DAC PLANNING PTY LTD
TOWN PLANNING & DEVELOPMENT CONSULTANTS

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19 September 2018

Our Ref: WBL 17/30 Pt 2

General Manager
Byron Shire Council
P O Box 219
Mullumbimby NSW 2482

Attention: Chris Larkin

Dear Sir

Development Application No. 10.2017.661.1 – Subdivision at West Byron (West Byron Landowners Group)

We refer to Byron Shire Council's requests for further information dated 20 April 2018, 14 May 2018, 19 June 2018 and 3 July 2018 and respond as follows, on behalf of the applicants:

RFI 20 APRIL 2018

1. Clarification of Proposed Development

We confirm that the originally proposed development was for 378 residential lots as shown on the Proposal Plans. However, following our meeting with Council Officers on 7 June 2018, reference to the small lots contained within the super lots have been removed and only super lots are now proposed. A copy of the amended plans is attached at **Annexure 1**.

The amended Plan Reference Numbers are as follows:

Plans of Subdivision Showing Staging

- Plan Showing Proposed Subdivision of Lot 1 DP 201626, Lot 2 DP 542178, Lot 1 DP 780242, Lot 2 DP 818403 & Lot 1 DP 520063 - West Byron Ewingsdale Road, Sheet 1 of 9, Reference 15024-8G, 10 September 2018
- Plan Showing Proposed Subdivision of Lot 1 DP 201626, Lot 2 DP 542178, Lot 1 DP 780242, Lot 2 DP 818403 & Lot 1 DP 520063 - West Byron Ewingsdale Road, Sheet 2 of 9, Reference 15024-9G, 10 September 2018
- Plan Showing Proposed Subdivision of Lot 1 DP 201626, Lot 2 DP 542178, Lot 1 DP 780242, Lot 2 DP 818403 & Lot 1 DP 520063 - West Byron Ewingsdale Road, Sheet 3 of 9, Reference 15024-10G, 10 September 2018
- Plan Showing Proposed Subdivision of Lot 1 DP 201626, Lot 2 DP 542178, Lot 1 DP 780242, Lot 2 DP 818403 & Lot 1 DP 520063 - West Byron Ewingsdale Road, Sheet 4 of 9, Reference 15024-11G, 10 September 2018
- Plan Showing Proposed Subdivision of Lot 1 DP 201626, Lot 2 DP 542178, Lot 1 DP 780242, Lot 2 DP 818403 & Lot 1 DP 520063 - West Byron Ewingsdale Road, Sheet 5 of 9, Reference 15024-12G, 10 September 2018

- Plan Showing Proposed Subdivision of Lot 1 DP 201626, Lot 2 DP 542178, Lot 1 DP 780242, Lot 2 DP 818403 & Lot 1 DP 520063 - West Byron Ewingsdale Road, Sheet 6 of 9, Reference 15024-13G, 10 September 2018
- Plan Showing Proposed Subdivision of Lot 1 DP 201626, Lot 2 DP 542178, Lot 1 DP 780242, Lot 2 DP 818403 & Lot 1 DP 520063 - West Byron Ewingsdale Road, Sheet 7 of 9, Reference 15024-14G, 10 September 2018
- Plan Showing Proposed Subdivision of Lot 1 DP 201626, Lot 2 DP 542178, Lot 1 DP 780242, Lot 2 DP 818403 & Lot 1 DP 520063 - West Byron Ewingsdale Road, Sheet 8 of 9, Reference 15024-15G, 10 September 2018
- Plan Showing Proposed Subdivision of Lot 1 DP 201626, Lot 2 DP 542178, Lot 1 DP 780242, Lot 2 DP 818403 & Lot 1 DP 520063 - West Byron Ewingsdale Road, Sheet 9 of 9, Reference 15024-16G, 10 September 2018
- Staging Plan, Reference Figure 22.1, Issue D, 7 September 2018

Plans of Subdivision on Aerial Photograph base:

- Plan Showing Proposed Subdivision of Lot 1 DP 201626, Lot 2 DP 542178, Lot 1 DP 780242, Lot 2 DP 818403 & Lot 1 DP 520063 - West Byron Ewingsdale Road, Sheet 1 of 8, Reference 15024-8E, 2 August 2018
- Plan Showing Proposed Subdivision of Lot 1 DP 201626, Lot 2 DP 542178, Lot 1 DP 780242, Lot 2 DP 818403 & Lot 1 DP 520063 - West Byron Ewingsdale Road, Sheet 2 of 8, Reference 15024-9E, 2 August 2018
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Plans of Subdivision on Zoning base:

- Plan Showing Proposed Subdivision of Lot 1 DP 201626, Lot 2 DP 542178, Lot 1 DP 780242, Lot 2 DP 818403 & Lot 1 DP 520063 - West Byron Ewingsdale Road, Sheet 1 of 8, Reference 15024-8F, 18 July 2018
- Plan Showing Proposed Subdivision of Lot 1 DP 201626, Lot 2 DP 542178, Lot 1 DP 780242, Lot 2 DP 818403 & Lot 1 DP 520063 - West Byron Ewingsdale Road, Sheet 2 of 8, Reference 15024-9F, 18 July 2018
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The revised subdivision description is as follows:

This application seeks development consent for a proposed residential, business, recreation and industrial subdivision (and subdivision works) containing the following key elements:

- The creation of a total of 186 lots comprising 163 residential lots, 14 master lots, 2 business lots with areas of 3695m^2 and 4385m^2, 1 recreation lot with an area of 8837m^2, 2 industrial lots with areas of 5485m^2 and 8437m^2 and 4 residue lots (Lots 177, 181, 182 and 183).

- The development will be carried out in 12 stages as shown on the table accompanying the amended Plans of Subdivision at **Annexure 1**.

- Construction of a roundabout at the intersection of proposed Road No. 5, Ewingsdale Road and the SAE access road.

- Construction of all internal roads.

- Provision of underground water, sewer, power and telephone services.

- Upgrading and embellishment of the existing drainage channel with Lot 7020 DP 1113431.

- Provision of underground and at grade stormwater drainage system including water quality control devices.

- Carrying out of bulk earthworks across the subject land including the importation of approximately 329,500m^3 of fill from an approved source.

- Construction of an acoustic fence adjacent to the alignment of Ewingsdale Road.

- Carry out restoration works, habitat reconstruction and offset planting within the E2 zoned Lot 1 DP780242, Lot 1 DP 201626 and Lot 2 DP 818403.

- Carry out restoration works and offset planting within the E3 zoned Lot 2 DP818403, Lot 2 DP 542178, and Lot 7020 DP1113413.

To provide flexibility in implementation of the development, Council is requested to include the following condition:

> "The development may be carried out in smaller stages, in any order, provided that such stages are carried out in a logical and functional arrangement to the satisfaction of Council's Development Engineer and provided that conditions relevant to each stage have been complied with, including payment of developer contributions as appropriate for each stage."

2. Small Lots

As indicated above, the small lots have been removed and super lots created in place and therefore this issue is resolved.

3. Minimum Lot Sizes

As indicated above, deletion of the small lots removes this issue.

4. Building Envelopes/Building Setback Plans

As indicated above, deletion of the small lots removes this issue.

5. Super Lots

As indicated above, the small lots have been removed and super lots only are proposed.

6. Dual Frontage for Medium Density Development

As indicated above, deletion of the small lots and creation of super lots only resolves this issue.

7. Miscellaneous Lots

As agreed at the meeting with Council Officers on 20 April 2018, the applicants will accept a condition requiring Lot 184 to be consolidated with the adjoining Lot 2 DP 878549 owned by Margolin.

8. Acoustic Barrier

See response from Ennismore Field dated 11 July 2018 at **Annexure 2**.

9. Groundwater

See response from AWC dated 9 May 2018 at **Annexure 3**.

10. Dual Occupancy Lots

The Application Plans have been amended by deleting dual occupancy lots which do not comply with Byron Development Control Plan 2014, Chapter E8.10.2(5) and (6).

11. Recreational Areas

See response from Ennismore Field dated 11 July 2018 at **Annexure 2**.

12. Staging /Orderly Development of the Site

Veitch Lister Consulting has advised as follows:

*"**Orderly Development, 3rd para**; Section 5.2 of our report notes that the Smith development will need to await construction of the West Distributor Road by Villaworld. Any further details on the interface issues and timing needs to be resolved between the landowners."*

13. Interface with Neighbouring Developments

See response from ACCOR at **Annexure 6**.

14. Filling

See response from ACCOR at **Annexure 6**.

15. Vehicular Movements Relating to Construction Traffic

Veitch Lister Consulting has advised as follows:

*"**Construction Traffic***
1st para; we did not mention the source of fill material as, since it would only involve 10 truck movements an hour, it wont matter a damn which direction it comes from.

2nd para; we've already stated (in Section 5.3 of our report) that once the eastern roundabout on Ewingsdale Road is constructed, there will be no need for traffic management on Ewingsdale Road. Management of traffic during construction of the roundabout will be the responsibility of the chosen contractor.

We can provide a fuller discussion of the above issues, but we cant provide the level of detail and assessment that Council seem to think is necessary at this stage."

16. Stormwater Discharge Ewingsdale Road

See response from ACCOR at **Annexure 6**.

17. E Zones

See response from AWC dated 9 May 2018 regarding flora and fauna issues at **Annexure 3** and response from ACCOR at **Annexure 6**.

18. Stormwater

See response from AWC dated 9 May 2018 at **Annexure 3** and response from ACCOR at **Annexure 6**.

19. Threatened Species

See response from AWC dated 9 May 2018 at **Annexure 3**.

20. Offsets

See response from AWC dated 9 May 2018 at **Annexure 3**.

21. State Environmental Planning Policy (Coastal Management) 2018

This State Environmental Planning Policy (SEPP) came into force on 3 April 2018. Clause 21 of the Policy is in the following terms:

> *"**21 Savings and transitional provisions***
> *Note. See also section 27 (Granting of development consent relating to coastal protection works) of the Coastal Management Act 2016.*

(1) The former planning provisions continue to apply (and this Policy does not apply) to a development application lodged, but not finally determined, immediately before the commencement of this Policy in relation to land to which this Policy applies."

As this Development Application was lodged prior to the date on which the Policy came into force, the provisions of the Policy do not apply to the Development Application.

RFI 14 MAY 2018

The issues raised in this RFI are addressed in the ACCOR Report at **Annexure 6**.

RFI 19 JUNE 2018

An amended State Environmental Planning Policy No. Objection to the 40 hectare development standard in Clause 11 of Byron Local Environmental Plan 1988 is attached at **Annexure 4** (DAC Planning Pty Ltd, July 2018).

NORTHERN REGIONAL PLANNING PANEL MINUTES – 19 JUNE 2018

The applicants are aware of the summary of issues raised at the Northern JRPP meeting, however it is considered that the issues have been adequately addressed in the original Development Application and this RFI response.

RFI EMAIL 3 JULY 2018

See attached Technical Memorandum, AWC 9 August 2018 at **Annexure 5**.

We trust that this response to the various RFIs will enable Council to finalise assessment of the Development Application.

Please do not hesitate to contact Darryl Anderson should you require any further information in relation to this matter.

Yours faithfully
DAC Planning Pty Ltd

Darryl Anderson
Director

Encl.

Annexures

Annexure 1	Amended Application Plans
Annexure 2	Response from Ennismore Field
Annexure 3	Response from AWC
Annexure 4	Amended SEPP1 Objection
Annexure 5	AWC response to email RFI of 3 July 2018
Annexure 6	ACCOR Engineering Assessment, Rev 7, September 2018

Notes:

100m 200m 300m 400m

ALL DATA HAS BEEN SCALED TO MGA GRID DISTANCE

SEPP 14 - Coastal Wetlands Zone Boundary

SEPP 14 digitised from AWC's Figure 1.2: Zoning, SEPP 14 & Cadastral plan

Disclaimer:

- *Aerial imagery source - SIX Portal 28.09.2017.*
- *The location of aerial imagery is approximate only.*
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LGA:	**BYRON**	RR:	**1:5000 @ A3**	Surveyor:	**CAA PF**
Parish:	**BYRON**	Datum:	**N/A**	Drawn:	**SB**
County:	**ROUS**	Origin:	**N/A**	Data:	**N/A**
FB, LB:	**N/A**	RL:	**N/A**	Sheet:	**1 of 8**

PLAN SHOWING PROPOSED SUBDIVISION OF LOT 1 DP 201626, LOT 2 DP 542178, LOT 1 DP 780242, LOT 2 DP 818403 & LOT 1 DP 520063 - WEST BYRON
Ewingsdale Road

Chris Abbott Surveying
Land and Engineering Surveyors

10 Martin St | Ballina NSW 2478 | T 02 6686 8939 | F 02 6686 8139 | E office@chrisabbottsurveying.com | www.chrisabbottsurveying.com.au | Chris Abbott Surveying Pty Ltd | ABN 68 155 795 994 | Liability limited by a scheme approved under Professional Standards Legislation

Notes:

20m 40m 60m 80m

* LOCATION OF DUPLEX LOTS

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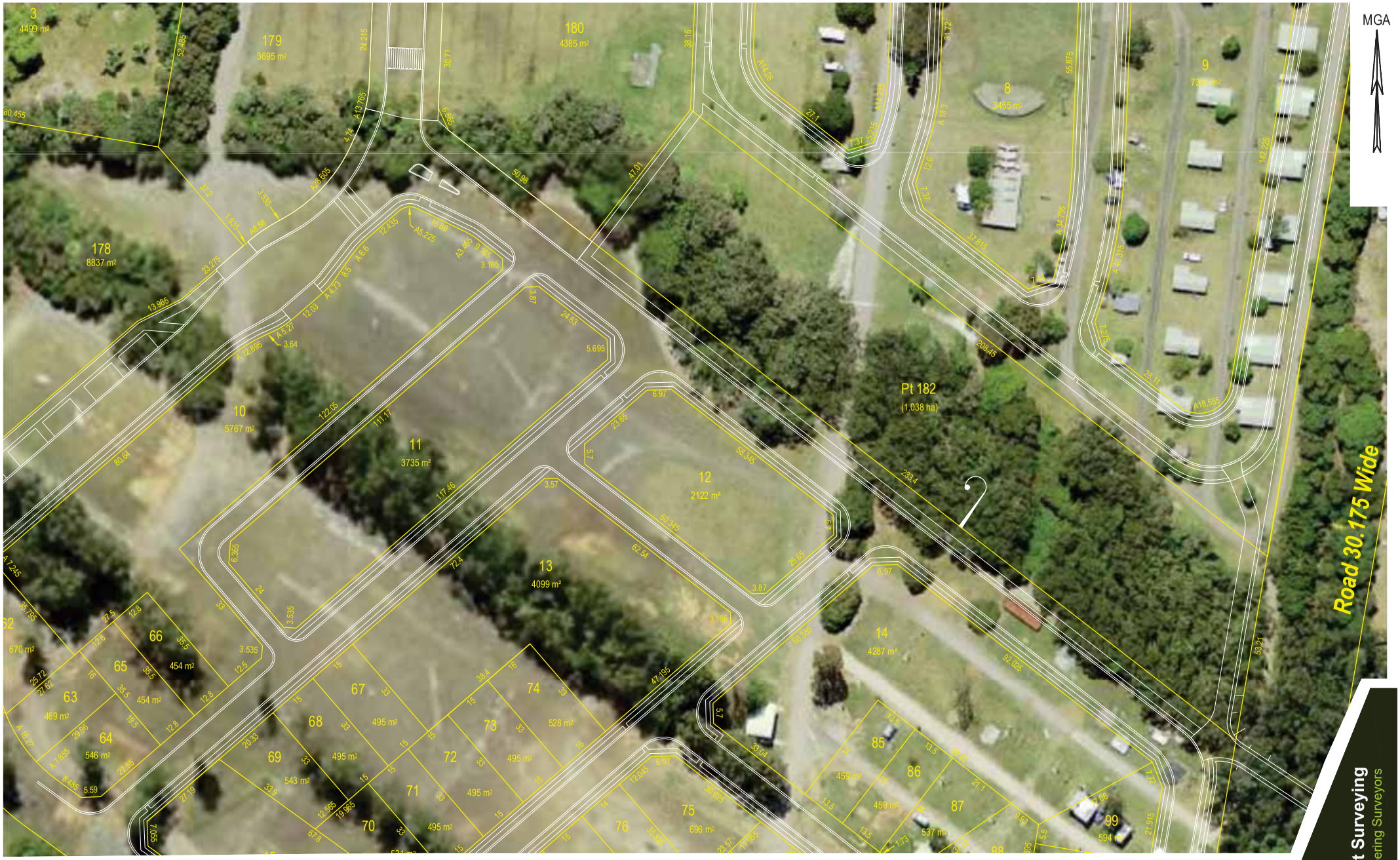

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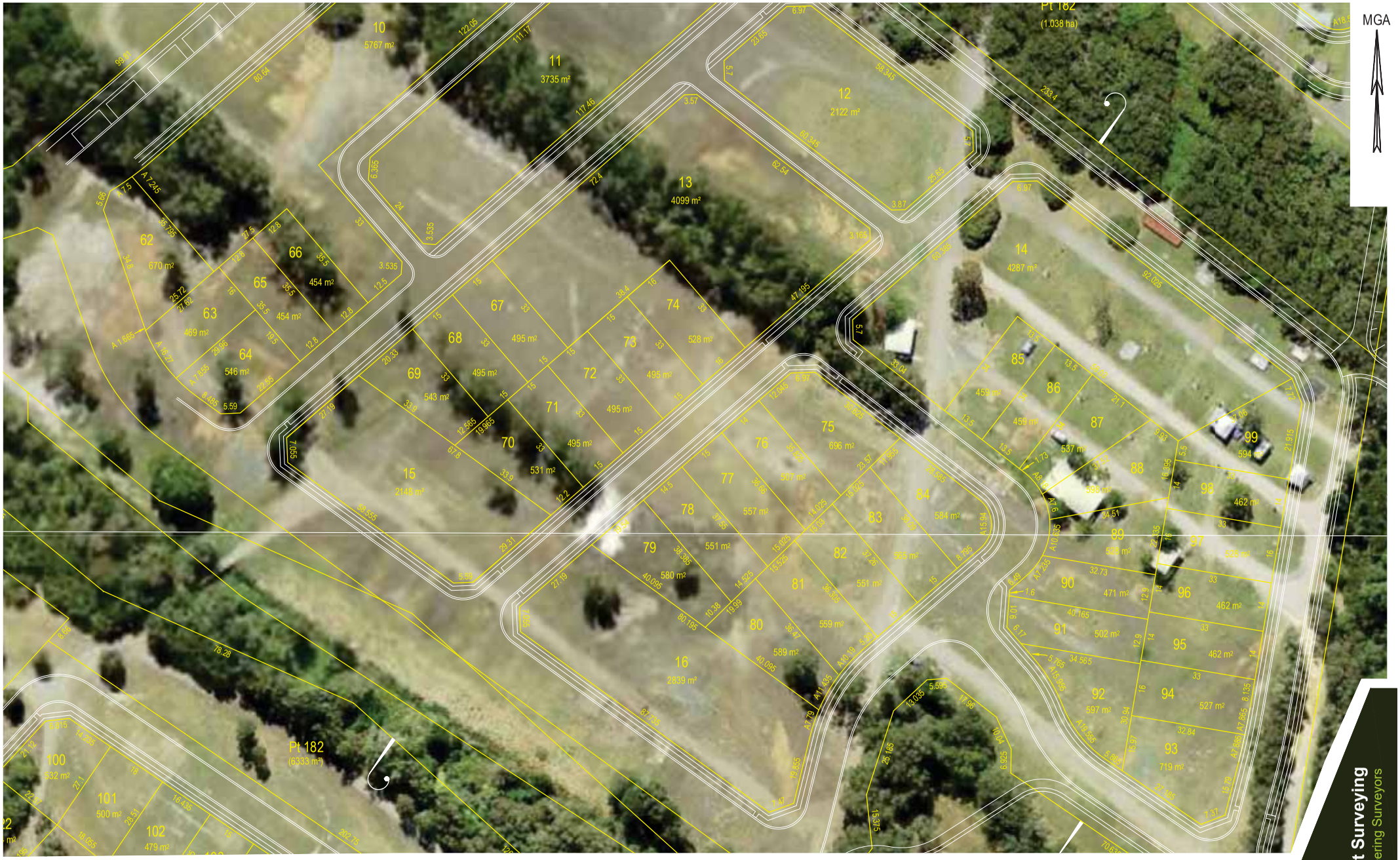

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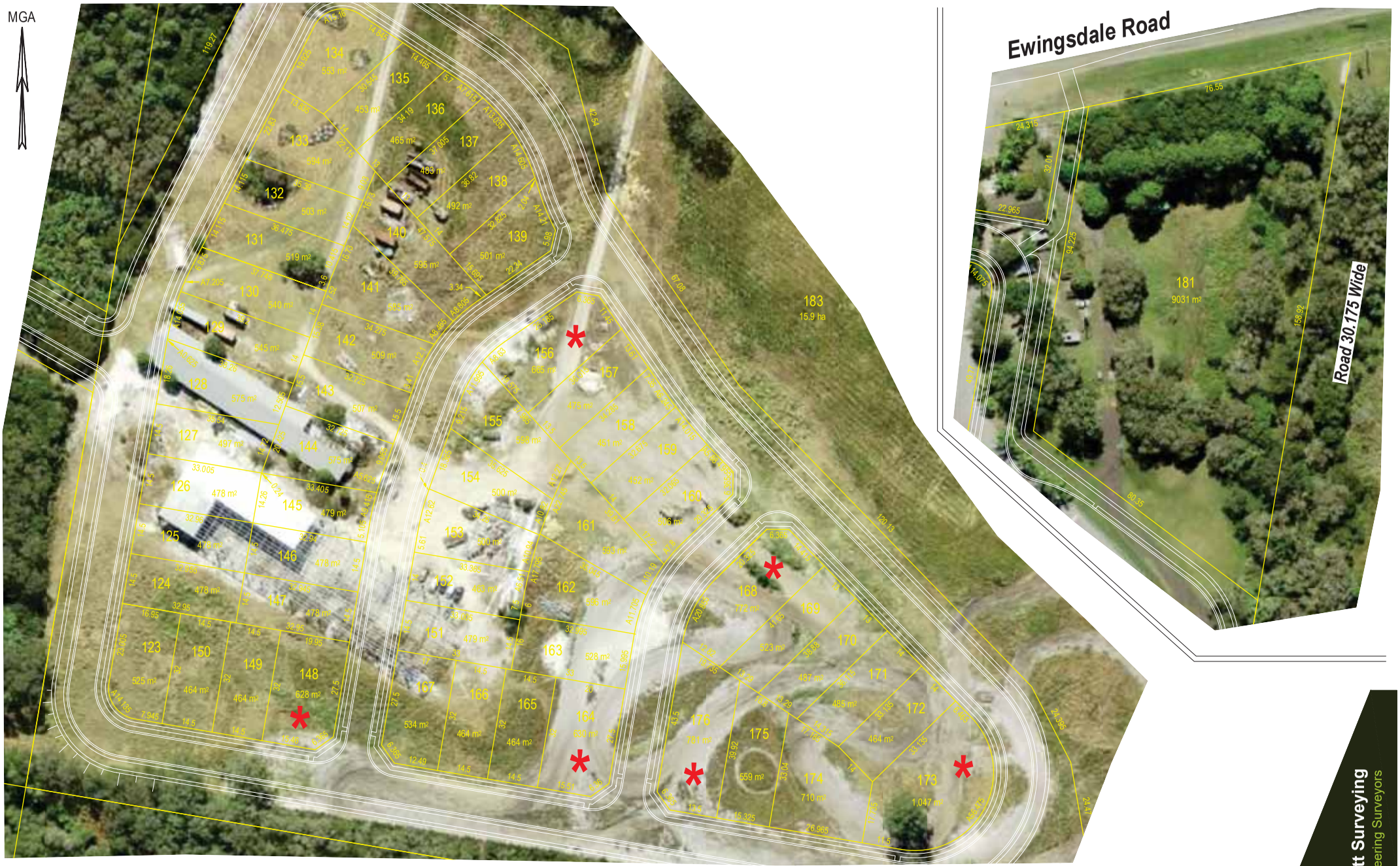

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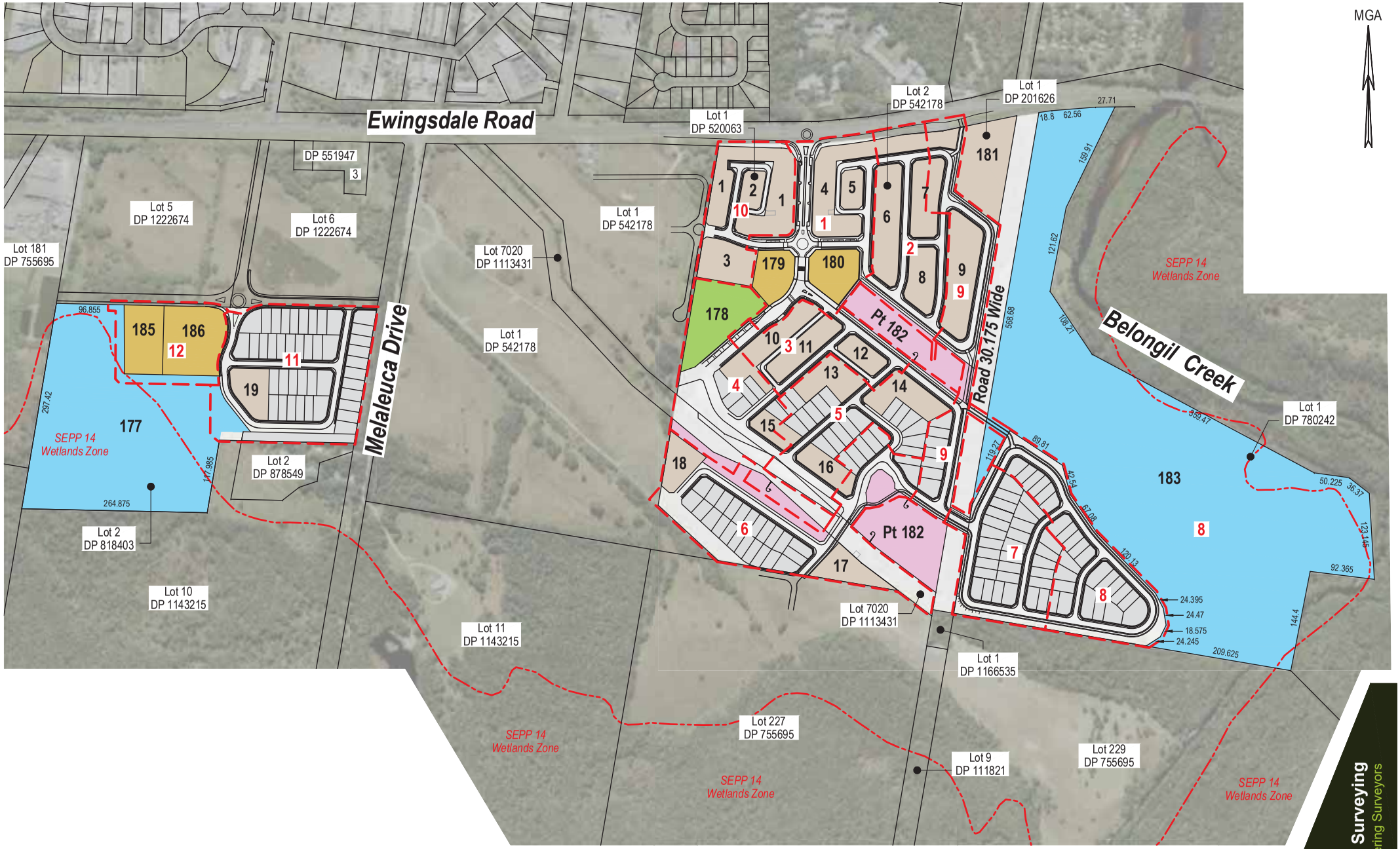

Notes:

100m 200m 300m 400m

INDICATIVE SUPERLOTS / COMMUNITY TITLE LOTS

STANDARD LOTS

SEPP 14 - Coastal Wetlands Zone Boundary

SEPP 14 digitised from AWC's Figure 1.2: Zoning, SEPP 14 & Cadastral plan

11 *Stage 11*

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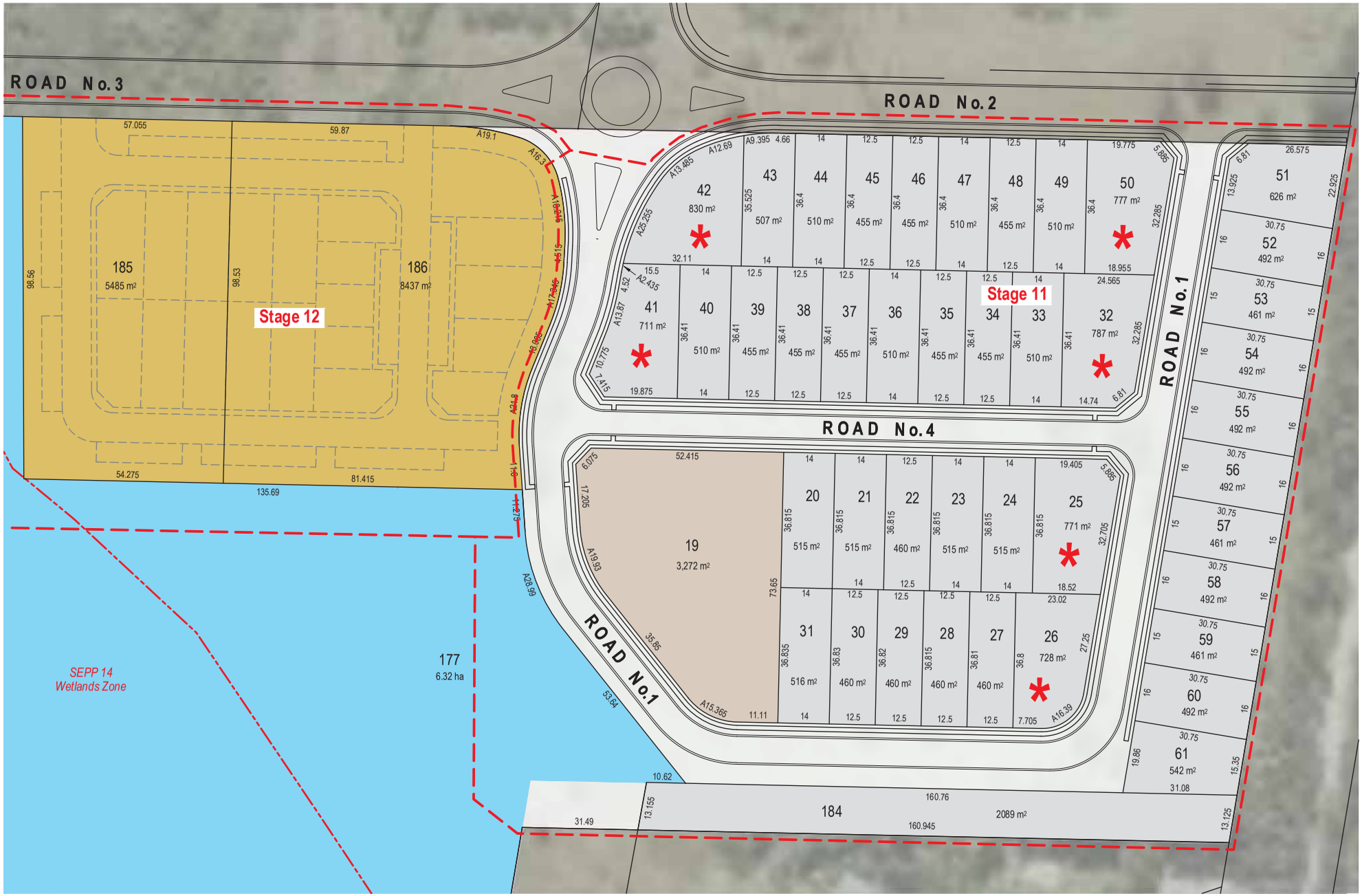

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* LOCATION OF DUPLEX LOTS

INDICATIVE SUPERLOTS / COMMUNITY TITLE LOTS

STANDARD LOTS

SEPP 14 - Coastal Wetlands Zone Boundary

Disclaimer:

- *Aerial imagery source - SIX Portal 28.09.2017.*
- *The location of aerial imagery is approximate only.*
- *Easements have been omitted for clarity*
- *All data has been scaled to MGA grid distance*

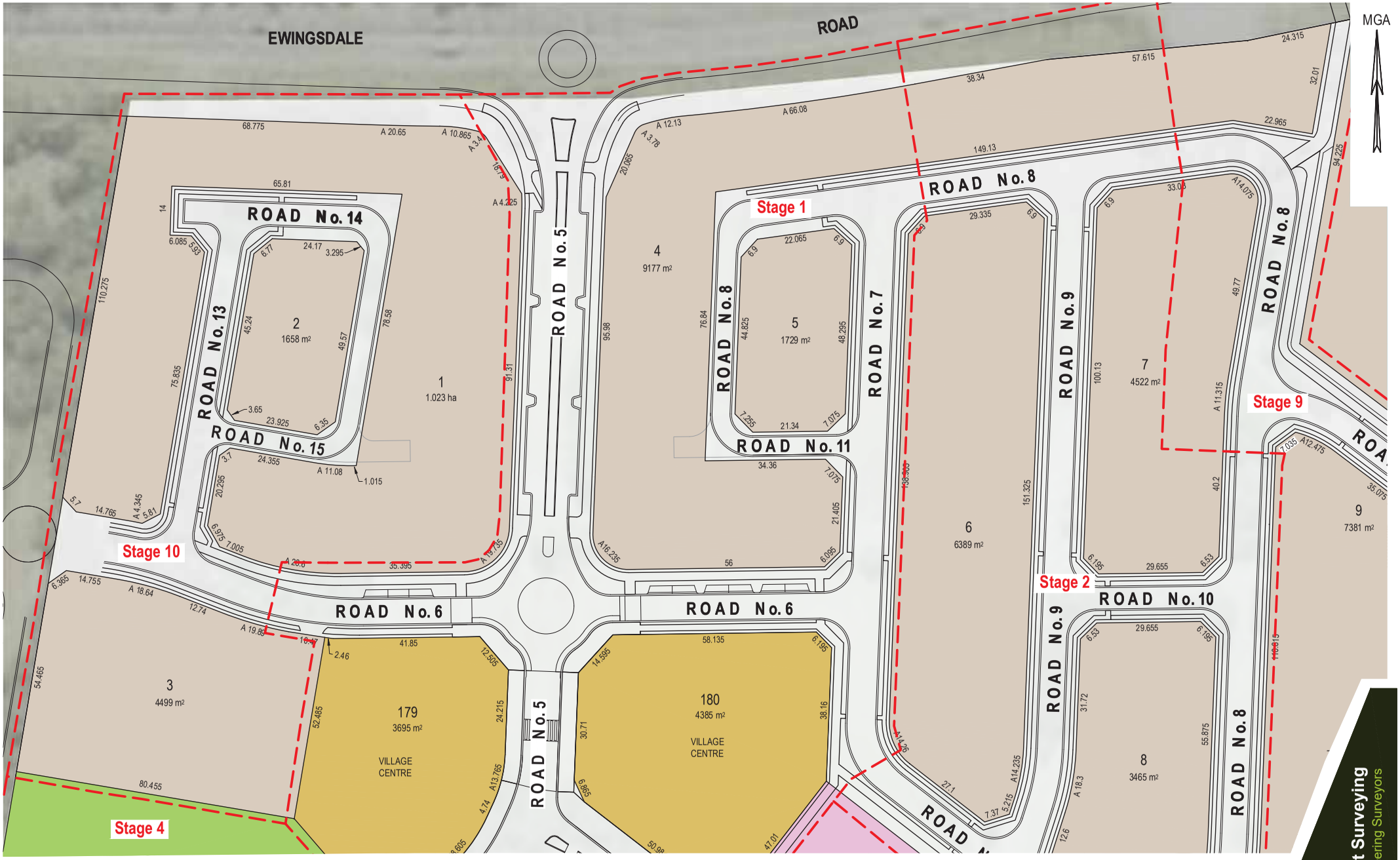
Locality:	**BYRON BAY**	Date:	**10.09.2018**	Ref:	**15024-9G**
LGA:	**BYRON**	RR:	**1:1000 @ A3**	Surveyor:	**CAA PF**
Parish:	**BYRON**	Datum:	**N/A**	Drawn:	**SB**
County:	**ROUS**	Origin:	**N/A**	Data:	**N/A**
FB, LB:	**N/A**	RL:	**N/A**	Sheet:	**2 of 9**

PLAN SHOWING PROPOSED SUBDIVISION OF LOT 1 DP 201626, LOT 2 DP 542178, LOT 1 DP 780242, LOT 2 DP 818403 & LOT 1 DP 520063 - WEST BYRON

Ewingsdale Road

Chris Abbott Surveying
Land and Engineering Surveyors

10 Martin St | Ballina NSW 2478 | T 02 6686 8939 | F 02 6686 8139 | E office@chrisabbottsurveying.com | www.chrisabbottsurveying.com.au | Chris Abbott Surveying Pty Ltd | ABN 68 155 795 994 | Liability limited by a scheme approved under Professional Standards Legislation



Notes:

20m 40m 60m 80m

INDICATIVE SUPERLOTS / COMMUNITY TITLE LOTS

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Locality:	**BYRON BAY**	Date:	**10.09.2018**	Ref:	**15024-10G**
LGA:	**BYRON**	RR:	**1:1000 @ A3**	Surveyor:	**CAA PF**
Parish:	**BYRON**	Datum:	**N/A**	Drawn:	**SB**
County:	**ROUS**	Origin:	**N/A**	Data:	**N/A**
FB, LB:	**N/A**	RL:	**N/A**	Sheet:	**3 of 9**

PLAN SHOWING PROPOSED SUBDIVISION OF LOT 1 DP 201626, LOT 2 DP 542178, LOT 1 DP 780242, LOT 2 DP 818403 & LOT 1 DP 520063 - WEST BYRON

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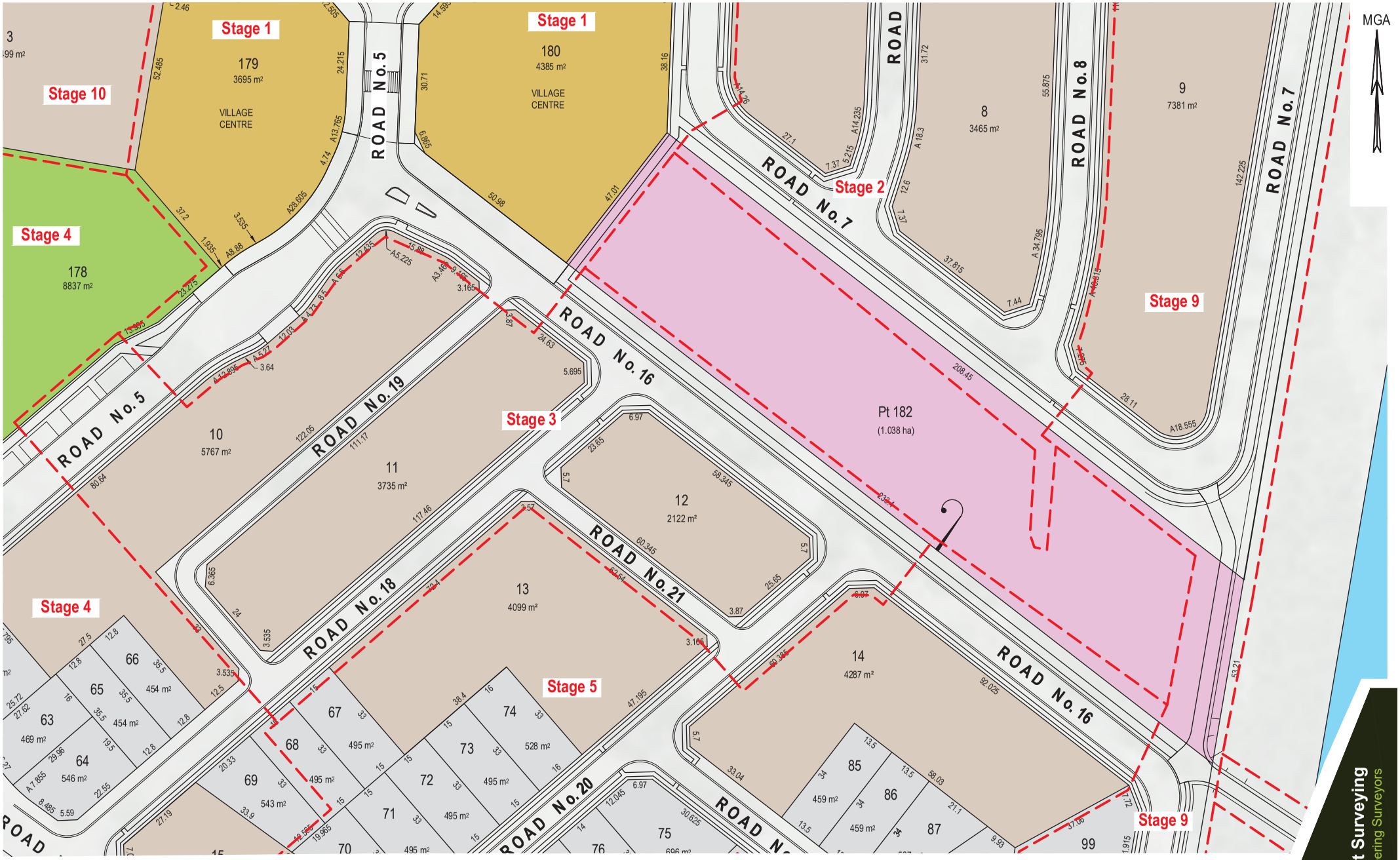

Notes:

20m 40m 60m 80m

* LOCATION OF DUPLEX LOTS

INDICATIVE SUPERLOTS / COMMUNITY TITLE LOTS

STANDARD LOTS

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Locality:	**BYRON BAY**
LGA:	**BYRON**
Parish:	**BYRON**
County:	**ROUS**
FB, LB:	**N/A**

Date:	**10.09.2018**
RR:	**1:1000 @ A3**
Datum:	**N/A**
Origin:	**N/A**
RL:	**N/A**

Ref:	**15024-11G**
Surveyor:	**CAA PF**
Drawn:	**SB**
Data:	**N/A**
Sheet:	**4 of 9**

PLAN SHOWING PROPOSED SUBDIVISION OF LOT 1 DP 201626, LOT 2 DP 542178, LOT 1 DP 780242, LOT 2 DP 818403 & LOT 1 DP 520063 - WEST BYRON

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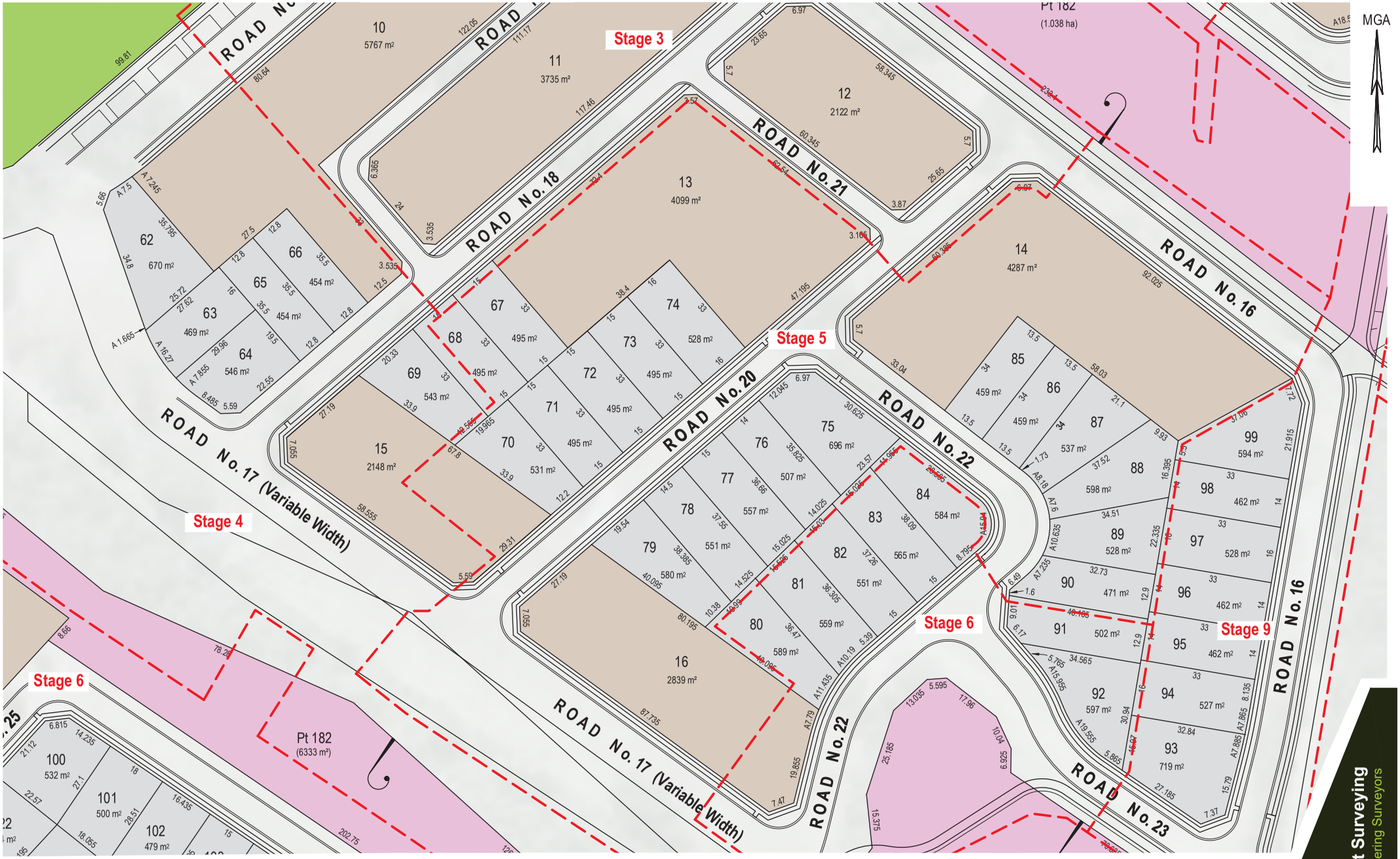

Notes:

20m 40m 60m 80m

* LOCATION OF DUPLEX LOTS

INDICATIVE SUPERLOTS / COMMUNITY TITLE LOTS

STANDARD LOTS

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Locality:	**BYRON BAY**	Date:	**10.09.2018**	Ref:	**15024-12G**
LGA:	**BYRON**	RR:	**1:1000 @ A3**	Surveyor:	**CAA PF**
Parish:	**BYRON**	Datum:	**N/A**	Drawn:	**SB**
County:	**ROUS**	Origin:	**N/A**	Data:	**N/A**
FB, LB:	**N/A**	RL:	**N/A**	Sheet:	**5 of 9**

PLAN SHOWING PROPOSED SUBDIVISION OF LOT 1 DP 201626, LOT 2 DP 542178, LOT 1 DP 780242, LOT 2 DP 818403 & LOT 1 DP 520063 - WEST BYRON

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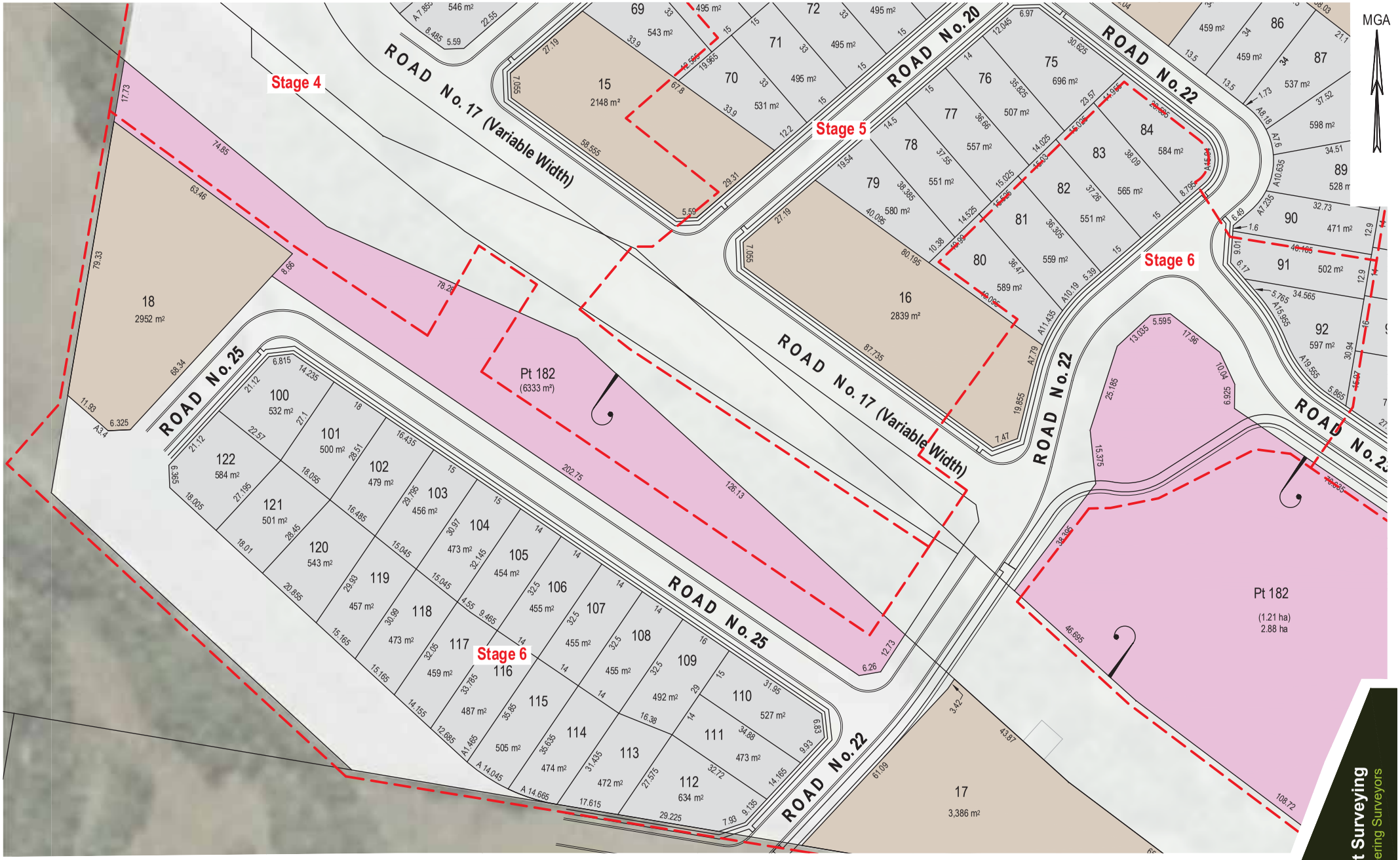

Notes:

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Locality:	**BYRON BAY**
LGA:	**BYRON**
Parish:	**BYRON**
County:	**ROUS**
FB, LB:	**N/A**

Date:	**10.09.2018**
RR:	**1:1000 @ A3**
Datum:	**N/A**
Origin:	**N/A**
RL:	**N/A**

Ref:	**15024-13G**
Surveyor:	**CAA PF**
Drawn:	**SB**
Data:	**N/A**
Sheet:	**6 of 9**

PLAN SHOWING PROPOSED SUBDIVISION OF LOT 1 DP 201626, LOT 2 DP 542178, LOT 1 DP 780242, LOT 2 DP 818403 & LOT 1 DP 520063 - WEST BYRON

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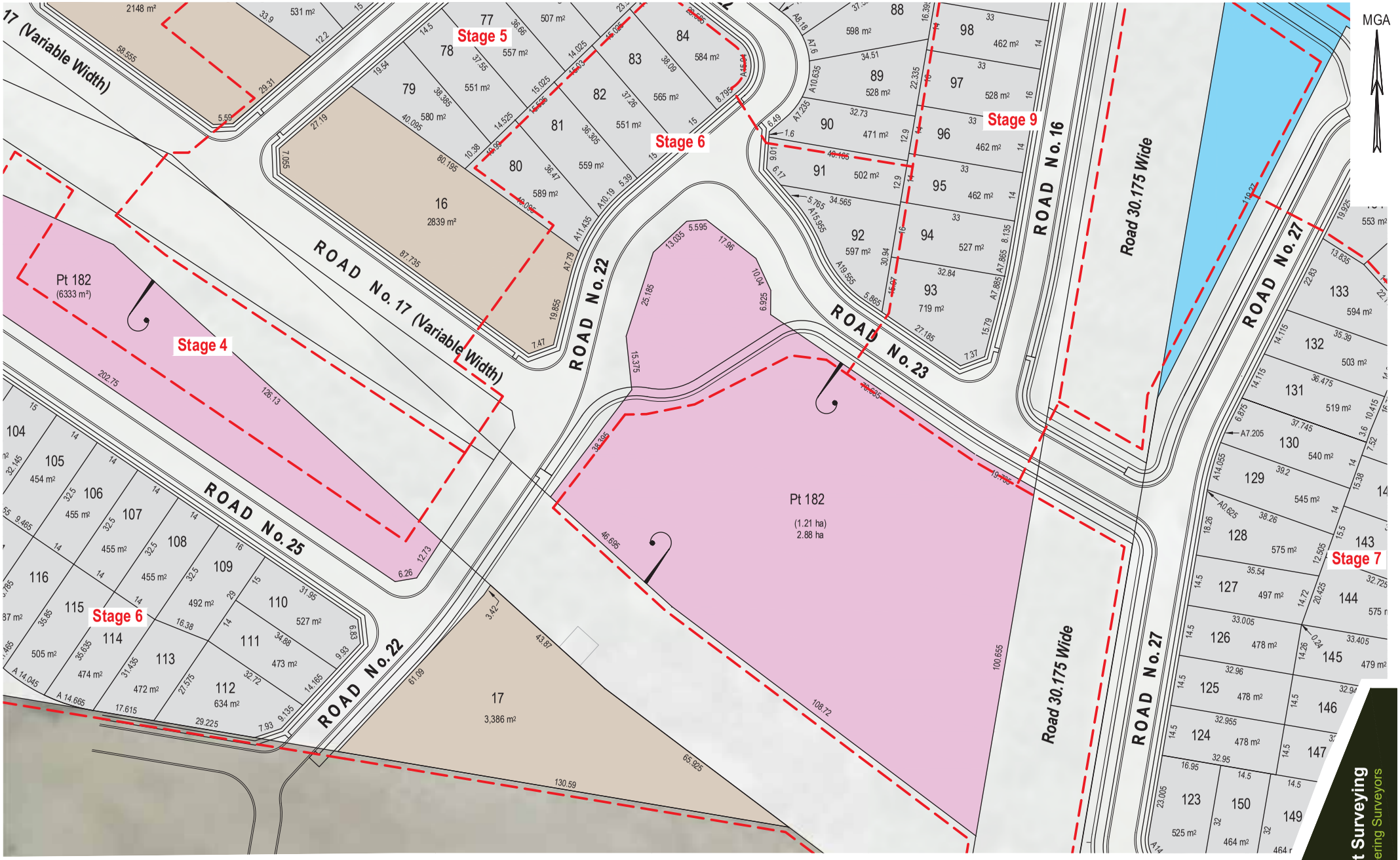

Notes:

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* LOCATION OF DUPLEX LOTS

INDICATIVE SUPERLOTS / COMMUNITY TITLE LOTS

STANDARD LOTS

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Locality:	**BYRON BAY**	Date:	**10.09.2018**	Ref:	**15024-14G**
LGA:	**BYRON**	RR:	**1:1000 @ A3**	Surveyor:	**CAA PF**
Parish:	**BYRON**	Datum:	**N/A**	Drawn:	**SB**
County:	**ROUS**	Origin:	**N/A**	Data:	**N/A**
FB, LB:	**N/A**	RL:	**N/A**	Sheet:	**7 of 9**

PLAN SHOWING PROPOSED SUBDIVISION OF LOT 1 DP 201626, LOT 2 DP 542178, LOT 1 DP 780242, LOT 2 DP 818403 & LOT 1 DP 520063 - WEST BYRON

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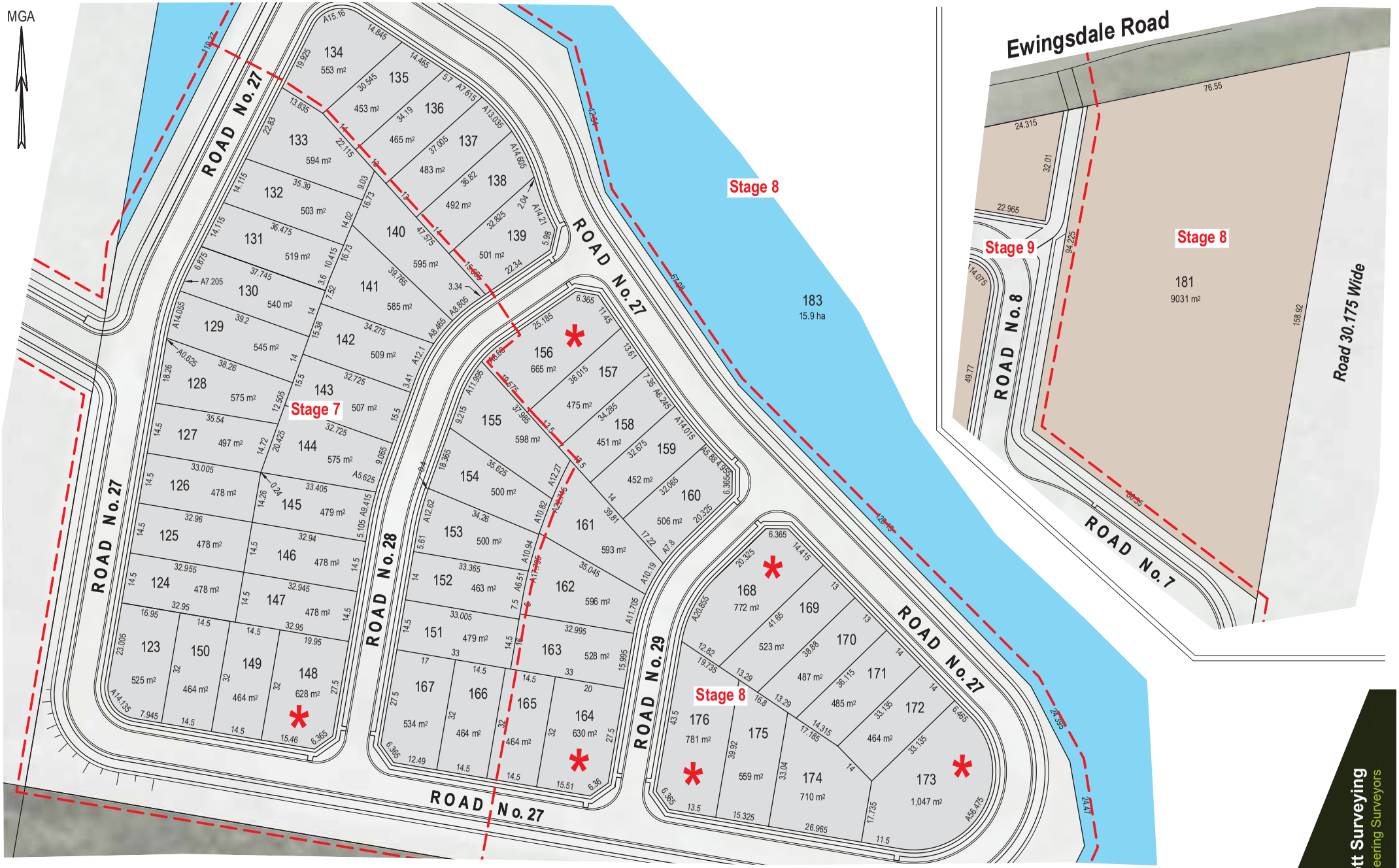

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Locality:	**BYRON BAY**
LGA:	**BYRON**
Parish:	**BYRON**
County:	**ROUS**
FB, LB:	**N/A**

Date:	**10.09.2018**
RR:	**1:1000 @ A3**
Datum:	**N/A**
Origin:	**N/A**
RL:	**N/A**

Ref:	**15024-15G**
Surveyor:	**CAA PF**
Drawn:	**SB**
Data:	**N/A**
Sheet:	**8 of 9**

PLAN SHOWING PROPOSED SUBDIVISION OF LOT 1 DP 201626, LOT 2 DP 542178, LOT 1 DP 780242, LOT 2 DP 818403 & LOT 1 DP 520063 - WEST BYRON

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STAGE 1		
LOT	AREA-m²	ZONE
Pt 4		R3
5	1729	R3
179	3695	B1
180	4385	B1

STAGE 2		
LOT	AREA-m²	ZONE
Pt 4		R3
6	6389	R3
Pt 7		R3
8	3465	R3

STAGE 3		
LOT	AREA-m²	ZONE
Pt 10		R3
11	3735	R3
12	2122	R3

STAGE 4		
LOT	AREA-m²	ZONE
Pt 10		R2 R3
Pt 15		R2
62	670	R2
63	469	R2
64	546	R2
65	454	R2
66	454	R2
69	543	R2
178	8837	RE1
Pt 182		R2 E3

STAGE 5		
LOT	AREA-m²	ZONE
Pt 15		R2
Pt 16		R2
13	4099	R2 R3
14	4287	R2 R3
67	495	R2
68	495	R2
70	531	R2
71	495	R2
72	495	R2
73	495	R2
74	528	R2
75	696	R2
76	507	R2
77	557	R2
78	551	R2
79	580	R2
85	459	R2
86	459	R2
87	537	R2
88	598	R2
89	528	R2
90	471	R2

STAGE 6		
LOT	AREA-m²	ZONE
Pt 182		E3 R2
17	3386	R2
18	2952	R2
80	589	R2
81	559	R2
82	551	R2
83	565	R2
84	584	R2
91	502	R2
92	597	R2
100	532	R2
101	500	R2
102	479	R2
103	456	R2
104	473	R2
105	454	R2
106	455	R2
107	455	R2
108	455	R2
109	492	R2
110	527	R2
111	473	R2
112	634	R2
113	472	R2
114	474	R2
115	505	R2
116	487	R2
117	459	R2
118	473	R2
119	457	R2
120	543	R2
121	501	R2
122	584	R2

STAGE 7		
LOT	AREA-m²	ZONE
123	525	R2
124	478	R2
125	478	R2
126	478	R2
127	497	R2
128	575	R2
129	545	R2
130	540	R2
131	519	R2
132	503	R2
133	594	R2
140	595	R2
141	585	R2
142	509	R2
143	507	R2
144	575	R2
145	479	R2
146	478	R2
147	478	R2
148	628	R2
149	464	R2
150	464	R2
151	479	R2
152	463	R2
153	500	R2
154	500	R2
155	598	R2
166	464	R2
167	534	R2

STAGE 8		
LOT	AREA-m²	ZONE
134	553	R2
135	453	R2
136	465	R2
137	483	R2
138	492	R2
139	501	R2
156	665	R2
157	475	R2
158	451	R2
159	452	R2
160	506	R2
161	593	R2
162	596	R2
163	528	R2
164	630	R2
165	464	R2
168	772	R2
169	523	R2
170	487	R2
171	485	R2
172	464	R2
173	1047	R2
174	710	R2
175	559	R2
176	761	R2
181	9031	E2
183	15.9ha	E2

STAGE 9		
LOT	AREA-m²	ZONE
Pt 4		R3
Pt 7		R3
Pt 182		E3
9	7381	R3
93	719	R2
94	527	R2
95	462	R2
96	462	R2
97	528	R2
98	462	R2
99	594	R2

STAGE 10		
LOT	AREA-m²	ZONE
1	10225	R3
2	1658	R3
3	4499	R3

STAGE 11		
LOT	AREA-m²	ZONE
19	3272	R2
20	515	R2
21	515	R2
22	460	R2
23	515	R2
24	515	R2
25	771	R2
26	728	R2
27	460	R2
28	460	R2
29	460	R2
30	460	R2
31	516	R2
32	787	R2
33	510	R2
34	455	R2
35	455	R2
36	510	R2
37	455	R2
38	455	R2
39	455	R2
40	510	R2
41	711	R2
42	830	R2
43	507	R2
44	510	R2
45	455	R2
46	455	R2
47	510	R2
48	455	R2
49	510	R2
50	777	R2
51	626	R2
52	492	R2
53	461	R2
54	492	R2
55	492	R2
56	492	R2
57	461	R2
58	492	R2
59	461	R2
60	492	R2
61	542	R2
Pt 177		E2 E3 7A
184	2089	R2 E3

STAGE 12		
LOT	AREA-m²	ZONE
185	5485	IN2
186	8437	IN2

Notes:

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Locality: **BYRON BAY**
LGA: **BYRON**
Parish: **BYRON**
County: **ROUS**
FB, LB: **N/A**

Date: **10.09.2018**
RR: **1:1000 @ A3**
Datum: **N/A**
Origin: **N/A**
RL: **N/A**

Ref: **15024-16G**
Surveyor: **CAA PF**
Drawn: **SB**
Data: **N/A**
Sheet: **9 of 9**

PLAN SHOWING PROPOSED SUBDIVISION OF LOT 1 DP 201626, LOT 2 DP 542178, LOT 1 DP 780242, LOT 2 DP 818403 & LOT 1 DP 520063 - WEST BYRON
Ewingsdale Road

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SCALE 1:2500 @ A1
SCALE 1:5000 @ A3

NOT FOR CONSTRUCTION

This drawing has been assigned an electronic code that signifies the drawing has been checked and approved by:

Issue	Description	Date	Drawn	Approved
D	RE-ISSUED FOR DA	22.08.18	SJC	RNS
C	REVISED FOR DA	08.06.18	SJC	RNS
B	ISSUED FOR DA	26.09.17	JER	RNS
A	ISSUED FOR INFORMATION	07.09.17	JER	RNS

Actual size 100 200

North

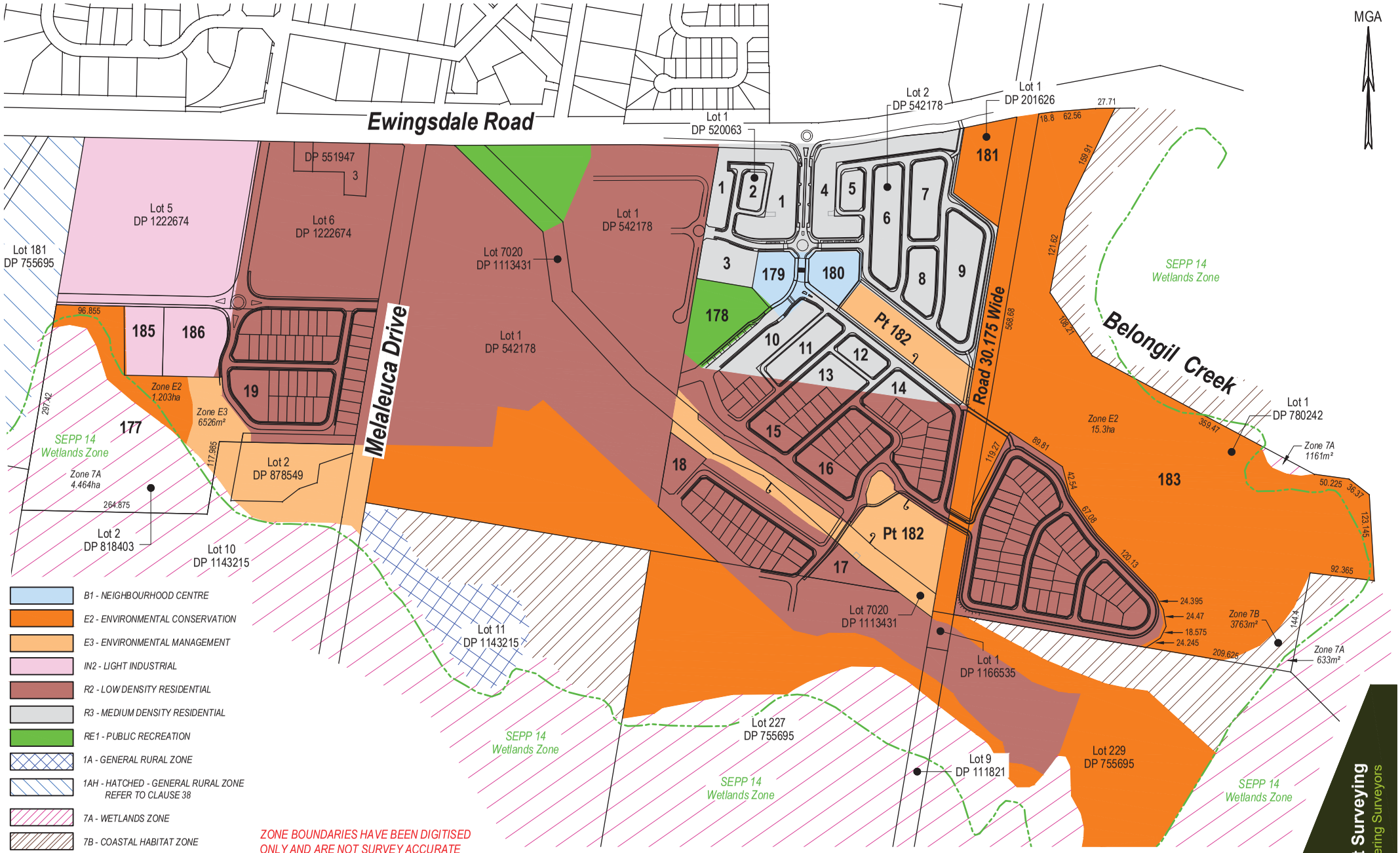
Client: WEST BYRON

ACOR Consultants (NNSW) Pty Ltd
Level 1,54 Union Street
Cooks Hill, Newcastle NSW 2300
T +61 2 4929 4811
ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project: WEST BYRON URBAN RELEASE AREA
DEVELOPMENT APPLICATION

Drawing Title: STAGING PLAN

Drawn	Date	Scale A1	QA Chec	Date
JER	SEPT 2017	1:2500		
Designd	Project No.	Dwg. No.	Issue
SJO	NE160352	FIG 22.1	D



Notes:

100m 200m 300m 400m

ALL DATA HAS BEEN SCALED TO MGA GRID DISTANCE

SEPP 14 - Coastal Wetlands Zone Boundary

SEPP 14 digitised from AWC's Figure 1.2: Zoning, SEPP 14 & Cadastral plan

Disclaimer:

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Locality:	**BYRON BAY**	Date:	**18.07.2018**	Ref:	**15024-8F**
LGA:	**BYRON**	RR:	**1:5000 @ A3**	Surveyor:	**CAA PF**
Parish:	**BYRON**	Datum:	**N/A**	Drawn:	**SB**
County:	**ROUS**	Origin:	**N/A**	Data:	**N/A**
FB, LB:	**N/A**	RL:	**N/A**	Sheet:	**1 of 8**

PLAN SHOWING PROPOSED SUBDIVISION OF LOT 1 DP 201626, LOT 2 DP 542178, LOT 1 DP 780242, LOT 2 DP 818403 & LOT 1 DP 520063 - WEST BYRON

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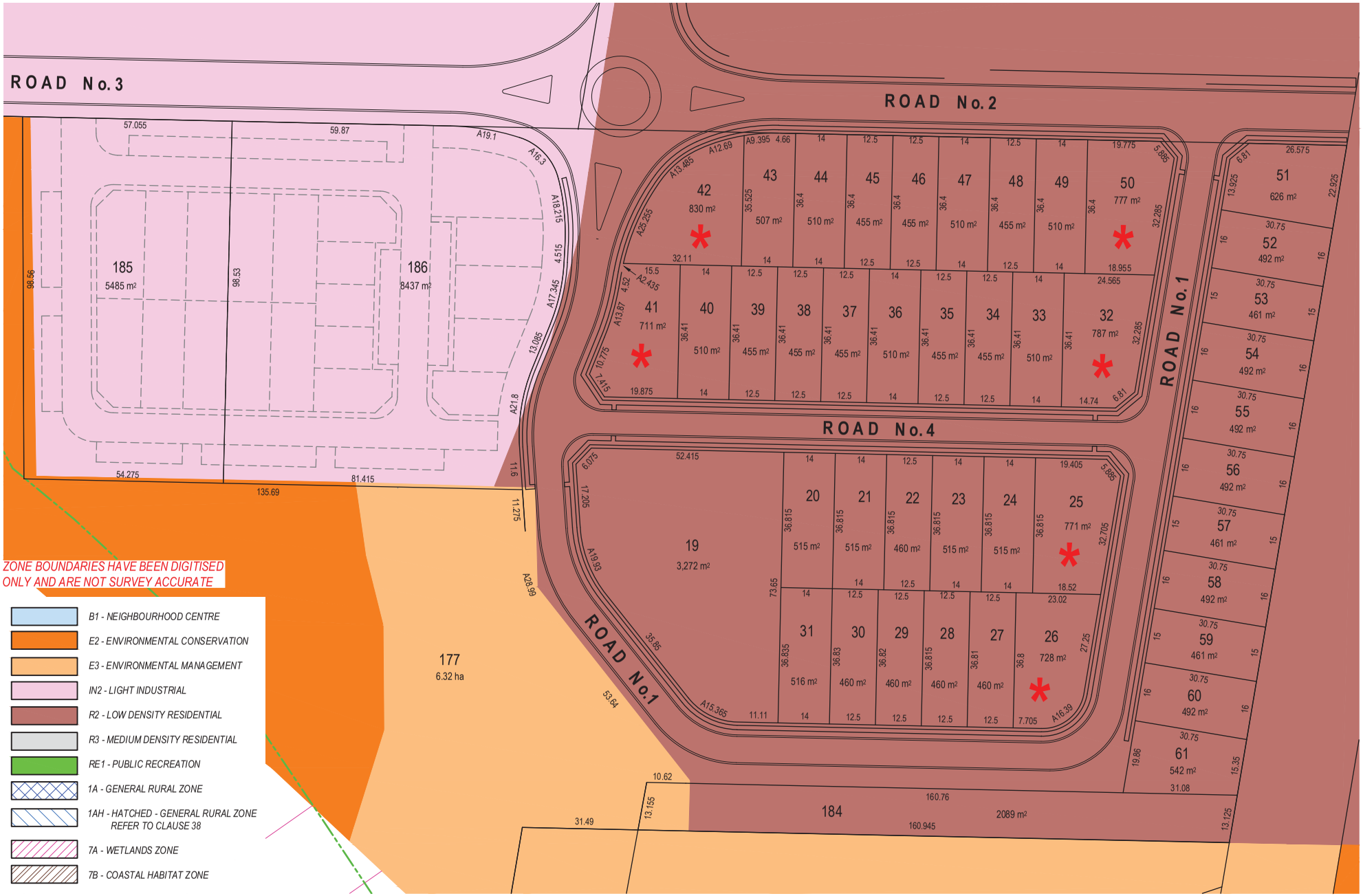

Notes:

20m 40m 60m 80m

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SEPP 14 - Coastal Wetlands Zone Boundary

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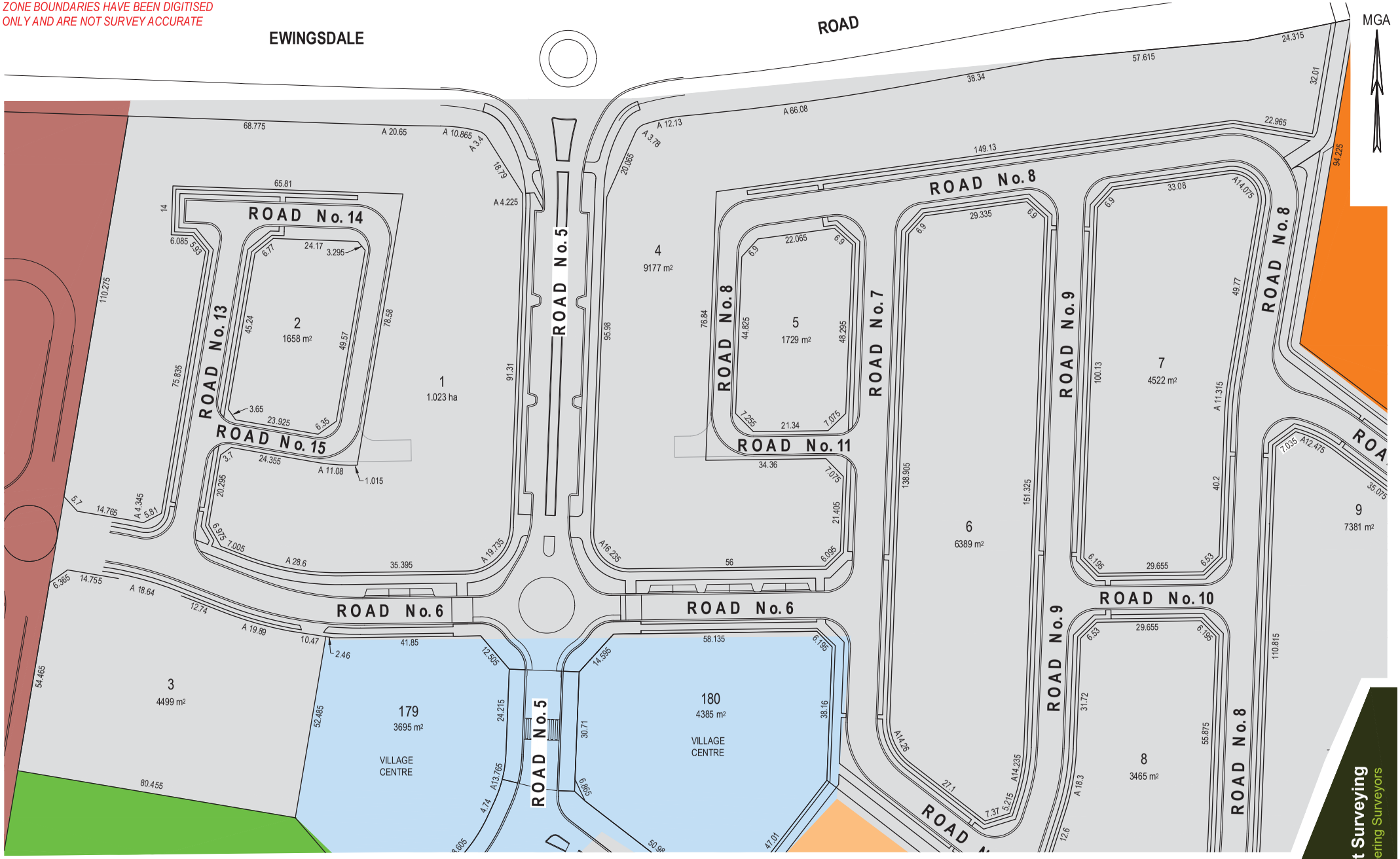
ZONE BOUNDARIES HAVE BEEN DIGITISED
ONLY AND ARE NOT SURVEY ACCURATE



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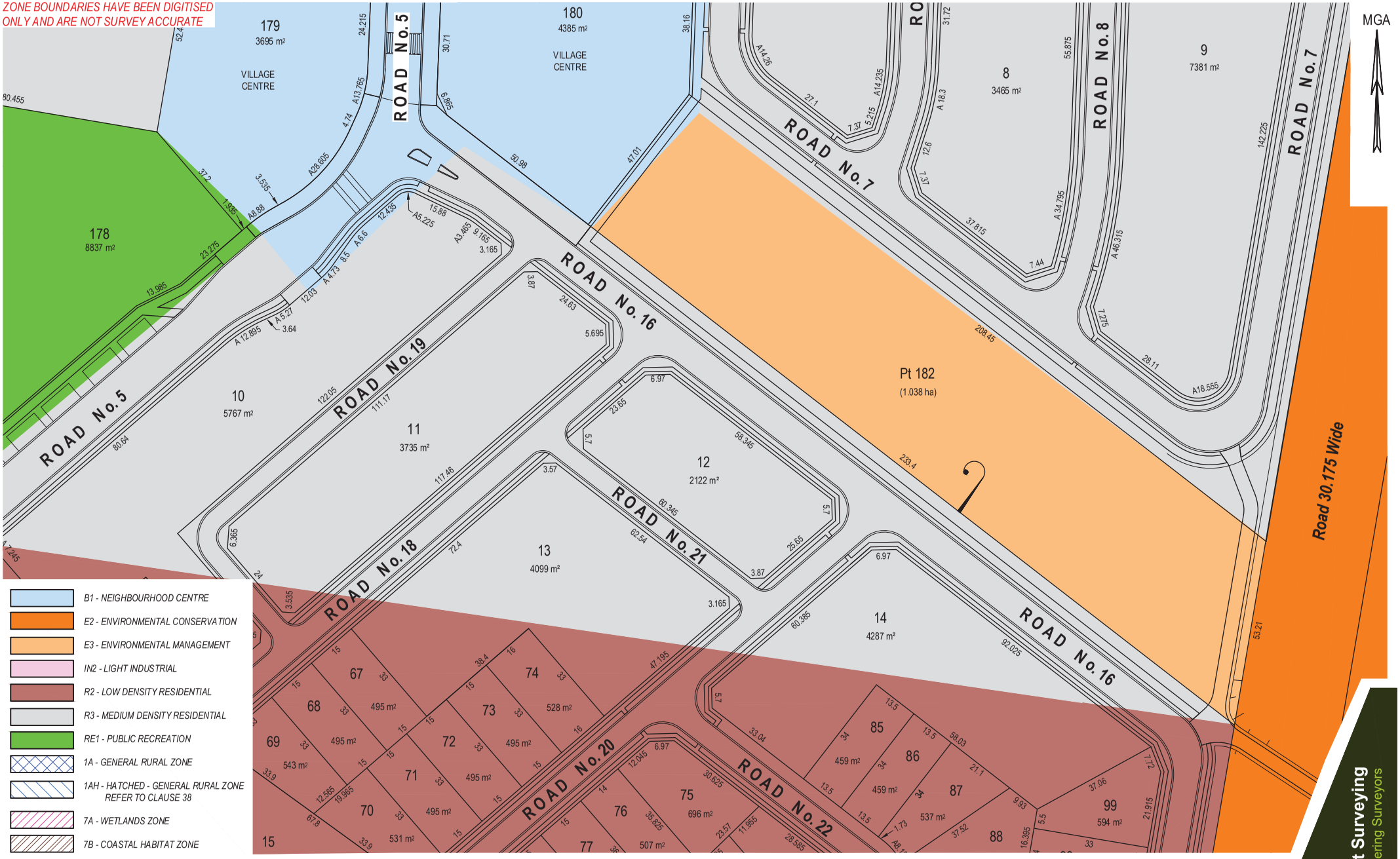

Notes:

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- *Zone boundaries digitised from 1350_WBB_LZN_001_007_20140403, LEP Map Sheets 0712, 0713, 0812 & 0813*

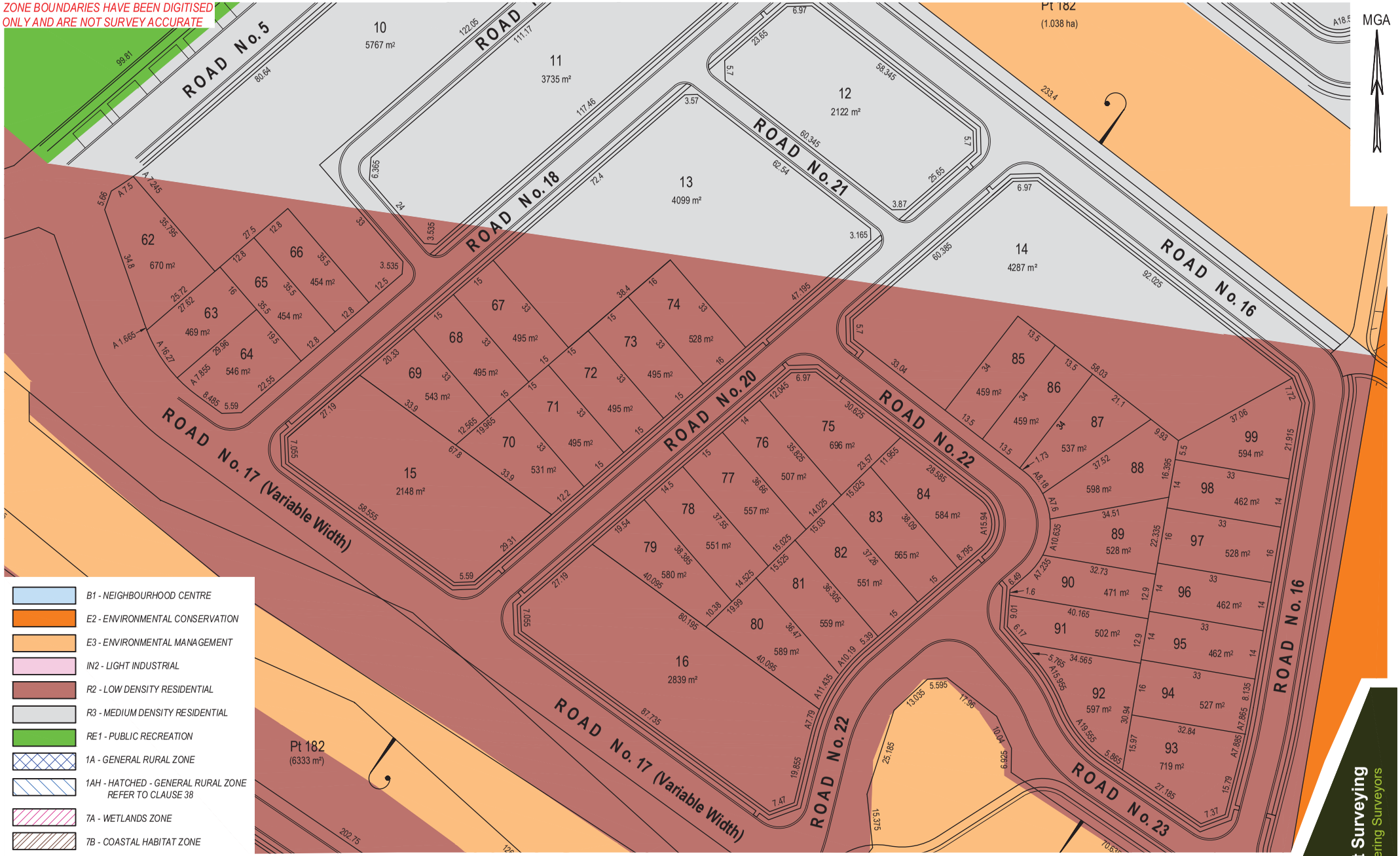
Locality:	**BYRON BAY**	Date:	**18.07.2018**	Ref:	**15024-11F**
LGA:	**BYRON**	RR:	**1:1000 @ A3**	Surveyor:	**CAA PF**
Parish:	**BYRON**	Datum:	**N/A**	Drawn:	**SB**
County:	**ROUS**	Origin:	**N/A**	Data:	**N/A**
FB, LB:	**N/A**	RL:	**N/A**	Sheet:	**4 of 8**

PLAN SHOWING PROPOSED SUBDIVISION OF LOT 1 DP 201626, LOT 2 DP 542178, LOT 1 DP 780242, LOT 2 DP 818403 & LOT 1 DP 520063 - WEST BYRON

Ewingsdale Road

Chris Abbott Surveying
Land and Engineering Surveyors

10 Martin St | Ballina NSW 2478 | T 02 6686 8939 | F 02 6686 8139 | E office@chrisabbottsurveying.com | www.chrisabbottsurveying.com.au | Chris Abbott Surveying Pty Ltd | ABN 68 155 795 994 | Liability limited by a scheme approved under Professional Standards Legislation



Notes:

20m 40m 60m 80m

* LOCATION OF DUPLEX LOTS

ALL DATA HAS BEEN SCALED TO MGA GRID DISTANCE

Disclaimer:

- *Easements have been omitted for clarity*
- *Zone boundaries digitised from 1350_WBB_LZN_001_007_20140403, LEP Map Sheets 0712, 0713, 0812 & 0813*

Locality:	**BYRON BAY**	Date:	**18.07.2018**	Ref:	**15024-12F**
LGA:	**BYRON**	RR:	**1:1000 @ A3**	Surveyor:	**CAA PF**
Parish:	**BYRON**	Datum:	**N/A**	Drawn:	**SB**
County:	**ROUS**	Origin:	**N/A**	Data:	**N/A**
FB, LB:	**N/A**	RL:	**N/A**	Sheet:	**5 of 8**

PLAN SHOWING PROPOSED SUBDIVISION OF LOT 1 DP 201626, LOT 2 DP 542178, LOT 1 DP 780242, LOT 2 DP 818403 & LOT 1 DP 520063 - WEST BYRON

Ewingsdale Road

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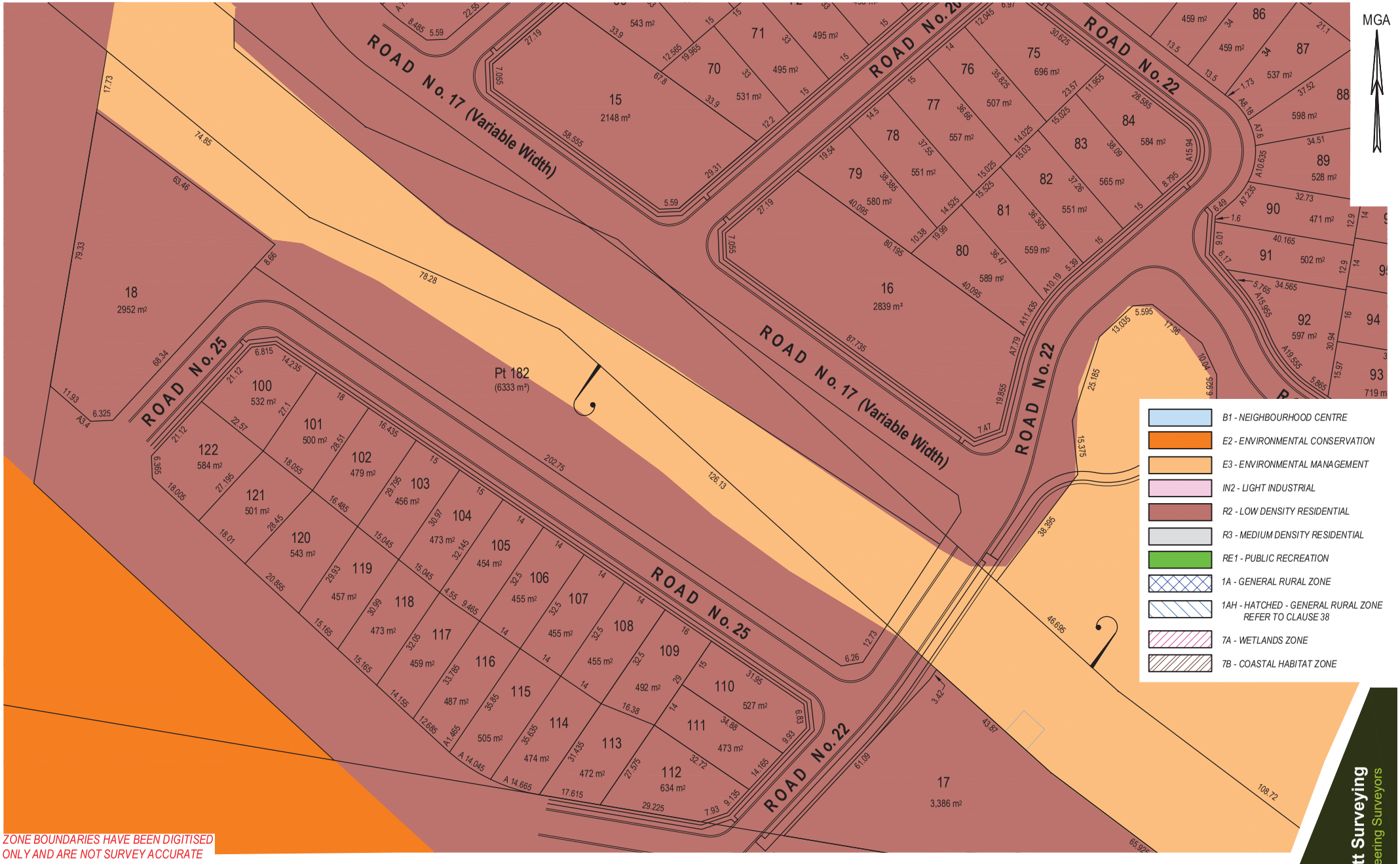

Notes:

20m 40m 60m 80m

* *LOCATION OF DUPLEX LOTS*

ALL DATA HAS BEEN SCALED TO MGA GRID DISTANCE

Disclaimer:

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Locality:	**BYRON BAY**	Date:	**18.07.2018**	Ref:	**15024-13F**
LGA:	**BYRON**	RR:	**1:1000 @ A3**	Surveyor:	**CAA PF**
Parish:	**BYRON**	Datum:	**N/A**	Drawn:	**SB**
County:	**ROUS**	Origin:	**N/A**	Data:	**N/A**
FB, LB:	**N/A**	RL:	**N/A**	Sheet:	**6 of 8**

PLAN SHOWING PROPOSED SUBDIVISION OF LOT 1 DP 201626, LOT 2 DP 542178, LOT 1 DP 780242, LOT 2 DP 818403 & LOT 1 DP 520063 - WEST BYRON

Ewingsdale Road

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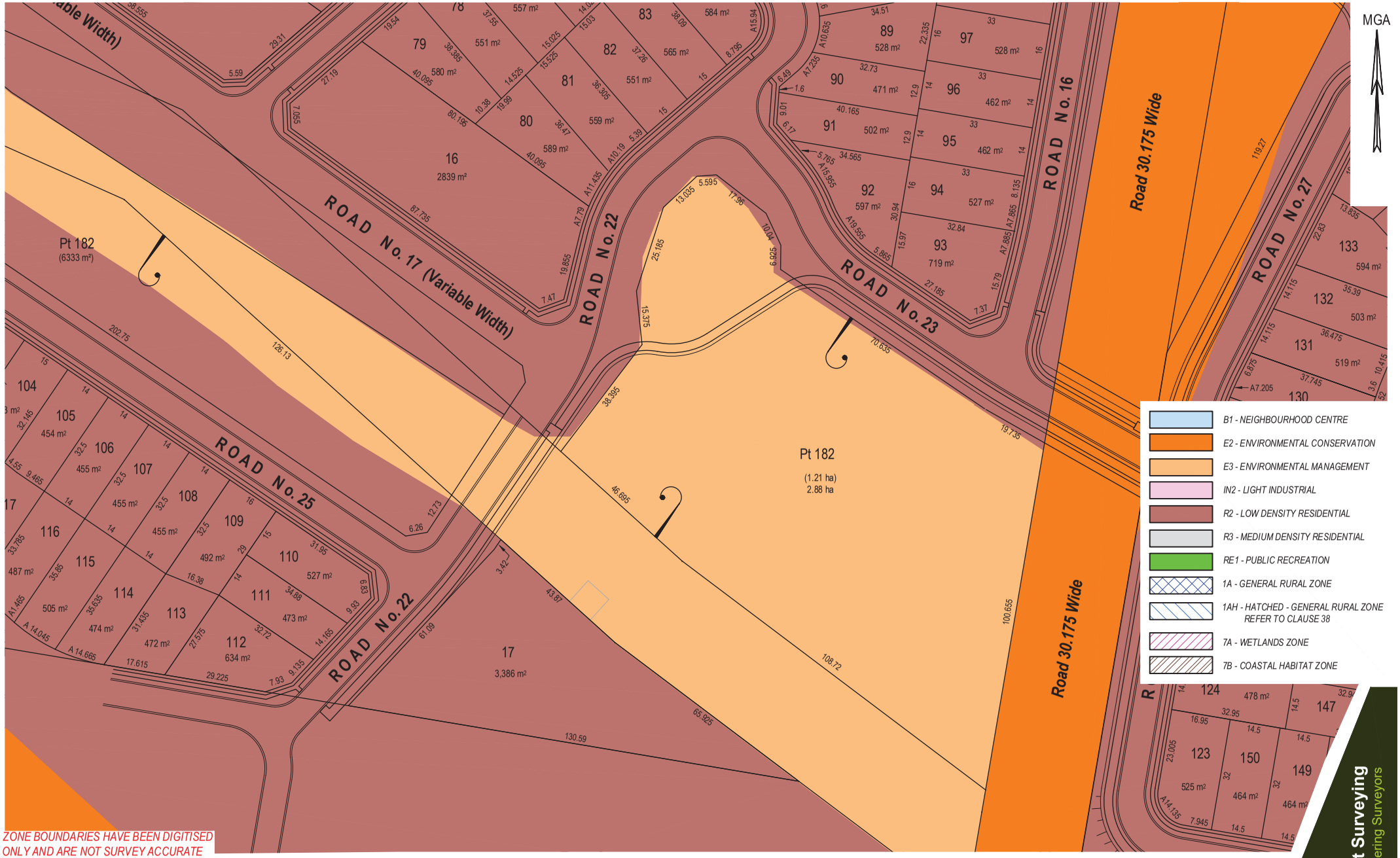

ZONE BOUNDARIES HAVE BEEN DIGITISED ONLY AND ARE NOT SURVEY ACCURATE

Notes:

20m 40m 60m 80m

* *LOCATION OF DUPLEX LOTS*

ALL DATA HAS BEEN SCALED TO MGA GRID DISTANCE

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- *The location of aerial imagery is approximate only.*
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Locality:	**BYRON BAY**	Date:	**18.07.2018**	Ref:	**15024-14F**
LGA:	**BYRON**	RR:	**1:1000 @ A3**	Surveyor:	**CAA PF**
Parish:	**BYRON**	Datum:	**N/A**	Drawn:	**SB**
County:	**ROUS**	Origin:	**N/A**	Data:	**N/A**
FB, LB:	**N/A**	RL:	**N/A**	Sheet:	**7 of 8**

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Ewingsdale Road

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ZONE BOUNDARIES HAVE BEEN DIGITISED ONLY AND ARE NOT SURVEY ACCURATE

Notes:

20m 40m 60m 80m

* LOCATION OF DUPLEX LOTS

ALL DATA HAS BEEN SCALED TO MGA GRID DISTANCE

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Locality:	BYRON BAY	Date:	18.07.2018	Ref:	15024-15F
LGA:	BYRON	RR:	1:1000 @ A3	Surveyor:	CAA PF
Parish:	BYRON	Datum:	N/A	Drawn:	SB
County:	ROUS	Origin:	N/A	Data:	N/A
FB, LB:	N/A	RL:	N/A	Sheet:	8 of 8

PLAN SHOWING PROPOSED SUBDIVISION OF LOT 1 DP 201626, LOT 2 DP 542178, LOT 1 DP 780242, LOT 2 DP 818403 & LOT 1 DP 520063 - WEST BYRON

Ewingsdale Road

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BANGALOW NSW 2479
PH +61 2 66870471
E-mail: mark.perkins@ennismorefield.com.au
Web: www.ennismorefield.com.au
Your reference DA No. 10.2017.661.1 20/04/18
Our reference EF1804.0_WEST BYRON RFI

RE: REQUEST FOR FURTHER INFORMATION
DA No. 10.2017.661.1
PROPOSAL Subdivision of Six (6) Lots into Three Hundred and Eighty Seven (387) Lots consisting of Three Hundred and Seventy Eight (378) Residential Lots, Two (2) Business Lots, Two (2) Industrial Lots, One (1) Recreation Lot and Four (4) Residue Lots
Owner: Telicove Pty Ltd
Parcel No. 21700, 151400,21720, 152550, 114340,241870
Address LOT: 1 DP: 201626, LOT: 2 DP: 542178, LOT: 1 DP: 780242, LOT: 2 DP: 818403, LOT: 1 DP: 520063, LOT: 7020 DP: 1113431 Ewingsdale Road BYRON BAY, 394 Ewingsdale Road BYRON BAY, 412 Ewingsdale Road BYRON BAY, Melaleuca Drive BYRON BAY, 364 Ewingsdale Road BYRON BAY.

Darryl Anderson
DAC PLANNING

Dear Darryl

As requested on the 9th May my comments are provided below (Pages 1 through 3) in response to Byron Shire Councils request for further information in support of DA No. 10.2017.661.1

I have commented on this request as it relates to our sections but will also need to be addressed by others.
"Acoustic Report shows the general design of the acoustic barrier within the future lots - Show the location of the acoustic barriers on the lot plans by demonstrating the depth that these retaining walls will extend into the lots."

I have updated initial sections sent through on the May 1 2018.

Kind regards,

Mark Perkins AILA Registered Landscape Architect No: 002060

INFORMATION REQUESTED TO SUPPORT THE PROPOSAL

ITEM 8; Acoustic Barrier.

"E8.10.8.8 Buffer to Ewingsdale Road - The returns of the Acoustic Barriers are to extend 15 m back into the new lots. There is no detail of how the earthen berms will be returned in this area. The acoustic barriers are 4m high - the returns are located within private property and there will be no opportunity to have an earthen berm to the Spine Road with the future footpaths and road reserves."

Comment; MP RLA.
Drawing LA03; issue B, Dated 9/10/2017; shows the extent of the acoustic barrier in plan view including returns and retaining walls. Drawing LA09,10,11,12; issue B, Dated 9/10/2017; shows the extent of the acoustic barrier in plan view including returns along the Spine Road, ((road no.5). Drawing LA10 details returns, retaining walls, entry feature, pedestrian and cycle ways and planting.

"applicant is to provide a section showing the acoustic barrier returns within the spine road (road no. 5)"

Comment; MP RLA.
A further section has been provided in addition to LAS01 and is attached to this response BEING LAS08 and LAS08_B. Also attached 3 perspectives SK01 SK02 SK03 to illustrate how the returns are integrated with the landscape treatments and paths.

"Acoustic Report shows the general design of the acoustic barrier within the future lots - Show the location of the acoustic barriers on the lot plans by demonstrating the depth that these retaining walls will extend into the lots."

Comment; MP RLA.
Section LAS01; ISSUE B, DATED 9/10/17; shows the location of the property boundary in relation to the Acoustic Barrier with the face of the Acoustic Fence on the property boundary. To the East of the Spine Road (road no. 5) the retaining walls extend 3.5 metres into the lots and to the West of the Spine Road (road no. 5) 1.5 metres into the lots.

ITEM 11. Recreational Areas
"Provide detailed plans demonstrating the proposed levels of embellishment of future recreational areas in accordance with E8.10.7 of the Byron DCP 2014."

COMMENT; MP RLA.
Drawing LA03; issue B, Dated 9/10/2017; shows the location of the RE1 Neighbourhood Park within the proposed development.
Drawing LA06; issue B, Dated 9/10/2017; illustrates the Neighbourhood Park Concept addressing Objectives, Performance Criteria and Prescriptive Measures. (See comments below excerpt from WEST BYRON DCP 2014)

Drawings LA17, 18, 21 and 22; issue B, Dated 9/10/2017; detail surface treatments for softfall, gardens, turf, seating, tree species, cycle racks and areas for public art to a level that is consistent for the requirements for a Development Application for Subdivision.
The Statement of Landscape Intent; dated 9/10/17; provides design direction and specification that will achieve a high quality of landscape treatments and addresses each of the prescriptive measures 1,2,3, and 5 of E8.10.7 Recreational Areas.

More detailed plans would be appropriately supplied to provide drawings for Construction, subject to conditions of consent. As per, B9.2.4 Landscape Plan prior to issue of a Construction Certificate. *(See comments below excerpt from WEST BYRON DCP 2014)*

A perspective has been supplied to illustrate the Neighbourhood Park Setting. DWG SK04.

E8.10.7 Recreational Areas
Objectives
1. To help engender a sense of community.
2. To help to promote social interaction, community health and wellbeing.
3. *To provide a network of active and passive open recreational areas*

Performance Criteria
1. Lots are to be within walking and cycling distance to a neighbourhood park
2. Parks are to include a range of recreational facilities
3. Neighbourhood parks need to be designed to meet the Crime Prevention through Environmental Design (CPTED) principles and Active Living criteria.

Prescriptive Measures
1. Residential lots are to be approximately 500 metres from the nearest neighbourhood park.
2. Outside of the two areas zoned RE1 any other neighbourhood park provided within the development site to have a usable area of approx. 0.2 hectares.
3. Neighbourhood parks are to be provided with the following facilities:
a) A hard stand play area (e.g. half court basketball/ skate area) to be provided in one of the RE1 Zoned Parks as a minimum;
b) Be designed and sited such that adjoining development can provide casual surveillance of the park. Be designed and located so as to maximise street frontage and encourage natural surveillance from surrounding residents;

c) Be situated on land that is readily accessible to the surrounding dwellings and physically connected to the cycleway/ pedestrian network;
d) Be equipped with play equipment, park furniture including seating for adults and toilet amenities;
e) Include soft-fall under all play equipment in accordance with the relevant Australian Standards;

f) Appropriate shade cover over play equipment;
g) Provide an electric BBQ, two roofed picnic tables, rubbish bins on stands to be provided in one of the areas zoned RE1;
h) Be landscaped with appropriate plantings of local native trees (no exotics) and weeds to be removed. Trees must have non-invasive root systems and be suitable for under-pruning as they develop to allow mower egress and undisturbed lines of sight. Vacant areas to be turfed with a suitable lawn species for mowing and incorporate earth mounds to provide visual interest and general play areas.
i) Adequate lighting be provided for crime prevention purposes.
j) The RE1 zoned land adjacent to the B1 Zone to provide for a village square or piazza as a community focal point and a casual meeting place for social interaction.
k) Other features such as a chess tables, bocce courts, ground level garden labyrinth or concrete table tennis facilities will also be considered on merit having regards to ongoing maintenance costs and the anticipated demographics of residents.
l) A footbridge for pedestrians and cyclist over the Main Drain in the Central Park on Ewingsdale Road.
4. Developer contributions credits will be provided for the provision and embellishment of new neighbourhood parks in accordance with Council's Development Contribution Plan.
5. Other community uses for the parks such as community gardens and as a site for public art will be considered on merit. Where this is proposed, car parking, water and toilet amenities will be required for the community gardeners as a minimum.
Attached

A Statement of Landscape Intent dated 9/10/17 was provided to clarify and provide additional detail and context to the Landscape Concept Plans. Consistent with,

" B9.2.3 Further requirements for more complex developments.
For larger scale or more complex development projects, additional documentation may be required to adequately communicate what is proposed. For these projects Landscape Plans and supporting information must be prepared by a landscape architect or qualified landscape designer, and applicants are encouraged to discuss the landscaping requirements prior to lodging the Development Application.
Council may request any or all of the following: 1. Statement of Landscape Intent – A statement of Landscape Intent is a short report describing the aims, objectives, and design rationale that underpin the proposed Landscape Plan. It describes how the landscape proposal addresses any issues identified in an initial site analysis or assessment of the site. It describes the main features of the landscape proposal and can provide additional information to support accompanying Landscape Plans."

Specifically, to RFI; 11. Recreational Areas

-Page 5; Illustrations 8, 9 10.
Gives clear direction for the play and leisure elements proposed. Privileging natural play and health and fitness in a natural setting and natural landscape elements in treatments of swales and paths.

-Page 9; Illustrations 11,12,13,14,15.
Gives clear direction for combined parkour, rebound and passive recreation spaces.

-Page 10; Illustrations 16, 17, 18.
Gives clear direction for community gardens, BBQ areas and seating.

-Page 11; Illustrations 19,20,21,22
Gives clear direction for Breakout Cafe area, communal lawns and low key integrated Public Art.

-The Neighbourhood Park concept proposes areas for Community Gardens and Public Art; E8. 10.7 under Prescriptive Measure 5. Showing how Community Gardens can be integrated into a Neighbourhood Park to create a unique cultural space that strengthens community, sustainability and food security.

DOCUMENTS PROVIDED
DWG LAS08 ACOUSTIC BARRIER_SECTION_SPINE ROAD (ROAD 5)
DWG LAS08_B_ ACOUSTIC BARRIER_SECTION_SPINE ROAD (ROAD 5)
DWG SK01 DISTRIBUTOR ROAD SPINE ROAD (ROAD 5) AT EWINGSDALE ROAD NORTH ELEVATION
DWG SK02 DISTRIBUTOR ROAD SPINE ROAD (ROAD 5) AT EWINGSDALE ROAD NORTH EAST PERSPECTIVE
DWG SK03 DISTRIBUTOR ROAD SPINE ROAD (ROAD 5) AT EWINGSDALE ROAD NORTH WEST PERSPECTIVE
DWG SK04 NEIGHBOURHOOD PARK SOUTH PERSPECTIVE

STATEMENT OF LANDSCAPE INTENT ISSUED 9/10/17
COUNCIL POLICY COMMUNITY GARDENS

ENNISMORE FIELD PTY LTD
LANDSCAPE ARCHITECTS

UNIT 1B, 16 BYRON STREET BANGALOW
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mob: +61 447 713 999
info@ennismorefield.com.au
WWW.ENNISMOREFIELD.COM.AU

DESCRIPTION

RFI_PLANNING_No:_8_ACOUSTIC_BARRIER

CLIENT

TELICOVE PTY LTD
GOUSSE HOLDINGS PTY LTD
AR & JD SMITH
FLETCHER PROJECT
DEVELOPMENTS PTY LTD
DJ & CF O'CONNOR

PROJECT

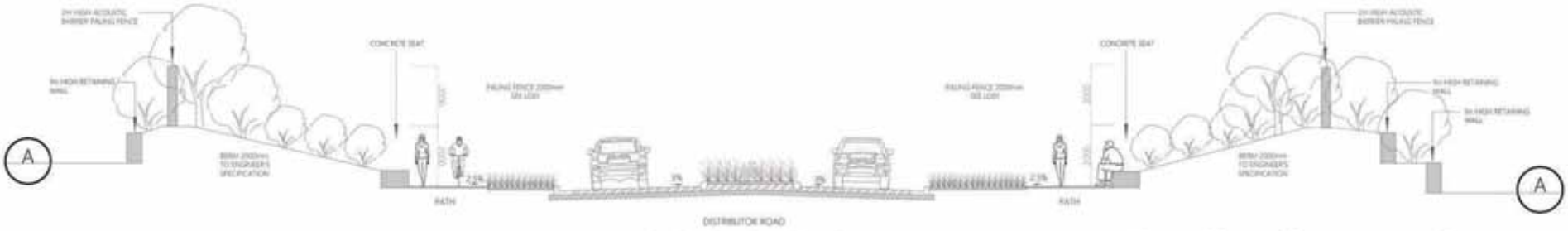
WEST BYRON

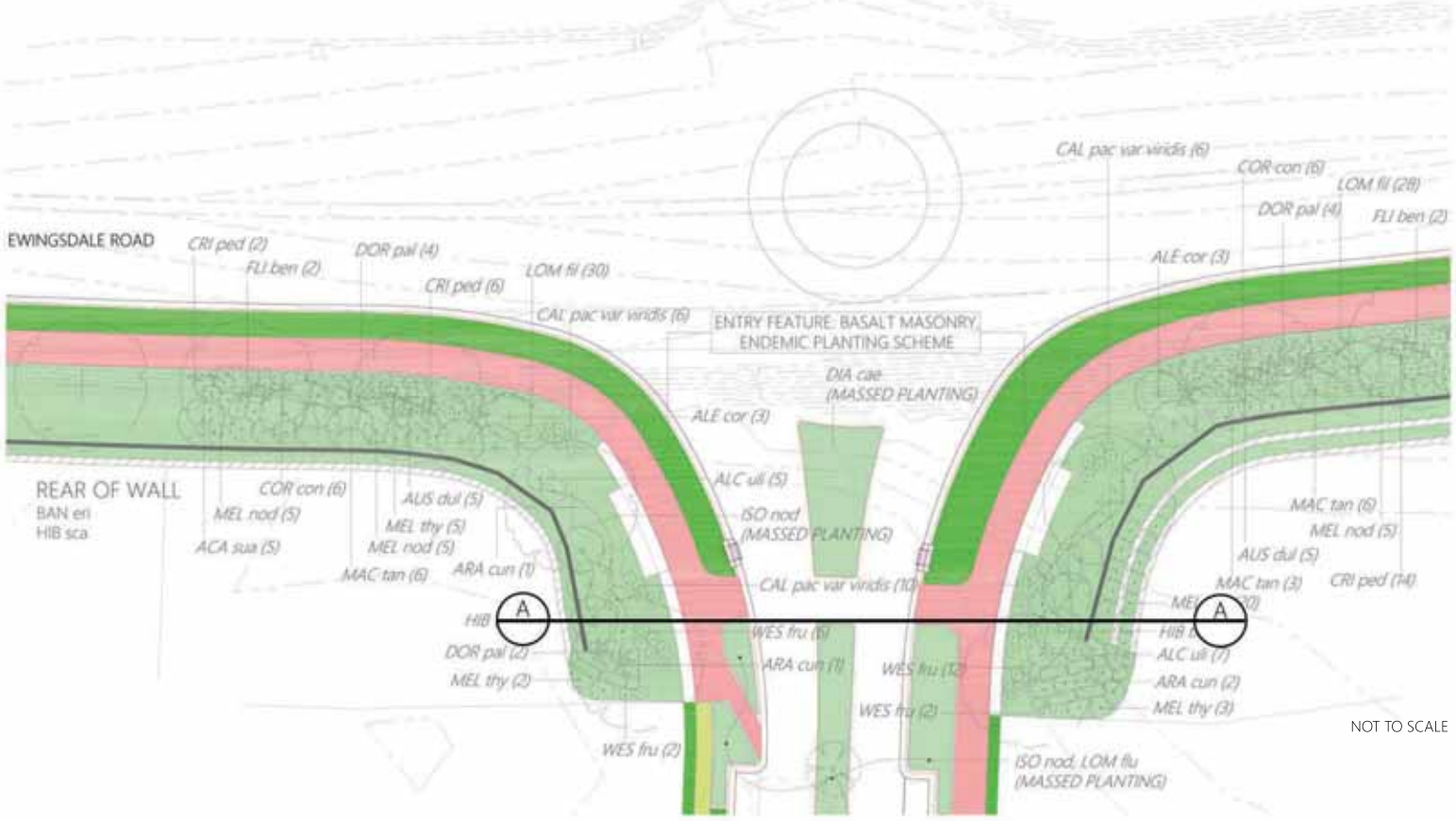
SHEET TITLE

ACOUSTIC BARRIER_SECTION_
RETURN AT DISTRIBUTOR ROAD
(SPINE ROAD: (ROAD 5))

NOT FOR CONSTRUCTION

PROJECT NO EF_1704	SCALE 1:150@A3	DESIGN MP
DRAWING NO LAS 08_B		DRAFT AW
DATE 11/07/2018	ISSUE A	APPROVED





NOT TO SCALE

UNIT 18, 16 BYRON STREET BANGALOW
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WWW.ENNISMOREFIELD.COM.AU
info@ennismorefield.com.au MARK PERKINS RLA 002060

ISSUE	DESCRIPTION	DRAWN	APPROVED	DATE
A	RFI PLANNING No. 8 ACOUSTIC BARRIER	AW	MP	11_07_2018

CLIENT:
TELICOVE PTY LTD
GOUSSE HOLDINGS PTY LTD
AR & JD SMITH
FLETCHER PROJECT DEVELOPMENTS PTY LTD
DJ & CF O'CONNOR

PROJECT
WEST BYRON

SHEET TITLE
ACOUSTIC BARRIER SECTION RETURN AT DISTRIBUTOR ROAD (SPINE ROAD: (ROAD 5))

NOT FOR CONSTRUCTION

JOB NUMBER	EF1704	SCALE AT A1	1:75
		SCALE AT A3	1:150
DRAWING NUMBER	LAS06		
DATE	11_07_2018	ISSUE	A
DESIGN	MP		
DRAWN	AW		
APPROVED			

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DESCRIPTION

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CLIENT

TELICOVE PTY LTD
GOUSSE HOLDINGS PTY LTD
AR & JD SMITH
FLETCHER PROJECT
DEVELOPMENTS PTY LTD
DJ & CF O'CONNOR

PROJECT

WEST BYRON

SHEET TITLE

DISTRIBUTOR ROAD
(SPINE ROAD:(ROAD 5))
EWINGSDALE ROAD
NORTH ELEVATION

NOT FOR CONSTRUCTION

PROJECT NO EF_1704	SCALE NA	DESIGN MP
DRAWING NO SK01		DRAFT AW
DATE 10/07/2018	ISSUE A	APPROVED

ENNISMORE FIELD PTY LTD
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AR & JD SMITH
FLETCHER PROJECT
DEVELOPMENTS PTY LTD
DJ & CF O'CONNOR

PROJECT

WEST BYRON

SHEET TITLE

DISTRIBUTOR ROAD
(SPINE ROAD:(ROAD 5))
EWINGSDALE ROAD
NORTH EAST PERSPECTIVE

NOT FOR CONSTRUCTION

PROJECT NO EF_1704	SCALE NA	DESIGN MP
DRAWING NO SK02		DRAFT ZM
DATE 11/07/18	ISSUE A	APPROVED

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CLIENT

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GOUSSE HOLDINGS PTY LTD
AR & JD SMITH
FLETCHER PROJECT
DEVELOPMENTS PTY LTD
DJ & CF O'CONNOR

PROJECT

WEST BYRON

SHEET TITLE

DISTRIBUTOR ROAD
(SPINE ROAD:(ROAD 5))
EWINGSDALE ROAD
NORTH WEST PERSPECTIVE

NOT FOR CONSTRUCTION

PROJECT NO EF_1704	SCALE NA	DESIGN MP
DRAWING NO SK03		DRAFT ZM
DATE 11/07/18	ISSUE A	APPROVED

Stuart Murray

Site R & D Pty Ltd

Via email: stuart@siterd.com.au

17 September 2018

AWC Reference: 1-17820

Water | Ecology | Management

8 George St
Bangalow NSW 2479

p. (02) 6687 1550
e. info@awconsult.com.au
w. awconsult.com.au

Dear Stuart,

RE: RFI Responses- DA 10.2017.661.1

Please see our responses to the Draft RFIs received from Byron Shire Council (BSC) via email on the 3rd of July 2018 and as noted during meetings on the 20th of June 2018 and 19th of July.

Additional information requested as part of the RFIs has been included below.

Yours sincerely,

Eli Dutton

Senior Ecologist

Australian Wetlands Consulting Pty Ltd
ABN 81 140 533 919

Table 1 Responses to draft RFI's sent on the 3rd of July from BSC.

General			
Query	Response	Relevant Report	Action
Failure to consider impacts on public sewer system, water quality, flooding.	Not relevant to ecological reports	N/A	None
Failure to consider impacts and barrier effects from proposed fencing: acoustic fence along Ewingsdale Road, & dog proof fencing/exclusion fencing around the residential development.	Ewingsdale Road already acts as a physical barrier for north/south wildlife movement. Fencing with in development needs to be considered further.	1-17820-2d_WBURA_BCMP	None
Failure to consider impacts from the domestic dogs and cats from 378 residential lots: R & D).	Impacts of domestic dogs and cats discussed and considered in various reports. Page 49, 63, and 65 ecology report. Page 10, 35, and 37 of BCMP.	1-17820-1b_WBURA_Ecology	None
Net loss of habitat; failure to consider time lag for rehabilitation area to compensate for native vegetation loss.	4.87 Hectares of native habitat to be removed (Page 45 ecology report). Approximately 28.3 hectares available for restoration/ offset (Page 53 ecology report). Also discussed on page 27 of the BCMP, along with a recommendation that offset works commence as soon as possible (and preferably) before clearing commences.	1-17820-1b_WBURA_Ecology 1-17820-2d_WBURA_BCMP	None
Inevitable increased human presence in coastal wetlands, around Belongil Creek and associated impacts, trailbikes, arson, not adequately considered.	This is a generic and speculative statement. Impacts and associated with the proposed development are specifically discussed in relevant reports.	1-17820-1b_WBURA_Ecology 1-17820-2d_WBURA_BCMP, 1-14530-3e_WestByronKPOM, 1-14530-2b_WestByron_TSMP, 1-14530-4b_WestByron_VMP	None

Wallum Sedge Frog & Wallum Froglet			
Query	Response	Relevant Report	Action
Inadequate mapping, insufficient recent survey data for *L.olongburensis*; reliance upon ineffective mitigation measures (constructed ponds likely to be first occupied by common frogs; and failure to address risk of introducing Chytridiomycosis (especially in the common Brown-striped Marsh Frog *Limnodynastes peroni*) which is a reservoir for the disease. *Limnodynastes peroni* recorded from BF drain (2005).	*L.olongburensis* was last recorded in 2015 at the site. There is no direct impact on this frog species from the development footprint. Mitigation in the form of constructed habitat is a proven method endorsed by the Australian Government as an acceptable strategy under the EPBC Act. Chytridiomycosis is likely to be common throughout amphibian populations in Byron Shire and as such it is unlikely that the development would be introducing the disease to the amphibian population. Brown-striped Marsh Frog (*Limnodynastes peroni*) is already common throughout site and we do not accept that creating wallum habitat for *L. olongburensis* will exacerbate pressure on this species.	1-17820-1b_WBURA_Ecology 1-17820-2d_WBURA_BCMP, 1-14530-2b_WestByron_TSMP	None
5 Constructed ponds at WBSTP were not used by *olongburensis*, were first occupied by Cane Toads and common frogs; it was > 2 years before *tinnula* used only 1 of 5 constructed ponds.	It would be expected that the construction of Wallum Sedge Frog ponds would take a number of years to establish. As such the restoration of existing habitat and known populations would be the focus of restoration works. The construction of Wallum Sedge Frog Habitat at West Byron is extensively discussed in Section 4 pages 29- 36 of the TSMP. Long term monitoring of the created Wallum Sedge Frog ponds is discussed in Section 7 of the TSMP.	1-14530-2b_WestByron_TSMP	Show location of created ponds at detailed design and see success criteria table.
There must be no translocation of any (Wallum) Frogs without screening for Chytridiomycosis. Refer to NSW Hygiene protocol for the control of disease in frogs (2008).	Agreed. No translocation of frogs has been confirmed, if this action is undertaken all the necessary licenses will be acquired.	n/a	None

Query	Response	Relevant Report	Action
Translocation of threatened species requires permission from NSW OEH; assumptions about the manufacture of long term suitable habitat for Wallum Sedge Frog are untested and unlikely to be achievable in time frames discussed (p37, Thsppmgt Plan). Therefore underestimation of impacts likely for *olongburensis*.	The TSMP applies to the whole site, including the Villaworld site. There is at this stage there is no proposed translocation of the Wallum Sedge Frog on our site as Lot 6 DP 1222674 is on the Villaworld site and this is what Page 37 of the TSMP pertains too.	n/a	None
Failure to consider viability of *olongburensis* population remaining after Villaworld population is lost. Small population paradigm (also applicable to Koalas) not considered.	We cannot control what happens on the Villaworld site. The Wallum Sedge Frog population on our site is already a small population and sits outside the development footprint. Restoration works will aim to increase the population and improve its viability as discussed in Section 4 pages 29- 36 of the TSMP.	1-17820-1b_WBURA_Ecology 1-17820-2d_WBURA_BCMP, 1-14530-2b_WestByron_TSMP	None
Extinction vortex: small (isolated) population leads to inbreeding; lower heterozygosity; impacts of semi-lethal recessive alleles; reduced fecundity & increased mortality; further decline in population.	This is a broad statement. The population on the site is already small and is likely genetically identical to secure populations at the West Byron Wetlands and Tyagarah Nature Reserve, Page 28 of TSMP. Restoration works will aim to increase the population and improve its viability as discussed in Section 4 pages 29- 36 of the TSMP.	1-17820-1b_WBURA_Ecology 1-17820-2d_WBURA_BCMP, 1-14530-2b_WestByron_TSMP	None
Cane Toads and fish will likely occupy constructed ponds, and prey upon *olongburensis.*	The construction methodology of the Wallum Sedge Frog ponds will aim to exclude Cane Toads (Page 37 of BCMP). Re-creation of habitat and hydrological regimes will aim to reduce the risk of predation from fish species. Creating additional habitat (in addition to	1-17820-1b_WBURA_Ecology 1-17820-2d_WBURA_BCMP, 1-14530-2b_WestByron_TSMP	None

	rehabilitating existing habitat) is considered preferable to no habitat creation.		
Query	**Response**	**Relevant Report**	**Action**
Stormwater detention ponds/swales likely to be occupied by *Bufo, Lim peroni, L fallax,* Chytrid. Recovery Plan notes *L. fallax* (Eastern Dwarf Tree Frog) as a significant competitor with *olongburensis*.	Stormwater detention ponds and swales are not intended as habitat for *L.olongburensis*; however they will be designed to mimic wallum wetland vegetation and function to limit their suitability for competitor species.	1-17818-1d_WBURA_SWMP. See success criteria table in the 1-14530-2b_WestByron_TSMP	None
Failure to adequately address the impact of likely changes in stormwater quality, due to 329 500m^3 of unspecified fill, inevitable nutrient loads and eutrophication from occupation phase; existing poor condition of water in main drain, likely to deteriorate because of the development, *e.g.* degraded peri-urban wetlands around Byron Bay.	Issues relating to stormwater management are addressed within the Stormwater Management Plan prepared for the site. This plan provides specific and measurable criteria for protecting water quality and hydrological regimes post development.	1-17818-1d_WBURA_SWMP	None
Failure to adequately address the impact of the Plague Minnow *Gambusia holbrooki* known from main drain (and likely to be present in all Byron Bay area drains), and likely to occupy constructed ponds. *Olongburensis* does not breed in water where fish are present, and *Gambusia* is a listed Key Threatening Process. Fish eat eggs and larvae of *olongburensis* (Recovery Plan 2006).	As mentioned Gambusia already present throughout the Belongil catchment. This is a catchment wide issue that is not a result of the proposed development. However *L.olongburensis* is present in the catchment and has historically been recorded at the site. As such, habitat restoration and habitat construction will aim to exclude Gambusia from Wallum Sedge Frog habitat.	1-17820-1b_WBURA_Ecology 1-17820-2d_WBURA_BCMP, 1-14530-2b_WestByron_TSMP	See Table 2 success criteria.

Insufficient information relating to the practicalities of long term maintenance of hydrology and water quality parameters for Wallum Frogs. Unmanageable impacts; responsibility for costs of future & ongoing management effort?	The BCMP, TSMP, VMP and the ecology report all outline mitigation, management, and monitoring strategies. Funding, Tenure and Long- Term Implementation shown on page 44 of the BCMP. However a cost table will be produced as part of the detailed design stage.	1-17820-1b_WBURA_Ecology 1-17820-2d_WBURA_BCMP, 1-14530-3e_WestByronKPOM, 1-14530-2b_WestByron_TSMP, 1-14530-4b_WestByron_VMP	Cost Table of Mitigation Works to be prepared in support of the detailed design
Query	**Response**	**Relevant Report**	**Action**
Insufficient contemporary information on the ecology of local Wallum Sedge Frog populations, and inadequate consideration of the probable impacts on this species of the development. Inadequate mapping of local records for the species. Test of significance of impacts for this species is therefore inadequate.	Area where the Wallum Sedge Frog was recorded at the site is not within the development footprint. There are many records throughout the catchment in better habitat. Restoration works will focus on restoring and creating Wallum Sedge Frog habitat.	1-17820-1b_WBURA_Ecology 1-17820-2d_WBURA_BCMP, 1-14530-2b_WestByron_TSMP, 1-14530-4b_WestByron_VMP	None
Draft Referral Guidelines indicate a referral under the EPBC Act is necessary when uncertainty exists about the importance of the population and impacts from the proposal.	The area of habitat where Wallum Sedge Frog has been recorded is not in the development footprint. It is the aim of the restoration activities to improve and restore Wallum Sedge Frog Habitat at the site while avoiding direct and/or indirect impacts. On this basis referral under the EPBC Act is not required.	1-17820-1b_WBURA_Ecology 1-17820-2d_WBURA_BCMP, 1-14530-2b_WestByron_TSMP, 1-14530-4b_WestByron_VMP	None
Proposal conflicts with the principal objective of the Acid Frog Recovery Plan (Meyer et al 2006).Namely: To improve the conservation status of wallum sedge frog and other wallum-dependent frogs through effective management, protection and rehabilitation of wallum frog habitat.	It is the aim of the restoration activities to improve and restore Wallum Sedge Frog Habitat at the site, while ensuring there are no direct and indirect impacts upon the species. On this basis the proposed actions are consistent with the recovery plan.	1-17820-1b_WBURA_Ecology 1-17820-2d_WBURA_BCMP, 1-14530-2b_WestByron_TSMP, 1-14530-4b_WestByron_VMP	None
Will Belongil Swamp Drainage Union relinquish control of drain maintenance in the Main & Union Drains ?	The Union Drain is irrelevant to the proposed development site, being located to the south. The main drain is owned by	n/a	None

	Council.		
Cannot create offsets where the impacted species is already present; need adequate recent survey data to have confidence in the suitability of offset areas.	The area where Wallum Sedge Frog habitat already exists will be improved and restored. There are no records of Wallum Sedge Frog in locations where artificial ponds are proposed, though confirmation via follow up survey prior to the creation of artificial Wallum Sedge Frog habitat would be appropriate.	1-17820-1b_WBURA_Ecology 1-17820-2d_WBURA_BCMP, 1-14530-2b_WestByron_TSMP, 1-14530-4b_WestByron_VMP	Update map showing restoration areas at detailed design and undertake survey if conditions allow.
Koala			
Query	Response	Relevant Report	Action
Koala are slow to use purpose built crossings (YTOC & BTOY data), Koala movements will be affected by extensive fencing, and loss of access to food trees, presence of dogs, & increased traffic on Ewingsdale Road. Breaches in the fence will soon occur following residential occupation. Annual maintenance interval for fences is inadequate: who funds fence maintenance long term?	Funding for any fencing maintenance to be part of VMP and BCMP maintenance program.	2d_WBURA_BCMP, 1-14530 4b_WestByron_VMP	None
Location of all fences needs to be shown in order to accurately assess barrier effects and isolation for fauna associated with the development. Where Koala exclusion fences intersect with internal roads, how will Koalas be prevented from entering and becoming trapped in the enclosed residential area?	Location of and design of any fences to be determined at detailed design.	n/a	None

Vegetation Management Plan nominates use of Koala Feed Trees for infill plantings contrary to the use of exclusion fencing to keep Koalas out of the urban residential zone.	The plantings described in the VMP are in relation to the Vegetation Management Zones not landscape plantings in the urban residential zone. It is clear that the aim of these plantings is to provide habitat for Koalas in the VMZ's not the urban residential areas.	n/a	None
Fencing at rear of residential lots encourages dumping of garden waste and the proliferation of weeds.	Only 4-5 lots back onto bushland all others have roads on their borders. If lots don't have fences residents have easier access to bushland.	1-17820-1b_WBURA_Ecology	None
Failure to address impacts of the overall WBURA development on traffic levels and ensuing roadkill pressure on Ewingsdale Road for native fauna.	Traffic impacts discussed in Section 4 on page 36 of the KPoM. Ewingsdale road already pose a threat to Koalas. Threats to koalas on Ewingsdale Rd require a coordinated response from key landholders and Council to ensure Koalas are excluded from areas of high traffic.	1-14530-3e_WestByronKPOM	None
Query	**Response**	**Relevant Report**	**Action**
Provision of literature to landowners/residents is an inadequate measure for the control of domestic dogs & cats.	This is not the only control measure suggested but forms part of a strategy which includes Koala fencing refer to Section 4 pages 37-38 of the KPoM. Furthermore the Draft Byron Coast Comprehensive Koala Plan of Management page 49 suggests e*ducation and extension to promote responsible dog ownership and koalas* as a management strategy.	1-14530-3e_WestByronKPOM	None

Conclusion that the development will not have any significant impact on wildlife movement fails to adequately consider impacts of koala exclusion fencing, acoustic fencing, and uncontrolled ownership of domestic dogs & cats in the development.	Wildlife movement is currently substantially limited by Ewingsdale Road and while the development will limit and/or prevent movement of certain fauna through what is currently open grassland areas, this will be compensated for via the provision of a large and continuous corridor through lands adjoining Belongil Creek east of the site and south and west within environmental zones, meaning that on balance the movement of fauna will be maintained or improved compared to existing.	1-17820-1b_WBURA_Ecology 1-17820-2d_WBURA_BCMP, 1-14530-3e_WestByronKPOM, 1-14530-2b_WestByron_TSMP	None
Referral under the EPBC Act required for Koalas, important local population and uncertainty about impacts.	There is not an important population at the West Byron Site and the impacts have been addressed, they are not uncertain. Refer to pages 7 and 8 of the KPoM. No referral required.	1-14530-3e_WestByronKPOM	None
APZ			
Query	Response	Relevant Report	Action
APZs; absence of consideration of vegetation impacts from APZs and their ongoing maintenance. APZs shown to overlap with E Zones in west of site, but no detail on tree removal.	Asset protection zones for bushfire management are intended to sit outside E zones and occupy public open space, road reserve and private lots. Any discrepancies from this approach will be identified and addressed.	Bushfire Threat Assessment, West Byron Development, Ewingsdale Road, Byron Bay, 2017, Prepared by Bushfire Planning Australia	None

Table 2 Wallum Sedge Frog constructed ponds success criteria

No.	Performance Area	Success Critera (ie measurable and reportable targets)
Created and retained Wallum Sedgefrog habitat ponds		
1	**Water chemistry**	Generally a pH range of between 3-5 across all constructed ponds. Tannic Acid equivalent concentration for individual ponds range between 5-39.2mg/L, with a median concentration of 10-20 mg/L across all constructed ponds. Conductivity range between 8-77µS/cm, with a median level of 20-30 across all constructed ponds. Collectively, created Wallum Sedgefrog ponds must achieve a: Average water depth of created Wallum Sedgefrog ponds between 5-67cm; Minimum water depth of constructed Wallum Sedgefrog ponds when full between 5cm; and Maximum water depth of constructed Wallum Sedgefrog ponds when full between 30-100cm.
2	**Surface water runoff**	No direct engineered and concentrated stormwater runoff from the development is to directly connect with any created or retained Wallum Sedgefrog habitat pond.
3	**Hydroperiod**	Created ponds must retain water for a continuous period of at least six to eight weeks. Such ponding is to occur under a summer/spring rainfall exceeding the 65%ile and/or consitent with ponding regime results recorded from control sites.
4	**Vegetation**	Created Wallum Sedgefrog ponds have a vegetation community consistent with that measured within existing Wallum Sedgefrog habitat. This includes (PER,2012): >25% native rigid rushes/reeds/sedges comprising *Baumea articulata, Baumea juncea, Baumea rubiginosa, Juncus usitatus, Lepironia articulata* <25% open water No more than 25% non-native grasses including *Setaria sphacelata, Axonopus fissifolius, Paspalum wettsteinii* <25% combined litter, bare ground, ferns, forbs, shrubs jointed rushes/reeds/sedges, limp rushes/reeds/sedges.
5	**Habitat connectivity**	Constructed Wallum Sedgefrog habitat ponds at a minimum size of 50m^2 at a maximum distance of 300m from the nearest retained or constructed Wallum Sedgefrog pond Note benchmark of habitat suitability at 150m^2 every 250m.
6	**Wallum Sedgefrog presence**	The occurrence of Wallum Sedgefrog within both created and retained habitat ponds. Due to natural variability, frogs may not be present, however, provided the other success criteria are met, this will be accepted. If Wallum Sedgefrog/s are present within defined conservation area, then it is assumed that all other success crieteria are achieved
7	**Predatory fish**	Fish predators (in particular mosquito fish *Gambusia holbrooki*) do not become established in constructed Wallum Sedgefrog habitat ponds
Frog Buffer and Frog Rehabilitation Zone (excluding created and retained Wallum Sedgefrog habitat ponds)		
8	**Vegetation**	75% native vegetation.This is to be achieved 3 years post practical completion of the Wallum Sedgefrog habitat ponds and Frog Zone and Buffer Zone in accordance with construction phase sequencing.

Update Assessments of Significance

An updated assessment of Significance has been undertaken following receipt of feedback from BSC during a meeting held on the 19th of July, 2018, particularly for question a).

Threatened Flora and Communities

a) in the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction

White Lace Flower	Vulnerable - *TSC Act 1995*
Habitat description/ life cycle components	White Lace Flower occurs in riverine and lowland subtropical rainforest, littoral rainforest, coastal cypress pine forest and their ecotones. It is found on a variety of soils including coastal sands and those derived from basalt and metasediments.
Threats	• Risk of local extinction because populations are small. • Clearing and fragmentation of habitat for development. • Clearing and fragmentation of habitat for agriculture. • Infestation of habitat by weeds. • Clearing and disturbance as a result of roadworks and track maintenance. • Inappropriate fire regime. • Trampling by visitors when accessing beach areas through littoral rainforest. • Trampling by domestic stock. • Inappropriate fire regime altering habitat and destroying individuals.
Likelihood of local extinction	Not recorded on the subject site and the proposal will not impact on this species in the Study Area. As such, there is no likelihood of the proposal having an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Stinking Cryptocarya	Vulnerable - *TSC Act 1995*
Habitat description/ life cycle components	Found in littoral, warm temperate and subtropical rainforest, wet sclerophyll forest and Camphor laurel forest usually on sandy soils, but mature trees are also known on basalt soils.
Threats	• Risk of local extinction because populations are small. • Clearing and fragmentation of habitat for development. • Clearing and fragmentation of habitat for agriculture. • Infestation of habitat by weeds. • Clearing and disturbance as a result of roadworks and track maintenance. • Inappropriate fire regime. • Trampling by visitors when accessing beach areas through littoral rainforest. • Trampling by domestic stock. • Inappropriate fire regime altering habitat and destroying individuals.

Likelihood of local extinction	Not recorded on the subject site and the proposal will not impact on this species in the Study Area. As such, there is no likelihood of the proposal having an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Durobby	Vulnerable - *TSC Act 1995*
Habitat description/ life cycle components	Found in subtropical and riverine rainforest at low altitude. Often occurs as isolated remnant paddock trees.
Threats	• Clearing and fragmentation of habitat. • Weed infestation of rainforest habitats. • Grazing and trampling of seedlings and saplings by domestic stock, particularly around remnant paddock trees. • Illegal collection for horticulture. • Risk of local extinction due to very small population sizes.
Likelihood of local extinction	The proposal will not occur within 10m within of individuals onsite. The proposal would result in the alteration of a very small amount of potential habitat for the Durobby. Furthermore, the out-skirts of vegetation in which the Durobby is situated is already exposed to high levels of disturbance (weed invasion & canopy gaps). As such, there is no likelihood of the proposal having an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Pink Nodding Orchid	Endangered - *TSC Act 1995*
Habitat description/ life cycle components	Dry eucalypt forest and coastal swamp forest at lower altitudes, often on sand.
Threats	• Clearing and fragmentation of habitat for urban development. • Invasion of habitat by introduced weeds such as Bitou Bush. • Trampling by bushwalkers and fishers. • Illegal collection of orchids.
Likelihood of local extinction	Not recorded on the subject site and the proposal will not impact on this species in the Study Area. As such, there is no likelihood of the proposal having an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Yellow-flowered King of the Fairies	Endangered - *TSC Act 1995*
Habitat description/ life cycle components	This species grows on trees and rocks in littoral rainforest, subtropical rainforest, dry rainforest, wet or dry eucalypt forests, dunes (including stabilised sands), stream-side areas, swampy forests and mangroves.
Threats	• Loss of habitat through clearing, degradation and fragmentation of native vegetation. • Collection by orchid enthusiasts. • The species is susceptible to extinction via stochastic processes due to its small known population size and restricted distribution.
Likelihood of local extinction	Not recorded on the subject site and the proposal will not impact on this species in the Study Area. As such, there is no likelihood of the proposal having an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Southern Swamp Orchid	Endangered - *TSC Act 1995*
Habitat description/ life cycle components	Swampy grassland or swampy forest including rainforest, eucalypt or paperbark forest, mostly in coastal areas.
Threats	• Illegal collection for horticulture or cut flowers. This showy species is highly sought after. • Small population size. • Drainage of swamps, or pollution from nutrient run-off. • Frequent fire • Grazing and trampling by domestic stock and feral pigs. • Invasion of habitat by introduced weeds. • Trail bike riders disturbing substrate and destroying plants. • Rubbish dumping and other disturbance due vehicles and/or people • Clearing and fragmentation of habitat for development, agriculture and roadworks.
Likelihood of local extinction	Not recorded on the subject site and the proposal will not impact on this species in the Study Area. As such, there is no likelihood of the proposal having an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

b) In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction

No threatened flora populations occur or are likely to occur on the site.

c) in the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

i. is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

ii. is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

One EEC, *Coastal Cypress Pine Forest in the NSW North Coast Bioregion* occurs at the site, however the community will be retained and appropriately buffered.

The Cypress Pine Forest at the site is highly disturbed and fragmented, under scrubbed in parts, weeds present, very high degree of edge to core ratio. Weed species include, Ground Asparagus* (*Asparagus aethiopicus*) and Fishbone Fern* (*Nephrolepis cordifolia*). The proposal will not increase fragmentation or edge effects of these communities.

This vegetation community is to be protected within the E2 and E3 zones and it is proposed that restoration works will be undertaken to improve the current conditions of this community at the site. As such, the proposal is unlikely to have an adverse effect on the ecological community such that its local occurrence is likely to be placed at risk of extinction.

in relation to the habitat of a threatened species, population or ecological community:

i. the extent to which habitat is likely to be removed or modified as a result of the action proposed, and

The proposal will not result in the removal of or any habitat fragmentation of the Threatened Flora species or EECs onsite. Moreover, proposed weed control and planting works will result in habitat consolidation and will be enhanced the viability of the vegetation communities to be retained long term.

The proposed works are not likely to affect the long-term survival of the species, population or ecological community in the locality.

ii. whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and

The proposed works would not fragment or isolate any habitat of value to the subject species.

iii. the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality,

The proposed works will not remove, modify, fragment or isolate any vegetation community that would affect the long-term survival of a species, population or ecological community in the locality.

d) whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly),

No areas of critical habitat listed under the *TSC Act 1995* occur within the locality.

e) whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan,

No relevant Recovery Plans.

f) whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.

The proposed work constitutes clearing of native vegetation. The current list of Key Threatening Processes (KTPs) are listed at Table B.1and discussed below.

Threatened Species Conservation Act 1995 Schedule 3 Key Threatening Processes	Applicable to proposal
Aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners	No
Alteration of habitat following **subsidence due to longwall mining**	No
Alteration to the natural flow regimes of rivers, streams, floodplains & wetlands.	Yes
Bushrock Removal	No
Clearing of native vegetation	Yes
Competition and grazing by the **feral European rabbit**	No
Competition and habitat degradation by Feral Goats	No
Competition from **feral honeybees**	No
Death or injury to marine species following capture in **shark control programs on ocean beaches**	No
Ecological consequences of **high frequency fires**	No
Entanglement in, or ingestion of **anthropogenic debris in marine and estuarine environments**	No
Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners	No
Herbivory and environmental degradation caused by **feral deer**	No
Human-caused **Climate Change**	No
Importation of **red imported fire ants** into NSW	No
Infection by **Psittacine circoviral (beak and feather) disease** affecting endangered psittacine species	No
Infection of frogs by amphibian chytrid causing the disease chytridiomycosis	No
Infection of native plants by *Phytophthora cinnamomi*	No
Introduction and establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae	No
Introduction of the **large earth bumblebee**	No
Invasion and establishment of **exotic vines and scramblers**	No
Invasion and establishment of Scotch Broom	No
Invasion and establishment of the **Cane Toad**	No
Invasion of native plant communities by African Olive	No
Invasion of native plant communities by **bitou bush & boneseed**	No
Invasion of native plant communities by **exotic perennial grasses**	No
Invasion of the **yellow crazy ant** into NSW	No
Invasion, establishment and spread of Lantana	No
Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants	No
Loss and/or degradation of **sites used for hill-topping by butterflies**	No
Loss of hollow-bearing trees	No
Predation and hybridisation by Feral Dogs	No
Predation by **feral cats**	No
Predation by the **European Red Fox**	No
Predation by the **Plague Minnow**	No
Predation by the **Ship Rat on Lord Howe Island**	No
Predation, habitat degradation, competition and disease transmission by **Feral Pigs**	No
Removal of **dead wood and dead trees**	No

Conclusion: The proposed works would not result in any significant impact to any of the subject threatened flora species; nor EEC and therefore a Species Impact Statement (SIS) is not required.

Threatened Fauna

a) in the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction

Wallum Froglet	Vulnerable - *TSC Act 1995*
Habitat description/ life cycle components	Found in a range of coastal habitats usually associated with acidic wallum swamps on coastal sand plains. Typical habitat includes sedgelands, wet heath, swamp sclerophyll forests and drainage lines, but also found in roadside drains in heathland environments. Breeds in swamps with permanent water, shallow ephemeral pools and drainage lines during cooler months though can occur throughout the year. Eggs laid in water with a pH <6.
Threats	Destruction and degradation of coastal wetlands as a result of roadworks, coastal developments and sandmining. Reduction of water quality and modification to acidity in coastal wetlands. Changes to hydrology of coastal wetlands as a result of a changing climate and/ or sea level rise. Nutrient enrichment and chemical run off from urban and agricultural areas and as a result of mosquito control. Predation of tadpoles and eggs by the Plague Minnow *Gambusia holbrooki*. While little is known of the extent of Plague Minnow predation on Wallum Froglets, it must be considered a potential threat. Habitat disturbance by feral pigs.
Likelihood of local extinction	Numerous records throughout the site in low-lying areas prone to inundation. Core habitat areas are restricted to the natural watercourse areas in Lot 1 DP780242. This species is subject to a number of threatening process such as altered water quality, weed invasion, pollution and invasion by pest species such as Cane Toads and Mosquito Fish. Large areas of habitat will be retained and enhanced within Environmental Zones at the subject site and preferential habitat available in the study area. Further detail on mitigation strategies are outlined in the TSMP for this species. As such, there is no likelihood of the proposal having an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Olongburra Frog	Vulnerable - *TSC Act 1995*
Habitat description/ life cycle components	Confined to coastal sand plain wallum swamps. Life-cycle adapted to the acidic pH (2.8-5.5) of coastal swamps. Typical habitat characterised by emergent sedges including *Baumea* spp. and *Schoenus* spp. Breeding occurs from spring through to autumn following rain. Eggs are laid in water at the base of sedges.
Threats	Destruction and degradation of wallum habitat for coastal development. Reduction of water quantity and/or quality (including changes to pH) in coastal wetland habitat. Changes in average and extreme temperatures and the amount and timing of rainfall due to climate change. Severe fires in very dry periods that result in insufficient refuge remaining post-fire. Roadkill (it has been estimated that >10,000 Olongburra Frogs are killed annually on one 4km stretch of road near Lennox Head). Predation of tadpoles and eggs by the Plague Minnow *Gambusia holbrooki*. While little is known of the extent of Plague Minnow predation on Olongburra Frogs, it must be considered a potential threat.
Likelihood of local extinction	Restricted to the watercourse in Lot 1 DP780242 an Environmental Zone. Habitat areas subject to a number of threatening process such as altered water quality, weed invasion, pollution and invasion by pest species such as Cane Toads and Mosquito Fish. Habitat identified during survey work will be retained and is not in the footprint of the proposed development. Habitat identified will be enhanced within Environmental Zones at the subject site. Further detail on mitigation strategies are outlined in the TSMP for this species. As such, there is no likelihood of the proposal having an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Black-necked Stork	Endangered - *TSC Act 1995*
Habitat description/ life cycle components	Inhabits permanent freshwater wetlands including margins of billabongs, swamps, shallow floodwaters, and adjacent grasslands and savannah woodlands; can also be found occasionally on inter-tidal shorelines, mangrove margins and estuaries.
Threats	• Powerlines, especially close to wetlands or over floodplains, are a significant cause of mortality of Storks and one of the most critical threats to the species in NSW. • Modification or degradation of wetlands through changes in natural water flows. It is important to maintain or reintroduce flows to provide wetland habitats suitable for foraging by Storks as they require large amounts of vertebrate prey from such habitats. • Loss of wetland habitat through clearing and draining for development. • Loss of key habitat as a result of wetland drainage for flood mitigation and agricultural development. • Degradation of wetland habitats through pollution. • Loss of paddock trees used for nesting. • Degradation of wetlands as a result of salinity.
Likelihood of local extinction	The proposed development would result in the loss of negligible potential habitat for the Black-necked Stork. Habitat in the area of the proposal is generally marginal with preferential habitat available in the study area. As such, there is no likelihood of the proposal having an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Black Bittern	Vulnerable - *TSC Act 1995*
Habitat description/ life cycle components	Occupies terrestrial and wetland estuarine systems within flooded grasslands, forest, woodland, rainforest and mangrove plant communities. Requires dense vegetation and permanent water. Constructs nest of sticks and reeds on branches overhanging swamp.
Threats	Clearing of riparian vegetation. Predation by foxes and feral cats on eggs and juveniles. Grazing and trampling of riparian vegetation by stock. Lack of knowledge about habitat use and the distribution of breeding activity.
Likelihood of local extinction	No core habitat occurs on site. Habitat occurs within the southern forested portions along the union drain and west into Cumbebin Swamp Nature Reserve. As such, there is no likelihood of the proposal having an adverse effect on the life cycle of the species such that a viable local

Black Bittern	Vulnerable - *TSC Act 1995*
	population of the species is likely to be placed at risk of extinction.

White-bellied Sea Eagle	Vulnerable - *TSC Act 1995*
Habitat description/ life cycle components	Foraging habitat consists of coastal seas, rivers, fresh and saline lakes, lagoons, reservoirs and terrestrial habitats such as grasslands.
Threats	Disturbance to or removal of large trees near the coast that have been or could be used as nest sites. Disturbances to water quality, such as from the disposal of treated effluent or stormwater runoff that increases turbidity in feeding areas. Ingestion of fish containing discarded fishing tackle. Potential electrocution of individuals using powerline poles for nesting. Disturbance to active nests potentially reducing reproductive success.
Likelihood of local extinction	The species is likely to fly over the site and potentially perch in emergent trees. Potential foraging habitat occurs widely in the study area along the foreshore and within local estuaries. The proposal would not result in the loss of any opportunistic foraging, roosting or breeding habitat for the White-bellied Sea Eagle. As such, there is no likelihood of the proposal having an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Eastern Osprey	Vulnerable - *TSC Act 1995*
Habitat description/ life cycle components	Feed on fish over clear, open water. Breed from July to September in NSW. Nests are made high up in dead trees, in dead crowns of live trees or nesting poles.
Threats	Disturbance to or removal of large trees near the coast that have been or could be used as nest sites. Disturbances to water quality, such as from the disposal of treated effluent or stormwater runoff, that increases turbidity in feeding areas. Ingestion of fish containing discarded fishing tackle. Potential electrocution of individuals using powerline poles for nesting. Disturbance to active nests potentially reducing reproductive success.
Likelihood of local extinction	The species is likely to fly over the site and potentially perch in emergent trees or Osprey nesting pole on the site. Potential foraging habitat occurs widely in the study area along the foreshore and within local estuaries. The proposal would not result in the loss of any opportunistic foraging, roosting or breeding habitat for the Eastern Osprey. As such, there is no likelihood of the proposal having an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Brolga	Vulnerable - *TSC Act 1995*
Habitat description/ life cycle components	• Though Brolgas often feed in dry grassland or ploughed paddocks or even desert claypans, they are dependent on wetlands too, especially shallow swamps, where they will forage with their head entirely submerged.
Threats	• At least in former times, Brolgas were poisoned and shot because of their feeding incursions into crops, following drainage of swamps. • Loss of wetland habitat through clearing and draining for flood mitigation and agriculture.
Likelihood of local extinction	There is no core habitat in the proposed development footprint for the Brolga. Habitat in the area of the proposal is generally marginal with preferential habitat available in the study area. As such, there is no likelihood of the proposal having an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Pale-vented Bush Hen	Vulnerable - *TSC Act 1995*
Habitat description/ life cycle components	The Pale-vented Bush-hen inhabits tall dense understorey or ground-layer vegetation on the margins of freshwater streams and natural or artificial wetlands, usually within or bordering rainforest, rainforest remnants or forests. Also occur in secondary forest growth, rank grass or reeds, thickets of weeds, such as Lantana (*Lantana camara*), and pastures, crops or other farmland, such as crops of sugar cane, and grassy or weedy fields, or urban gardens where they border forest and streams or wetlands, such as farm dams. Can also occur in and around mangroves, though rarely do so, if at all, in NSW.
Threats	Clearing, filling and draining of wetlands for agricultural, residential and industrial development. Pollution of wetlands from agricultural, urban and industrial run-off, including herbicides and pesticides. Changes to wetlands caused by weed invasion, often associated with sedimentation or grazing. Predation by introduced, feral and domestic predators, particularly Red Foxes (*Vulpes vulpes*) and Cats (*Felis catus*). Destruction of habitat and predation by feral Pigs (*Sus scrofa*). Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands. Loss of dense and rank understorey vegetation near streams and wetlands with clearing associated with urban and semi-rural developments.
Likelihood of local extinction	The proposed development would result in the loss of negligible potential habitat for the Pale-vented Bush Hen. Habitat in the area of the proposal is generally marginal with preferential habitat available in the study area. As such, there is no likelihood of the proposal having an adverse effect

Pale-vented Bush Hen	Vulnerable - *TSC Act 1995*
	on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Bush Stone-curlew	Endangered – TSC Act 1995
Habitat description/ life cycle components	Found in open forest with sparse grassy groundcover. Feeds on invertebrates and small reptiles & amphibians.
Threats	Predation by foxes and cats. Trampling of eggs by cattle. Clearance of woodland habitat for agricultural and residential development. Modification and destruction of ground habitat through removal of litter and fallen timber, introduction of exotic pasture grasses, grazing and frequent fires. Disturbance in the vicinity of nest sites.
Likelihood of local extinction	The proposed development would result in the loss of negligible potential habitat for the Bush Stone-Curlew. Habitat in the area of the proposal is generally marginal with preferential habitat available in the study area. As such, there is no likelihood of the proposal having an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Little Lorikeet	Vulnerable - *TSC Act 1995*
Habitat description/ life cycle components	Forages primarily in the canopy of open Eucalyptus forest and woodland, yet also finds food in Angophora, Melaleuca and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity. Isolated flowering trees in open country, e.g. paddocks, roadside remnants and urban trees also help sustain viable populations of the species. Feeds mostly on nectar and pollen, occasionally on native fruits such as mistletoe, and only rarely on orchards
Threats	Given that large old *Eucalyptus* trees on fertile soils produce more nectar, the extensive clearing of woodlands for agriculture has significantly decreased food for the lorikeet, thus reducing survival and reproduction. Small scale clearing, such as during roadworks and fence construction, continues to destroy habitat and it will be decades before revegetated areas supply adequate forage sites. The loss of old hollow bearing trees has reduced nest sites, and increased competition with other native and exotic species that need large hollows with small entrances to avoid predation. Felling of hollow trees for firewood collection or other human demands increases this competition. Competition with the introduced Honeybee for both nectar and hollows exacerbates these resource limitations. Infestation of habitat by invasive weeds. Inappropriate fire regimes. Aggressive exclusion from forest and woodland habitat by over abundant Noisy Miners. Climate change impacts including reduction in resources due to drought. Degradation of woodland habitat and vegetation structure due to overgrazing.
Likelihood of local extinction	The proposed development would result in the loss of negligible potential habitat for the Little Lorikeet. Habitat in the area of the proposal is generally marginal with preferential habitat available in the study area. As such, there is no likelihood of the proposal having an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Masked Owl	Vulnerable - *TSC Act 1995*
Habitat description/ life cycle components	Occupies eucalypt forests and woodlands though will forage along forest edge and roadsides. Roosts and breeds in eucalypt forests and eucalypt forested gullies using large tree hollows
Threats	Loss of mature hollow-bearing trees and changes to forest and woodland structure, which leads to fewer such trees in the future. Clearing of habitat for grazing, agriculture, forestry or other development. A combination of grazing and regular burning is a threat, through the effects on the quality of ground cover for mammal prey, particularly in open, grassy forests. Secondary poisoning from rodenticides. Being hit by vehicles.
Likelihood of local extinction	No breeding habitat for the Masked Owl occurs on the subject site; foraging requirements are unlikely to be significantly restricted or affected by development of the site. As such, there is no likelihood of the proposal having an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

White-eared Monarch	Vulnerable - *TSC Act 1995*
Habitat description/ life cycle components	In NSW, occurs in rainforest, especially drier types, such as littoral rainforest, as well as wet and dry sclerophyll forests, swamp forest and regrowth. They appear to prefer the ecotone between rainforest and other open vegetation types or the edges of rainforests, such as along roads.
Threats	• Clearing and increasing fragmentation and isolation of habitat, especially low-elevation subtropical rainforest, littoral rainforest and wet sclerophyll forest, through agricultural, tourist and residential development or forestry activities. • Forest management that results in conversion of multi-aged forests to young, even-aged stands. • Invasion of forests by weeds. • Inappropriate fire regimes that degrade habitat or allow invasion by weeds. • Degradation or loss of habitat through grazing of stock.
Likelihood of local extinction	The proposed development would result in the loss of a negligible area of low quality potential foraging habitat for the White-eared Monarch. As such, there is no likelihood of the proposal having an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Koala	Vulnerable - *TSC Act 1995*
Habitat description/ life cycle components	• Inhabit eucalypt woodlands and forests. • Feed on the foliage of more than 70 eucalypt species and 30 non-eucalypt species, but in any one area will select preferred browse species.
Threats	Loss, modification and fragmentation of habitat Vehicle strike Predation by roaming or domestic dogs Intense prescribed burns or wildfires that scorch or burn the tree canopy Koala disease Heat stress through drought and heatwaves Human-induced climate change Inadequate support for fauna rehabilitation Poor understanding of sources of trauma and mortality Poor understanding of population distribution and trend Poor understanding of animal movements and use of habitat
Likelihood of local extinction	The proposed development would aim to retain existing Koala food trees where possible and offset areas would be established for any loss of Koala habitat via a KPOM. The population and movement of koalas within the study area is well understood via successive studies and confirm the presence of Koalas to the north, west and south a population of which animals on the subject site are a part. As such, there is no likelihood of the proposal having an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Grey-headed Flying-fox	Vulnerable - *TSC Act 1995*
Habitat description/ life cycle components	Occurs in subtropical and temperate rainforests, tall sclerophyll forests and woodlands. The species forages on nectar and pollen of native trees, in particular Eucalypts, Melaleuca and fruits of rainforest trees and vines, in addition to cultivated gardens and fruit crops. Congregation camps of up to the tens of thousands are used for roosting, often in stands of riparian rainforest, Paperbark or Casuarina forest.
Threats	• Loss of foraging habitat. • Disturbance of roosting sites. • Unregulated shooting. • Electrocution on powerlines.
Likelihood of local extinction	No core habitat occurs on site. Nearest roosting camps are located in Byron Bay (behind Shirley Street, approx. 800m to the east) and at Mullumbimby (along the Brunswick River, 13km to the north-west). The proposal would not result in the loss of any opportunistic foraging habitat for the Grey-headed Flying-fox. No roost camps or potential roost camps occur at the subject site. As such, there is no likelihood of the proposal having an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Yellow-bellied Sheathtail Bat	Vulnerable - *TSC Act 1995*
Habitat description/ life cycle components	Occupies a range of vegetation communities with and without trees. Roosts and breeds in large tree hollows and usually found in mixed-sex groups of 2 – 6. A single young is born between December and March.
Threats	Disturbance to roosting and summer breeding sites. Foraging habitats are being cleared for residential and agricultural developments, including clearing by residents within rural subdivisions. Loss of hollow-bearing trees; clearing and fragmentation of forest and woodland habitat. Pesticides and herbicides may reduce the availability of insects, or result in the accumulation of toxic residues in individuals' fat stores.
Likelihood of local extinction	Tree hollows are a sparse resource at the site, but potential breeding habitat occurs; foraging requirements are unlikely to be significantly restricted or affected by development of the subject site. As such, there is no likelihood of the proposal having an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Microbat Species	
Habitat description/ life cycle components	Common Blossom Bat: The species roosts in littoral rainforest and feed on nectar and pollen from flowers in adjacent heathland and paperbark swamps. They can also occur in subtropical rainforest, wet sclerophyll forest and other coastal forests. Little Bentwing Bat: Forages above and below canopy of well-forested areas. Roosts in old buildings, caves, mines etc. Dependent on nursery caves and communal roosts. Eastern Bentwing-Bat: Caves provide primary roosting habitat although storm water tunnels, buildings and other man-made structures are also used. Maternity caves are known to have specific temperature and humidity regimes. Young are reared during spring and summer. Southern Myotis: Tunnel, cave, bridges, old buildings, tree hollow and dense foliage roosting bat which prefers riparian habitat over 500m long with nearby roosting habitat. Key habitats are streams, rivers, creeks, lagoons, lakes and other water bodies. Feeds on aquatic insects and small fish. Eastern Long-eared Bat: found in Lowland subtropical rainforest and wet and swamp eucalypt forest, extending into adjacent moist eucalypt forest and coastal rainforest. Roosts in tree hollows, the hanging foliage of palms, in dense clumps of foliage of rainforest trees, under bark and in shallow depressions on trunks and branches, among epiphytes, in the roots of strangler figs, among dead fronds of tree ferns and less often in buildings. Greater Broad-nosed Bat: Utilises a variety of plant communities including woodland, dry and wet sclerophyll forests and rainforest. Typically found in gullies, creek and river corridors where it forages for insects. Maternity sites are located in tree hollows where a single young is born and reared during January.
Threats	• Disturbance by recreational cavers and general public accessing caves and adjacent areas particularly during winter or breeding. • Loss of high productivity foraging habitat. • Introduction of exotic pathogens, particularly white-nose fungus. • Cave entrances being blocked for human health and safety reasons, or vegetation (particularly blackberries) encroaching on and blocking cave entrances. • Hazard reduction and wildfire fires during the breeding season. • Disturbance to roosting and summer breeding sites. • Foraging habitats are being cleared for residential and agricultural developments, including clearing by residents within rural subdivisions. • Loss of hollow-bearing trees. • Pesticides and herbicides may reduce the availability of insects, or result in the accumulation of toxic residues in individuals' fat stores. • Changes to water regimes are likely to impact food resources, as is the use of pesticides and herbicides near waterways. • Disturbance to roosting and summer breeding sites. • Foraging habitats are being cleared for residential and agricultural developments, including clearing by residents within rural subdivisions. • Pesticides and herbicides may reduce the availability of insects, or result in the accumulation of toxic residues in individuals' fat stores. • Changes to water regimes are likely to impact food resources, as is the use of pesticides and herbicides near waterways. • Poor knowledge of reproductive success and population dynamics • Disturbance to roosting areas by goats

Likelihood of local extinction	While individuals are likely to use the subject site for foraging habitat, any local population of these species would extend well beyond the site to meet all their full lifecycle requirements. No breeding habitat occurs on site; foraging requirements are unlikely to be significantly restricted or affected by development of the subject site. Considering that the area these bats would routinely range well beyond the subject site to meet their lifecycle requirements: the order of magnitude of impacts associated with the proposal is not considered likely to impact on the life cycle of the bat species described above. As such, there is no likelihood of the proposal having an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

b) In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction

No endangered populations, listed under Part 2 of Schedule 1 of the TSC Act, occur within the vicinity of the site. Thus, the action proposed will not cause *a viable local population of the species to be placed at risk of extinction*.

c) in the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

iv. is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

v. is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

N/A for fauna assessment. Refer Flora and Endangered Ecological Communities assessment.

d) in relation to the habitat of a threatened species, population or ecological community:

vi. the extent to which habitat is likely to be removed or modified as a result of the action proposed, and

4.7 ha of habitat will be removed or modified due to the proposed development. However, this will be offset by the rehabilitation and restoration of approximately 28 ha of habitat. These rehabilitation works will particularly focus on the creation and restoration of Koala, Wallum Froglet and Wallum Sedge frog habitat.

vii. whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and

The footprint of the proposed development removes habitat in a manner that will not fragment or isolate any habitat which may be used by any of the subject species, with environmental zones consolidated and improved on the eastern and southern sides of the development.

viii. the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality,

It is expected that approximately 4.7 ha of mixed vegetation is to be removed as part of the proposed works. The habitat to be removed can be considered to be already modified, fragmented regrowth isolated from important habitat. Due to the large extent of similar and better-quality habitat in the locality and proposed native regeneration it is not expected that this removal will have an adverse impact on any local populations.

e) whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly),

No areas of critical habitat listed under the *TSC Act 1995* occur within the locality.

f) whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan,

The proposed development is not inconsistent with the objectives of any recovery plans. Three approved threat abatement plans (TAPs) have been prepared to date:

- Invasion of native plant communities by bitou bush and boneseed,
- Predation by the red fox, and
- Predation by the plague minnow.

None of the approved TAPs have relevance to any of the subject species with regard to the proposed action.

g) whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.

The proposed work constitutes the clearing of native vegetation. The current list of Key Threatening Processes (KTPs) are listed at Table B.3 and discussed below.

Threatened Species Conservation Act 1995 Schedule 3 Key Threatening Processes	Applicable to proposal
Aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners	No
Alteration of habitat following **subsidence due to longwall mining**	No
Alteration to the natural flow regimes of rivers, streams, floodplains & wetlands.	Yes
Bushrock Removal	No
Clearing of native vegetation	**Yes**
Competition and grazing by the **feral European rabbit**	No
Competition and habitat degradation by Feral Goats	No
Competition from **feral honeybees**	No
Death or injury to marine species following capture in **shark control programs on ocean beaches**	No
Ecological consequences of **high frequency fires**	No
Entanglement in, or ingestion of **anthropogenic debris in marine and estuarine environments**	No
Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners	No
Herbivory and environmental degradation caused by **feral deer**	No
Human-caused **Climate Change**	No
Importation of **red imported fire ants** into NSW	No
Infection by **Psittacine circoviral (beak and feather) disease** affecting endangered psittacine species	No
Infection of frogs by amphibian chytrid causing the disease chytridiomycosis	No
Infection of native plants by *Phytophthora cinnamomi*	No
Introduction and establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on	No

Threatened Species Conservation Act 1995 Schedule 3 Key Threatening Processes	Applicable to proposal
plants of the family Myrtaceae	
Introduction of the **large earth bumblebee**	No
Invasion and establishment of **exotic vines and scramblers**	No
Invasion and establishment of Scotch Broom	No
Invasion and establishment of the **Cane Toad**	No
Invasion of native plant communities by African Olive	No
Invasion of native plant communities by **bitou bush & boneseed**	No
Invasion of native plant communities by **exotic perennial grasses**	No
Invasion of the **yellow crazy ant** into NSW	No
Invasion, establishment and spread of Lantana	No
Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants	No
Loss and/or degradation of **sites used for hill-topping by butterflies**	No
Loss of hollow-bearing trees	No
Predation and hybridisation by Feral Dogs	No
Predation by **feral cats**	No
Predation by the **European Red Fox**	No
Predation by the **Plague Minnow**	No
Predation by the **Ship Rat on Lord Howe Island**	No
Predation, habitat degradation, competition and disease transmission by **Feral Pigs**	No
Removal of **dead wood and dead trees**	No

Conclusion: The proposed works would not result in any significant impact to any of the subject threatened fauna species; therefore, a SIS is not required.

DAC PLANNING PTY LTD
TOWN PLANNING & DEVELOPMENT CONSULTANTS

REVISED STATE ENVIRONMENTAL PLANNING POLICY NO. 1 OBJECTION TO THE 40 HECTARE DEVELOPMENT STANDARD IN BLEP1988

PROPOSED SUBDIVISION
EWINGSDALE ROAD
BYRON BAY

PREPARED FOR:

West Byron

PREPARED BY:

DAC Planning Pty Ltd

NOVEMBER 2017
REVISED JULY 2018

REVISED STATE ENVIRONMENTAL PLANNING POLICY NO. 1 OBJECTION

IN RELATION TO A PROPOSED SUBDIVISION AT WEST BYRON

1.0 INTRODUCTION

This State Environmental Planning Policy No.1 Objection has been prepared by DAC Planning Pty Ltd and relates to the development standard requiring a 40 hectare minimum lot size, which applies to land zoned 7(a) and 7(b) pursuant to Clause 11 of Byron Local Environmental Plan 1988 (BLEP1988).

Details of the proposed subdivision are contained in the Statement of Environmental Effects and Annexures.

Lot 2 DP 818403 (AR & JD Smith & Fletcher Project Development Pty Ltd) is zoned partly R2, partly IN2, partly E2 and partly E3 under BLEP1988 (West Byron Amendment). The remainder of the land is zoned 7(a) Wetlands (4.464 hectares) under BLEP1988.

Lot 2 has a total area of 11.46 hectares and the whole of the land zoned 7(a) (and E2/E3) will be contained in the residue Lot 177 which has an area of 7(a) land comprising 4.46 hectares.

Lot 1 DP 780242 (Gousse Holdings Pty Ltd) is zoned partly R2 and partly E2 under BLEP1987 (West Byron Amendment). The remainder of the lot, comprising two parts with areas of 1161m^2 and 633m^2, is zoned 7(a) Wetlands and a further part is zoned 7(b) Coastal Habitat with an area of 3763m^2 under BLEP1988.

Lot 1 has a total area of 21.01 hectares and the whole of the land zoned 7(a), 7(b) (and E2) will be contained in the residue Lot 183.

It is simply not possible to comply with the 40 hectare development standard because the area of 7(a) and 7(b) land is already less than 40 hectares and subdivision is required to implement the urban zones over the site in accordance with BLEP1988 (West Byron Amendment).

No fragmentation of the wetland or coastal habitat will occur and no works are proposed within the 7(a) or 7(b) zoned land.

Therefore, this Objection is lodged in relation to the 40 hectare Development Standard in Clause 11(1) of BLEP1988.

Clause 11 of BLEP1988 is in the following terms:

> "***11 Subdivision in rural areas for agriculture etc***
> *(1) The council shall not consent to the subdivision of land for agriculture, forestry or a dwelling-house within the zones shown in Column 1 of the Table to this clause unless the area of each of the allotments to be created is not less than that shown opposite that zone in Column 2 of the Table and, in the opinion of the council, each allotment is of satisfactory shape and has a satisfactory frontage.*

Column 1 *Zone*	*Column 2* *Minimum Area* *ha*
Rural 1 (a) General Rural Zone	*40*
Rural 1 (b1) Agricultural Protection ("b1") Zone	*40*
Rural 1 (b2) Agricultural Protection ("b2") Zone	*20*
Rural 1 (c1) Small Holdings ("c1") Zone	*0.4*
Rural 1 (c2) Small Holdings ("c2") Zone	*0.2*
Rural 1 (d) Investigation Zone	*40*
Urban 2 (t) Tourist Area Zone	*1*
Environmental Protection 7 (a) Wetlands Zone	***40***
Environmental Protection 7 (b) Coastal Habitat Zone	***40***
Environmental Protection 7 (c) Water Catchment Zone	*40*
Environmental Protection 7 (d) Scenic/Escarpment Zone	*40*
Environmental Protection 7 (f1) Coastal Lands Zone	*40*
Environmental Protection 7 (j) Scientific Zone	*40*
Environmental Protection 7 (k) Habitat Zone	*40"*

2.0 OBJECTION TO THE DEVELOPMENT STANDARD

We submit that, in the case of the subject subdivision, compliance with the development standard is both unreasonable and unnecessary because the objectives of the standard are achieved notwithstanding noncompliance with the standard.

Clause11 of the BLEP1988 does not contain any objectives, however by inference the objective of the 40 hectare standard is to maintain the "rural character" and avoid fragmentation and disturbance of the 7(a) Wetlands and 7(b) Coastal Habitat area. The whole of the 7(a) and 7(b) land will be contained in the residue Lots 177 and 183. Currently both existing lots are less than 40 hectares and therefore the 40 hectare development standard cannot be complied with.

It is therefore submitted that the proposed development is consistent with the objectives for subdivision in the 7(a) and 7(b) zone.

The Courts have consistently emphasised that there is no single determinative test for assessing a SEPP 1 objection. However, it has become usual practice in recent years to apply the "underlying object test" and to use the formulation suggested by Lloyd J in *Winten Property Group Limited v North Sydney Council* (2001) 130 LGERA 79.

In *Wehbe v Pittwater Council [2007] NSW LEC 827,* Chief Judge of the Land and Environment Court, Preston J recast the long standing 5 part test for consideration of a SEPP 1 objection set out in *Winten Property Group Ltd v North Sydney Council* (2001).

The Chief Judge suggests that a consent authority must be satisfied of three matters before a SEPP 1 objection can be upheld:

(1) That the objection is well founded and that compliance with the development standard is unreasonable or unnecessary in the circumstances of the case.

(2) That the granting of consent is consistent with the aims of SEPP 1.

(3) That Clause 8 matters (in SEPP 1) are satisfied ie.

- Whether noncompliance raises matters of State or Regional planning significance.
- The public benefit of maintaining the planning controls.

Each of the three key matters are addressed in turn, as follows:

1. <u>That the objection is well founded and that compliance with the development standard is unreasonable or unnecessary in the circumstances of the case.</u>

The Chief Judge advised that the requirement to demonstrate that an objection is well founded and that the approval of the objection may be consistent with the aims of the policy could be satisfied in any one of the following ways:

(i) <u>The objectives of the standard are achieved notwithstanding non-compliance with the standard.</u>
(ii) The underlying objective or purpose of the standard is not relevant to the development and therefore compliance is unnecessary.
(iii) The underlying object of purpose would be defeated or thwarted if compliance was required and therefore compliance is unreasonable.
(iv) The development standard has been virtually abandoned or destroyed by the Council's own actions in granting consents departing from the standard and hence compliance with the standard is unnecessary and unreasonable.
(v) The zoning of the particular land is unreasonable or inappropriate so that a development standard appropriate for that zoning is also unreasonable and unnecessary as it applies to the land and compliance with the standard would be unreasonable or unnecessary. That is, the particular parcel of land should not have been included in the particular zone.

<u>We submit that the objectives of the standard are achieved notwithstanding non-compliance with the standard.</u>

The relevant questions to properly assess whether the objectives of the standard are achieved notwithstanding non-compliance with the standard are as follows:

a) Will the proposed subdivision result in fragmentation which would generate pressure to allow isolated residential development in an uncoordinated manor?

b) Will the proposed subdivision result in any adverse impact upon the ecological or scenic values of the land?

The responses to these questions are provided as follows:

a) Will the proposed subdivision result in fragmentation which would generate pressure to allow isolated residential development in an uncoordinated manor?

The proposed subdivision will not result in any additional dwellings or dwelling entitlements. Therefore the proposal cannot be considered to generate any pressure to allow isolated residential development.

In addition, the 40 hectare standard cannot be complied with because both parent lots have areas of less than 40 hectares.

b) Will the proposed subdivision result in any adverse impact upon the ecological or scenic values of the land?

The proposal does not fragment or alter the existing landform of the 7(a) or 7(b) land and therefore will not affect the ecological or scenic values of the land.

For the above stated reasons we submit that the implied objectives of the 40 hectare development standard are achieved notwithstanding noncompliance with the standard. Following from the first test established in *Wehbe v Pittwater Council [2007] NSW LEC 827*, we conclude that the objection is well founded and that compliance with the development standard is unreasonable or unnecessary in the circumstances of the case.

2. <u>That the granting of consent is consistent with the aims of SEPP 1.</u>

The aims and objectives of the Policy (SEPP 1) are as follows:

"This Policy provides flexibility in the application of planning controls operating by virtue of development standards in circumstances where strict compliance with those standards would, in any particular case, be unreasonable or unnecessary or tend to hinder the attainment of the objects specified in section 1.3 (a) to (j) of the Act."

Sections 1.3(a) and (c) of the Environmental Planning and Assessment (EP&A) Act 1979 (as amended) are as follows:

*"**1.3 Objects of Act***
(cf previous s 5)
The objects of this Act are as follows:
(a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,
(c) to promote the orderly and economic use and development of land,"

In summary, it is considered that the Objection is consistent with the relevant aims of the Act in that the 40 hectare development standard cannot be complied with because the parent lots have areas of less than 40 hectares, no fragmentation or landform changes are proposed within the 7(a) and 7(b) zoned land and there will be no change in the land use of the 7(a) and 7(b) zoned land.

In this case, where the proposed development does not alter the status-quo, compliance with the development standard would hinder attainment of the EP&A Act's object to promote orderly and economic use and development of land in accordance with the zoning of that land and its physical capabilities.

3. <u>That clause 8 matters (in SEPP 1) are satisfied i.e.</u>

- **<u>Whether noncompliance raises matters of State or regional environmental planning significance.</u>**
- **<u>The public benefit of maintaining the planning controls.</u>**

In considering whether the proposal creates any matters of Regional or State planning significance or raises any issues in relation to the public benefit of maintaining the standard the following points are relevant.

- No change in land use in the 7(a) and 7(b) zones results from the subdivision;
- No physical disturbance to the landform or vegetation in the 7(a) and 7(b) zones results from the subdivision;

- No fragmentation of the 7(a) and 7(b) zoned land will occur;
- No additional dwelling entitlements will be created;

There is no public benefit in maintaining the 40 hectare development standard because to do so would preclude development of the West Bryon site in accordance with the zoning applied under Byron Local Environmental Plan, 1988 (West Byron Amendment).

3.0 CONCLUSION

It is submitted that upholding of the Objection would be consistent with the aims of SEPP1, in that strict compliance with the 40 hectare Development Standard would unreasonably preclude the appropriate subdivision of the site in accordance with the capability of the land and the contemporary zonings applied by way of BLEP1988 (West Byron Amendment) on 14 November 2014.

The proposal does not involve any change of use of the 7(a) and 7(b) zoned land and accordingly, in the circumstances of this case, noncompliance with the Development Standard is well founded and is consistent with the aims of SEPP1.

We conclude that upholding the Objection is in the public interest and consistent with the objects of the Act.

Technical Memorandum

To:	Stuart Murray
From:	Eli Dutton
Date:	9/08/2018
Pg/Attach.:	5
Job ref:	1-17820

West Byron Fencing Plan

Australian Wetlands Consulting has produced this technical memo in response to Requests for Further Information (RFI) from Byron Shire Council in regard to the Wets Byron Development.

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The RFI's pertaining to the west Byron fencing plan were received by email from BSC on the 3-7-18 and are as follows:

- Failure to consider impacts and barrier effects from proposed fencing: acoustic fence along Ewingsdale Road, & dog proof fencing/exclusion fencing around the residential development.
- Failure to consider impacts from the domestic dogs and cats from 378 residential lots: R & D).
- Koala are slow to use purpose-built crossings (YTOC & BTOY data), Koala movements will be affected by extensive fencing, and loss of access to food trees, presence of dogs, & increased traffic on Ewingsdale Road. Breaches in the fence will soon occur following residential occupation. Annual maintenance interval for fences is inadequate: who funds fence maintenance long term?
- Location of all fences needs to be shown in order to accurately assess barrier effects and isolation for fauna associated with the development. Where Koala exclusion fences intersect with internal roads, how will Koalas be prevented from entering and becoming trapped in the enclosed residential area?
- Vegetation Management Plan nominates use of Koala Feed Trees for infill plantings contrary to the use of exclusion fencing to keep Koalas out of the urban residential zone.

The RFI's above are addressed in the main RFI document, however it is recognised that a fencing plan was lacking from the original ecological documentation. This fencing plan is discussed and described further below.

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Fencing Plan

The West Byron fencing plan aims to mitigate the impacts of the proposed development on native fauna in particular Koala's. The construction and design of the fence needs to take a collaborative approach between West Byron, Villaworld and Byron Shire Council (BSC) for it the be effective. As such the fence needs to be designed so that it is fauna friendly and uses best practice management strategies. The Australian Government Department of the Environment and Queensland Government Department of Environment and Science provide guidelines for the construction of fauna or Koala friendly fencing.

Furthermore, Byron Shire Council (BSC) in their Draft Byron Coast Comprehensive Koala Plan of Management Koala Plan of Management (KPoM), outline Koala friendly fencing design in the Byron Shire Area.

Fence Design

The following design notes are taken from Byron Shire Council (2015):

Fencing of residential lots must not impede the movement of koalas. Fences that do not impede koala movement may include:

a) *hedges or screens of trees and/or shrubs;*
b) *fences where the bottom of the fence is a minimum of 300 mm above the ground to allow koalas to freely move underneath;*
c) *open post and rail fences;*
d) *post and 4 or 5 strands of plain wire, barbed wire or some combination of plain and barbed wire, where the bottom strand of wire is a minimum 300 mm above the ground at any in-line fence post and/or dropper.*

However, this style of fencing is not appropriate for the perimeter of the project site. The fencing required at the site needs to ensure that dogs and cats both domestic and feral are not easily able to access Koala habitat areas. As a result, the following fencing design measures as suggested by the Department of the Environment (2014), need to be undertaken;

a) Fencing that is both dog proof and koala proof along boundaries; or dog proof fencing with koala furniture to allow koalas to escape yards, AND
b) Fences are a minimum 3m high (dog proof), AND
c) Have a minimum 50cm wide scratch panelling installed along the length of the outer side of the fence (for koala proof fencing), AND
d) A fully-funded agreement is in place with a relevant organisation or authority for the maintenance and monitoring of the fencing in perpetuity.

BSC (2015) also recommends that, round pipe cattle-grids or other approved devices must be installed at fence-ends and driveways and other access points to prevent koala access to the exclusion area.

A preliminary fencing plan is shown below in Figure 1 and examples of fencing designs and Koala grids are shown in plates 1-4.

Plate 2 Example of Koala furniture (Source https://www.ehp.qld.gov.au/wildlife/koalas/koala-threats.html)

Plate 1 Example of Koala Grid (Source http://www.rms.nsw.gov.au/projects/northern-nsw/koala-grids/index.html)

Plate 3 Example of mesh fencing (Source https://fencescape.com.au/wildlife-fencing/)

Plate 4 Example of scratch plate at top of fencing (Source https://fencescape.com.au/wildlife-fencing/)

AWC

Source:	
Disclaimer:	Care was taken in the creation of this map. AWC should be consulted as to the suitability of the information shown herin prior to the commencement of any works based on the information provided. AWC cannot accept any responsibility for errors, omissions or positional accuracy. There are no warranties expressed or implied as to the suitability of this map for a particular purpose. However notification of any errors will be appreciated.

0 75 150 225 300 m

A3 Scale 1:10,000
Coordinate System: MGA 56 Projection: Transverse Mercator

- Fencing Plan
- Koala Grids
- Gate

Figure 1:

West Byron Fencing Plan

References

Byron Shire Council, (2015). Draft *Byron Coast Comprehensive Koala Plan of Management*. Byron Shire Council, Mullumbimby, NSW.

Department of the Environment, (2014). *EPBC Act Referral Guidelines for the vulnerable koala (combined populations of Queensland, New South Wales and the Australian Capital Territory), Commonwealth of Australia.* Commonwealth of Australia.

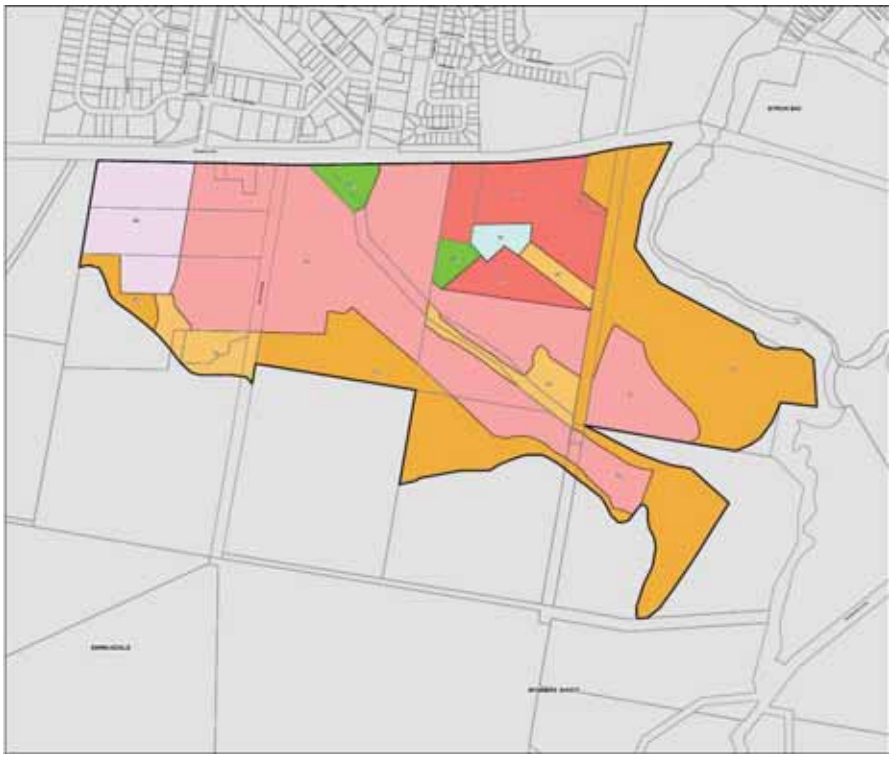
Department of Environment and Science, (2018). https://www.ehp.qld.gov.au/wildlife/koalas/koala-threats.html

West Byron Urban Release Area Development Application

Engineering Assessment

Document No: NE160352 R07

Issue No: 7



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REVISIONS

Date	Revision/ Issue No.	Revision Description	Prepared By	Reviewed By	Approved By
4 August 2017	1	Draft	Bob Staniland		
9 August 2017	2	Draft	Bob Staniland		
7 Sept 2017	3	Draft	Bob Staniland		
26 Sept 2017	4	For Approval	Bob Staniland		
11 October 2017	5	For DA Approval	Bob Staniland		
26 October 2017	6	Final	Bob Staniland	Joshua Rhodes	Joshua Rhodes
September 2018	7	Revised Final	Bob Staniland		

Table of Contents

1. Introduction

The urban release area development is on the lands referred to as West Byron rezoned in November 2014 by the NSW Department of Planning and Environment.

1.1 Development of the urban release area will be subject to three separate applications over three property areas which are:

- The West Byron Urban Release Area (WBURA) being the subject of this Development Application and
- The Harvest Estate to be developed by Villaworld and
- The industrial development by NSPT.

The property areas are shown in Figure 1 – Development Plan.

1.2 The WBURA development is a mix of commercial, residential, industrial and environmental purposes zonings. Development is anticipated to yield approximately 300 lots.

1.3 ACOR Consultants have been instructed to carry out an engineering assessment by the Project Manager Site R & D on behalf of the land owners. The Landowners are:

- Telicove Pty Ltd (Lot 1 DP 201626 & Lot 2 DP 524178)
- Gousse Holdings Pty Ltd (Lot 1 DP 780242)
- Anthony Roy Smith, Julie Deborah Smith & Fletcher Project Developments Pty Ltd (Lot 2 DP 818403)
- David John O'Connor & Carol Fay O'Connor (Lot 1 DP 520063)

1.4 The purpose of this assessment is to address engineering matters relating to the WBURA development, in accordance with the Byron DCP 2014, so that future Construction Certificates (CC's) submitted by individual landowners will be based on approved concepts.

1.5 The scope of this assessment is:

- Bulk earthworks
- Road profiles and property accesses
- Cycleways
- Stormwater quantity i.e. conveyance, swales, pipes and detention
- Main drain
- Services infrastructure
- Coordination of development and infrastructure with the Harvest Estate and Ewingsdale Road upgrade works.

1.6 Design and construction standards will generally be in compliance with:

- The Byron DCP 2014.
- Byron Shire Council Northern Rivers- Local Government (BSC NR-LG) Development Design Specifications and Standard Drawings as applicable.

1.7 Existing site levels generally range between RL 2 to 4m AHD. The existing site contours are shown in Figure 2- Detailed Site Survey Plan.

1.8 E2 and E3 zoning for environmental purposes adjoin the development to the south and east. A 50m buffer has been applied to the southern SEPP14 boundary line.

2 Earthworks

2.1 Bulk earthworks will set the approximate landform and finished levels for future urban development of roads and lots. Development will involve detailed urban design for layout and corresponding CC standard engineering resulting in minor modifications to the bulk earthworks.

2.2 Constraints and design basis of earthworks are:

a) Minimum lot level corresponding to the 100 year Average Recurrence Interval (ARI) flood level of RL 2.24m-2.79m AHD as determined by the West Byron Flood Impact Assessment October 2017 prepared by BMT WBM. Flood levels are shown in Figure 26 – Flood Levels.

b) Flood Planning Level of RL 2.74m-3.29m AHD, including for 500mm freeboard, which sets minimum floor level.

c) Minimum stormwater discharge levels at the development boundaries corresponding approximately to adjacent surface levels.

d) Perimeter road generally adjacent E2 and E3 zoned land for Rural Fire Service (RFS) requirements for access and asset protection zones (APZ's) and other suitable separations and buffers.

e) Stormwater conveyance by:

- Pit and pipe system to Council standards; and
- Grassed swale to Water Sensitive Urban Design (WSUD) principles for quality treatment, particularly at perimeter roads.

f) Grade in swales of minimum 0.5% longitudinally to low point discharge.

g) Grade in urban development areas of about 0.5-1% to accommodate future detailed design of roads and stormwater facilities.

h) Development works other than storm water infrastructure are generally excluded from areas zoned for environmental purposes and designated buffer zones.

2.3 The proposed bulk earthworks are shown in;

- Figures 3.1, 3.2 and 3.3 Earthworks Surface Levels Concept Plans,
- Figures 3.4 - Earthwork Sections
- Figures 4.1, 4.2 and 4.3 - Earthworks Filling Plans.

2.4 Bulk earthworks will involve filling to depths between zero and about 2m. Filling is required to achieve:

- Minimum lot level for flooding
- Minimum grades on lots and in roads, pipes and swales for stormwater drainage

Excavation will be generally avoided to prevent any impacts on Potential Acid Sulphate Soils (PASS).

2.5 The total fill imported to site will be about 330,000m^3.

2.6 An acoustic mound will be constructed at the Ewingsdale Road frontage to a height of 2m above road level. A 2m high fence and landscaping will be included. The mound will be incorporated in the earthworks. The mound is shown in Figure 5.1 – Acoustic Mound and Utilities Allocations Section. The mound will return 15m into the Road as shown in Figure 5.2 - Accoustic Mound Returns.

2.7 Earthworks construction standard will include:

- Earthworks preparation of clearing, stripping and grubbing. Trees and vegetation will be removed. Topsoils and soils containing organic matter will be stripped, stockpiled and replaced over finished bulk earthworks.
- Proof roll, remove and replace identified areas of soft, loose or unsuitable material prior to filling.
- Identify and treat areas of existing uncontrolled fill.
- Place fill in residential development areas in layers not exceeding 200mm loose thickness and compact in the moisture range of optimum +/- 2% to a dry density ratio of not less than 95% Standard maximum dry density or density index of not less than 70%.
- Place fill in commercial development areas and roads similarly to a dry density ratio of not less than 98% of Standard maximum dry density or a density index of not less than 75%.
- Provide Level 1 supervision to AS3798-2007.
- Imported fill material is to be sound, clean, of reasonable standard and free from large rock, stumps, organic matter and other debris.

2.8 Imported fill type will be dependent on available sources at the time of construction and will generally not be critical to the development. Sand or clay materials might be utilised. However, stormwater management will rely on infiltration of treated stormwater from bioretention swales into the site sandy soils. It will therefore be necessary to select sand material as fill under road swales and basins.

2.9 The significant geotechnical issues arising from the Shaw Urquart report are:

- Site soils are identified as predominately silty sand and sand. Some fill is considered uncontrolled because it is loose. Such fill will be recompacted.
- No significant near surface clayey soils were encountered.
- Top soil is not suitable for use as structural fill and will be stripped, stockpiled and spread over final lot surfaces.
- With the exception of the top soil layers the site soils are considered suitable for use as engineered fill but are likely to require moisture conditioning before compaction.
- No general cut is proposed across the site.
- Imported fill will generally be high permeability sandy material selected to road reserves for high infiltration of stormwater and good subgrade for pavements. Other sources of general fill may also be utilised for the project.

- Suitable local sources for sandy fill include:

  1 Dunloe Sands – Holcim (Pottsville)

  2 Newrybar Sand Quarry – off Ross Lane

  3 Doonbah Quarry – Evans Head

  4 South Ballina Quarry

3 Road Profiles and Property Access

3.1 Road carriageway widths have been adopted from the DCP and BSC NR-LG Design Specification D1- Geometric Road Design, Table D.1.5 characteristics of Roads in Residential Subdivision Road Networks. These are shown in Figures 10.1 and 10.2 – Road Typical Cross Sections.

3.2 Road verge or footway minimum widths have been similarly adopted with widening as required to accommodate footpaths, shared pathways, public utilities and buffers to environmental areas. These are shown in Figure 6- Typical Footway Cross Sections.

3.3 Public utilities allocations have been adopted from BSC NR-LG Standard Drawing R-10 with adjustments to accommodate widened verges.

4 Roads

4.1 The basis of street hierarchy for the development is:

- Distributor road from the development entry at the Ewingsdale Road/ School of Audio Engineering (SAE) access roundabout extending to the commercial area.
- Collector road from the commercial area to the connection at the main drain with the Harvest Estate.
- A network of local and access roads providing access to lots.

- Laneways providing access to rear of special purpose lots.
- Formation of a spine road through this development and Harvest Estate connecting at the Ewingsdale Road/ Bayshore Drive and SAE entry roundabouts.

4.2 The scope of roads is shown in Figure 7- Roads Plan.

Preliminary road design is shown in:

- Figures 8.1, 8.2 and 8.3 – Roads Plan
- Figures 9.1 to 9.21 - Road Longitudinal Sections
- Figures 10.1 to 10.2 – Road Typical Cross Sections

4.3 Roads will be designed and constructed in accordance with BSC NR-LG Design Specification D1- Geometric Road Design.

4.4 There will be a bridge crossing of the main drain.

4.5 The Ewingsdale Road roundabout at the SAE entry will be two lane width to cater for future road widening. A concept arrangement is shown in Figure 11 - Roundabout Concept SAE Entry.

4.6 A bus route is anticipated to utilise the spine road. Bus stops will be provided on the internal spine road at kerb side within the road carriageway and on the Ewingsdale Road frontage. Bus stops will be located in consultation with Council and bus service provider.

4.7 Perimeter roads will be provided abutting environmental zoned areas in accordance with Planning for Bushfire Protection 2006 or other suitable separations and buffers.

5 Cycleways and Pathways

5.1 Proposed shared pedestrian cycleways and pedestrian pathways are shown in Figures 12.1, 12.2 and 12.3 – Cycleways and Pathways Plans.

5.2 Off road shared pedestrian cycleway will be 2.5m width in compliance with BSC NR-LG Design Specification D9 Cycleway and Pathway Design.

6 Stormwater

6.1 WSUD is a critical basis of the stormwater management proposed for the urban release development. Stormwater quantity is addressed in this report; stormwater quality is addressed by Australian Wetland Consulting (AWC).

6.2 Stormwater conveyance design will be in compliance with BSC NR-LG Design Specification D5 Stormwater Drainage Design, utilising pit and pipe networks and grassed swales corresponding to the principles of WSUD.

6.3 Stormwater drainage will be designed in accordance with the “major/minor” system concept set out in Chapter 14 of Australian Rainfall and Runoff, 1987 (AR & R). The “major” system provides safe, well defined over land flow paths for rare and extreme storm runoff events while the “minor” system shall be capable of carrying and controlling flows from frequent runoff events.

6.4 Design principles for the pit and pipe conveyance are to the Design Specifications.

6.5 All lots drain to a lawful point of discharge at road frontage. All roads drain to lawful points of discharge.

6.6 Design principles for the grassed swales conveyance and treatment of stormwater flows include:

a) Profile correlating with the grassed swale at perimeter roads shown in Figure 13 – Grassed Swale at Perimeter Road and 14.1-Stormwater Bioretention Swale.
b) Longitudinal grade of 0.5% minimum to low point discharge.
c) Provision of upright kerb to control traffic.
d) Use of scour protection and flow dissipation by level spreaders and ponding facilities at the end of pipes and swales. Provision for upstream litter and siltation treatment. This is shown in Figure 14.2 - Stormwater Bioretention Basin.
e) Hydraulic capacity of swales to cater for minimum 1 year ARI event to ensure 3 month ARI first flush flows infiltrate.

6.7 Stormwater detention is not required because there are no under capacity downstream drainage systems affected. Discharge is spread, dissipated and dispersed directly to the non-urban areas, mirroring the existing situation. This is in conformance with BSC NR-LG Development Design Specification D5 Stormwater Drainage Design D5.16.

6.8 BSC Comprehensive Guidelines for Stormwater Management also applies. Council has advised it considers the downstream Belongil Creek might be non-tidal therefore Guidelines 6.1, 2g. requires detailed analysis to demonstrate that detention provides no benefit to the downstream drainage system. Assessment by AWC has confirmed the Belongil Creek is tidal, therefore the Guidelines do not require detention.

Refer to the WBM report which confirms by TUFLOW modelling that impacts are less than 0.01m and therefore insignificant. Stormwater detention is not required.

6.9 Proposed stormwater conveyance infrastructure, including flood levels and levels at the bioretention swales and basin are shown in Figures 15.1, 15.2 and 15.3 – Stormwater Infrastructure. Flood levels have been determined by BMT-WBM.

7 Main Drain

7.1 The existing main drain traverses the release area from the Ewingsdale Road culvert in a south easterly direction to Belongil Creek. The contributing catchment to the north is urbanised industrial and residential. The drainage channel is about 3m base width, 10m top width, about 2 to 2.5m in depth and is located generally within a drainage reserve of about 30m width.

7.2 Responsibility for the drain is with the Belongil Swamp Drainage Union.

7.3 The upstream and downstream reaches are contained in the Harvest Estate development. The midstream reach is contained in this WBURA development site. Location and profile are shown in Figure 16.1 – Main Drain Plan and 16.2 Main Drain Cross Section Nº1.

7.4 Council has adopted the Belongil Creek Floodplain Risk Management Study and Plan 2011 prepared by BMT WBM. This study establishes flood behaviour for up to the 100 year ARI event plus 2100 climate change. Further modelling by BMT WBM has determined peak 100 year ARI flow in the drain. Corresponding channel flow levels are contained within the drain and easement. There will be no earthworks within the drainage amount.

7.5 The existing drain profile will be modified by minor trimming and clean-up of the existing channel and earthworks filling of the development area up to the easement boundaries both sides to form overbank major flowpaths. There will be no earthworks within the drainage easement.

7.6 Crossings of the main drain are at Road No5 chainage 470m (Villaworld scope) and Road No22 chainage 240m. Both roads will utilise bridging structures not subject to blockage.

8 Hydraulic Utilities

8.1 Existing hydraulic utilities of water supply, sewerage reticulation and reuse water are shown in Figure 17 - Existing Hydraulic Utilities Plan.

8.2 A 400mm diameter trunk watermain is located within the Crown Road reserve at the site eastern boundary. A 300mm diameter trunk watermain is located along the Ewingsdale Road frontage south side. A 250mm diameter reuse water main is located along the Ewingsdale Road frontage north side. There is an existing vacuum sewer system in the proximity however, Council requires sewerage reticulation for the urban release development to be a low pressure system.

8.3 Proposed hydraulic utility services for this DA will be sufficient for connection to the Harvest Estate development.

8.4 Byron Shire Council has undertaken an assessment for water supply and sewerage reticulation for the WBURA development. Council advices are contained in the Appendix.

8.5 Water reticulation for the WBURA development scope of work will incorporate:

a) Connections to the existing 400mm diameter trunk main to the east, to the existing 300mm diameter trunk main to the north and to the future 250m main from the Harvest Estate to the west. The proposed trunk main connections are shown in Figure 18 – Water Supply Trunk Main Master Plan.

b) Applicable standards include:

- Development Servicing Plan for Water Supply Services, Byron Shire Council, 2011;
- Fire Flow Design Guidelines, Water Directorate, 2011;
- Water and Sewer Equivalent Tenement Policy (13/005), Byron Shire Council, 2013;
- WSAA Water Supply Code of Australia- WSA 03 2011;
- Northern Rivers Local Government Development Design and Construction Manuals.

c) Scope of water reticulation is shown in Figures 19.1, 19.2 and 19.3 - Hydraulic Infrastructure Plan.

8.6 Sewer reticulation for the WBURA development scope of work will incorporate:

a) Low pressure reticulation system connecting to works by Villaworld for new sewage pump station and rising main connecting to the existing sewage treatment plant.

b) Appropriate ET credits will apply for the abandoned existing vacuum system. BSC will fund a rising main in Ewingsdale Road between the SAE and Bayshore Drive roundabouts up to a capacity reflecting ET credits. Future connection of Byron Discovery Park and the SAE College will also be reflected in credits and detail design.

c) Applicable standards include:

- Development Servicing Plan for Sewerage Services, Byron Shire Council, 2011;
- Water and Sewer Equivalent Treatment Policy (13/005), Byron Shire Council, 2013;
- WSAA Sewerage Code of Australia (WSA 02-2014);
- WSAA Sewerage Pumping Code of Australia (WSA 04-2005);
- WSAA Pressure Sewerage Code of Australia (WSA 07-2007);
- Norther Rivers Local Government Development Design and Construction Manuals.

d) Sewer pump station will be provided in the Harvest Estate development.

Scope of sewer reticulation is shown in Figures 19.1, 19.2 and 19.3 - Hydraulic Infrastructure Plan.

8.7 Reuse water (purple pipe) for the scope of work will incorporate:

a) Connection to the existing main at the north side of Ewingsdale Road.

b) Reticulation will service all lots.

c) Scope of reuse water reticulation is shown in Figures 19.1, 19.2 and 19.3 - Hydraulic Infrastructure Plan.

9 Soil and Water Management

9.1 Soil and water management will conform to the requirements of:

- BSC NR-LG Development Design Specification D7 Erosion Control and Stormwater Management.
- Landcom Soils and Construction, Volume 1, 4th Edition, March 2004.

9.2 Earthworks will involve fill over most of the development site generally up to about 2m. The earthworks surface is flat graded at about 0.5-1%, hence stormwater runoff velocities will be low, minimising sediment mobilisation and erosion potential.

9.3 The works will be staged into relatively small areas of disturbance to minimise exposure to erosion. Grassing will be provided as soon as possible after completion of each stage of earthworks to accelerate stabilisation.

9.4 All on site runoff flows from disturbed areas will be controlled by facilities in a treatment train. This will include:

- Diversion works.
- Temporary sediment basins.
- Level spreaders.
- Sediment control fence.
- Stabilised site access.
- Geotextile inlet filters.

These are shown in Figures 20 and 21- Erosion and Sediment Control Details.

9.5 Concept Soil and Water Management Plans (SWMP) will be developed at the detail design stage utilising a treatment train of facilities.

9.6 Dust management will be achieved by perimeter fence wind breaks and watering.

9.7 Facilities will be inspected and maintained on a regular basis and after rainfall by skilled personnel. Maintenance will continue until finished surface stabilisation is achieved.

10 Staging

10.1 Construction of the WBURA development will be staged to reflect desired land release, connectivity of roads and services and construction access. Trafficking of completed works will be minimised and avoided where possible.

10.2 The proposed staging scope is shown in Figure 22.1 – Staging Plan. The order of construction stages will not necessarily be sequential. Conceptual Staging is shown in Figures 22.2 to 22.13 – Conceptual Staging, for each stage.

10.3 Access for construction is shown in Figure 23 – Construction Accesses. Existing access will be utilised.

10.4 Traffic routes for imported fill will be via Ewingsdale Road eastbound from the west, not via the Byron Bay township.

11 Provision for Adjoining Land Owners

11.1 Provision will be made in the staged construction of the WBURA development for the connection of adjoining landowners to infrastructure for roads, stormwater and utility services.

11.2 Where required, easement connection will be provided to permit access and servicing during early stages.

11.3 Earthworks filling will be undertaken to the adopted staging so that stormwater drainage is not impeded.

11.4 Works at the Ewingsdale road frontage will incorporate lot filling, the acoustic mound and entry road connection to the proposed roundabout. Levels will connect and correspond to the proposed Ewingsdale Road upgrade. It is proposed to raise the Ewingsdale Road levels from the preliminary design at the roundabout to facilitate required road gradings and stormwater drainage. Councils' proposals and adjustments are shown in Figures 24.1 and 24.2 – Ewingsdale Road Upgrade Works.

The sewer rising main from the development will be routed westward in the Ewingsdale Road widened footway. The route is shown in Figure 19.2 – Hydraulic Infrastructure Plan. The footway profile and services allocations, including the sewer rising main, are shown in Figure 5 – Acoustic Mound and Utilities Allocations Section.

11.5 There is a stormwater discharge point from Ewingsdale Road east end through the site. This is shown in Figure 24.2 – Ewingsdale Road Upgrade Work. Drainage and flows are directed east via an existing open drain at the road frontage to discharge within E2 zoned land. When Ewingsdale Road is upgraded, stormwater pipework will be constructed to convey drainage flows to the same outlet.

11.6 There is a stormwater discharge point from Ewingsdale Road west end and a drain through Lot 5 DP1222674 and Lot 2 DP818403 (Stage 12). This drain is intercepted and diverted by the development of Lot 2. Future industrial development of Lot 5 will intercept the drain and convey flows south and west. The drain is shown in Figures 15.1 – Stormwater Infrastructure.

11.7 Access and servicing to stages 11 & 12 can be provided independent of the Villaworld development by the construction of Bayshore Drive extension from the Ewingsdale Road roundabout. This road is shown in Figure 25 – Bayshore Drive Extension Independent of Villaworld. BMT WBM have confirmed this proposal would have no significant flood level impacts. The flood levels are shown in Figure 26 – Flood levels.

A Figures

Figure 1	Development Plan
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Figure 3.1	Earthworks Surface Levels Concept Plan
Figure 3.2	Earthworks Surface Levels Concept Plan
Figure 3.3	Earthworks Surface Levels Concept Plan
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Appendix

#E2017/64147
Your ref:
Contact: Dean Baulch

27 June 2017

Site R&D Pty.Ltd
c/- Mr Stuart Murray (Director)
PO Box 134
KOTORA NSW 2289

COPY

Dear Mr Murray

West Byron Civil Engineering - Water & Sewer

I refer to your letter dated 01 May 2017, Project Engineer Mr Bob Staniland of Acor and your request for advice regarding the follow items, including responses:

- *Capacity of the existing trunk water mains:*

  The existing 400mm diameter trunk main does have capacity to service the entire WBURA development. The 300mm diameter main running along Ewingsdale Road does not. This has been confirmed though our water modelling software.

- *Preliminary water supply network masterplan for the total WBURA development, that is, Belongil and Villaworld. Include connections to existing trunk mains.*

  At this point in time we have not seen your lot layout or staging, however, a water trunk main of 250mm diameter is to be designed to service the development from the 300mm Trunk Main located along Ewingsdale Road linking through to the adjacent development to the east and ultimately connect to the existing 400mm diameter Trunk Main running from Coopers Shoot. No water service tapping will be permitted on the 250mm diameter trunk mains, all residential service tapping are restricted to water reticulations mains between 100mm diameter and <250mm in diameter. See attached sketch diagram (Water Supply – Trunk Main Master Plan)

- *Any staging requirements.*

  Initially the subdivisions will be allowed connect to the 300mm diameter main on Ewingsdale Road with a boundary zone arrangement (Stop Valve- Hydrant- Stop Valve). Assuming that your development starts from the Ewingsdale Road frontage and continues in a southerly direction.

  As development increases and internal arterial roads are constructed, the developer will be required to build a designated PRV (Pressure Reduction Valve with associated fixtures and pit) and a 250mm diameter trunk main from the 400mm trunk main through to the 250mm trunk main installed by Villaworld to service this WBURA development only.

  Council has no knowledge of your proposed subdivision staging, however, it is expected that the Villaworld 250mm water trunk main will be installed by Stage 4 of their proposed

subdivision stage plan, see Planit Engineering drawing J128 – 0041 in the Villaworld submission.

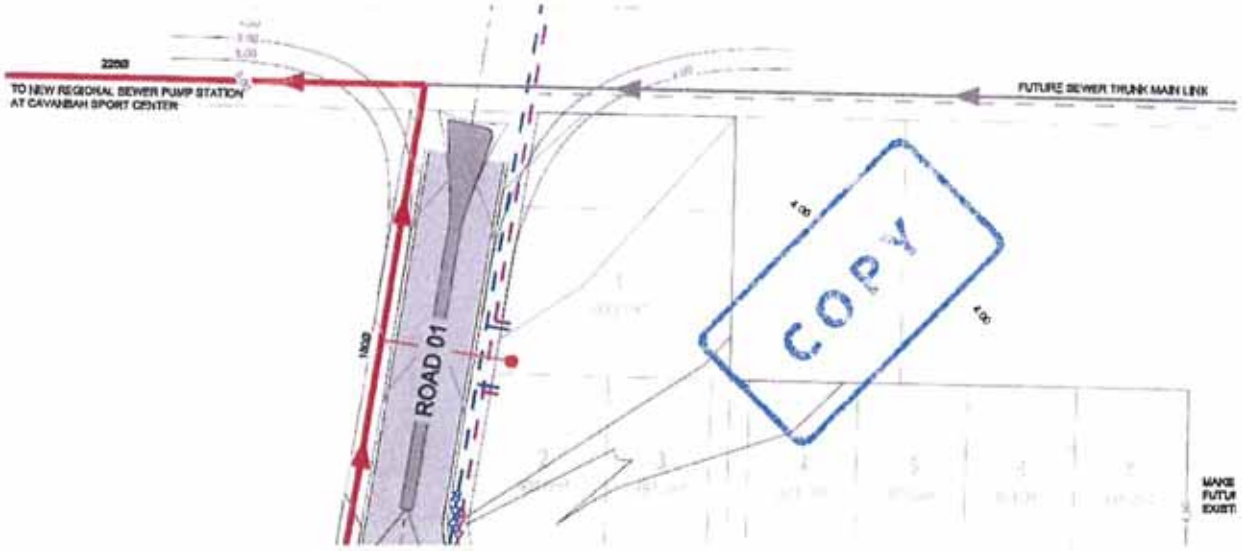
- *Confirmation of the proposed low pressure sewage system including comment on Villaworld DA details.*

  Villaworld is proposing to use an Aquatech system. The system is of course concept at this point in time. However, looking at the design and system layout, it appears to be adequate.

  There is requirement to link both the Belongil (east) and Villaworld (west) systems at one or more interfaces. Villaworld have also stated this in their submission and plans – Appendix B Engineering Report, Site Engineering Assessment 6 Integration of Engineering Design with Adjoining Land Owners, 6.6 Sewerage.

  In the Villaworld submission, see Planit Engineering drawing J128 – 0021 (section shown below), showing connection between "Future Sewer Trunk Main Link" from Belongil into a proposed 225ø pressure main that will discharge into the SPS. Both the Villaworld and Belongil mains will need to be sized for ultimate capacity and it will be important that Villaworld design the capacity of their main to accommodate Belongil. The final location of the linking sewer trunk main for both developments will depend on planning of the Byron Gateway Road that I'm assuming you are aware of.

  It is proposed that a condition of consent for Belongil Fields development, in relation to the sewerage system, that formal confirmation is obtained from Villaworld that it has provided adequate capacity in its sewer trunk main for Belongil i.e the eastern development.



- *Council's proposal for applying ET credits for the existing Belongil vacuum sewage system which is to be abandoned, including works or funds.*

  As per previous discussions with owner representative and engineers, the Vacuum Sewerage System is not operationally or technically feasible to utilise in this development and Council is prepared to fund the construction of a sewer rising main servicing a low pressure sewerage system for the development. This Council sewer rising main will start from an agreed location at the frontage of the Belongil Fields property and continue to either the connection junction and pressure main to be built be Villaworld (shown above) or direct inject into a sewer rising

main coming from the new Hospital (connection point within the sports grounds at 249 Ewingsdale Road)

The designed capacity for this sewer rising main will be up to 142 Equivalent Tenements (the current entitlement of the property). Any pipe size above this entitlement will be funded by the developer.

Ideally, it is preferred that the Sewer Pump Station is built first but this will depend on when each developer is ready to start their respective developments after all appropriate approvals.

I'm sure you may have queries regarding the above. Please do not hesitate to contact Dean Baulch (Principal Engineer – Systems Planning) 02 66859305 or via email: dean.baulch@byron.nsw.gov.au to discuss.

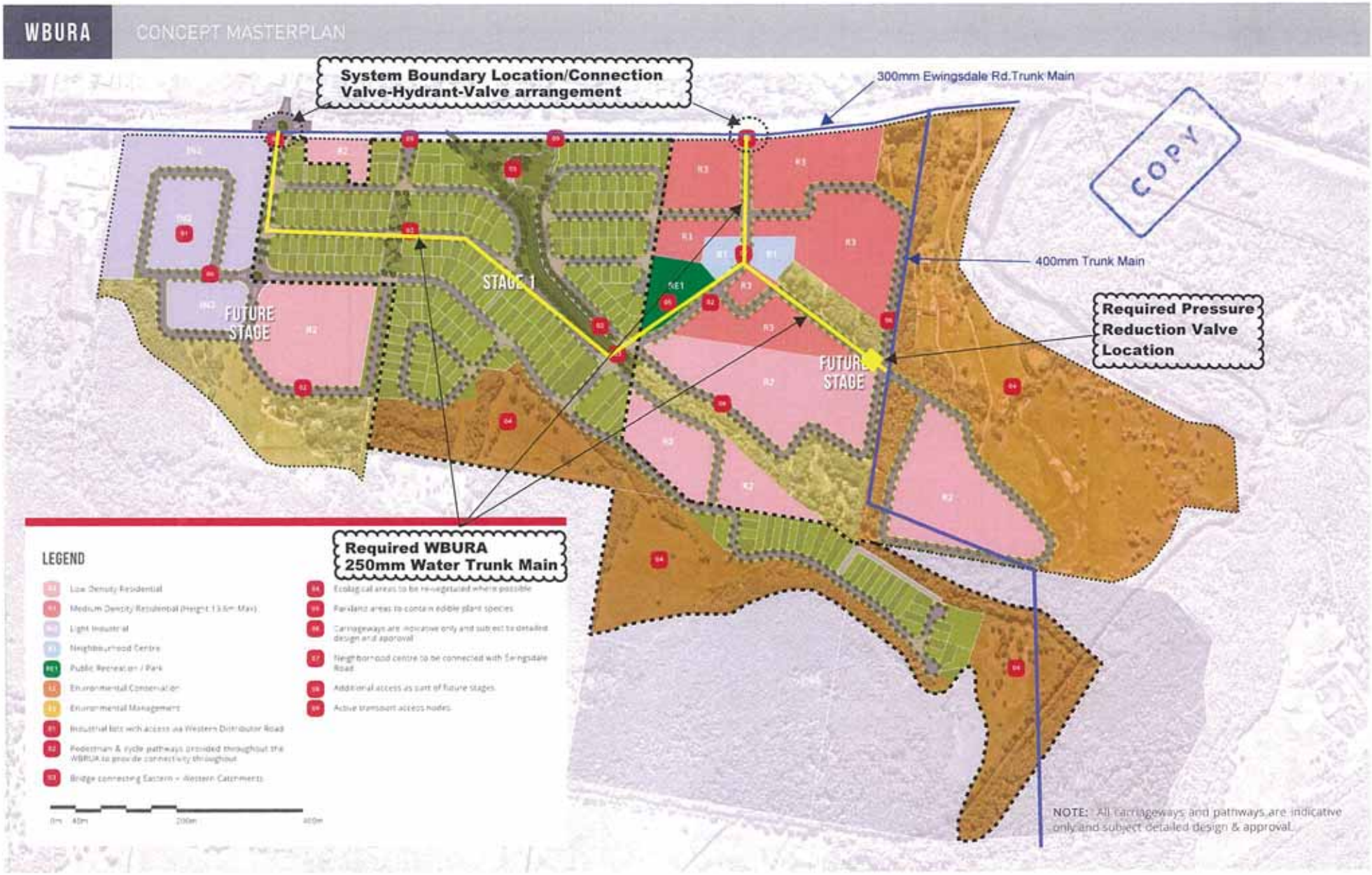
As a final note, it is imperative that both east (Belongil) and west (Villaworld) developers coordinate their activities together in terms of the trunk water and trunk sewer infrastructure.

Yours sincerely

COPY

Peter Rees
Manager - Utilities
Infrastructure Service

WATER SUPPLY - TRUNK MAIN MASTER PLAN



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Our Ref: L.B22567.001.WBURA_in_Isolation.docx

16 July 2018

Site R&D Pty Ltd
PO Box 134
Kotara NSW 2289

Attention: Stuart Murray

Dear Stuart

RE: RESPONSE TO THE REQUEST FOR INFORMATION OF THE WEST BYRON RESIDENTIAL DEVELOPMENT LOCATED IN THE WEST BYRON URBAN RELEASE AREA (WBURA)

1 Introduction

This letter report addresses the request for information (RFI) by Byron Shire Council (BSC) on the above mentioned proposed West Byron residential development, here in referred to as 'the site'. The site is located in the West Byron Urban Release Area (WBURA). This letter report builds upon and refers to the flooding detailed in the West Byron Flood Impact Assessment report finalised by BMT WBM in October 2017.

2 Tasks

To address the RFI, BMT have undertaken the following additional works:

- Simulate the hydraulic model for the West Byron residential development in isolation (without the proposed development called 'Villaworld' within the WBURA and the Byron Business Park (BBP)), refer to Figure 1 and Figure 2 for localities. The WBURA has different development application associated with the area including Harvest Estate, hence BSC wants to ensure the proposed development does not create any significant impacts in the case that other developments are delayed for a significant period of time or are abandoned; and
- The documentation of peak flood levels around the site to ensure the development is above the floor planning levels stipulated by council. The flood levels extracted for this section of works is using the model result from the West Byron Flood Impact Assessment report (BMT WBM, 2017).

For the above works, the 1% AEP event for 2100 (known to BSC as Floor Planning Level 2 or FPL2) was simulated. As outlined in BMT WBM (2017), this event is a combination of the 1% AEP and 5% AEP catchment and tailwater conditions. The two Ewingsdale Road scenarios from BMT WBM (2017) were also retained in this assessment for consistency. These scenarios are:

- The existing Ewingsdale Road alignment, and
- The proposed Ewingsdale Road upgrade alignment.

3 West Byron Residential Development in Isolation

The hydraulic modelling results with and without the Ewingsdale Road upgrade are illustrated in Figure 1 and Figure 2. For ease of reporting, the two development areas are referred to as the **west development area**, which is west of Melaleuca Drive, and the **east development area**, east of Melaleuca Drive.

From Figure 1 and Figure 2, the results for both Ewingsdale Road scenarios illustrate that the site in isolation has produced some impacts (peak flood level increases) north of the west development area and from the main drain traversing through Harvest Estate (between the west and east development areas). The details of impacts are as follows:

- West development area:
  - Impacts are located between the development fill pad and Ewingsdale Road and on the east of Bayshore Drive extension (the connecting road between the fill pad and Ewingsdale Road);
  - The impacts are 30mm for the Ewingsdale Road upgrade and up to 700mm for the current alignment. The impacts are much larger in the current Ewingsdale alignment as Ewingsdale Road upgrade includes drainage that diverts discharge away from the west development area; and
  - The impacts occur as the main drainage path is now impeded due the west development area, allowing for water to pond behind the fill pad and Bayshore Drive extension works.
- East development area:
  - Impacts are located to the north of the drain which traverses through Harvest Estate and the east development area;
  - The impacts of 45mm are the same for the both the Ewingsdale Road upgrade and the current alignment; and
  - The impacts occur due to the flow path being impeded by the east development fill pad.

The mitigation options proposed to remove the impacts are illustrated in Image 1 and are as follows:

- West development area – a pipe will be place under the Bayshore Drive extension to allow the water to flow west /southwest to towards BBP in the existing drain towards the Belongil Creek floodplain; and
- East development area – a pipe under road to connect the runoff from Villaworld to the main drain.

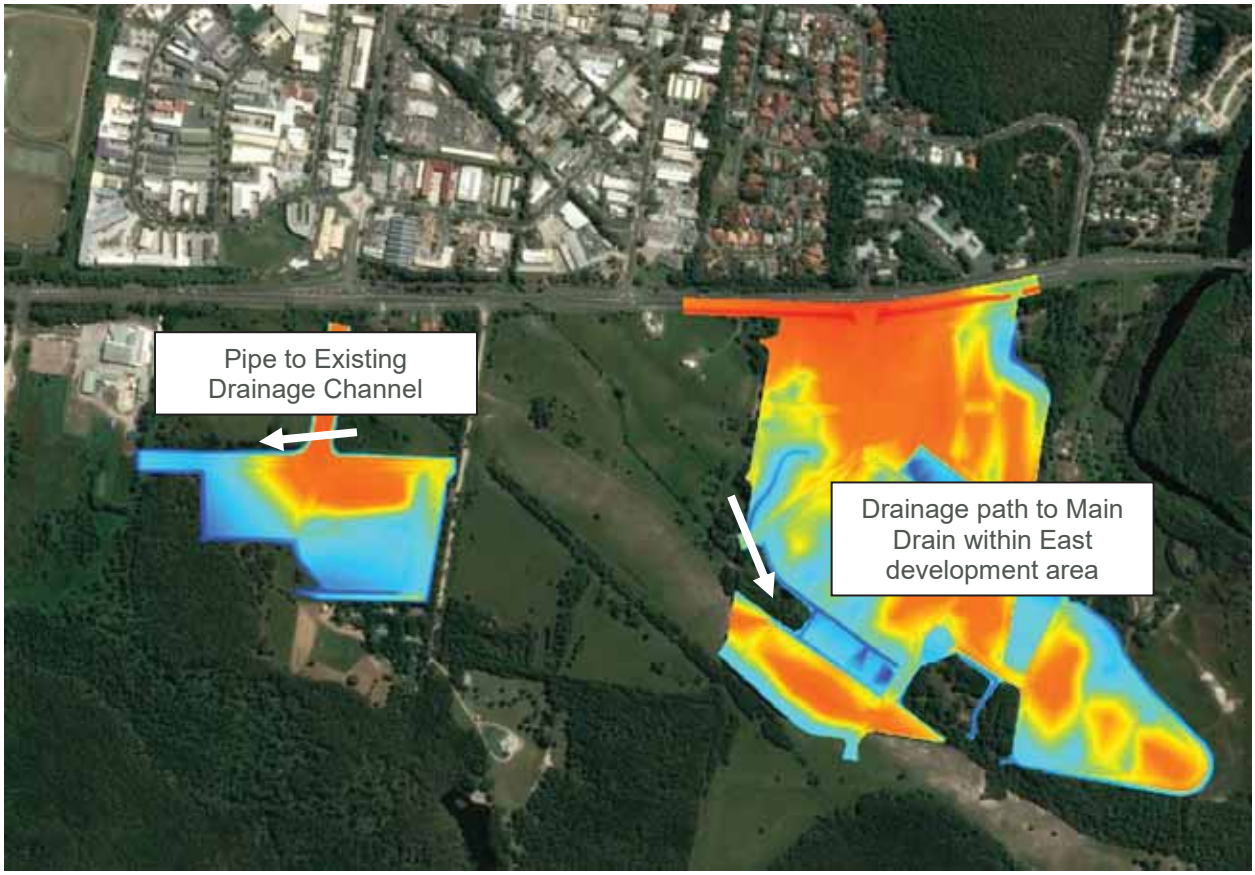


Image 1 Potential and Preliminary Mitigation Options

4 Documentation of Flood Levels

The flood levels at specific locations around the site are provided in Figure 3. The levels are provided for both Ewingsdale upgrade and the current alignment from the FPL2 results found in BMT WBM (2017). The extracted levels confirm that the development fill pad is above the FPL2 flood levels by more than 0.5m to the Belongil Creek waterway and drainage channel through the site. The height of the fill pads for the site is sufficient as flooding from Belongil Creek does not occur on any fill pad in the FPL2 scenario, this is outlined in BMT WBM (2017).

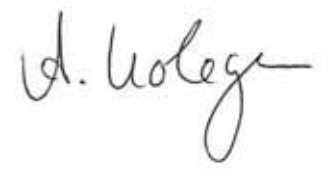
5 Conclusion

BMT was required to address BSC's RFI in relation to the flooding of the West Byron residential development. This included assessing the site in isolation (without Harvest Estate or Byron Business Park) and documenting flood levels around the site. In regard to the RFI, the following key points were found:

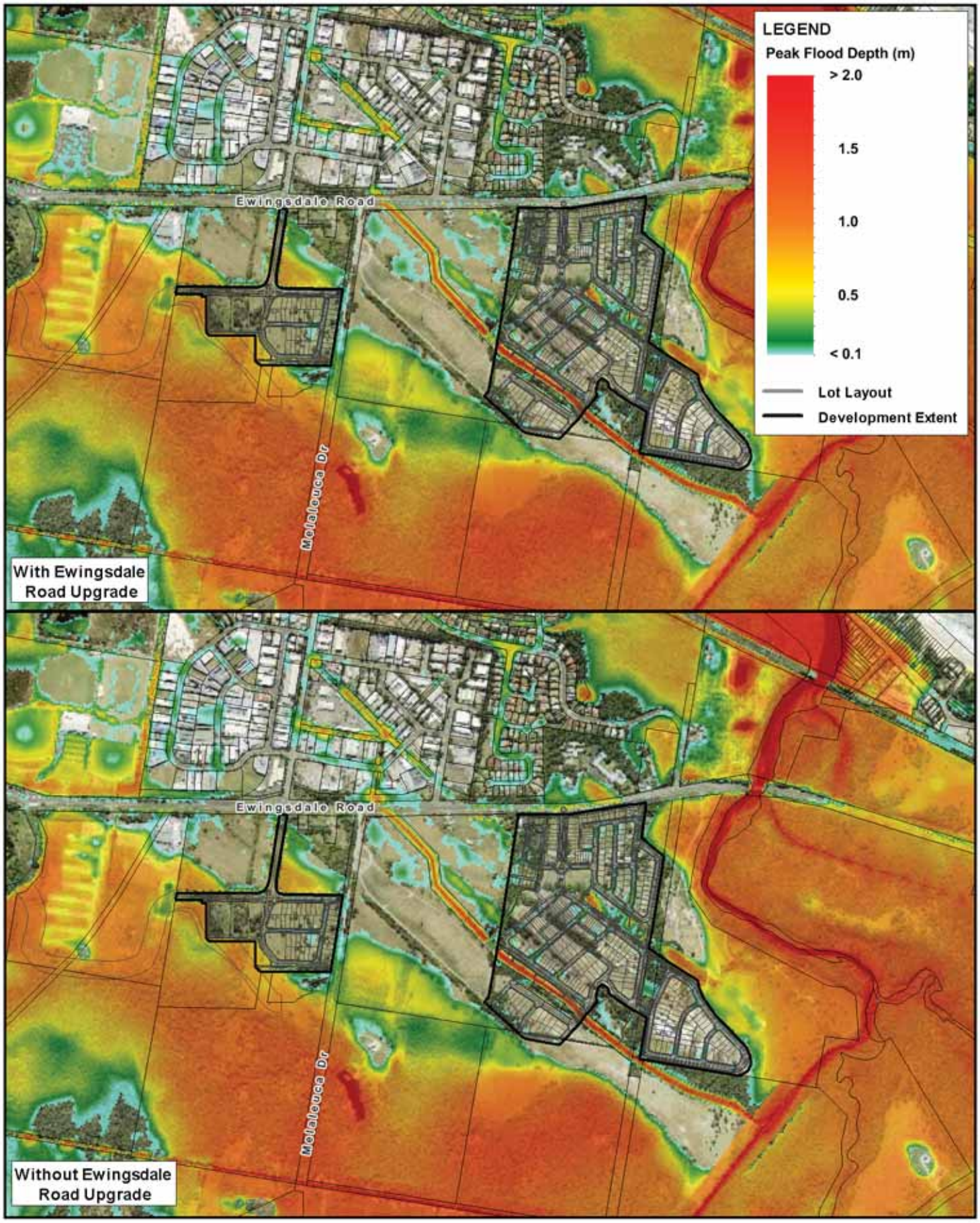
- The proposed development site in isolation cause some impacts in two main areas as discussed. These impacts can be removed by implementing mitigation measures, as recommended; and
- The flood levels around the site have been provided and the site remains flood free.

I trust that this is satisfactory, and please do not hesitate to contact me if you have any questions.

Yours Faithfully



Anne Kolega
Senior Flood Engineer
BMT



Title:

Post-Development Flood Conditions – West Byron Estate 1% AEP Event in 2100 (FPL Event)

Figure:	Rev:
1	A

N

0 200 400m

Approx. Scale

BMT

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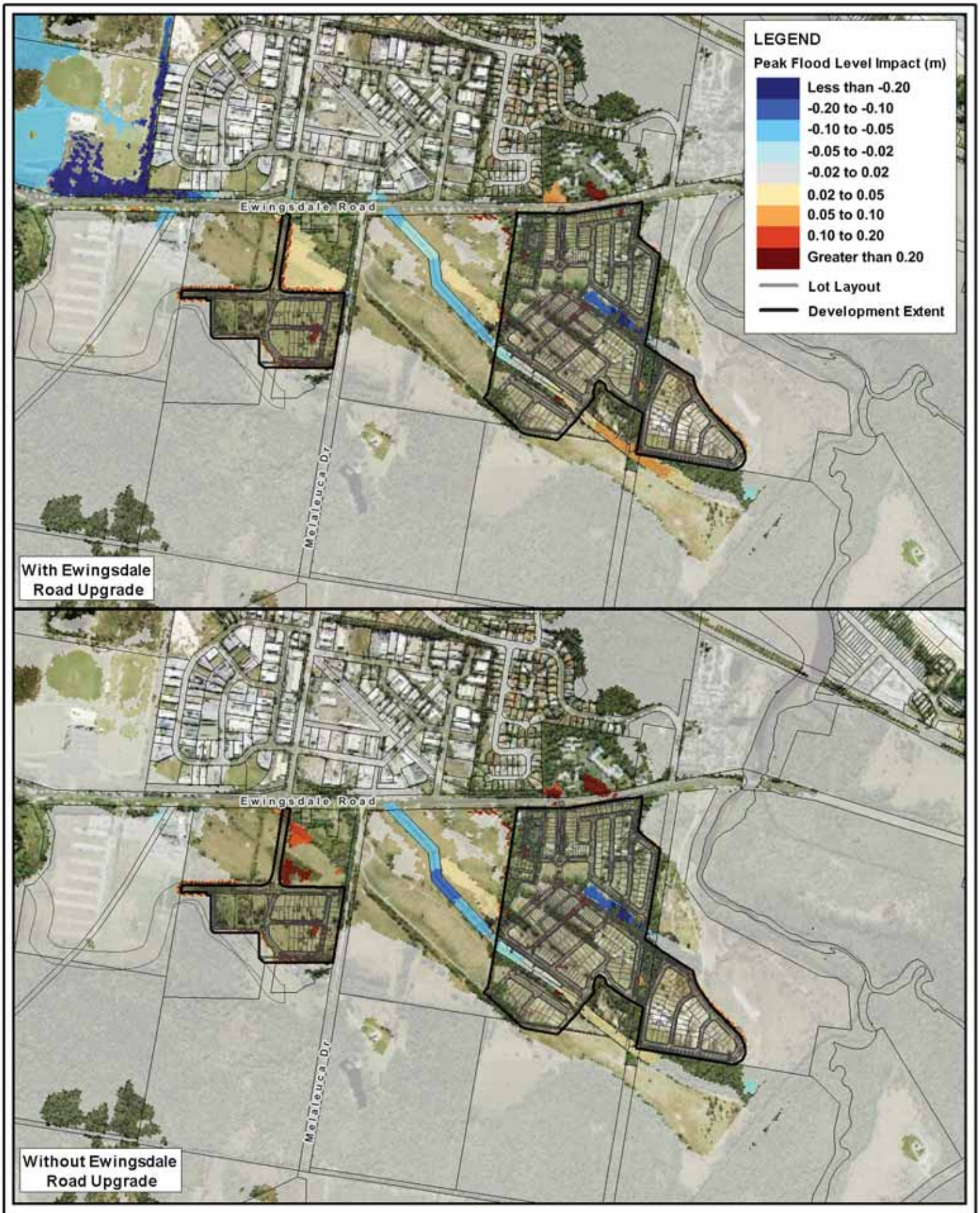

Title:

Peak Flood Level Impact – West Byron Estate in Isolation 1% AEP Event in 2100 (FPL Event)

Figure: 2

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0 200 400m

Approx. Scale

BMT

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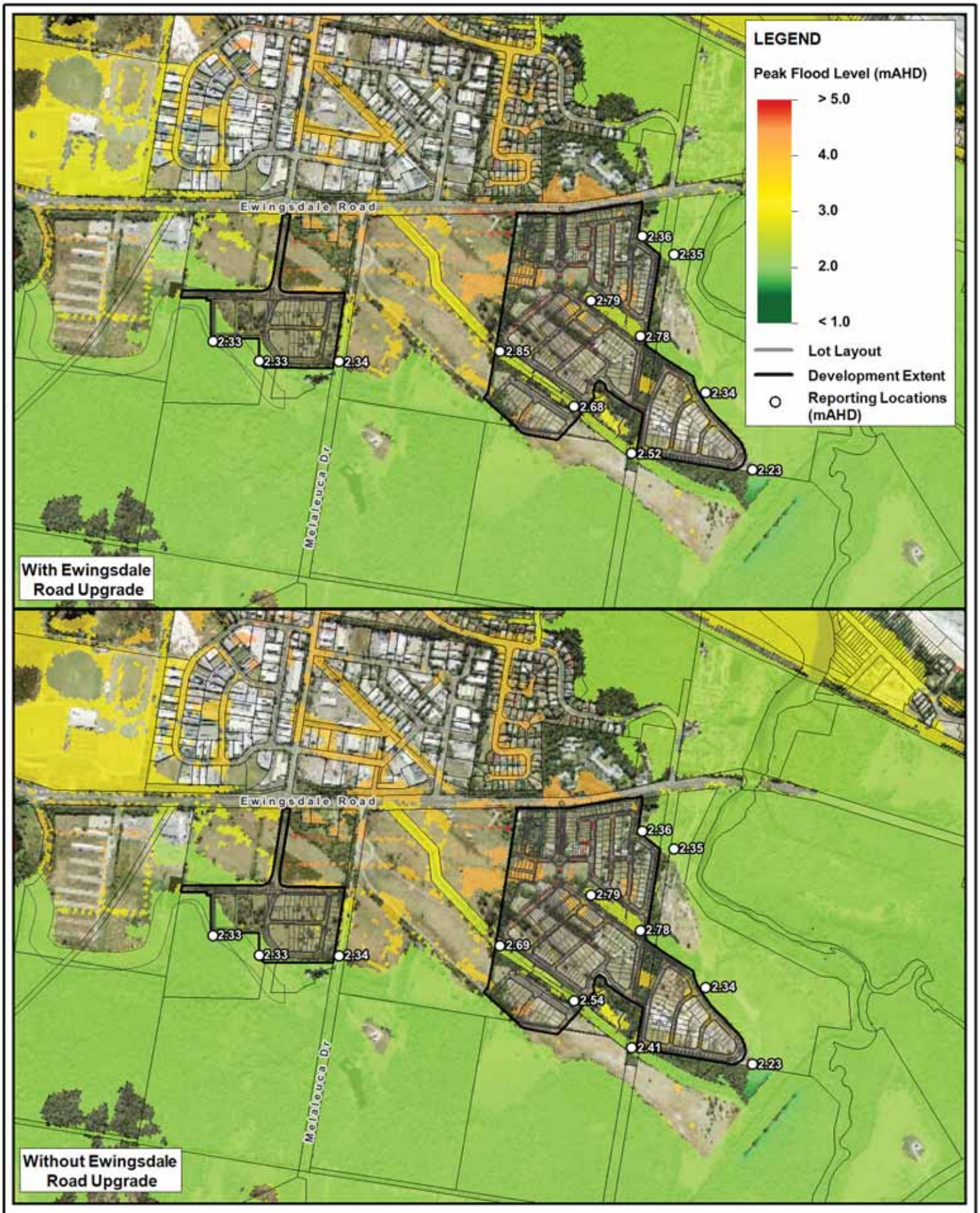

Title:

Post-Development Flood Levels
1% AEP Event in 2100 (FPL Event)

Figure: 3

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0 200 400m

Approx. Scale

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