

ECOLOGICAL ASSESSMENT REPORT –
HYDROLOGICAL AND STORMWATER
RUNOFF IMPACTS

September 2019
J156455-13

**NSW Health Infrastructure
Tweed Valley Hospital**

C107778 : CM

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Ecological Assessment Report– Hydrological and Stormwater Runoff Impacts

NSW Health Infrastructure
Tweed Valley Hospital

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1 INTRODUCTION

1.1 Purpose of Document

GreenCap Pty Ltd (GreenCap) was commissioned by TSA Management (TSA) on behalf of Health Infrastructure NSW (HI) to prepare a report to assess the potential impacts of any changes to hydrology and stormwater runoff quality associated with the development of the Tweed Valley Hospital on ecological receptors within mapped Coastal Wetlands within the site and the adjoining lands.

This report has been prepared to address the requirement of Schedule 2, Condition B31 (c) of the Development Consent granted for State Significant Development: SSD 9575 on 11 June 2019 and supports the Environmental Impact Statement (EIS) to assist in the State Significant Development (SSD) Stage 2 Application for the Tweed Valley Hospital which will be assessed under Part 4 Division 4.7 of the Environmental Planning and Assessment Act.

Specifically Schedule 2, Condition B31 (c) requires that: *“The Stage 2 application must be accompanied by: a report prepared by a suitably qualified ecologist assessing the impacts of any changes to hydrology (flow regimes) and stormwater runoff quality associated with the development on the EECs, TECs, threatened species located within the coastal wetlands to the north of the site and on the overall biophysical, hydrological and ecological integrity of the mapped wetlands within the site and the adjoining lands”.*

1.2 Background

In preparing this report GreenCap have reviewed the following documents:

- Tweed Valley Hospital Hydrology Assessment – Draft Rev 2, 15 August 2019 (SMEC);
- Tweed Valley Hospital Proposed Site Plan AR-SKE-PRW-1000015A Rev 1, 6 September 2019 (STH Batessmart);
- Stormwater Management Plan (SWMP) – Tweed Valley Hospital, Prepared for Stage 2 SSD Application, Issue C, 16 August 2019 (Robert Bird Group);
- Tweed Valley Hospital – Flooding Component DRAFT (BMT);
- Tweed Valley Hospital Development Design Report Civil & Structural (Bonacci Group NSW);
- Stage 2 Landscape Zonal Plan LS_DWG-10-003 Rev 8, 6 September 2019 (Turf Design Studio); and
- Project Construction Environmental, Health & Safety Management Plan- Main Works (CEMP), Rev 05, 16 August 2019 and Construction Soil and Water Management Sub-Plan (CSWMSP) Rev 3.1, 12 July 2019 (Lendlease Building Pty Ltd [LLB]).

2 DESCRIPTION OF THE PROPOSAL

2.1 Overview

2.1.1 Description of the proposal

On the 11 June 2019 the Minister for Planning and Public Spaces granted approval for the Concept Proposal and Stage 1 Early and Enabling Works for the new Tweed Valley Hospital (SSD 9575) located at 771 Cudgen Road, Cudgen (Lot 11 DP1246853). All documents relating to this consent can be found on the major project website of DPIE at <https://www.planningportal.nsw.gov.au/major-projects/project/10756>.

The Environmental Impact Statement (EIS) has been prepared to assist in the State Significant Development (SSD) Stage 2 Application for the Tweed Valley Hospital which will be assessed under Part 4 Division 4.7 of

the Environmental Planning and Assessment Act 1979 (EP&A Act). This, along with supporting documentation, provides a clear outline of the Stage 2 Application.

The Tweed Valley Hospital Project broadly consists of:

- Construction of a new Level 5 major regional referral hospital to provide the health services required to meet the needs of the growing population of the Tweed-Byron region (in conjunction with the other hospitals and community health facilities across the region);
- Delivery of the supporting infrastructure required for the Tweed Valley Hospital, including green space and other amenities, roads and car parking, external road upgrades and connections, utilities connections, and other supporting infrastructure.

2.1.2 Stage 2 Hospital Main Works and Operation

The Stage 2 SSD component seeks consent for the Main Works and Operation of the Tweed Valley Hospital, including:

| | |
|---|--|
| <ul style="list-style-type: none"> • Construction of Main Hospital Building <ul style="list-style-type: none"> – Main entry and retail area – Administration – Community health – In-Patient units – Outpatient clinics and day only units – Child and Adolescent Services – Intensive Care Unit – Mental Health Unit – Maternity Unit and Birthing Suites – Renal Dialysis – Pathology – Pharmacy – Radiation Oncology as part of integrated Cancer Care – Emergency Department – Perioperative Services – Interventional Cardiology – Medical Imaging – Mortuary – Education, Training, Research | <ul style="list-style-type: none"> – Back of House services – Rooftop Helipad • Construction of Support Buildings, referred to as the 'Health Hub', containing: <ul style="list-style-type: none"> – Oral Health – Community Health – Aboriginal Health – Administration – Education, Training and Research • Internal Roads and carparking, including multi-deck parking for staff, patients and visitors; • Construction of a temporary building for the 'Tweed Valley Skills Centre' • External road infrastructure upgrades and main site access • Environmental and wetland rehabilitation, including rehabilitation of existing farm dam as outlined in the Biodiversity Development Assessment Report (BDAR) prepared for the Concept Proposal and Stage 1 works • Site landscaping • Signage • Utility and service works |
|---|--|

The works outlined above comprise five key components, which are subject to various funding allocations and may be delivered independently to each other. Stage 2 has therefore been defined in the following sub-stages (stages are not listed in chronological order and may be delivered independently to each other):

- Stage 2A – Main Hospital Building complete with supporting roads, services infrastructure and landscaping
- Stage 2B – Main Hospital Building incremental expansion areas
- Stage 2C – Health Hub
- Stage 2D – Tweed Valley Skills Centre
- Stage 2E – Multi-deck car park.

Development consent is sought for the all 5 components of Stage 2 under this SSDA.

Plans for Stage 2 Main Works and Operation are attached in Appendix B of the EIS. Approval of Stage 2 will enable the new Tweed Valley Hospital to be built which will provide a much-needed contemporary health service facilities for the surrounding region.

2.1.3 Potential Future Expansions

Any subsequent stages or modifications to the proposal would be subject to separate applications as required including the potential future expansion of the facility.

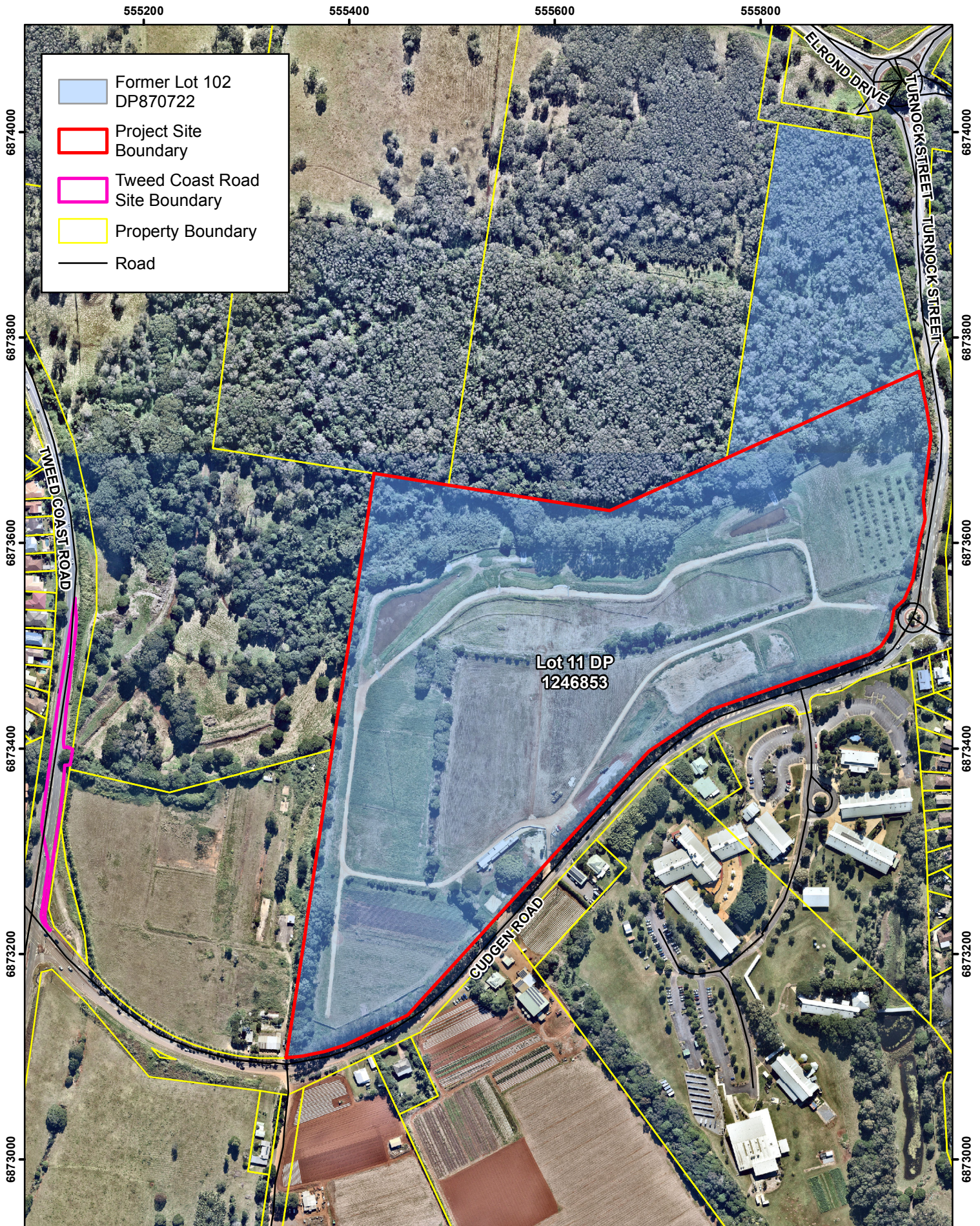
3 THE SITE

The Project site is located at 771 Cudgen Road, Cudgen (Lot 11 DP 1246853) within the Tweed Shire Council LGA (**Figure 1** and **Figure 2**) (the 'Site'). The 19.4 ha Site is located between the existing residential areas of Kingscliff and Cudgen, situated opposite Kingscliff TAFE. Approximately 16.4 ha of the Site is above the Probable Maximum Flood (PMF), a legislated requirement for hospital developments.

The southern section of the Site was a working farm under cultivation (approximately 11.24 ha) and apart from the self-sown windrows along the Site boundary, most of the southern section has been cleared of native vegetation.

The northern section of the Site is located on the Tweed River floodplain and is part of an important forested wetland that has been mapped under *State Environmental Planning Policy (Coastal Management) 2018* (Coastal Management SEPP) (**Figure 3**). The wetland is part of a mapped regional fauna corridor (Department of Environment, Climate Change and Water [DECCW], 2010;) and is a significant stepping-stone habitat to the Cudgen Creek estuary located approximately 800 m to the south-east of the Site. The wetland forest which is within the floodplain with flood levels of approximately RL 3 – 3.5m AHD in the 1% annual exceedance probability (AEP) flood.

The northern section of the Site has high biodiversity value and is part of a mapped fauna corridor that affords connectivity and enables the movement of threatened species. At a local scale this forested wetland with associated rainforest components blends eastward into a coastal floodplain wetland (Keith, 2004) that extends to within 200 m of the coast. This area of remnant vegetation has been avoided by the development footprint and therefore avoids directly impacting threatened species and Threatened Ecological Communities (TECs)/ Endangered Ecological Communities (EECs). Direct impacts on several other windrows located along the western, southern and eastern boundaries of the site have also been avoided.



Client: C107778

Job #: J156455-13

Author: D. Correa

Checked: C. Maloney

Date: 19/08/2019

GREENCAP



0 50 100 m

Scale (@A4): 1:4,750

Coordinate System: GDA 1994 MGA Zone 56

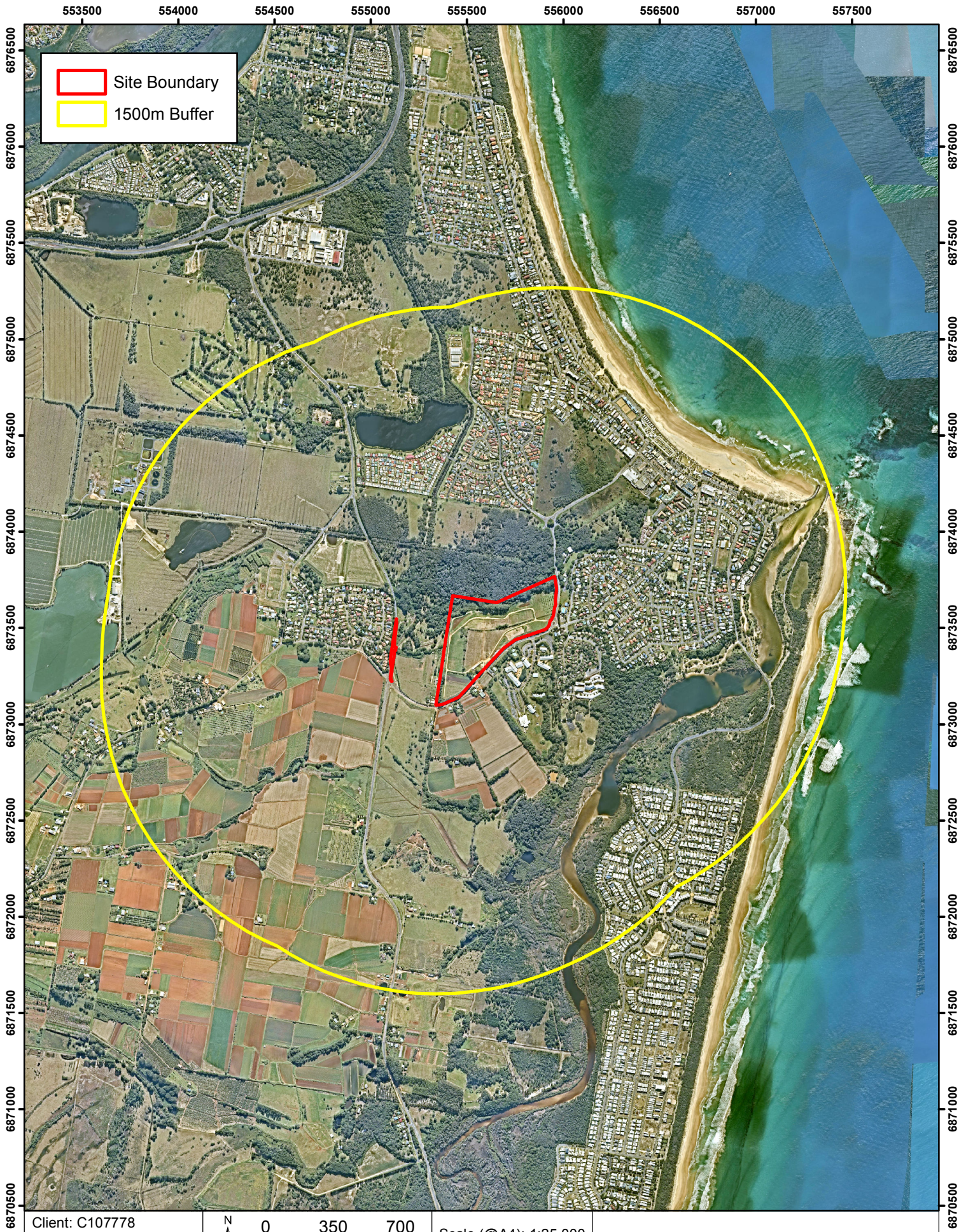
*Note: All data is approx only & subject to survey.
Imagery 15th July 2019 (7.5 cm) © Nearmap 2019
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Site Map

Tweed Valley Hospital Condition B31c Report
771 Cudgen Road
Cudgen NSW

**Figure
1**



Client: C107778

Job #: J156455-13

Author: D. Correa

Checked: C. Maloney

Date: 19/08/2019

GREENCAP



0 350 700 m

Scale (@A4): 1:25,000

Coordinate System: GDA 1994 MGA Zone 56

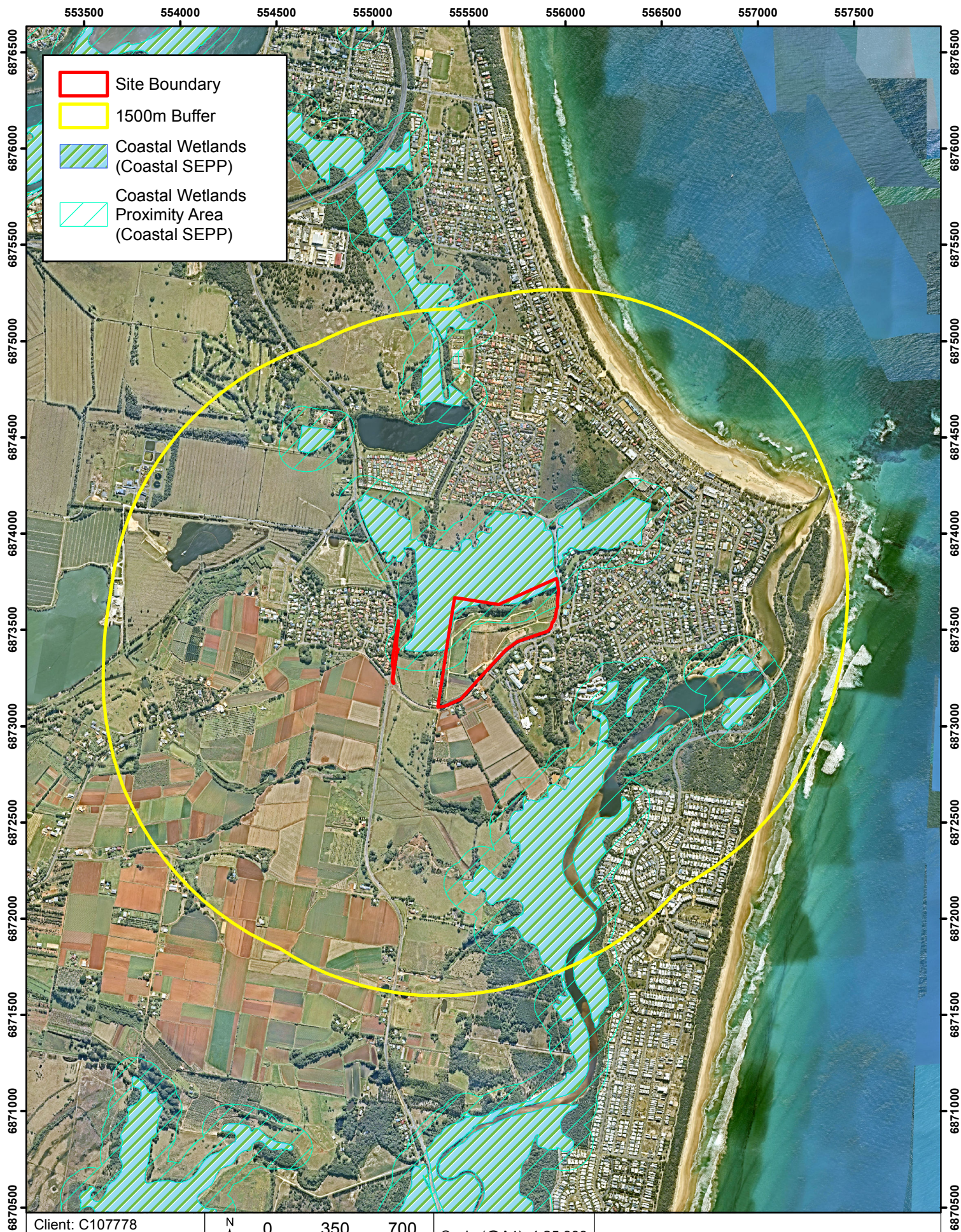
*Note: All data is approx only & subject to survey.
Imagery 15th July 2019 (1.2 m) © Nearmap 2019*

Location Map

Tweed Valley Hospital Condition B31c Report
771 Cudgen Road
Cudgen NSW

**Figure
2**

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0 350 700 m

Scale (@A4): 1:25,000

Coordinate System: GDA 1994 MGA Zone 56

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Coastal SEPP mapping © Department of Planning and
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Wetlands (Location)

Tweed Valley Hospital Condition B31c Report
771 Cudgen Road
Cudgen NSW

**Figure
3**

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4 ECOLOGICAL RECEPTORS

4.1 Adjacent Wetlands

During the development of the BDAR (Greencap 2019), the following Threatened Ecological Communities (TECs) and threatened species were identified on the Site:

- Swamp sclerophyll forest on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions EEC;
- Lowland rainforest on floodplain in the NSW North Coast Bioregion EEC; and
- Two pH dependent amphibians were identified by the BAM Calculator as candidate threatened species – Wallum froglet *Crinia tinnula* and Olongburra frog *Litoria olongburensis*. There are records for these species within the 1,500 m assessment area and within the receiving catchment.

The location of both TECs is shown in **Figure 4**.

Furthermore, three Mitchell's rainforest snail *Thersites mitchellae* (MRS) specimens were detected during BDAR threatened species surveys, however, all of these were recorded outside the Project Site boundary in the northern portion of former Lot 102 DP 870722 (Greencap 2019a) (**Figure 5**). Potential habitat for MRS is in the paperbark swamp forest of and Subtropical Rainforest EECs in the northern section of the Site (**Figure 5**).

The MRS is classified as endangered in NSW under the BC Act (OEH 2018) and Critically Endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and has an adopted recovery plan (NPWS 2001).