

TWEED VALLEY HOSPITAL STAGE 2 SSD: BDAR WAIVER

June 2019
J156455-13

NSW Health
Infrastructure
Tweed Valley Hospital

C107778: DL

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Document and Project Control

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| Proposal Name: | | | Tweed Valley Hospital Stage 2 SSD: BDAR Waiver | | |
| Site Details: | | | Tweed Valley Hospital | | |
| Project Number: | | | J156455-13 | | |
| Client Name: | | | NSW Health Infrastructure | | |
| Client Number: | | | C107778 | | |
| Signatures: | | | | | |
| Prepared By:  Malcolm Nunn Team Manager - Environment | | Approved By:  Dylan Burford Practice Manager – Environmental Management | | Authorised By:  Dr Damian Licari Principal Consultant Environment | |
|  Christina Maloney Senior Environmental Scientist | | | | | |
|  Dr Damian Licari Principal Consultant Environment | | | | | |
| Conflict of Interest Statement | | Greencap warrants that as at the date of lodgement of the Tweed Valley Hospital Stage 2 SSD: BDAR Waiver, no actual, perceived or potential conflict of interest exists between it or between any one or more of Greencap's officers, employees, consultants or agents and Health Infrastructure, or is likely to arise in relation to the Report that is submitted for this project, and if any conflict of interest arises or is likely to arise Greencap | | | |

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| | |
| | will immediately notify Health Infrastructure in writing of that actual, perceived or potential conflict of interest. |

Issue Status

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Tweed Valley Hospital Stage 2 SSD: BDAR Waiver

NSW Health Infrastructure

Tweed Valley Hospital

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1. INTRODUCTION

1.1 Overview

Under the *Biodiversity Conservation Act 2016* (BC Act), State Significant Development (SSD) applications must be accompanied by a Biodiversity Development Assessment Report (BDAR) unless the Secretary of the Department of Planning and Environment (DPE) and the Chief Executive of the Office of Environment and Heritage (OEH) determine that the proposed development is not likely to have any significant impact on biodiversity values.

This document contains the required tables of information detailed by the BDAR Waiver Factsheet (DPE, 2018) to allow DPE and OEH to make this determination, which is referred to as a BDAR Waiver.

1.2 Previous Biodiversity Assessment and Stage 2 Conditions

The Stage 1 Concept Proposal (referred to as Stage 1 through this document) for the Tweed Valley Hospital Project was approved 11th June 2019 (SSD 9575). Greencap Pty Ltd (Greencap) was commissioned by TSA Management (TSA) on behalf of Health Infrastructure to prepare a Biodiversity Development Assessment Report (BDAR) for the Stage 1 application, in accordance with the *Biodiversity Assessment Method Order 2017* (Office of Environment and Heritage [OEHa], 2017) (BAM), and to address more broadly the requirements in the *Biodiversity Conservation Act 2016* (NSW) (BC Act).

This previously endorsed Stage 1 BDAR comprises of a comprehensive assessment of impacts to biodiversity for the Stage 1 proposal, and the Stage 1 works include the clearing of vegetation on site. The Stage 1 BDAR also addressed impacts relevant to the Stage 2 construction works and operation of the Project, based on the known information at the time. The Stage 2 application introduces the detailed design and additional information about Stage 2 works, construction and operation of the hospital.

The SSD 9575 Conditions Schedule 2 places the following conditions in relation to biodiversity:

- **B20.** The Stage 2 application must demonstrate that the proposal is consistent with the endorsed *Biodiversity Development Assessment Report* prepared by Greencap dated January 2019 (BDAR) and the *Matters of National Environmental Significance Report* (MNES) prepared by Greencap dated February 2019 and all recommendations to mitigate the direct, indirect and prescribed impacts in the BDAR and the MNES;
- **B21.** The Stage 2 application must be supported by a long-term Biodiversity Management Plan (BMP) including the following: [B31a - n]; and
- **B31c.** 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.

These requirements for supporting documents in the Stage 2 application, will assist in addressing any additional biodiversity impacts in the Stage 2 application.

1.3 Supporting Documents/Plan, Currency of Information and Limitations

The following tables are prepared with reference to, or based on information provided in, the documents/approvals listed below:

- Stage 1 SSD application – EIS and approved plans (SSD 9575) (Stage 1) (**approved**);
- *Stage 1 Biodiversity Development Assessment Report*, Rev H, 29th January 2019, Greencap (Stage 1 BDAR) (**endorsed**);
- *Stage 1 Draft Biodiversity Management Plan*, Rev D, 7th June 2019, Greencap (Stage 1 BMP) (**draft**), which includes the following sub-plans:
 - Fauna Management Plan (FMP);
 - Vegetation Management Plan (VMP); and
 - Water Quality Management Plan (WQMP).
- *Stage 2 Draft Biodiversity Management Plan*, Rev C, 17th June 2019, Greencap (Stage 2 BMP) (**draft**), which includes the following sub-plans:
 - Fauna Management Plan (FMP);
 - Vegetation Management Plan (VMP); and
 - Water Quality Management Plan (WQMP).
- *Stage 2 Landscape Zonal Plan DRAFT Advanced Issue*, 11th June 2019, Turf Design Studios, (LZP);
- *Tweed Valley Hospital Masterplan Series*, AR-SKE-20, 6 June 2019 (STH Batesmart) (Masterplan);
- AviPro (2019) *Aviation State Significant Development Report: Tweed Valley Hospital SSD-9575*.
- JHA (2019) *Draft Noise and Vibration Impact Assessment*, Tweed Valley Hospital Stage 2, North Sydney;
- LCI (2019) *External Lighting Strategy Report Tweed Valley Hospital Lendlease Preliminary Revision*, North Sydney;
- Lendlease Building Pty Ltd (LLB) (2019) *Project Construction Environmental, Health & Safety Management Plan (CEMP)*. Issue No 5.0;
- Cavvanba (2019) *Data quality objectives and sampling, analysis and quality plan - Groundwater and soil investigation*, Byron Bay, NSW; and
- *Stage 2 Stormwater Management Plan – Tweed Valley Hospital, Prepared for Stage 2 SSD Application*, Issue A, 14th June 2019, Robert Bird Group.

Greencap has prepared this document based on information current and made available at the time of writing, and pending final plans/reports for review for the Stage 2 proposal.

1.4 Summary

The conditions of the Stage 1 approval clearly state that the Stage 2 application must demonstrate that the proposal is consistent with the endorsed Biodiversity Development Assessment Report prepared by Greencap dated January 2019 (BDAR) and the Matters of National Environmental Significance Report (MNES) prepared by Greencap dated February 2019 and all recommendations to mitigate the direct, indirect and prescribed impacts in the BDAR and the MNES. This is justification for the BDAR Waiver for the Stage 2 approval and gives DPE and OEH a level of security that the biodiversity impacts will be sufficiently covered in the Stage 2 EIS.

Table 2 below presents an assessment of each required category of biodiversity impact for the site in context of the approved Stage 1 proposal and other supporting documents listed above. On the basis of the information currently available for each category, this assessment notes that it is expected that the Stage 2 proposal will be generally consistent with the approved Stage 1 application with regards to biodiversity, and it is expected to have no additional significant biodiversity impacts that are not already addressed by the Stage 1 BDAR or the requirements of Condition Schedule 3 B20, B21 and B31c.

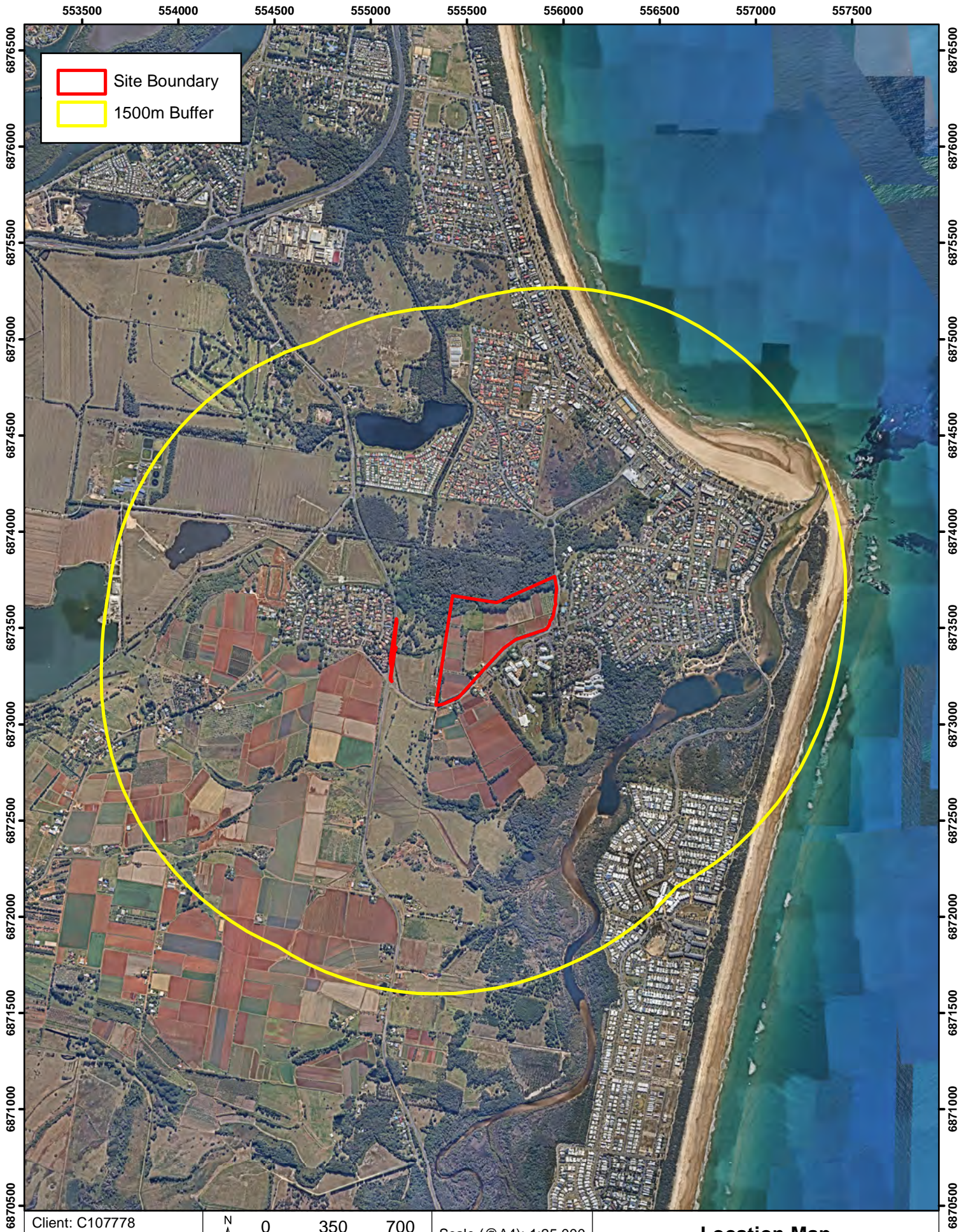
2. ATTACHMENT A, TABLE 1 BDAR WAIVER REQUEST: INFORMATION REQUIREMENTS

Table 1 BDAR Waiver Request: Information Requirements

| Information Requirement | Detail |
|-------------------------|--|
| Admin | <ul style="list-style-type: none"> NSW Health Infrastructure c/o TSA Management: Jacqueline Hawkins Tweed Valley Hospital 771 Cudgen Road Cudgen NSW 4895 Project ID: Stage 2 SDD Application: Tweed Valley Hospital. This is the second SSD stage, following approval of Stage 1 SSD 9575 on 11th June 2019 Person completing Table 2: Dr Damian Licari (BAM Assessor Accreditation No. BASS18006) |
| Site Details | <ul style="list-style-type: none"> 771 Cudgen Road, Cudgen (Lot 11 DP 1246853) & Tweed Coast Road, Cudgen (Crown Road Reserve); Tweed Shire Council (Figure 1) |
| Proposed development | <p>Overview</p> <p>On the 11th June 2019 the Minister for Planning and Public Spaces granted approval for the Concept Plan and Stage 1 Early and Enabling Works for the new Tweed Valley Hospital (SSD 18_9575) located at 771 Cudgen Road, Cudgen (Lot 11 DP 1246853).</p> <p>The Environmental Impact Statement (EIS) has been prepared to support the State Significant Development (SSD) Stage 2 Application for the Tweed Valley Hospital which will be assessed under Part 4 Division 4.1 of the <i>Environmental Planning and Assessment Act 1979</i> (EP&A Act). This, along with supporting documentation, will provide a clear outline of the Stage 2 Application.</p> <p>The Tweed Valley Hospital Project broadly consists of:</p> <ul style="list-style-type: none"> Delivery of the Tweed Valley Hospital; 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. <p>Concept Proposal and Stage 1 Early and Enabling Works</p> <p>The Concept Proposal and Stage 1 Early and Enabling Works were approved for the new Tweed Valley Hospital (SSD 18_9575) by the Minister of Planning and Public Spaces on 11th June 2019. All documents relating to the Concept Proposal and Stage 1 Early and Enabling Works can be found on the project website at https://www.planningportal.nsw.gov.au/major-projects/project/10756.</p> <p>Stage 2 Hospital Delivery - Main Works and Operation</p> |

| Information Requirement | Detail |
|-------------------------|--|
| | <p>The Stage 2 SSD component will seek consent for the Main Works and Operation of the Tweed Valley Hospital, including:</p> <ul style="list-style-type: none"> ➤ Construction of Main Hospital Building <ul style="list-style-type: none"> ▪ A main entry and retail area ▪ Administration ▪ Community health ▪ Inpatients 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 ▪ Back of House services ▪ Rooftop Helipad ➤ Construction of Support Building, 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; • External road infrastructure upgrades and main site access; • Environmental and wetland rehabilitation; • Site landscaping; • Signage; |

| Information Requirement | Detail |
|--------------------------------|--|
| | <ul style="list-style-type: none">• Utility and service works. <p>Plans for Stage 2 Main Works and Operation are attached in Appendix A. Approval for Stage 2 will enable the new Tweed Valley Hospital to be built which will a much-needed contemporary health service facilities for the surrounding region.</p> <p>Potential Future Expansions</p> <p>Any subsequent stages or modifications would need to be subject to a separate application/s as required. These would need to be related to works for potential future expansion of the facility.</p> |
| Impacts on biodiversity values | <ul style="list-style-type: none">• See Table 2 |



Client: C107778

Job #: J156455

Author: M. Nunn

Checked: D. Licari

Date: 22/01/2019

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 8th August 2018 (59.7 cm) © Nearmap 2018*

Location Map (ref: s4.2.1.2 of BAM)

Tweed Valley Hospital BDAR
771 Cudgen Road
Cudgen NSW

**Figure
1**

No warranty is given in relation to the data (including accuracy, reliability, completeness or suitability) and accept no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of or reliance upon the data. Data must not be used for direct marketing or be used in breach of privacy laws.

3. Attachment A, Table 2 Impacts of the proposed development on biodiversity values

Table 2 Impacts of the proposed development on biodiversity values

| Biodiversity Value | Meaning | Relevant (Y or N/A) | Explain and document potential impacts including additional impacts prescribed under the BC Regulation |
|---|---|---------------------|--|
| Vegetation abundance - 1.4(b) BC Regulation | Occurrence and abundance of vegetation at a particular site | Y | <p>Native vegetation on site, as assessed in Stage 1 BDAR (Figure 2, Stage 1 BDAR).</p> <p>Avoidance of impacts on native vegetation:</p> <p>Direct impacts on native vegetation for Stage 1 and expected Stage 2 works are assessed in Stage 1. Based on existing draft information at the time of writing, the approved vegetation clearing for the Site is detailed in SSD 9575 Schedule 3 Condition B33 c, which references the approved Drawing <i>No L-EIS-1 Rev F Tree Removal and Preservation Plan</i> prepared by Turf Design dated 03 May 2019. It is expected that there is no increase in clearing areas beyond the approved conditions of Stage 1 (total of 0.95 ha of White Booyong- Fig Subtropical Rainforest self-sown windrow, Stage 1 BDAR), and the therefore no additional direct impacts to vegetation are expected in the Stage 2 application.</p> <p>Likelihood and extent of any remaining impacts</p> <p>Any requirement for additional direct impacts during the Stage 2 application process will be dealt with in the EIS as an amendment. The Stage 1 and Stage 2 Biodiversity Management Plans (Stage 1 BMP; Stage 2 BMP) will also address details of the mitigation measures such as Vegetation Protection Measures as per Schedule 3 Condition C25 and B33 c (ie Tree Protection Zones [TPZs]) to protect retained native vegetation during construction works.</p> |
| Vegetation integrity 1.5(2)(a) BC Act | Degree to which the composition, structure and function of vegetation at a particular site and the surrounding landscape has been altered from a near natural state | Y | <p>Vegetation integrity for some PCTs on site have been altered from a near natural state after previous land use as agriculture. Zones 4 and 8 (Figure 2) are windrows with regrowth vegetation. Vegetation with high integrity is being retained on site as per Stage 1 BDAR.</p> <p>Based on existing information available at the time of writing this request, it is not expected that the Stage 2 application will introduce any negative impacts beyond those covered in Stage 1. The draft Stage 2 BMP includes a number of measures for the long-term management of vegetation to</p> |

| Biodiversity Value | Meaning | Relevant (Y or N/A) | Explain and document potential impacts including additional impacts prescribed under the BC Regulation |
|--|---|---------------------|--|
| | | | retain and enhance biodiversity values on the Site, including habitat for threatened species, in particular the Mitchell's rainforest snail <i>Thersites mitchellae</i> (MRS), Koala habitat values in the small 0.2 ha area of preferred koala <i>Phascolarctos cinereus</i> habitat located on Site and to create stepping-stone or habitat corridors across the site. |
| Habitat suitability 1.5(2)(b) BC Act | Degree to which the habitat needs of threatened species are present at a particular site | Y | <p>The BAM Calculator for Stage 1 yielded 11 Predicted (ecosystem credit species) and 66 candidate (species credit species) threatened species for the zones impacted by the Stage 1 works, Zones 4 and 8.</p> <p>Table 5 and Table 6 of the Stage 1 BDAR provide the justification for exclusion of ecosystems and species on the basis of habitat constraints, and the final residual offset requirements are given in Appendices L and M of the Stage 1 BDAR.</p> <p>The residual offset requirement is linked to the direct impacts assessed in Stage 1, and at the time of writing the Stage 2 proposal is expected to be consistent with the approved Stage 1 application. This will be assessed as part of the EIS as Stage 2 plans are finalised.</p> <p>The avoid and minimise strategy is detailed in the Stage 1 BDAR. A long-term BMP will be included with the Stage 2 application as per SSD Conditions Schedule B21, which will detail measures to protect and maintain vegetation on the northern part of the Site, outline a Vegetation Management Plan and habitat management measures for the identified threatened species, ecological endangered communities (EEC) and threatened ecological communities (TEC) including the Koala food trees Zone 6; and fauna management measures covering indirect impacts such as lighting, noise, and water quality.</p> |
| Threatened species abundance 1.4(a) BC Regulation | Occurrence and abundance of threatened species or threatened ecological communities, or their habitat, at a particular site | Y | <p>During the development of the Stage 1 BDAR, the following Threatened Ecological Communities (TECs) and threatened species were identified on the Site:</p> <ul style="list-style-type: none"> 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; Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions; One species of threatened flora on site (<i>Cryptocarya foetida</i> – Stinking Cryptocarya) |

| Biodiversity Value | Meaning | Relevant (Y or N/A) | Explain and document potential impacts including additional impacts prescribed under the BC Regulation |
|--|--|---------------------|---|
| | | | <ul style="list-style-type: none"> Two species of threatened fauna assumed to be present in areas directly impacted by the Stage 1 Concept proposal: <ul style="list-style-type: none"> <i>Coeranoscincus reticulatus</i> - Three-toed snake-tooth Skink; <i>Ninox strenua</i> - Powerful owl. <p>Two pH dependent amphibians were identified by the BAM Calculator as candidate threatened species – Wallum froglet <i>Crinia tinnula</i> and Olongburra frog <i>Litoria olongburensis</i>. There are records for these species within the 1,500 m assessment area and within the receiving catchment.</p> <p>Three 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 (Stage 1 BDAR). Potential habitat for MRS is in the paperbark swamp forest and Subtropical Rainforest EECs in the northern section of the Site and will not be directly impacted by the proposed development.</p> <p>Based on the Stage 1 BDAR, and on the expectation that the Stage 2 works will be consistent with the Stage 1 proposal, it can be expected that any impacts on biodiversity have been assessed under the approved Stage 1 proposal and/or managed in the Stage 1 or draft Stage 2 BMP, including any impacts from changes in stormwater quality and vehicle strikes.</p> |
| Habitat connectivity 1.4(c) BC Regulation | Degree to which a particular site connects different areas of habitat of threatened species to facilitate the movement of those species across their range | Y | <p>Current connectivity of different areas of habitat differs between the northern and southern portions of the site. The existing vegetation in the northern portion of the site contributes to the mapped regional fauna corridor identified in Figure 3. This area of vegetation is bordered by an existing wildlife fence within the road corridor which runs alongside Turnock St (and therefore outside the boundary of the site).</p> <p>This vegetation in the northern portion of the site will be retained and therefore will continue to contribute to connectivity of this part of the habitat.</p> <p>The southern portion of the site, currently used for agriculture, is largely cleared with the exception of small clumps of trees and vegetation. In respect of connectivity, these areas</p> |

| Biodiversity Value | Meaning | Relevant (Y or N/A) | Explain and document potential impacts including additional impacts prescribed under the BC Regulation |
|---|---|---------------------|--|
| | | | <p>currently contribute to connectivity by providing minor 'stepping stone' habitats for threatened species such as birds, mammals etc. These existing stepping stone areas will be removed as part of the proposed development in the approved Stage 1 works.</p> <p>It is expected that the Stage 2 application will be generally consistent with the Stage 1 proposal and not introduce any additional biodiversity impacts on habitat connectivity.</p> <p>Measures to maintain habitat connectivity are described in the draft Stage 2 BMP in the Vegetation Management Plan, including vegetation protection measures (eg TPZs), and vegetated buffer zones (10 m and 30 m wide) to connect to the retained Subtropical Rainforest vegetation in the northern portion of the Site and run north to south in line with the mapped regional fauna corridor. Furthermore, it identifies suitable wildlife friendly fencing that will not impede the movement of fauna in the future with no permanent fencing on the northern boundary of the Site.</p> |
| Threatened species movement 1.4(d) BC Regulation | Degree to which a particular site contributes to the movement of threatened species to maintain their lifecycle | Y | <p>The primary impact on movement of threatened species relates to boundary fencing of the site, noting that species would be able to move around the Project site unless impeded by a boundary fence. In respect of the current fencing on the site, the only existing permanent fencing in proximity to the site is the wildlife fencing along the Turnock St roadside. The Project will not impact this existing fencing.</p> <p>Temporary boundary fencing has been installed during the pre-construction works under current approvals. Measures to mitigate impacts to threatened species movement are detailed in the draft Stage 2 BMP in the VMP, including Tree Protection Zones (TPZs), and temporary boundary fencing has been fitted with a 'post and bridge' system at least every 50 m in accordance with published guidelines (KRS 2009) to facilitate movement of koala <i>Phascolarctos cinereus</i> and other arboreal marsupials.</p> |

| Biodiversity Value | Meaning | Relevant (Y or N/A) | Explain and document potential impacts including additional impacts prescribed under the BC Regulation |
|---|---|---------------------|---|
| | | | <p>Based on draft plans for the Stage 2 application, as per the Stage 1 SSD application there is no intent for a permanent boundary fence to be installed for the operation phase of the Project, thereby allowing movement of threatened species.</p> <p>It is expected that the Stage 2 application will be generally consistent with the Stage 1 proposal and not introduce any additional biodiversity impacts on threatened species movement.</p> |
| Flight path integrity 1.4(e) BC Regulation | Degree to which the flight paths of protected animals over a particular site are free from interference | Y | <p>The proposed development includes a Helicopter Landing Site (HLS) on the top of the main building, which will result in low level air traffic in the vicinity of the Site. There is a small risk that threatened species of birds and bats may be flying across the Site in remnant vegetation that is located at the level of the floodplain at the time of aircraft operation.</p> <p>This impact is addressed in the approved Stage 1 proposal and found the risk to be negligible.</p> <p>The siting of the HLS and primary considerations in HLS approach and departure path selection included avoidance of ecologically and environmentally sensitive areas. The SSD general requirements of preferred flight path directions are detailed in the <i>Aviation State Significant Development Report: Tweed Valley Hospital SSD-9575</i> (AviPro 2019). The planned flight approach and departure paths to the HLS run north-northeast to southwest, minimising any impact on the environmentally sensitive areas (nearby Flying fox camp).</p> <p>Any relevant additional information on expected air traffic (updates to expected aircraft movement during operation) will be addressed in the draft Stage 2 BMP.</p> |
| Water sustainability 1.4(f) BC Regulation | Degree to which water quality, water bodies and hydrological processes sustain threatened species and threatened ecological communities at a particular site. | Y | <p>The northern section of the Site is part of an important wetland mapped under the Coastal Management SEPP, and contains several pH dependent amphibians, namely the Wallum froglet <i>Crinia tinnula</i> and Olongburra frog <i>Litoria olongburensis</i>.</p> <p>Under the pre-construction conditions, the agricultural land use has changed the stormwater management to a non-natural flow regime. This includes floodplain drains and a dam on-site. The approved Stage 1 proposal includes a number of measures for management run-off and water</p> |

| Biodiversity Value | Meaning | Relevant (Y or N/A) | Explain and document potential impacts including additional impacts prescribed under the BC Regulation |
|--------------------|---------|---------------------|--|
| | | | <p>quality, including the construction of sediment dams that will be converted into bio-detention basins.</p> <p>Updated information on hydrological impacts such as updated hydrological modelling, detailed sediment dam design, potential infill of the existing dam on Site, and any potential impacts on biodiversity will be addressed in the draft Stage 2 BMP Water Quality Management Plan (WQMP) sub-plan and a letter from a suitably qualified ecologist on the biodiversity impacts based on updated hydrological modelling as required by SSD 9575 Conditions Schedule B31c as well as the SWMP and ESCP (RBG 2019), CEMP and associated CSWMSP (LLB 2019) which sets out the key items to manage stormwater runoff.</p> |

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 Site Boundary

Native Vegetation by Vegetation Zone (PCT) (TVH/TCR Site only)

Zone 1 (1064 - Paperbark swamp forest of the coastal lowlands)

Zone 2 (1302 - White Booyong - Fig subtropical rainforest)

Zone 3 (1302 - White Booyong - Fig subtropical rainforest)

Zone 4 (1302 - White Booyong - Fig subtropical rainforest)

Zone 5 (1569 - Flooded Gum – Brush Box – Tallowwood mesic tall open forest)

Zone 6 (1569 - Flooded Gum – Brush Box – Tallowwood mesic tall open forest)

Zone 7 (1235 - Swamp Oak swamp forest of the coastal lowlands)

Zone 8 (1302 - White Booyong - Fig subtropical rainforest)

Client: C107778

Job #: J156455

Author: M. Nunn

Checked: D. Licari

Date: 22/01/2019



0 50 100 m

Scale (@A4): 1:4,750

Coordinate System: GDA 1994 MGA Zone 56

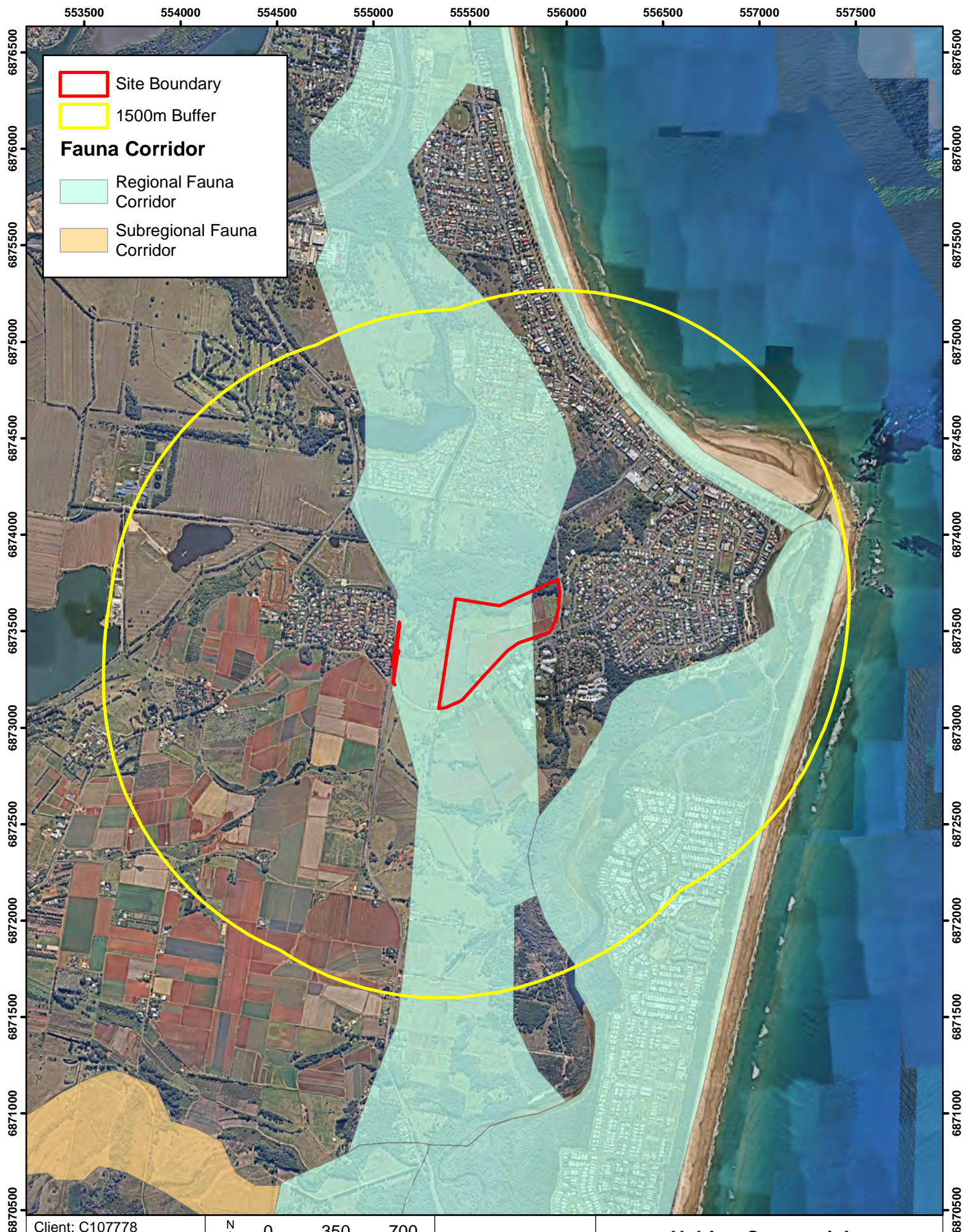
Imagery 8th August 2018 (7.5 cm) © Nearmap 2018
Vegetation mapping: Greencap (2018)




Native Vegetation Extent on the Site (ref s5.1 of BAM)

Tweed Valley Hospital BDAR
771 Cudgen Road
Cudgen NSW
**Figure
2**
GREENCAP

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Doc Path: R:\Projects\IC107778_Health Infrastructure\U156455_Tweed Valley Hospital\3. Job Folder\GIS\U156455_Tweed Valley Hospital\BDAR\mxd\U156455_BDAR_F13_native_vege_Site_190122.mxd



| | | | | | | | | |
|--|---|---|-----|-----|-----------------------|--|--|---------------------|
| Client: C107778 |  | 0 | 350 | 700 | Scale (@A4): 1:25,000 | Habitat Connectivity (ref: s4.2.1.3d & s4.2.1.9 of BAM) | | |
| Job #: J156455 | |  m | | | | | | |
| Author: M. Nunn | Coordinate System: GDA 1994 MGA Zone 56 | | | | | Tweed Valley Hospital BDAR 771 Cudgen Road Cudgen NSW | | Figure 3 |
| Checked: D. Licari | Imagery 8th August 2018 (59.7 cm) © Nearmap 2018 | | | | | | | |
| Date: 22/01/2019 | Fauna corridors for NE NSW © Office of Environment and Heritage (OEH) 2010. | | | | | | | |
|  | | No warranty is given in relation to the data (including accuracy, reliability, completeness or suitability) and accept no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of or reliance upon the data. Data must not be used for direct marketing or be used in breach of privacy laws. | | | | | | |

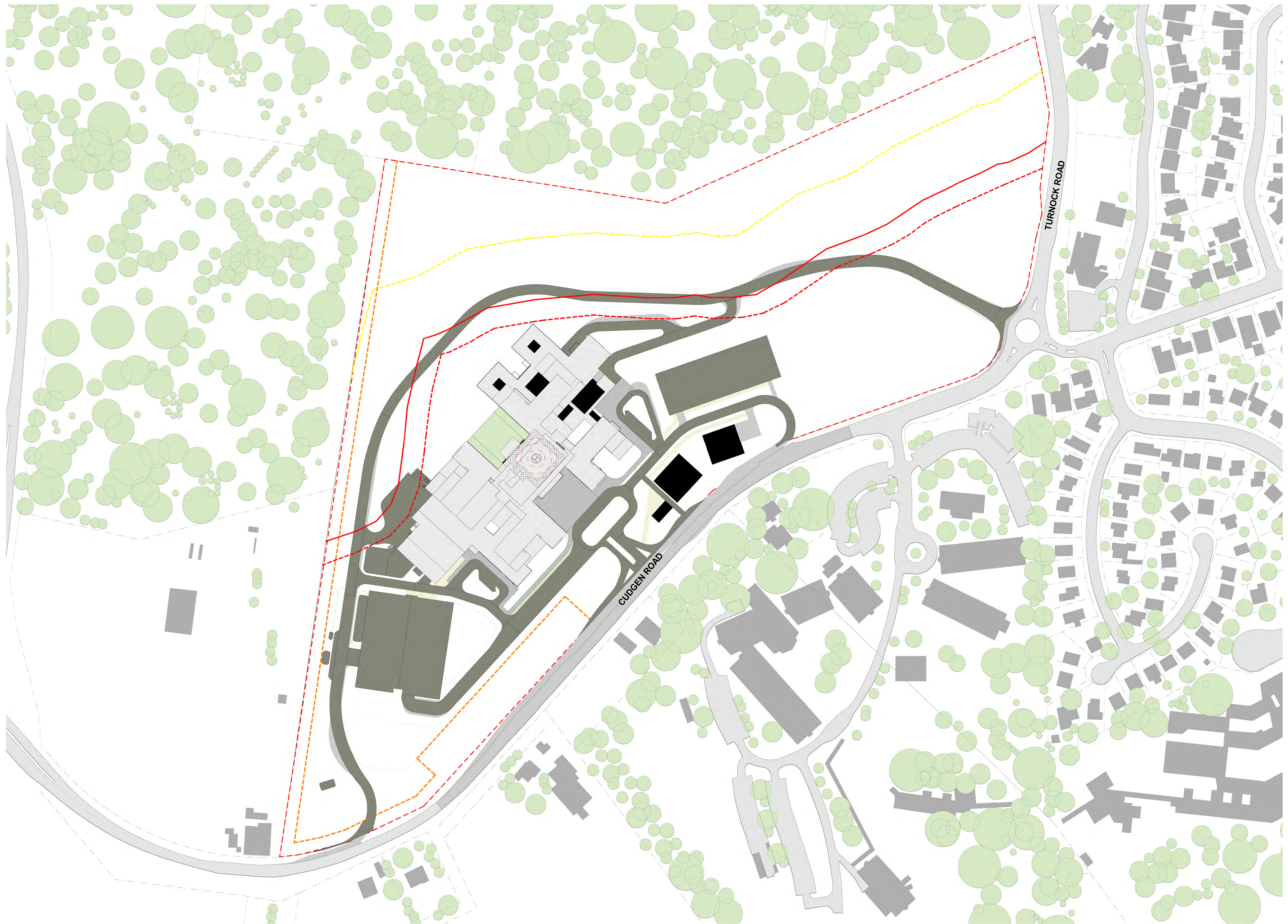
**Figure
3**

Figure 3 Habitat Connectivity (from Stage 1 BDAR)

Tweed Valley Hospital Stage 2 SSD: BDAR Waiver

NSW Health Infrastructure Tweed Valley Hospital

APPENDIX A. MASTERPLAN



SITE PLAN

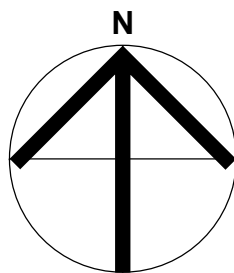
TWEED VALLEY HOSPITAL

Project Number 10363

Scale @ A0 Sheet Size 1 : 1000 Date 03/05/19

Drawing Number: AR-SKE-20-SITE

Rev:1



Health
Infrastructure

Health
Northern NSW
Local Health District



555400

555600

555800

556000

6874000

6873800

6873600

6873400

6873200


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
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
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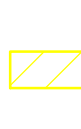
6873200

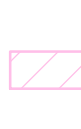
 Site Boundary
Vegetation Zone (PCT)
 Zone 1 (1064 - Paperbark swamp forest of the coastal lowlands)


 Zone 2 (1302 - White Booyong - Fig subtropical rainforest)


 Zone 3 (1302 - White Booyong - Fig subtropical rainforest)


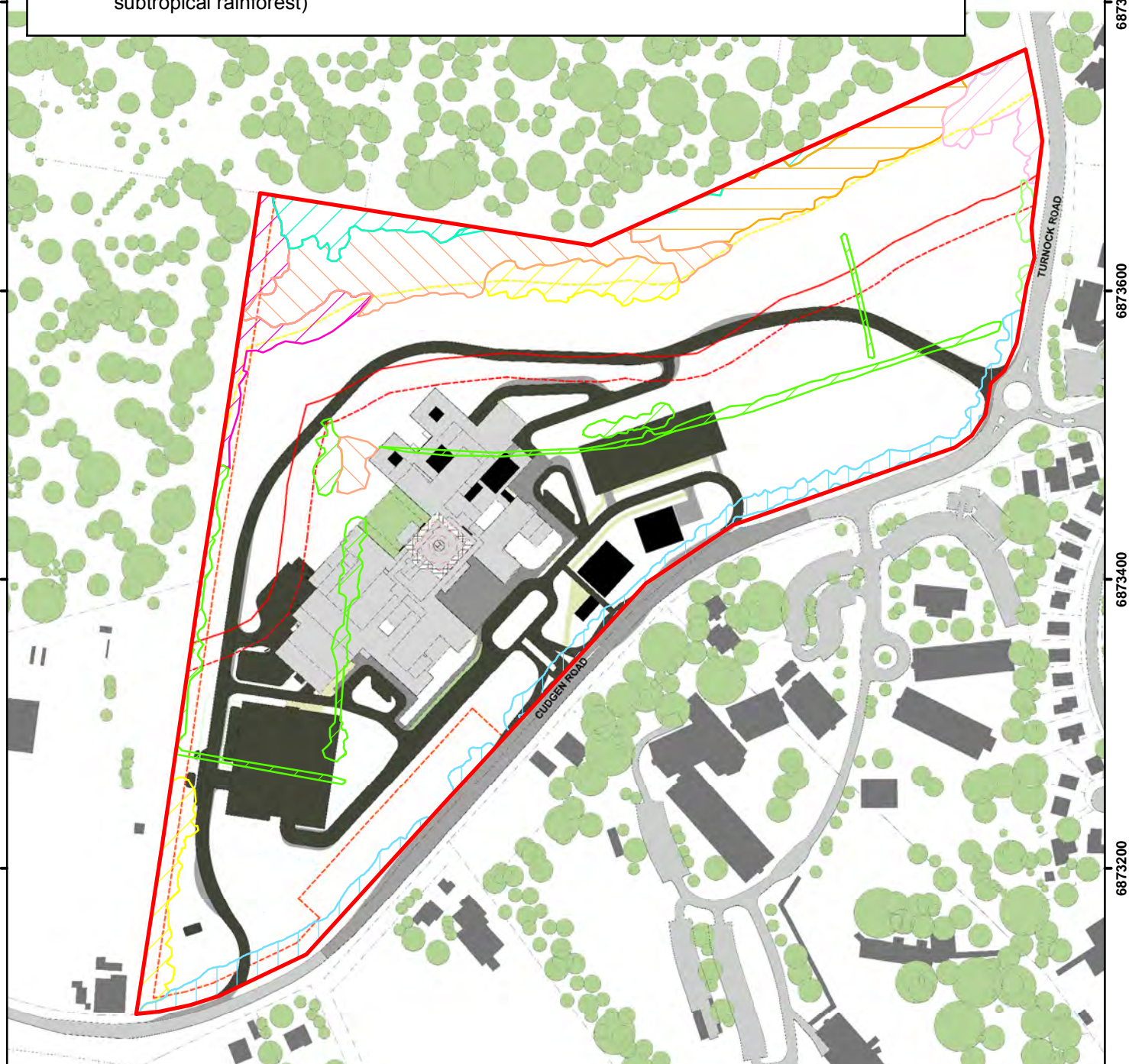
 Zone 4 (1302 - White Booyong - Fig subtropical rainforest)

 Zone 5 (1569 - Flooded Gum – Brush Box – Tallowwood mesic tall open forest)

 Zone 6 (1569 - Flooded Gum – Brush Box – Tallowwood mesic tall open forest)

 Zone 7 (1235 - Swamp Oak swamp forest of the coastal lowlands)

 Zone 8 (1302 - White Booyong - Fig subtropical rainforest)

 Zone 9 (n/a - Exotic Vegetation)


Client: C107778

Job #: J156455_13

Author: M. Nunn

Checked: D. Licari

Date: 17/06/2019

GREENCAP

0 50 100 m

Scale (@A4): 1:4,000

Coordinate System: GDA 1994 MGA Zone 56

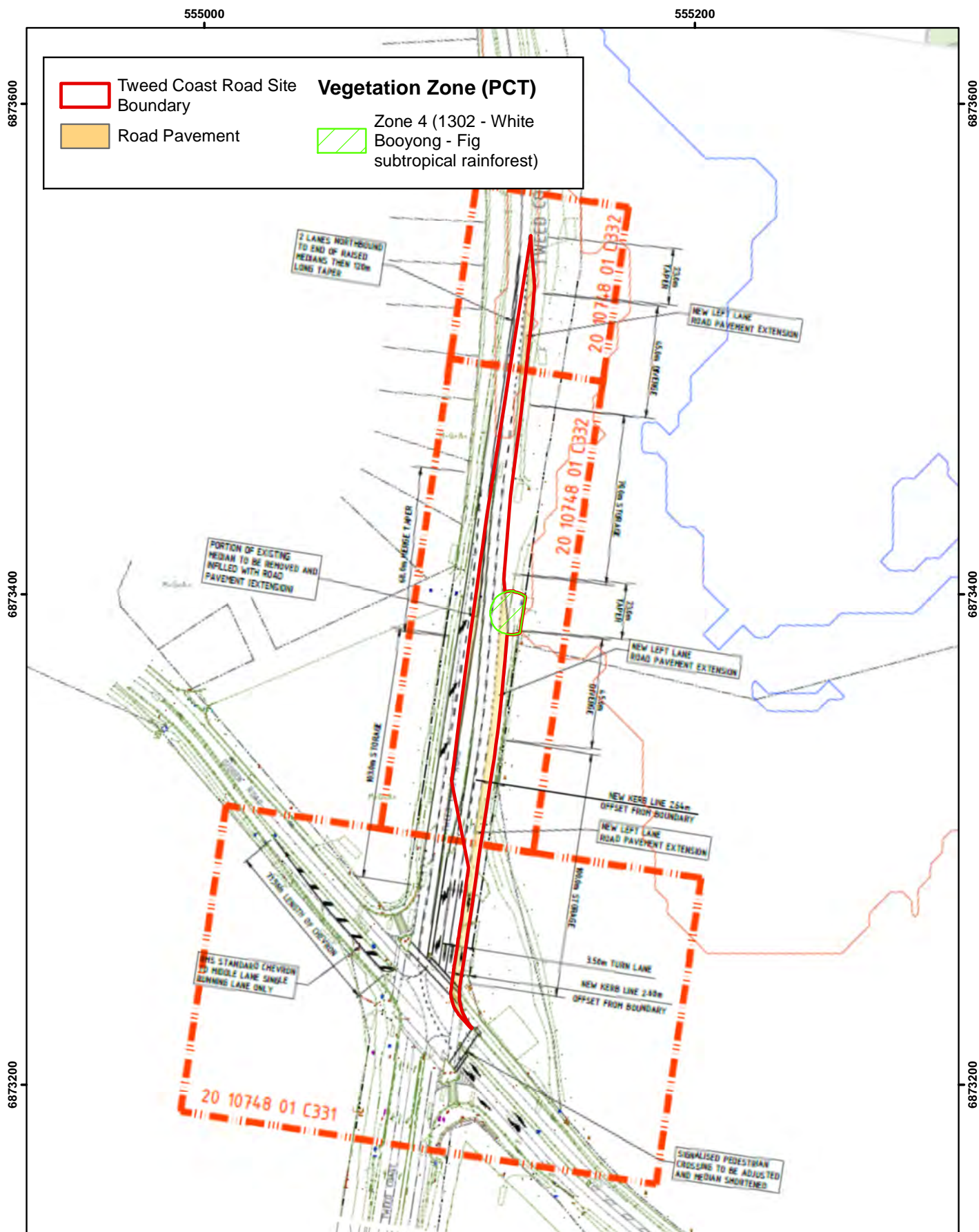
Imagery 8th August 2018 (7.5 cm) © Nearmap 2018

Vegetation mapping: Greencap (2018)

Masterplan: Georeferenced version of AR-SKE-20-SITE Rev.1 (Sth Batesmart, 03/05/2019)

Project Site Masterplan and Vegetation ZonesTweed Valley Hospital BDAR
771 Cudgen Road
Cudgen NSW**Figure
A-3**

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| | | | | |
|--------------------|--|---|--|--|
| Client: C107778 | <div><div>N</div><div><div>0</div><div>25</div><div>50</div></div><div>m</div></div> | Scale (@A4): 1:2,000 | <div>Tweed Coast Road Site and Vegetation Zones</div> | |
| Job #: J156455 | | | | |
| Author: M. Nunn | Coordinate System: GDA 1994 MGA Zone 56 | | <div>Tweed Valley Hospital BDAR 771 Cudgen Road Cudgen NSW</div> <div>Figure A-4</div> | |
| Checked: D. Licari | Imagery 8th August 2018 (7.5 cm) © Nearmap 2018 | | | |
| Date: 24/01/2019 | Vegetation mapping: Greencap (2018) | | | |
| | Plan: Georeferenced version of 10748C-C330[P2] - 2/10/2018 (Bonacci) | | | |
| GREENCAP | | No warranty is given in relation to the data (including accuracy, reliability, completeness or suitability) and accept no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of or reliance upon the data. Data must not be used for direct marketing or be used in breach of privacy laws. | | |

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