WESTERN AUSTRALIA

STATE PLANNING POLICY 5.4: ROAD AND RAIL NOISE





REVIEW BACKGROUND

- July 2015- The WAPC resolved to review SPP 5.4
- March 2016- The SPP 5.4 Policy Options and Recommendations Report was prepared and endorsed by the WAPC
- **September 2016 -** SPP5.4 Steering group endorsement (DG's of Planning, Transport, Environment Regulation and State Development.)
- December 2016 WAPC endorsed draft policy for public consultation
- June 2017 to August 2017 Ministerial and Cabinet approval
- September 2017 Release for 90 days advertising



REVIEW SCOPE

OBJECTIVES

Simplify and reduce complexity

Enhance consistency and quality of implementation

Improve interface between transport corridors and sensitive land uses

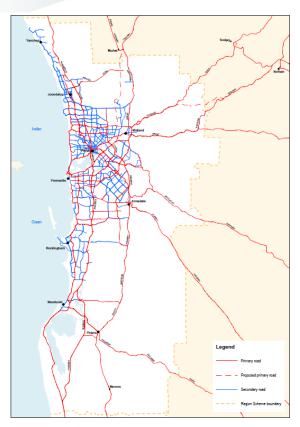
Identify and address policy gaps

POLICY ELEMENT

- Policy status
- Policy application and implementation
- Trigger mechanisms
- Noise Criteria
- Noise metrics
- Noise Management
- Mapping
- Building siting and design
- Vibration



KEY CHANGES- MAPPING





Transport corridor classification	Trigger distance	Distance measured from
Primary Roads		
State Roads (freeways/highways/primary distributors) Primary Regional Roads (red roads under region schemes)	300 metres	Road carriageway edge
Freight roads (Perth and Peel regions)		, , ,
Regional freight roads		
Secondary Roads		
Other Regional Roads (blue roads under region schemes) District Distributor A	200 metres	Road carriageway edge
Passenger railways		
	60 metres	Centreline of the closest track
Freight railways		
	300 metres	Centreline of the closest track



https://espatial.planning.wa.gov.au/mapviewer/Index.html?viewer=planwa



KEY CHANGES- NOISE EXPOSURE FORECAST

Table 2: Noise forecast

Transport Comidor Classificat	ansport Corridor Classification Vehicles/day Forecast noise level (LAeq, Day) and exposure category based on distance from edge of nearest road carriageway (m)																							
			1	0 2	20 3	30 4	10 5	50 6	i0 7	0 8	0 9	0 1	00 1	10 1	20 13	0 1	40 1	150 17	5	200	225	250 2	75 30	0
			adjacent																					
* State roads ~ 30,000		up to 25,000	71	66	64	62	61	59	59	58	57	56	56	56	55	55	54	53	52	51	51	50	50	
		71	67	64	63	61	60	59	58	58	57	57	57	56	56	54	54	53	52	51	51	50	-	
(Freeways, highways, primar * Primary regional roads	ry distributors)	~ 35,000	72	68	65	63	62	61	60	59	58	58	58	57	56	56	55	54	53	53	52	51	51	
(Red roads under region sche	emes)	~ 40,000	72	68	66	64	62	61	60	59	59	58	58	58	57	57	56	55	54	53	52	52	51	
* Metropolitan freight roads		~ 45,000	73	68	66	64	63	62	61	60	59	59	59	58	57	57	56	55	54	54	53	52	52	
(in the Perth and Peel region	is - typicallly 7.5%	~ 50,000	73	69	66	65	63	62	61	60	60	59	59	59	58	58	56	56	55	54	53	53	52	
heavy vehicles) Map 1, 2, 3		~ 55,000	74	69	67	65	64	62	62	61	60	59	59	59	58	58	57	56	55	54	54	53	53	-
map 1, 2, 3		~ 60,000	74	70	67	66	64	63	62	61	61	60	60	60	59	59	58	57	56	55	54	54	53	
		~ 70,000	75	71	68	66	65	64	63	62	61	61	61	61	59	59	58	57	56	56	55	54	54	
		~ 80,000	75	71	69	67	65	64	63	62	62	61	61	61	60	60	59	58	57	56	55	55	54	
		~ 90,000	76	72	69	67	66	65	64	63	62	62	62	61	60	60	59	58	57	57	56	55	55	
		~ 100,000	77	72	70	68	67	66	65	64	63	62	62	61	61	61	60	59	58	57	57	56	56	-
		~ 120,000	77	73	70	69	67	66	65	64	64	63	63	63	62	62	61	60	59	58	57	57	56	
		more than 140,000	78	74	71	69	68	67	66	65	64	64	64	64	62	62	61	60	59	59	58	57	57	
* Regional freight roads	up to 10% heavy	up to 10,000	72	69	67	65	64	63	62	61	61	60	60	59	59	58	58	57	56	56	55	55	54	_
(Regional freight roads are	vehicles	more than 10,000	74	70	68	67	65	64	63	63	62	61	61	60	60	59	59	58	57			_		
defined by Department	10 to 20% heavy	up to 10,000		70	68	67	65	64	64	63	62	62	61	61	60	60	59	59	58		_	_		_
of Transport Western Australian Regional Freight	vehicles	more than 10.000	76	72	70	68	67	66	65	64	63	63	62	62	61	61	61	60	59	_	_	58 57 57 55 55 54 56 56 55 57 56 56 58 57 57 59 59 58 46 45 45 49 48 48		
Transport Network Plan)	more than 20%	up to 10,000	75	72	70	68	67	66	65	64	64	63	63	62	62	61	61	60	59	_		_	_	-
Maps 1 and 2	heavy vehicles	more than 10,000	77	73	71	70	68	67	66	66	65	64	64	63	63	62	62	61	60	_				
Secondary roads ¹		up to 5,000	60	57	55	54	53	52	51	51	50	50	49	49	48	48	48	47	47	_	_	_	_	= _
* Other regional roads		up to 5,000 ~ 7,500	63	60	58	57	56	55	54	54	53	53	52	52	51	51	51	50	50	_	_		_	
(Blue roads under region sch	emes)	~ 10,000	65	62	60	59	58	57	56	55	55	54	54	54	53	53	53	52	51	_	50	50	49	
* District Distributor A	,	~ 15,000	66	63	61	60	59	58	57	57	56	56	55	55	54	54	54	53	53	_	52	51	51	
(Typicallly 5%heavy vehicles Map 3)	~ 15,000	67	64	62	61	60	59	58	58	57	57	56	56	55	55	55	54	54	_	53	52	52	_
марэ	1	~ 25,000	68	65	63	62	61	60	59	58	58	57	57	57	56	56	56	55	54	_	53	53	52	
	1	~ 25,000	68	65	64	62	61	60	60	59	59	58	58	57	57	57	56	56	55	_	54	54	53	
		~ 30,000 more than 35,000	69	66	64	63	62	61	60	60	59	59	58	58	58	57	57	56	56	_	55	54	54	
			_													3/	3/	30	30	33	33	24	34	=
Transport Corridor Classificat	tion	Movements/day	Forecas	st noise l	evel (LA	eq,Day) a	nd expos	sure cate	gory base	ed on dist	ance fro	m neare	st rail cen	treline (ı	m)									_
			1	0 2	20 :	30 4	10 !	50 6	0 7	70 8	0 9	0 1	00 1	10 1	20 1	10 1	40 1	150 1	75	200	225	250 2	75 30	0
			adjacent										Ш							\perp	$\perp \perp$		Ш	
Passenger railways	Joondalup-Butler	260	68	64	61	60	59	58	57	56	56	55	55	54	54	53	53	52	52	51	50	50	49	
Map 3	Midland	170	66	62	59	58	57	56	55	54	54	53	53	52	52	52	51	51	50	49	48	48	47	
	Fremantle	160	66	61	59	58	56	56	55	54	53	53	52	52	52	51	51	50	49	49	48	48	47	
	Armadale-Thornlie	290	68	64	62	60	59	58	57	57	56	56	55	55	54	54	53	53	52	51	51	50	50	
	Mandurah	250	68	64	61	60	59	58	57	56	56	55	55	54	54	53	53	52	51	51	50	50	49	
	Other lines	300	68	64	62	60	59	58	57	57	56	56	55	55	54	54	54	53	52	51	51	50	50	
Freight railways Map 1, 2, 3 (LAeq, Night)		-	70	66	64	62	61	60	59	59	58	58	57	57	56	56	55	55	54	53	53	52	52	

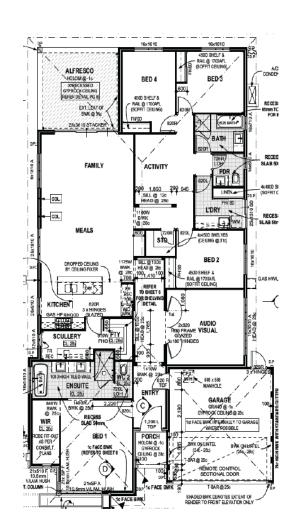
Forecast Noise Level (LAeq,day, dB)	Exposure Category	Policy requirements for noise- sensitive land use and/or development
55 or less		No further measures
56 to 58	A	Noise-sensitive land use and/or development is acceptable, subject to:
		Mitigation measures in accordance with an approved Noise Management Plan; or
		Quiet house A (see Table 3)
59 to 62	В	Noise-sensitive land use and/or development is acceptable, subject to:
		Mitigation measures in accordance with an approved Noise Management Plan; or
		Quiet house B (see Table 3)
63 to 66	С	Noise-sensitive land use and/or development is acceptable, subject to:
		Mitigation measures in accordance with an approved Noise Management Plan; or
		Quiet house C (see Table 3)
67 to 70	D¹	Noise-sensitive land use and/or development is not recommended. ²
71+	E.	Noise-sensitive land use and/or development is strongly discouraged. ²

- For Exposure Categories D and E there is no quiet house option
- If noise-sensitive land use and/or development is unavoidable, an approved Noise Management Plan is required to demonstrate compliance with the noise criteria (see Table 1).

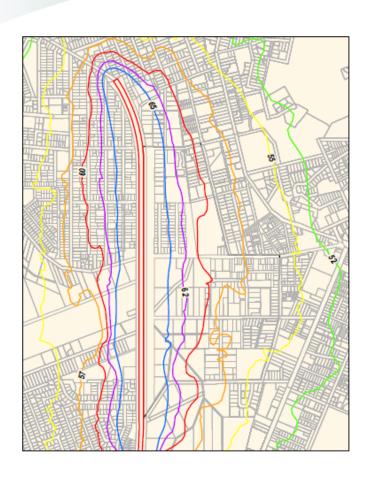


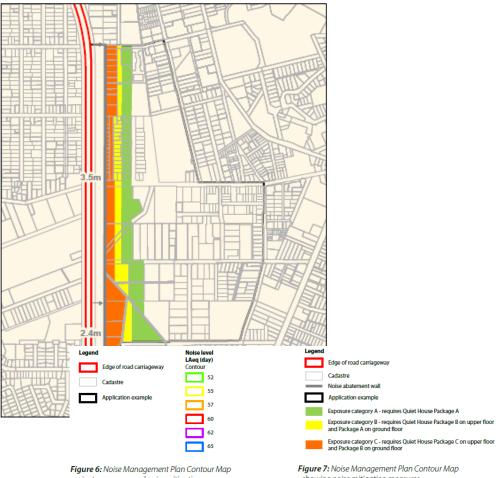
KEY CHANGES- NOISE EXPOSURE FORECAST

- Introduction of noise exposure categories with corresponding QH treatment requirements as a deemed-to-comply option.
- Revision of the noise levels based on case testing
- No noise sensitive land use recommended within 40m of Freight development of
- Simplification of the table by removing reference to speed limits, vehicle type characteristics and heavy vehicle percentages
- Concession (4dB reduction can be applied) for existing screening development between the noise source and receiver.



KEY CHANGES- NOISE CONTOUR MAPPING





- prior to any proposed noise mitigation

- showing noise mitigation measures

OTHER IMPROVEMENTS

- Dual (target and limit) criteria replaced with a single value
- Application of noise criteria to infrastructure upgrade proposals
- New or upgrade infrastructure proposals to treat the second floor (and more if practicable) of affected noise-sensitive development (previous policy only required ground floor).
- Enhanced guidance on the content and form of a detailed noise assessment and a noise management plan reports.
- More user friendly Noise assessment worksheet

Step 1	Identify the elevant notes ozure (not or all) from 59° 5.4 poly mapping and list in the Neise- Tepoure Forests whothers. If subject site near multiple mapped crindon, all need to be included in the worksheer. For nod welskieper day data and % heavy welskie min information, viols the Main Rock Wictem Australia Cliffs May politic <u>https://mappor.notimends.wa.gov.au/CliffsMaps.</u> Locate the names of the which there is monitoring data and use the most recent which per day and heavy welskie min information and wall-bit incombining data and use the most recent which ger day and heavy welskie min information and wall-bit incombining of the nearest welskie per day line or heavy which mail line in the bits of popular of recent.			Site description and summary of proposal			
Step 2	Measure the distance from relevant noise sources! to receiver. The distance is defined as the three dimensional distance between the edge of the nearest nod carriagously or the certainties of the nearest attracts to either. - If the positions and extent of the noise sensitive building position can be reasonably determined, one metric varietie the nearest external fugulate or opining to a mornally conjuded space; or - a point which reasonably regresses where each future noise-sensitive development could be constructed nearest the trapport asks and ask whith three 10 meters of the bit bundary.						
	Insert measured distances into the Noise Exposure Forecast table.		1	 list road / rail corridors (as mapped) and VPD/heavy vehicle mix 	for each corridor, measure the distance to subject site/development	Noise Exposure Forecast noise level (dB)/ Exposure category	
Step 3	Locate the closest scenario in the Noise Exposure Forecast table (rounding up or down to the closest VPD/Fleavy wehicle mix). Identify the forecast noise level (dB) and corresponding exposure category in the Noise Exposure Forecast table (rounding to the nearest noise level (dB) where measured distance is		ļ				
	between intervals) and put this into the worksheet.						
Step 4	If the subject site is impacted upon by multiple noise source, use the formula in table to arrive at a single noise level. De Mose Exposure Forecast table to destify a single relevant noise exposure category and corresponding policy requirements (Noise Management Plan required, quiet house requirements or no further measures).			4) Where there are multiple roads/rall noise source highlighted column (3) above are: d8 equal or within 1d8 of each other = +3d8; dfferent by 2 or 3d8 = +2d8, dfferent by 4-7d8 = +1d	es: (4) Add correction if the two highest values in		
Step 5	For scenarios with multiple noise sources, add the highest noise source value (column 3) to the correction.		[5) Sum of the maximum LAeq value from column			
Step 6	If there is existing development between the subject site and the road or rail corridor (as defined), describe this in the worksheet. It is permissible to drop 4dB (approximately one noise exposure category) to account for screening effects.		-	6) Screening development? Drop 4dB (one Exposu			
Step 7	Determine final noise level/exposure category and corresponding policy requirements in the Noise Exposure Forecast worksheet, which is to accompany your planning or development application.	1	7) Final noise level and Exposure Category				

		Noise Criteria ¹	Noise Criteria ¹									
Proposals		Outdoor		Indoor	Where outdoor criteria must be met							
	New/upgrade	Day (LAeq(Day) dB) (6 am–10 pm)	Night (LAeq(Night) dB) (10 pm–6 am)	(LAeq(Day) or LAeq(Night) 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	40 (living and work areas) 35 (bedrooms) Refer to Note 2	Outdoor all floors							
ь.	New	55	50	NA								
Roads	Upgrade	60 ³	55 ³	NA	Outdoor first two floors (more if practicable)							
Railways	New	55	50	NA								
	Upgrade	60³	55 ³	NA								



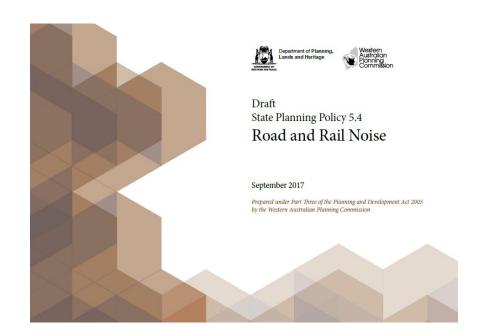
L_{Amax} and Vibration

- Concerns about increased costs & the need to balance housing affordability
- No wider planning and regulatory framework/ agreement that enables control of transport noise (freight rail) at source.
- Adding an additional metric/vibration to the policy will added further complexity and have financial and time implications for policy delivery
- Concerns that transport infrastructure already emits noise in excess of L_{Amax} which present risk to government, in particularly implications on METRONET
- Adopting the LAmax metric and vibration will not address the existing problem



NEXT STEPS

- Advertising:
 12 September 2017
 to 15 December 2017
- Consider submissions: Engage with Technical Working Group



- WAPC endorsement
- Government endorsement
- Implementation & training