NSW Roads and Maritime Services

WOOLGOOLGA TO BALLINA | PACIFIC HIGHWAY UPGRADE

SUBMISSIONS / PREFERRED INFRASTRUCTURE REPORT

Appendix F Revised operational noise assessment

November 2013

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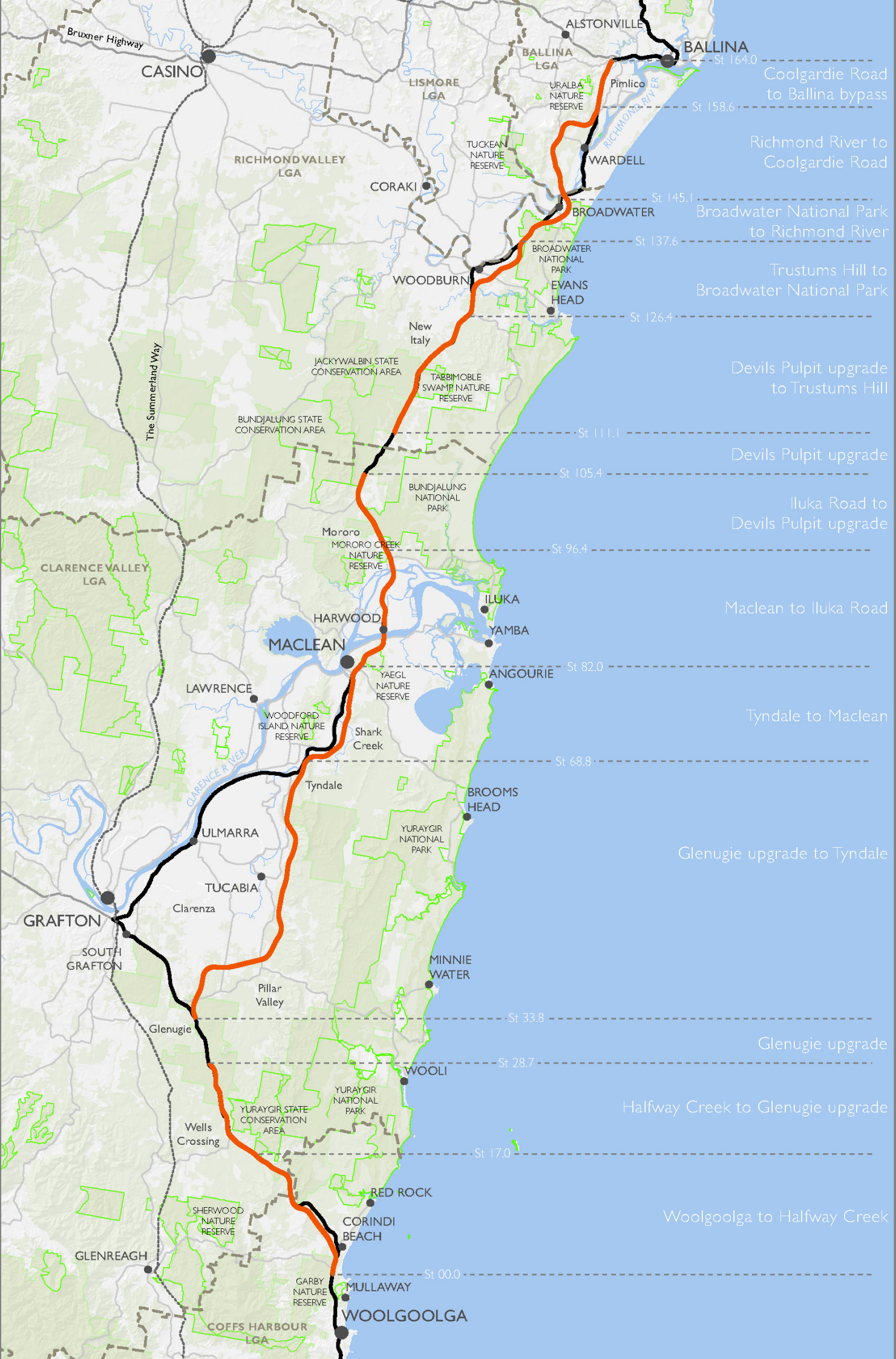
Bruxner Highway
CASINO
ALSTONVILLE
BALLINA
BALLINA LGA
LISMORE LGA
URALBA NATURE RESERVE
Pimlico
RICHMOND RIVER
St 164.0
Coolgardie Road to Ballina bypass
11
St 158.6
Richmond River to Coolgardie Road
10
TUCKEAN NATURE RESERVE
WARDELL
RICHMOND VALLEY LGA
CORAKI
St 145.1
BROADWATER
Broadwater National Park to Richmond River
9
St 137.6
BROADWATER NATIONAL PARK
WOODBURN
EVANS HEAD
Trustums Hill to Broadwater National Park
8
St 126.4
New Italy
JACKYWALBIN STATE CONSERVATION AREA
TABBIMOBLE SWAMP NATURE RESERVE
Devils Pulpit upgrade to Trustums Hill
7
The Summerland Way
BUNDJALUNG STATE CONSERVATION AREA
St 111.1
Devils Pulpit upgrade
St 105.4
BUNDJALUNG NATIONAL PARK
Iluka Road to Devils Pulpit upgrade
6
Mororo
MORORO CREEK NATURE RESERVE
St 96.4
CLARENCE VALLEY LGA
ILUKA
Maclean to Iluka Road
5
HARWOOD
YAMBA
MACLEAN
St 82.0
ANGOURIE
YAEGL NATURE RESERVE
LAWRENCE
WOODFORD ISLAND NATURE RESERVE
Shark Creek
Tyndale to Maclean
4
St 68.8
CLARENCE RIVER
Tyndale
BROOMS HEAD
YURAYGIR NATIONAL PARK
ULMARRA
Glenugie upgrade to Tyndale
3
TUCABIA
Clarenza
GRAFTON
SOUTH GRAFTON
MINNIE WATER
Pillar Valley
St 33.8
Glenugie
Glenugie upgrade
St 28.7
WOOLI
YURAYGIR NATIONAL PARK
YURAYGIR STATE CONSERVATION AREA
Halfway Creek to Glenugie upgrade
2
Wells Crossing
St 17.0
RED ROCK
SHERWOOD NATURE RESERVE
CORINDI BEACH
Woolgoolga to Halfway Creek
1
GLENREAGH
St 00.0
GARBY NATURE RESERVE
MULLAWAY
WOOLGOOLGA
COFFS HARBOUR LGA

Appendix F Revised operational noise assessment

F.1 Operational noise assessment for additional sensitive receivers

Receivers previously not assessed as part of the operational noise assessment in Working paper – Noise and vibration (Roads and Maritime, 2012) were assessed for potential operational noise impacts. Additional sensitive receivers were identified in project sections 1, 2 and 11. These sensitive receivers were assessed using the methodology identified in the Working paper – Noise and vibration. Noise impacts were assessed for the opening year, "build" and "no build" scenario and for the design year (ten years after opening) for the same scenarios. The assessment also identified the requirement for noise mitigation.

Where required, appropriate noise mitigation would be provided in line with OEH's *NSW Road Noise Policy 2011* for noise affected residences. Potential noise mitigation measures could include architectural noise treatment, including sealing off wall vents, upgrading windows, double-glazing or air-conditioning. Mitigation measures would be confirmed at the detailed design stage following additional noise modelling and consultation with affected property owners.

F.1.1 Section 1

In project section 1, three additional sensitive receivers were identified (IDs 402, 404 and 422). The locations of these receivers are identified in Figure F-1.

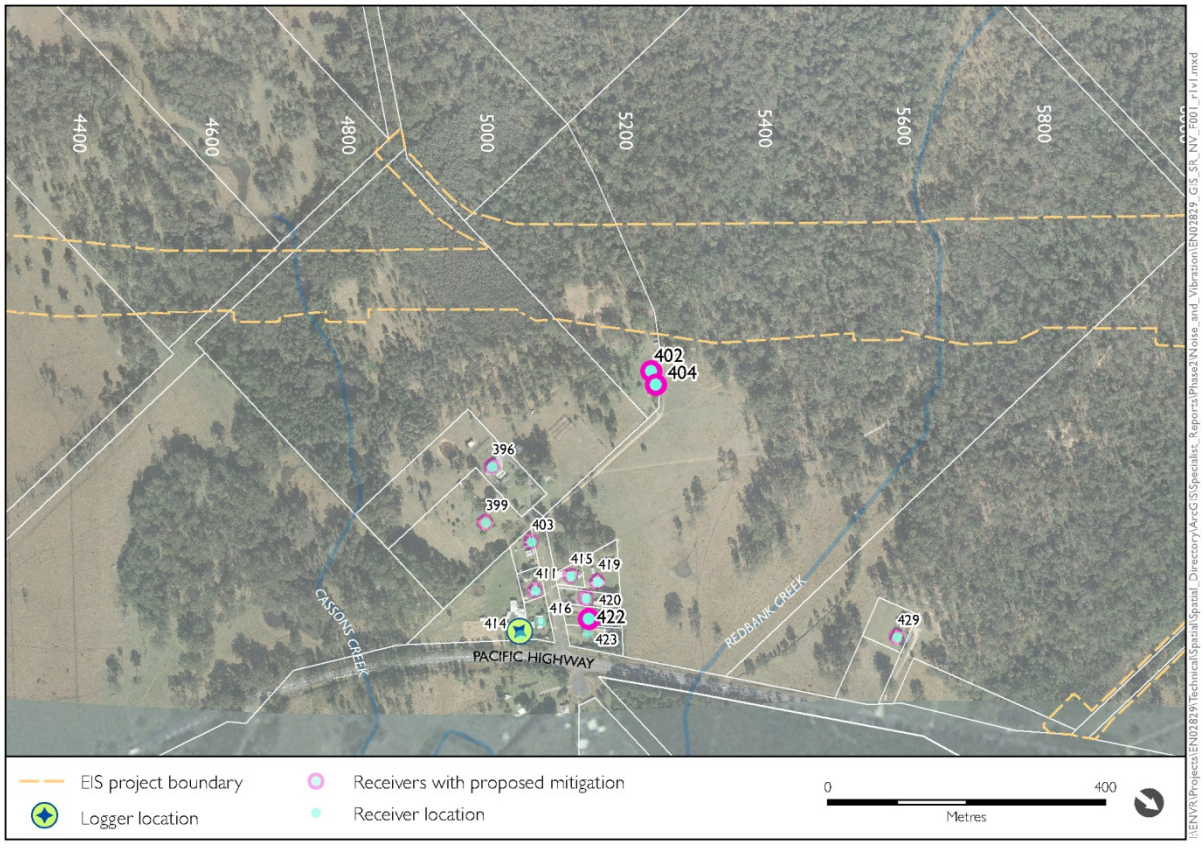

Figure F-1: Additional sensitive receivers in Section 1 (IDs 402, 404, 422)

Based on the revised assessment, an additional three sensitive receivers have been identified for noise mitigation. Table F-1 updates the section noise impact summary from the EIS with the additional assessment.

Table F-1: Summary of noise modelling results – Section 1 (revised to include receivers 402, 404, 422)

NCA	Number of receivers	Number exceeding base criteria	Number of receivers considered for mitigation
a	201	77	12
b	166	166	19
c	17	17	15
d	3	3	3
e	7	6	4
f	2	1	1
Total	**396**	**270**	**54**

F.1.2 Section 2

In project section 2, two sensitive receivers were re-assessed (IDs 584 and 597). The locations of these receivers are identified in Figure F-2.

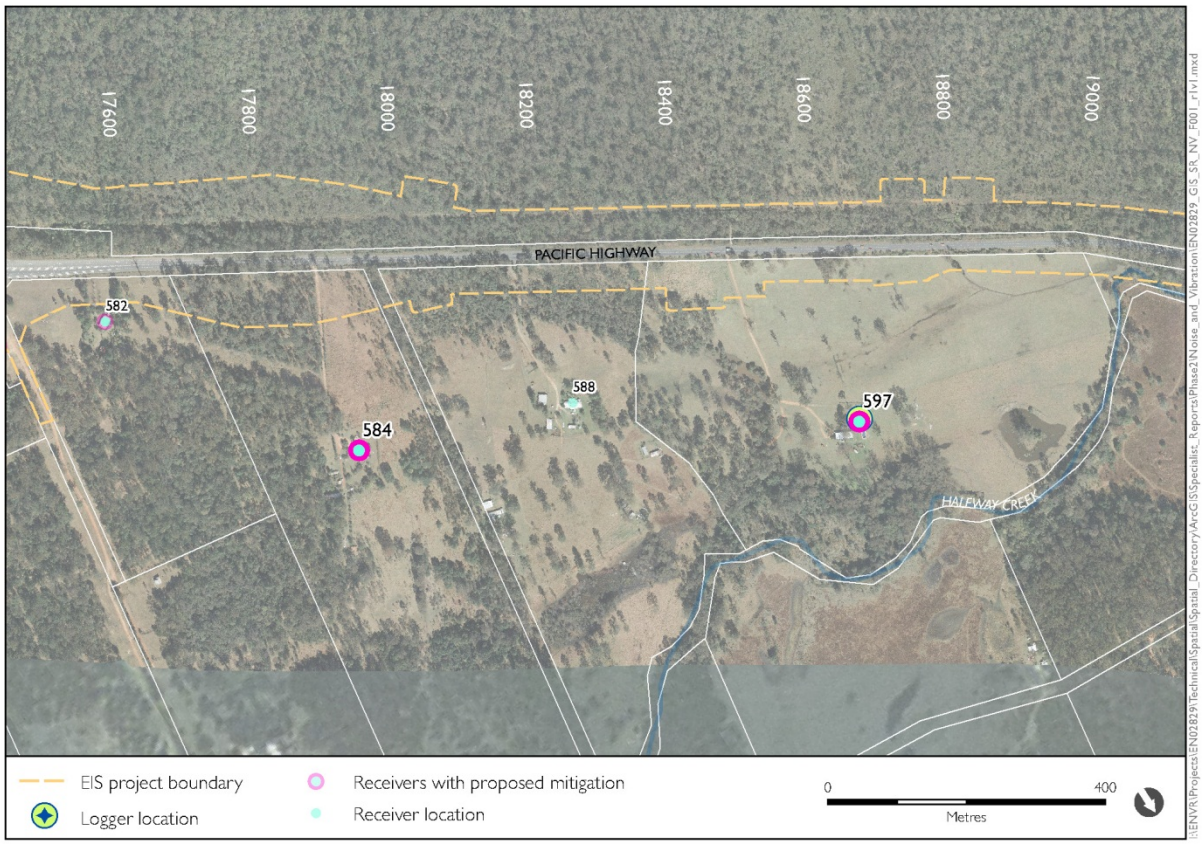

Figure F-2: Additional sensitive receivers in Section 2 (IDs 584, and 597)

Based on the revised assessment, both sensitive receivers were identified for noise mitigation. Table F-2 updates the section noise impact summary from the EIS with the additional assessment.

Table F-2: Summary of noise modelling results – Section 2 (revised to include receivers 584, 597)

NCA	Number of receivers	Number exceeding base criteria	Number of receivers considered for mitigation
a	3	2	2
b	7	7	5
c	2	2	2
d	3	3	1
e	4	4	1
f	3	0	0
Total	**22**	**18**	**11**

F.1.3 Section 11

In project section 11, one additional sensitive receiver was assessed (ID 2084). The location of this receiver is identified in Figure F-3.

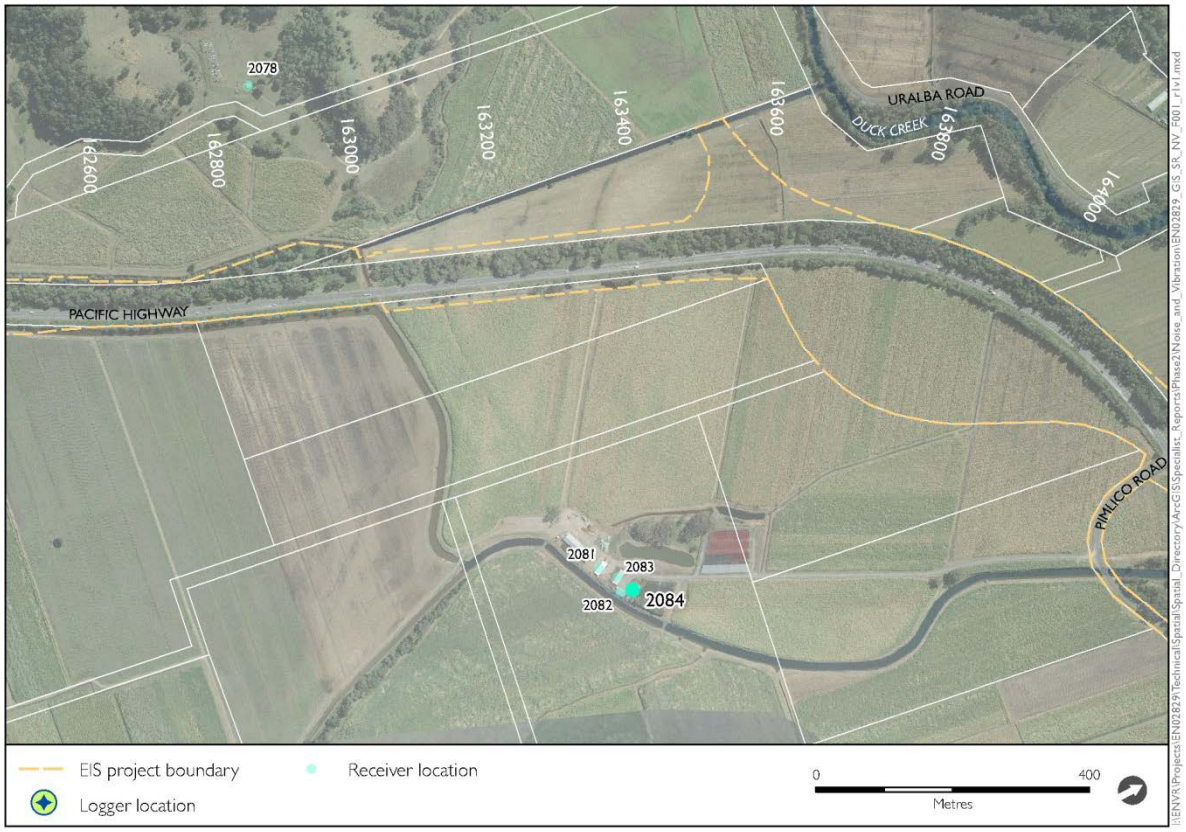

Figure F-3: Additional sensitive receiver in Section 11 (ID 2084)

Based on the revised assessment, this sensitive receiver was found not to exceed the noise criteria and therefore, no mitigation measures are proposed. Table F-3 updates the section noise impact summary from the EIS to include the additional sensitive receiver.

Table F-3: Summary of noise modelling results – Section 11 (revised to include receiver 2084)

NCA	Number of receivers	Number exceeding base criteria	Number of receivers considered for mitigation
a	5	0	0
b	0	0	0
c	0	0	0
d	1	1	1
e	3	3	1
f	1	0	0
Total	**10**	**4**	**2**

F.2 Detailed operational noise assessment results

The results of the operational noise assessment undertaken for the sensitive receivers identified above are detailed in Table F-4.

Table F-4: Operational results table – revised to include re-assessed receiver results including newly identified receiver 2084 (Section 11)

ID	Year opening 'no build' scenario dB(A)		Year opening 'build' scenario dB(A)		Design year 'no build' scenario dB(A)		Design year 'build' scenario dB(A)		RNP criteria, dB(A)		Are the RNP Criteria exceeded?		Change in noise level dB(A)				Acute level of noise		Consider mitigation ?
													Opening Year		Design year				
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	
402	42	41	61	61	43	42	62	62	55	50	**YES**	**YES**	18.4	19.5	18.5	19.6	NO	**YES**	**YES**
404	47	45	57	57	47	47	58	57	55	50	**YES**	**YES**	10.1	11.3	10.2	11.3	NO	NO	**YES**
422	55	54	55	56	56	56	56	56	55	50	**YES**	**YES**	0.2	2.0	0.0	0.9	NO	NO	**YES**
584	56	54	57	56	57	55	58	57	60	55	NO	**YES**	1.2	1.9	1.2	2.1	NO	NO	**YES**
597	58	56	59	58	59	57	60	59	60	55	NO	**YES**	1.1	2.0	1.1	2.1	NO	NO	**YES**
2084	52	50	54	52	53	51	55	53	60	55	NO	NO	2.1	2.0	2.2	2.1	NO	NO	NO