HERRING STORER ACOUSTICS

CLE TOWN PLANNING + DESIGN

LANCELIN SOUTH STRUCTURE PLAN
LANCELIN

SPP 5.4 NOISE MANAGEMENT PLAN

JUNE 2025

OUR REFERENCE: 34783-2-25182

Rochdale Holdings Pty Ltd A.B.N. 85 009 049 067 trading as:
HERRING STORER ACOUSTICS
P.O. Box 219, Como, W.A. 6952
(08) 9367 6200
hsa@hsacoustics.com.au

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NOISE MANAGEMENT PLAN

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FOR

CLE TOWN PLANNING + DESIGN

DOCUMENT INFORMATION			
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Date of Issue:	17 June 2025		

REVISION HISTORY

Revision	Description	Date	Author	Checked
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Copy No.	Version No.	Destination	Hard Copy	Electronic Copy
1	1	CLE Town Planning Attn: Sophie Moscardini Email: sophiem@cleplan.com.au		✓

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APPENDICES

1. INTRODUCTION

Herring Storer Acoustics was commissioned to undertake an assessment of road traffic noise for the proposed Lancelin South structure plan.

The purpose of this assessment was to assess noise received within the development from road vehicles for future traffic volumes. The traffic noise assessment has been carried out in accordance with the WAPC State Planning Policy 5.4 *"Road and Rail Noise"*.

For information, the development plan is attached in Appendix A.

2. SUMMARY

Under the Western Australian Planning Commission (WAPC) Planning Policy 5.4 *"Road and Rail Noise"* (SPP5.4), the appropriate criteria for assessment for this development are as listed below for "Noise Limits".

EXTERNAL

$L_{Aeq(Day)}$ of 55 dB(A); and
$L_{Aeq(Night)}$ of 50 dB(A).

INTERNAL

$L_{Aeq(Day)}$ of 40 dB(A) in living and work areas; and
$L_{Aeq(Night)}$ of 35 dB(A) in bedrooms.

Noise received at an outdoor area should also be reduced as far as practicable, with an aim of achieving an L_{Aeq} (night) of 50 dB(A).

Noise received at lots located adjacent to the transport corridors in and around the development exceed the criteria. Quiet House Design requirements are listed in section 6.

3. ACOUSTIC CRITERIA

3.1 ROAD TRAFFIC NOISE

The Western Australian Planning Commission (WAPC) released on 6th September 2019 State Planning Policy 5.4 *"Road and Rail Noise".* The requirements of State Planning Policy 5.4 are outlined below.

POLICY APPLICATION (Section 4)

When and where it applies (Section 4.1)

SPP 5.4 applies to the preparation and assessment of planning instruments, including region and local planning schemes; planning strategies, structure plans; subdivision and development proposals in Western Australia, where there is proposed:

a) *noise-sensitive land-use within the policy's trigger distance of a transport corridor as specified in* ***Table 1****;*

b) *New or major upgrades of roads as specified in* ***Table 1*** *and maps* ***(Schedule 1,2 and 3);*** *or*

c) *New railways or major upgrades of railways as specified in maps (****Schedule 1, 2 and 3);*** *or any other works that increase capacity for rail vehicle storage or movement and will result in an increased level of noise.*

Policy trigger distances (Section 4.1.2)

***Table 1** identifies the State's transport corridors and the trigger distances to which the policy applies.*

*The designation of land within the trigger distances outlined in **Table 1** should not be interpreted to imply that land is affected by noise and/or that areas outside the trigger distances are un-affected by noise.*

*Where any part of the lot is within the specified trigger distance, an assessment against the policy is required to determine the likely level of transport noise and management/ mitigation required. An initial screening assessment (**guidelines: Table 2: noise exposure forecast**) will determine if the lot is affected and to what extent."*

TABLE 1: TRANSPORT CORRIDOR CLASSIFICATION AND TRIGGER DISTANCES

Transport corridor classification	***Trigger distance***	***Distance measured from***
Roads		
Strategic freight and major traffic routes *Roads as defined by Perth and Peel Planning Frameworks and/or roads with either 500 or more Class 7 to 12 Austroads vehicles per day, and/or 50,000 per day traffic volume*	*300 metres*	*Road carriageway edge*
Other significant freight/traffic routes *These are generally any State administered road and/or local government road identified as being a future State administered road (red road) and other roads that meet the criteria of either >=23,000 daily traffic count (averaged equivalent to 25,000 vehicles passenger car units under region schemes)*	*200 metres*	*Road carriageway edge*
Passenger railways		
	100 metres	*Centreline of the closest track*
Freight railways		
	200 metres	*Centreline of the closest track*

Proponents are advised to consult with the decision making authority as site specific conditions (significant differences in ground levels, extreme noise levels) may influence the noise mitigation measures required, that may extend beyond the trigger distance.

POLICY MEASURES (Section 6)

The policy applies a performance-based approach to the management and mitigation of transport noise. The policy measures and resultant noise mitigation will be influenced by the function of the transport corridor and the type and intensity of the land-use proposed. Where there is risk of future land-use conflict in close proximity to strategic freight routes, a precautionary approach should be applied. Planning should also consider other broader planning policies. This is to ensure a balanced approach takes into consideration reasonable and practical considerations.

Noise Targets (Section 6.1)

***Table 2** sets out noise targets that are to be achieved by proposals under which the policy applies. Where exceeded, an assessment is required to determine the likely level of transport noise and management/mitigation required.*

In the application of the noise targets the objective is to achieve:

- *indoor noise levels as specified in **Table 2** in noise sensitive areas (for example, bedrooms and living rooms of houses, and school classrooms); and*
- *a reasonable degree of acoustic amenity for outdoor living areas on each residential lot. For non-residential noise-sensitive developments, for example schools and child care centres the design of outdoor areas should take into consideration the noise target.*

It is recognised that in some instances, it may not be reasonable and/or practicable to meet the outdoor noise targets. Where transport noise is above the noise targets, measures are expected to be implemented that balance reasonable and practicable considerations with the need to achieve acceptable noise protection outcomes.

TABLE 2: NOISE TARGETS

Proposals	***New/Upgrade***	***Noise Targets***		
		Outdoor		***Indoor***
		Day (L_{Aeq}(Day) dB) (6 am-10 pm)	***Night (L_{Aeq}(Night) dB) (10 pm-6 am)***	***(L_{Aeq} dB)***
Noise-sensitive land-use and/or development	*New noise sensitive land use and/or development within the trigger distance of an existing/proposed transport corridor*	*55*	*50*	*L_{Aeq} (Day) 40(Living and work areas)* *L_{Aeq} (Night) 35 (bedrooms)*
Roads	*New*	*55*	*50*	*N/A*
	Upgrade	*60*	*55*	*N/A*
Railways	*New*	*55*	*50*	*N/A*
	Upgrade	*60*	*55*	*N/A*

Notes:

- *The noise target is to be measured at one metre from the most exposed, habitable façade of the proposed building, which has the greatest exposure to the noise-source. A habitable room has the same meaning as defined in State Planning Policy 3.1 Residential Design Codes.*
- *For all noise-sensitive land-use and/or development, indoor noise targets for other room usages may be reasonably drawn from Table 1 of Australian Standard/New Zealand Standard AS/NZS 2107:2016 Acoustics – Recommended design sound levels and reverberation times for building interiors (as amended) for each relevant time period.*
- *The 5dB difference in the criteria between new and upgrade infrastructure proposals acknowledges the challenges in achieving noise level reduction where existing infrastructure is surrounded by existing noise-sensitive development.*
- *Outdoor targets are to be met at all outdoor areas as far as is reasonable and practical to do so using the various noise mitigation measures outlined in the guidelines. For example, it is likely unreasonable for a transport infrastructure provider to achieve the outdoor targets at more than 1 or 2 floors of an adjacent development with direct line of sight to the traffic.*

Noise Exposure Forecast (Section 6.2)

*When it is determined that SPP 5.4 applies to a planning proposal as outlined in Section 4, proponents and/or decision makers are required to undertake a preliminary assessment using **Table 2**: noise exposure forecast in the guidelines. This will provide an estimate of the potential noise impacts on noise-sensitive land-use and/ or development within the trigger distance of a specified transport corridor. The outcomes of the initial assessment will determine whether:*

- *no further measures is required;*
- *noise-sensitive land-use and/or development is acceptable subject to deemed-to- comply mitigation measures; or*
- *noise-sensitive land-use and/or development is not recommended. Any noise-sensitive land-use and/ or development is subject to mitigation measures outlined in a noise management plan."*

4. NOISE MONITORING

Road traffic noise monitoring was undertaken on Indian Ocean Drive and Lancelin Road in order to calibrate the noise model. Two Svan SV307A noise monitors were deployed for a period of two weeks beginning Tuesday 20th of May. Monitoring results are summarised in Table 4.1 and illustrated in Appendix D.

TABLE 4.1: SUMMARY OF MEASURED TRAFFIC NOISE LEVELS

Road	Weekday Average Noise Levels (dB(A))		
	$L_{A10(18hour)}$	$L_{Aeq,day}$ (6am to 10pm)	$L_{Aeq,night}$ (10pm to 6am)
Indian Ocean Drive	61.9	62.7	52.7
Lancelin Rd	59.4	60.6	51.9

For information, the results of the monitoring are shown graphically in Appendix D Figures 4.1 and 4.2 illustrate the locations of the monitors.

FIGURE 4.1 – MONITOR LOCATIONS

FIGURE 4.2 – NOISE MONITORS IN SITU

5. MODELLING

5.1 ROAD TRAFFIC NOISE

Modelling of noise received within the development from Indian Ocean Drive and Lancelin Road was carried out using SoundPlan, using the Calculation of Road Traffic Noise (CoRTN) algorithms. The input data for the model included the parameters detailed in Table 5.1.

Mainroads modelling predicts 0% growth for these roads, however for a conservative assessment future road traffic volumes were based on an increase of 1% per year from the most recent traffic counts.

TABLE 5.1 - SUMMARY OF TRAFFIC DATA

Parameter	Lancelin Road		Indian Ocean Drive	
	Current (2022)	Future (2043)	Current (2022)	Future (2043)
Traffic flows VPD Lancelin Road	2630	3200	2980	3710
Heavy Vehicles (%)	18%	18%	25%	25%
Traffic Speed km/hr	90 kmh^{-1}	90 kmh^{-1}	110 kmh^{-1}	110 kmh^{-1}
Road Surface	Chip Seal	Chip Seal	Chip Seal	Chip Seal

Other input data for the model included:

- Traffic data from MRWA (https://mrapps.mainroads.wa.gov.au/TrafficMap/)
- Traffic as provided by the MRWA ROM Department, as attached in Appendix E.
- Noise source heights for the three road source strings (Passenger Vehicles, Heavy Vehicles Engine and Heavy Vehicle Exhausts) are +0.5, +1.5 and +3.6m, with a noise correction of -0.8 and -8.0 applied to the heavy vehicle's engine and exhaust noise sources.
- Topographical data, with the ground level within the development based on natural ground levels as per surveys conducted.
- A +2.5 dB adjustment to allow for façade reflection.
- A -1.2 dB conversion from L_{10} to $L_{eq(Day)}$.
- Development receiver heights at 1.4m above ground level.
- Future heavy vehicle percentage assumed to be the same as current.
- Calculations based on CoRTN algorithms.
- Other parameter listed in SPP 5.4 as to guidance for modelling road traffic noise / assessment.

6. ASSESSMENT

In accordance with the WAPC Planning Policy 5.4, an assessment of the noise that would be received within the development from future road and rail traffic volumes has been undertaken.

In accordance with the Policy, the following would be the acoustic criteria applicable to this project:

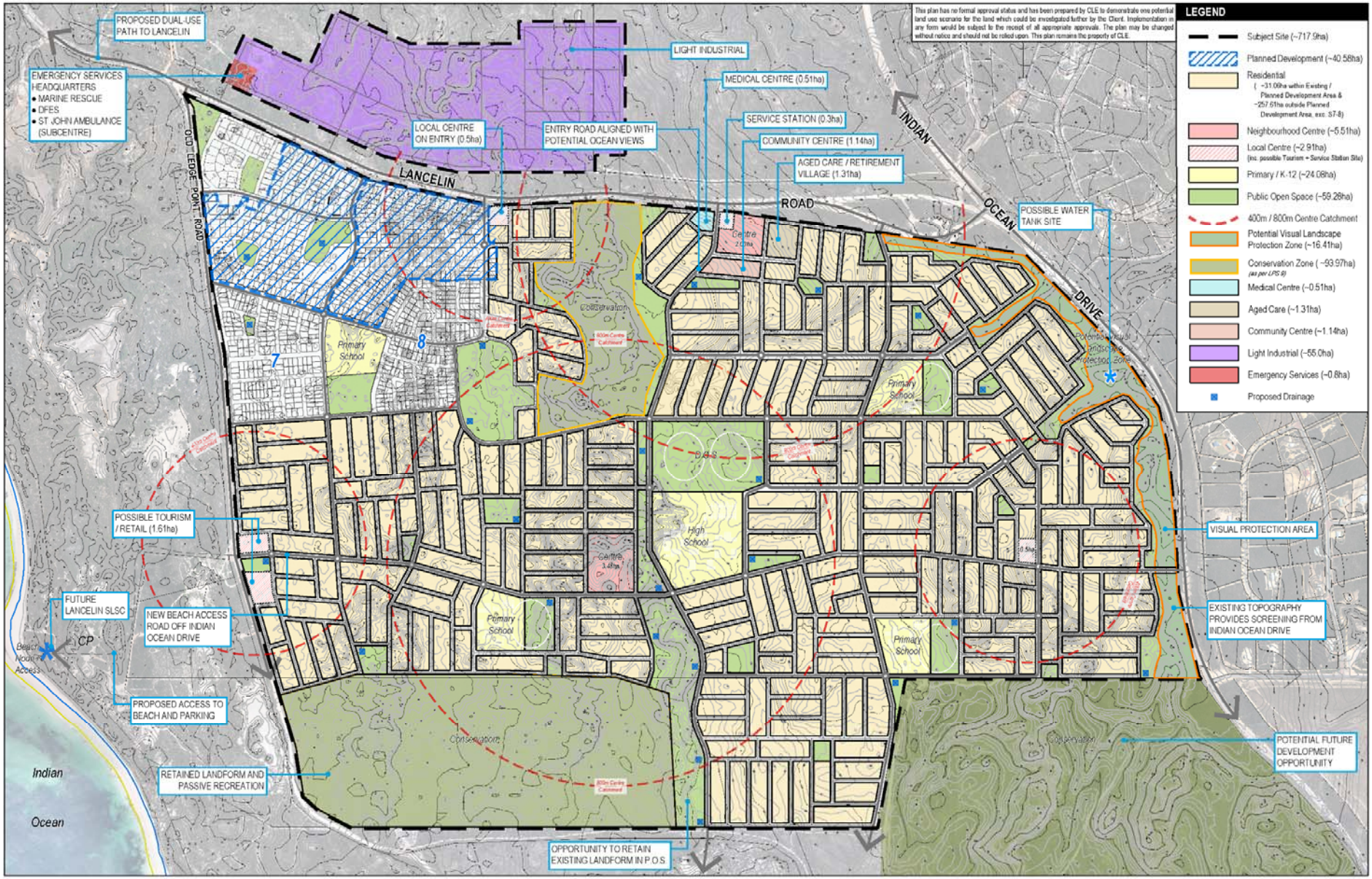
External	
Day	Maximum of 55 dB(A) L_{Aeq}
Night	Maximum of 50 dB(A) L_{Aeq}
Outdoor Living Areas (Night)	Maximum of 50 dB(A) L_{Aeq}
Internal	
Sleeping Areas	35 dB(A) $L_{Aeq(night)}$
Living Areas	40 dB(A) $L_{Aeq(day)}$

Noise received at an outdoor area should also be reduced as far as practicable with an aim of achieving an $L_{Aeq\ (night)}$ of 50 dB(A).

From the modelling undertaken, noise received at residential lots adjacent to Lancelin Road would exceed the criteria. These lots would require Quiet House Design in the form of Package A. Requirements for individual lots should be assessed at the subdivision stage once lot boundaries are known.

APPENDIX A

DEVELOPMENT PLAN



CLE Town Planning + Design

CONCEPT MASTERPLAN

Lancelin South

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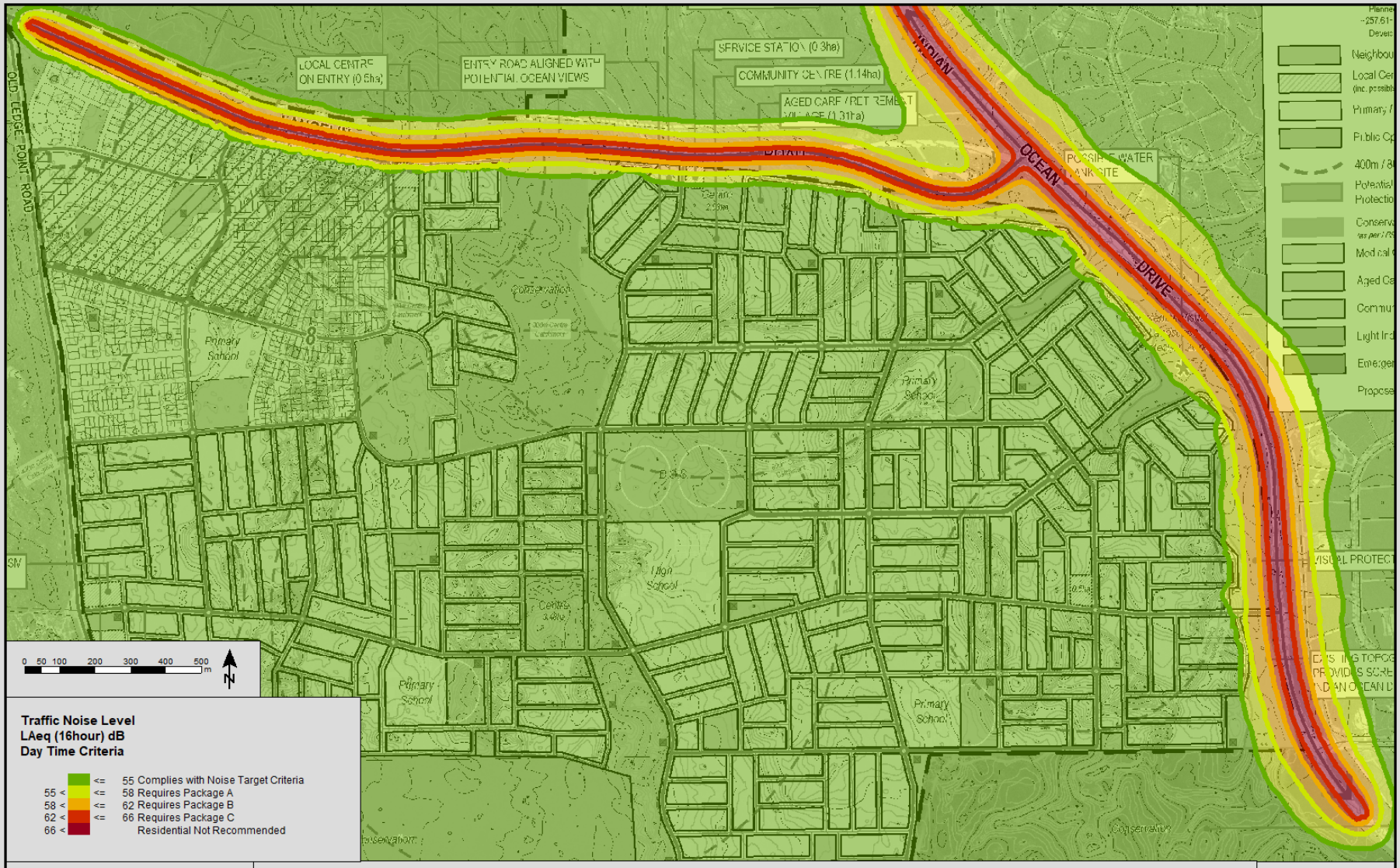
DRAFT

plan no: 3818-38F-01
date: 2 December 2025
scale: 1:12,000 @A3, 1:6,000 @A1

N

APPENDIX B

NOISE CONTOUR PLOTS



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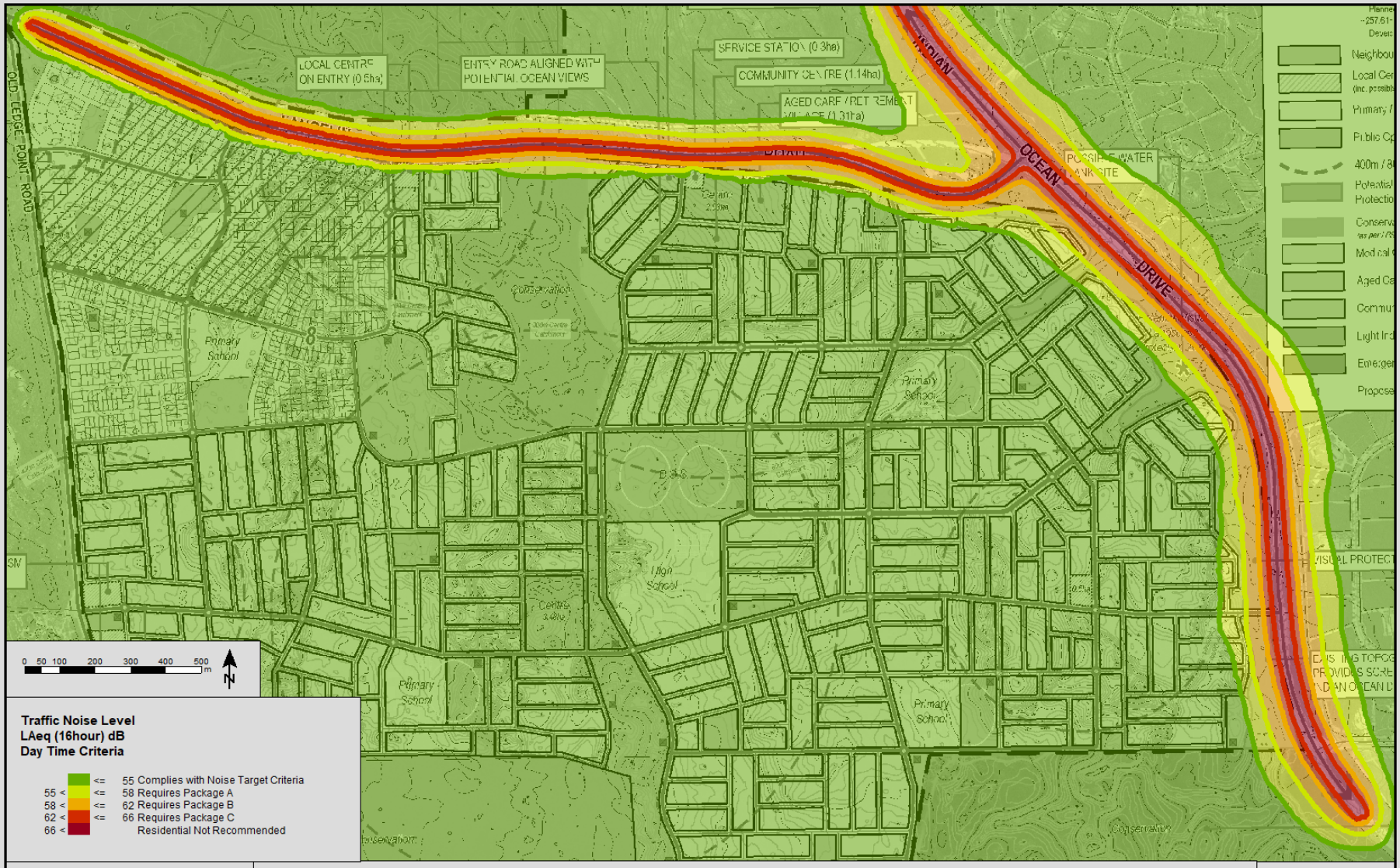
LANCELIN SOUTH STRUCTURE PLAN
Future Traffic Volumes - Including Buildings
LAeq (16hour) Day Noise Level Contour



Herring Storer Acoustics
Job No - 25182

LANCELIN SOUTH STRUCTURE PLAN
Future Traffic Volumes - Including Buildings
LAeq (16hour) Day Noise Level Contour

APPENDIX C

QUIET HOUSE DESIGN GUIDELINES
Excerpt from *State Planning Policy 5.4 – Road and Rail Noise Guidelines* (2019)

Table 3: *Quiet house requirements*

Exposure Category	Orientation to corridor	Acoustic rating and example constructions					Mechanical ventilation / air conditioning considerations
		Walls	**External doors**	**Windows**	**Roofs and ceilings of highest floors**	**Outdoor living areas**	
A **Quiet House A**	Facing	**Bedroom and indoor living and work areas to Rw+Ctr 45dB** • One row of 92mm studs at 600mm centres with: – Resilient steel channels fixed to the outside of the studs; and – 9.5mm hardboard or 9mm fibre cement sheeting or 11mm fibre cement weatherboards or one layer of 19mm board cladding fixed to the outside of the channels; and – 75mm glass wool (11kg/m3) or 75mm polyester (14kg/m3) insulation, positioned between the studs; and – Two layers of 16mm fire-protective grade plasterboard fixed to the inside face of the studs. – Single leaf of 150mm brick masonry with 13mm cement render on each face. – Double brick: two leaves of 90mm clay brick masonry with a 20mm cavity between leaves.	**Bedrooms:** • Fully glazed hinged door with certified Rw+Ctr 28dB rated door and frame including seals and 6mm glass Other external doors to Rw+Ctr 25dB, e.g. • 35mm solid core timber hinged door and frame system certified to Rw 28dB including seals • Glazed sliding door with 10mm glass and weather seals	**Bedrooms:** • Total external door and window system area up to 40% of room floor area: Sliding or double hung with minimum 10mm single or 6mm-12mm-10mm double insulated glazing (Rw+Ctr 28 dB). Sealed awning or casement windows may use 6 mm glazing instead. • Up to 60% floor area: as per above but must be sealed awning or casement type windows (Rw+Ctr 31dB). **Indoor living and work areas** • Up to 40% floor area: Sliding, awning, casement or double hung with minimum 6mm single pane or 6mm-12mm-6mm double insulated glazing (Rw+Ctr 25dB). • Up to 60% floor area: As per Bedrooms at up to 40% area (Rw+Ctr 28 dB). • Up to 80% floor area: As per Bedrooms at up to 60% area (Rw+Ctr 31dB).	**To Rw+Ctr 35dB** • Concrete or terracotta tile or metal sheet roof with sarking and at least 10mm plasterboard ceiling	At least one outdoor living area located on the opposite side of the building from the transport corridor and/or at least one ground level outdoor living area screened using a solid continuous fence or other structure of minimum 2 metres height above ground level.	• Acoustically rated openings and ductwork to provide a minimum sound reduction performance of Rw 40dB into sensitive spaces • Evaporative systems require attenuated ceiling air vents to allow closed windows • Refrigerant-based systems need to be designed to achieve National Construction Code fresh air ventilation requirements • Openings such as eaves, vents and air inlets must be acoustically treated, closed or relocated to building sides facing away from the corridor where practicable
	Side on						
	Opposite		As per 'Facing' above, except Rw+Ctr values may be 3dB less, e.g. glazed sliding door with 10mm glass and weather seals for bedrooms.	As above, except Rw+Ctr values may be 3dB less, or max % area increased by 20%			
			No specific requirements				
A **Quiet House A+**	All	As per Quiet House A, except double leaf masonry / brick construction only.	As per Quiet House A.	As per Quiet House A, except that • 'Side-on' requirements same as 'Facing'. • All windows comprise minimum 6 mm thick laminated or toughened glass in sealed awning or casement frames. Polymer (e.g. uPVC) window framing should be used. Evaporative air conditioning systems are not recommended. • No external doors for bedrooms with entry 'Facing' transport corridor	No specific requirements		
B **Quiet House B**	Facing	**Bedroom and indoor living and work areas to Rw+Ctr 50dB** • Single leaf of 90mm clay brick masonry with: – A row of 70mm x 35mm timber studs or 64mm steel studs at 600mm centres; – A cavity of 25mm between leaves; – 50mm glass wool or polyester cavity insulation (R2.0+) insulation between studs; and – One layer of 10mm plasterboard fixed to the inside face	**Bedrooms** • Fully glazed hinged door with certified Rw+Ctr 31dB rated door and frame including seals and 10mm glass • Other external doors to Rw+Ctr 28dB, e.g. • As per Quiet House A Bedrooms.	**Bedrooms:** • Total external door and window system area up to 40% of room floor area: Fixed sash, awning or casement with minimum 6mm single or 6mm-12mm-6mm double insulated glazing (Rw+Ctr 31 dB). • Up to 60% floor area: as per above but must be minimum 10 mm single or 6mm-12mm-10mm double insulated glazing (Rw+Ctr 34dB). **Indoor living and work areas** • Up to 40% floor area: Sliding or double hung with minimum 6mm single pane or 6mm-12mm-6mm double insulated glazing (Rw+Ctr 28dB). Sealed awning or casement windows may use 6 mm glazing instead. • Up to 60% floor area: As per Bedrooms at up to 40% area (Rw+Ctr 31 dB). • Up to 80% floor area: As per Bedrooms at up to 60% area (Rw+Ctr 34dB).	**To Rw+Ctr 35dB** • Concrete or terracotta tile or metal sheet roof, sarking and at least 10mm plasterboard ceiling, R3.0+ insulation	At least one outdoor living area located on the opposite side of the building from the corridor and/or at least one ground level outdoor living area screened using a solid continuous fence or other structure of minimum 2.4 metres height above ground level	
	Side-on	• 150mm thick unlined concrete panel or 200mm thick concrete panel with one layer of 13mm plasterboard or 13mm cement render on each face					
	Opposite	• Double brick: two leaves of 90mm clay brick masonry with: – A 50mm cavity between leaves – 50mm glass wool or polyester cavity insulation (R2.0+) – resilient ties where required to connect leaves • Double brick: two leaves of 110mm clay brick masonry with a 50mm cavity between leaves and R2.0+ cavity insulation	As per Quiet House A 'Facing' above (Rw+Ctr values may be 3dB less, or max % area increased by 20%).				
			As per Quiet House A 'Side-on' above.				
B **Quiet House B+**	All	As per Quiet House B example above, except use double leaf masonry construction only.	As per Quiet House B, except • No external doors for bedrooms with entry 'Facing' or 'Side-on' to transport corridor	As per Quiet House B, except that • 'Side-on' requirements become the same as Quiet House B 'Facing'. • All windows comprise minimum 6 mm thick laminated or toughened glass in sealed awning or casement frames. Polymer (e.g. uPVC) window framing should be used. • Evaporative air conditioning systems are not recommended.	As per Quiet House C (to Rw+Ctr 40dB).		

Cont. next page

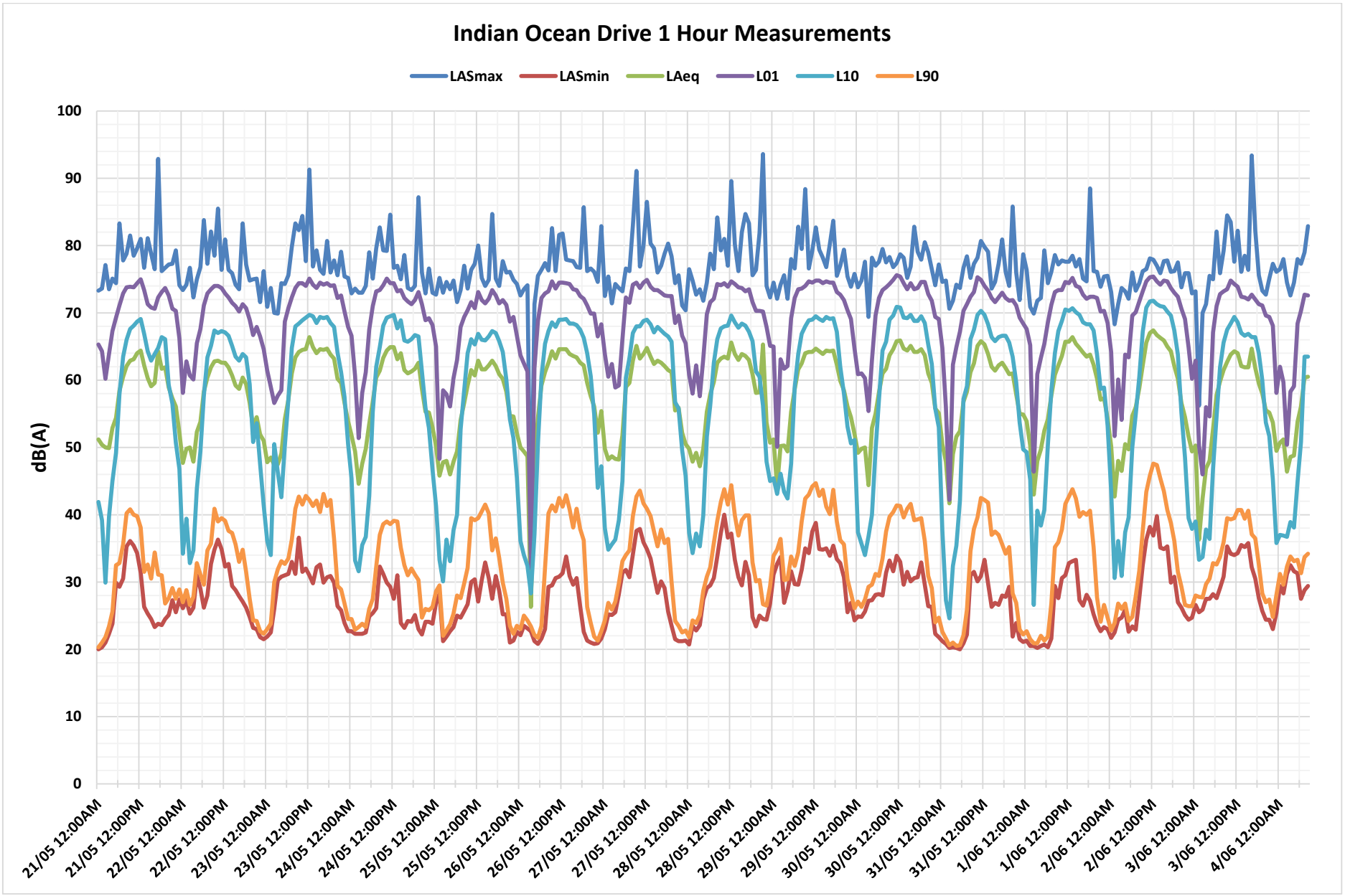
Exposure Category	Orientation to corridor	Acoustic rating and example constructions					Mechanical ventilation / air conditioning considerations
		Walls	External doors	Windows	Roofs and ceilings of highest floors	Outdoor living areas	
C **Quiet House C**	Facing	**Bedroom and indoor living and work areas to Rw+Ctr 50dB** • As per Quiet House B example above	**Bedrooms** • External doors to bedrooms facing the corridor are not recommended. Other external doors to Rw+Ctr 30dB, e.g. • Fully glazed hinged door with certified Rw+Ctr 31dB rated door and frame including seals and 10mm glass. • 40mm solid core timber frame and door (without glass or with glass inserts not less than 6mm), side hinged with certified Rw 32dB acoustically rated door and frame system including seals	**Bedrooms:** • Total external door and window system area up to 20% of room floor area: Fixed sash, awning or casement with minimum 6mm single or 6mm-12mm-6mm double insulated glazing (Rw+Ctr 31 dB). • Up to 40% floor area: as per above but must be minimum 10 mm single or 6mm-12mm-10mm double insulated glazing (Rw+Ctr 34dB). **Indoor living and work areas** • Up to 40% floor area: Sliding or double hung with minimum 6mm single pane or 6mm-12mm-6mm double insulated glazing (Rw+Ctr 31dB). Sealed awning or casement windows may use 6 mm glazing instead. • Up to 60% floor area: As per Bedrooms at up to 40% area (Rw+Ctr 34 dB).	**To Rw+Ctr 40dB** • To all bedrooms, 2 layers of 10mm plasterboard, or one layer 13 mm high density sealed plasterboard (minimum surface density of 12.5 kg/m2), affixed using steel furring channels beneath ceiling rafters / supports. • R3.0+ insulation batts laid in cavity. • Concrete or terracotta tile roof with sarking, or metal sheet roof with foil backed R2.0+ fibre insulation between steel sheeting and roof battens.	As per Quiet House B	• Acoustically rated openings and ductwork to provide a minimum sound reduction performance of Rw 40dB into sensitive spaces • Evaporative systems require attenuated ceiling air vents to allow closed windows • Refrigerant-based systems need to be designed to achieve National Construction Code fresh air ventilation requirements • Openings such as eaves, vents and air inlets must be acoustically treated, closed or relocated to building sides facing away from the corridor where practicable
	Side-on		As per Quiet House B 'Facing' above (Rw+Ctr values may be 3dB less, or max % area increased by 20%).				
	Opposite		As per Quiet House A 'Facing' above.				
C **Quiet House C+**	All	As per Quiet House B example above, except using double leaf masonry construction only. • Double brick: two leaves of 90mm clay brick masonry with: – A 50mm cavity between leaves – R2.0+ cavity insulation – resilient ties where required to connect • Double brick: two leaves of 110mm clay brick masonry with a 50mm cavity between leaves and R2.0+ cavity insulation	As per Quiet House C, except • No external doors for bedrooms with entry 'Facing' or 'Side-on' to transport corridor.	As per Quiet House C, except that • 'Side-on' requirements same as Quiet House C 'Facing'. • All windows into habitable areas comprise minimum 6 mm thick glazing in sealed awning or casement frames. Polymer (e.g. uPVC) window framing and hardware which cannot rattle loose should be used throughout. • Evaporative air conditioning systems are not recommended.	To Rw+Ctr 45dB As per Quiet House C, except • the roof must be concrete or terracotta tile construction with sarking (i.e. no steel sheet roof option). • Ceilings to bedrooms must be constructed from at least 2 overlapping layers of flush plasterboard.		

Footnotes:

- The airborne weighted sound reduction index (Rw) and traffic correction term (Ctr) are published by manufacturers/suppliers, can be determined by acoustical consultants or measured in accordance with AS ISO 717.1. Higher Rw+Ctr values infer greater sound insulation. All values are minimum Rw+Ctr (dB)
- Example construction for different external wall ratings of Rw+Ctr 45dB and 50dB are provided and are listed within Specification F5.2 in Volume 1 Part F of the National Construction Code. These values are based on the installation and sealing of joints and penetrations in accordance with Specification F5.2.
- Window and external door sound reduction values provided are based on the provision of suitable acoustic seals to prevent sound leakage. To comply with the above ratings, all external glass windows and doors specified under requirements A, B and C must have the following:
  - Operable windows and external doors must have a seal to restrict air infiltration fitted to each edge and doors must have a drop seal to provide an airtight seal when closed
  - Within doors or fixed framing, glazing must be set and sealed using an airtight arrangement of non-hardening sealant, soft rubber (elastomer) gasket and/or glazing tape, or be verified by manufacturer or approved person that the construction system as to be installed achieves the relevant Rw+Ctr value
  - In this context, a seal is foam or silicon based rubber compressible strip, fibrous seal with vinyl fin interleaf or the like. Brush / pile type seals without this seal included are not allowed.
  - Glazing referenced can be monolithic, laminated or toughened safety glass
- Any penetrations in a part of the building envelope must be acoustically treated so as not to degrade the performance of the building elements affected. Most penetrations in external walls such as pipes, cables or ducts can be sealed through caulking gaps with non-hardening mastic or suitable mortar

APPENDIX D

NOISE MONITORING DATA


Indian Ocean Drive 1 Hour Measurements
LASmax
LASmin
LAeq
L01
L10
L90
dB(A)
100
90
80
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60
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40
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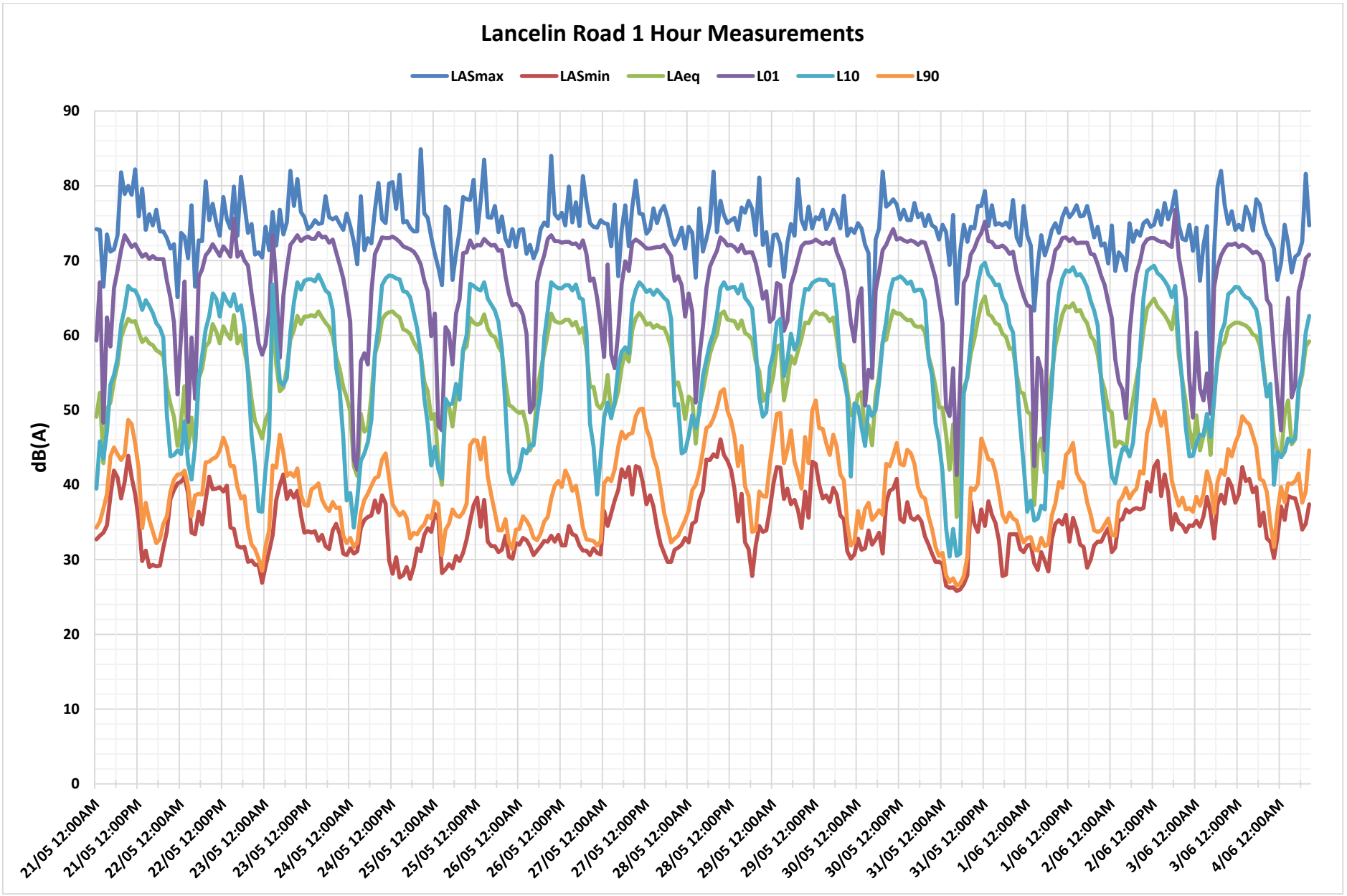
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LASmin
LAeq
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L10
L90
dB(A)
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70
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50
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APPENDIX E

TRAFFIC DATA

mainroads WESTERN AUSTRALIA

SITE 50711

Hourly Volume

Indian Ocean Dr (M045)

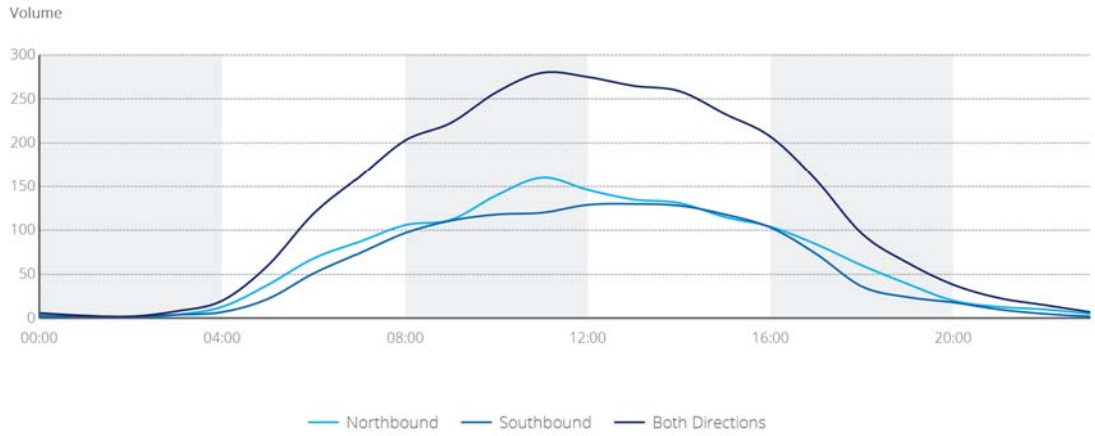
South of Lancelin Rd (SLK 67.40)

2022/23
Monday to Friday

	All Vehicles			Heavy Vehicles			
	NB	SB	Both	NB	SB	Both	%
00:00	4	2	6	2	0	2	33.3
01:00	1	2	3	0	0	0	0.0
02:00	0	2	2	0	0	0	0.0
03:00	4	4	8	2	0	2	25.0
04:00	13	7	20	5	1	6	30.0
05:00	38	22	60	16	5	21	35.0
06:00	68	51	119	29	18	47	39.5
07:00	87	74	161	30	27	57	35.4
08:00	106	97	203	37	24	61	30.0
09:00	112	111	223	33	29	62	27.8
10:00	140	118	258	40	27	67	26.0
11:00	160	120	280	41	25	66	23.6
12:00	146	129	275	32	26	58	21.1
13:00	135	130	265	36	25	61	23.0
14:00	131	128	259	35	24	59	22.8
15:00	115	118	233	33	24	57	24.5
16:00	104	103	207	25	22	47	22.7
17:00	84	73	157	20	15	35	22.3
18:00	60	36	96	11	6	17	17.7
19:00	39	24	63	9	3	12	19.0
20:00	20	18	38	5	1	6	15.8
21:00	13	10	23	4	3	7	30.4
22:00	10	5	15	4	1	5	33.3
23:00	5	2	7	2	0	2	28.6
TOTAL	1595	1386	2981	451	306	757	25.4

Peak Statistics

AM	TIME	11:15	10:45	10:45	11:15	08:45	10:45
	VOL	165	125	285	43	29	70
PM	TIME	12:00	12:45	12:00	14:30	13:45	14:30
	VOL	146	132	275	38	26	63



mainroads WESTERN AUSTRALIA

SITE 52643

Hourly Volume

2024/25
Monday to Friday

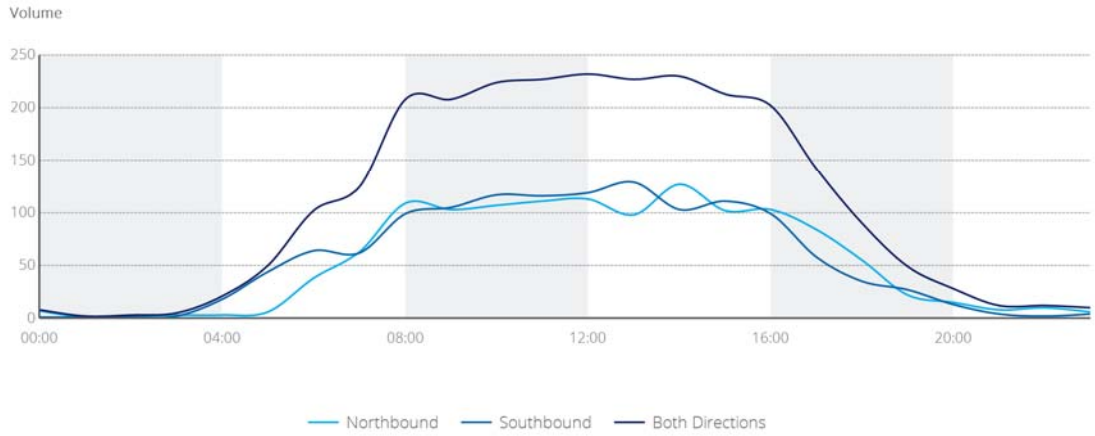
Lancelin Rd (5070417)

North of Old Ledge Point Rd (SLK 3.56)

	All Vehicles			Heavy Vehicles			
	NB	SB	Both	NB	SB	Both	%
00:00	7	1	8	0	0	0	0.0
01:00	1	1	2	0	0	0	0.0
02:00	2	1	3	0	0	0	0.0
03:00	3	2	5	0	0	0	0.0
04:00	3	18	21	1	0	1	4.8
05:00	6	44	50	2	4	6	12.0
06:00	38	64	102	11	17	28	27.5
07:00	63	62	125	14	10	24	19.2
08:00	109	99	208	25	11	36	17.3
09:00	103	105	208	26	17	43	20.7
10:00	107	117	224	25	19	44	19.6
11:00	111	116	227	21	20	41	18.1
12:00	113	119	232	21	16	37	15.9
13:00	98	129	227	22	14	36	15.9
14:00	127	103	230	25	15	40	17.4
15:00	102	111	213	22	18	40	18.8
16:00	103	99	202	28	18	46	22.8
17:00	84	58	142	15	6	21	14.8
18:00	55	35	90	8	3	11	12.2
19:00	22	27	49	3	3	6	12.2
20:00	15	13	28	1	2	3	10.7
21:00	8	4	12	1	0	1	8.3
22:00	10	2	12	1	0	1	8.3
23:00	6	4	10	0	0	0	0.0
TOTAL	1296	1334	2630	272	193	465	17.7

Peak Statistics

AM	TIME	11:30	10:30	11:45	09:30	09:45	09:45
	VOL	117	125	236	28	21	49
PM	TIME	14:15	13:00	14:15	16:00	14:30	16:00
	VOL	133	129	247	28	21	46



Aidan Strumpher

From: Suk Ling Chang <sukling.chang@mainroads.wa.gov.au>
Sent: Monday, 9 June 2025 2:08 PM
To: Hunter Daly
Cc: Paul Daly (Herring Storer Acoustics); Wesley Soet; Clare Yu
Subject: #43329: Noise Assessment for Indian Ocean Drive, Lancelin
Attachments: Surface Detail.Indian Ocean Dr.pdf

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Hi Hunter,

Analysis of our State Wide Model and observed counts from Trafficmap suggest that there is no projected growth (i.e. 0% per annum) for Indian Ocean Drive, Lancelin. Please refer to the observed counts from https://trafficmap.mainroads.wa.gov.au/map for more information.

Current road surface information is attached for your reference. Please let me know if you have any other questions.

Thank you.

Kind regards,

Suk Ling Chang (she/her/hers)
Transport Modelling Analyst
Asset and Geospatial Information
Planning and Technical Services Directorate
Tel: +61 8 9323 4667

Main Roads acknowledges the traditional custodians throughout Western Australia and their continuing connection to the land, waters and community. We pay our respects to all members of the Aboriginal communities and their cultures; and to Elders both past and present.

From: Hunter Daly <hunter@hsacoustics.com.au>
Sent: Tuesday, 20 May 2025 10:35 AM
To: Suk Ling Chang <sukling.chang@mainroads.wa.gov.au>