ASPIRE

Town Planning and Project Services

10 February 2026

Chief Executive Officer
Douglas Shire Council
64-66 Front Street
MOSSMAN QLD 4873

Attn: Neil Beck (Team Leader – Planning)

Delivered via: enquiries@douglas.qld.gov.au

Re: Extension Application Pursuant to s86 Planning Act 2016 – Development Permit for Reconfiguring a Lot (1 lot into 22 lots) issued by Douglas Shire Council – Council Ref: ROL 2021_4160/1 (Doc ID 1110764)

Aspire Town Planning and Project Services act on behalf of Far North Development Group (the 'Applicant') in relation to the above described Development Application.

On behalf of the Applicant, please accept this correspondence and the accompanying attachments as a properly made Extension Application pursuant to s86 of the *Planning Act 2016* seeking an extension to the current Development Permit for Reconfiguring a Lot (1 lot into 22 lots) for an additional four (4) years, up to and including 22 September 2030.

Please find enclosed the following documentation associated with this Development Application:

- Certificate of Title (Attachment 1)
- Duly Completed State Form – Extension Application under section 86 of the Planning Act 2016 (Attachment 2);
- Duly Completed Land Owners Consent (Attachment 3);
- Electronic Copy of the Development Permit for Reconfiguring a Lot (1 Lot into 22 Lots) issued on the 27 September 2022– Council ref: ROL 2021_4160/1 (Doc ID 1110764) (Attachment 4).

The applicable application fee under the Douglas Shire Council Fees & Charges Schedule 2025–2026 is $3,212.75. This is calculated as follows (noting the approval includes an amendment to design condition, resulting in a total residential lot yield of 21 lots):

- Extension Application fee is 25% of the current prescribed Development Application fee
- A Reconfiguration of a Lot attracts a base fee of $1,584.00, plus additional fee of $593.00/lot (over and above the initial 2 base lots), therefore @ 19 lots = $12,851.00
- 25% = $3,212.75

PO BOX 1040, MOSSMAN QLD 4873
M. 0418826560
W. www.aspireqld.com
E. admin@aspireqld.com
ABN. 79 851 193 691

We respectfully request that Council confirm the applicable fee and provide the payment link and reference details so that the payment can be made directly by the Applicant.

Justification

This request seeks an extension to the currency period of the Development Permit for Reconfiguring a Lot (1 lot into 22 lots) granted by Douglas Shire Council on 27 September 2022 (Council Ref: ROL 2021_4160).

An additional four (4) years is requested to allow the development to proceed in an orderly and deliverable manner.

While the Applicant is not privy to the full commercial or logistical circumstances that have delayed commencement of the development, it is evident that the period since approval has been characterised by a number of significant regional and economic disruptions that reasonably explain the lack of progression within the original currency period.

Exceptional Regional and Economic Circumstances

Since the approval was issued in September 2022, the Far North Queensland region has experienced a series of events that may have materially affected development feasibility, investment confidence and the construction industry generally:

- Ongoing disruption to business and construction markets following the COVID-19 pandemic, including labour shortages, contractor availability issues and sustained escalation in construction costs;
- Severe rainfall and flooding associated with Cyclone Jasper in late 2023, which caused widespread infrastructure damage across the region, diverted contractor capacity to recovery works, and delayed private development projects;
- The closure of the Mossman Mill in 2024, which had a measurable economic and social impact within the Douglas Shire area, affecting employment, investor confidence and short-term development activity.

These are not site-specific delays but represent broader economic and environmental factors beyond the control of the land owner. Such circumstances are widely recognised as valid grounds for currency extensions where development intent remains genuine.

Continued Development Intent

Importantly, the approval has not become dormant or abandoned. Stage 1 which included the excise of the balance farm was executed. The property has recently been sold to a new owner who is actively progressing the development and intends to deliver the approved subdivision.

Additional time is required to:

- Finalise detailed engineering design;
- Prepare and lodge the required Operational Works application; and
- Secure contractor availability in a stabilising but still constrained construction market.

The change in ownership reflects renewed commitment to implementation rather than speculative holding.

Change in Planning Circumstances

A key consideration in extending currency is whether the planning framework has materially changed such that the approval would no longer be supportable.

Since the approval was granted:

- There has been no material change to the Douglas Shire Planning Scheme 2018 (Version 1) that would alter the assessment outcome for this development;
- The zoning intent and strategic planning direction for residential development in this locality remain unchanged;
- No new overlay constraints or policy shifts have emerged that would render the approved subdivision inconsistent with current planning policy.

Accordingly, the approval remains aligned with the contemporary planning framework.

Absence of Adverse Impacts

The extension does not:

- Increase the scale or intensity of development;
- Change the approved design or lot yield;
- Create new environmental, infrastructure or community impacts.

The request simply allows additional time to implement an already approved and compliant development outcome.

Planning Interest and Public Benefit

Allowing the approval to lapse would not produce a better planning outcome. Rather, it would:

- Delay delivery of approved residential lots;
- Require reassessment of a proposal already deemed acceptable; and
- Create unnecessary regulatory inefficiency.

Granting the extension supports housing supply, economic activity and orderly development consistent with the Scheme's intent.

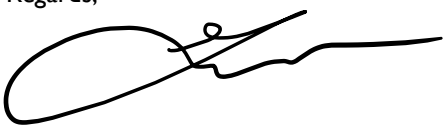
Conclusion

The delay in commencing the development may be attributable to extraordinary regional economic and environmental events, not abandonment of the proposal. A new owner is progressing delivery, the planning framework remains unchanged, and no adverse impacts arise from allowing additional time.

On this basis, it is respectfully submitted that extending the currency period by four (4) years is reasonable, justified, and in the public interest.

Thank you for your time in considering the attached Development Application. If you wish to inspect the property or have any further queries, please contact the undersigned.

Regards,



Daniel Favier
Senior Town Planner
ASPIRE Town Planning and Project Services

Attachment 1

Certificate of Title

Current Title Search

Queensland Titles Registry Pty Ltd
ABN 23 648 568 101

Title Reference:	**51316538**	**Search Date:**	03/02/2026 13:31
Date Title Created:	22/05/2023	**Request No:**	54913362
Previous Title:	50517738		

ESTATE AND LAND

Estate in Fee Simple

LOT 100 SURVEY PLAN 334253
Local Government: DOUGLAS

REGISTERED OWNER — INTEREST

Dealing No: 722475914 16/05/2023

FRANCIS RONALD COULTHARD	1/2
CAVILL BRETT COULTHARD	1/2

AS TENANTS IN COMMON

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 20654064 (POR 69)

2. EASEMENT IN GROSS No 700652063 16/05/1995 at 12:44
burdening the land to
COUNCIL OF THE SHIRE OF DOUGLAS
over
EASEMENT C ON RP 890698.

3. EASEMENT IN GROSS No 709238085 21/12/2005 at 10:08
burdening the land
DOUGLAS SHIRE COUNCIL
over
EASEMENT A ON SP174877

4. MORTGAGE No 714239999 03/01/2012 at 09:36
AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED A.B.N. 11 005 357 522

ADMINISTRATIVE ADVICES

NIL

UNREGISTERED DEALINGS

NIL

Caution - Charges do not necessarily appear in order of priority

** End of Current Title Search **

Requested by: D-ENQ TITLES QUEENSLAND

Attachment 2

Duly Completed State Form – Extension Application under section 86 of the Planning Act 2016

Extension application under section 86 of the *Planning Act 2016*

This template may be used for giving notice to make an extension application under section 86 of the *Planning Act 2016*. If the assessment manager for the extension application has a form for the application, the application must be made using that form.

Additional pages may be attached if there is insufficient space on the template to complete any question.

***Note**: All terms used within this template have the meaning given under the Planning Act 2016, the Planning Regulation 2017*, or the *Development Assessment Rules (DA Rules).*

PART 1 – APPLICANT DETAILS

1) Applicant details	
Applicant name(s) (*individual or company full name*)	Far North Development Group Pty Ltd
Contact name *(only applicable for companies)*	c/- Aspire Town Planning and Project Services
Postal address *(P.O. Box or street address)*	PO Box 1040
Suburb	Mossman
State	QLD
Postcode	4873
Country	Australia
Email address *(non-mandatory)*	admin@aspireqld.com
Contact number	0418826560
Applicant's reference number(s) *(if applicable)*	2026-01-01 - Coulthard Close, Newell

2) Owner's consent – Is written consent of the owner required for this extension application?
***Note**: section 86(2)(b)(ii) of the Planning Act 2016, states owner's consent requirements.*

☒ Yes – the written consent of the owner(s) is attached to this extension application
☐ No – proceed to question 3

PART 2 – ASSESSMENT MANAGER DETAILS

3) Identify the assessment manager who will be assessing this extension application.

Douglas Shire Council

PART 3 –DETAILS OF APPLICATION

4) Provide details of the existing development approval subject to this extension application.

Approval type	Reference number	Date issued	Entity that gave the development approval
☒ Development permit ☐ Preliminary approval	ROL 2021_4160/1 (Doc ID 1110764)	27 September 2022	Douglas Shire Council

5) Further details
5.1) Provide the currency period for this development approval.
27 September 2026
5.2) Identify how long this application seeks to extend the currency period of this development approval. *Note: reasoning to support the proposed extension should also be provided*
Four (4) years, up to and including 27 September 2030

PART 4 – FOR OFFICE USE ONLY

Date received: | Reference number(s):

The *Planning Act 2016,* the Planning Regulation 2017 and the DA Rules are administered by the Department of Infrastructure, Local Government and Planning. This template (or the assessment manager's form) and any additional materials supporting this extension application must be sent to the assessment manager.

Attachment 3

Duly Completed Land Owners Consent

Individual owner's consent for making a development application under the *Planning Act 2016*

I, **Francis Ronald Coulthard; and**
Cavill Brett Coulthard

as owner of the premises identified as follows:

L100 Coulthard Close, Newell, more formally described as Lot 100 on SP334253

consent to the making of a development application under the *Planning Act 2016* by:

Far North Development Group Pty Ltd

on the premises described above for:

For making an Extension Application under section 86 of the *Planning Act 2016* to the Development Permit for Reconfiguring a Lot (1 lot into 22 lots) issued by Douglas Shire Council on the 27 September 2022 (Council Ref: ROL 2021_4160/1 (Doc ID 1110764))

Signed:

C B Coulthard

Cavill Brett Coulthard
Date: 3-2-2026

FR Coulthard

Francis Ronald Coulthard
Date: 09-02-2026

Attachment 4

Electronic Copy of the Development Permit for Reconfiguring a Lot (1 Lot into 22 Lots) issued on the 27 September 2022– Council ref: ROL 2021_4160/1 (Doc ID 1110764)

DOUGLAS SHIRE COUNCIL

PO Box 723 Mossman Qld 4873
www.douglas.qld.gov.au
enquiries@douglas.qld.gov.au
ABN 71 241 237 800

Administration Office
64 - 66 Front St Mossman
P 07 4099 9444
F 07 4098 2902

27 September 2022

Enquiries: Neil Beck
Our Ref: ROL 2021_4160/1 (Doc ID 1110764)
Your Ref: 34678-001-01

F R Coulthard & C B Coulthard
C/- Brazier Motti Pty Ltd
PO Box 1185
CAIRNS QLD 4870

Email: cns.planning@braziermotti.com.au

Attention Mr Michael Tessaro

Dear Sir

Development Application for Reconfiguring a Lot (1 lot into 22 lots)
At 2 Andrews Street Newell
On Land Described as Lot 51 on SP168537

Please find attached the Decision Notice for the above-mentioned development application.

Please quote Council's application number: ROL 2021_4160/1 in all subsequent correspondence relating to this development application.

Should you require any clarification regarding this, please contact Neil Beck on telephone 07 4099 9444.

Yours faithfully

Paul Hoye
Manager Environment & Planning

encl.

- Decision Notice
  - Approved Drawing(s) and/or Document(s)
  - Reasons for Decision
- Advice For Making Representations and Appeals (Decision Notice)
- Adopted Infrastructure Charges Notice
- Advice For Making Representations and Appeals (Infrastructure Charges)

Decision Notice

Approval (with conditions)

Given under s 63 of the Planning Act 2016

Applicant Details

Name:	F R Coulthard & C B Coulthard
Postal Address:	C/- Brazier Motti Pty Ltd PO Box 1185 Cairns Qld 4870
Email:	cairns@braziermotti.com.au

Property Details

Street Address:	2 Andrews Street Newell
Real Property Description:	Lot 51 on SP168537
Local Government Area:	Douglas Shire Council

Details of Proposed Development

Development Permit for Reconfiguring a Lot (1 lot into 22 lots)

Decision

Date of Decision:	27 September 2022
Decision Details:	Approved (subject to conditions)

Approved Drawing(s) and/or Document(s) (Subject to the conditions of the approval.)

Copies of the following plans, specifications and/or drawings are enclosed.

The term 'approved drawing(s) and/or document(s) or other similar expressions means:

Drawing or Document	Reference	Date
Proposed Reconfiguration (Stage 1)	Plan No. 34678/003 Issue A	23/12/2020
Proposed Reconfiguration (Stage 1)	Plan No. 34678/004 Issue C	19/08/2022
Technical Report		
Newell Beach Flood Study prepared by Bligh Tanner.	Job No. 2021.0566	2/08/2022

Note – The plans referenced above will require amending in order to comply with conditions of this Decision Notice.

Assessment Manager Conditions & Advices

Assessment Manager Conditions

1. Carry out the approved development generally in accordance with the approved drawing(s) and/or document(s), and in accordance with:

   a. The specifications, facts and circumstances as set out in the application submitted to Council; and

   b. The following conditions of approval and the requirements of Council's Planning Scheme and the FNQROC Development Manual.

   Except where modified by these conditions of approval

Timing of Effect

2. The conditions of the Development Permit must be effected prior to the approval of the Plan of Survey, except where specified otherwise in these conditions of **approval.**

Lot Layout

3. The lot layout plan must be revised and provided to the satisfaction of the Chief Executive Officer prior to the lodgement of the application for operational work, generally in accordance with the Brazier Motti Plan No. 34678/004 Issue C dated 19 August 2022 and amended to detail:

   a. Allotments 8 – 13 to be reconfigured to provide less than 6 allotments to be endorsed by the Chief Executive Officer; and

   b. Provide a corridor to accommodate the water main to connect from Coulthard Close to Pacific Street as required by conditions of this Development Permit. The water main must be contained within an easement;

Water Supply Infrastructure Plan

4. A detailed Water Supply infrastructure plan and supporting information including hydraulic network analysis must be submitted demonstrating how the development will be serviced from Council's Infrastructure.

   The detailed Water Supply plan is to demonstrate the capacity of the existing network to service the development in accordance with the standards of service specified within the FNQROC Development Manual. In particular, the Masterplan must:

   a. identify the water supply network catchment or catchments that the development relies upon;

   b. provide a detailed hydraulic network analysis and supporting calculations which demonstrate any augmentations or upgrades required to existing water supply infrastructure to ensure the required standard of service is achieved for the development;

   c. identify the connection points and land tenure arrangements for new and existing infrastructure required to ensure an adequate standard of service is achieved for the development;

   d. Provide a loop main connecting Pacific Street to Coulthard Close to ensure adequate pressure and reliability of supply.

   The water supply infrastructure plan must be endorsed by the Chief Executive Officer prior to the issue of a Development Permit for Operational Works.

Water Supply Works

5. A Development Approval for Operational Work must be obtained for the design and construction of all internal and external water supply infrastructure that is required to ensure an adequate standard of service is achieved for the development.

   As part of any such Development Application, evidence must be provided that the development does not adversely affect the water supply to external properties adjacent to the development.

   Water supply works required to ensure an adequate standard of service is achieved for the development must be designed and constructed at no cost to Council.

   All works must be carried out in accordance with the approved plans, to the requirements and satisfaction of the Chief Executive Officer prior to the issue of a Compliance Certificate for the Plan of Survey.

On-Site Effluent Disposal

6. The method of on-site effluent disposal must be in accordance with the Queensland Plumbing & Wastewater Code. Details of the wastewater treatment system to be installed must be approved by the Chief Executive Officer prior to the construction of dwellings on each of the proposed allotments.

Acid Sulfate Soil Investigation

7. Undertake an Acid Sulfate Soil investigation in the area to be affected by this development. Soil sampling and analysis must be undertaken in accordance with procedures specified in '*Guidelines for Sampling and Analysis of Lowland Acid Sulfate Soils in Queensland' (1998)* or updated version of document produced by Department of Environment and Resource Management, (Previously DNRW – QASSIT), and State Planning Policy 2/02 – '*Planning and Managing Development involving Acid Sulfate Soils'*. The results of this investigation must be submitted to Council for approval prior to any earthworks or clearing being commenced on the site.

   Identification of soils with a pyrite content in excess of the action levels nominated in the latest version of DNRM – QASSIT: '*Guidelines for Sampling and Analysis of Lowland Acid Sulfate Soils in Queensland' (1998)* will trigger the requirement for preparation of an Acid Sulfate Soil Environmental Management Plan in accordance with the most recent requirements of the DNRW: *'Queensland Acid Sulfate Soil Technical Manual'* (2002), including Soil Management Guidelines (updated Feb 2003), which must be prepared to the satisfaction of the Chief Executive Officer.

Drainage Study of Site

8. The development is to be undertaken in accordance with the findings and recommendations of the Bligh Tanner Report on Newell Beach Flood Study Dated 2 August 2022, except where modified by the conditions.

   The applicant is to undertake additional local drainage calculations and reporting for the design of the internal road and stormwater drainage system and for the rear allotment drains. The supporting calculations are to confirm that the peak flows from the shorter duration rainfall events are contained within the drains and drainage easements.

   In relation to the local drainage elements, the additional calculations are to determine the drainage impacts on upstream and downstream properties and the mitigation measures required to minimise such impacts. In particular, the further advice must address the following:

   a. The contributing catchment boundaries to the local drains;

   b. The depth, velocity and extent of the 100-year ARI peak runoff flows in the allotment catch drain post-development. Based on the drain operation, confirm the extent of the drainage easements;

c. Information on the proposed works and any impacts proposed at the drainage outlet from the proposed development.

d. Confirmation of the severe impact assessment for the scenario where the crossroad culverts are blocked.

The report on the local drainage elements must be endorsed by the Chief Executive Officer prior to the issue of a Development Permit for Operational Works.

Earthworks

9. The development is to be undertaken generally in accordance with Civil Walker drawings 214-001-SK03 and SK04 (Revision 1) except as follows:

   a. Unless otherwise approved following the severe impact assessment findings and detailed flood calculations for local drains, the levels on lots 1, 2, 20 and 21 are to be amended as follows:

      i. Within 1m of the lot frontage the lot level must achieve a minimum earthworks level of 3.5m AHD. A small batter along the frontage of lots is to be provided to transition from the verge level to this minimum level.

      ii. The rear allotment level is to be a minimum of 3.7m AHD;

Demolish Structures

10. All structures not associated with the approved development (including disused services and utilities) must be demolished and/or removed from the subject land prior to the issue of a Compliance Certificate for the Plan of Survey.

Stockpiling and Transportation of Fill Material

11. Soil used for filling or spoil from the excavation is not to be stockpiled in locations that can be viewed from adjoining premises or a road frontage for any longer than one (1) month from the commencement of works.

    Transportation of fill or spoil to and from the site must not occur within:

    a. peak traffic times; or

    b. before 7:00 am or after 6:00 pm Monday to Friday; or

    c. before 7:00 am or after 1:00 pm Saturdays; or

    d. on Sundays or Public Holidays.

12. Dust emissions or other air pollutants must not extend beyond the boundary of the site and cause a nuisance to surrounding properties.

Storage of Machinery and Plant

13. The storage of any machinery, material and vehicles must not cause a nuisance to surrounding properties, to the satisfaction of the Chief Executive Officer.

Drainage Construction

14. The applicant / owner must undertake the development of the land in accordance with the findings of the Drainage Study dated 2 August 2022 prepared by Bligh Tanner and generally in accordance with Civil Walker drawings 214-001-SK03 and SK04 (Revision 1) except where modified by the conditions.

Drainage Easements

15. Drainage Easements as nominated in the Bligh Tanner Drainage Study, dated 2 August 2022, must be granted in favour of Council. A copy of the easement documents must be submitted to Council for the approval of Council's solicitors at no cost to Council. The approved easement documents must be submitted at the same time as seeking approval and dating of the Plan of Survey and must be lodged and registered with the Department of Resources. The easement document must nominate that the maintenance obligations for the easement resides with he respective property owners.

Lawful Point of Discharge

16. All stormwater from the property must be directed to a lawful point of discharge such that it does not adversely affect surrounding properties or properties downstream from the development to the requirements and satisfaction of the Chief Executive Officer.

Plan of Drainage Works

17. The subject land must be drained to the satisfaction of the Chief Executive Officer. In particular,

    a. Drainage infrastructure in accordance with the FNQROC Development Manual

    b. The drainage system from the development must incorporate a gross pollutant trap(s) or equivalent measure(s), meeting the following Council specifications for stormwater quality improvement devices (SQID), namely:

        i. End-of-line stormwater quality improvement devices (SQID) shall be of a proprietary design and construction and shall carry manufacturer's performance guarantees as to removal of foreign matter from stormwater and structural adequacy of the unit.

        ii. SQIDs shall remove at least ninety-five per cent of all foreign matter with a minimum dimension of three (3) mm and shall be configured to prevent re-injection of captured contaminants. The SQID treat all first flush runoff, which shall be defined as that volume of water equivalent to the runoff from the three (3) month ARI storm event. The location of SQIDs within the drainage system shall be planned to ensure that the first flush waters from all parts of the (developed) catchment are treated.

        iii. The design of the SQID shall not compromise the hydraulic performance of the overall drainage system.

        iv. SQIDs shall be positioned so as to provide appropriate access for maintenance equipment.

    c. All new allotments shall have immunity from flooding associated with an ARI 100 year rainfall event; and

    d. Where practical, all new allotments must be drained to the road frontages, drainage easements or drainage reserves and discharged to the existing drainage system via storm water quality device(s).

    e. The current earthworks concept on Civil Walker Drawing 214-001-SK03 drawings indicate the open drain at the rear of lots 1 to 9 to have a very flat grade in the order of 0.25%. This drain must be provided with a concrete invert for its full length. Detailed flow calculations must confirm that the drain profile can contain the 1%AEP runoff from the local catchment.

    The concrete invert must extend along the northern side of Lot 1 to the cross culvert apron, and must extend west from the culvert outlet to the western boundary of the easement in Lot 21.

Landscape Plan

18. Undertake landscaping of the site and street frontages of new roads in accordance with FNQROC Development Manual and in accordance with a landscape plan. The landscape plan must be endorsed by the Chief Executive Officer prior to the issue of a Development Permit for Operational Work. In particular, the plan must show:

    a. Planting of the footpath with trees, using appropriate species with consideration to be given to creating an individual sense of place and character to the estate;

    b. The provision of suitable shade trees;

    c. Species to have regard to the Planning Scheme Policy No.SC6.7 Landscaping; and

    d. Road verges to be seeded and grassed with turf adjacent back of kerb and placed in strip at right angles to kerb;

    Permanent irrigation or any other embellishments are not permitted.

    Inclusion of all requirements as detailed in other relevant conditions included in this Approval, with a copy of this Development Approval to be given to the applicant's Landscape Architect / Designer.

    One (1) A3 copy of the landscape plan must be endorsed by the Chief Executive Officer prior to the issue of a Development Permit for Operational Works. Areas to be landscaped must be established prior to the lodgement of the Survey Plan with Council for endorsement and must be maintained for the duration of the on-maintenance period to the satisfaction of the Chief Executive Officer.

Sediment and Erosion Control

19. A sediment and erosion control plan must be submitted prior the issue of a Development Permit for Operational Works. Such plans must be installed / implemented prior to discharge of water from the site, such that no external stormwater flow from the site adversely affects surrounding or downstream properties (in accordance with the requirements of the *Environmental Protection Act 1994,* and the FNQROC Development Manual).

Existing Services

20. Written confirmation of the location of existing services for the land must be provided. In any instance where existing services are contained within another lot, the following applies, either:

    a. Relocate the services to comply with this requirement; or

    b. Arrange registration of necessary easements over services located within another lot prior to, or in conjunction with, the lodgement of a Compliance Certificate for the Plan of Survey creating the lot.

Electricity Supply

21. Written evidence from Ergon Energy advising if distribution substation/s are required within the development must be provided. If required, details regarding the location of these facilities must be submitted to the Chief Executive Officer accompanied by written confirmation from Ergon Energy. Details regarding electricity supply must be provided prior to the issue of a Development Permit for Operational Works.

Electricity and Telecommunications

22. Written evidence of negotiations with Ergon Energy and the telecommunication authority must be submitted to Council stating that both an underground electricity supply and telecommunications service will be provided to the development prior to the issue of a Compliance Certificate for the Plan of Survey.

Street Lighting

23. The following arrangements for the installation of street lighting within the proposed subdivision must be provided prior to the issue of a Compliance Certificate for the Plan of Survey:

    a. Prior to the issue of a development permit for Operational Works a Rate 2 lighting scheme is to be prepared by an Ergon Energy approved consultant and submitted to the Chief Executive Officer for approval. The Rate 2 lighting scheme is to be designed in accordance with the relevant Road Lighting Standard AS/NZS 1158 and the FNQROC Development Manual. The applicable lighting category is to be determined from the Road Hierarchy Table D1.1 and the corresponding applicable Lighting Categories Table D8.1 as identified in the FNQROC Development Manual.

    The lighting scheme must show light pole locations that align with property boundaries that represent the permitted design spacing and demonstrates no conflicts with stormwater, kerb inlet pits and other services.

    The design must provide the applicable illumination level specified in the Road Lighting Standard AS/NZS 1158 at the following road elements:

    - Intersections
    - Pedestrian Refuges
    - Cul-de-sacs
    - LATM Devices (Including Roundabouts)

    LATM Devices are to be shown on the civil layout design, the electrical services and street lighting design must be submitted in accordance with Ergon Energy's latest Distribution Design Drafting Standard.

    b. Prior to the issue of a Compliance Certificate for the Plan of Survey written confirmation that the relevant capital contribution required by Ergon Energy has been paid must be submitted, to ensure that the street lighting will be constructed.

Advices

1. This approval, granted under the provisions of the *Planning Act 2016*, shall lapse four (4) years from the day the approval takes effect in accordance with sections 85(1)(b) and 71 of the *Planning Act 2016*.
2. This approval does not negate the requirement for compliance with all relevant Local Laws and statutory requirements.
3. For information relating to the *Planning Act 2016*, log on to www.dsd.qld.gov.au . To access the FNQROC Development Manual, Local Laws and other applicable Policies log on to *www.douglas.qld.gov.au*.

Infrastructure Charges Notice

4. A charge levied for the supply of trunk infrastructure is payable to Council towards the provision of trunk infrastructure in accordance with the Infrastructure Charges Notice, refer to Attachment 3. The original Infrastructure Charges Notice will be provided under cover of a separate letter.

    The amount in the Infrastructure Charges Notice has been calculated according to Council's Infrastructure Charges Resolution. Please note that this Decision Notice and the Infrastructure Charges Notice are stand-alone documents. The *Planning Act 2016* confers rights to make representations and appeal in relation to a Decision Notice and an Infrastructure Charges Notice separately.

Further Development Permits

Please be advised that the following development permits are required to be obtained before the development can be carried out:

- All Operational Work

All Plumbing and Drainage Work must only be carried in compliance with the Queensland *Plumbing and Drainage Act 2018*.

Currency Period for the Approval

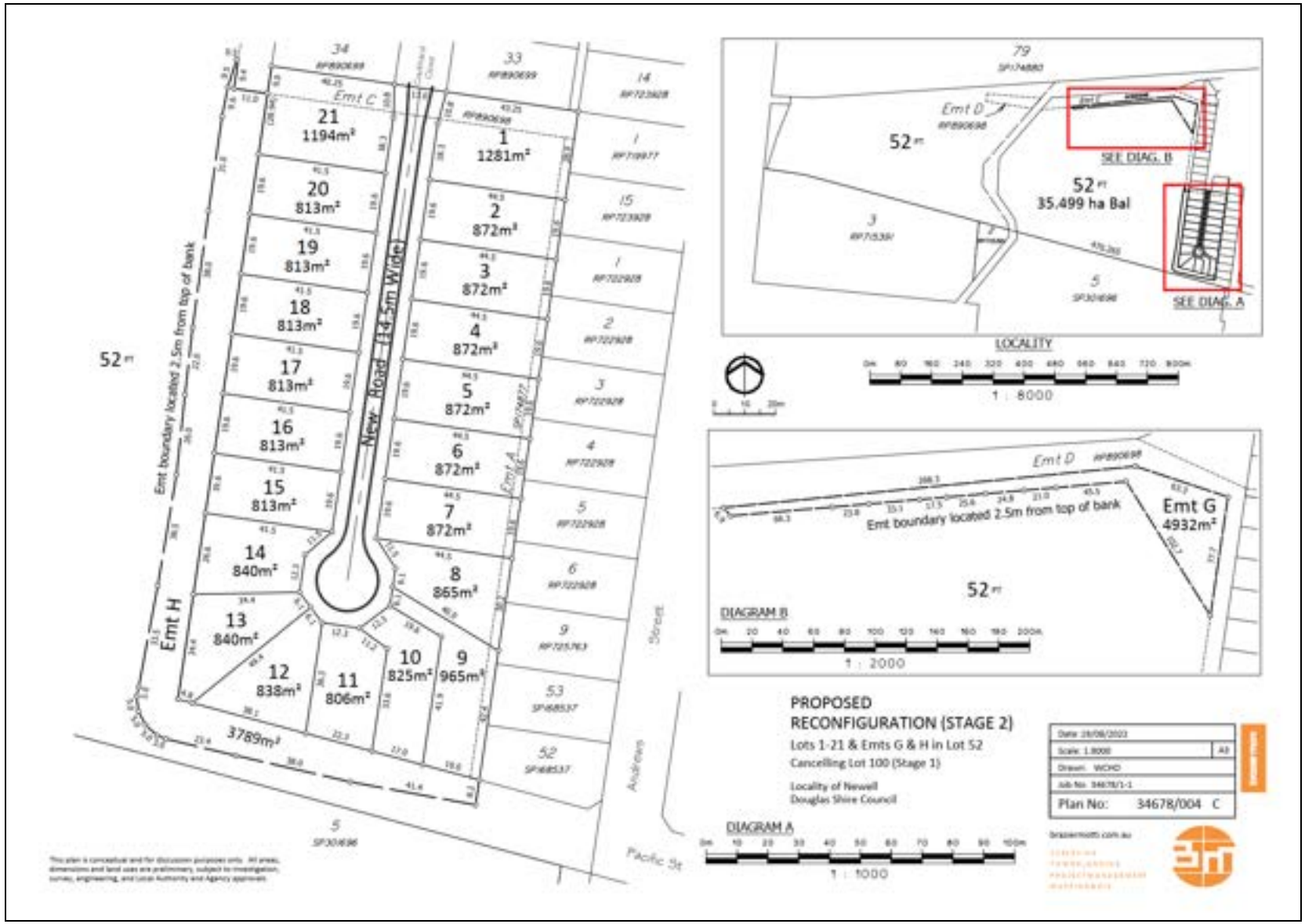
This approval, granted under the provisions of the *Planning Act 2016*, shall lapse four (4) years from the day the approval takes effect in accordance with the provisions of Section 85 of the *Planning Act 2016*.

Rights to make Representations & Rights of Appeal

The rights of applicants to make representations and rights to appeal to a Tribunal or the Planning and Environment Court against decisions about a development application are set out in Chapter 6, Part 1 of the *Planning Act 2016.*

A copy of the relevant appeal provisions is attached.

Approved Drawing(s) and/or Document(s) (Subject to the conditions of the approval.)


New Road (14.5m Wide)
Emt C
Emt A
Emt H
Emt boundary located 2.5m from top of bank
52m
3789m²
Pacific St
Andrews Street
21 1194m²
20 813m²
19 813m²
18 813m²
17 813m²
16 813m²
15 813m²
14 840m²
13 840m²
12 838m²
11 806m²
10 825m²
9 965m²
1 1281m²
2 872m²
3 872m²
4 872m²
5 872m²
6 872m²
7 872m²
8 865m²
5 SP301696
79 SP174883
Emt D RP890698
52m
SEE DIAG. B
52m 35.499 ha Bal
3 RP715591
5 SP301696
SEE DIAG. A
LOCALITY
1 : 8000
Emt D RP890698
Emt boundary located 2.5m from top of bank
Emt G 4932m²
52m
DIAGRAM B
1 : 2000
DIAGRAM A
1 : 1000
PROPOSED
RECONFIGURATION (STAGE 2)
Lots 1-21 & Emts G & H in Lot 52
Cancelling Lot 100 (Stage 1)
Locality of Newell
Douglas Shire Council
Date: 28/08/2023
Scale: 1:8000
A3
Drawn: WCHD
Job No: 34678/1-1
Plan No: 34678/004 C

BLIGH TANNER

NEWELL BEACH FLOOD STUDY

TECHNICAL MEMORANDUM

Company. GLF Development Pty Ltd C/- CivilWalker Consulting Engineers
Contact. Daryl Walker
Date. 2 August 2022
Job Number # 2021.0566

DOCUMENT CONTROL SHEET

DOCUMENT

Newell Beach Flood Study

JOB NUMBER

2021.0566

PROJECT ENGINEER

Carlos Gambirazio

CLIENT

GLF Development Pty Ltd C/- CivilWalker Consulting Engineers

CLIENT CONTACT

Daryl Walker

VERSION	AUTHOR	REVIEWED	APPROVED	DATE
1	Carlos Gambirazio	Alan Hoban	Alan Hoban RPEQ # 14570	02/08/2022

Bligh Tanner Pty Ltd
ABN 32 061 537 666

blightanner@blightanner.com.au
blightanner.com.au

Brisbane

Level 9
269 Wickham Street
PO Box 612
Fortitude Valley
Qld 4006 Australia

T +61 7 3251 8555
F +61 7 3251 8599

Sydney

Level 32, 101 Miller Street
North Sydney
NSW 2060 Australia

T +61 2 8019 7221

CONTENTS

FIGURES

TABLES

APPENDICES

EXECUTIVE SUMMARY

This report documents the findings of an overland flow flood study for a site adjacent to Coulthard Close, Newell Beach QLD 4873 (Lot 51 on SP168537), in response to a Douglas Shire Council Development Application Information Request dated 6 July 2021 (Council Reference ROL_2021_4160/1 (101890)).

Methodology

A 2D hydrodynamic flood model was developed using WBNM (hydrology) and TUFLOW (hydraulics) in accordance with Australian Rainfall and Runoff 2019. The flood model incorporates proposed cross-drainage infrastructure (culverts).

Three scenarios were assessed:

1. Existing Case Scenario
    a. Topography based on detailed site survey and LiDAR 1 m grid (Geoscience Australia, 2020),
    b. Surface parameters and hydrological model based on 2022 Aerial Imagery.
2. Developed Case Scenario
    a. Topography based proposed earthworks overlayed over the Existing Case Scenario topography (Refer Appendix B for bulk earthworks drawings).,
    b. Surface parameters and hydrological model based on a fully developed site assuming 60% impervious cover and proposed catchment diversions (associated with development grading and open channels surrounding the development footprint).
3. Developed Case Scenario Sensitivity Analysis
    a. Based on the Developed Case Scenario assuming open channels are not maintained, by increasing their Manning's 'n' value from 0.035 to 0.1.

Flood Impacts

Results indicate reductions in flood levels and flood extents south of the site, and at Philips Street towards the north.

Increases in flood levels and flood extents can be seen adjacent to the Coulthard Close culvert cross-over associated with the site's proposed internal road, however these are contained within the road corridor and do not encroach onto private properties. Minor increases in flood levels and extents at the culvert cross-over are due to the site's local catchment discharging at this location.

During the 1% AEP flood, maximum flood depths and flood hazard categories at the Coulthard Close culvert cross-over do not exceed 300 mm nor Category H1 (~0.1 m²/s), indicating flow conditions relatively safe for people and vehicles.

Building Floor Levels

Flood planning levels were informed by the Douglas Shire Planning Scheme Flood and Storm Tide Hazard Overlay Code, the FNQROC Development Manual, and the Queensland Urban Drainage Manual.

Results indicate that the dominant flood planning level at the site is the 1% AEP overland flow flood plus 300 mm freeboard, resulting in the following building floor level requirements:

- Upstream (south) site area – 3.8 m AHD
- Downstream (north) site area – 3.6 m AHD

Intermediate levels should be interpolated from these levels.

Maintenance Easement Requirements

As part of the proposed works, new drainage channels will be established and existing drainage channels widened, which will require corresponding establishment and widening of easements to permit access for works to be performed, secure a right for stormwater flows, and provide access for maintenance vehicles.

Easements for open channels will be established as per recommendations in Section 3.2.4 of QUDM and Section BN9.7 in the QUDM background notes, as follows:

- 4.5 m wide maintenance access track at one side of the top of bank of the channel,
- 1.5 m wide access strip at one side of the top of bank of the channel.

Due to geometric constraints, no maintenance easement will be established at the grassed channel east of the site (strip between the proposed development and adjacent properties). This has been reflected in the Developed Case Scenario flood model with a Manning's 'n' value of 0.1.

1 INTRODUCTION

This report documents the findings of a local drainage study for a site adjacent to Coulthard Close, Newell Beach QLD 4873 (Lot 51 on SP168537), in response to a Douglas Shire Council Development Application Information Request dated 6 July 2021 (Council Reference ROL_2021_4160/1 (101890)).

The proposed development comprises an urban residential low-density subdivision of 21 new lots with a central access road.

This report addresses:

- Site Context,
- Flood Modelling Methodology,
- Flood Results,
- Design Levels,
- Flood Impacts,
- Drainage Easement Recommendations.

2 SITE CONTEXT

2.1 Flooding

The existing site is undeveloped.

The development proposal comprises an urban residential low-density subdivision of 21 new lots with a central access place.

The existing lot is affected by the 1% AEP storm tide flood at the year 2100 (as per the Douglas Shire Council Storm Tide Inundation Property Report, as seen in Appendix N), with a flood level of approximately 2.8 m AHD. The storm tide flood does not encroach onto the proposed subdivision.

The site is protected from higher storm tide flood levels by a coastal embankment towards the east.

Refer Figure 1 below for an image of the site as affected by the 1% AEP storm tide flood at the year 2100.

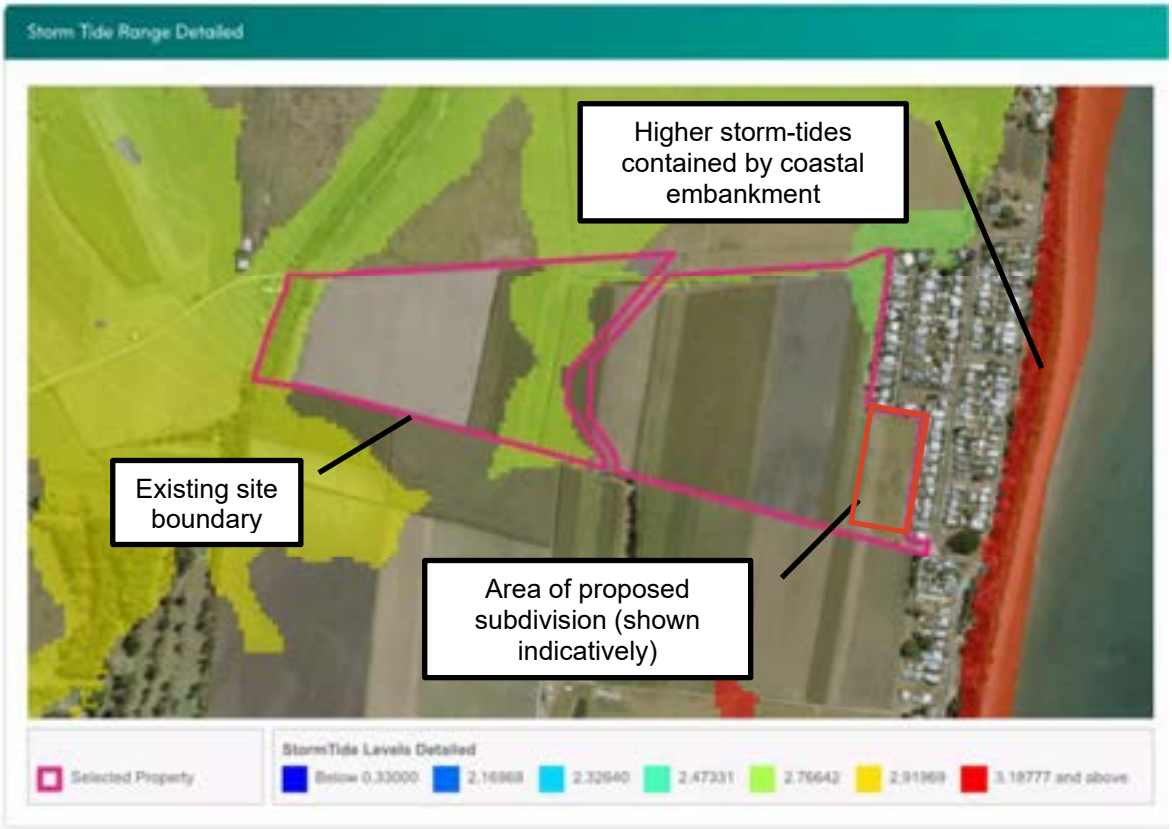


Figure 1 **1% AEP at year 2100 storm tide level – Adopted as flood model tail water level – Douglas Shire Council Storm Tide Inundation Property Report – Produce 14/07/2021**

3 FLOOD MODELLING METHODOLOGY

3.1 Hydrology

Hydrological analysis was undertaken on WBNM to assess storm flows associated with the local overland flow path catchments.

The total catchment was demarcated based on contributing runoff to the Saltwater Creek outlet, resulting in a total catchment area of 624 hectares.

3.1.1 Design Scenarios

Two hydrological models were developed to represent existing and proposed conditions.

Existing Case scenario sub-catchment division and impervious percentages were defined via interpretation of LiDAR topographic information, aerial imagery, defined flow paths and drainage infrastructure.

Developed Case scenario sub-catchment division and impervious percentages were based on the Existing Case scenario, amended to incorporate the development footprint (assuming 60% impervious cover) and proposed catchment modifications.

Refer Appendix A for Existing Case and Developed Case catchments plans.

3.1.2 Storm Selection

Rainfall information and temporal patterns relevant to the site's latitude, longitude and area were extracted from the Bureau of Meteorology IFD website and the Australian Rainfall and Runoff 2019 (ARR 2019) datahub, respectively.

This information was then input into a storm selection process that consisted of analysing 10 temporal patterns for every AEP and duration, including non-standard ones.

Storm durations producing the highest peak flows at the downstream end of the site (Catchment 6 outlet for the Existing Case / Catchment 6A outlet for the Developed Case) were adopted as critical.

Temporal patterns producing peak flows just above the mean were selected for the critical storm durations.

The process of storm and temporal pattern analysis was facilitated by the software application "Storm Injector", designed to help implement and streamline the new requirements of ARR2019.

Critical storm durations are summarised in Table 1 below.

Table 1 Critical Storm Durations

Event	Downstream of Site (adopted for flood model)	Saltwater Creek Outlet (Larger regional catchment)
1% AEP ('1 in 100-year')	1.5 hours	3 hours
10% AEP ('1 in 10-year')	1.5 hours	3 hours
20% AEP ('1 in 5-year')	1.5 hours	3 hours

3.1.3 Rainfall Losses

Rainfall losses were adopted as per recommendations in the Australian Rainfall and Runoff 2019 (ARR 2019) ((Commonwealth of Australia (Geoscience Australia), 2019):

- Global Initial Loss – 61 mm (as per ARR19 DataHub)
- Indirectly Connected Area Initial Loss – 42.7 mm (70% of Global Initial Loss as per Section 3.5.3.2.1 of ARR 2019, Book 5, Chapter 3) – It was assumed all pervious areas act as Indirectly Connected Areas.
- Global Continuous Loss – 4.0 mm/h (ARR 2019 DataHub)
- Impervious Initial Loss – 1.5 mm (Section 3.5.3.1.2 of ARR 2019, Book 5, Chapter 3)
- Impervious Continuous Loss – 0 mm

Local initial losses were applied independently for every rainfall event, subtracting the median pre-burst depth from the Indirectly Connected Area initial loss.

3.1.4 Validation

The suitability of the WBNM hydrological model was validated by comparing Existing Case Scenario peak flow estimates with the Rational Method (Queensland Urban Drainage Manual, 2017) and the Regional Flood Frequency Estimation Model (Engineers Australia, Western Sydney University, 2019) at the Saltwater Creek outlet (Catchment 'OUT'). Refer Table 2 below for comparison.

Table 2 Peak flow estimates at the Saltwater Creek outlet

Method	20% AEP (m^3/s)	10% AEP (m^3/s)	1% AEP (m^3/s)
WBNM	57.3	66.7	102.5
Rational Method	55.5	65.6	108.6
Regional Flood Frequency Estimation (RFFE)	43.4 - 255	57.2 - 364	96.6 - 904

WBNM estimates fall within the RFFE confidence intervals and agree with rational method estimates by -6% to 3%. They are considered fit for purpose.

Refer Appendix L for rational method calculations.

Refer Appendix M for RFFE estimates.

3.2 Hydraulics

A 1D/2D coupled hydrodynamic TUFLOW model was developed to assess the hydraulic behaviour of storm flows associated with the local overland flow path.

Hydrographs for the selected critical storms (calculated via the WBNM hydrologic model as described in 3.1 above) were incorporated into the 2D hydraulic space via 'source area' inflows.

3.2.1 Topography

3.2.1.1 Existing Case Scenario

The base topography is based on Digital Elevation Models of Australia derived from a LiDAR 1 m grid (Geoscience Australia, 2020) and a detailed site survey.

3.2.1.2 Developed Case Scenario

Proposed development earthworks were incorporated into the flood model's topography via overlaying the proposed design surface over the Existing Case Scenario surface.

3.2.2 Surface Roughness

Surface roughness was represented via a combination of fixed and depth-variable Manning's 'n' values.

Parameters for the Existing Case Scenario were determined via inspection of aerial imagery.

These parameters were modified to incorporate the open grassed drain around the perimeter of the site and lot footprint for the Developed Case Scenario.

The adopted surface roughness parameters are presented in Table 3 and Table 4 below.

Refer to Appendix K for the Flood Model Layouts indicating Existing Case Scenario and Developed Case Scenario surfaces.

Table 3 Surface Roughness Parameters

Material Description	Manning's 'n'	
Road & verge, carpark, pavement, driveways	0.02	
Low Density Residential	0.08	
High-Medium Density Residential	0.15	
Maintained grass	0.035	
Mature field crops	0.05	
Medium Density Vegetation	Depth Variable – Refer	Table 4
High Density Vegetation	Depth Variable – Refer	Table 4
Unmaintained grass	0.1	

Table 4 Depth-Variable Manning's 'n' Parameters

Depth (m)	Medium Dense Vegetation	Dense Vegetation
0	0.075	0.090
0.2	0.075	0.090
0.8	0.075	0.090
1.5	0.075	0.090
2	0.094	0.113
3.5	0.150	0.180
99	0.150	0.180

3.2.3 Stormwater Drainage

The culverts under the proposed road extension (three 1.2 m wide x 0.3 m high RCBC's) were incorporated into the TUFLOW 1D solver (ESTRY) and dynamically linked to the 2D hydraulic space via source boundaries (SX), as recommended in the TUFLOW USER Manual (BMT, 2018).

Flow loss coefficients were adopted as per recommendations in the TUFLOW USER Manual (BMT, 2018).

The culvert was represented with 20% blockage as recommended in Table 10.4.1 of the Queensland Urban Drainage Manual (QUDM) (IPWEAQ, 2017), as seen in Figure 2 below.

Table 10.4.1 – Suggested blockage factors for culverts [1]

Culvert conditions	Blockage factor	
	Design value	Severe storm [2]
Inlet height < 3 m, or width < 5 m:		
Inlet	20%	100% [3]
Chamber (barrel)	[3]	
Inlet height > 3 m and width > 5 m:		
Inlet	10%	25%
Chamber (barrel)	[3]	[3]
Culvert inlets with effective debris control features for culverts with inlet height < 3 m and width < 5 m	As above	As above
Screened culvert inlets	50%	100%

Notes:

[1] Developed from Engineers Australia (2012).

[2] Refer to discussion below on severe storm investigations.

[3] Adopt 25% bottom-up sediment blockage unless such blockage is unlikely to occur.

[4] The degree of blockage typically depends on availability of suitable bridging matter, such as large branches and fallen trees, that can 'bridge' across the structure opening.

Figure 2 QUDM Recommended Blockage Factors (IPWEAQ, 2017)

3.2.4 Downstream Tailwater Conditions

3.2.4.1 1% AEP (1 in 100-year flood)

A fixed downstream tailwater level of 2.77 m AHD was adopted for the 1% AEP event scenario, based on the 1% AEP at year 2100 as per the Douglas Shire Council Storm Tide Inundation Property Report (Refer Appendix N)

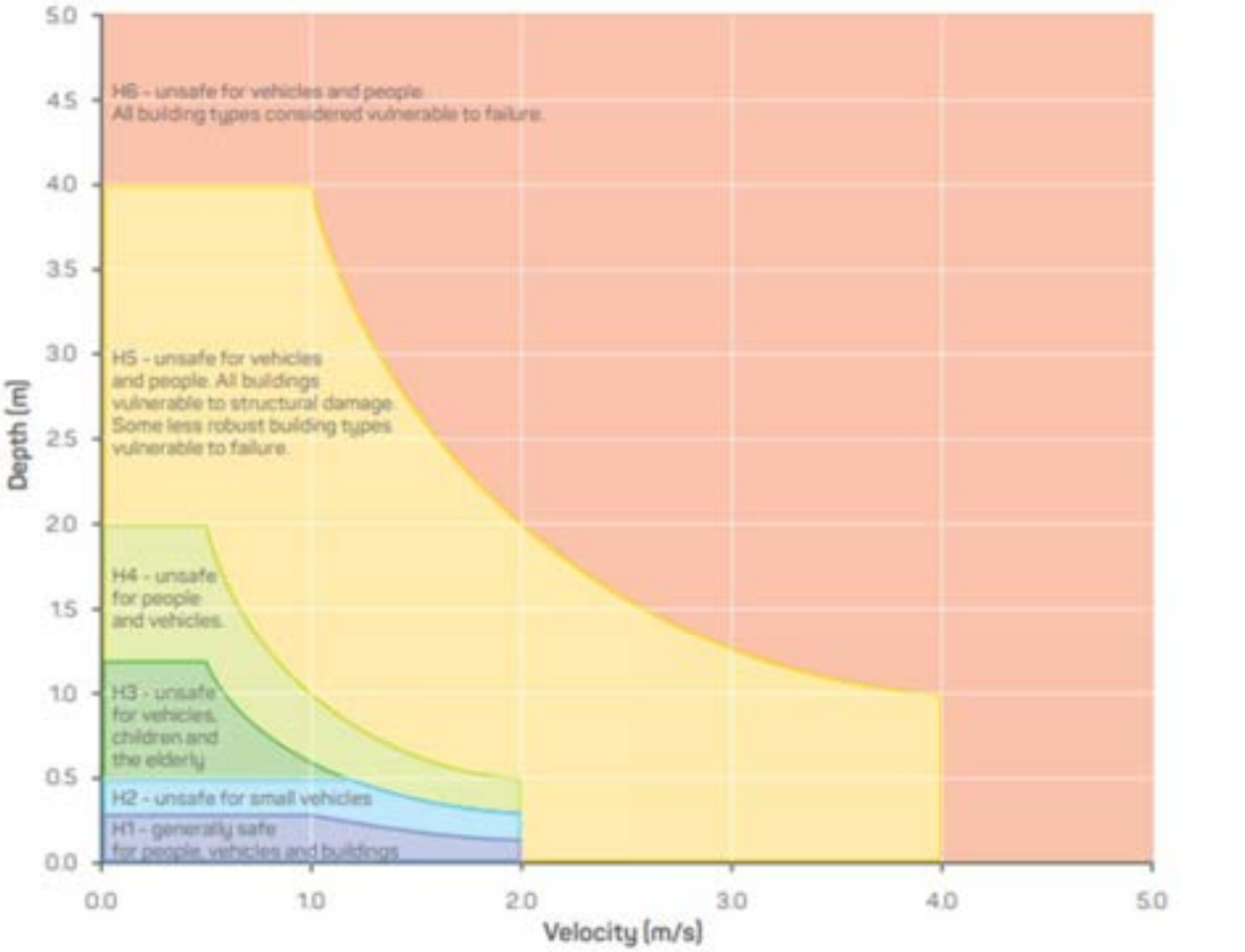
3.2.4.2 10% AEP (1 in 10-year flood) and 20% AEP (1 in 5-year flood)

Tailwater conditions for the 10% AEP and 20% AEP were represented via Stage-Discharge relationships automatically generated by TUFLOW (HQ boundaries), derived from surface slope and flows.

4 RESULTS

Refer to Appendices D to I for the Existing Case and Developed Case flood maps, indicating flood depth, hazard, and level for the 1% AEP, 10% AEP and 20% AEP floods.

Flood Hazard mapping was undertaken as per recommendations in the Australian Disaster Resilience Handbook Collection Guideline 7-3 Flood Hazard (Australian Institude for Disaster Resilience - Commonwealth of Australia, 2017). The adopted 'Flood Hazard Vulnerability Curves' as presented in Figure 3 below.



Hazard Classification	Description
H1	Relatively benign flow conditions. No vulnerability constraints.
H2	Unsafe for small vehicles.
H3	Unsafe for all vehicles, children and the elderly.
H4	Unsafe for all people and all vehicles.
H5	Unsafe for all people and all vehicles. Buildings require special engineering design and construction.
H6	Unconditionally dangerous. Not suitable for any type of development or evacuation access. All building types considered vulnerable to failure.

Figure 3 Flood Hazard Vulnerability Curves – Summary from the TUFLOW USER Manual

5 FLOOD IMMUNITY REQUIREMENTS AND BUILDING FLOOR LEVELS

5.1 Policy Requirements

5.1.1 Douglas Shire Planning Scheme 2018

AO1.2 of the Douglas Shire Planning Scheme Flood and Storm Tide Hazard Overlay Code indicates that "Development within the Flood and Storm Tide hazard overlay maps (…) is designed to provide immunity to the Defined Inundation Event as outlined within Table 8.2.4.3.b plus freeboard of 300 mm", which is the 1% AEP flood level plus 300 mm.

5.1.2 Queensland Urban Drainage Manual (QUDM)

The Douglas Shire Planning Scheme 2018 policy SC6.5 identifies the FNQROC Regional Development Manual as the policy relevant to infrastructure design.

The FNQROC Design Manual D4 (Stormwater Drainage) identifies QUDM (IPWEAQ, 2017) as the basis for design of stormwater drainage, except as amended by the design manual.

The FNQROC Design Manual D4 identifies the 1% AEP ('1 in 100-year flood') as the major design storm for overland flow.

Table 9.3.1 of QUDM recommends 300 mm freeboard for open channels.

As such, the minimum overland flow flood level immunity requirement adopted for the proposed development is the 1% AEP plus 300 mm freeboard.

5.2 Sensitivity Analysis

Open channels surrounding the development will be subject to mowing and maintenance.

A sensitivity analysis was undertaken to assess the 1% AEP flood level assuming the open channels were not maintained, by increasing the Manning's 'n' from 0.035 to 0.1. Refer Appendix J for the corresponding flood level plan.

The overland flow flood level immunity adopted for the proposed development will be the highest of:

- Developed Case 1% AEP with maintained open channels (Manning's 'n' of 0.035) plus 300 mm freeboard, or
- Developed Case 1% AEP with unmaintained open channels (Manning's 'n' of 0.1).

5.3 Building Floor Levels

Refer to Figure 5 and Figure 6 overleaf for site sections at the upstream (Section 1) and downstream (Section 2) ends of the site, respectively, indicating overland flow flood levels, storm-tide flood levels, and respective freeboard requirements. Refer Figure 4 below for the locations of the sections in plan view.

Results indicate that the dominant flood planning level at the site is the 1% AEP overland flow flood plus 300 mm freeboard requirement, resulting in the following building floor level requirements:

- Upstream (south / Section 1) site area – 3.8 m AHD
- Downstream (north / Section 2) site area – 3.6 m AHD

Intermediate levels should be interpolated from these levels.

Figure 4 Site Sections

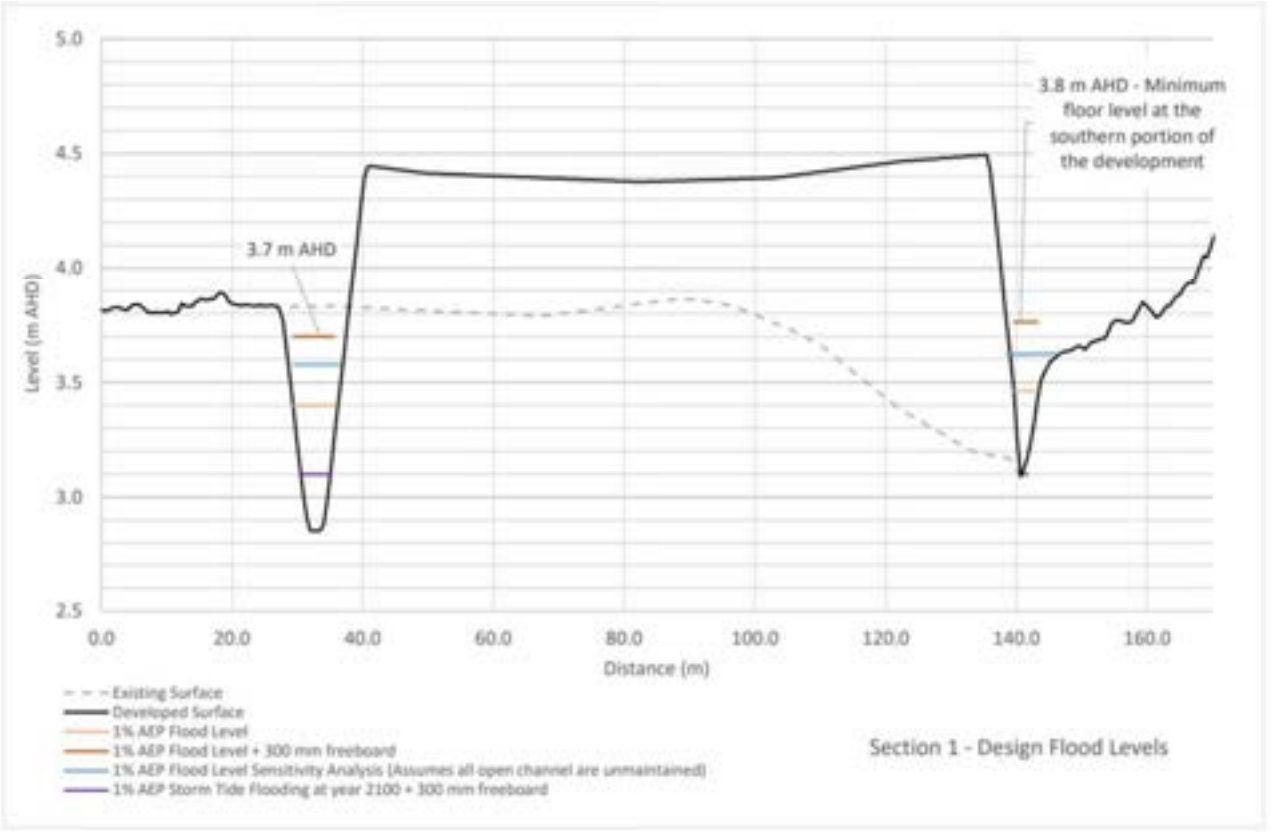


Figure 5 Site Section 1, flood levels & freeboard requirements

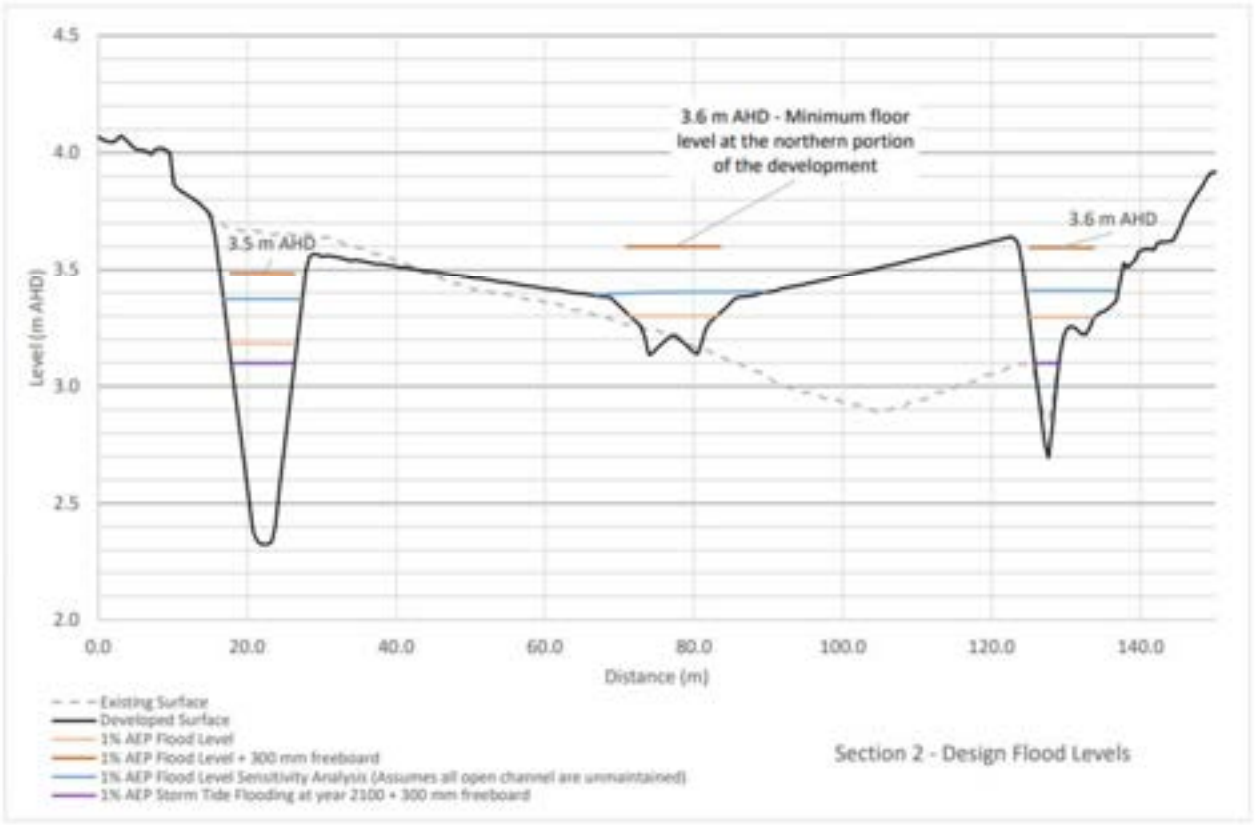


Figure 6 Site Section 2, flood levels & freeboard requirements

6 FLOOD IMPACTS

Proposed development earthworks were incorporated into the flood model's topography via overlaying the proposed design surface over the existing surface.

Refer Appendix B for proposed earthworks drawings.

This scenario assumes the proposed development does not have an on-site stormwater detention system.

Results indicate reductions in flood levels and flood extents south of the site, and at Philips Street towards the north.

Increases in flood levels and flood extents can be seen adjacent to the Coulthard Close culvert cross-over associated with the site's proposed internal road, however these are contained within the road corridor and do not encroach onto private properties.

Minor increases in flood levels and extents at the culvert cross-over are due to the site's local catchment discharging at this location.

During the 1% AEP flood, maximum flood depths and flood hazard categories at the Coulthard Close culvert cross-over do not exceed 300 mm nor Category H1 (~0.1 m²/s), indicating flow conditions relatively safe for people and vehicles.

Refer to Appendix C for flood impact maps.

7 DRAINAGE MAINTENANCE EASEMENT REQUIREMENTS

As part of the proposed works, new drainage channels will be established and existing drainage channels widened, which will require corresponding establishment and widening of easements to permit access for works to be performed, secure a right for stormwater flows, and provide access for maintenance vehicles.

Easements for open channels will be established as per recommendations in Section 3.2.4 of QUDM and Section BN9.7 in the QUDM background notes, as follows:

- 4.5 m wide maintenance access track at one side of the top of bank of the channel,
- 1.5 m wide access strip at one side of the top of bank of the channel.

Due to geometric constraints, no maintenance easement will be established at the grassed channel east of the site as clouded in purple in Figure 7 below. This has been reflected in the Developed Case Scenario flood model with a Manning's 'n' value of 0.1.

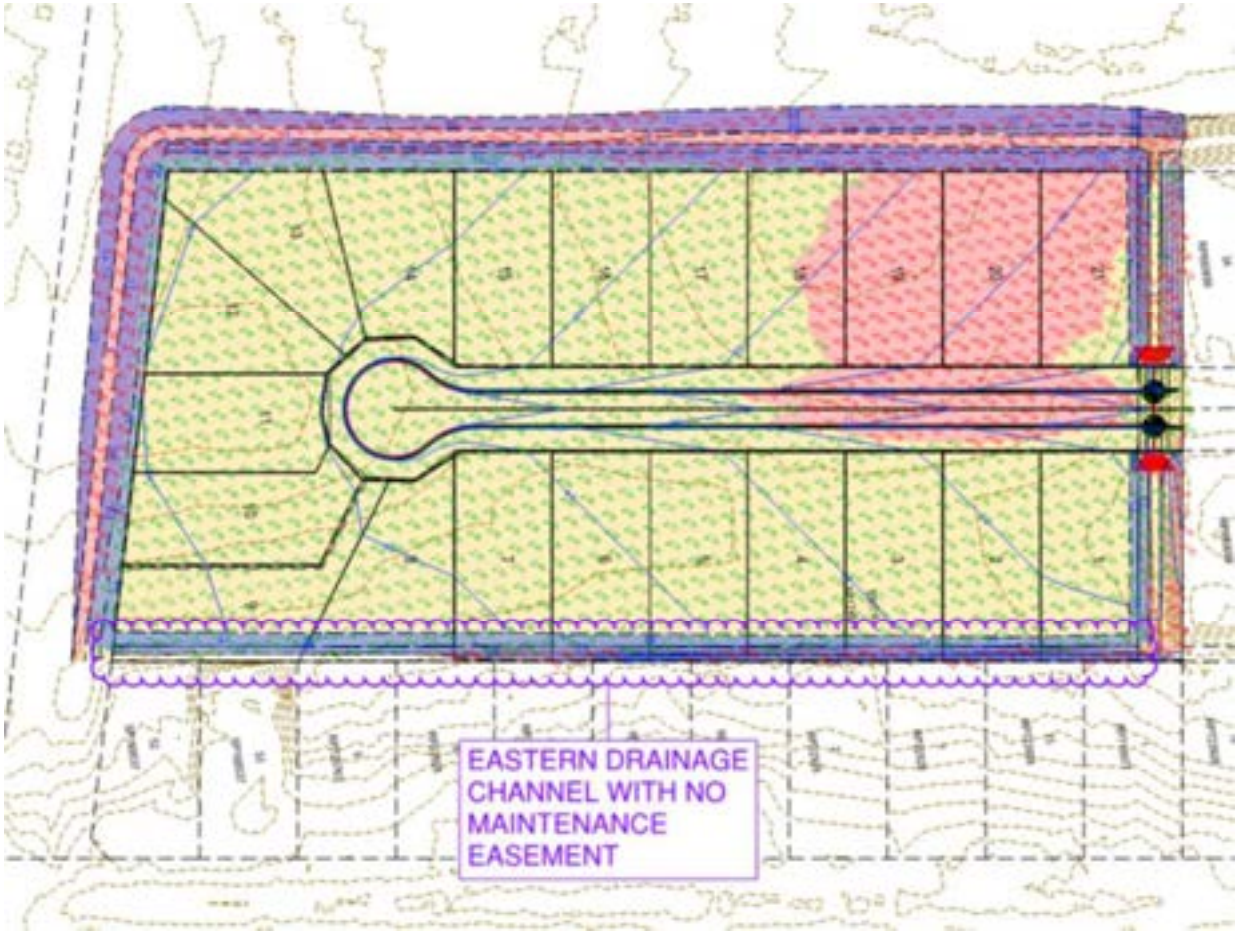


Figure 7 Proposed earthworks drawing indicating eastern drainage channel with no easement clouded in purple

8 REFERENCES

Australian Institude for Disaster Resilience - Commonwealth of Australia. (2017). Australian Disaster Resilience Handbook Collection Guideline 7-3 Flood Hazard. Melbourne, Victoria, Australia.

BMT. (2018). TUFLOW Classic/HPC User Manual - Build 2018-03-AD. Brisbane, Queensland, Australia.

Bureau of Meteorology. (2017, November). Flood Warning System for the Mulgrave and Russel Rivers. Brisbane, Queensland, Australia.

Bureau of Meteorology. (2021, 02 19). Index of Queensland River Height Stations. Queensland, Australia.

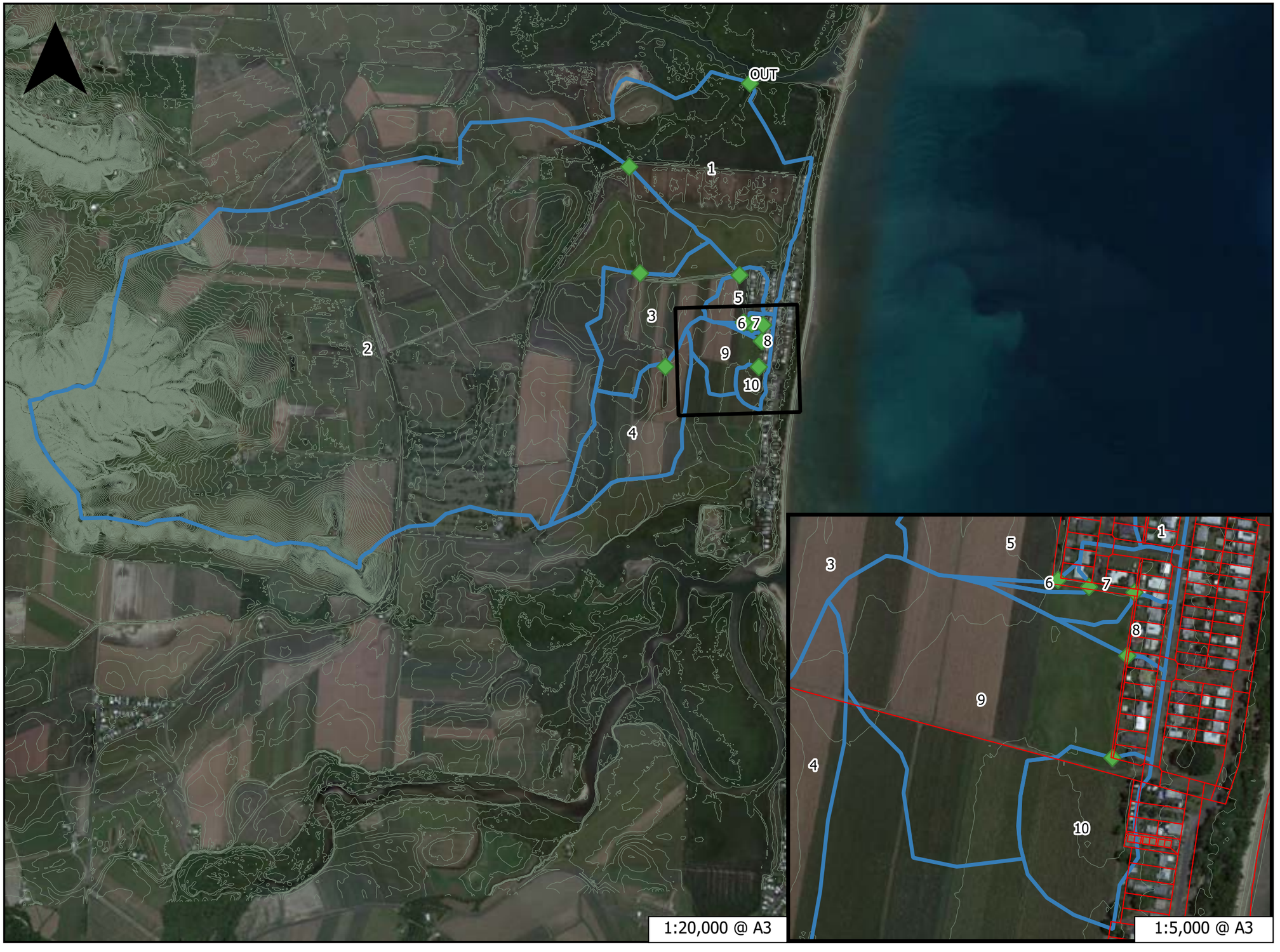
Commonwealth of Australia (Geoscience Australia). (2019). Australian Rainfall and Runoff - A Guide to Flood Estimation. Barton, ACT, Australia.

Engineers Australia, Western Sydney University. (2019). Regional Flood Frequency Estimation Model. Sydney, NSW, Australia.

Geoscience Australia. (2020, January 1). Digital Elevation Model (DEM) of Australia derived from LiDAR Metre Grid. Canberra, ACT, Australia.

IPWEAQ. (2017). Queensland Urban Drainage Manual. Queensland, Australia.

APPENDIX A
CATCHMENT PLANS



Legend
- Catchments
- Catchment Outlets
- 1 m Contours - LiDAR - 2015
- © Google Maps

Existing Catchment Table

Catchment ID	Area (ha)	Impervious %
1	68.0	1.7%
2	475.5	0.7%
3	29.9	0.0%
4	29.2	0.8%
5	6.4	14.4%
6	0.2	29.1%
7	1.3	18.0%
8	0.6	22.8%
9	9.8	2.0%
10	2.8	1.9%
OUT	0.0	0.0%
Total	**623.7**	**1.0%**

BLIGH TANNER
Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Catchment Plan - Existing Conditions
Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 1/2/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

Scale 1:20,000 0 500 1000 1500 2000 m

Scale 1:5,000 0 125 250 375 500 m

Legend
- Catchments
- Catchment Outlets
- 1 m Contours - LiDAR - 2015
- Proposed subdivision
- © Google Maps

Developed Catchment Table

Catchment ID	Area (ha)	Impervious %
1	68.0	2.0%
2	475.5	1.0%
3	29.9	0.0%
4	29.2	1.0%
5	6.4	14.0%
6A	0.7	2.0%
6B	7.4	0.0%
7	0.8	40.0%
8	0.4	50.0%
9	0.7	50.0%
10	2.8	2.0%
SITE_E	1.0	60.0%
SITE_W	1.0	60.0%
OUT	0.0	0.0%
Total	**623.7**	**1.5%**

BLIGH TANNER
Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

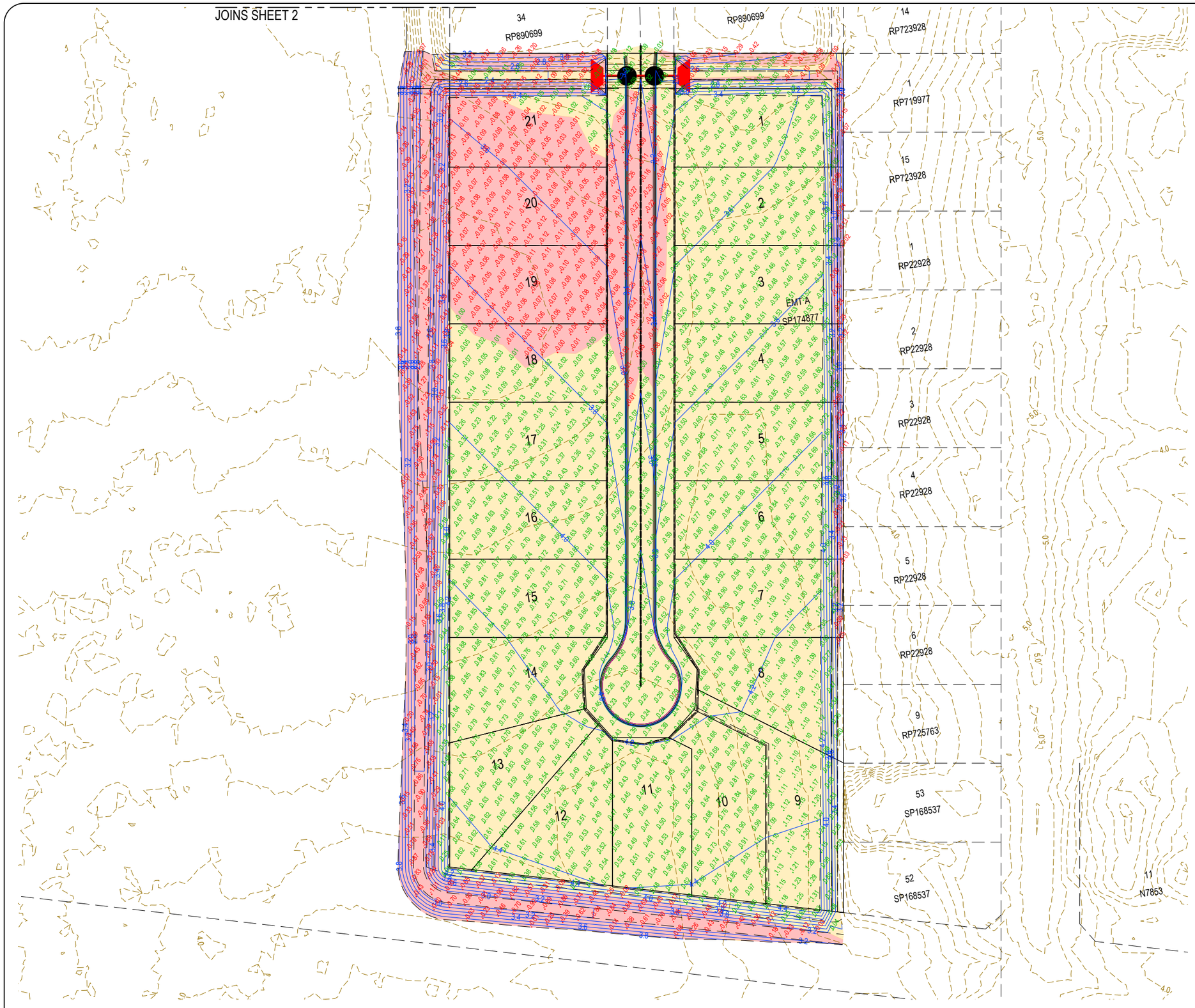
Title:
Catchment Plan - Developed Conditions
Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 25/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

Scale 1:20,000 0 500 1000 1500 2000 m

Scale 1:5,000 0 125 250 375 500 m

APPENDIX B
BULK EARTHWORKS

JOINS SHEET 2



LEGEND

- AREAS OF CUT
- AREAS OF FILL
- 57.0 — DESIGN SURFACE CONTOURS (0.2m INTERVAL)
- 57.0 — EXISTING SURFACE CONTOURS (0.2m INTERVAL)
- -0.13 — CUT DEPTH
- -0.17 — FILL DEPTH

REVISIONS				
NO.	DATE	DESCRIPTION	DESIGN	APPROVED
1	26.07.22	INITIAL ISSUE		

CLIENT: CB & FR COULTHARD

SCALE: 1:500 / 1:1000 — 0 5 10 20 30 — A1 / A3

ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE

CivilWalker CONSULTING ENGINEERS

DRAWN	CW	CHECKED	DJW
DESIGNED	CW	CHECKED	DJW
APPROVED			
DATE:		RPEQ:	

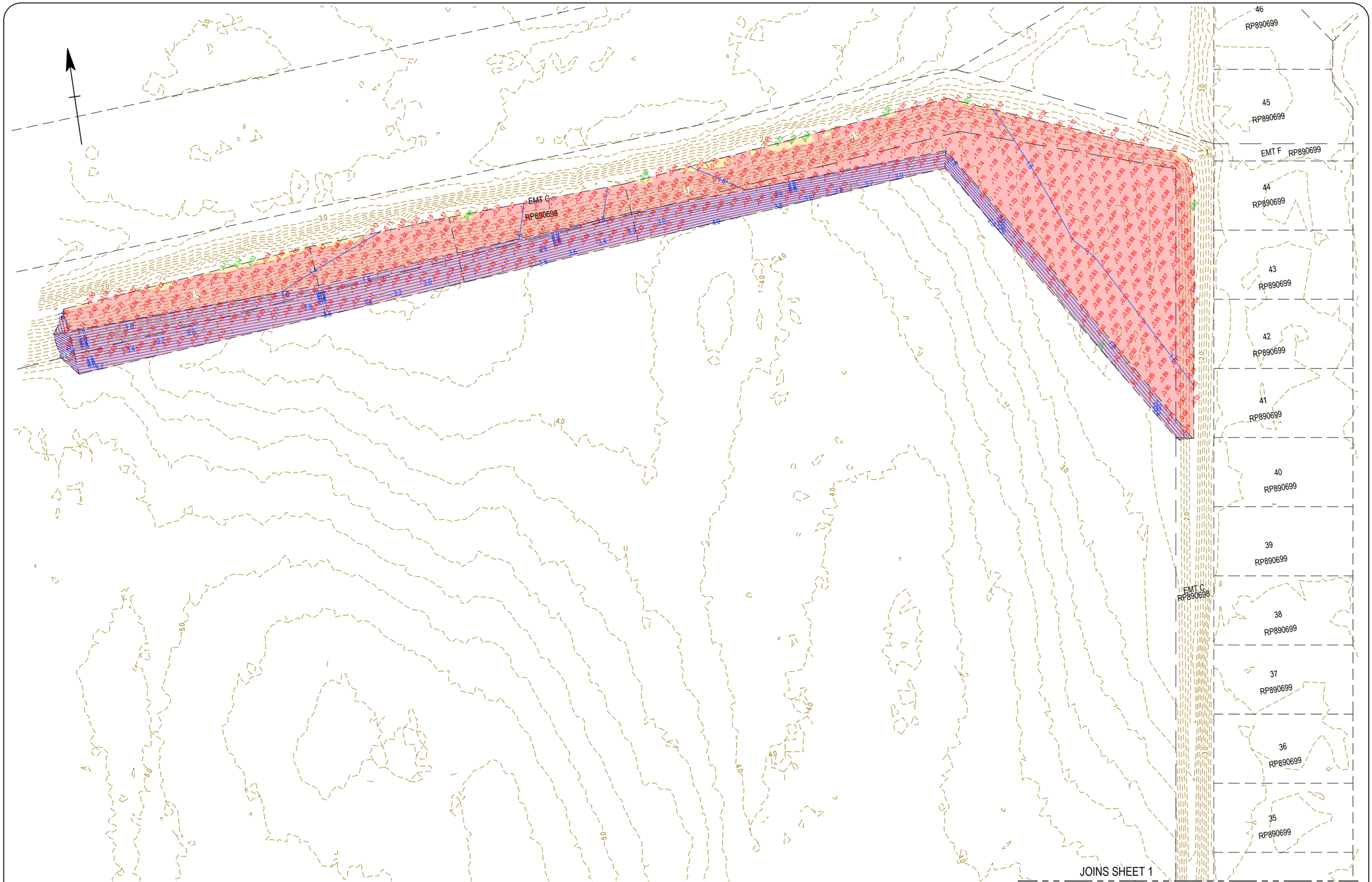
LOT 51 COULTHARD CLOSE, NEWELL BEACH

EARTHWORKS CONCEPT

SHEET 1 OF 2

DRAWING NO. 214-001-SK03

REVISION



REVISIONS					
NO.	DATE	DESCRIPTION	DESIGN	APPROVED
1	26.07.22	INITIAL ISSUE		

CLIENT

CB & FR COULTHARD

SCALE

1:500 0 5 10 20 30 A1
1:1000 A3

ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE

CivilWalker
CONSULTING ENGINEERS

DRAWN	CW	CHECKED	DJW
DESIGNED	CW	CHECKED	DJW
APPROVED			
DATE:		RPEQ:	

LOT 51 COULTHARD CLOSE, NEWELL BEACH

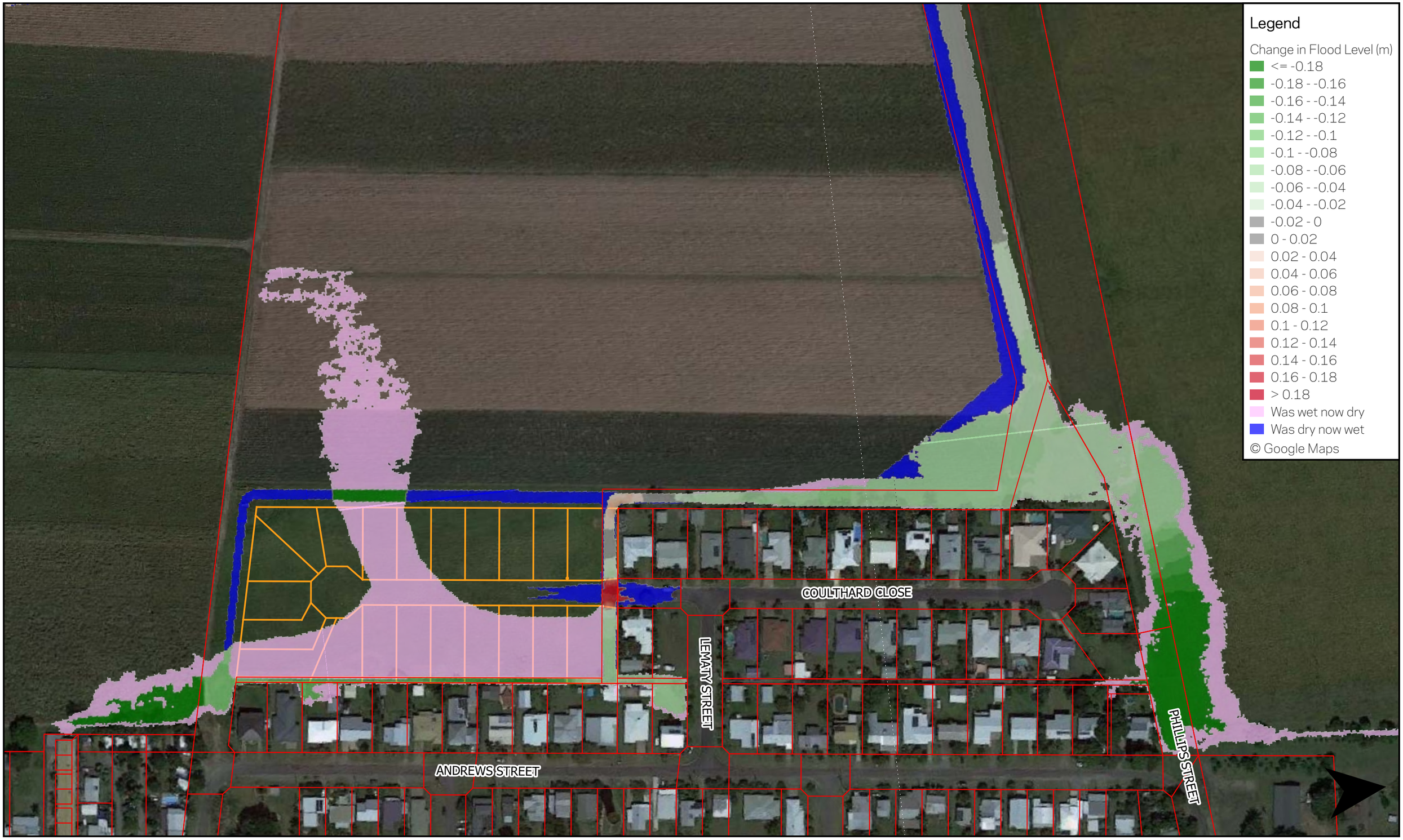
EARTHWORKS CONCEPT

SHEET 2 OF 2

DRAWING NO. 214-001-SK04

REVISION

APPENDIX C
FLOOD IMPACT ASSESSMENT



BLIGH TANNER

Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Afflux - 20% AEP ('1 in 5-year flood')

Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 27/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

0 50 100 150 200 m

Scale 1:2,000 @ A3

BLIGH TANNER

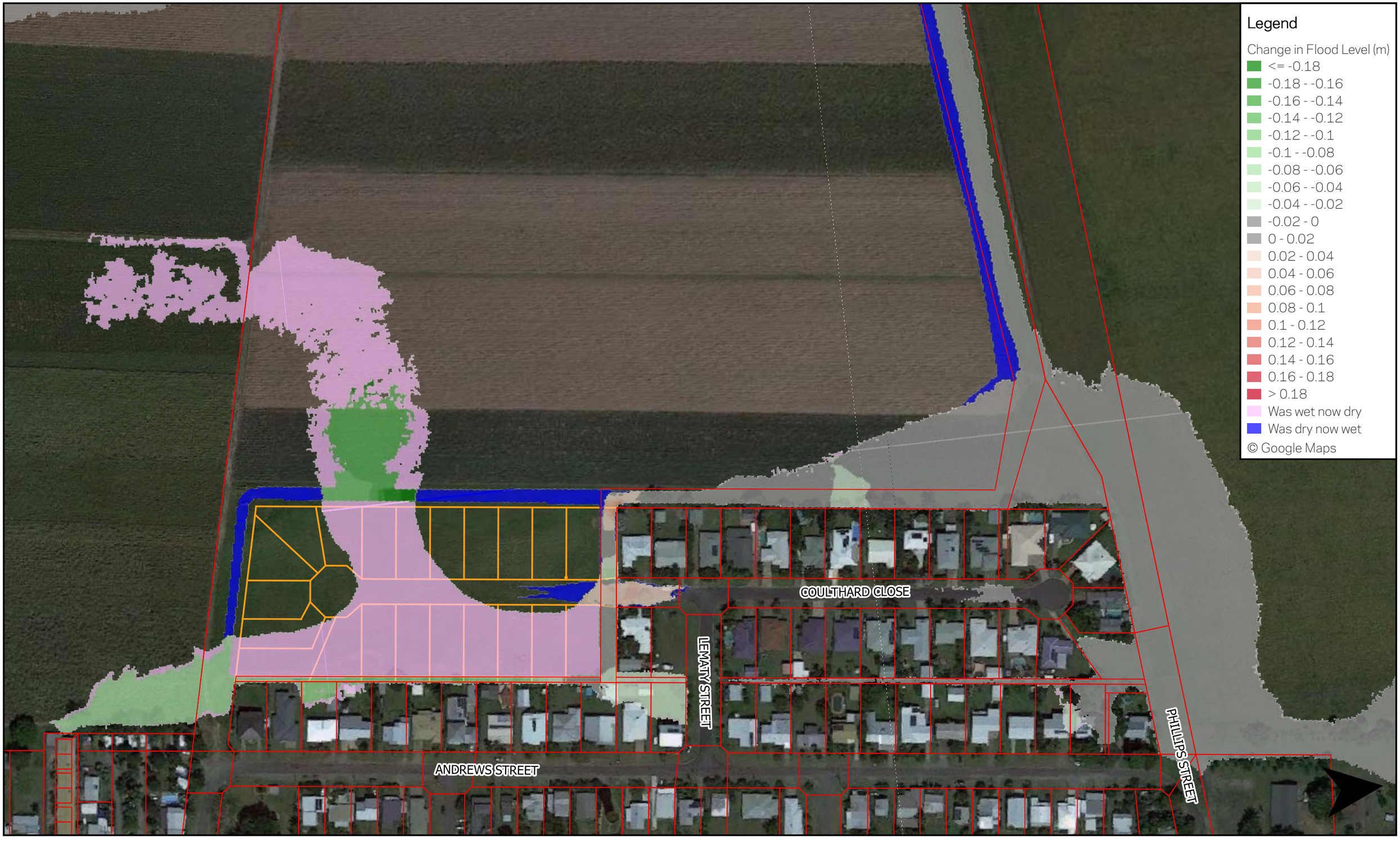
Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Afflux - 10% AEP ('1 in 10-year flood')

Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 27/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

0 50 100 150 200 m

Scale 1:2,000 @ A3



BLIGH TANNER

Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Afflux - 1% AEP ('1 in 100-year flood')

Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 27/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

0 50 100 150 200 m

Scale 1:2,000 @ A3

APPENDIX D
EXISTING FLOOD DEPTH

Legend

Flood Depth (m)

- <= 0.2
- 0.2 - 0.4
- 0.4 - 0.6
- 0.6 - 0.8
- 0.8 - 1
- 1 - 1.2
- 1.2 - 1.4
- 1.4 - 1.6
- 1.6 - 1.8
- > 1.8

COULTHARD CLOSE

LEMATY STREET

ANDREWS STREET

PHILLIPS STREET

0 50 100 150 200 m

Scale 1:2,000 @ A3

Title:

Depth - Existing - 20% AEP ('1 in 5-year flood')

Project. Newell Beach Drainage Study

Job # 2021.0566

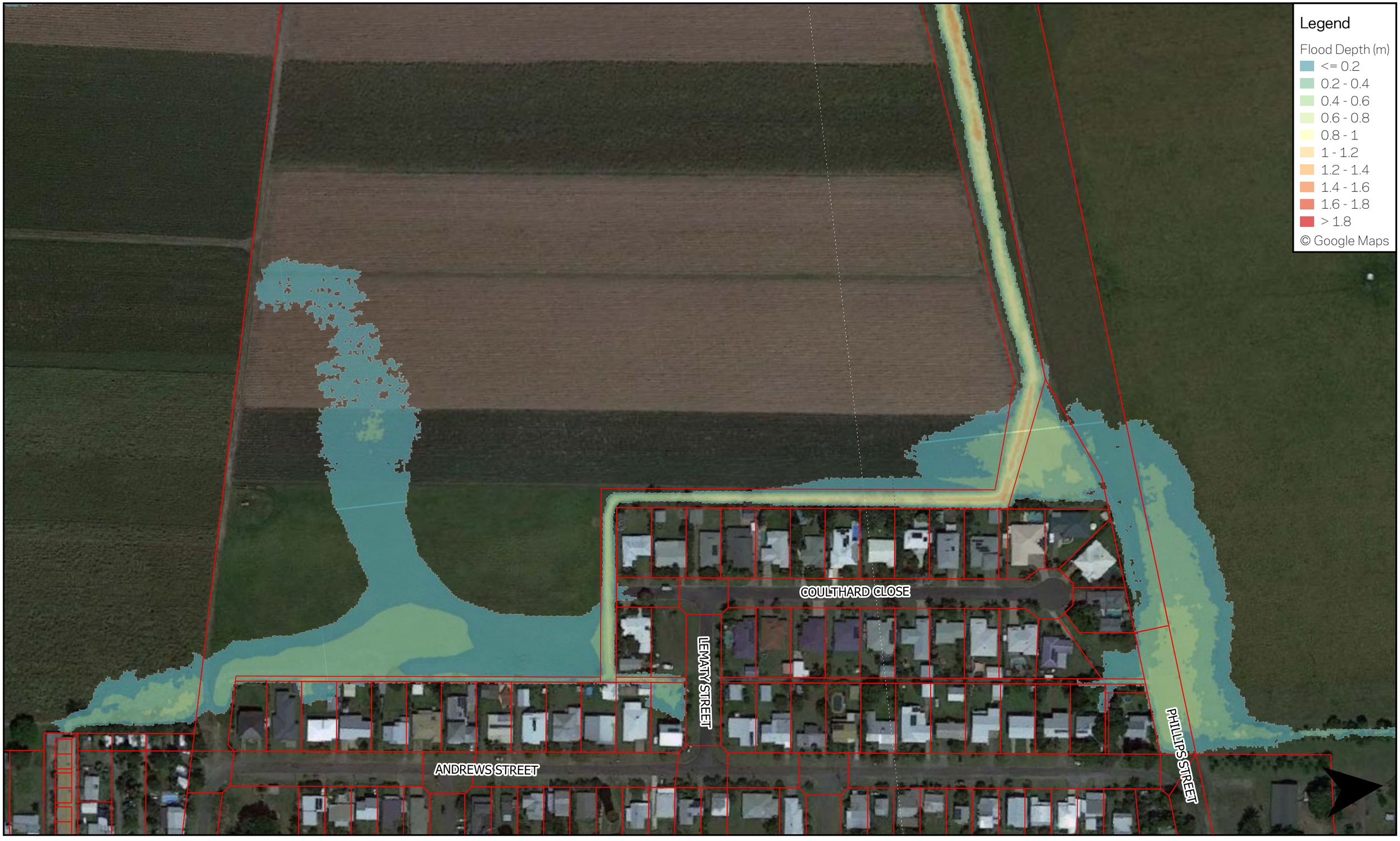
Engineer. Carlos Gambirazio

Date. 27/7/2022

Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

BLIGH TANNER

Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555



BLIGH TANNER

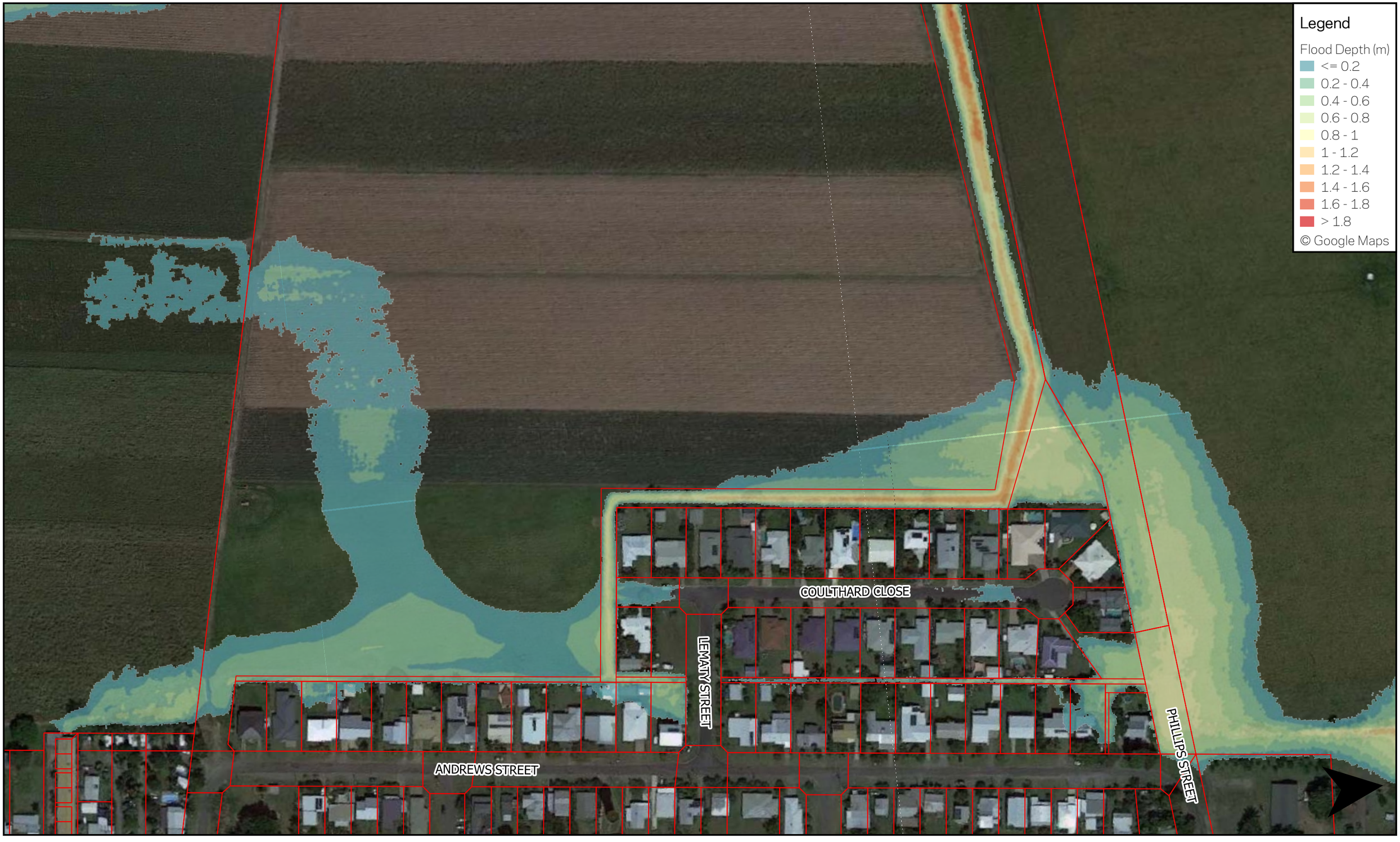
Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Depth - Existing - 10% AEP ('1 in 10-year flood')

Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 27/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

0 50 100 150 200 m

Scale 1:2,000 @ A3



BLIGH TANNER

Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Depth - Existing - 1% AEP ('1 in 100-year flood')
Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 27/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

0 50 100 150 200 m

Scale 1:2,000 @ A3

APPENDIX E
EXISTING FLOOD HAZARD

Legend

Hazard Categories
- H0 - No Hazard
- H1 - No restrictions
- H2 - Unsafe for small vehicles
- H3 - Unsafe for vehicles, children and the elderly
- H4 - Unsafe for people and vehicles
- H5 - Unsafe for all people and all vehicles. Buildings require special engineering and construction.
- H6 - Not suitable for people, vehicles or buildings

COULTHARD CLOSE

LEMATY STREET

ANDREWS STREET

PHILLIPS STREET

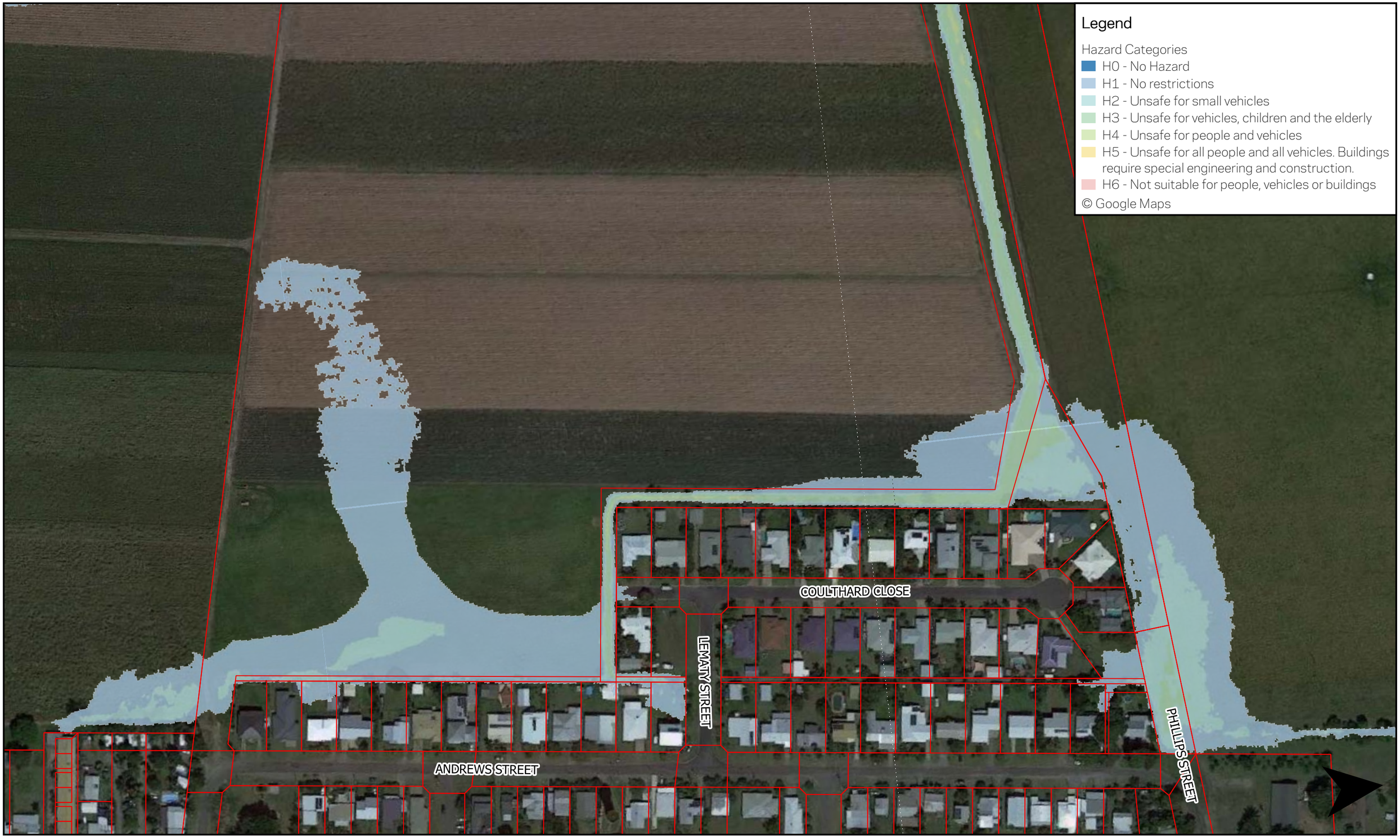
BLIGH TANNER

Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Hazard - Existing - 20% AEP ('1 in 5-year flood')
Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 27/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

0 50 100 150 200 m

Scale 1:2,000 @ A3



BLIGH TANNER

Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Hazard - Existing - 10% AEP ('1 in 10-year flood')
Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 27/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

0 50 100 150 200 m

Scale 1:2,000 @ A3

BLIGH TANNER

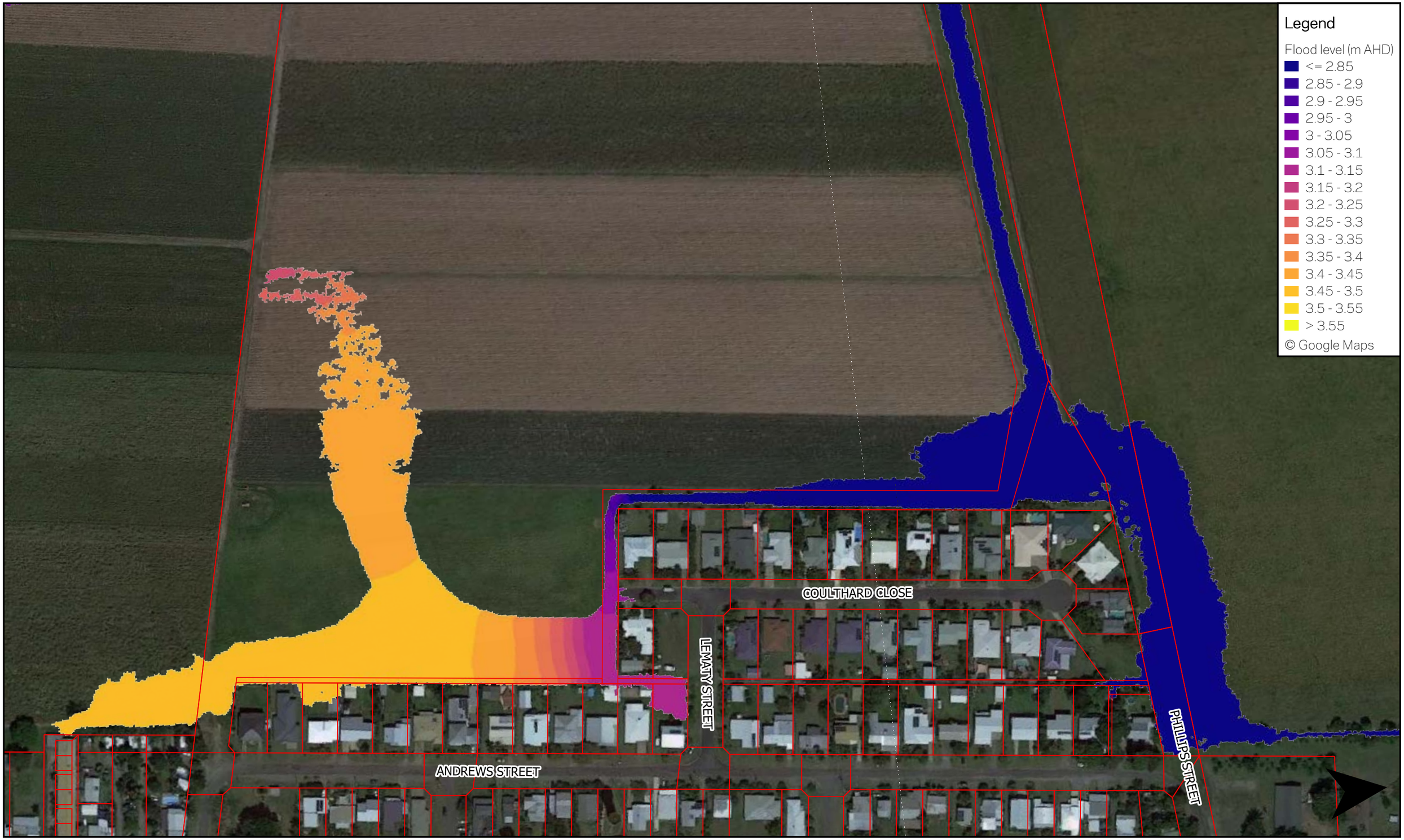
Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Hazard - Existing - 1% AEP ('1 in 100-year flood')
Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 27/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

0 50 100 150 200 m

Scale 1:2,000 @ A3

APPENDIX F
EXISTING FLOOD LEVEL



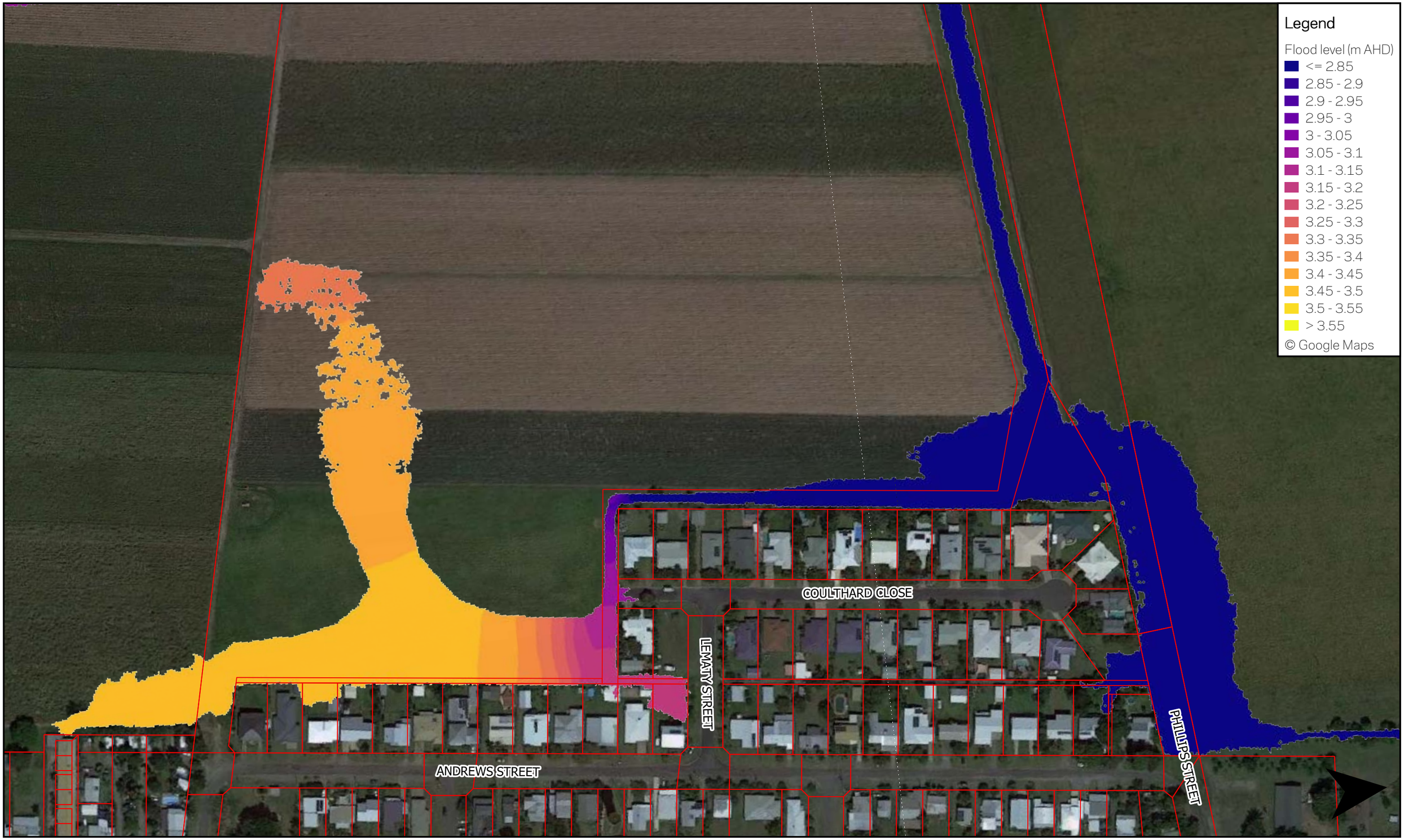
BLIGH TANNER

Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Level - Existing - 20% AEP ('1 in 5-year flood')
Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 27/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

0 50 100 150 200 m

Scale 1:2,000 @ A3



BLIGH TANNER

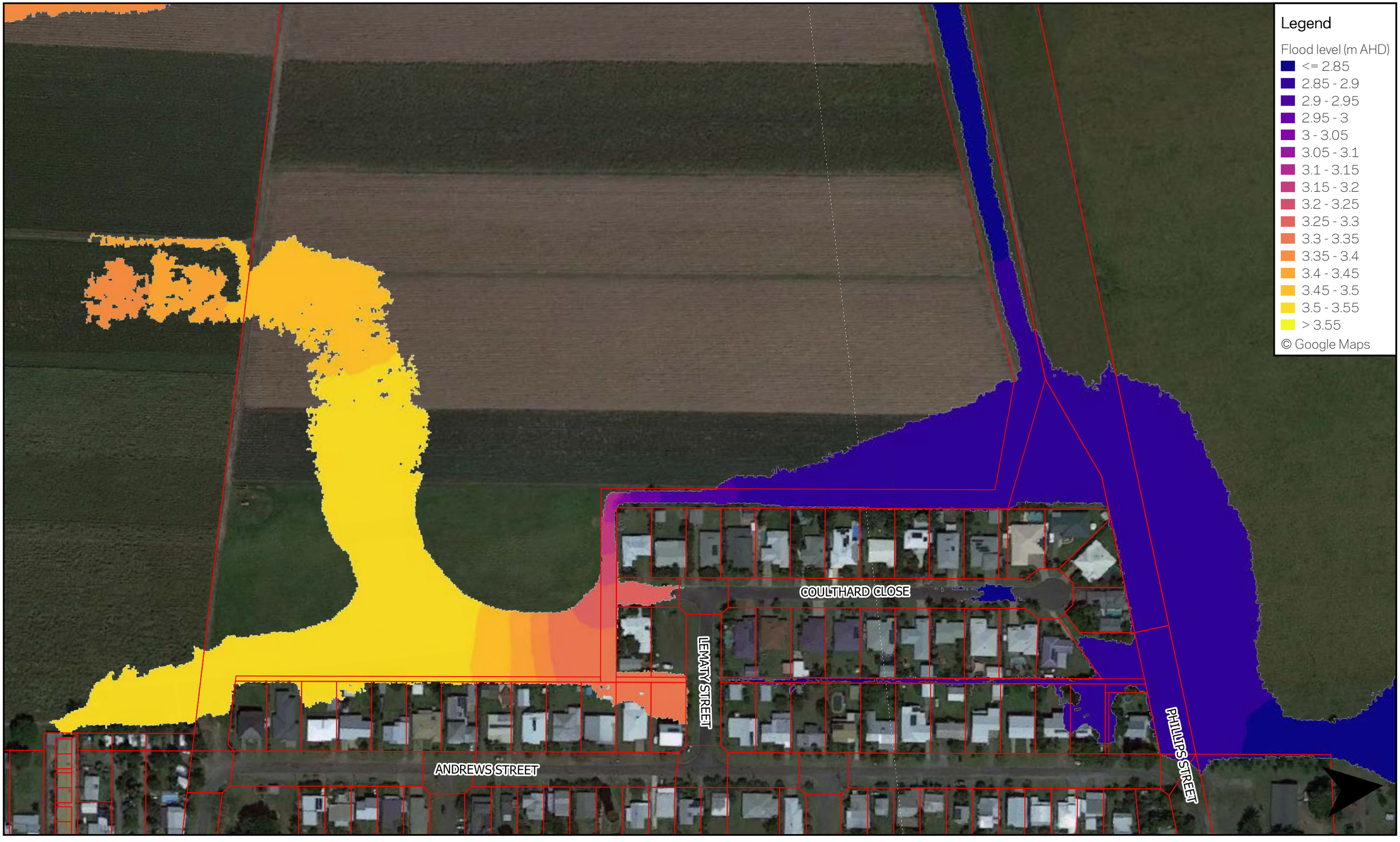
Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Level - Existing - 10% AEP ('1 in 10-year flood')

Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 27/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

0 50 100 150 200 m

Scale 1:2,000 @ A3



BLIGH TANNER

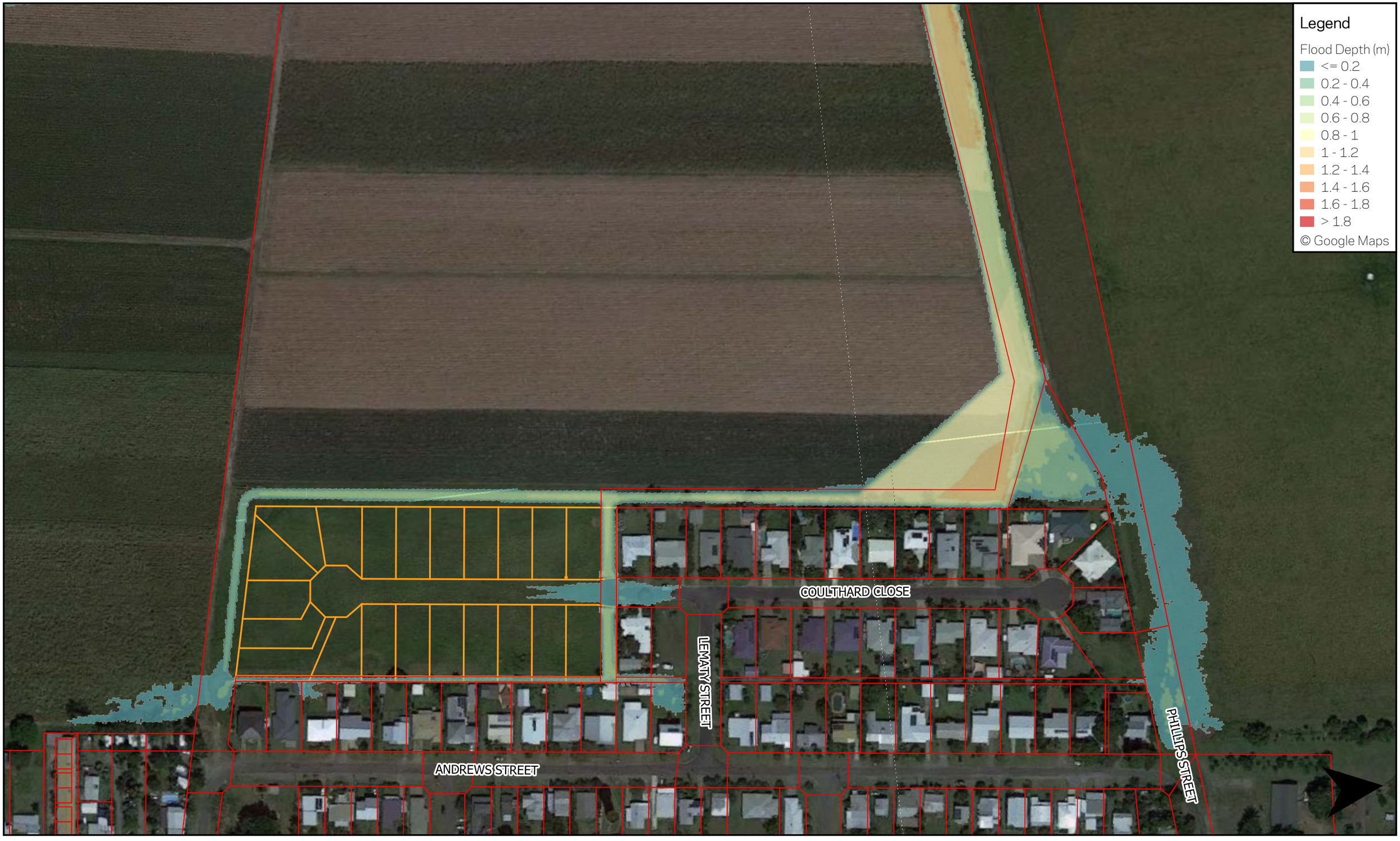
Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Level - Existing - 1% AEP ('1 in 100-year flood')
Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 27/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

0 50 100 150 200 m

Scale 1:2,000 @ A3

APPENDIX G
DEVELOPED FLOOD DEPTH



BLIGH TANNER

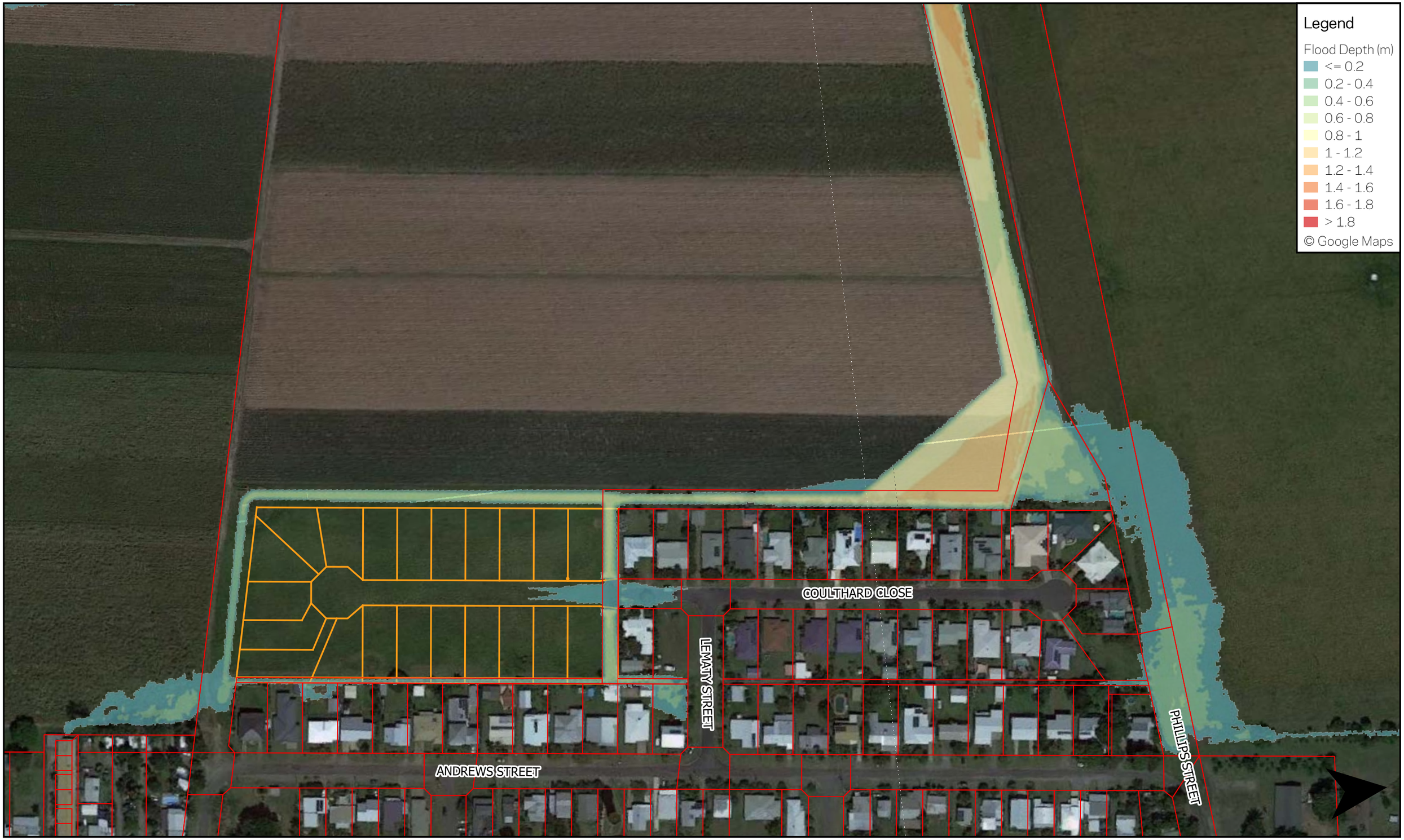
Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Depth - Developed - 20% AEP ('1 in 5-year flood')

Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 27/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

0 50 100 150 200 m

Scale 1:2,000 @ A3



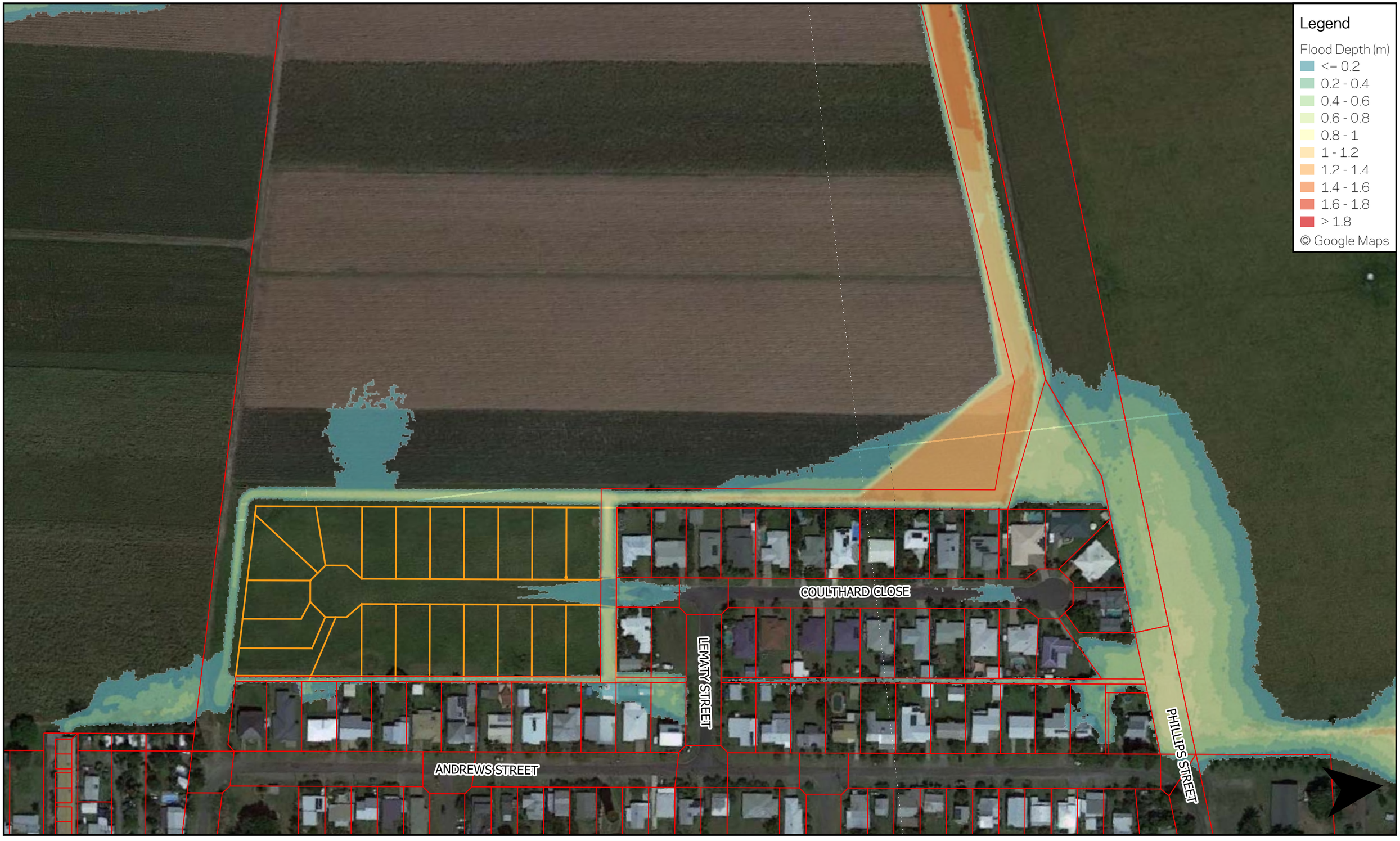
BLIGH TANNER

Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Depth - Developed - 10% AEP ('1 in 10-year flood')
Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 27/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

0 50 100 150 200 m

Scale 1:2,000 @ A3



BLIGH TANNER

Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Depth - Developed - 1% AEP ('1 in 100-year flood')

Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 27/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

0 50 100 150 200 m

Scale 1:2,000 @ A3

APPENDIX H
DEVELOPED FLOOD HAZARD

Legend

Hazard Categories
- H0 - No Hazard
- H1 - No restrictions
- H2 - Unsafe for small vehicles
- H3 - Unsafe for vehicles, children and the elderly
- H4 - Unsafe for people and vehicles
- H5 - Unsafe for all people and all vehicles. Buildings require special engineering and construction.
- H6 - Not suitable for people, vehicles or buildings

COULTHARD CLOSE

LEMATY STREET

ANDREWS STREET

PHILLIPS STREET

0 50 100 150 200 m

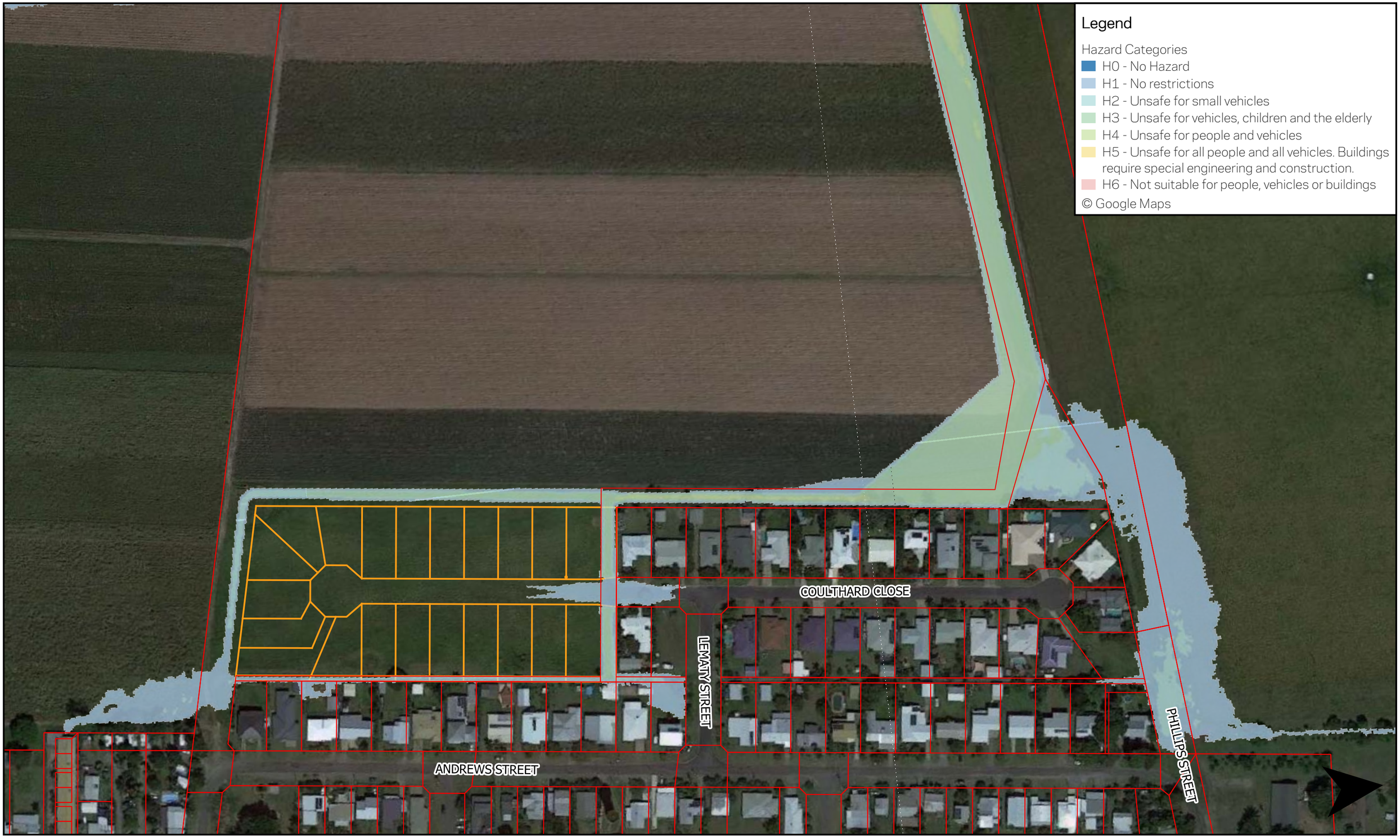
Scale 1:2,000 @ A3

BLIGH TANNER

Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Hazard - Developed - 20% AEP ('1 in 5-year flood')

Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 27/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz



BLIGH TANNER

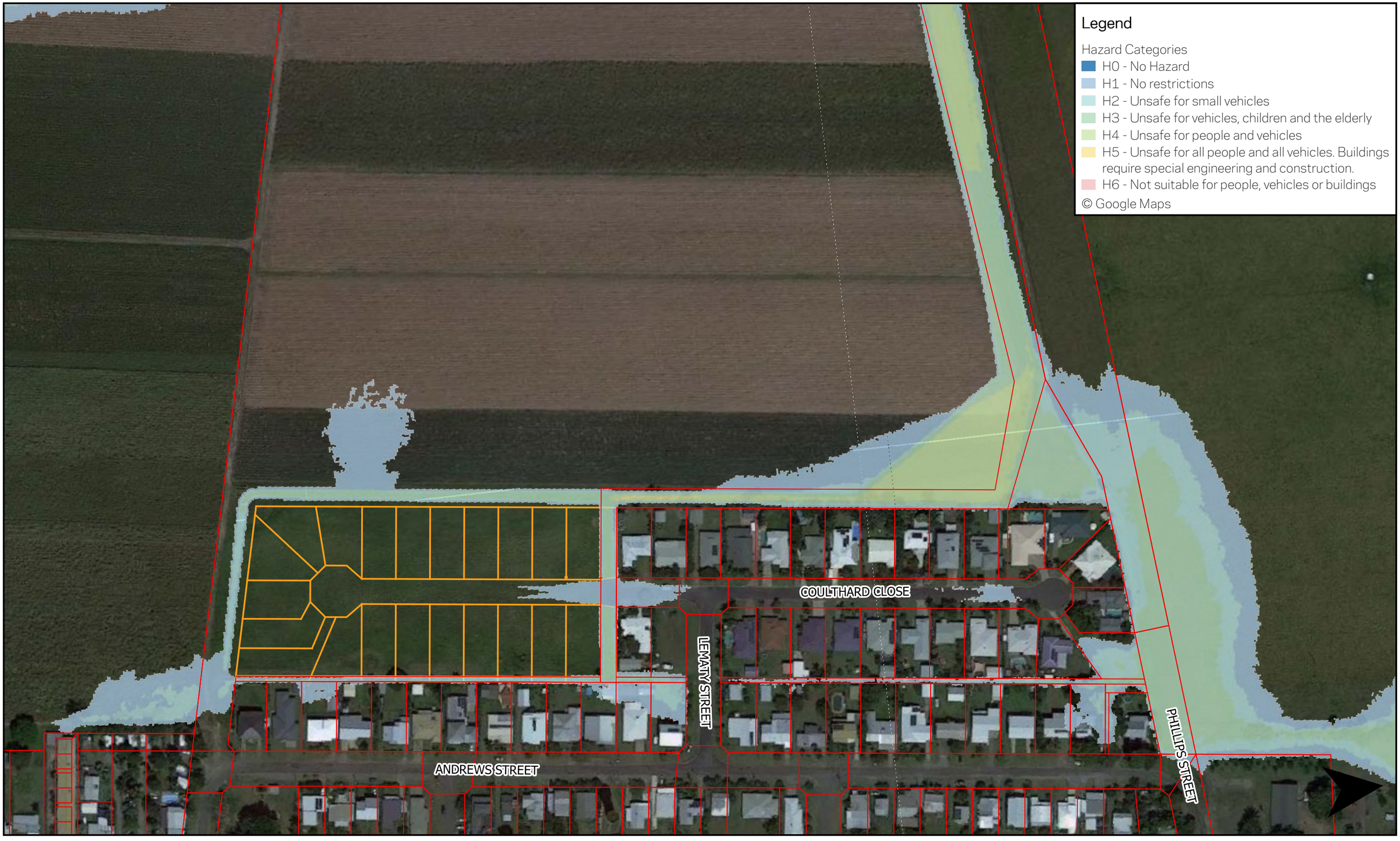
Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Hazard - Developed - 10% AEP ('1 in 10-year flood')

Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 27/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

0 50 100 150 200 m

Scale 1:2,000 @ A3



BLIGH TANNER

Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Hazard - Developed - 1% AEP ('1 in 100-year flood')
Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 27/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

0 50 100 150 200 m

Scale 1:2,000 @ A3

APPENDIX I
DEVELOPED FLOOD LEVEL

BLIGH TANNER

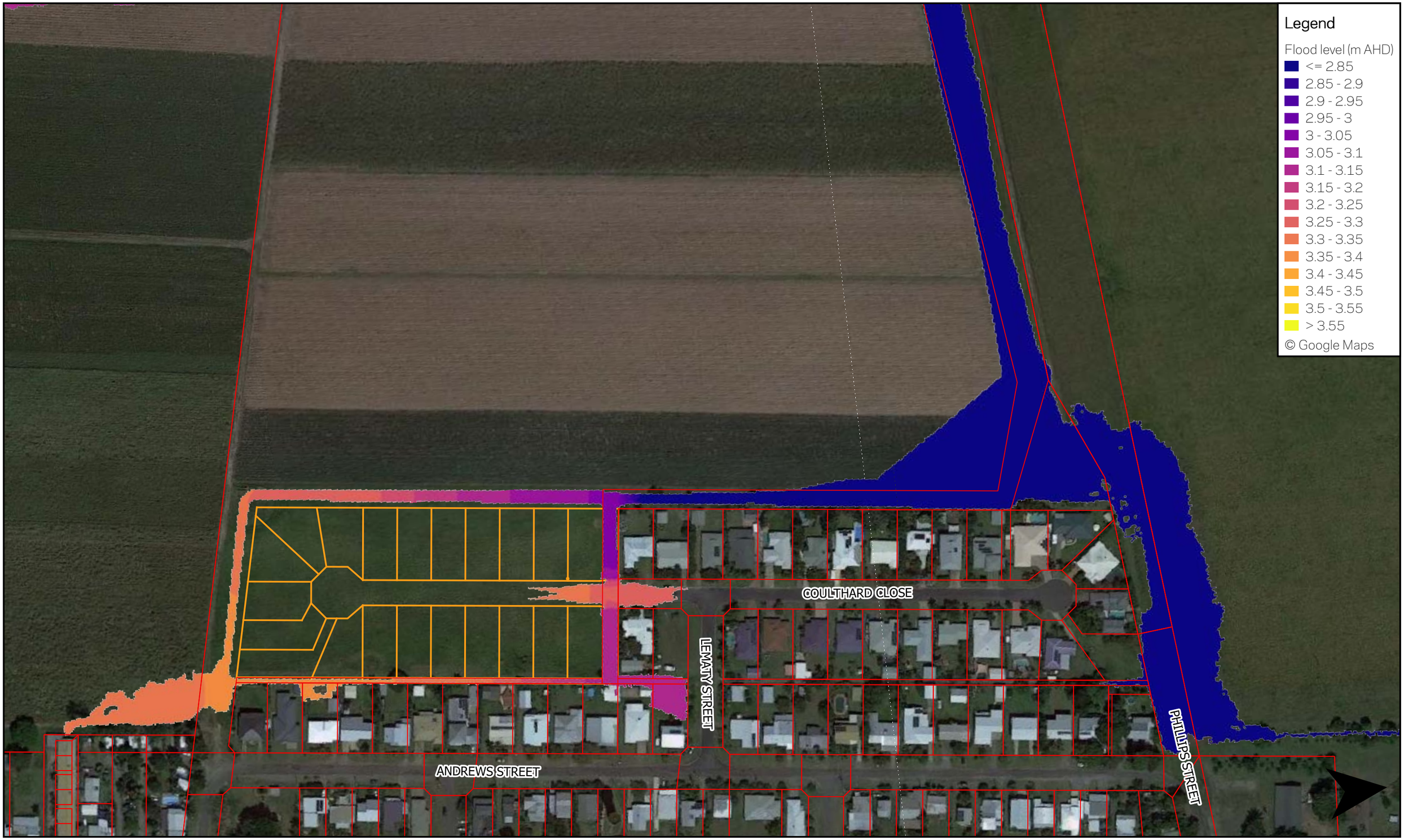
Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Level - Developed - 20% AEP ('1 in 5-year flood')

Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 27/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

0 50 100 150 200 m

Scale 1:2,000 @ A3



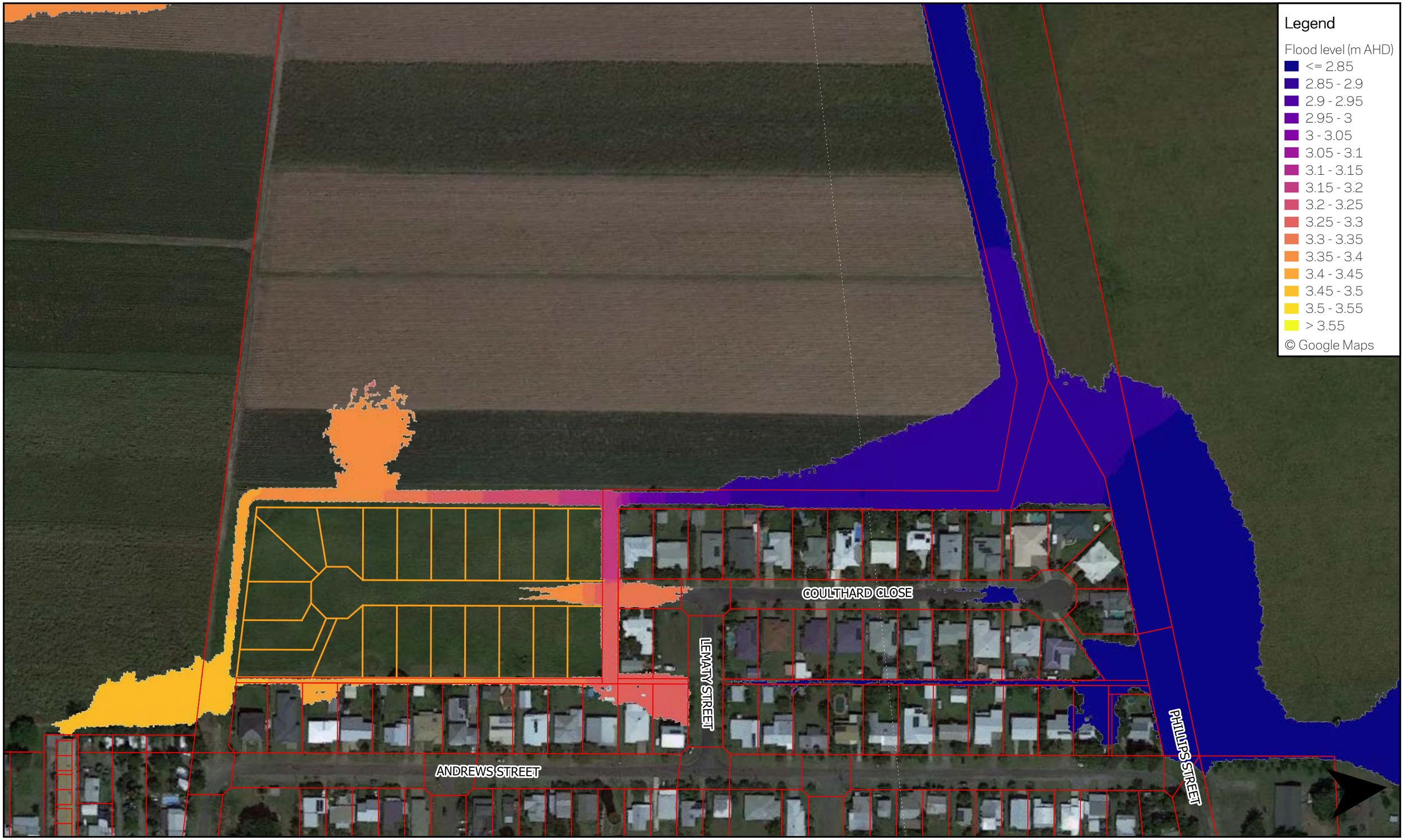
BLIGH TANNER

Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Level - Developed - 10% AEP ('1 in 10-year flood')
Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 27/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

0 50 100 150 200 m

Scale 1:2,000 @ A3



BLIGH TANNER

Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

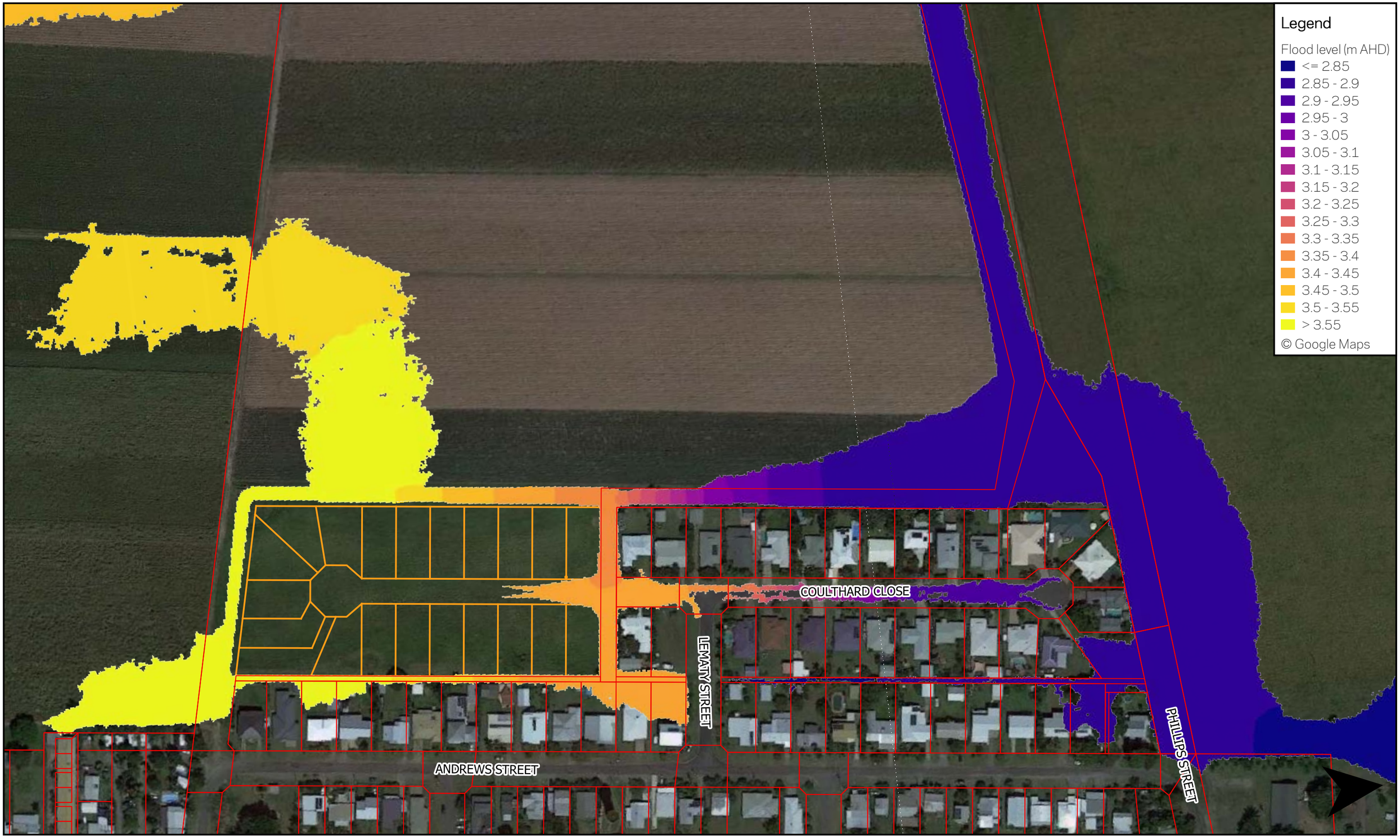
Title:
Level - Developed - 1% AEP ('1 in 100-year flood')

Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 27/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

0 50 100 150 200 m

Scale 1:2,000 @ A3

APPENDIX J
DEVELOPED SENSITIVITY ANALYSIS FLOOD LEVEL



BLIGH TANNER

Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Level - Developed - Sensitivity Analysis - 1% AEP ('1 in 100-year flood')
Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 27/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

0 50 100 150 200 m

Scale 1:2,000 @ A3

APPENDIX K
FLOOD MODELLING LAYOUTS

Legend

Material Surfaces
- Asphalt Surfaces - Manning's 'n' 0.02
- Low Density Residential - Manning's 'n' 0.08
- High-Medium Density Residential - Manning's 'n' 0.15
- Maintained Grass - Manning's 'n' 0.035
- Mature field crops - Manning's 'n' 0.05
- Medium-Dense Vegetation - Depth-Variable Manning's
- Dense Vegetation - Depth-Variable Manning's
- Unmaintained Grass - Manning's 'n'
- Flood Model Extents
- Downstream Tailwater Boundary
- DCDB Property Boundaries

© Google Maps

Depth (m)	Manning's 'n' Medium Dense Vegetation	Manning's 'n' Dense Vegetation
0	0.075	0.09
0.2	0.075	0.09
0.8	0.075	0.09
1.5	0.075	0.09
2	0.094	0.113
3.5	0.15	0.18
99	0.15	0.18

BLIGH TANNER

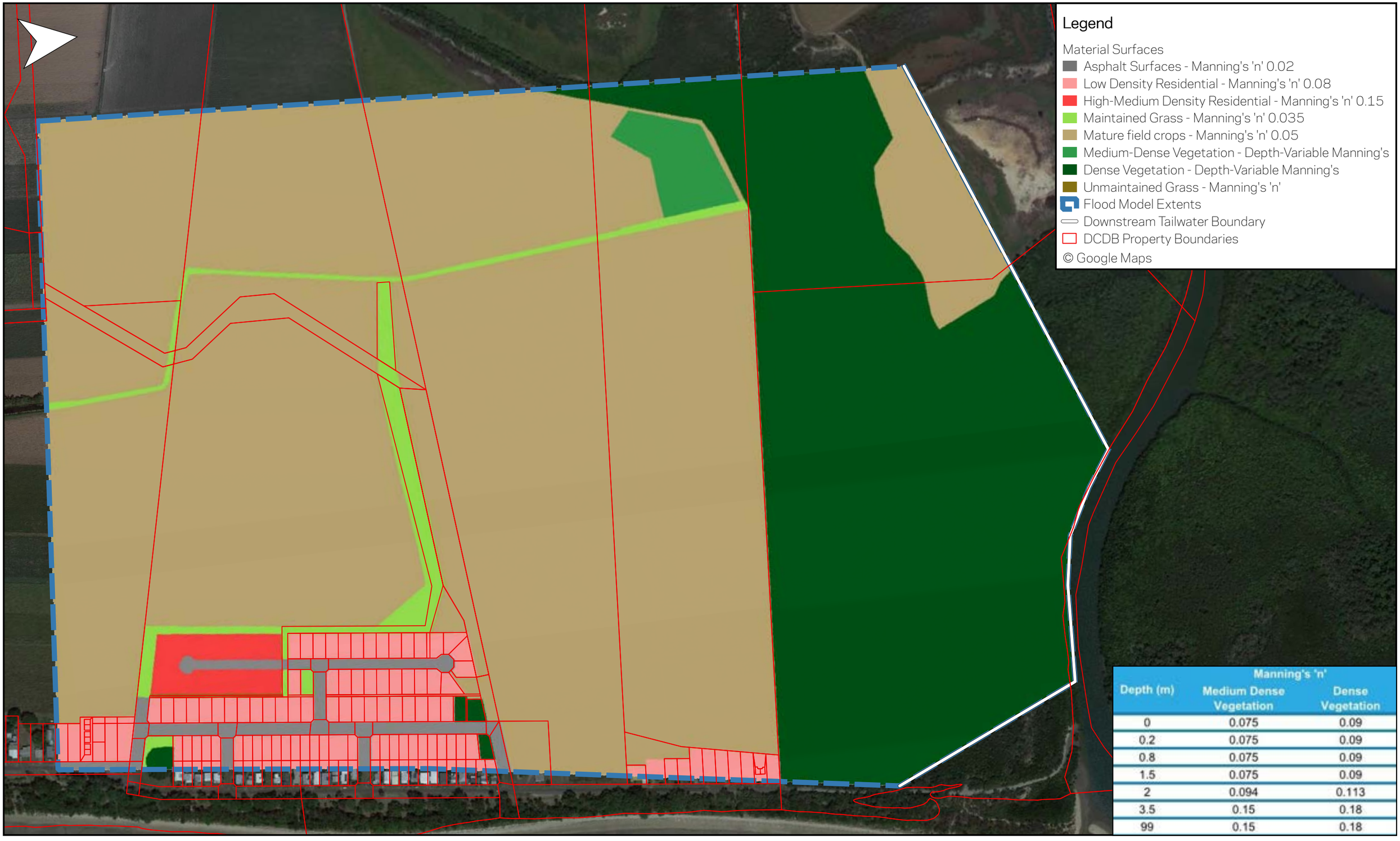
Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Flood Modelling Layout - Existing Case Scenario

Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 28/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

0 100 200 300 400 m

Scale 1:5,500 @ A3



Depth (m)	Manning's 'n' Medium Dense Vegetation	Manning's 'n' Dense Vegetation
0	0.075	0.09
0.2	0.075	0.09
0.8	0.075	0.09
1.5	0.075	0.09
2	0.094	0.113
3.5	0.15	0.18
99	0.15	0.18

BLIGH TANNER

Level 9, 269 Wickham St
PO Box 612 Fortitude Valley Qld
4006 Australia
T +61 7 3251 8555

Title:
Flood Modelling Layout - Developed Case Scenario

Project. Newell Beach Drainage Study
Job # 2021.0566
Engineer. Carlos Gambirazio
Date. 28/7/2022
Filepath: \\bt-data\Company Data\Projects\2021\2021.0566-Newell Beach Drainage Study\2 Engineering\1 Civil\6 GIS\2021.0566_NewellBeachDrainageStudy_GIS.qgz

0 100 200 300 400 m

Scale 1:5,500 @ A3

APPENDIX L
RATIONAL METHOD

RATIONAL METHOD CALCULATOR

Project Name:	Newell Beach Drainage Study
Project Number	2021.0566
Date	1/02/2022

Instructions

INPUT	Manually Insert Information
CALCULATIONS/REFERENCE INFORMATION	sources or calculations for transparency of the worksheet operations. **DO NOT CHANGE.**
RESULTS	These cells contain results from relevant processes

Rainfall Information - Download and manually input mm/hr IFD information from BoM

		Average Rainfall Intensity (mm/hr)						
		Average Recurrence Interval (ARI) (years)						
Duration (min)	Duration (hr)	1	2	5	10	20	50	100
1	0.02	180	219	254	283	314	353	382
2	0.03	169	206	239	265	293	328	353
3	0.05	156	191	221	245	272	304	328
4	0.07	146	178	206	229	254	285	308
5	0.08	138	168	195	216	240	269	291
10	0.17	111	135	157	174	194	218	236
15	0.25	96.6	117	136	151	168	189	204
20	0.33	86.5	105	122	135	150	169	183
25	0.42	79	95.9	111	123	137	154	167
30	0.50	73	88.8	103	114	127	143	155
45	0.75	60.7	73.9	85.9	95.6	106	120	129
60	1.00	52.7	64.3	75.1	83.6	93.1	105	113
90	1.50	42.6	52.2	61.4	68.7	76.7	86.6	93.9
120	2.00	36.4	44.7	53	59.5	66.5	75.4	81.9
180	3.00	28.7	35.5	42.7	48.2	54.2	61.9	67.5
270	4.50	22.5	28	34.1	38.9	44	50.7	55.6
360	6.00	18.8	23.5	29	33.3	37.9	44	48.5
540	9.00	14.6	18.4	23.1	26.7	30.7	36	40.1
720	12.00	12.2	15.4	19.6	22.8	26.4	31.3	35.1
1080	18.00	9.52	12.1	15.6	18.3	21.3	25.6	29
1440	24.00	8	10.2	13.2	15.6	18.3	22.2	25.3
1800	30.00	7.01	8.94	11.7	13.8	16.2	19.8	22.7
2160	36.00	6.29	8.04	10.5	12.5	14.7	18	20.7
2880	48.00	5.33	6.81	8.93	10.6	12.5	15.4	17.9
4320	72.00	4.21	5.38	7.04	8.35	9.82	12.2	14.2
5760	96.00	3.55	4.53	5.89	6.96	8.15	10.1	11.8
7200	120.00	3.1	3.94	5.09	5.98	6.96	8.67	10.1
8640	144.00	2.76	3.5	4.48	5.24	6.06	7.54	8.8
10080	168.00	2.49	3.15	4	4.65	5.35	6.64	7.74

Catchment Information

Catchment Type:	Rural creek catchments	
Catchment Area	6.237	km2
Catchment Area	623.7	hectares

Time of Concentration

Standard Inlet Time	Urban residential areas, slope at top of catchment is up to 3%	
Standard Inlet Time	0	minutes
Overland Sheet Flow Time	Flat (0-1%) bushland or grassland	
Recommended maximum length	200	
Selected length (m)	28	
Surface Type	Concrete	
Surface Roughness	0.01	Horton's Roughness Coefficient (n)
Slope of surface	2.8	%
Overland Sheet Flow Time	0	minutes
Kerb and Channel Flow Time		
Length of Gutter Flow	45	metres
Slope of Gutter	0.5	%
Kerb and Channel Flow Time	0	minutes
Open Channel Flow Time		
Length of Reach	28.7	metres
Velocity from Flood Model	1.1	m/s
Open Channel Flow Time	0	minutes

Pipe Flow Time (assuming full)		
Material Type	Concrete	
Manning's Roughness 'n'	0.013	do not touch
Diameter	300	millimetres
Hydraulic Radius	0.075	metres
Slope	0.05	m/m
Velocity	3.059021238	m/s
Length of Reach	0	metres
Pipe Capacity (full)	0.21622947	m3/s
Pipe Flow Time	0	minutes
Creek Flow Time		
Length of flow path	5.424	kilometres
Catchment Area	623.7	hectares
Slope	3.15	%
Creek Flow Time	131.3977683	minutes
TOTAL TIME OF CONCENTRATION (MINUTES)	131.3977683	

Coefficient of Discharge (C10)

Intensity (10% AEP, 1 Hour)	Impervious Options	Associated C10
83.6	0	0.66
	0.2	0.74
	0.4	0.78
	0.6	0.82
	0.8	0.86
	0.9	0.88
	1	0.9

Stage	Impervious	C10
Existing	0	0.66
Proposed	0.5	0.8

Table 4.5.3 – Table of C_{10} values

Intensity (mm/hr) I_{1hr}	Fraction Impervious f_i						
	0.00	0.20	0.40	0.60	0.80	0.90	1.00
39-44	Refer to Table 4.5.4	0.44	0.55	0.67	0.78	0.84	0.90
45-49		0.49	0.60	0.70	0.80	0.85	0.90
50-54		0.55	0.64	0.72	0.81	0.86	0.90
55-59		0.60	0.68	0.75	0.83	0.86	0.90
60-64		0.65	0.72	0.78	0.84	0.87	0.90
65-69		0.71	0.76	0.80	0.85	0.88	0.90
70-90		0.74	0.78	0.82	0.86	0.88	0.90

Refer to notes on previous page.

Table 4.5.4 – C_{10} values for zero fraction impervious [1]

Land description	Below bushland			Medium density bush, or Good grass cover, or High density pasture, or Zone village cropping			Light cover bushland, or Poor grass cover, or Low density pasture, or Low cover farm fallows		
Intensity (mm/hr) I_{1hr}	Soil permeability			Soil permeability			Soil permeability		
	High	Med	Low	High	Med	Low	High	Med	Low
39–44	0.08	0.24	0.32	0.16	0.32	0.40	0.24	0.40	0.48
45–49	0.10	0.29	0.39	0.20	0.39	0.49	0.29	0.49	0.59
50–54	0.12	0.35	0.46	0.23	0.46	0.58	0.35	0.58	0.69
55–59	0.13	0.40	0.53	0.27	0.53	0.68	0.40	0.66	0.79
60–64	0.15	0.44	0.59	0.30	0.59	0.70	0.44	0.70	0.70
65–69	0.17	0.50	0.66	0.33	0.66	0.70	0.50	0.70	0.70
70–90	0.18	0.53	0.70	0.35	0.70	0.70	0.53	0.70	0.70

[1] Developed from Department of Natural Resources and Mines (2004); see Background Notes for further discussion. These coefficients are not suitable for soils compacted by construction activities.

RATIONAL METHOD CALCULATION

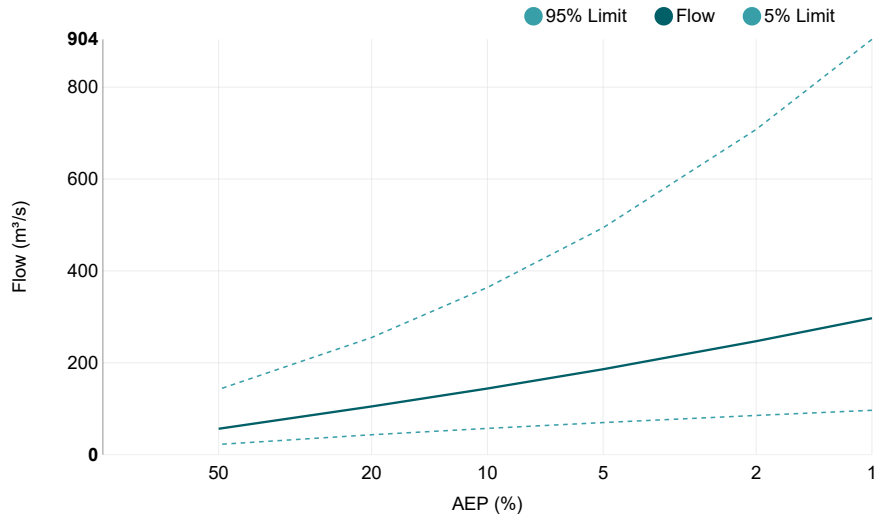
Catchment Area	623.7
Fraction Impervious	0
Coefficient of Discharge (C10)	0.66
Q1 - C1 - 63.2% AEP	0.528
Q2 - C2 - 39.3% AEP	0.561
Q5 - C5 - 20% AEP	0.627
Q10 - C10 - 10% AEP	0.66
Q20 - C20 - 5% AEP	0.693
Q50 - C50 - 2% AEP	0.759
Q100 - C100 - 1% AEP	0.792

Peak Flow (Qy) (m^3/s)	
1 EY (1-year ARI)	31.9592321
0.5 EY (2-year ARI)	41.74677732
0.2 EY (5-year ARI)	55.44727859
10% AEP (10-year ARI)	65.58076844
5% AEP (20-year ARI)	77.03609074
2% AEP (50-year ARI)	95.77631814
1% AEP (100-year ARI)	108.6248259

	Duration (min) - Change duration values so that the range covers the time of concentration. E.g. Tc = 20, durations = 15 and 30.		Tc (min)
Average Rainfall Intensity (I)	120	180	131.40
1	36.4	28.7	34.9372864
2	44.7	35.5	42.95234219
5	53	42.7	51.0433831
10	59.5	48.2	57.35342029
20	66.5	54.2	64.16345749
50	75.4	61.9	72.83550212
100	81.9	67.5	79.1645356

APPENDIX M
RFFE ESTIMATION MODEL

Results | Regional Flood Frequency Estimation Model



AEP (%)	Discharge (m^3/s)	Lower Confidence Limit (5%) (m^3/s)	Upper Confidence Limit (95%) (m^3/s)
50	56.4	22.3	142
20	105	43.4	255
10	144	57.2	364
5	186	69.9	494
2	247	85.4	708
1	297	96.6	904

Statistics

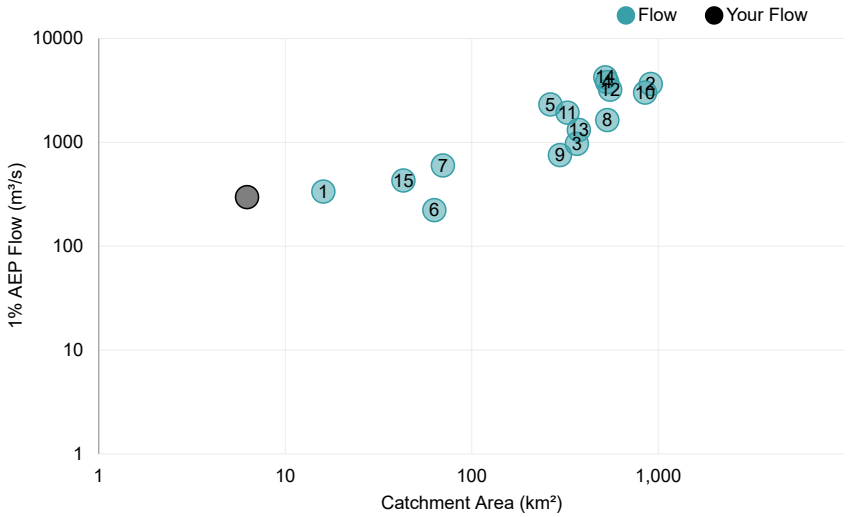
Variable	Value	Standard Dev
Mean	3.707	0.544
Standard Dev	0.743	0.293
Skew	-0.126	0.084

Note: These statistics come from the nearest gauged catchment. Details.

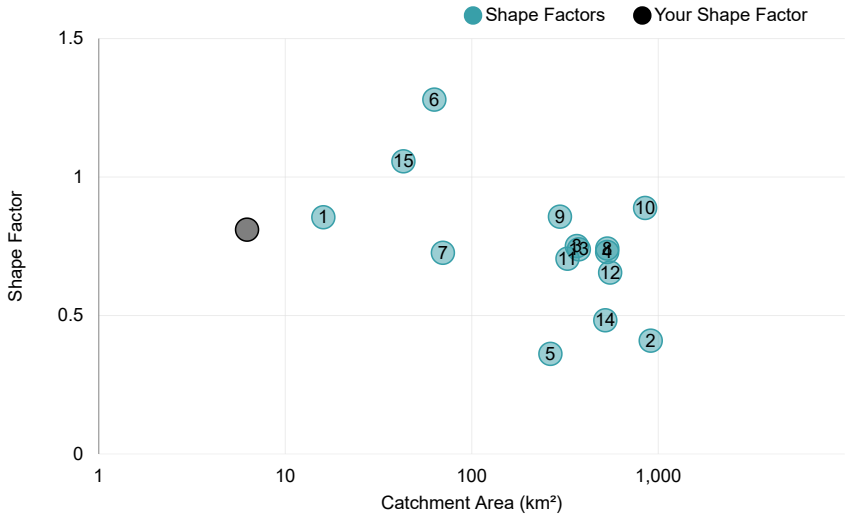
Correlation		
1.000		
-0.330	1.000	
0.170	-0.280	1.000

Note: These statistics are common to each region. Details.

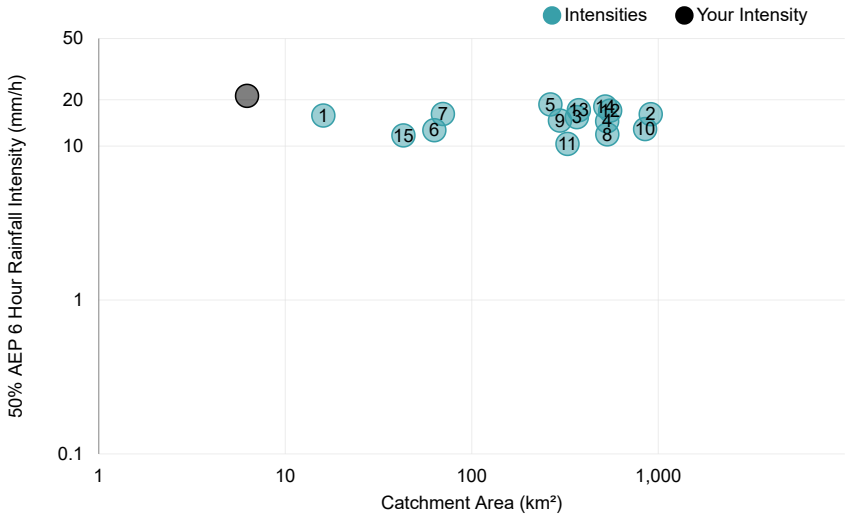
1% AEP Flow vs Catchment Area



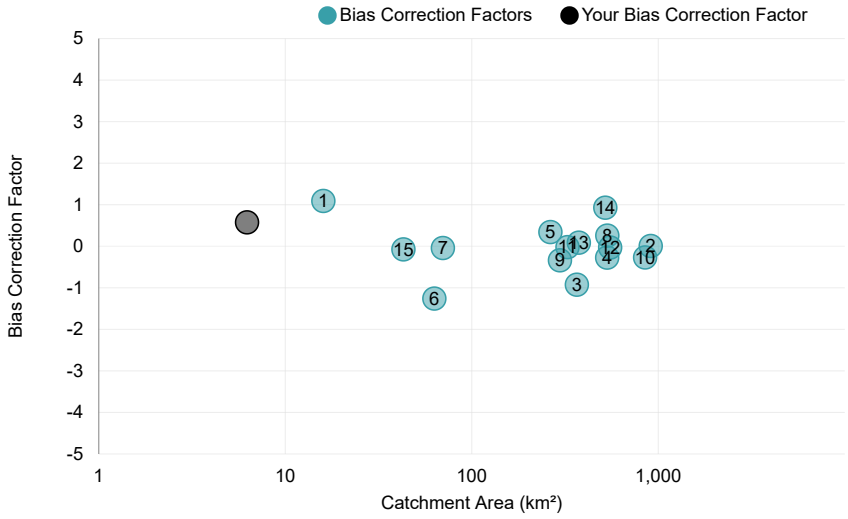
Shape Factor vs Catchment Area



Intensity vs Catchment Area



Bias Correction Factor vs Catchment Area



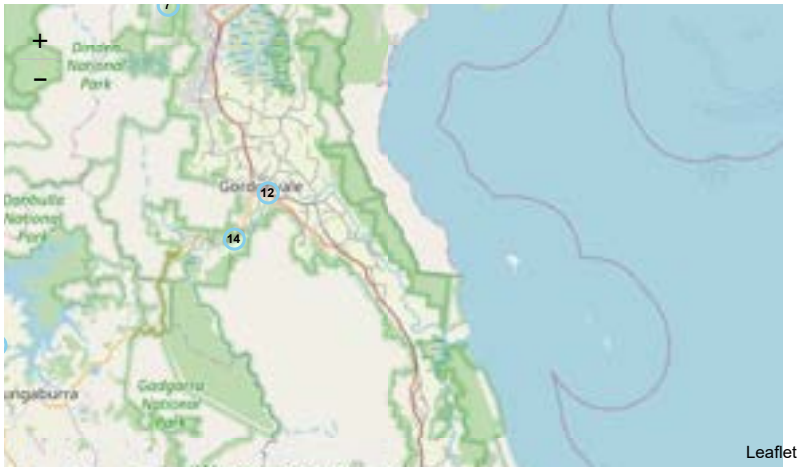
Download

TXT Nearby JSON

Input Data

Input Data

Date/Time	2022-02-01 16:41
Catchment Name	Catchment1
Latitude (Outlet)	-16.41165
Longitude (Outlet)	145.40545
Latitude (Centroid)	-16.42258
Longitude (Centroid)	145.39041
Catchment Area (km^2)	6.237
Distance to Nearest Gauged Catchment (km)	7.66
50% AEP 6 Hour Rainfall Intensity (mm/h)	21.203716
2% AEP 6 Hour Rainfall Intensity (mm/h)	43.872875
Rainfall Intensity Source (User/Auto)	Auto
Region	East Coast
Region Version	RFFE Model 2016 v1
Region Source (User/Auto)	Auto
Shape Factor	0.81
Interpolation Method	Natural Neighbour
Bias Correction Value	0.576



Method by Dr Ataur Rahman and Dr Khaled Haddad from Western Sydney University for the Australian Rainfall and Runoff Project. Full description of the project can be found at the project page (http://arr.ga.gov.au/revision-projects/project-list/projects/project-5) on the ARR website. Send any questions regarding the method or project here (mailto:admin@arr-software.org).

APPENDIX N
STORM TIDE INUNDATION REPORT

Storm Tide Inundation Property Report

The following report has been automatically generated to provide a general indication of development related information applying to the nominated land parcel.

For more information refer to the JB Pacific Storm Tide Inundation Methodology Study This report is not intended to replace the need for carrying out a detailed assessment of Council and State controls or the need to seek your own professional advice on any town planning instrument, local law or other controls that may impact on the existing or intended use of the premise mentioned in this report. For further information please contact Council by phone: 07 4099 9444 or 1800 026 318 or email enquiries@douglas.qld.gov.au.

A separate Council Planning Scheme Property Report tool is available for information relating to Council's 2018 Planning Scheme.

Visit Council's website to apply for an official property search or certificate, or contact the Department of Natural Resources, Mines and Energy to undertake a title search to ascertain how easements may affect land.

JB Pacific Storm Tide Inundation Methodology Study

The purpose of the Douglas Shire Storm Tide Inundation Methodologies Study was to review and analyse different methodologies, identify a best practise model for the Shire's coastal urban areas, run this preferred best practise model and calculate the minimum heights for the 1% AEP (Annual Exceedance Probability) storm tide inundation for the year 2100 having regard to a 0.8m sea level rise for urban coastal properties.

Excerpt from the JB Pacific Storm Tide Inundation Methodology Report -

Storm Tide Inundation

The Douglas Shire coastline experiences a range of hydrodynamic, waves, and morphologic processes that are linked through dependant and independent variables. This includes the underlying astronomical tide, the passage of local storms and cyclones, the interaction of storm surges along the open coastline, the local wave climate, any sheltering provided by nearshore reefs, and the role of nearshore and dune vegetation. A range of these coastal processes are shown in Figure 2-1.

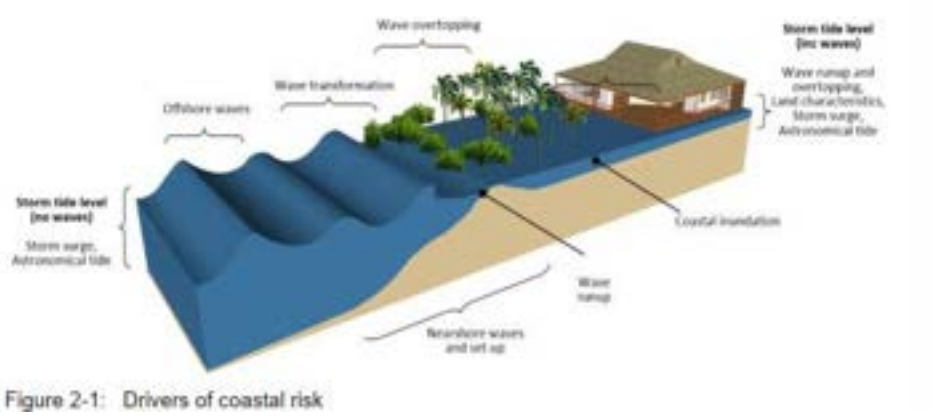


Figure 2-1: Drivers of coastal risk

Importantly storm tide inundation can be from the overtopping at the foreshore as well as wave runup through estuaries and inundate from "behind" a locality. Check out the animation of this activity through the local estuaries in the animation on Council's website.

Future Year 2100 Projected Levels

On 2 July 2017 the Planning Act 2016 came into effect as part of the Queensland Government's commitment to delivering planning reform across the State and the State Planning Policies reinstating the need to consider the 1% AEP (Average Exceedance Probability) Storm Tide Inundation level for the year 2100 with a 0.8m sea level rise. The 1% AEP is referred to as the one in one hundred year event. The 1%AEP is the minimum we need to consider and plan for.

Freeboard

There are numerous variants that can affect the modelled levels. To account for the differences in these variants a "freeboard" is applied. For the JB Pacific Storm Tide Inundation Methodology Study these differences have been considered within a nominal 0.5m freeboard level. Minimum levels for habitable rooms need to consider the Finished Floor Level (FFL) being the 1%AEP level plus the 0.5m freeboard. This value is a measurement at AHD (Australian Height Datum).

AHD Levels

A Licensed Surveyor should be engaged to determine the accurate AHD for a property. Contours and levels identified through Queensland Globe are estimated from LIDAR calculations and may not be 100% accurate.

Storm Tide Inundation Property Report

2 Andrews Street NEWELL

Produced: 14/07/2021

Property Information

Property Address	2 Andrews Street NEWELL
Lot Plan	51SP168537 (Freehold - 379270m^2)

Selected Property | Easements | Land Parcels

Storm Tide Inundation Property Report

2 Andrews Street NEWELL

Produced: 14/07/2021

Storm Tide Inundation Property Information

The information below provides details of the projected Future Year 2100 Storm Tide Inundation Level that considers a Sea Level Rise of 0.8m AHD

Selected Property

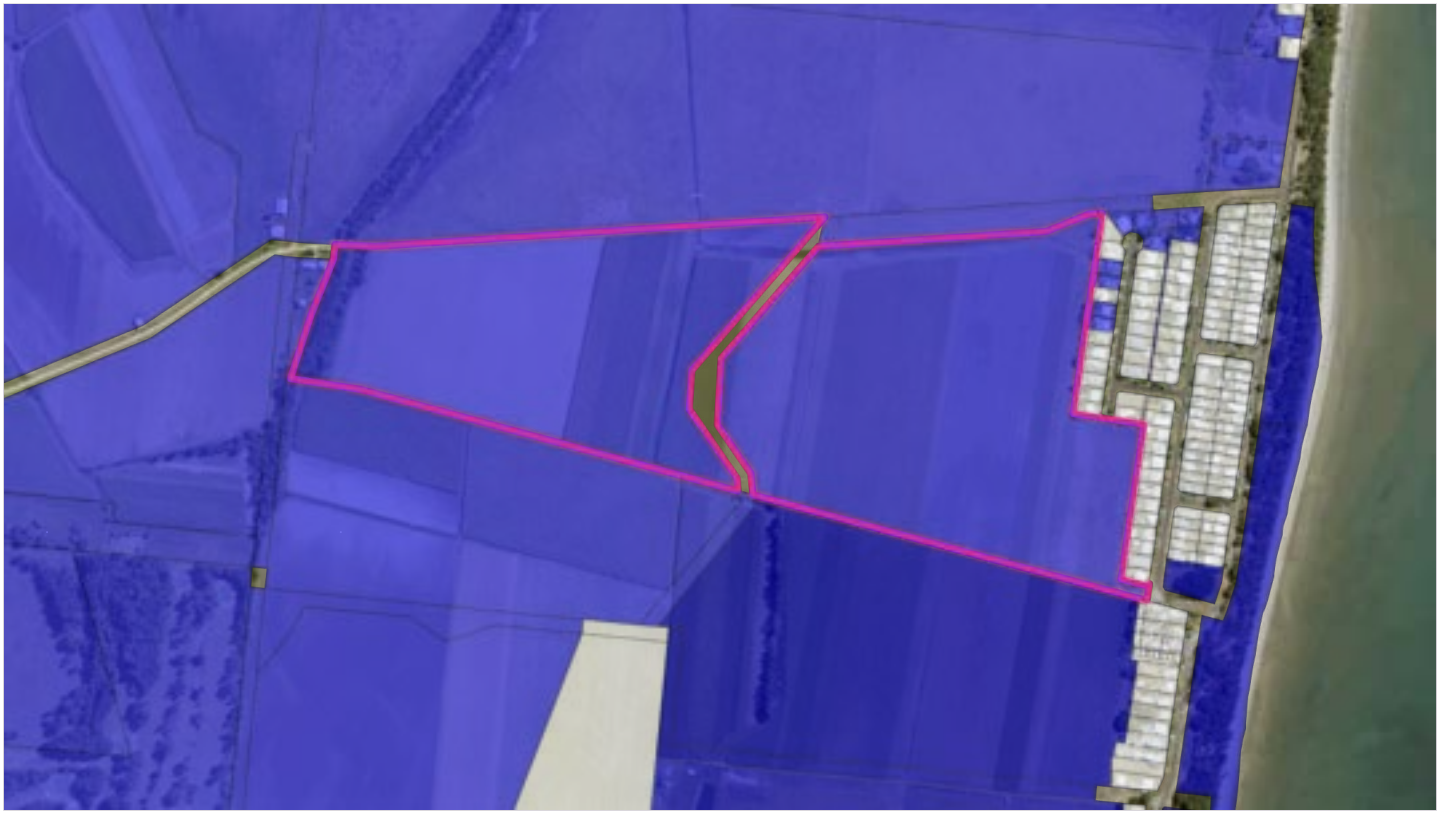
Affected by the 1 % AEP Event for the year 2100

Storm Tide Inundation Property Report

2 Andrews Street NEWELL

Produced: 14/07/2021

JBPacific summary Information



Storm Tide Inundation Property Report

2 Andrews Street NEWELL

Produced: 14/07/2021

Storm Tide Range Detailed

Selected Property

StormTide Levels Detailed

Below 0.33000 | 2.16968 | 2.32640 | 2.47331 | 2.76642 | 2.91969 | 3.18777 and above

The Level for Construction – for Storm Tide Inundation Considerations

The lot is affected by storm tide inundation for the Year 2100, 1 in 100 (1% AEP) event. The 1% AEP for the year 2100 (including a Sea Level Rise of 0.8m) is at **2.809** (without freeboard).The Freeboard for the Study is 0.5m and is applied to determine Finished Floor Level for habitable rooms.

Finished Floor Level

The total required Finished Floor Level for habitable rooms is 3.309 m AHD

Note - Finished floor level is usually 225mm above the pad level.

Disclaimer

The maps show the estimated areas of inundation for the 1% AEP projected for the year 2100 having regard to a sea level rise of 0.8m. The report nominates required minimum habitable room minimum finished floor level. This minimum level is determined from the best data to date held by Council. This storm tide inundation flood level, for a particular property, may change if more detailed information becomes available or changes are made in the method of calculating flood levels. Storm tide Inundation analysis is based on comprehensive computer modelling calibrated against actual storm tides. The website provides locations, street names, aerial photography and available storm tide inundation data for the Shire areas that were included in the JB Pacific Storm Tide Inundation Methodologies Study. This property reporting tool is not a substitute for a detailed Coastal Engineering analysis of a property and should not be relied upon where the reliance may result in loss, damage or injury. While every effort is taken to ensure the information in this report is accurate and up to date, Douglas Shire Council makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs that may occur as a result of the report being inaccurate or incomplete in any way or for any reason.

Brisbane

Level 9, 269 Wickham St
PO Box 612 Fortitude Valley
QLD 4006, Australia

T +61 7 3251 8555
F +61 7 3251 8599
blightanner@blightanner.com.au
www.blightanner.com.au

Sydney

Level 32, 101 Miller Street
North Sydney
NSW 2060 Australia

T +61 2 8019 7221

blightanner@blightanner.com.au
www.blightanner.com.au

BLIGH
TANNER

Reasons for Decision

1. Sections 60, 62 and 63 of the *Planning Act 2016*:

    a. to ensure the development satisfies the benchmarks of the 2018 Douglas Shire Planning Scheme Version 1.0; and

    b. to ensure compliance with the *Planning Act 2016*.

2. Findings on material questions of fact:

    a. the development application was properly lodged to the Douglas Shire Council on 3 June 2021 under section 51 of the *Planning Act 2016* and Part 1 of the *Development Assessment Rules*;

    b. the development application contained information from the applicant which Council reviewed together with Council's own assessment against the 2017 State Planning Policy and the 2018 Douglas Shire Planning Scheme Version 1.0 in making its assessment manager decision.

3. Evidence or other material on which findings were based:

    a. the development triggered assessable development under the Assessment Table associated with the Low density residential zone code;

    b. Council undertook an assessment in accordance with the provisions of sections 60, 62 and 63 of the *Planning Act 2016*; and

    c. the applicant's reasons have been considered and the following findings are made:

        i. The proposed development is consistent with the established pattern of development in Coulthard Close despite not complying with the minimum lot size for unsewered land in the Low density residential zone;

        ii. Conditions of approval require Lots 8-13 to be reconfigured into 4 allotments to increase the utility of the residential allotments and to meet the assessment benchmarks of the Low density residential zone with respect to minimum road frontage requirements and the ROL code with respect to number of allotments accessed via a cul-de-sac.

4. Compliance with Assessment Benchmarks.

    The development complies with the benchmarks as per the summary provided in Reasons For Decision in particular Item 3c.

Extracts from the Planning Act 2016 - Making Representations During Applicant's Appeal Period

Division 2 Changing development approvals

Subdivision 1 Changes during appeal period

74 What this subdivision is about

(1) This subdivision is about changing a development approval before the applicant's appeal period for the approval ends.

(2) This subdivision also applies to an approval of a change application, other than a change application for a minor change to a development approval.

(3) For subsection (2), sections 75 and 76 apply—

(a) as if a reference in section 75 to a development approval were a reference to an approval of a change application; and

(b) as if a reference in the sections to the assessment manager were a reference to the responsible entity; and

(c) as if a reference in section 76 to a development application were a reference to a change application; and

(d) as if the reference in section 76(3)(b) to section 63(2) and (3) were a reference to section 83(4); and

(e) with any other necessary changes.

75 Making change representations

(1) The applicant may make representations (***change representations***) to the assessment manager, during the applicant's appeal period for the development approval, about changing—

(a) a matter in the development approval, other than—

(i) a matter stated because of a referral agency's response; or

(ii) a development condition imposed under a direction made by the Minister under chapter 3, part 6, division 2; or

(b) if the development approval is a deemed approval—the standard conditions taken to be included in the deemed approval under section 64(8)(c).

(2) If the applicant needs more time to make the change representations, the applicant may, during the applicant's appeal period for the approval, suspend the appeal period by a notice given to the assessment manager.

(3) Only 1 notice may be given.

(4) If a notice is given, the appeal period is suspended—

(a) if the change representations are not made within a period of 20 business days after the notice is given to the assessment manager—until the end of that period; or

(b) if the change representations are made within 20 business days after the notice is given to the assessment manager, until—

(i) the applicant withdraws the notice, by giving another notice to the assessment manager; or

(ii) the applicant receives notice that the assessment manager does not agree with the change representations; or

(iii) the end of 20 business days after the change representations are made, or a longer period agreed in writing between the applicant and the assessment manager.

(5) However, if the assessment manager gives the applicant a negotiated decision notice, the appeal period starts again on the day after the negotiated decision notice is given.

76 Deciding change representations

(1) The assessment manager must assess the change representations against and having regard to the matters that

must be considered when assessing a development application, to the extent those matters are relevant.

(2) The assessment manager must, within 5 business days after deciding the change representations, give a decision notice to—

(a) the applicant; and

(b) if the assessment manager agrees with any of the change representations—

(i) each principal submitter; and

(ii) each referral agency; and

(iii) if the assessment manager is not a local government and the development is in a local government area—the relevant local government; and

(iv) if the assessment manager is a chosen assessment manager—the prescribed assessment manager; and

(v) another person prescribed by regulation.

(3) A decision notice (a ***negotiated decision notice***) that states the assessment manager agrees with a change representation must—

(a) state the nature of the change agreed to; and

(b) comply with section 63(2) and (3).

(4) A negotiated decision notice replaces the decision notice for the development application.

(5) Only 1 negotiated decision notice may be given.

(6) If a negotiated decision notice is given to an applicant, a local government may give a replacement infrastructure charges notice to the applicant.

Extracts from the Planning Act 2016 – Appeal Rights

Chapter 6 Dispute resolution

Part 1 Appeal rights

229 Appeals to tribunal or P&E Court

(1) Schedule 1 states—

(a) matters that may be appealed to—

(i) either a tribunal or the P&E Court; or

(ii) only a tribunal; or

(iii) only the P&E Court; and

(b) the person—

(i) who may appeal a matter (the ***appellant***); and

(ii) who is a respondent in an appeal of the matter; and

(iii) who is a co-respondent in an appeal of the matter; and

(iv) who may elect to be a co-respondent in an appeal of the matter.

(2) An appellant may start an appeal within the appeal period.

(3) The ***appeal period*** is—

(a) for an appeal by a building advisory agency—10 business days after a decision notice for the decision is given to the agency; or

(b) for an appeal against a deemed refusal—at any time after the deemed refusal happens; or

(c) for an appeal against a decision of the Minister, under chapter 7, part 4, to register premises or to renew the registration of premises—20 business days after a notice is published under section 269(3)(a) or (4); or

(d) for an appeal against an infrastructure charges notice—20 business days after the infrastructure charges notice is given to the person; or

(e) for an appeal about a deemed approval of a development application for which a decision notice has not been given—30 business days after the applicant gives the deemed approval notice to the assessment manager; or

(f) for an appeal relating to the *Plumbing and Drainage Act 2018*—

(i) for an appeal against an enforcement notice given because of a belief mentioned in the *Plumbing and Drainage Act 2018*, section 143(2)(a)(i), (b) or (c)—5 business days after the day the notice is given; or

(ii) for an appeal against a decision of a local government or an inspector to give an action notice under the *Plumbing and Drainage Act 2018*—5 business days after the notice is given; or

(iii) for an appeal against a failure to make a decision about an application or other matter under the *Plumbing and Drainage Act 2018*—at anytime after the period within which the application or matter was required to be decided ends; or

(iv) otherwise—20 business days after the day the notice is given; or

(g) for any other appeal—20 business days after a notice of the decision for the matter, including an enforcement notice, is given to the person.

Note—

See the P&E Court Act for the court's power to extend the appeal period.

(4) Each respondent and co-respondent for an appeal may be heard in the appeal.

(5) If an appeal is only about a referral agency's response, the assessment manager may apply to the tribunal or P&E Court to withdraw from the appeal.

(6) To remove any doubt, it is declared that an appeal against an infrastructure charges notice must not be about—

(a) the adopted charge itself; or

(b) for a decision about an offset or refund—

(i) the establishment cost of trunk infrastructure identified in a LGIP; or

(ii) the cost of infrastructure decided using the method included in the local government's charges resolution.

230 Notice of appeal

(1) An appellant starts an appeal by lodging, with the registrar of the tribunal or P&E Court, a notice of appeal that—

(a) is in the approved form; and

(b) succinctly states the grounds of the appeal.

(2) The notice of appeal must be accompanied by the required fee.

(3) The appellant or, for an appeal to a tribunal, the registrar, must, within the service period, give a copy of the notice of appeal to—

(a) the respondent for the appeal; and

(b) each co-respondent for the appeal; and

(c) for an appeal about a development application under schedule 1, section 1, table 1, item 1—each principal submitter for the application whose submission has not been withdrawn; and

(d) for an appeal about a change application under schedule 1, section 1, table 1, item 2—each principal submitter for the application whose submission has not been withdrawn; and

(e) each person who may elect to be a co-respondent for the appeal other than an eligible submitter for a development application or change application the subject of the appeal; and

(f) for an appeal to the P&E Court—the chief executive; and

(g) for an appeal to a tribunal under another Act—any other person who the registrar considers appropriate.

(4) The ***service period*** is—

(a) if a submitter or advice agency started the appeal in the P&E Court—2 business days after the appeal is started; or

(b) otherwise—10 business days after the appeal is started.

(5) A notice of appeal given to a person who may elect to be a co-respondent must state the effect of subsection (6).

(6) A person elects to be a co-respondent to an appeal by filing a notice of election in the approved form—

(a) if a copy of the notice of appeal is given to the person—within 10 business days after the copy is given to the person; or

(b) otherwise—within 15 business days after the notice of appeal is lodged with the registrar of the tribunal or the P&E Court.

(7) Despite any other Act or rules of court to the contrary, a copy of a notice of appeal may be given to the chief executive by emailing the copy to the chief executive at the email address stated on the department's website for this purpose.

231 Non-appealable decisions and matters

(1) Subject to this chapter, section 316(2), schedule 1 and the P&E Court Act, unless the Supreme Court decides a decision or other matter under this Act is affected by jurisdictional error, the decision or matter is non-appealable.

(2) The *Judicial Review Act 1991*, part 5 applies to the decision or matter to the extent it is affected by jurisdictional error.

(3) A person who, but for subsection (1) could have made an application under the *Judicial Review Act 1991* in relation to the decision or matter, may apply under part 4 of that Act for a statement of reasons in relation to the decision or matter.

(4) In this section—

decision includes—

(a) conduct engaged in for the purpose of making a decision; and

(b) other conduct that relates to the making of a decision; and

(c) the making of a decision or the failure to make a decision; and

(d) a purported decision; and

(e) a deemed refusal.

non-appealable, for a decision or matter, means the decision or matter—

(a) is final and conclusive; and

(b) may not be challenged, appealed against, reviewed, quashed, set aside or called into question in any other way under the *Judicial Review Act 1991* or otherwise, whether by the Supreme Court, another court, any tribunal or another entity; and

(c) is not subject to any declaratory, injunctive or other order of the Supreme Court, another court, any tribunal or another entity on any ground.

232 Rules of the P&E Court

(1) A person who is appealing to the P&E Court must comply with the rules of the court that apply to the appeal.

(2) However, the P&E Court may hear and decide an appeal even if the person has not complied with rules of the P&E Court.

DOUGLAS SHIRE COUNCIL

2018 Douglas Shire Planning Scheme version 1.0 Applications

ADOPTED INFRASTRUCTURE CHARGES NOTICE

F.R. Coulthard & C.B. Coulthard.		**0**	**0**
DEVELOPERS NAME		ESTATE NAME	STAGE
2 Andrews Street	**Newell Beach**	**Lot 51 on SP168537**	**11485**
STREET No. & NAME	**SUBURB**	LOT & RP No.s	PARCEL No.
ROL (1 lot into 22 lots)		**2021-4160**	**4**
DEVELOPMENT TYPE		COUNCIL FILE NO.	VALIDITY PERIOD (year)
1108522	**1**	**Payment before commencement of use for MCU; and Prior to signing and sealing of survey form for ROL**	
DSC Reference Doc . No.	VERSION No.		

Infrastructure Charges as resolved by Council at the Ordinary Meeting held on 23 February 2021 (Came into effect on 1 March 2021)

		Charge per Use	$ Rate	Floor area/No.	Amount	Amount Paid	Receipt Code & GL Code
Proposed Demand							
Residential	Dwelling_house	$_per_3_or_more_bedroom_dwelling	15,959.97	22	$351,119.34		
	Total Demand				**$351,119.34**		
Credit							
Existing land use							
3 or more bedroom dwelling	1 lot	$_per_3_or_more_bedroom_dwelling	15,959.97	1	$15,959.97		
	Total Credit				**$15,959.97**		**Code 895 GL GL7500.135.825**
	Required Payment or Credit		**TOTAL**		**$335,159.37**		

Prepared by	**Rebecca Taranto**	**9 Spetember 2022**	**Amount Paid**		
Checked by	**Neil Beck**	**9-Sep-22**	**Date Paid**		
Date Payable	**ROL - Before the Local Government approves the plan of subdivision**		**Receipt No.**		
Amendments		**Date**	**Cashier**		

Note:

The Infrastructure Charges in this Notice are payable in accordance with Sections 119 and 120 of the *Planning Act 2016* *as from Council's resolution from the Ordinary Meeting held on 23 February 2021.*

Charge rates under the Policy are subject to indexing.
Any Infrastructure Agreement for trunk works must be determined and agreed to prior to issue of Development Permit for Operational Work.

Charges are payable to: Douglas Shire Council. You can make payment at any of Council's Business Offices or by mail with your cheque or money order to Douglas Shire Council, PO Box 723, Mossman QLD 4873. Cheques must be made payable to Douglas Shire Council and marked 'Not Negotiable.' Acceptance of a cheque is subject to collection of the proceeds. Post dated cheques will not be accepted

Any enquiries regarding Infrastructure Charges can be directed to the Development & Environment, Douglas Shire Council on 07 4099 9444 or by email on enquiries@douglas.qld.gov.au

DOUGLAS SHIRE COUNCIL

PO Box 723 Mossman Qld 4873
www.douglas.qld.gov.au
enquiries@douglas.qld.gov.au
ABN 71 241 237 800

Administration Office
64 - 66 Front St Mossman
P 07 4099 9444
F 07 4098 2902

27 September 2022

Enquiries: Neil Beck
Our Ref: ROL 2021_4160 (Doc ID 1110764)
Your Ref: 34678-001-01

F R Coulthard & C B Coulthard
C/- Brazier Motti Pty Ltd
PO Box 1185
CAIRNS QLD 4870

Email: cns.planning@braziermotti.com.au

Attention Mr Michael Tessaro

Dear Sir

Adopted Infrastructure Charge Notice
For Development Application Reconfiguring a Lot (1 lot into 22 lots)
At 2 Andrews Street Newell
On Land Described as Lot 51 on SP168537

Please find attached the Adopted Infrastructure Charges Notice issued in accordance with section 119 of the *Planning Act 2016.*

The amount in the Adopted Infrastructure Charges Notice has been calculated according to Council's Adopted Infrastructure Charges Resolution.

Please also find attached extracts from the Act regarding the following:

- your right to make representations to Council about the Adopted Infrastructure Charges Notice; and
- your Appeal rights with respect to the Adopted Infrastructure Charges Notice.

Please quote Council's application number: MCUC 2021_4160 in all subsequent correspondence relating to this matter.

Should you require any clarification regarding this, please contact Neil Beck on telephone 07 4099 9444.

Yours faithfully

Paul Hoye
Manager Environment & Planning

encl.

- Adopted Infrastructure Charges Notice
- Rights to Make Representations and Appeals Regarding Infrastructure Charges

Adopted Infrastructure Charges Notice

DOUGLAS SHIRE COUNCIL

2018 Douglas Shire Planning Scheme version 1.0 Applications

ADOPTED INFRASTRUCTURE CHARGES NOTICE

F.R. Coulthard & C.B. Coulthard.		0	0
DEVELOPERS NAME		ESTATE NAME	STAGE
2 Andrews Street	Newell Beach	Lot 51 on SP168537	11485
STREET No. & NAME	SUBURB	LOT & RP No.s	PARCEL No.
ROL (1 lot into 22 lots)		2021-4160	4
DEVELOPMENT TYPE		COUNCIL FILE NO.	VALIDITY PERIOD (year)
1108522	1	Payment before commencement of use for MCU; and Prior to signing and sealing of survey form for ROL	
DSC Reference Doc . No.	VERSION No.		

Infrastructure Charges as resolved by Council at the Ordinary Meeting held on 23 February 2021 (Came into effect on 1 March 2021)

		Charge per Use	$ Rate	Floor area/No.	Amount	Amount Paid	Receipt Code & GL Code
Proposed Demand							
Residential	Dwelling_house	$_per_3_or_more_bedroom_dwelling	15,959.97	22	$351,119.34		
	Total Demand				**$351,119.34**		
Credit							
Existing land use							
3 or more bedroom dwelling	1 lot	$_per_3_or_more_bedroom_dwelling	15,959.97	1	$15,959.97		
	Total Credit				**$15,959.97**		**Code 895 GL GL7500.135.825**
	Required Payment or Credit		**TOTAL**		**$335,159.37**		

Prepared by	Rebecca Taranto	9 Spetember 2022	**Amount Paid**	
Checked by	Neil Beck	9-Sep-22	**Date Paid**	
Date Payable	**ROL - Before the Local Government approves the plan of subdivision**		**Receipt No.**	
Amendments		**Date**	**Cashier**	

Note:

The Infrastructure Charges in this Notice are payable in accordance with Sections 119 and 120 of the *Planning Act 2016* *as from Council's resolution from the Ordinary Meeting held on 23 February 2021.*

Charge rates under the Policy are subject to indexing.
Any Infrastructure Agreement for trunk works must be determined and agreed to prior to issue of Development Permit for Operational Work.

Charges are payable to: Douglas Shire Council. You can make payment at any of Council's Business Offices or by mail with your cheque or money order to Douglas Shire Council, PO Box 723, Mossman QLD 4873. Cheques must be made payable to Douglas Shire Council and marked 'Not Negotiable.' Acceptance of a cheque is subject to collection of the proceeds. Post dated cheques will not be accepted

Any enquiries regarding Infrastructure Charges can be directed to the Development & Environment, Douglas Shire Council on 07 4099 9444 or by email on enquiries@douglas.qld.gov.au

Extracts from the Planning Act 2016 – Making Representations during Applicant's Appeal Period

Subdivision 5 Changing charges during relevant appeal period

124 Application of this subdivision

This subdivision applies to the recipient of an infrastructure charges notice given by a local government.

125 Representations about infrastructure charges notice

(1) During the appeal period for the infrastructure charges notice, the recipient may make representations to the local government about the infrastructure charges notice.

(2) The local government must consider the representations.

(3) If the local government—

(a) agrees with a representation; and

(b) decides to change the infrastructure charges notice;

the local government must, within 10 business days after making the decision, give a new infrastructure charges notice (a ***negotiated notice***) to the recipient.

(4) The local government may give only 1 negotiated notice.

(5) A negotiated notice—

(a) must be in the same form as the infrastructure charges notice; and

(b) must state the nature of the changes; and

(c) replaces the infrastructure charges notice.

(6) If the local government does not agree with any of the representations, the local government must, within 10 business days after making the decision, give a decision notice about the decision to the recipient.

(7) The appeal period for the infrastructure charges notice starts again when the local government gives the decision notice to the recipient.

126 Suspending relevant appeal period

(1) If the recipient needs more time to make representations, the recipient may give a notice suspending the relevant appeal period to the local government.

(2) The recipient may give only 1 notice.

(3) If the representations are not made within 20 business days after the notice is given, the balance of the relevant appeal period restarts.

(4) If representations are made within the 20 business days and the recipient gives the local government a notice withdrawing the notice of suspension, the balance of the relevant appeal period restarts the day after the local government receives the notice of withdrawal.

Division 3 Development approval conditions about trunk infrastructure

Subdivision 1 Conditions for necessary trunk infrastructure

127 Application and operation of subdivision

(1) This subdivision applies if—

(a) trunk infrastructure—

(i) has not been provided; or

(ii) has been provided but is not adequate; and

(b) the trunk infrastructure is or will be located on—

(i) premises (the ***subject premises***) that are the subject of a development application, whether or not the infrastructure is necessary to service the subject premises; or

(ii) other premises, but is necessary to service the subject premises.

Extracts from the Planning Act 2016 –Appeal Rights

Chapter 6 Dispute resolution

Part 1 Appeal rights

229 Appeals to tribunal or P&E Court

(1) Schedule 1 states—

(a) matters that may be appealed to—

(i) either a tribunal or the P&E Court; or

(ii) only a tribunal; or

(iii) only the P&E Court; and

(b) the person—

(i) who may appeal a matter (the ***appellant***); and

(ii) who is a respondent in an appeal of the matter; and

(iii) who is a co-respondent in an appeal of the matter; and

(iv) who may elect to be a co-respondent in an appeal of the matter.

(2) An appellant may start an appeal within the appeal period.

(3) The ***appeal period*** is—

(a) for an appeal by a building advisory agency—10 business days after a decision notice for the decision is given to the agency; or

(b) for an appeal against a deemed refusal—at any time after the deemed refusal happens; or

(c) for an appeal against a decision of the Minister, under chapter 7, part 4, to register premises or to renew the registration of premises—20 business days after a notice is published under section 269(3)(a) or (4); or

(d) for an appeal against an infrastructure charges notice—20 business days after the infrastructure charges notice is given to the person; or

(e) for an appeal about a deemed approval of a development application for which a decision notice has not been given—30 business days after the applicant gives the deemed approval notice to the assessment manager; or

(f) for an appeal relating to the *Plumbing and Drainage Act 2018*—

(i) for an appeal against an enforcement notice given because of a belief mentioned in the *Plumbing and Drainage Act 2018*, section 143(2)(a)(i), (b) or (c)—5 business days after the day the notice is given; or

(ii) for an appeal against a decision of a local government or an inspector to give an action notice under the *Plumbing and Drainage Act 2018*—5 business days after the notice is given; or

(iii) for an appeal against a failure to make a decision about an application or other matter under the *Plumbing and Drainage Act 2018*—at anytime after the period within which the application or matter was required to be decided ends; or

(iv) otherwise—20 business days after the day the notice is given; or

(g) for any other appeal—20 business days after a notice of the decision for the matter, including an enforcement notice, is given to the person.

Note—

See the P&E Court Act for the court's power to extend the appeal period.

(4) Each respondent and co-respondent for an appeal may be heard in the appeal.

(5) If an appeal is only about a referral agency's response, the assessment manager may apply to the tribunal or P&E Court to withdraw from the appeal.

(6) To remove any doubt, it is declared that an appeal against an infrastructure charges notice must not be about—

(a) the adopted charge itself; or

(b) for a decision about an offset or refund—

(i) the establishment cost of trunk infrastructure identified in a LGIP; or

(ii) the cost of infrastructure decided using the method included in the local government's charges resolution.

230 Notice of appeal

(1) An appellant starts an appeal by lodging, with the registrar of the tribunal or P&E Court, a notice of appeal that—

(a) is in the approved form; and

(b) succinctly states the grounds of the appeal.

(2) The notice of appeal must be accompanied by the required fee.

(3) The appellant or, for an appeal to a tribunal, the registrar, must, within the service period, give a copy of the notice of appeal to—

(a) the respondent for the appeal; and

(b) each co-respondent for the appeal; and

(c) for an appeal about a development application under schedule 1, section 1, table 1, item 1—each principal submitter for the application whose submission has not been withdrawn; and

(d) for an appeal about a change application under schedule 1, section 1, table 1, item 2—each principal submitter for the application whose submission has not been withdrawn; and

(e) each person who may elect to be a co-respondent for the appeal other than an eligible submitter for a development application or change application the subject of the appeal; and

(f) for an appeal to the P&E Court—the chief executive; and

(g) for an appeal to a tribunal under another Act—any other person who the registrar considers appropriate.

(4) The ***service period*** is—

(a) if a submitter or advice agency started the appeal in the P&E Court—2 business days after the appeal is started; or

(b) otherwise—10 business days after the appeal is started.

(5) A notice of appeal given to a person who may elect to be a co-respondent must state the effect of subsection (6).

(6) A person elects to be a co-respondent to an appeal by filing a notice of election in the approved form—

(a) if a copy of the notice of appeal is given to the person—within 10 business days after the copy is given to the person; or

(b) otherwise—within 15 business days after the notice of appeal is lodged with the registrar of the tribunal or the P&E Court.

(7) Despite any other Act or rules of court to the contrary, a copy of a notice of appeal may be given to the chief executive by emailing the copy to the chief executive at the email address stated on the department's website for this purpose.

231 Non-appealable decisions and matters

(1) Subject to this chapter, section 316(2), schedule 1 and the P&E Court Act, unless the Supreme Court decides a decision or other matter under this Act is affected by jurisdictional error, the decision or matter is non-appealable.

(2) The *Judicial Review Act 1991*, part 5 applies to the decision or matter to the extent it is affected by jurisdictional error.

(3) A person who, but for subsection (1) could have made an application under the *Judicial Review Act 1991* in relation to the decision or matter, may apply under part 4 of that Act for a statement of reasons in relation to the decision or matter.

(4) In this section—

decision includes—

(a) conduct engaged in for the purpose of making a decision; and

(b) other conduct that relates to the making of a decision; and

(c) the making of a decision or the failure to make a decision; and

(d) a purported decision; and

(e) a deemed refusal.

non-appealable, for a decision or matter, means the decision or matter—

(a) is final and conclusive; and

(b) may not be challenged, appealed against, reviewed, quashed, set aside or called into question in any other way under the *Judicial Review Act 1991* or otherwise, whether by the Supreme Court, another court, any tribunal or another entity; and

(c) is not subject to any declaratory, injunctive or other order of the Supreme Court, another court, any tribunal or another entity on any ground.

232 Rules of the P&E Court

(1) A person who is appealing to the P&E Court must comply with the rules of the court that apply to the appeal.

(2) However, the P&E Court may hear and decide an appeal even if the person has not complied with rules of the P&E Court.