in the original report *Rpt01-AU00659-Rev1-26.Nov.2021 Hastings Generation Project Environmental Noise Impact Assessment* (**Section 3**).

2 SELECTION OF RECEPTORS

A noise sensitive area has several definitions as per the Victorian Environmental Protection Regulations 2021[1]. For the previous assessment, four noise sensitive receivers (NSRs) nearby the proposed facility were identified. These receivers have all been identified as private residences/dwellings. The residential addresses of these receivers are outlined in Table 3-1 (NSRs 1-4).

These receivers were chosen to provide an inclusive and geographical spread of noise from The Project, and representative of varying potential for environmental noise impacts due to their distance and direction from The Project noise sources (*effective noise levels*, affected principally by geometrical spreading and meteorological factors), and also the local ambient baseline noise conditions (affecting the applied *Noise Limit*).

While the selection of receivers to be assessed is not exhaustive (e.g. every dwelling or multiple dwellings in close proximity), it is intended to provide characterisation of both differences in the local noise environment and emissions from The Project to adequately assess the risk of non-compliance with the regulations.

Further to this, the selection of receivers is also intended to represent the 'worst-case' potential for non-compliance with the regulations, within the local vicinity and influencing factors as described above.

Thus, selection of NSR 1 at 11 Cemetery Road is intended to represent the worst-case potential for exceedances of the *Noise Limit* for other dwellings in close proximity (e.g. dwellings on Picnic Avenue,

[1] Victorian Environmental Protection Regulations 2021, Part 1.2 – Interpretation and introductory matters, Pages 21-23

Beach Avenue, and other dwellings on Cemetery Road), affected by the same environmental conditions (baseline, influenced by roads, rail and nearby industry) and at a similar distance and direction from The Project. As such, if NSR 1 is assessed as compliant with the regulations, nearby residences are also treated as compliant.

3 ASSESSMENT METHODOLOGY

Details of The Project and its operations as affecting noise emissions, as well as assessment methodology to determine compliance with the regulations for the additional receivers is identical to that for the original receivers, and provided in report document *Rpt01-AU00659-Rev1-26.Nov.2021 Hastings Generation Project Environmental Noise Impact Assessment* **Sections 2 (Description of Site & Operations), 4 (Project Noise Limits), and 5 (Noise Modelling Methodology).**

3.1 Noise Sensitive Receivers

The residential addresses of the originally selected receivers and additional receivers are outlined in Table 3-1 (additional receivers shown in bold).

Table 3-1 Residential address' of Assessed Noise Sensitive Receivers

Noise Sensitive Receiver	Address
NSR 1	11 Cemetery Rd, Hastings VIC 3915
NSR 2	65 Skinner St, Hastings VIC 3915
NSR 3	2 Hodgins Rd, Hastings VIC 3915
NSR 4	15A Lyall St, Hastings VIC 3915
NSR 5	**34 Cemetery Road, Hastings VIC 3915**
NSR 6	**7 Beach Drive, Hastings VIC 3915**
NSR 7	**22 Beach Drive, Hastings VIC 3915**
NSR 8	**47 Beach Drive, Hastings VIC 3915**

Figure 3-1 shows an overview of the previously assessed receivers (yellow), and additional receivers for this addendum (blue) with reference to the proposed project area (red)

Figure 3-1: Location of Project Area and Noise Sensitive Receivers

3.1.1 Zoning Levels

In accordance with the Noise Protocol, the zoning level[2] is determined by applying two concentric circles of diameters of 140 m and 400 m, reproduced to scale, with the centre of the circles placed at the centre of each identified sensitive receiver. From each of these circles the area of each zoning types was determined and from this the zoning levels were calculated.

The night-time zoning levels for each noise sensitive receiver are summarised in Table 3-2.

[2] *Noise Limit and Assessment Protocol for the Control of Noise from Commercial, Industrial and Trade Premises and Entertainment Venues*, EPA Publication 1826.4 Part 1A, Section 1.1 Zoning Level

Table 3-2 Influencing Factor and Zoning Levels

Noise Sensitive Receiver	Land Zoning for NSR		Influencing Factor	Zoning Levels, dB(A)
	140 m diameter	400 m diameter		Night-time period
NSR 1	SUZ1	SUZ1 PCRZ PUZ5	0.93	55
NSR 2	PPRZ PUZ3 RDZ2 GRZ1	PPRZ PUZ3 RDZ2 GRZ1 PUZ6	0.09	41
NSR 3	GRZ1 C1Z RDZ2 PUZ2	GRZ1 C1Z RDZ2 PUZ2 PPRZ	0.19	42
NSR 4	GRZ1 RDZ2 IN3Z	GRZ1 RDZ2 IN3Z	0.25	43
NSR 5	SUZ1	SUZ1 PUZ5	0.99	56
NSR 6	PCRZ SUZ1	PUZ5 PCRZ SUZ1	0.62	50
NSR 7	PCRZ SUZ1	PUZ5 PCRZ SUZ1	0.87	54
NSR 8	PCRZ SUZ1	PUZ5 PCRZ SUZ1	0.54	48

3.2 Project Noise limits

The background noise levels were compared to the night-time zoning levels and a determination on whether the background noise level, relative to the zoning level, is neutral, low or high was made in accordance with Clause 4[3] of the Noise Protocol. Where background noise is dominated by intrusive noise from a commercial, industrial, or trade premises, background noise measurements undertaken at an equivalent location have been used in accordance with Clauses 40 & 42[4] of the Noise Protocol. Table 3-3 displays the background noise level assessment and outlines the project noise limits which were determined in accordance with Clauses 5 or 6[5] of the Noise Protocol

Table 3-3 Background Noise Level Assessment & Project Noise Limits

Receiver	Background Noise Level, dB(A)	Night time zoning Level, dB(A)	Background Noise Level Assessment	Comment	Project Night-time noise limit, dB(A)
NSR 1	37[6]	55	Low	Project noise limit is ½ (zoning level + background level) + 3 dB	**49**
NSR 2	35	41	Neutral	Project noise Limit based is zoning Level	**41**

[3] *Noise Limit and Assessment Protocol for the Control of Noise from Commercial, Industrial and Trade Premises and Entertainment Venues*, EPA Publication 1826.4 Part 1A, Section 1. Noise limits – urban area method, Clause 4

[4] *Noise Limit and Assessment Protocol for the Control of Noise from Commercial, Industrial and Trade Premises and Entertainment Venues*, EPA Publication 1826.4 Part 1A, Section 4. Assess background level to set noise limits for the urban area method or the rural area method, Clause 40 & 42.

[5] *Noise Limit and Assessment Protocol for the Control of Noise from Commercial, Industrial and Trade Premises and Entertainment Venues*, EPA Publication 1826.4 Part 1A, Section 1. Noise limits – urban area method, Clause 5 / Clause 6

[6] Due to the presence of significant intrusive noise from an industrial premises at this location. Background measurements undertaken at a background equivalent location (NSR3) have been used to determine project noise limits.

Receiver	Background Noise Level, dB(A)	Night time zoning Level, dB(A)	Background Noise Level Assessment	Comment	Project Night-time noise limit, dB(A)
NSR 3	37	42	Neutral	Project noise Limit based is zoning Level	**42**
NSR 4	37[6]	43	Neutral	Project noise Limit based is zoning Level	**43**
NSR 5	37[6]	56	Low	Noise limit is ½ (zoning level + background level) + 3 dB	**50**
NSR 6	37[6]	50	Low	Noise limit is ½ (zoning level + background level) + 3 dB	**47**
NSR 7	37[7]	54	Low	Noise limit is ½ (zoning level + background level) + 3 dB	**49**
NSR 8	37[7]	48	Low	Noise limit is ½ (zoning level + background level) + 3 dB	**46**

[7] Due to the presence of significant intrusive noise from an industrial premises at this location. Background measurements undertaken at a background equivalent location (NSR3) have been used to determine project noise limits.

4 NOISE ASSESSMENT

The noise levels that would be generated at the noise sensitive receivers by operation of the Hastings Generation Project were modelled under adverse weather conditions, as set out in Section 5.3 of the report document *Rpt01-AU00659-Rev1-26.Nov.2021 Hastings Generation Project Environmental Noise Impact Assessment*. The predicted noise levels are presented in Table 4-1 below.

Table 4-1 Predicted Noise Levels

Receiver	Address	Predicted noise level, dB(A)
NSR 1	11 Cemetery Rd, Hastings VIC 3915	46.4
NSR 2	65 Skinner St, Hastings VIC 3915	33.8
NSR 3	2 Hodgins Rd, Hastings VIC 3915	34.3
NSR 4	15A Lyall St, Hastings VIC 3915	31.4
NSR 5	**34 Cemetery Road, Hastings VIC 3915**	**45.4**
NSR 6	**7 Beach Drive, Hastings VIC 3915**	**43.1**
NSR 7	**22 Beach Drive, Hastings VIC 3915**	**42.6**
NSR 8	**47 Beach Drive, Hastings VIC 3915**	**40.9**

Predicted noise contours for the modelled scenario are presented in Appendix A.

Based on noise characteristics from the proposed equipment it is expected that noise emissions from The Project are unlikely to exhibit tonal or other noise characteristics that may invoke adjustments to predicted noise levels at noise sensitive receivers. Therefore, no adjustments have been made to the predicted levels to obtain the *effective noise levels (Table 4-2),* which form the basis of the assessment.

Table 4-2 Effective Noise Levels

Receiver	Address	Noise limit, dB(A)	Effective noise level, dB(A)
NSR 1	11 Cemetery Rd, Hastings VIC 3915	49	46
NSR 2	65 Skinner St, Hastings VIC 3915	41	34
NSR 3	2 Hodgins Rd, Hastings VIC 3915	42	34
NSR 4	15A Lyall St, Hastings VIC 3915	43	31
NSR 5	**34 Cemetery Road, Hastings VIC 3915**	**50**	**45**
NSR 6	**7 Beach Drive, Hastings VIC 3915**	**47**	**43**
NSR 7	**22 Beach Drive, Hastings VIC 3915**	**49**	**43**
NSR 8	**47 Beach Drive, Hastings VIC 3915**	**46**	**41**

5 CONCLUSION

The assessment results for the additional dwellings presented in Table 4-2 for this addendum indicate that noise emissions (*effective noise levels*) due to the operation of The Project would fall below the noise limits at all noise sensitive receivers identified in the assessment and are thus compliant with the relevant regulations.

Based on noise characteristics from the proposed equipment it is expected that noise emissions from The Project are unlikely to exhibit tonal or other noise characteristics that may invoke adjustments to predicted noise levels at noise sensitive receivers. Therefore, no adjustments have been made to the predicted levels.

The recommended noise attenuation measures, and verification of their implementation in the as-built plant, as described in Section 7 of report document *Rpt01-AU00659-Rev1-26.Nov.2021 Hastings Generation Project Environmental Noise Impact Assessment,* remains.

APPENDIX A PREDICTED NOISE CONTOURS