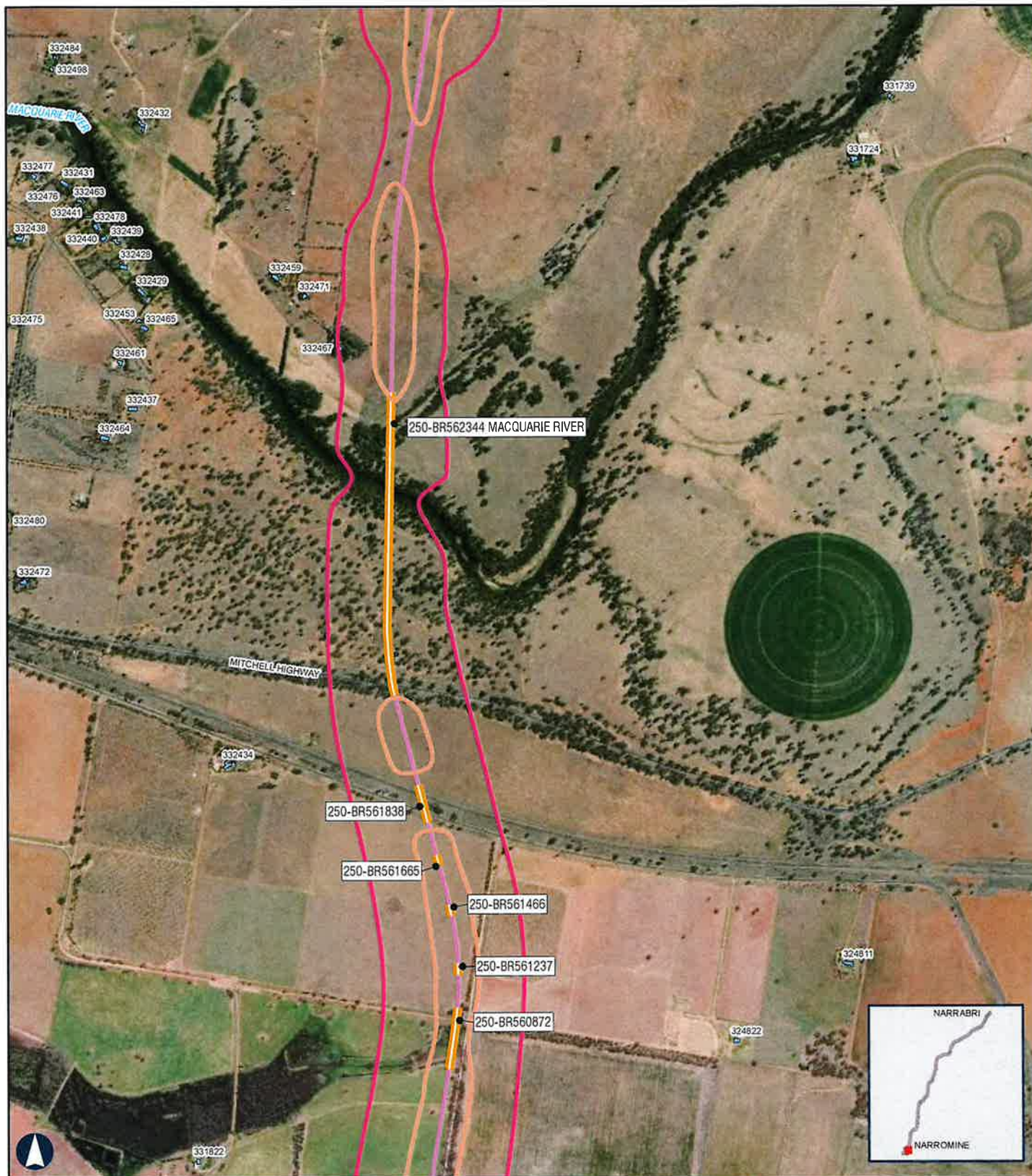


	Rail noise criteria			Project rail noise levels dBA		
	LAeq Day	LAeq Night	Lamax	LAeq,15hr	LAeq,9hr	Lamax
332455	60	55	80	44	49	71
332459	60	55	80	48	53	76
332461	60	55	80	45	50	73
332462	60	55	80	42	47	68
332463	60	55	80	43	48	69
332464	60	55	80	46	51	73
332465	60	55	80	45	50	73
332467	60	55	80	54	59	82
332468	60	55	80	40	45	67
332470	60	55	80	42	47	68
332471	60	55	80	51	56	79
332472	60	55	80	44	49	72
332475	60	55	80	42	47	69
332476	60	55	80	42	46	68
332477	60	55	80	42	46	68
332478	60	55	80	42	47	67
332480	60	55	80	42	48	70
332484	60	55	80	41	47	68
332485	60	55	80	39	44	67
332498	60	55	80	42	47	68
332612	60	55	80	40	45	67
332614	60	55	80	41	45	68
332615	60	55	80	54	59	81
332616	60	55	80	49	53	76
332618	60	55	80	41	46	67
332622	60	55	80	44	49	71
332623	60	55	80	41	46	66
332624	60	55	80	42	47	69
332625	60	55	80	42	47	68
332626	60	55	80	42	47	69
332627	60	55	80	41	45	67
332628	60	55	80	42	47	69
332630	60	55	80	44	49	71
332633	60	55	80	42	46	68
332634	60	55	80	44	49	71
332635	60	55	80	42	47	69
332636	60	55	80	42	47	69
332637	60	55	80	43	48	70
332638	60	55	80	42	47	67
332639	60	55	80	41	46	69
332640	60	55	80	41	46	67
332641	60	55	80	43	47	70
332646	60	55	80	40	45	67
332648	60	55	80	42	46	68
332650	60	55	80	40	45	67
332651	60	55	80	41	46	68
332652	60	55	80	43	48	70
332655	60	55	80	42	46	67
332656	60	55	80	42	46	68
332657	60	55	80	43	47	69
332663	60	55	80	43	47	70
332664	60	55	80	41	46	68
332665	60	55	80	40	45	64
332666	60	55	80	42	47	68



NARROMINE TO NARRABRI Year 2040 Daytime Rail Noise Levels

APPENDIX E - Map 5 of 168

500 m

Coordinate System: GDA 1994 MGA Zone 55

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Paper: A4
Date: 31-Jul-2020
Author: JG

Scale: 1:20,000

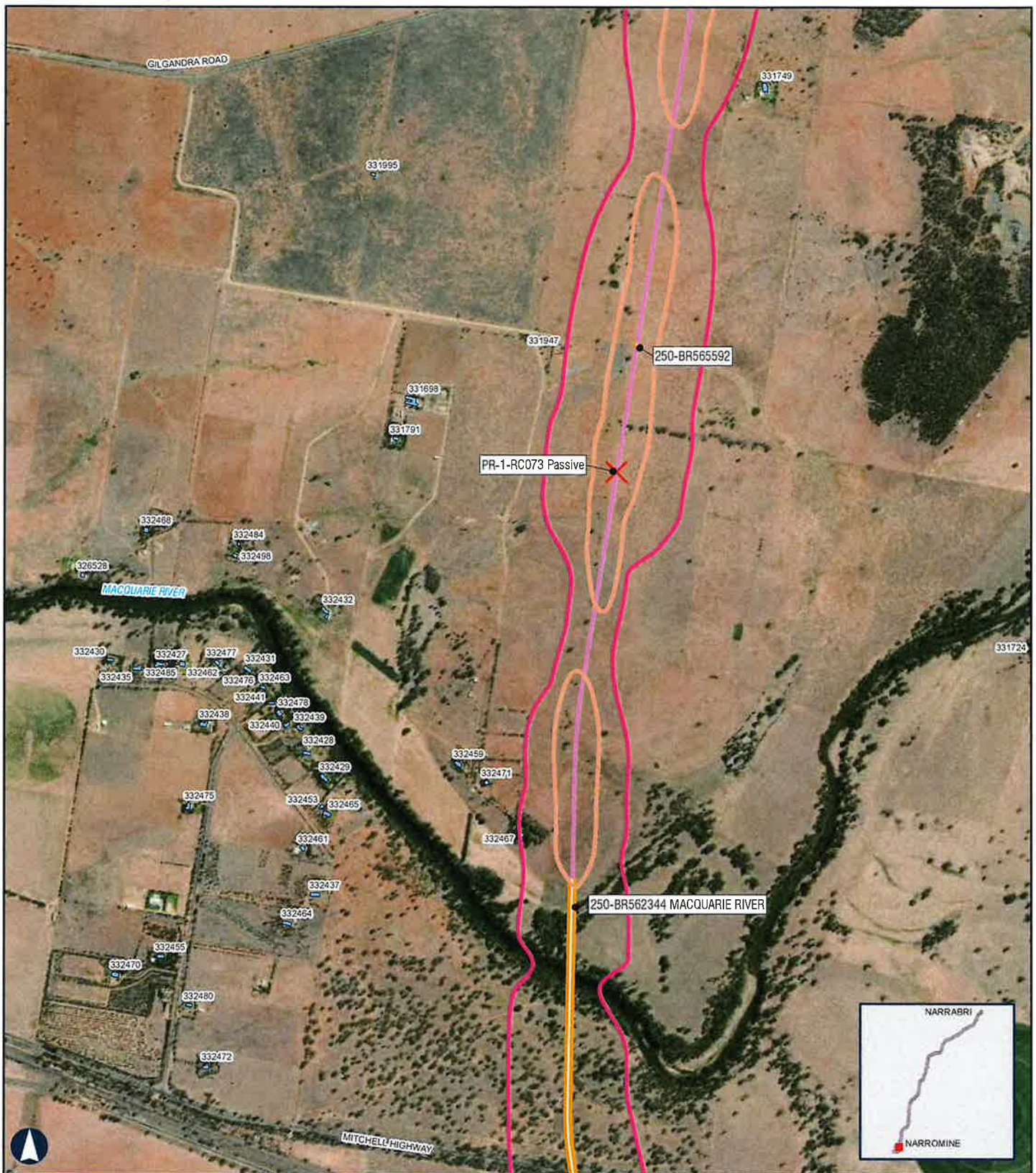
- ✗ Level Crossings
- Proposal Extent
- Crossing Loops
- Rail Alignment/Centreline
- Bridges and Viaducts
- Sensitive Receivers
- Noise Assessment Area – Upgrading Existing Railway

Noise contours are based on a set distance above the local terrain level of 2.4m.

- Daytime noise criteria LAeq15hr 60dBA new rail corridor
- Daytime noise criteria LAeq15hr 65dBA upgrading existing rail corridor
- Daytime noise criteria LA max 80dBA new rail corridor
- Daytime noise criteria LA max 85dBA upgrading existing rail corridor

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NARROMINE TO NARRABRI Year 2040 Daytime Rail Noise Levels

APPENDIX E - Map 7 of 168

500 m

Coordinate System: GDA 1994 MGA Zone 55

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Paper: A4
Date: 31-Jul-2020
Author: JG

Scale: 1:20,000

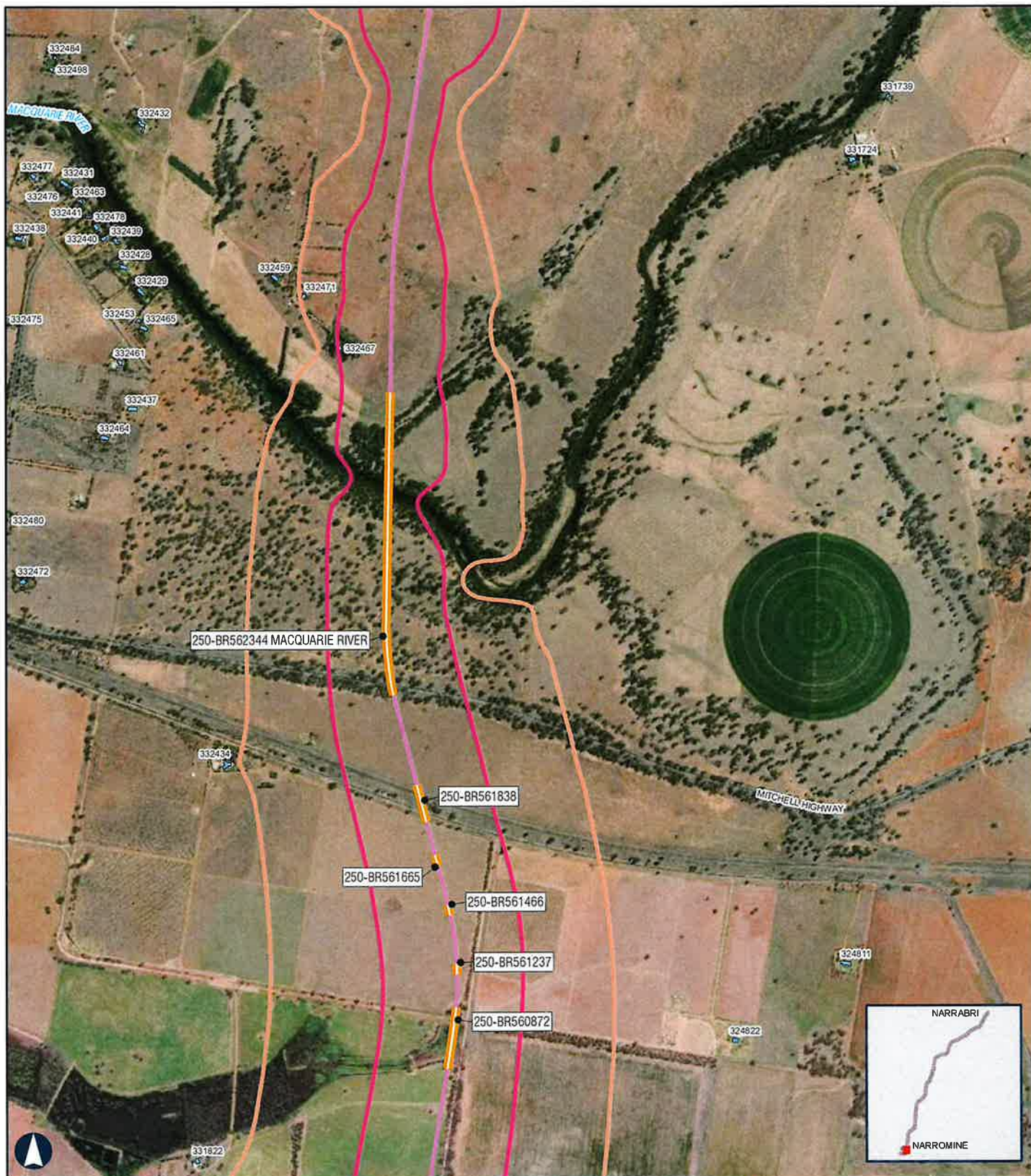
- X Level Crossings
- Proposal Extent
- Crossing Loops
- Rail Alignment/Centreline
- Bridges and Viaducts
- Sensitive Receivers
- Noise Assessment Area – Upgrading Existing Railway

Noise contours are based on a set distance above the local terrain level of 2.4m.

- Daytime noise criteria LAeq15hr 60dBA new rail corridor
- Daytime noise criteria LAeq15hr 65dBA upgrading existing rail corridor
- Daytime noise criteria LA max 80dBA new rail corridor
- Daytime noise criteria LA max 85dBA upgrading existing rail corridor

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NARROMINE TO NARRABRI Year 2040 Night-time Rail Noise Levels

APPENDIX E - Map 89 of 168

500 m

Coordinate System: GDA 1994 MGA Zone 55

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Paper: A4
Date: 01-Sep-2020
Author: JG

Scale: 1:20,000

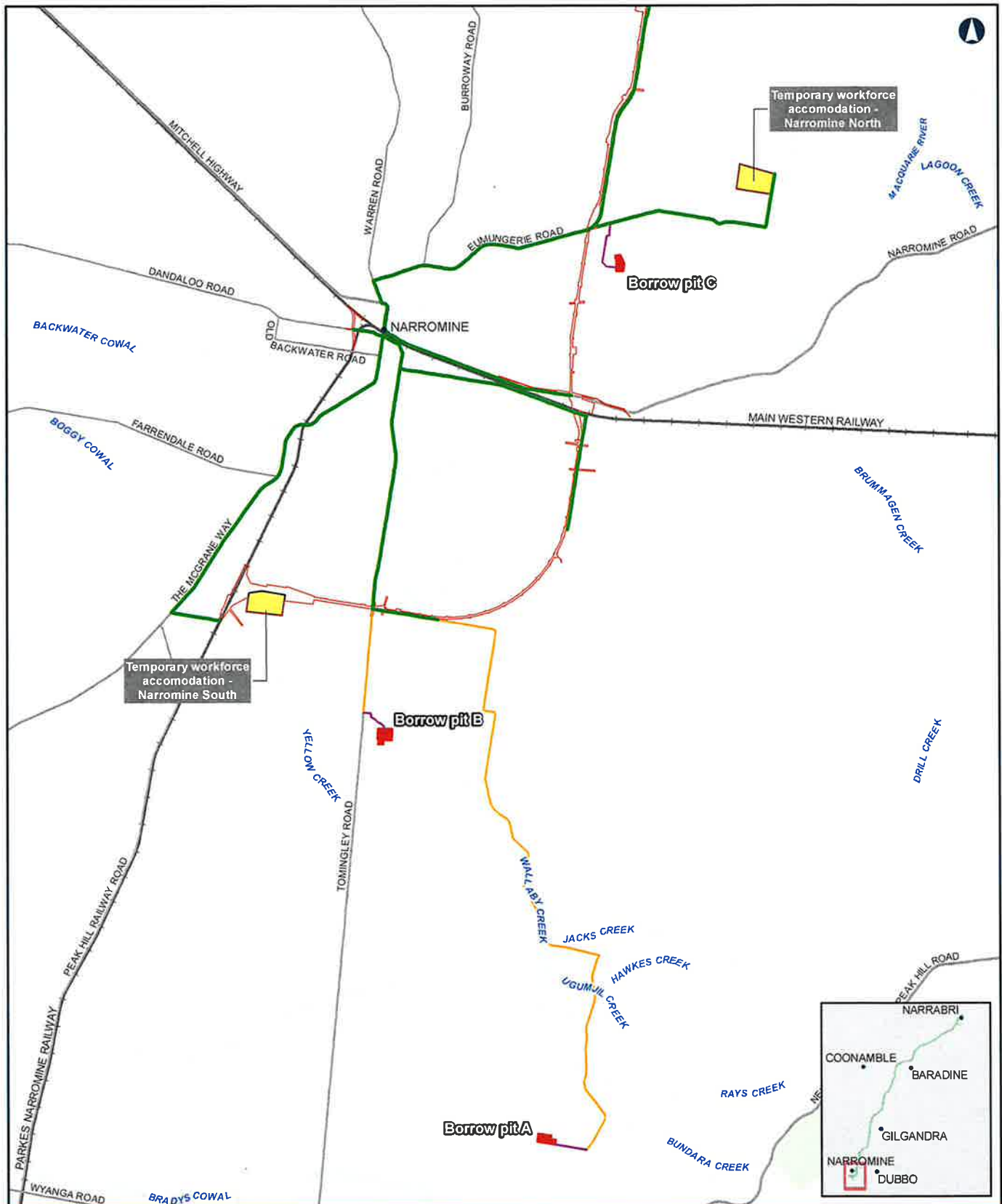
- X Level Crossings
- Proposal Extent
- Crossing Loops
- Rail Alignment/Centrelines
- Bridges and Viaducts
- Sensitive Receivers
- Noise Assessment Area – Upgrading Existing Railway

Noise contours are based on a set distance above the local terrain level of 2.4m.

- Night-time noise criteria LAeq 9hr 55dBA new rail corridor
- Night-time noise criteria LAeq 9hr 60dBA upgrading existing rail corridor
- Night-time noise criteria LA max 80dBA new rail corridor
- Night-time noise criteria LA max 85dBA upgrading existing rail corridor

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NARROMINE TO NARRABRI

Construction access routes – Narromine

Figure 5.10

0 2 4 Km

Coordinate System: GDA 1994 MGA Zone 55

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Date: 31/07/2020

Paper: A4

Author: JacobsGHD

Scale: 1:150,000

Data Sources: Basemap layers: NSWSS; Study area, project elements GHDJACOBS

LEGEND

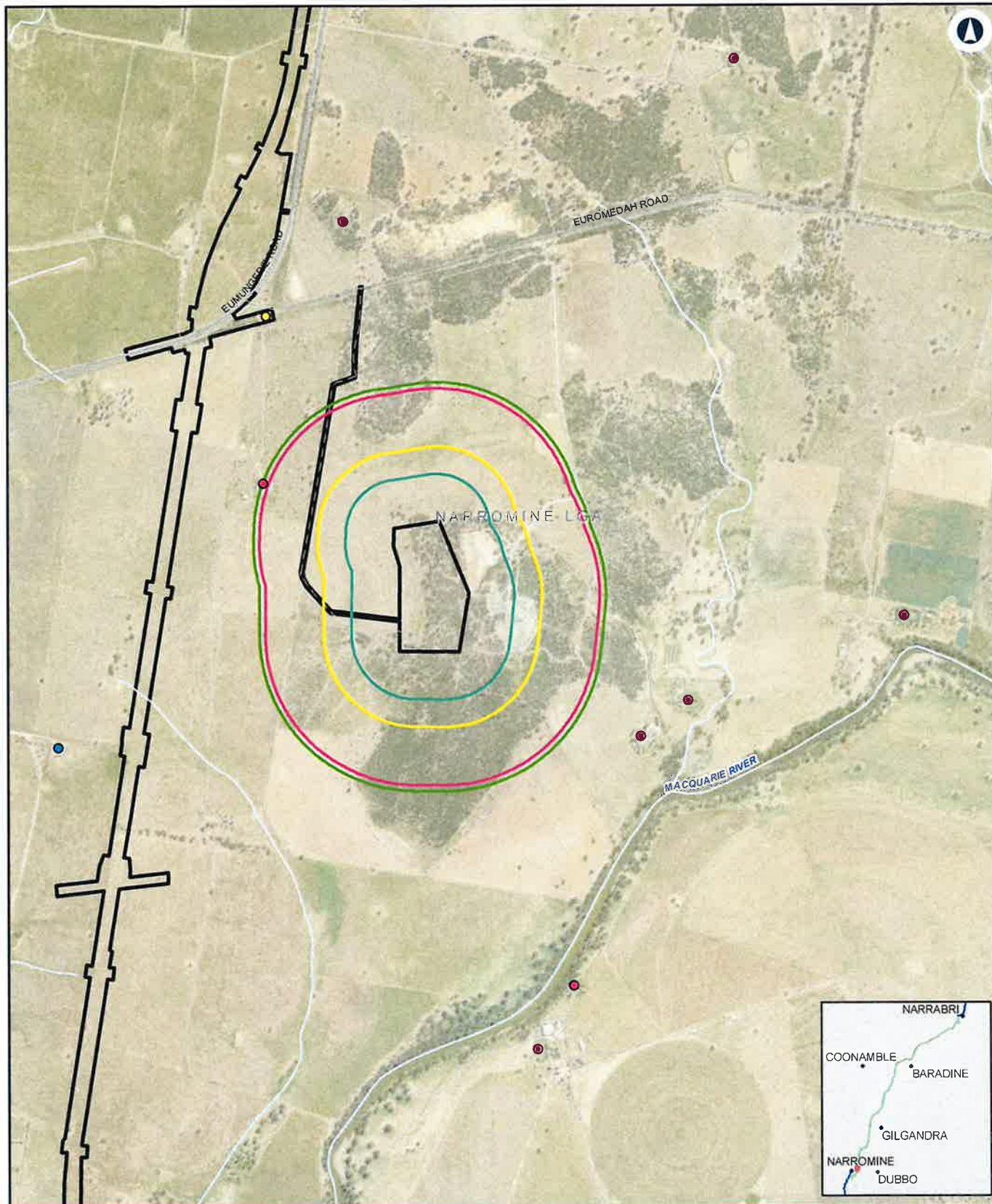
- The proposal site
- Access roads
- Temporary workforce accommodation
- Road
- Existing railway

- Borrow pit
- New haul road
- Public road

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NARROMINE TO NARRABRI

Borrow Pit C blasting impacts

Figure 5.8

0 0.25 0.5
Km

Coordinate System: GDA 1994 MGA Zone 55

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Date: 31/07/2020

Paper: A4

Author: GHD

Scale: 1:20,000

Data Sources: Basemap layers: NSWSS; All other la:

LEGEND

Construction footprint

193 m buffer: 10 mm/s PPV - 100 kg charge mass

298 m buffer: 5 mm/s PPV - 100 kg charge mass

521 m buffer: 115 dB (Lin Peak) - 4 kg charge mass

544 m buffer: 120 dB (Lin Peak) - 15 kg charge mass

Structure type

Active recreation

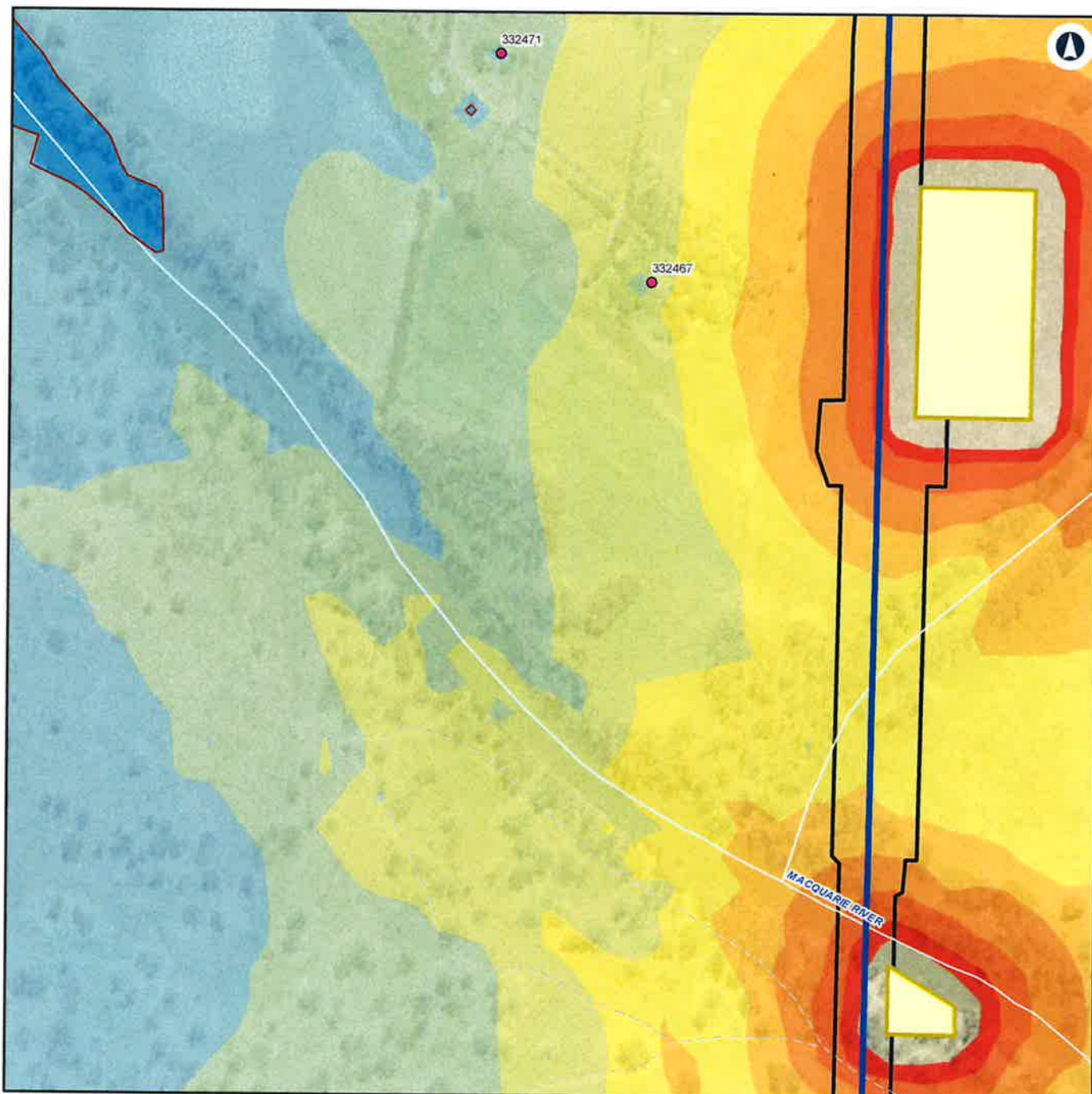
Community

Residential

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Legend

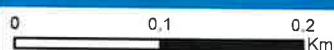
Construction footprint	40 - 45
Minor Compound	45 - 50
Night-time noise management level	50 - 55
Structure type	55 - 60
Residential	60 - 65
Noise level (dBA L_{Aeq} 15 minute)	65 - 70
30 - 35	70 - 75
35 - 40	



NARROMINE TO NARRABRI

Construction noise contours, Construction Infrastructure (combined)

Appendix H - Page 41 of 249



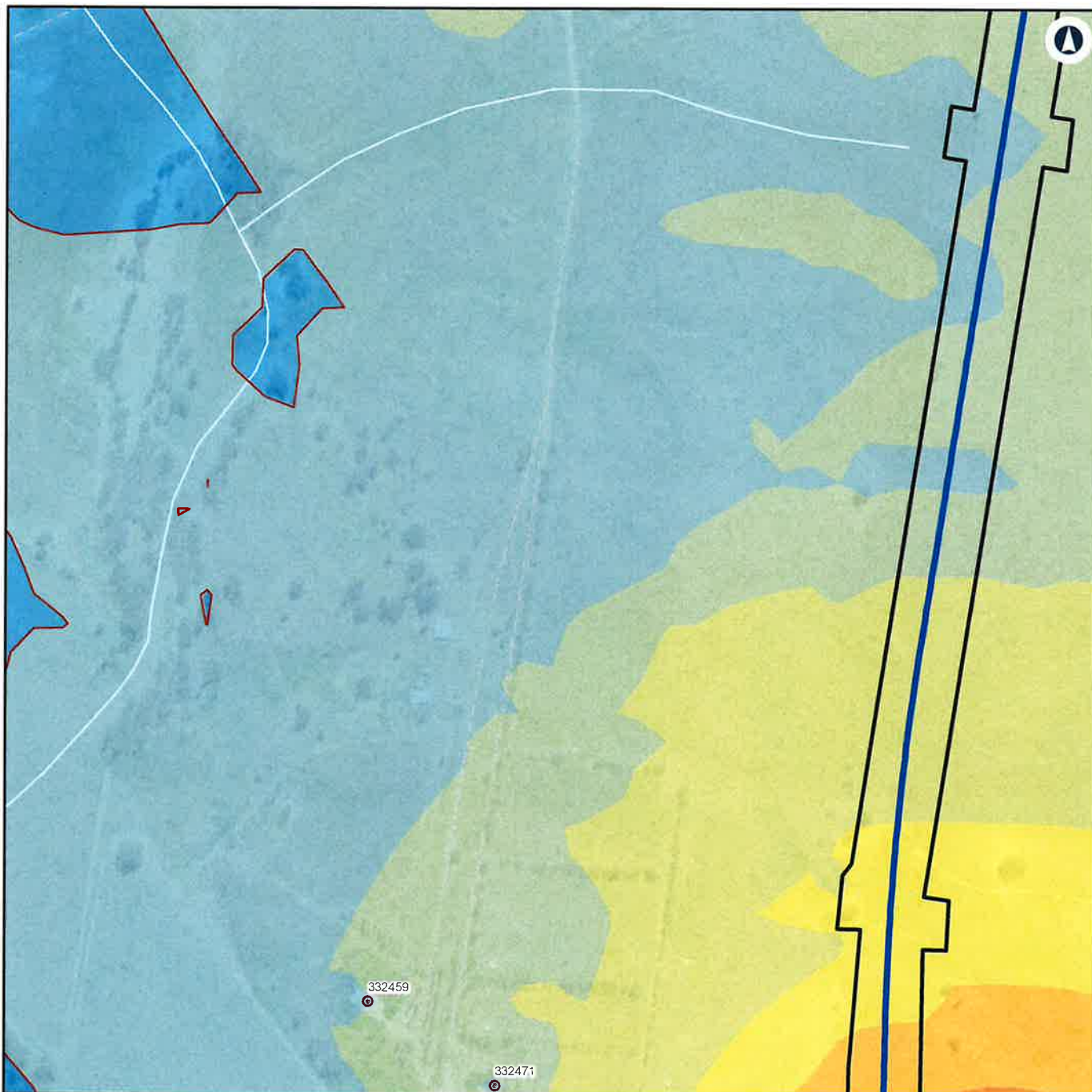
Coordinate System: GDA 1994 MGA Zone 55

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Date: 16/07/2020 Paper: A4
Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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Legend

- Construction footprint
- Night-time noise management level
- Structure type**
 - Residential
- Noise level (dBA L_{Aeq} 15 minute)**
 - 30 - 35
 - 35 - 40
 - 40 - 45
 - 45 - 50
 - 50 - 55
 - 55 - 60
 - 60 - 65



NARROMINE TO NARRABRI

Construction noise contours, Construction Infrastructure (combined)

Appendix H - Page 44 of 249

0 0.1 0.2 Km

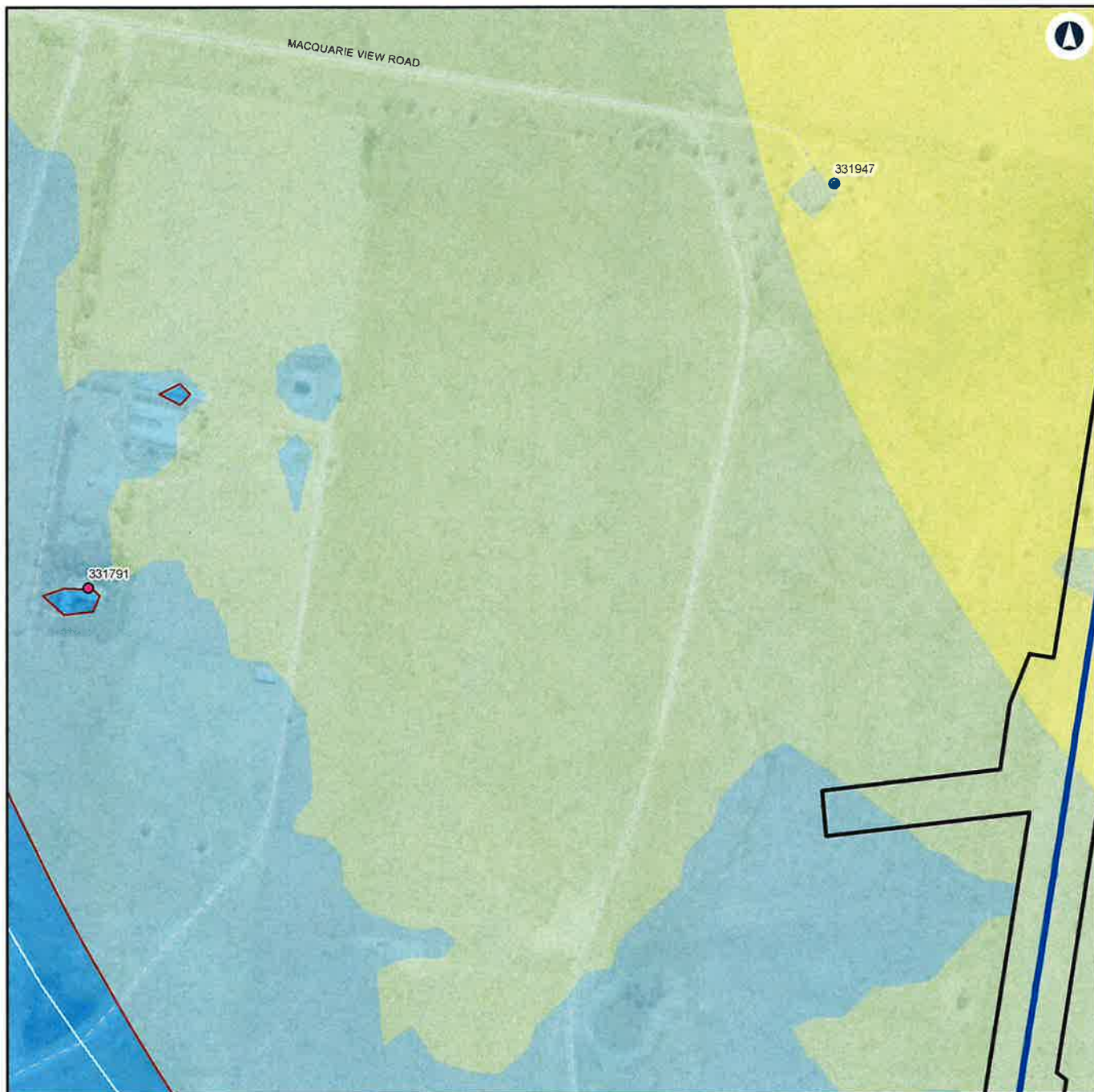
Coordinate System: GDA 1994 MGA Zone 55

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Date: 16/07/2020 Paper: A4
 Author: GHD Scale: 1:5,000
 Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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Legend

- Construction footprint
- Night-time noise management level
- 40 - 45
- 45 - 50

Structure type

- Active recreation
- Residential

Noise level (dBA L_{Aeq} 15 minute)

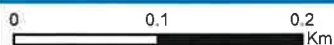
- 30 - 35
- 35 - 40



NARROMINE TO NARRABRI

Construction noise contours, Construction Infrastructure (combined)

Appendix H - Page 48 of 249



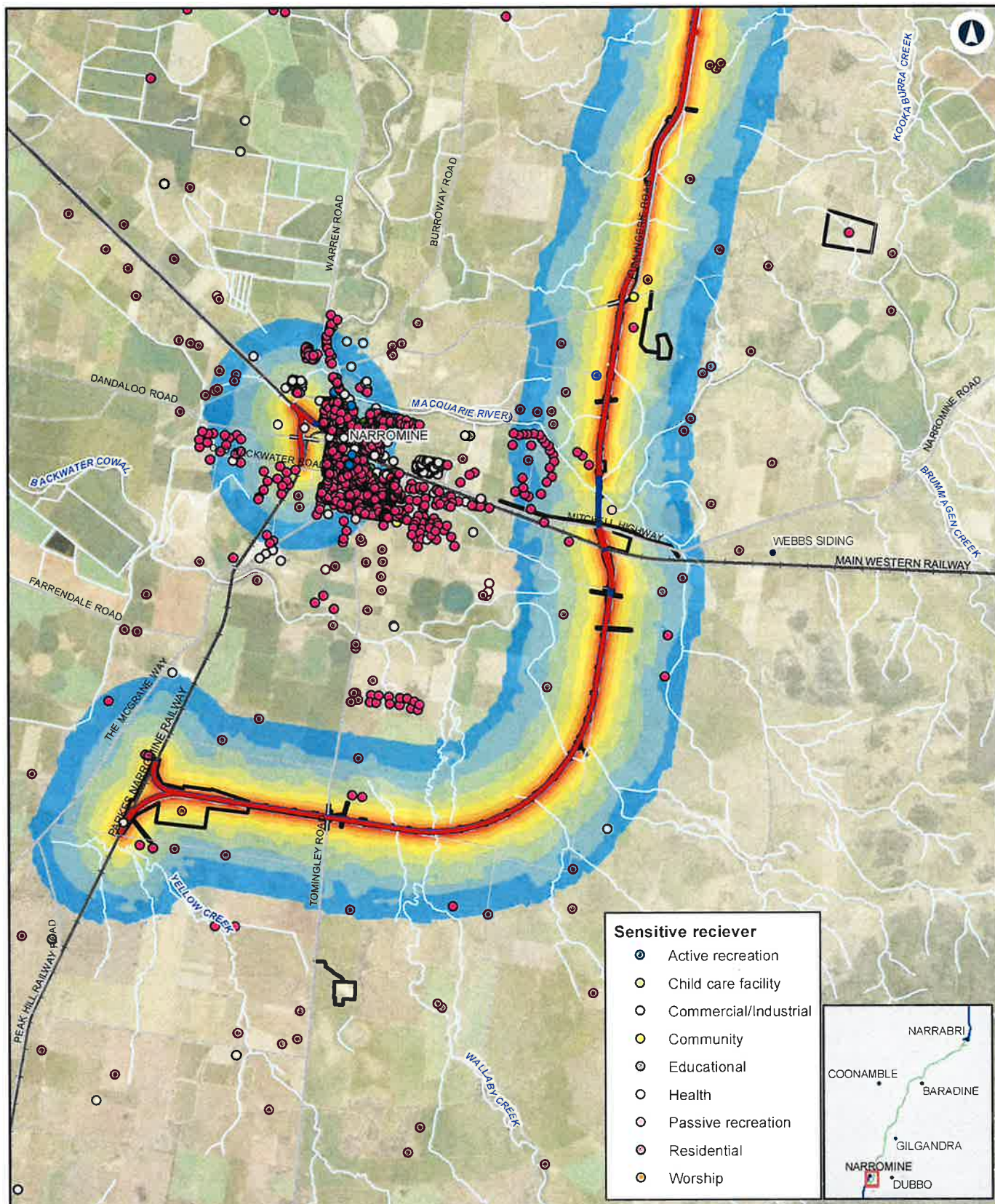
Coordinate System: GDA 1994 MGA Zone 55

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Date: 16/07/2020 Paper: A4
 Author: GHD Scale: 1:5,000
 Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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NARROMINE TO NARRABRI

Construction noise, 'No Exceedance' extents - RAIL04 - Main Earthworks

Appendix I - Page 1 of 13

0 1.5 3 Km

Coordinate System: GDA 1994 MGA Zone 55

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Date: 20/07/2020

Paper: A4

Author: GHD

Scale: 1:110,000

Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

LEGEND

- Alignment
- Construction footprint
- Rail earthworks red zone

Noise level (dBA L_{Aeq} 15 minute)

- 30 - 35
- 35 - 40
- 40 - 45

- 45 - 50
- 50 - 55
- 55 - 60
- 60 - 65
- 65 - 70
- 70 - 75
- > 75

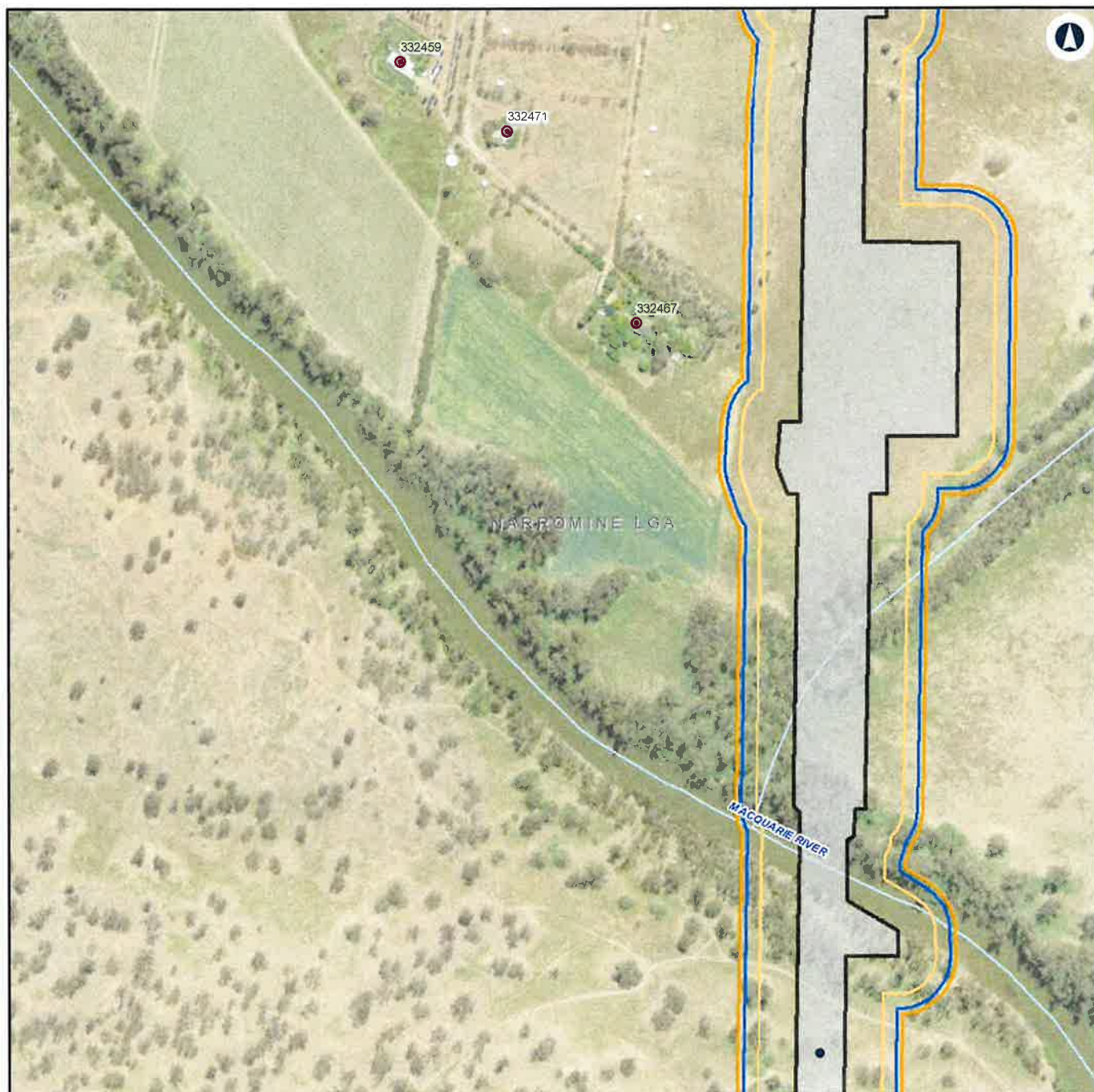
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Appendix J - Construction noise, RNP Sleep awakening impacts

Exceedance of RNP Sleep Disturbance Criteria																
Receiver ID	Coordinate X	Coordinate Y	RAIL01-Site establishment	RAIL02-Utility relocations	RAIL03-Stripping topsoil	RAIL04-Main earthworks	RAIL05-Bridges and culverts	RAIL06-Bridges (piling)	RAIL07-Bridges (night work)	RAIL08-Level crossings	RAIL09-Track construction	RAIL10-Track connections	RAIL11-Landscaping	RAIL12-Decommissioning	CL01-Rail earthworks, Bridges(piling), Construction infrastructure	CL02-Rail earthworks, Road earthworks, Construction Infrastructure
R_241652	616478.5	6432713.1	Y		Y	Y							Y		Y	Y
R_332471	621851.5	6432699.1	Y		Y	Y		Y			Y		Y		Y	Y
R_241638	616468.9	6432695.1	Y		Y	Y					Y		Y		Y	Y
R_241611	616464.8	6432674.1	Y		Y	Y					Y		Y		Y	Y
R_241597	616466.8	6432654.8	Y		Y								Y			
R_241585	616532.8	6432637.4			Y								Y			
R_241581	616462.4	6432635.4	Y		Y	Y					Y		Y		Y	Y
R_241555	616458.0	6432613.7	Y		Y	Y					Y		Y		Y	Y
R_241535	616455.3	6432595.8	Y		Y	Y					Y		Y		Y	Y
R_332465	621231.6	6432578.2						Y							Y	
R_241491	616448.1	6432543.4			Y								Y			
R_241467	616449.1	6432511.2			Y	Y							Y		Y	Y
R_332467	621985.3	6432500.1	Y		Y	Y	Y	Y			Y		Y	Y	Y	Y
R_241451	616443.2	6432493.1			Y	Y							Y		Y	Y
R_241433	615458.3	6432491.1			Y	Y							Y		Y	Y
R_241427	616442.2	6432474.4			Y	Y							Y		Y	Y
R_241350	615782.0	6432423.7	Y		Y	Y				Y	Y	Y	Y	Y	Y	Y
R_241360	616427.7	6432421.2			Y	Y							Y		Y	Y
R_241295	615603.4	6432378.5	Y		Y	Y					Y		Y		Y	Y
R_332437	621186.4	6432266.1													Y	
R_240998	615597.3	6432193.6	Y		Y	Y					Y		Y		Y	Y
R_332464	621077.9	6432154.7						Y							Y	
R_240863	615648.1	6432115.0	Y		Y	Y					Y		Y		Y	Y
R_332470	620412.6	6431955.4		Y												
R_332448	620610.6	6431888.8		Y												
R_332480	620698.6	6431838.5		Y												
R_332454	619870.8	6431611.4		Y												
R_332483	620744.0	6431581.4		Y												
R_332585	621016.9	6431305.0		Y												
R_332434	621550.0	6430892.2						Y							Y	Y
R_324822	623513.4	6429827.4													Y	
R_331822	621433.5	6429366.7						Y							Y	
R_239751	612615.4	6426442.2	Y		Y	Y					Y	Y	Y	Y	Y	Y
R_239748	612670.5	6426409.9	Y		Y	Y					Y	Y	Y	Y	Y	Y
R_324738	616960.3	6425578.3	Y	Y	Y	Y							Y	Y	Y	Y
R_324734	617176.4	6425540.7		Y	Y	Y							Y		Y	Y
R_239740	612488.8	6424538.9	Y	Y	Y	Y					Y		Y		Y	Y
R_239733	612761.0	6424473.5		Y	Y								Y		Y	Y
R_239732	613220.4	6424461.1			Y								Y		Y	Y
R_331622	615851.8	6421060.4													Y	Y



LEGEND

- Construction footprint (propagation source)
- AVTG night max (0.26 m/s 1.75, 39 m)
- AVTG day max (0.4 m/s 1.75, 54 m)
- BS 5228-2:2009 (1 mm/s, 60m)

Structure type

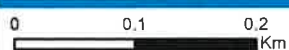
- Residential



NARROMINE TO NARRABRI

Construction vibration buffers, Human comfort - Clearing and stripping / Road construction

Appendix L - MAP 7 OF 76



Coordinate System: GDA 1994 MGA Zone 55

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Date: 20/07/2020

Paper: A4

Author: GHD

Scale: 1:5,960

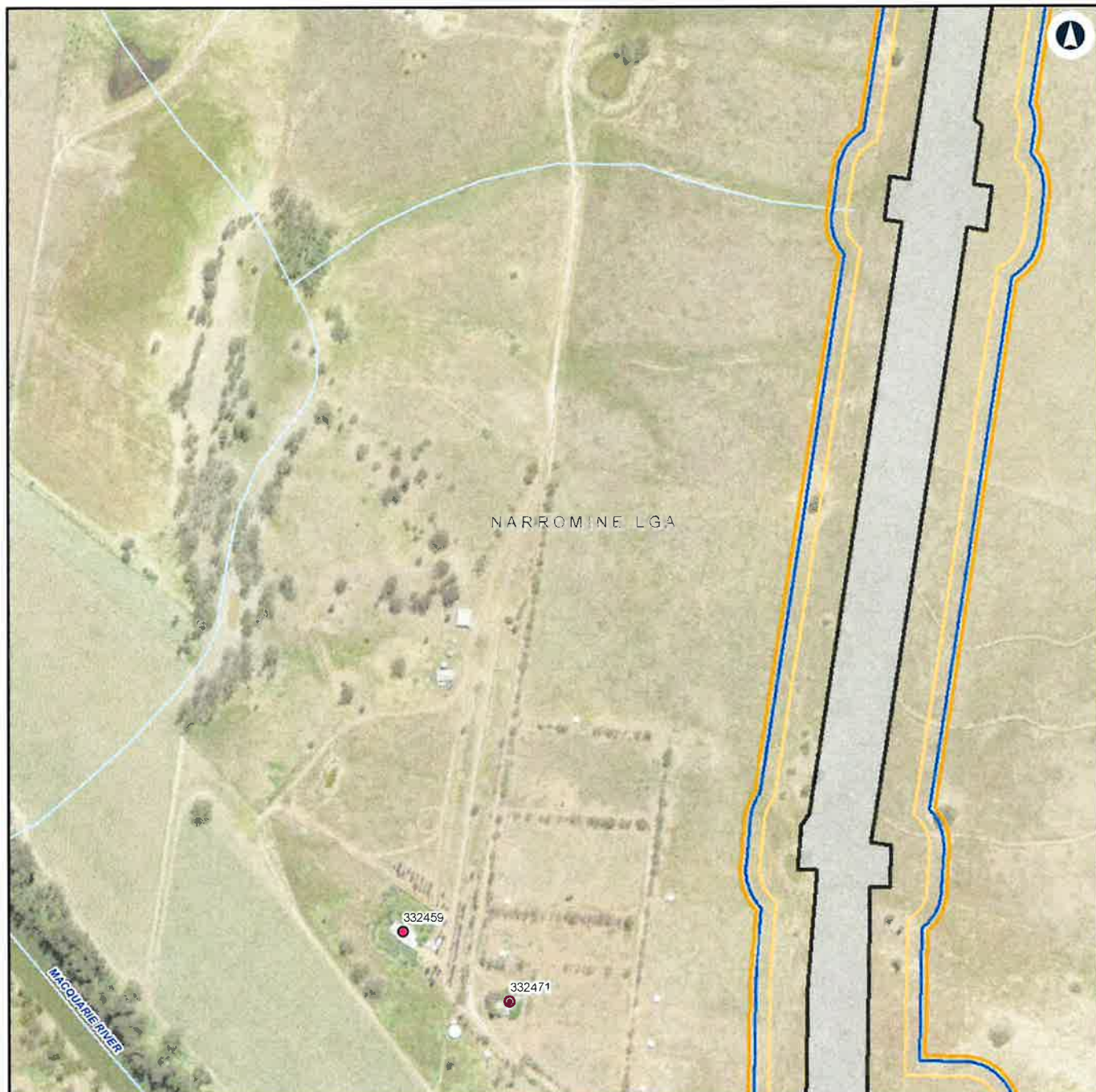
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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Appendix K - Construction noise, NPI Sleep disturbance impacts

Exceedance of NPI Sleep Disturbance Criteria																
Receiver ID	Coordinate X	Coordinate Y	RAIL01-Site establishment	RAIL02-Utility relocations	RAIL03-Stripping topsoil	RAIL04-Main earthworks	RAIL05-Bridges and culverts	RAIL06-Bridges (piling)	RAIL07-Bridges (night work)	RAIL08-Level crossings	RAIL09-Track construction	RAIL10-Track connections	RAIL11-Landscaping	RAIL12-Decommissioning	CL01-Rail earthworks, Bridges(piling), Construction infrastructure	CL02-Rail earthworks, Road earthworks, Construction Infrastructure
R_241659	616661.8	6432720.6	Y		Y	Y					Y		Y		Y	Y
R_332429	621219.2	6432718.2	Y		Y	Y	Y	Y					Y		Y	Y
R_241657	616677.9	6432717.8	Y		Y	Y					Y		Y	Y	Y	Y
R_241654	616689.4	6432715.6	Y		Y	Y					Y		Y		Y	Y
R_241652	616478.5	6432713.1	Y		Y	Y				Y	Y	Y		Y	Y	Y
R_241653	616845.2	6432711.5	Y		Y								Y		Y	Y
R_241646	616660.0	6432706.0	Y		Y	Y							Y		Y	Y
R_241647	616762.9	6432705.5	Y		Y	Y					Y		Y		Y	Y
R_241642	616612.1	6432701.0	Y		Y	Y					Y		Y		Y	Y
R_241641	616549.9	6432700.5	Y		Y	Y					Y		Y		Y	Y
R_332474	621851.5	6432699.1	Y		Y	Y	Y	Y			Y		Y	Y	Y	Y
R_241638	616468.9	6432695.1	Y		Y	Y				Y	Y	Y	Y	Y	Y	Y
R_241634	616656.6	6432691.7	Y		Y	Y					Y		Y		Y	Y
R_241636	616838.5	6432690.0	Y		Y	Y							Y		Y	Y
R_241630	616684.4	6432686.6	Y		Y	Y					Y		Y		Y	Y
R_241623	616541.7	6432683.7	Y		Y	Y					Y	Y		Y	Y	Y
R_241626	616768.0	6432681.6	Y		Y	Y							Y		Y	Y
R_241620	616606.2	6432680.8	Y		Y	Y					Y	Y	Y		Y	Y
R_241611	616464.8	6432674.1	Y		Y	Y				Y	Y	Y	Y	Y	Y	Y
R_241614	616841.6	6432672.8	Y		Y								Y			
R_241605	616540.2	6432663.0	Y		Y	Y					Y	Y	Y	Y	Y	Y
R_241599	616607.7	6432658.2	Y		Y	Y					Y		Y		Y	Y
R_241604	616760.8	6432658.0	Y		Y	Y							Y		Y	Y
R_241600	616839.2	6432656.3	Y		Y								Y			
R_241597	616466.8	6432654.8	Y		Y	Y					Y	Y	Y	Y	Y	Y
R_241596	616667.0	6432650.6	Y		Y	Y					Y		Y		Y	Y
R_241586	616600.6	6432640.2	Y		Y	Y				Y	Y		Y		Y	Y
R_241587	616839.2	6432637.7	Y		Y								Y		Y	Y
R_241585	616532.8	6432637.4	Y		Y	Y				Y	Y	Y	Y	Y	Y	Y
R_241581	616462.4	6432635.4	Y		Y	Y				Y	Y	Y	Y	Y	Y	Y
R_241584	617213.1	6432629.2				Y					Y				Y	Y
R_241573	616838.4	6432619.5	Y		Y								Y			
R_241566	616599.0	6432618.6	Y		Y	Y					Y	Y	Y	Y	Y	Y
R_241564	616742.4	6432615.2	Y		Y	Y							Y		Y	Y
R_241555	616458.0	6432613.7	Y		Y	Y				Y	Y	Y	Y	Y	Y	Y
R_241557	616663.0	6432611.9	Y		Y	Y					Y	Y	Y		Y	Y
R_332475	620694.7	6432606.2													Y	
R_241544	616834.8	6432601.2	Y		Y								Y			
R_241541	616531.7	6432600.8	Y		Y	Y					Y	Y	Y	Y	Y	Y
R_241538	616598.3	6432597.0	Y		Y	Y					Y	Y	Y	Y	Y	Y
R_241535	616455.3	6432595.8	Y		Y	Y				Y	Y	Y	Y	Y	Y	Y
R_241539	616742.7	6432595.6	Y		Y	Y							Y		Y	Y
R_241526	616834.9	6432585.1			Y								Y			
R_241519	616529.2	6432582.8	Y		Y	Y				Y	Y	Y	Y	Y	Y	Y
R_241520	616734.7	6432580.5	Y		Y	Y					Y		Y		Y	Y
R_241501	614619.9	6432580.4	Y		Y	Y					Y		Y		Y	Y
R_332465	621231.6	6432578.2			Y	Y	Y	Y					Y		Y	Y
R_241512	616594.0	6432573.3	Y		Y	Y				Y	Y	Y	Y	Y	Y	Y
R_241510	616613.0	6432570.8	Y		Y	Y					Y		Y		Y	Y
R_241505	616654.0	6432565.9	Y		Y	Y					Y	Y	Y	Y	Y	Y
R_241504	616738.4	6432564.0	Y		Y	Y					Y		Y		Y	Y
R_241499	616822.9	6432550.4			Y								Y			
R_241497	616736.6	6432548.9	Y		Y	Y					Y		Y		Y	Y
R_241493	616788.0	6432546.2	Y		Y	Y					Y		Y		Y	Y
R_241491	616448.1	6432543.4	Y		Y	Y					Y	Y	Y	Y	Y	Y
R_241485	616825.4	6432533.3	Y		Y	Y					Y		Y		Y	Y
R_241475	616511.6	6432524.4	Y		Y	Y				Y	Y	Y	Y	Y	Y	Y
R_241471	616580.3	6432516.6	Y		Y	Y					Y	Y	Y	Y	Y	Y
R_241467	616449.1	6432511.2	Y		Y	Y				Y	Y	Y	Y	Y	Y	Y
R_241469	616603.1	6432509.8	Y		Y	Y					Y		Y		Y	Y
R_241465	616715.5	6432504.4	Y		Y	Y					Y	Y	Y		Y	Y
R_241462	616515.3	6432501.6	Y		Y	Y				Y	Y	Y	Y	Y	Y	Y
R_332467	621985.3	6432500.1	Y		Y	Y	Y	Y	Y		Y		Y	Y	Y	Y
R_241464	617044.7	6432499.3	Y		Y	Y					Y		Y		Y	Y
R_241459	616750.9	6432497.4	Y		Y	Y					Y		Y		Y	Y



LEGEND

- Construction footprint (propagation source)
- AVTG night max (0.26 m/s 1.75, 39 m)
- AVTG day max (0.4 m/s 1.75, 54 m)
- BS 5228-2:2009 (1 mm/s, 60m)

Structure type

- Residential



NARROMINE TO NARRABRI

Construction vibration buffers, Human comfort - Clearing and stripping / Road construction Appendix L - MAP 10 OF 76

0 0.1 0.2
Km

Coordinate System: GDA 1994 MGA Zone 55

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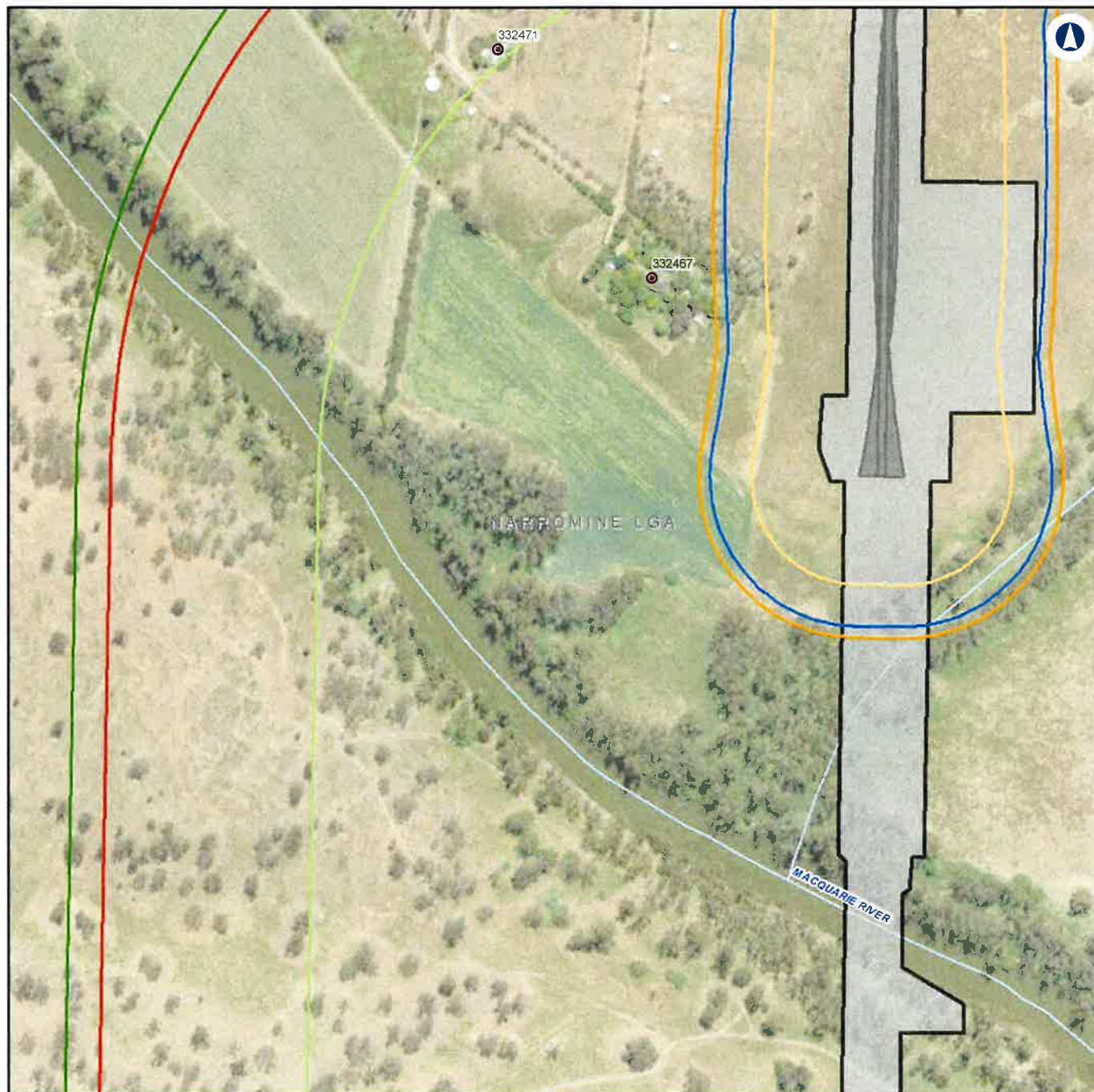
Date: 20/07/2020 Paper: A4
Author: GHD Scale: 1:5,960
Data Sources: Basemap layers: NSWSS; All other layers: JacobsGHD

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Appendix J - Construction noise, RNP Sleep awakening impacts

Exceedance of RNP Sleep Disturbance Criteria																
Receiver ID	Coordinate X	Coordinate Y	RAIL01-Site establishment	RAIL02-Utility relocations	RAIL03-Stripping topsoil	RAIL04-Main earthworks	RAIL05-Bridges and culverts	RAIL06-Bridges (piling)	RAIL07-Bridges (night work)	RAIL08-Level crossings	RAIL09-Track construction	RAIL10-Track connections	RAIL11-Landscaping	RAIL12-Decommissioning	CL01-Rail earthworks, Bridges(piling), Construction infrastructure	CL02-Rail earthworks, Road earthworks, Construction Infrastructure
R_242515	616458.1	6433501.8	Y		Y	Y					Y	Y	Y		Y	Y
R_242513	616539.8	6433499.2	Y		Y						Y		Y			
R_242507	616489.0	6433496.0	Y		Y	Y					Y		Y		Y	Y
R_242504	616625.8	6433491.1	Y		Y						Y		Y			
R_242499	616531.8	6433483.6	Y		Y	Y					Y		Y		Y	Y
R_242493	616602.4	6433474.4	Y		Y	Y					Y		Y		Y	Y
R_242478	616730.4	6433453.9			Y								Y			
R_242472	616370.2	6433453.2	Y		Y	Y					Y	Y	Y	Y	Y	Y
R_242470	616393.7	6433452.6	Y		Y	Y					Y		Y		Y	Y
R_242453	616451.2	6433438.1	Y		Y	Y					Y	Y	Y		Y	Y
R_242447	616506.6	6433433.8	Y		Y	Y							Y		Y	Y
R_242443	616475.8	6433433.4	Y		Y	Y					Y		Y		Y	Y
R_242438	616532.5	6433428.7			Y								Y			
R_242428	616591.9	6433420.9			Y								Y			
R_242419	616605.0	6433416.1			Y								Y			
R_242417	616530.3	6433414.8			Y								Y			
R_242413	616385.2	6433413.1	Y		Y	Y					Y	Y	Y	Y	Y	Y
R_242402	616453.8	6433403.6	Y		Y	Y					Y	Y	Y		Y	Y
R_242383	616378.8	6433393.8	Y		Y	Y					Y	Y	Y	Y	Y	Y
R_242386	616518.3	6433393.5			Y								Y			
R_242370	616450.7	6433384.5	Y		Y	Y					Y	Y	Y	Y	Y	Y
R_242355	616378.7	6433374.2	Y		Y	Y					Y	Y	Y	Y	Y	Y
R_242353	616516.0	6433372.0	Y		Y	Y					Y		Y		Y	Y
R_242338	616444.9	6433364.3	Y		Y	Y					Y	Y	Y		Y	Y
R_242329	616579.8	6433361.1			Y								Y			
R_242318	616513.6	6433353.2	Y		Y						Y		Y			
R_242305	616369.7	6433344.9	Y		Y	Y					Y	Y	Y	Y	Y	Y
R_242303	616442.5	6433343.1	Y		Y	Y					Y	Y	Y		Y	Y
R_242300	616573.8	6433340.0			Y						Y		Y			
R_242287	616508.2	6433332.1	Y		Y						Y		Y			
R_242277	616431.3	6433324.2	Y		Y	Y					Y	Y	Y	Y	Y	Y
R_242276	616573.1	6433322.1			Y						Y		Y			
R_242268	616500.9	6433316.6			Y						Y		Y			
R_242248	616443.6	6433302.0	Y		Y	Y					Y	Y	Y		Y	Y
R_242240	616508.2	6433295.8			Y								Y			
R_242192	616489.7	6433259.1	Y		Y	Y					Y	Y	Y		Y	Y
R_242190	616705.3	6433256.2			Y								Y			
R_242177	616562.4	6433245.3			Y								Y			
R_242159	616693.4	6433229.9			Y								Y			
R_242112	616638.2	6433179.4			Y								Y			
R_241947	616526.2	6433030.3	Y		Y								Y	Y		
R_241905	616548.2	6433000.8	Y		Y								Y			
R_241899	616565.0	6432997.2			Y								Y			
R_241900	616674.0	6432996.2	Y		Y								Y			
R_241891	616583.7	6432988.0			Y								Y			
R_241883	616651.5	6432982.5			Y								Y			
R_241843	616510.8	6432942.7	Y		Y	Y					Y		Y	Y	Y	Y
R_241834	616536.3	6432928.6			Y								Y			
R_241829	616562.3	6432924.8			Y								Y			
R_241828	616587.9	6432924.5	Y		Y								Y			
R_332439	621124.3	6432911.9													Y	
R_241804	616638.4	6432899.7			Y								Y			
R_241797	616505.2	6432894.5	Y		Y	Y							Y	Y	Y	Y
R_241793	616575.2	6432890.6	Y		Y								Y			
R_241785	616501.9	6432876.5	Y		Y	Y							Y		Y	Y
R_241771	616501.8	6432857.5	Y		Y								Y			
R_241749	616498.9	6432833.9	Y		Y								Y			
R_241716	616483.7	6432801.6	Y		Y	Y							Y		Y	Y
R_241710	616508.5	6432798.8	Y		Y								Y			
R_332459	621741.8	6432771.5						Y							Y	
R_241670	616475.7	6432741.1	Y		Y								Y			
R_241671	616502.5	6432740.9	Y		Y								Y			
R_241665	616550.8	6432732.5			Y								Y			
R_241663	616526.6	6432731.8	Y		Y								Y			
R_332429	621219.2	6432718.2						Y							Y	



LEGEND

- | | |
|--|---------------------------------------|
| Construction footprint | Vibration from rail earthworks |
| Rail earthworks extent (propagation source) | AVTG night max (0.26 m/s 1.75, 94 m) |
| Vibration from bridge construction (piling) | AVTG day max (0.4 m/s 1.75, 128 m) |
| AVTG night max (0.26 m/s 1.75, 490 m) | BS 5228-2:2009 (1 mm/s, 140 m) |
| AVTG day max (0.4 m/s 1.75, 670 m) | Structure type |
| BS 5228-2:2009 (1 mm/s, 700 m) | Residential |



NARRABINE TO NARRABRI Construction vibration buffers, Human comfort - Rail earthworks / Bridges (piling)/ Borrow pit finishing

Appendix M
MAP 8 OF 94

0 0.1 0.2
Km

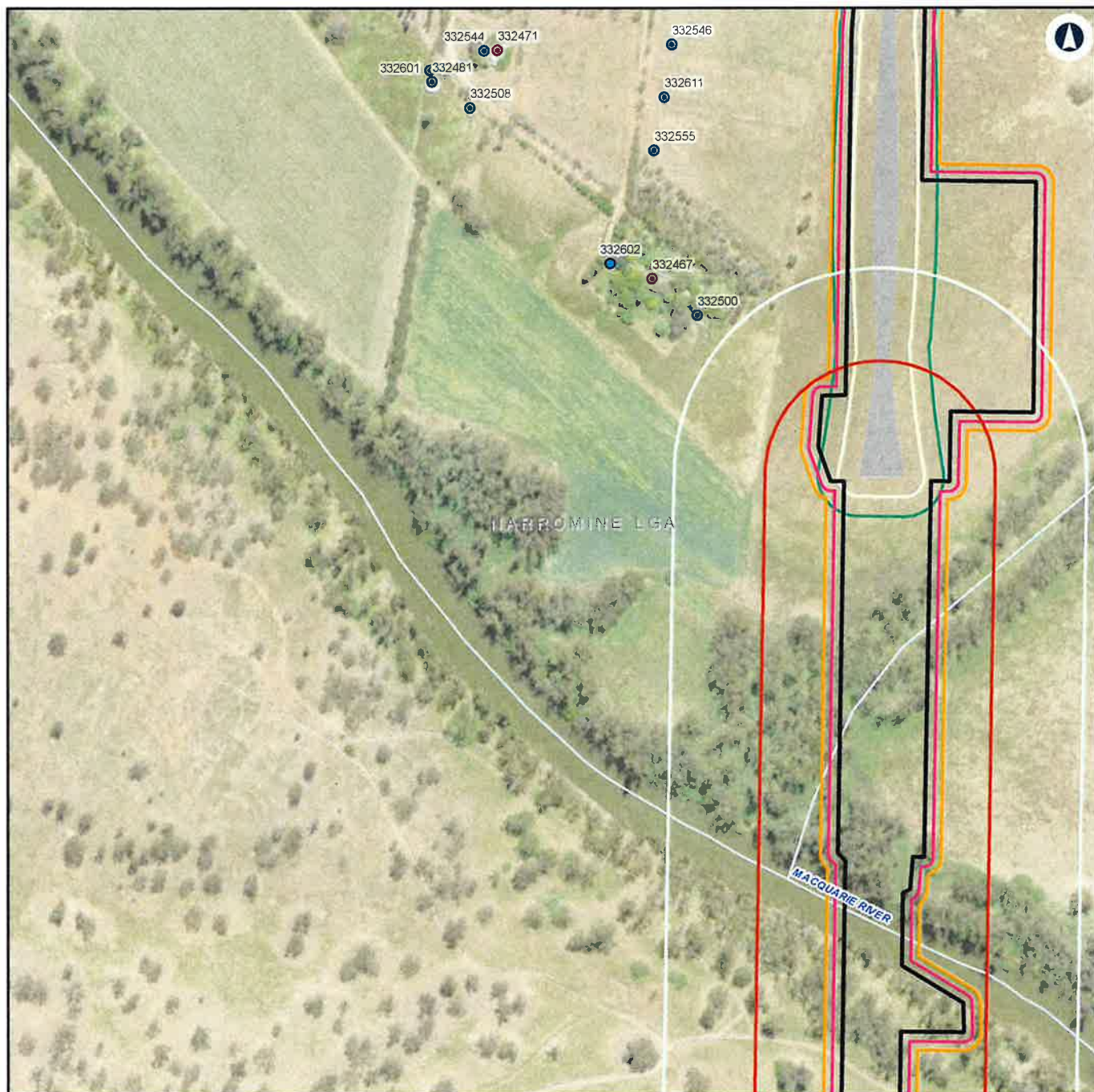
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Author: GHD Scale: 1:5,000
Data Sources: Basemap layers: NSWSS, All other layers: JacobsGHD

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LEGEND

- Construction footprint
- Rail earthworks extent
- Bridges (Impact piling) – Heritage structures: 3mm/s, 180m
- Bridges (Impact piling) – Standard buildings: 5mm/s, 100m
- Clearing (Dozer) – Heritage structures: 3mm/s, 15m
- Clearing (Dozer) – Standard buildings: 5mm/s, 8m
- Rail earthworks (Vibratory roller) – Heritage structures: 3mm/s, 35m
- Rail earthworks (Vibratory roller) – Standard buildings: 5mm/s, 18m

- Other
- Residential



NARRABRI TO NARRABRI

Construction vibration buffers, Structural damage

Appendix N - MAP 13 OF 113

0 0.1 0.2
Km

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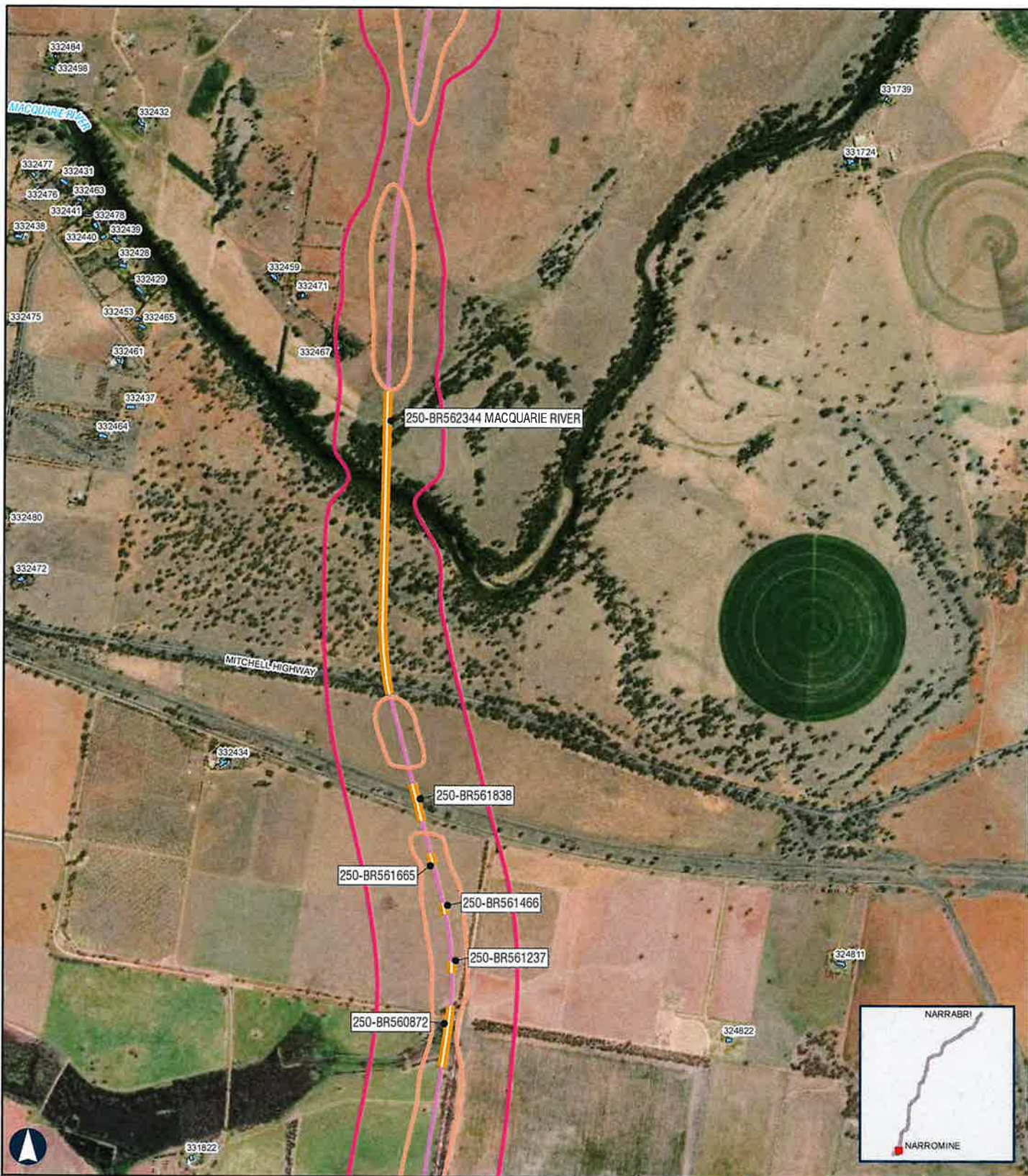
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H:\Projects-SLR\620-BNE\620-BNE\620_12209 Inland Rain06 SLR Data\06 CADGIS\ArcGIS\N2SLR62012209_N2N_Receptor.mxd

Receptor ID	Rail noise criteria			Project rail noise levels dBA		
	LAeq Day	LAeq Night	Lamax	LAeq,15hr	LAeq,9hr	Lamax
332313	60	55	80	37	41	64
332427	60	55	80	41	45	69
332428	60	55	80	42	45	69
332429	60	55	80	45	48	72
332430	60	55	80	38	42	67
332431	60	55	80	40	43	68
332432	60	55	80	44	47	71
332434	60	55	80	48	51	77
332435	60	55	80	41	44	69
332437	60	55	80	46	49	74
332438	60	55	80	42	45	69
332439	60	55	80	44	48	71
332440	60	55	80	42	46	70
332441	60	55	80	42	46	68
332453	60	55	80	43	47	72
332455	60	55	80	43	47	71
332459	60	55	80	48	51	76
332461	60	55	80	44	48	73
332462	60	55	80	41	45	68
332463	60	55	80	42	46	69
332464	60	55	80	46	49	73
332465	60	55	80	45	48	73
332467	60	55	80	53	57	82
332468	60	55	80	39	43	67
332470	60	55	80	41	45	68
332471	60	55	80	51	54	79
332472	60	55	80	43	47	72
332475	60	55	80	41	45	69
332476	60	55	80	41	45	68
332477	60	55	80	41	45	68
332478	60	55	80	41	45	67
332480	60	55	80	42	45	70
332484	60	55	80	41	45	68
332485	60	55	80	38	42	67
332498	60	55	80	41	45	68
332612	60	55	80	39	43	67
332614	60	55	80	40	44	68
332615	60	55	80	53	57	81
332616	60	55	80	48	52	76
332618	60	55	80	41	44	67
332622	60	55	80	43	47	71
332623	60	55	80	40	44	66
332624	60	55	80	42	45	69
332625	60	55	80	41	45	68
332626	60	55	80	41	45	69
332627	60	55	80	40	44	67
332628	60	55	80	42	45	69
332630	60	55	80	43	47	71
332633	60	55	80	41	45	68
332634	60	55	80	43	47	71
332635	60	55	80	42	45	69
332636	60	55	80	42	45	69
332637	60	55	80	42	46	70
332638	60	55	80	41	45	67
332639	60	55	80	41	44	69
332640	60	55	80	40	44	67
332641	60	55	80	42	46	70



NARROMINE TO NARRABRI Year 2025 Daytime Rail Noise Levels

APPENDIX D - Map 5 of 168

500 m

Coordinate System: GDA 1994 MGA Zone 55

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Paper: A4
Date: 31-Jul-2020
Author: JG

Scale: 1:20,000

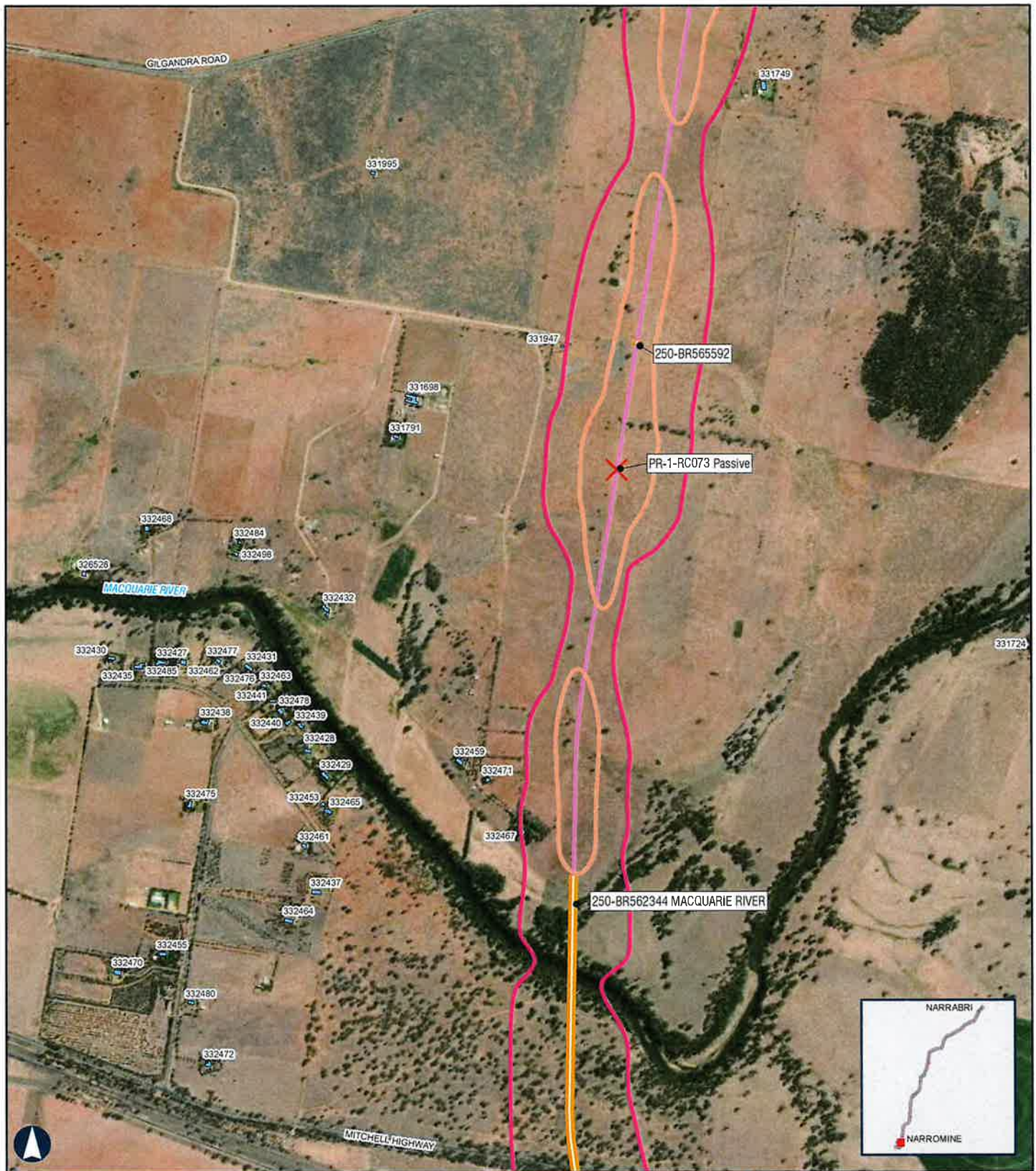
- ✕ Level Crossings
- Proposal Extent
- Crossing Loops
- Rail Alignment/Centreline
- Bridges and Viaducts
- Sensitive Receivers
- Noise Assessment Area – Upgrading Existing Railway

Noise contours are based on a set distance above the local terrain level of 2.4m.

- Daytime noise criteria LAeq15hr 60dBA new rail corridor
- Daytime noise criteria LAeq15hr 65dBA upgrading existing rail corridor
- Daytime noise criteria LA max 80dBA new rail corridor
- Daytime noise criteria LA max 85dBA upgrading existing rail corridor

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NARROMINE TO NARRABRI Year 2025 Daytime Rail Noise Levels

APPENDIX D - Map 7 of 168

500 m

Coordinate System: GDA 1994 MGA Zone 55

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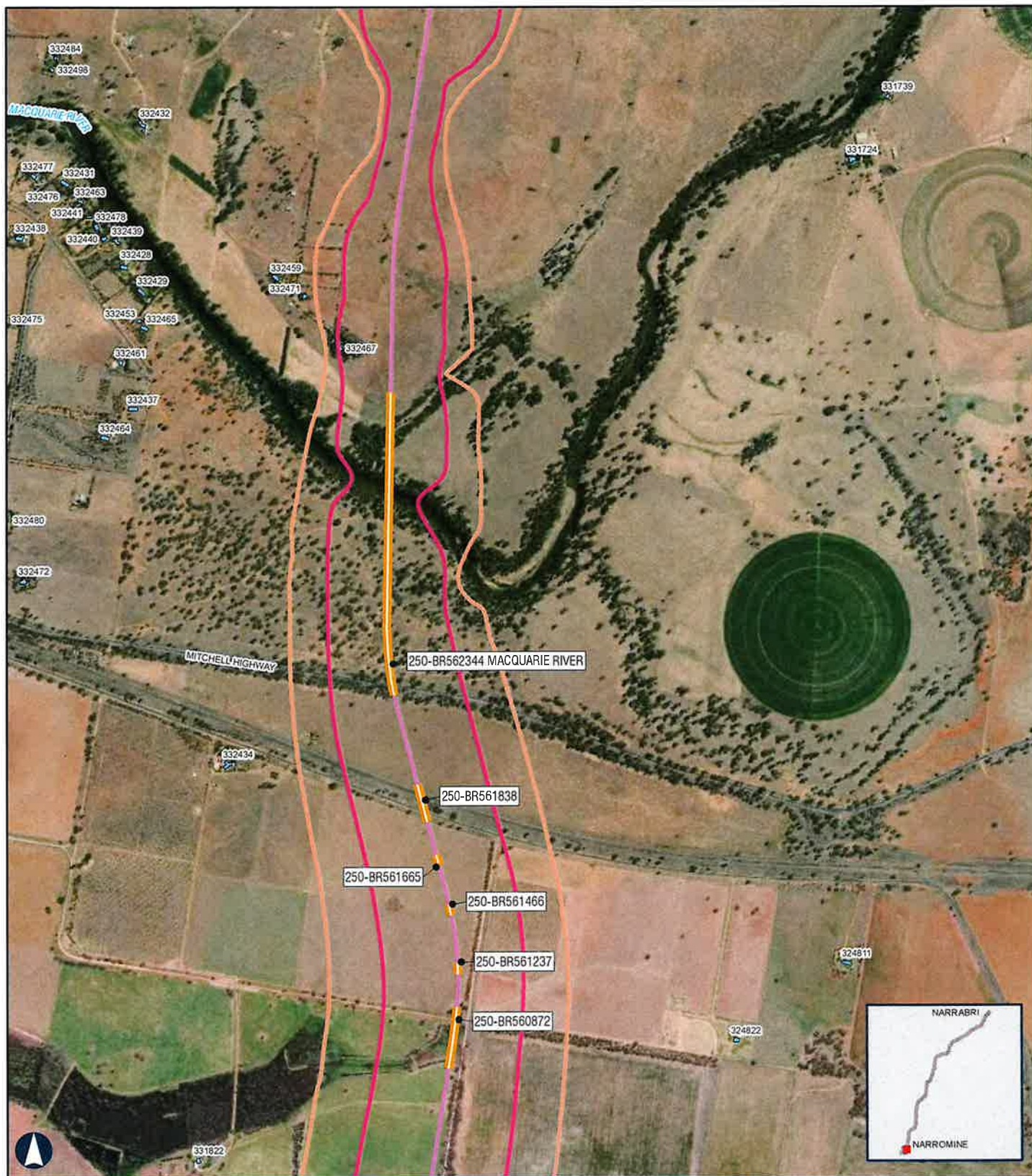
- X Level Crossings
- Proposal Extent
- Crossing Loops
- Rail Alignment/Centreline
- Bridges and Viaducts
- Sensitive Receivers
- Noise Assessment Area – Upgrading Existing Railway

Noise contours are based on a set distance above the local terrain level of 2.4m.

- Daytime noise criteria LAeq15hr 60dBA new rail corridor
- Daytime noise criteria LAeq15hr 65dBA upgrading existing rail corridor
- Daytime noise criteria LA max 80dBA new rail corridor
- Daytime noise criteria LA max 85dBA upgrading existing rail corridor

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NARROMINE TO NARRABRI Year 2025 Night-time Rail Noise Levels

APPENDIX D - Map 89 of 168

500 m

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Date: 31-Jul-2020
Author: JG

Scale: 1:20,000

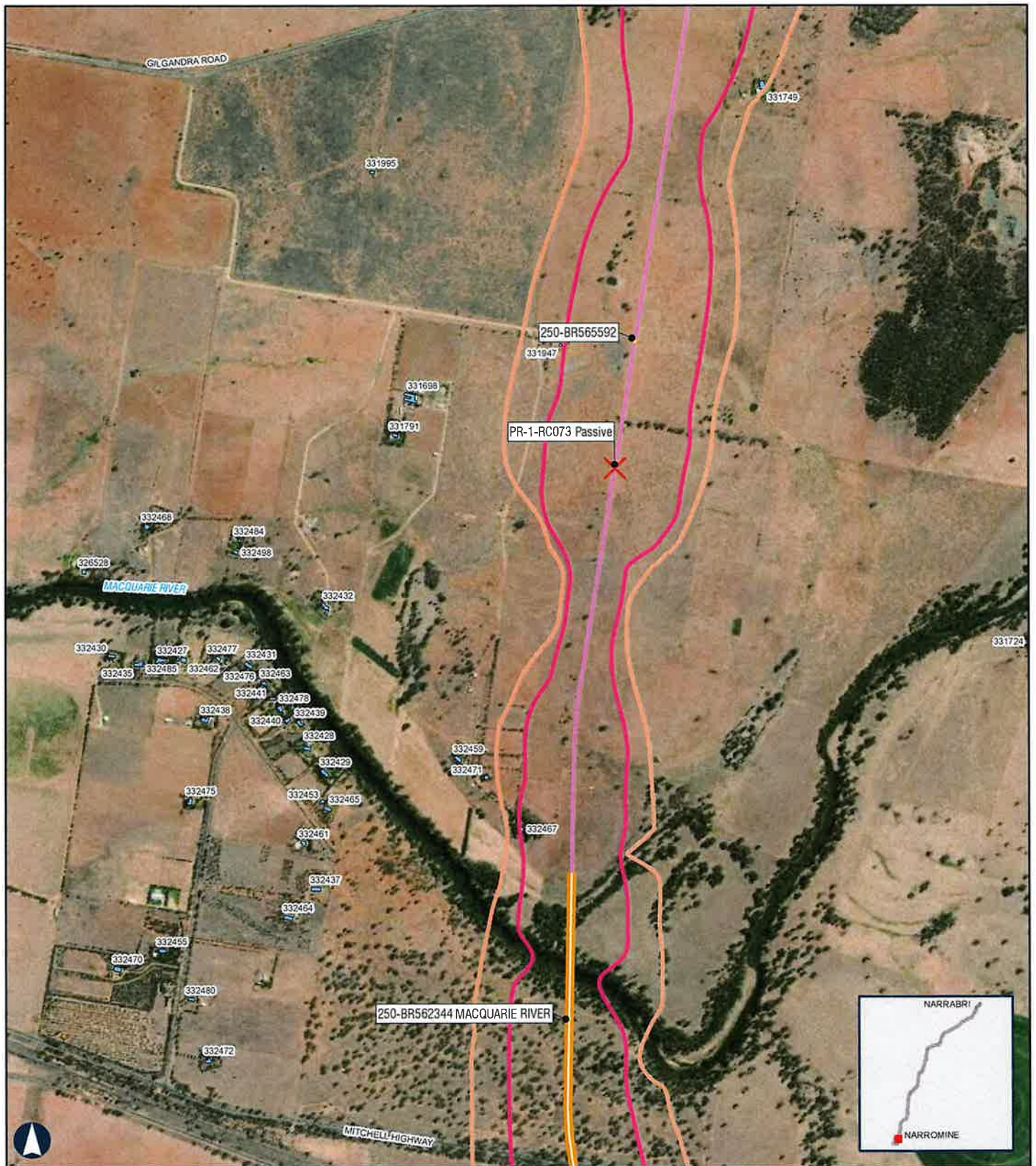
- ✗ Level Crossings
- Proposal Extent
- Crossing Loops
- Rail Alignment/Centrelines
- Bridges and Viaducts
- Sensitive Receivers
- Noise Assessment Area – Upgrading Existing Railway

Noise contours are based on a set distance above the local terrain level of 2.4m.

- Night-time noise criteria LAeq 9hr 55dBA new rail corridor
- Night-time noise criteria LAeq 9hr 60dBA upgrading existing rail corridor
- Night-time noise criteria LA max 80dBA new rail corridor
- Night-time noise criteria LA max 85dBA upgrading existing rail corridor

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NARROMINE TO NARRABRI Year 2025 Night-time Rail Noise Levels

APPENDIX D - Map 91 of 168

500 m

Coordinate System: GDA 1994 MGA Zone 55

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Paper: A4

Date: 31-Jul-2020

Author: JG

Scale: 1:20,000

- X Level Crossings
- Proposal Extent
- Crossing Loops
- Rail Alignment/Centreline
- Bridges and Viaducts
- Sensitive Receivers
- Noise Assessment Area – Upgrading Existing Railway

Noise contours are based on a set distance above the local terrain level of 2.4m.

- Night-time noise criteria LAeq 9hr 55dBA new rail corridor
- Night-time noise criteria LAeq 9hr 60dBA upgrading existing rail corridor
- Night-time noise criteria LA max 80dBA new rail corridor
- Night-time noise criteria LA max 85dBA upgrading existing rail corridor

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