

Our Ref: Q144007
Our Contact: Mr Dominic Hammersley
Council Ref: 8/13/1481(3693529)

9 December 2014

Chief Executive Officer
Douglas Shire Council
PO Box 723
MOSSMAN QLD 4873

BY EMAIL: neil.beck@douglas.qld.gov.au

ATTENTION: NEIL BECK

Dear Neil

Cardno (QLD) Pty Ltd
ABN 57 051 074 992

280 Sheridan Street
Cairns North QLD 4870
Australia

P.O. Box 1619
Cairns QLD 4879
Australia

Phone: +61 7 4051 0288
Fax: +61 7 4051 0133
www.cardno.com

**RESPONSE TO FURTHER ISSUES - RECONFIGURING A LOT
(1 INTO 72 LOTS AND PARK) VIXIES ROAD, WONGA BEACH**

Property Description: Lot 32 on SP126925

Property Location: Vixies Road, Wonga Beach

Council Reference: 8/13/1481

1.0 INTRODUCTION

On behalf of the applicant, Vittorio Scomazzon, we hereby provide a further and final response to Council's 'Outstanding Issues' described in correspondence dated 10 September 2012 in relation to the abovementioned development application.

Our response is set out as follows:

- **Section 2.0** identifies our technical response to Council's outstanding issues in relation to (a) drainage; (b) sewerage; (c) water; and (d) planning.
- **Section 3.0** identifies that the proposed refinements to the development concept are in response to Council's outstanding issues and represent only a minor change for the purposes of the Integrated Development Assessment System (IDAS) under the *Sustainable Planning Act 2009* (SPA).
- **Section 4.0** concludes that this written notice provides Douglas Shire Council with the necessary information in which to make a decision, conditionally approving a Development Permit for Reconfiguring a Lot on the subject land.

2.0 OUTSTANDING ISSUES RESPONSE

The proposed refinements to the development application in response to Council identified 'Outstanding Issues' include the following:

(a) Drainage

- > Refer to the Flood Study (**Attachment A**) prepared by Cardno and dated 20 November 2014 prepared in response to Council's requirements described at items 1. a. to 1. i. in Council correspondence dated 10 September 2012.

> In response to 'Drainage' Outstanding Information request item 1:

- a., Section 2 and Section 3.1 of the Flood Study identifies contributing catchments and their characteristics.
- b., the extent of the 100 year Annual Recurrence Interval (ARI) in a pre and post development context is provided at Figures B and C respectively in **Attachment A – Flood Study**. The Flood Study incorporates relevant boundary condition assumptions (refer section 4.4 in the Flood Study). A contour plan of the site is also provided at Appendix D of the Flood Study. It is not considered necessary, or relevant to provide a plan that identifies flood extent in the context of contours. Moreover, it is considered that such a plan would be illegible. Notwithstanding, the necessary information is provided to Council in two (2) separate plans.
- c., Council's request for detailed survey of swales is not relevant to the extent that the Flood Study appropriately identifies the 100 year ARI flood inundation risk present on each site. Further, there is limited to no discernible 'top of bank' of which to survey. However, survey in relation to existing stormwater culvert infrastructure has been undertaken as detailed at Appendix A of the Flood Study.
- d., the development concept has been subject to minor refinement in consideration of the current flood extent (refer **Attachment B – Revised Reconfiguring a Lot Plans**); however, the flood inundation risk is not such that the development concept required substantial change.
- e., a 100 year ARI flood event (only) has been shown on plans for the site. The modelled event describes that sufficient area is available for dwellings and supporting infrastructure in a post development context. Therefore, the information necessary for Council to make its decision in relation to a Reconfiguring a Lot development application is contained within the Flood Study. Relevant other flood events may be provided in conjunction with a future Operational Works development application to the extent required by relevant planning scheme provisions and FNQROC guidelines.
- f., drainage channels are identified on proposed lots 6, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 41, 43, 45, 47, 49, 51, 53, 55, 58, 60, 62, 64, 66 and 68 (refer Appendix D of the Flood Study). These proposed drainage channels discharge to the existing natural waterways at the rear of the proposed lots. Existing natural waterways are not considered appropriate to be identified as drainage easements as vegetation within these waterways is to be retained. Vegetation retention is not considered conducive to the maintenance of these areas as drainage easements *per se*. However, drainage channels described at 'f.' (above) are to be formalised as proposed drainage easements in the Operational Works development application stage. Formalisation of drainage easements as part of the Operational Works stage is appropriate as this more detailed design will identify the exacting width of drainage easements in order to ensure that drainage easements are of an appropriate width necessary to convey stormwater at specified locations¹. It is considered that access for the maintenance of drainage channels is to be provided within drainage easements i.e. drainage easements will be provided with an additional area sufficient for maintenance vehicles to access parallel to drainage channels.
- g., the Flood Study concludes that the proposed development results in no worsening on downstream properties. Consequently, no flood detention areas are required.
- h., no works are proposed at the drainage outlets from the proposed development.
- i., the results in Table 4-5 of the Flood Study demonstrate that the proposed development does not cause significant impact on flooding in the two major drainage swales downstream of the subject site. Consequently, the existing discharge points at the downstream end of the development are considered lawful points of discharge.

¹ It is anticipated that there will be minor variation between the width of drainage channels due to slope considerations.

(b) Sewerage

- > We refer to our response regarding on-site sewerage treatment systems provided in correspondence dated 1 May 2014. Additionally, we confirm that the Flood Study validates this earlier advice in that flood does not prejudice the operation or function of on-site sewerage treatment systems.

(c) Water

- > Cairns Regional Council wrote in their email of 7 June 2012 (**Attachment C**) that the then Council would include in future infrastructure planning a water reticulation main extended from the existing water main in the Mossman Daintree Road at Wonga Beach intersection to the intersection of South Arm Drive and Vixies Road as per the included concept plan; a distance of approximately 2,430 metres. Cairns Regional Council further advised that the developer would be expected to contribute on a pro-rata basis to the cost of this water main.
- > Council further advised that at that stage it wasn't known whether the reticulated supply would be capable of providing a full service or trickle feed supply and that it would be dealt with at a later time.
- > Also, Council advised that it expected that there would be an infrastructure agreement which would be executed prior to issue of a Works Acceptance Certificate for a first stage.
- > Since that time, in December 2013, Cairns Regional Council has issued a decision notice for a proposed development to the south of Vixies Road being Lot 51 on SP155078. That Decision Notice required preparation of a Water Supply Master Plan and an Infrastructure Plan to be prepared prior to issue of a Development Permit for Operational Works. It also suggested a need for additional reservoir storage if necessary and construction of a 225 diameter water main along the Mossman-Daintree Road and Vixies Road. These requirements are significantly more than initially suggested by Council officers for this development application.
- > As part of the conditions for the above development to the south, an Infrastructure agreement is to be prepared by the applicant. As part of this Agreement it is suggested by Council that some of the external works may be eligible to be claimed against applicable water headworks contributions.
- > As we understand, the Cairns Regional Council had not undertaken any investigation into extension of the water infrastructure for increasing development of the Wonga Beach area during its administration. To this date it is unknown what the capacity of the existing water network is; however it is suggested that it should form part of an overall water network assessment by Council in promoting growth and development in the area.
- > As advised by Douglas Shire Council in correspondence dated 13 August 2014 it is made clear that as on site effluent treatment will be required it is inferred that a reticulated water supply must be supplied. As such it is suggested that Council consider the upgrading of the water supply to the Wonga Beach area as a Council responsibility with headworks to be charged to respective developments rather than have ad hoc investigations undertaken by various applicants/developers. This would assist in responsible and orderly development of the area. Infrastructure Agreements would necessarily be an acceptable condition of an ROL approval and this is suggested as the most suitable outcome for this application.

(d) Planning

- > In response to 'Planning' Outstanding Information request item D:
 - o 1., Refer **Attachment A – Revised Reconfiguring a Lot Plans** that includes the dimensions and size of each proposed lot.
 - o 2., We identify a park lot between Lot 57 and 58. The use of this lot was previously unidentified.

At the outset we confirm that the proposed refinements do not result in the application not being a properly made application, nor do the proposed refinements involve prohibited development of any description. Furthermore, the proposed refinements do not, as demonstrated in **Section 3.0**, require the IDAS process to be restarted and are in fact made in response to Council's identified 'Outstanding Issues'.

Please find enclosed the following documents which comprise the change to the development application:

- > **Attachment A** - Flood Study.
- > **Attachment B** - Revised Reconfiguring a Lot Plans.
- > **Attachment C** - Cairns Regional Council Correspondence
- > **Attachment D** - IDAS Form 1 (amended).

3.0 SECTION 350 OF THE SPA – 'MINOR CHANGE'

In that the proposed refinements are in response to Council identified 'Outstanding Issues', not under the cover of a formal Information Request we affirm that the proposed refinements to the application are considered to be a 'minor change' pursuant to section 350 of the SPA.

Section 350 of the SPA defines a minor change in the context of a change to a development application as follows:

- (1) *A minor change in relation to an application, is any of the following changes to the application-*
- (a) *a change that merely corrects a mistake about the name or address of the applicant or owner, or the address or other property details of the land to which the application applies, if the assessment manager is satisfied the change would not adversely affect the ability of a person to assess the changed application;*
 - (b) *a change of applicant, if the assessment manager is satisfied the change would not adversely affect the ability of a person to assess the changed application;*
 - (c) *a change that merely corrects a spelling or grammatical error;*
 - (d) *a change that-*
 - (i) *does not result in a substantially different development; and*
 - (ii) *does not require the application to be referred to any additional referral agencies; and*
 - (iii) *does not change the type of development approval sought; and*
 - (iv) *does not require impact assessment for any part of the changed application, if the original application did not involve impact assessment; and*
 - (v) *if the application is taken under the Environmental Protection Act, section 115 to also be an application for an environmental authority – does not change the type of application made under the Environmental Protection Act.*

A response to each element of the minor change 'test', as elucidated above, is set out in **Table 3-1** below.

Table 3-1: Applicant's Response to Section 350 Minor Change Test

Section 350 Minor Change Test Element	Applicant's Response / Compliance
(a) <i>a change that merely corrects a mistake about the name or address of the applicant or owner or the address or other property details of the land to which the application applies, if the assessment manager is satisfied the change would not adversely affect the ability of a person to assess the changed application</i>	The proposed refinements do not seek to change an error or mistake in the application material.

Section 350 Minor Change Test Element	Applicant's Response / Compliance
<i>(b) a change of applicant, if the assessment manager is satisfied the change would not adversely affect the ability of a person to assess the changed application</i>	The proposed refinements do involve a change of Applicant in that Cardno is now the Applicant's representative (refer Attachment D – IDAS Form 1 (amended)). The change of Applicant details does not adversely affect the ability of Council to assess the changed application. Further, amended IDAS Form 1 is provided at the request of Council.
<i>(c) a change that merely corrects a spelling or grammatical error</i>	The proposed refinements are not a change that merely corrects a spelling or grammatical error.
<i>(d) a change that</i>	-
<i>(i) does not result in a substantially different development; and</i>	The proposed refinements will not result in a substantially different development from that proposed. Please refer to Section 3.1 below.
<i>(ii) does not require the application to be referred to any additional referral agencies; and</i>	The refinements do not require the application to be referred to any additional referral agencies.
<i>(iii) does not change the type of development approval sought; and</i>	The refinements do not change the type of development approval sought as a Development Permit for Reconfiguring a Lot continues to be sought by the Applicant.
<i>(iv) does not require impact assessment for any part of the changed application, if the original application did not involve impact assessment; and</i>	The refinements do not require impact assessment for any part of the changed application.
<i>(v) if the application is taken under the Environmental Protection Act, section 115 to also be an application for an environmental authority – does not change the type of application made under the Environmental Protection Act.</i>	The refinements do not affect any aspect of the Environmental Protection Act and no environmental authority is being applied for by the Applicant.

3.1 Substantially Different Development

'Statutory Guideline 06/09 Substantially different development when changing applications and approvals' provides guidance to applicants and assessment managers in determining whether a proposed change to a development application or approval makes the development 'substantially different' from that which was originally applied for or approved.

To assist in determining what constitutes a substantially different development the Guideline provides a list of changes that may result in a substantially different development. The list is non-exhaustive and includes proposed changes that:²

- > *involve a new use with different or additional impacts;*
- > *result in the application applying to a new parcel of land;*
- > *dramatically change the built form in terms of scale, bulk and appearance;*
- > *change the ability of the proposal to operate as intended;*
- > *remove a component that is integral to the operation of the development;*
- > *significantly impact on traffic flow and the transport network, such as increasing traffic to the site;*
- > *introduce new impacts or increase the severity of known impacts;*
- > *remove an incentive or offset component that would have balanced a negative impact of the development;*

² Queensland Government 2009, 'Statutory Guideline 06/09' pages 3-4.

> *impact on infrastructure provision, location or demand.*

An assessment of the refinements against each of these list items is provided in **Table 3-2** (overleaf). It is noted, however, that a determination on whether a change constitutes a substantially different development is to depend on the individual circumstances of the development and, while the above mentioned list provides guidance, a failure to meet the Guideline list does not automatically disqualify a change from being considered to be not substantially different from the original proposal or approval.

Table 3-2: Applicant's Response to Substantially Different Development

Substantially Different Development List Item	Applicant's Response / Compliance
> <i>involve a new use with different or additional impacts;</i>	The proposed refinements do not involve a new use with different or additional impacts. Rather, the proposed refinements seek to resolve 'outstanding issues' as identified by Council.
> <i>result in the application applying to a new parcel of land;</i>	The refinements do not result in the application applying to a new parcel of land.
> <i>dramatically change the built form in terms of scale, bulk and appearance;</i>	The refinements will not dramatically change the built form in terms of scale, bulk and appearance in that the subdivision remains a 72 lot subdivision and Park. The proposed cul-de-sac is reduced in length, terminating at proposed lots 38 and 40. Lot 39 is now proposed to be accessed from the existing road to the north. Future built form (dwellings) is necessarily controlled by Council and other regulation(s) and are not the subject of this Reconfiguring a Lot development application.
> <i>change the ability of the proposal to operate as intended;</i>	The refinements will not affect the ability of the proposal to operate as a residential subdivision. Conversely, the proposed refinements improve the development's responsiveness to the potential risks (albeit low) associated with flood.
> <i>remove a component that is integral to the operation of the development;</i>	The refinements will not remove a component that is integral to the operation of the development as a residential subdivision.
> <i>significantly impact on traffic flow and the transport network, such as increasing traffic to the site;</i>	The refinements will not impact on traffic flow and the transport network, as the change will not have a bearing on the amount of traffic generated in the construction and operation of the proposed development.
> <i>introduce new impacts or increase the severity of known impacts;</i>	The refinements will not introduce new impacts or increase the severity of known impacts on the site.
> <i>remove an incentive or offset component that would have balanced a negative impact of the development;</i>	The refinements will not remove an incentive or offset application component that would have balanced a negative impact of the development.
> <i>impact on infrastructure provision, location or demand.</i>	The refinements will not impact on infrastructure provision, location or demand as no increase in the scale or intensity of the development with regard to the number of lots is proposed.

In achieving compliance with the statutory guideline as set out in **Tables 3-1** and **3-2** above, the proposed refinements are considered to be a minor change and not an 'other change' per the SPA.

3.2 Effect on IDAS – ‘Minor Change’

As the proposed refinements are considered to constitute a minor change, the IDAS process does not stop as a result of notification of the change and the application may proceed to decision without reverting to an earlier stage of the IDAS process.

With regard to section 352 of the SPA, we note that it is the responsibility of the assessment manager to advise referral agencies about ‘changed’ applications.

In view of the above, we anticipate that, post Council’s favourable determination of this change request and the finalisation of referral agency notification requirements, the development application will continue in the Decision Stage under the SPA and accordingly, proceed to decision.

4.0 CONCLUSION

The Applicant has responded to Council identified ‘Outstanding Issues’ in its correspondence dated 10 September 2012. As the identified ‘Outstanding Issues’ fall outside of the information and referral stage of the IDAS process we affirm that the refinements to the development application should be considered a minor change.

The minor change proposed involves, amongst other things, the following:

- > Re-configuration of the proposed lots to incorporate drainage channels.
- > Refinements to lot boundaries to improve responsiveness to overland flows associated with a 100 year ARI.
- > A shortening of the road leading to the cul-de-sac resulting in the termination of the cul-de-sac at proposed lots 38 and 40.
- > A change of access to proposed lot 39 (now accessed off the road to the north).
- > A change of Applicant details per amended IDAS Form 1.

The proposed changes are ‘minor’ in their nature, and do not require the IDAS process to be restarted.

We note that the changed development application will continue to remain in the Decision Making Period.

If you have any questions or require additional information please contact me on (07) 4051 0288 or via email at dominic.hammersley@cardno.com.au.

Yours faithfully,
CARDNO HRP



DOMINIC HAMMERSLEY
BUSINESS DEVELOPMENT MANAGER AND SENIOR PLANNER

Enc. Attachment A – Flood Study
 Attachment B – Revised Reconfiguring a Lot Plans
 Attachment C – Cairns Regional Council Correspondence
 Attachment C – IDAS Form 1 (amended)

Cc: Vittorio Scomazzon

Attachment A – Flood Study

Prepared by Cardno

Wonga Beach

Flood Study

Q144007

Prepared for
Vic Scomazzon

20 November 2014



Contact Information

Cardno (Qld) Pty Ltd
Trading as Cardno (Qld) Pty Ltd
ABN 57 051 074 992

Level 11 Green Square North Tower
515 St Paul's Terrace
Fortitude Valley Qld 4006
Locked Bag 4006 Fortitude Valley
Queensland 4006 Australia

Telephone: (07) 3369 9822
Facsimile: (07) 3369 9722
International: +61 7 33699822

cardno@cardno.com.au
www.cardno.com.au

Document Information

Prepared for	Vic Scomazzon
Project Name	Flood Study
File Reference	Wonga Flood Study.dotm
Job Reference	Q144007
Date	20 November 2014

Document Control

Version	Date	Description of Revision	Prepared By	Prepared (Signature)	Reviewed By	Reviewed (Signature)
1	20 November 2014		M. Della		N. Guterres	

Version	Reason for Issue	Approved for Release By	Approved (Signature)	Approved Release Date

© Cardno 2013. Copyright in the whole and every part of this document belongs to Cardno and may not be used, sold, transferred, copied or reproduced in whole or in part in any manner or form or in or on any media to any person other than by agreement with Cardno.

This document is produced by Cardno solely for the benefit and use by the client in accordance with the terms of the engagement. Cardno does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by any third party on the content of this document.

Table of Contents

1	Introduction	1
2	Catchment Characteristics	2
3	Catchment Hydrology	3
3.1	Catchment Boundaries	3
3.2	Rational Method	3
3.3	Time of Concentration	3
3.4	Coefficient of Runoff	4
3.5	Peak Discharge	4
3.6	WBNM Model	4
4	Hydraulic Analysis	6
4.1	Topographic Information	6
4.2	Culverts	6
4.3	Floodplain Roughness	6
4.4	Boundary Conditions	6
4.5	Catchment Inflows	7
4.6	Model Scenarios	7
4.7	Existing Conditions	7
4.8	Developed Conditions	8
4.9	Sensitivity Analysis	10
5	Response to Council's Letter	11
6	Conclusion	13

Appendices

Appendix A	Survey Data
Appendix B	Flood Model Results – Existing Conditions
Appendix C	Flood Model Results – Developed Conditions
Appendix D	Cardno Drawings

Tables

Table 3-1	Time of Concentration	3
Table 3-2	Rational Method Peak Discharges	4
Table 4-1	Manning's n Values	6
Table 4-2	100 Year ARI Peak Flood Levels – Existing Conditions	8
Table 4-3	100 Year ARI Peak Flood Levels – Developed Conditions	9
Table 4-4	100 Year ARI (Storm Surge) Flood Levels	9
Table 4-5	Peak Flood Level in Major Drainage Swales	10

Figures

Figure 1 Topographic Map & Drainage Features

Figure 2 Hydrologic Modelling

1 Introduction

The subject site is located on the northern side of Vixies Road, Wonga Beach, and is described as Lot 32 SP126925. The location of the site is shown in the Locality Plan below.



Locality Plan (Source: Google Earth)

It is proposed to reconfigure the lot into 72 lots and park. On 10 September 2012, Cairns Regional Council issued a letter detailing the outstanding issues for the development application. Item 1 stated (in part):

Undertake a local drainage study of the site and adjacent swales to determine the drainage impacts on upstream and downstream properties and the mitigation measures required to minimise such impacts.

This report presents the results of the local drainage study of the subject site.

A full response to the items listed in Council's letter related to the stormwater drainage is contained in Section 5.

2 Catchment Characteristics

The area around Wonga Beach includes the following drainage characteristics (refer Figure 1):

- steep mountainous area to the west of Mossman – Daintree Road, which generally drains in an eastwards direction;
- relatively flat topography east of Mossman – Daintree Road, which discharges in three directions as described below:
 - i. area to the north-west of Wonga which discharges in a northerly direction to the lower reaches of the Daintree River system;
 - ii. a series of drainage paths which discharge in a northerly direction through or adjacent to the subject site, and outlet to the coast approximately one kilometre north-east of the subject site; and
 - iii. minor drainage paths (situated to the east of the drainage paths described in (ii) above) which discharge to the coast adjacent to the township of Wonga.

To model this complex arrangement of overlapping drainage systems, the following methodology was adopted for the hydrologic modelling of the catchments:

- the catchment defined by the steep mountainous area was subdivided into a number of subcatchments, and standard hydrologic modelling was used to calculate the runoff from the various subcatchments; and
- the runoff from the relatively flat areas was modelled using direct rainfall on grid modelling in the hydraulic model.

3 Catchment Hydrology

3.1 Catchment Boundaries

As discussed in Section 2, the runoff from the steep mountainous area to the west of Mossman – Daintree Road was modelled using standard hydrologic modelling.

The total catchment discharging from the steep area is approximately 278 hectares. This area was divided into 23 subcatchments, as shown in Figure 2.

The hydrologic modelling of the runoff from the remainder of the Study Area (i.e. to the east of the base of the mountain range), totalling approximately 1,007 hectares, was carried out in the hydraulic model.

3.2 Rational Method

To assist in the setup of the hydrologic model of the steep catchments, an estimate of the 100 year Average Recurrence Interval (ARI) was calculated for the three largest subcatchments using the Rational Method.

The catchment areas selected were:

- combined catchment comprising subareas F, G, H and I
- subcatchment O; and
- subcatchment S.

The results are described below.

3.3 Time of Concentration

The times of concentration of the catchments were calculated using the Bransby-Williams' Equation, as described in the *Queensland Urban Drainage Manual* (QUDM, 2007), Section 4.06.11.

The formula for the Bransby-Williams' Equation is:

$$t_c = \frac{58L}{A^{0.1} S^{0.2}}$$

where:

- t_c = time of concentration of the catchment (min)
- L = length of flowpath from the outlet to the catchment divide (km)
- A = catchment area (ha)
- S = equal area slope (%)

Using this equation, the times of concentration of the catchments were calculated, as shown in Table 3-1.

Table 3-1 Time of Concentration

Parameter	Catchment F – I	Catchment O	Catchment S
Stream Length (m)	1100	1315	1165
Catchment Area (ha)	35.0	36.8	42.9
Equal Area Slope (%)	10.2	6.5	6.0
Time of Concentration (min)	28	37	33

3.4 Coefficient of Runoff

The coefficient of runoff for the catchment was determined in accordance with the *Queensland Urban Drainage Manual* (2007).

The 1 hour, 10 year ARI Average Recurrence Interval (ARI) rainfall intensity at Wonga Beach is approximately 87.8 mm/h. The catchment is generally undeveloped, thus a 10 year coefficient of runoff of 0.70 was adopted.

Based on a frequency factor of 1.2, the coefficient of runoff for the 100 year ARI event is therefore 0.84.

3.5 Peak Discharge

Using the times of concentration shown in Table 3-1, the Rational Method was used to calculate the 100 year ARI peak discharge from the catchments.

Design rainfall intensities for the study area were obtained using the Intensity-Frequency-Duration application on the Bureau of Meteorology website. The 100 year ARI rainfall intensity for each relevant duration is shown in Table 3-2.

Table 3-2 Rational Method Peak Discharges

Parameter	Catchment F – I	Catchment O	Catchment S
100 Year ARI Rainfall Intensity (mm/h)	187	168	175
Peak Discharge (m ³ /s)	15.3	14.5	17.5

3.6 WBNM Model

A WBNM hydrologic model of the steep catchments was established. The design rainfall data for the catchment was determined in accordance with *Australian Rainfall & Runoff*. The information used is as follows (Source: Intensity-Frequency-Duration application on the Bureau of Meteorology website):

2 Year ARI, 1 hour Intensity	64.9 mm/h
2 Year ARI, 12 hour Intensity	15.5 mm/h
2 Year ARI, 72 hour Intensity	4.96 mm/h
50 Year ARI, 1 hour Intensity	113 mm/h
50 Year ARI, 12 hour Intensity	32.1 mm/h
50 Year ARI, 72 hour Intensity	9.88 mm/h
Regional Skewness	0.18
Geographical Factor F2	3.86
Geographical Factor F50	17.12

The design rainfall losses adopted for the analysis were:

- Initial Loss = 0 mm
- Continuing Loss = 2.5 mm/h

A Lag Parameter of 1.40 was used in the WBNM model. Studies carried out using WBNM have found that the average value of the Lag Parameter across a wide range of catchments is between 1.30 and 1.80 (ref. *WBNM User Manual*). Thus, the adopted value of 1.40 is within the accepted bounds.

The WBNM model was run for a range of storm durations, from 10 minutes to 72 hours, with the 1 and 1.5 hour events producing the peak discharges from the catchment. The peak discharges calculated by the WBNM model for the 100 year ARI event were:

- Catchment F – I 17.2 m³/s
- Catchment O 14.8 m³/s
- Catchment S 16.7 m³/s

These results shows that the peak flow calculated by the WBNM model agrees well with those from the Rational Method (refer Table 3-2). Thus, it was considered that the WBNM model could be used to represent the discharge hydrographs from the steep part of the catchment.

4 Hydraulic Analysis

4.1 Topographic Information

The flood flow within the study area was modelled using the 2-dimensional unsteady flow software TUFLOW (Build 2013-12-AC-iSP-w32).

A digital terrain model (DTM) of the study area was set up using the following information:

- Lidar data of the catchment (obtained from Department of Natural Resources and Mines); and
- field survey of the five sets of culverts under Vixies Road (refer Appendix A).

Based on this DTM, a TUFLOW model with a 5 metre grid was established.

4.2 Culverts

The culverts under Vixies Road (which flow in a northerly direction) were input into the TUFLOW model as 1-dimensional flow links. Inlet and outlet loss coefficients of 0.5 and 1.0 respectively were used for the culverts. The TUFLOW model checks the operation of culverts under both inlet and outlet flow control, for Class 1 (free water surface) and Class 2 (submerged entrance) conditions.

4.3 Floodplain Roughness

The Manning's *n* roughness values applicable to the study area were determined from site inspections and aerial photography. The values used are summarised in Table 4-1.

Table 4-1 Manning's *n* Values

Location	Manning's <i>n</i>
Road Reserves	0.035
Drainage Swales	0.035
Grassed / Vegetated Areas	0.05
Grassed / Vegetated Areas – Sensitivity Analysis	0.15

4.4 Boundary Conditions

The downstream boundary of the TUFLOW model was located at the following locations:

- along the coast line; and
- outlet into the lower Daintree River system.

Three boundary conditions were analysed:

- Highest Astronomical Tide (HAT) level = 1.78 mAHD (Source: *Queensland Tide Tables, 2014*);
- 100 year ARI Storm Surge = 2.80 mAHD (Source: *Cairns Region Storm Tide Inundation Study, Final Report and Mapping, January 2013*), which includes the impacts of Climate Change (10% increase in cyclone intensity) and a 0.8 metre rise in sea level; and
- creek outlets sanded up to a level of 1.5 mAHD.

Anecdotal evidence indicates that the mouth of the creek downstream of the site (i.e. Helens Creek) does not sand up. However, an analysis was carried out with the outlet sanded up as described above, in accordance with Council's request.

4.5 Catchment Inflows

Subcatchment hydrographs from the steep catchment areas calculated by the WBNM model were input into the TUFLOW model.

Direct rainfall on grid modelling was applied to the flatter part of the catchment, as discussed in Section 2. The rainfall losses adopted were the same as those used for the hydrologic model, i.e. initial loss of 0 mm and a continuing loss rate of 2.5 mm/h.

A range of storm durations were analysed, from the 1 hour to the 24 hour event.

It is noted that the analysis assumed no infiltration of catchment runoff into the existing sandy soil in the study area. This is considered to be a conservative assumption, and will result in overestimates of runoff from the catchment.

4.6 Model Scenarios

The TUFLOW model was used to assess the following two scenarios:

- existing conditions; and
- existing conditions plus the proposed internal road and drainage easements within the subject site.

The layout of the proposed development is shown in Appendix D.

The results are discussed in the following Sections. The Storm Surge boundary condition produced the highest flood levels throughout the study area, for both the existing and developed conditions. Thus, peak flood levels and depths are shown for this event. For the other two boundary conditions (HAT and outlets sanded up), only the peak flood levels are shown.

4.7 Existing Conditions

The 100 year ARI peak flood levels in the vicinity of the subject site under existing conditions are shown in the following Figures in Appendix B:

- Figure B1 – Flood levels in Southern Half of site, assuming HAT tailwater level
- Figure B2 – Flood levels in Northern Half of site, assuming HAT tailwater level
- Figure B3 – Flood levels in Southern Half of site, assuming Storm Surge tailwater level
- Figure B4 – Flood levels in Northern Half of site, assuming Storm Surge tailwater level
- Figure B5 – Flood depths in Southern Half of site, assuming Storm Surge tailwater level
- Figure B6 – Flood depths in Northern Half of site, assuming Storm Surge tailwater level
- Figure B7 – Flood depths in Northern Half of site, assuming outlets sanded up
- Figure B8 – Flood depths in Northern Half of site, assuming outlets sanded up

The peak flood levels in the major drainage swales which flow through the subject site, for each boundary condition event, are shown in Table 4-2.

Table 4-2 100 Year ARI Peak Flood Levels – Existing Conditions

Location	Peak Flood Level HAT Boundary (mAHD)	Peak Flood Level Storm Surge (mAHD)	Peak Flood Level Outlets Sanded Up (mAHD)
Western Swale			
Upstream End of Site	3.20	3.35	3.20
Middle of Site	3.16	3.31	3.16
Downstream End of Site	3.02	3.14	3.01
Eastern Swale			
Upstream End of Site	3.32	3.38	3.32
Middle of Site	3.05	3.19	3.03
Downstream End of Site	2.89	3.07	2.86

These results show that the adopted boundary condition only has a minor impact on the peak flood levels in the major drainage swales through the site. The peak flood levels with the outlets sanded up are generally equal to, or slightly lower than, the peak flood levels with the HAT boundary condition.

The Figures in Appendix B also indicate areas of flood inundation within the subject site adjacent to the major drainage swales. These areas are due to runoff collecting in minor drainage paths and depressions within the site. However, the depth of ponding in these areas is relatively minor – generally less than 300 mm (refer Figures B5 and B6).

4.8 Developed Conditions

The only changes made to the existing case model to represent the developed site were the inclusion of the proposed grassed drains to convey stormwater runoff to the major drainage swales. It is proposed to have grassed drains at every second allotment boundary to drain the road swales to the major drainage swales, as shown in the Drawings in Appendix D.

The 100 year ARI peak flood levels in the vicinity of the subject site under developed conditions (i.e. including the proposed internal road and drainage easements) are shown in the following Figures in Appendix C:

- Figure C1 – Flood levels in Southern Half of site, assuming HAT tailwater level
- Figure C2– Flood levels in Northern Half of site, assuming HAT tailwater level
- Figure C3 – Flood levels in Southern Half of site, assuming Storm Surge tailwater level
- Figure C4 – Flood levels in Northern Half of site, assuming Storm Surge tailwater level
- Figure C5 – Flood depths in Southern Half of site, assuming Storm Surge tailwater level
- Figure C6 – Flood depths in Northern Half of site, assuming Storm Surge tailwater level

The peak flood levels for the boundary condition with the outlets sanded up have not been included, as they are practically identical to those with the HAT boundary condition (as discussed in Section 4.7).

The peak flood levels in the major drainage swales which flow through the subject site, for each boundary condition event, are shown in Table 4-3.

Table 4-3 100 Year ARI Peak Flood Levels – Developed Conditions

Location	Peak Flood Level HAT Boundary (mAHD)	Peak Flood Level Storm Surge (mAHD)	Peak Flood Level Outlets Sanded Up (mAHD)
Western Swale			
Upstream End of Site	3.22	3.36	3.22
Middle of Site	3.18	3.32	3.18
Downstream End of Site	3.03	3.14	3.02
Eastern Swale			
Upstream End of Site	3.33	3.38	3.33
Middle of Site	3.04	3.17	3.03
Downstream End of Site	2.88	3.06	2.87

Comparing the results in Table 4-3 (for developed conditions) with those in Table 4-2 (for existing conditions), it can be seen that the proposed development will not have a significant impact on the peak flood levels in the major drainage swales through the site.

The peak flood levels upstream and downstream of the site for the 100 year ARI event (assuming Storm Surge boundary conditions), for both the existing and developed conditions, are shown in Table 4-4.

Table 4-4 100 Year ARI (Storm Surge) Flood Levels

Location	Peak Flood Level Existing Conditions (mAHD)	Peak Flood Level Developed Conditions (mAHD)	Change in Peak Flood Level (m)
Upstream of Vixies Road (refer Figure A1 for culvert locations)			
Culvert 1	3.18	3.17	-0.01
Culvert 2	3.89	3.80	-0.09
Culvert 3	4.01	3.98	-0.03
Culvert 4	3.42	3.42	0
Culvert 5	3.36	3.36	0
Downstream of Site			
Western Swale	3.14	3.14	0
Eastern Swale	3.07	3.06	-0.01

These results demonstrate that the proposed development has no significant impact on flood levels upstream or downstream of the site. This result was anticipated, given that no works are proposed in the major drainage swale as part of the development.

The Figures in Appendix C also indicate that the areas of flood inundation within the subject site adjacent to the major drainage swales are generally confined to the table drain adjacent to the internal road, or the drainage easements through the properties. Minor areas of inundation are shown in isolated depressions within some individual allotments, however these depressed areas would be eliminated through normal earthworks regrading carried out within each allotment during residential construction.

The results therefore show that there is sufficient space available within each allotment for a house pad and an effluent disposal area.

4.9 Sensitivity Analysis

A sensitivity analysis was carried out assuming a higher roughness in the major drainage swales through and adjacent to the site. The results showed that the peak flood levels in the site increased by approximately 100 to 250 mm.

The vegetation in the drainage swales is unlikely to be maintained in the long term. Therefore, it is recommended that the flood levels calculated using the higher roughness values be used to determine development levels in the site.

The peak flood levels with the higher Manning's n are shown in the following Figures:

- Figure C7 – Flood levels in Southern Half of site, assuming Storm Surge tailwater level and higher roughness
- Figure C8 – Flood levels in Northern Half of site, assuming Storm Surge tailwater level and higher roughness

The peak flood levels in the major drainage swales applicable to each lot are shown in Table 4-5. The location of each lot is shown in the Cardno Drawings in Appendix D.

Table 4-5 Peak Flood Level in Major Drainage Swales

Lot Number	100 Year ARI Flood Level (mAHD)
1 to 19	3.45
20 to 27	3.40
28 to 29	3.35
30 to 32	3.30
33 to 38	3.25
39 to 42	3.15
43 to 50	3.20
51 to 54	3.25
55 to 57	3.30
58 to 59	3.35
60 to 65	3.40
66 to 69	3.45

It is noted that slightly higher peak flood levels will occur at the front of each allotment due to the local runoff from the internal road and table drains.

5 Response to Council's Letter

As discussed in Section 1, Cairns Regional Council issued a letter on 10 September 2012 detailing the outstanding issues for the development application. Item 1 related to the drainage of the subject site. Responses to each of the issues raised by Council are presented below.

1. *Undertake a local drainage study of the site and adjacent swales to determine the drainage impacts on upstream and downstream properties and the mitigation measures required to minimise such impacts. In particular, the study must address the following:*

- (a) The contributing catchment boundaries.*

The overall catchment boundary in the vicinity of Wonga Beach is shown in Figure 1. The catchments in the mountainous area are well defined, and discharge generally in an easterly direction to Mossman – Daintree Road (refer Figure 2). The catchment boundaries in the lower area (generally east of Mossman – Daintree Road) are not well defined to the relatively flat topography. Consequently, during large rainfall events, runoff is expected to overflow from one drainage path to another. For this reason, direct rainfall on grid modelling was adopted in this area. This allows the runoff from all areas to discharge to the correct outlet point.

- (b) The extent of the 100 year ARI flood event in relation to the site both pre- and post-development. The flood extent is to be shown on a contoured plan of the site enabling comparison of flood levels and site levels. Boundary condition assumptions in the flood modelling are to be fully documented and justification for the adopted parameters is to be provided. That is, boundary conditions must include individual assessments of the operating conditions when the ocean outlets are sanded up; a high tide scenario, and an appropriate storm tide level for the tidal event coincident with the 1 in 100 year ARI flood event.*

The extent of the 100 year ARI flood event for pre- and post-development conditions is shown in Appendix B and Appendix C respectively. As discussed in Section 4.4, three boundary conditions were analysed:

- ocean outlet sanded up to a level of 1.5 mAHd;
- a high tide scenario using Highest Astronomical Tide (HAT) level of 1.78 mAHd; and
- a 100 year ARI storm tide level (including Climate Change and sea level rise) of 2.80 mAHd.

- (c) The top of bank from the swales is to be identified and is to be accompanied by detailed survey and contours showing the delineation of bank and batter lines. The setback from the top of bank to the building envelopes is to be shown. This is to form part of the constraints mapping for the site.*

Survey of the site was obtained from Lidar data provided by the Department of Natural Resources and Mines. The top of bank of the swales is evident from the flood mapping provided in Appendix B and Appendix C. In addition, the extent of the existing vegetation along the swales is shown in the Drawings in Appendix D. The results in Appendix C demonstrate that all lots have adequate space to include appropriate setback distances to future building envelopes from the top of bank of the drainage swales. Drawings showing existing contours and the revised lot layout are also contained in Appendix D.

- (d) The pre-development flood extent must be mapped to identify the area potentially available for development outside the flood limits. The lot layout should be superimposed on the flood plan and a revised layout prepared reflecting the constraints (if any) from flooding.*

The pre-development flood extent is mapped in the Figures contained in Appendix B. No changes are proposed to the existing major drainage swales. The lot layout is superimposed on the flood extents for the post-development layout presented in Appendix C.

- (e) *Primary and secondary flow paths for the 2, 5, 10 and 100 year ARI flood events are to be shown on plans of the site. Any flow paths between the swales are to be identified and accommodated in the lot layout. The proposed drainage corridors between the road reserve and the swales are to be included on the plans.*

The flow paths through the developed site for the 100 year ARI event are demonstrated in the Figures contained in Appendix C. In summary, table drains are proposed along each side of the internal road running north-south through the site. These table drains collect the runoff from the road, and directs it to the drainage paths located along the sides of every second lot boundary. These grassed drains also collect the runoff from the adjacent lots. The drains then discharge to the major drainage swales located along the rear of the allotments. All drainage paths are shown on the Drawings contained in Appendix D.

- (f) *Identify any requirement for drainage easements. The report must identify how access can be provided to the easements in the event of the requirement for maintenance and/or cleaning of blockages. Such maintenance must enable for machinery access and manoeuvrability and for removal of debris via truck. A head land type access is required to be provided along the edge of the full length of the swale for accessibility. This access must be free from buildings and fences.*

The requirement for drainage easements will be discussed in a separate report pertaining to planning matters.

- (g) *Identify the need and tenure for flood detention areas (if required) to ensure a no-worsening impact on downstream properties for the entire development.*

The results of the flood study demonstrate that the proposed development has no significant impact on downstream properties. Consequently, no flood detention areas are proposed as part of the development.

- (h) *Information on the proposed works and any impacts proposed at the drainage outlet from the proposed development.*

No works are proposed at the drainage outlets from the proposed development. The existing major drainage swales will remain in their existing condition.

- (i) *Lawful point of discharge.*

The results in Table 4-5 demonstrate that the proposed development does not cause a significant impact on flooding in the two major drainage swales downstream of the subject site. Consequently, the existing discharge points at the downstream end of the development are considered lawful points of discharge.

6 Conclusion

It is proposed to develop the subject site located at Vixies Road, Wonga Beach.

A flood study was carried out to determine the peak flood levels within the site, for both existing and developed conditions, with the following boundary conditions:

- Highest Astronomical Tide (HAT) level = 1.78 mAHD;
- 100 year ARI Storm Surge (including impacts of Climate Change and sea level rise) = 2.80 mAHD; and
- Outlets sanded up to a level of 1.50 mAHD.

The results showed that the proposed development:

- does not affect flood levels in the major drainage swales upstream or downstream of the site; and
- has sufficient space available within each lot for the construction of a residential pad and associated effluent disposal area.

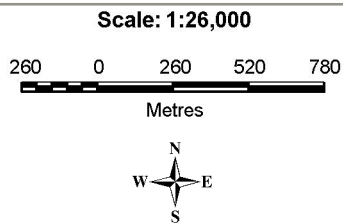
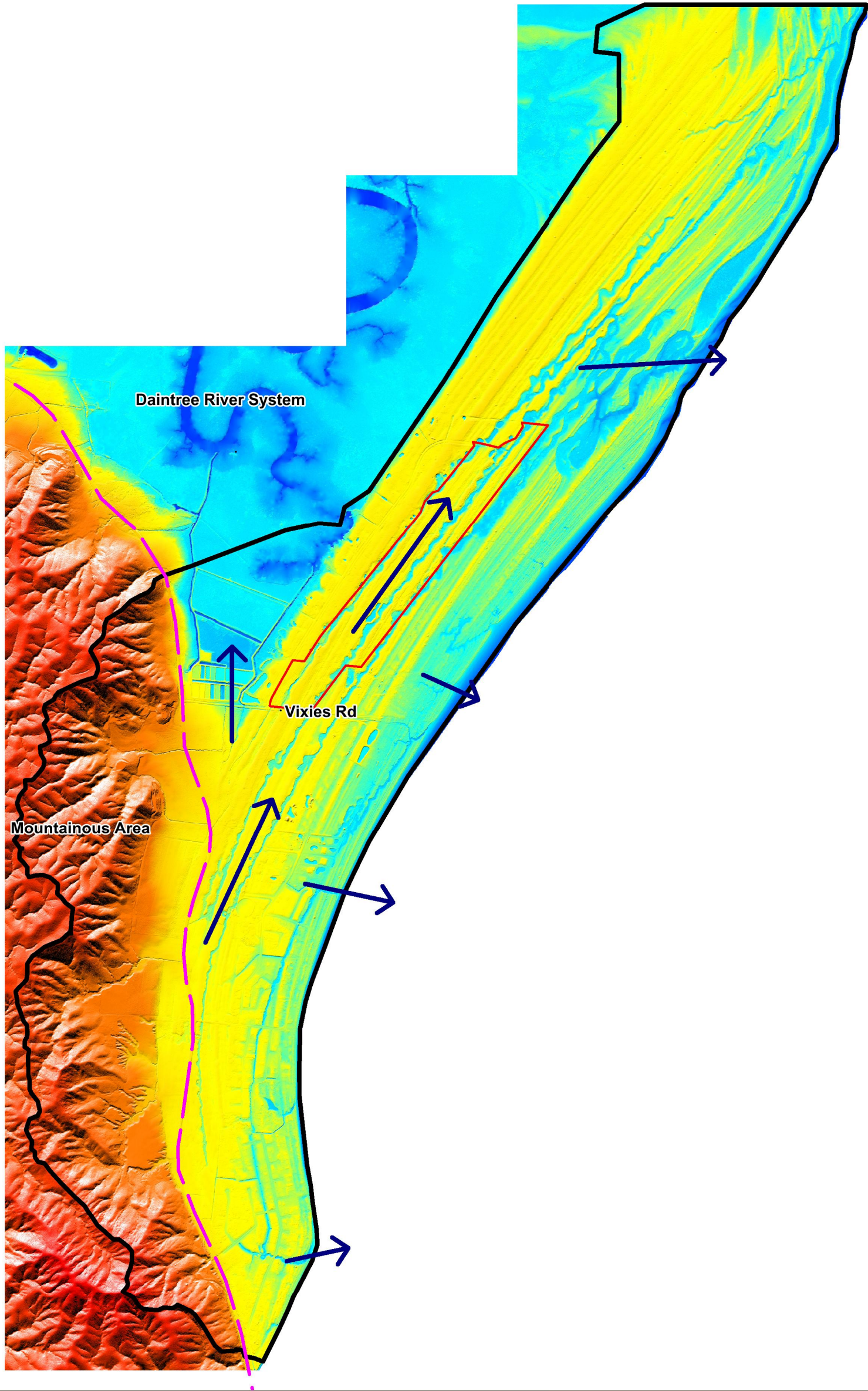
As the proposed development does not impact on the flood levels for adjacent properties, no mitigation measures were required.

A sensitivity analysis was carried out assuming a higher roughness in the major drainage swales. The calculated peak flood levels were used to determine the minimum development level applicable to each lot.

FIGURES

Figure 1 **Topographic Map &
Drainage Features**

Figure 2 **Hydrologic Modelling**



SHEET A3
Project No: Q144007
Date: 4 November 2014
Revision Number:
Designed by:
Client Name: Vic Scmazzon

LEGEND

- Mossman - Daintree Road
- Study Area
- Subject Site
- Drainage Paths

Figure 1

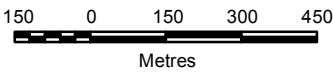
Wonga Beach

**Topographic
Map & Drainage
Features**





Scale: 1:15,000



LEGEND

- Mossman - Daintree Road
- Study Area
- Subject Site
- Subcatchment Areas
- Direct Rainfall Modelling

Figure 2

Wonga Beach

Hydrologic
Modelling

SHEET A3
Project No: Q144007
Date: 4 November 2014
Revision Number:
Designed by:
Client Name: Vic Scmazzon



Cardno (QLD) Pty Ltd | ABN 57 051 074 992
Level 11, North Tower, 515 St Pauls Terrace
Locked Bag 4006, Fortitude Valley QLD 4006
Tel: 07 3369 9822 Fax: 07 3369 9722

© 2014 Cardno (Qld) Pty Ltd All Rights Reserved. Copyright in the whole and every part of this drawing belongs to Cardno (Qld) Pty Ltd and may not be used, sold, transferred, copied or reproduced in whole or in part in any manner or form or in or on any media to any person other than by agreement with Cardno (QLD) Pty Ltd.
This document is produced by Cardno (Qld) Pty Ltd solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno (Qld) Pty Ltd does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by any third party on the content of this document.



Flood Study

APPENDIX A

SURVEY DATA



Figure A1. Culvert Locations



Figure A2. Culvert 1



Figure A3. Culvert 2



Figure A4. Culvert 3



Figure A5. Culvert 4

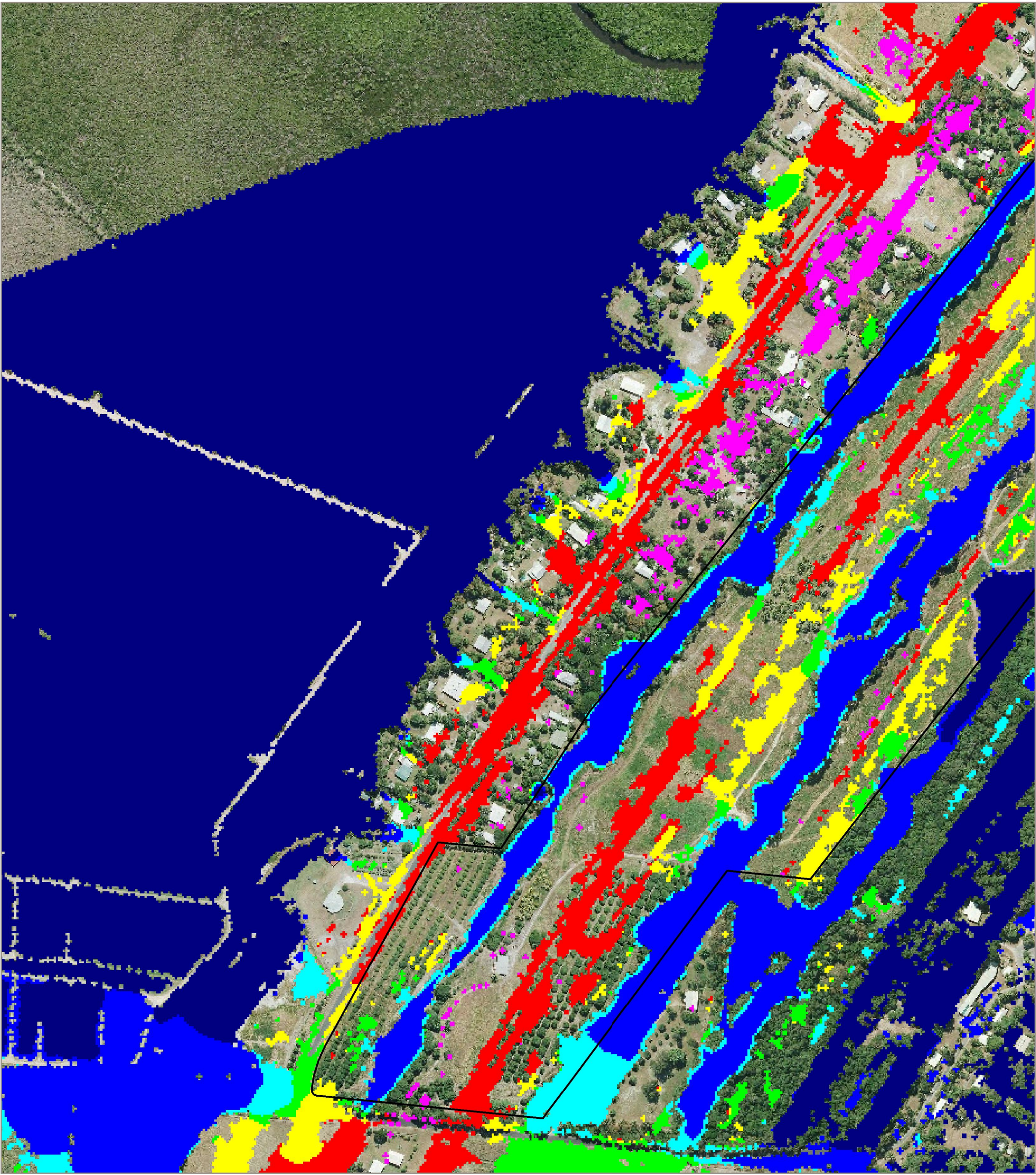


Figure A6. Culvert 5

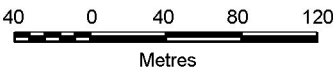
Flood Study

APPENDIX B

FLOOD MODEL RESULTS – EXISTING CONDITIONS



Scale: 1:4,000



SHEET A3
Project No: Q144007
Date: 30 September 2014
Revision Number:
Designed by:
Client Name: Scomazzon

LEGEND

100 Year ARI Flood Level (mAHD)

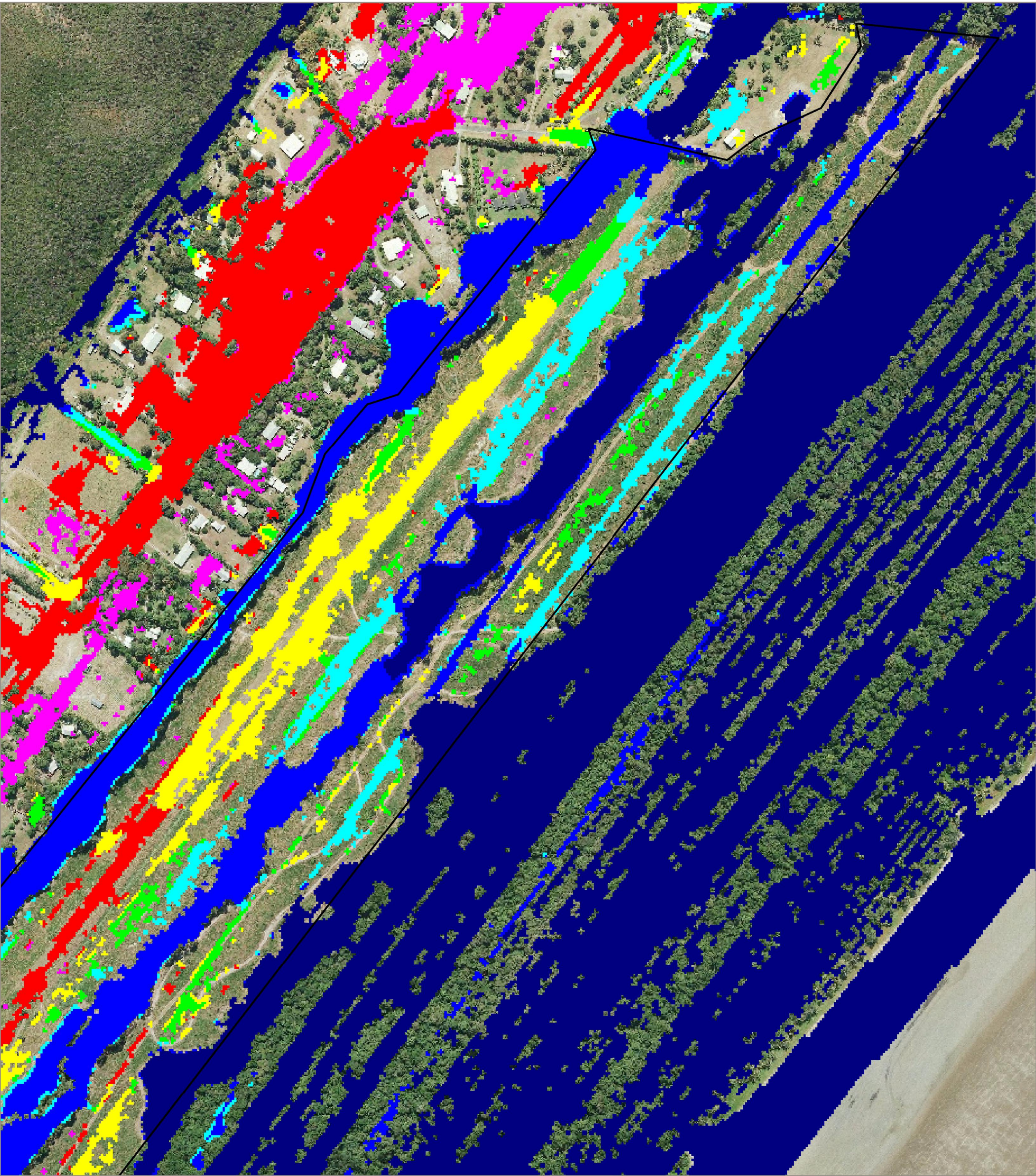
- 2.75 to 3.00
- 3.00 to 3.25
- 3.25 to 3.50
- 3.50 to 3.75
- 3.75 to 4.00
- 4.00 to 4.25
- 4.25 to 4.50

Figure B1

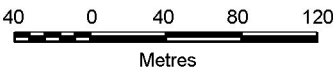
Wonga Beach

**100 Year ARI
Flood Levels
(Southern End)
with HAT
Existing Conditions**





Scale: 1:4,000



SHEET A3
Project No: Q144007
Date: 30 September 2014
Revision Number:
Designed by:
Client Name: Scmazzon

LEGEND

100 Year ARI Flood Level (mAHd)

- 2.75 to 3.00
- 3.00 to 3.25
- 3.25 to 3.50
- 3.50 to 3.75
- 3.75 to 4.00
- 4.00 to 4.25
- 4.25 to 4.50

Figure B2

Wonga Beach

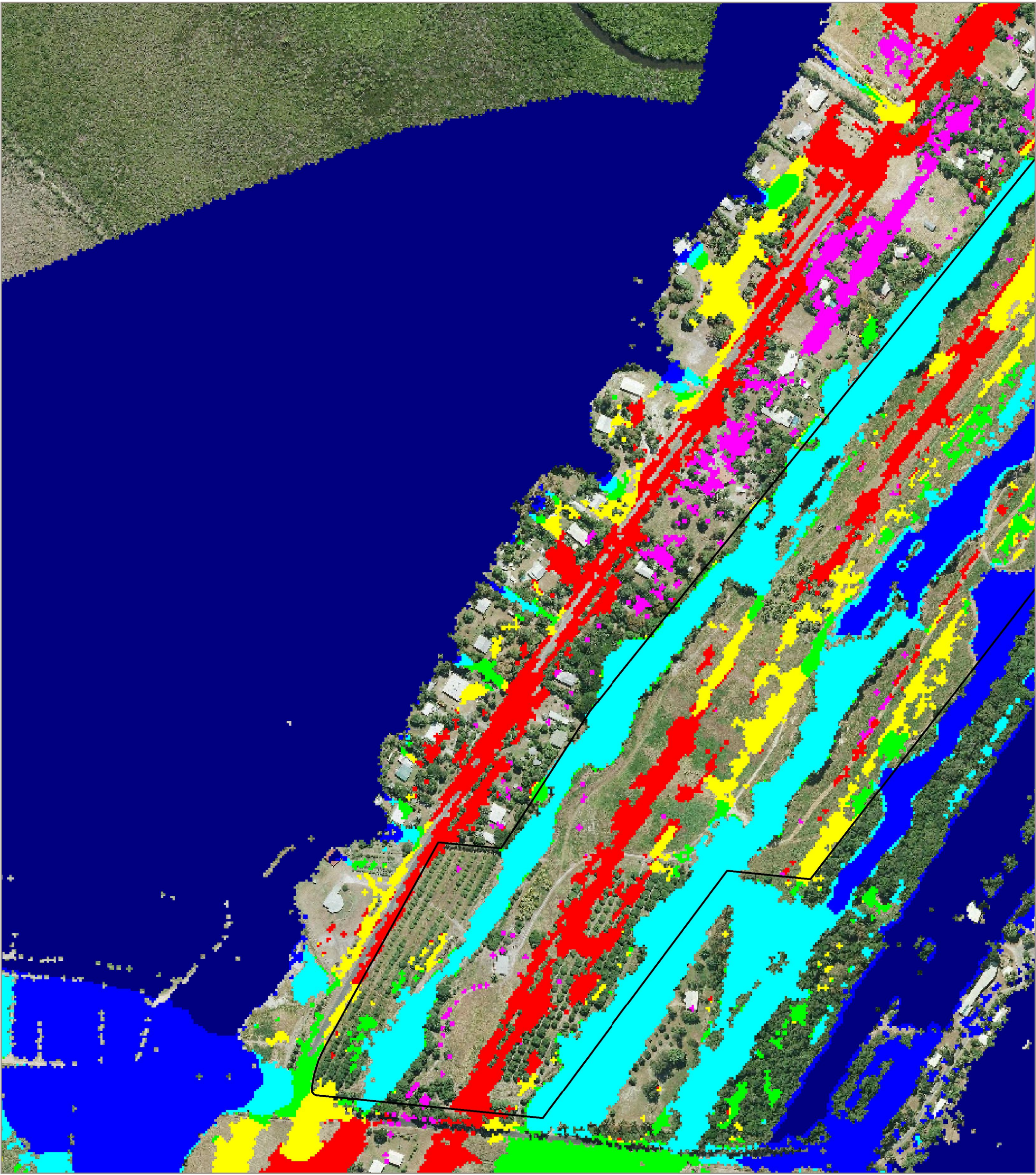
**100 Year ARI
Flood Levels
(Northern End)
with HAT
Existing Conditions**



Cardno (QLD) Pty Ltd | ABN 57 051 074 992
Level 11, North Tower, 515 St Pauls Terrace
Locked Bag 4006, Fortitude Valley QLD 4006
Tel: 07 3369 9822 Fax: 07 3369 9722

© 2014 Cardno (Old) Pty Ltd All Rights Reserved. Copyright in the whole and every part of this drawing belongs to Cardno (Old) Pty Ltd and may not be used, sold, transferred, copied or reproduced in whole or in part in any manner or form or in or on any media to any person other than by agreement with Cardno (OLD) Pty Ltd.
This document is produced by Cardno (Old) Pty Ltd solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno (Old) Pty Ltd does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by any third party on the content of this document.





LEGEND

100 Year ARI Flood Level (mAHD)

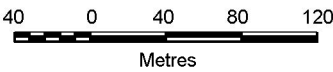
- 2.75 to 3.00
- 3.00 to 3.25
- 3.25 to 3.50
- 3.50 to 3.75
- 3.75 to 4.00
- 4.00 to 4.25
- 4.25 to 4.50

Figure B3

Wonga Beach

**100 Year ARI
Flood Levels
(Southern End)
with Storm Surge
Existing Conditions**

Scale: 1:4,000



SHEET A3
Project No: Q144007
Date: 30 September 2014
Revision Number:
Designed by:
Client Name: Scmazzon

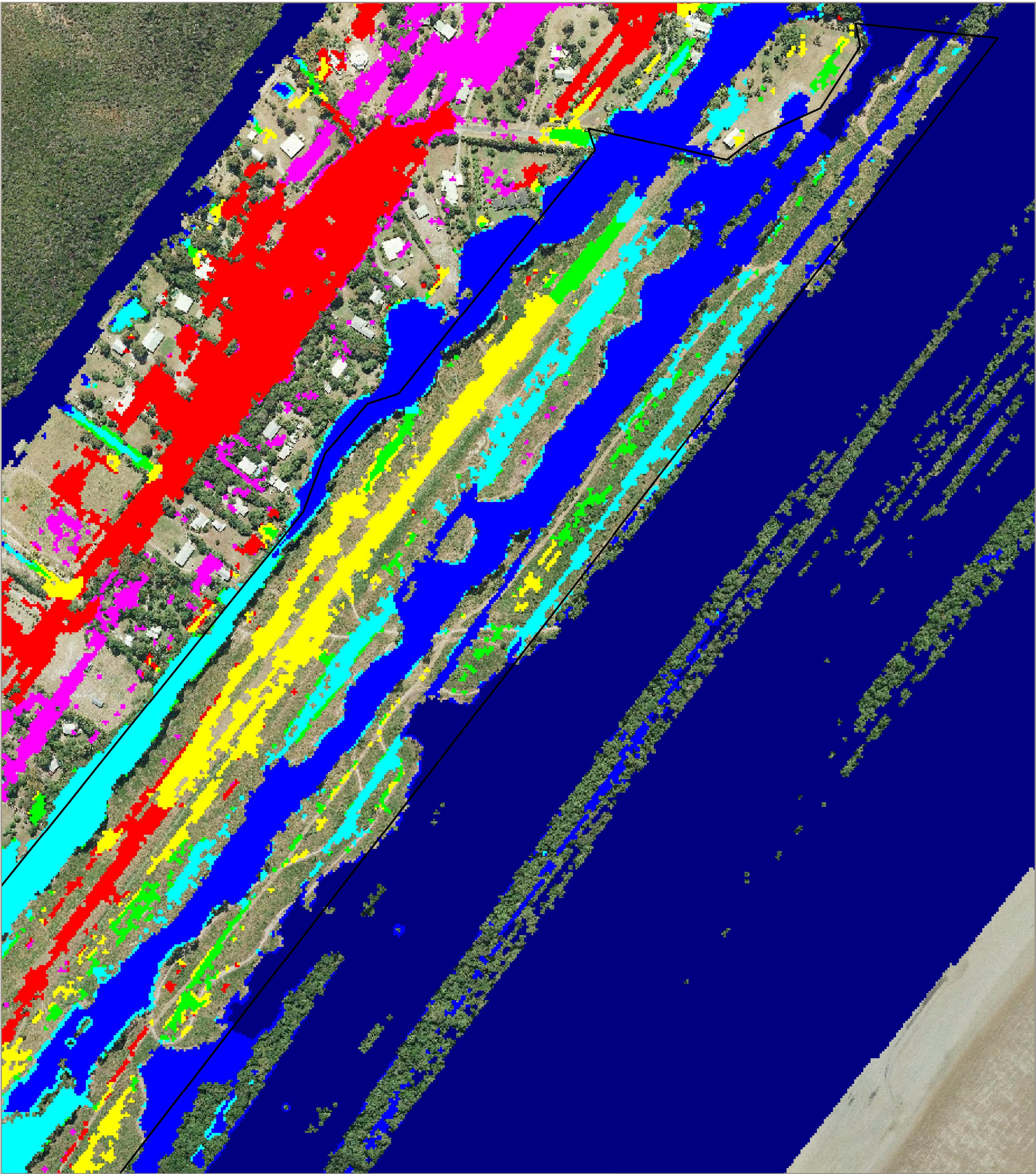


Cardno (QLD) Pty Ltd | ABN 57 051 074 992
Level 11, North Tower, 515 St Pauls Terrace
Locked Bag 4006, Fortitude Valley QLD 4006
Tel: 07 3369 9822 Fax: 07 3369 9722

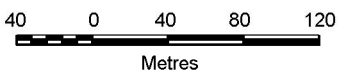
© 2014 Cardno (Old) Pty Ltd All Rights Reserved. Copyright in the whole and every part of this drawing belongs to Cardno (Old) Pty Ltd and may not be used, sold, transferred, copied or reproduced in whole or in part in any manner or form or in or on any media to any person other than by agreement with Cardno (OLD) Pty Ltd.

This document is produced by Cardno (Old) Pty Ltd solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno (Old) Pty Ltd does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by any third party on the content of this document.





Scale: 1:4,000



SHEET A3
Project No: Q144007
Date: 30 September 2014
Revision Number:
Designed by:
Client Name: Scomazzon

LEGEND

100 Year ARI Flood Level (mAHd)

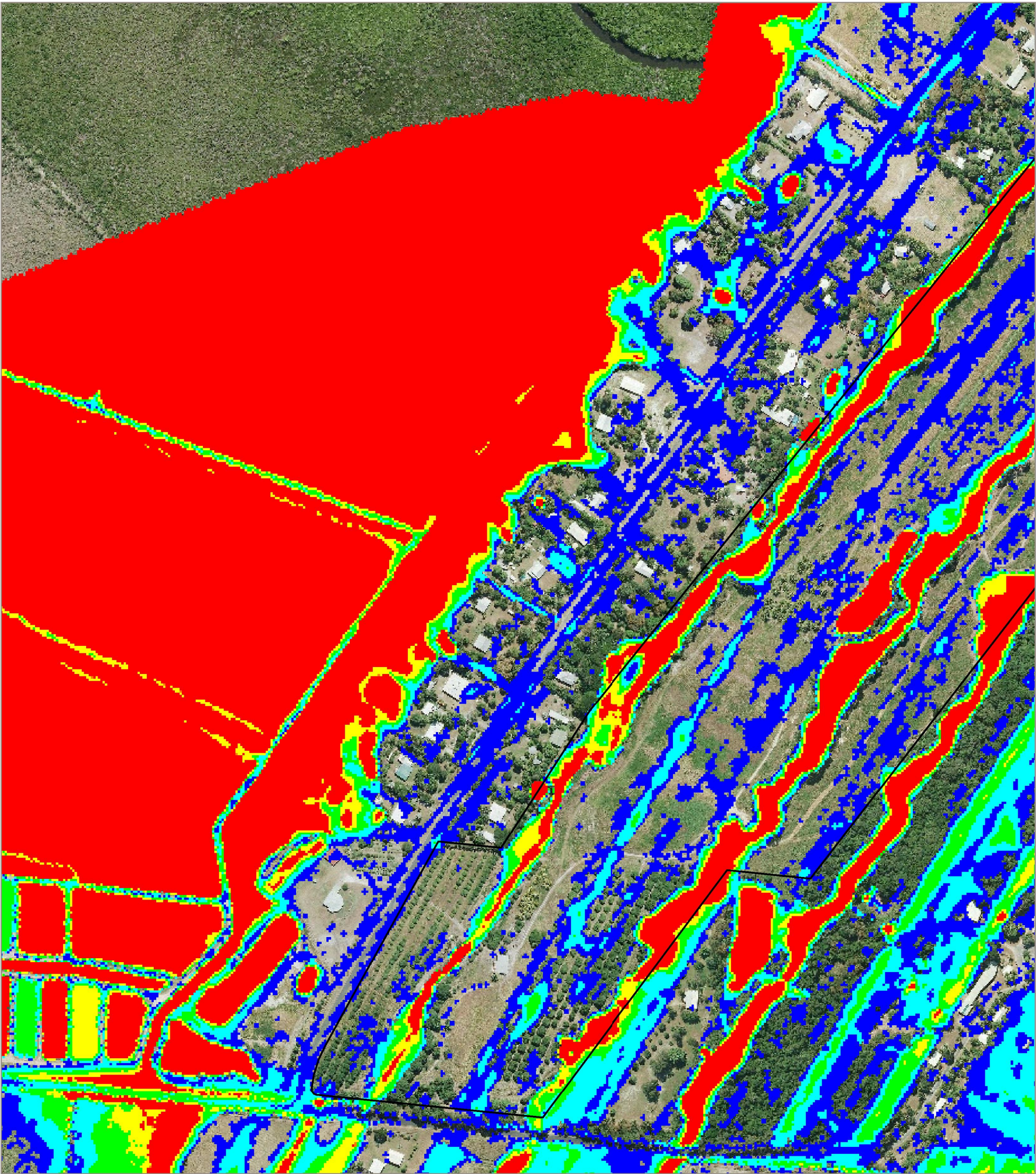
- 2.75 to 3.00
- 3.00 to 3.25
- 3.25 to 3.50
- 3.50 to 3.75
- 3.75 to 4.00
- 4.00 to 4.25
- 4.25 to 4.50

Figure B4

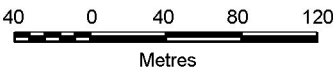
Wonga Beach

100 Year ARI
Flood Levels
(Northern End)
with Storm Surge
Existing Conditions





Scale: 1:4,000



SHEET A3
Project No: Q144007
Date: 30 September 2014
Revision Number:
Designed by:
Client Name: Scomazzon

LEGEND

100 Year ARI Flood Depth (m)

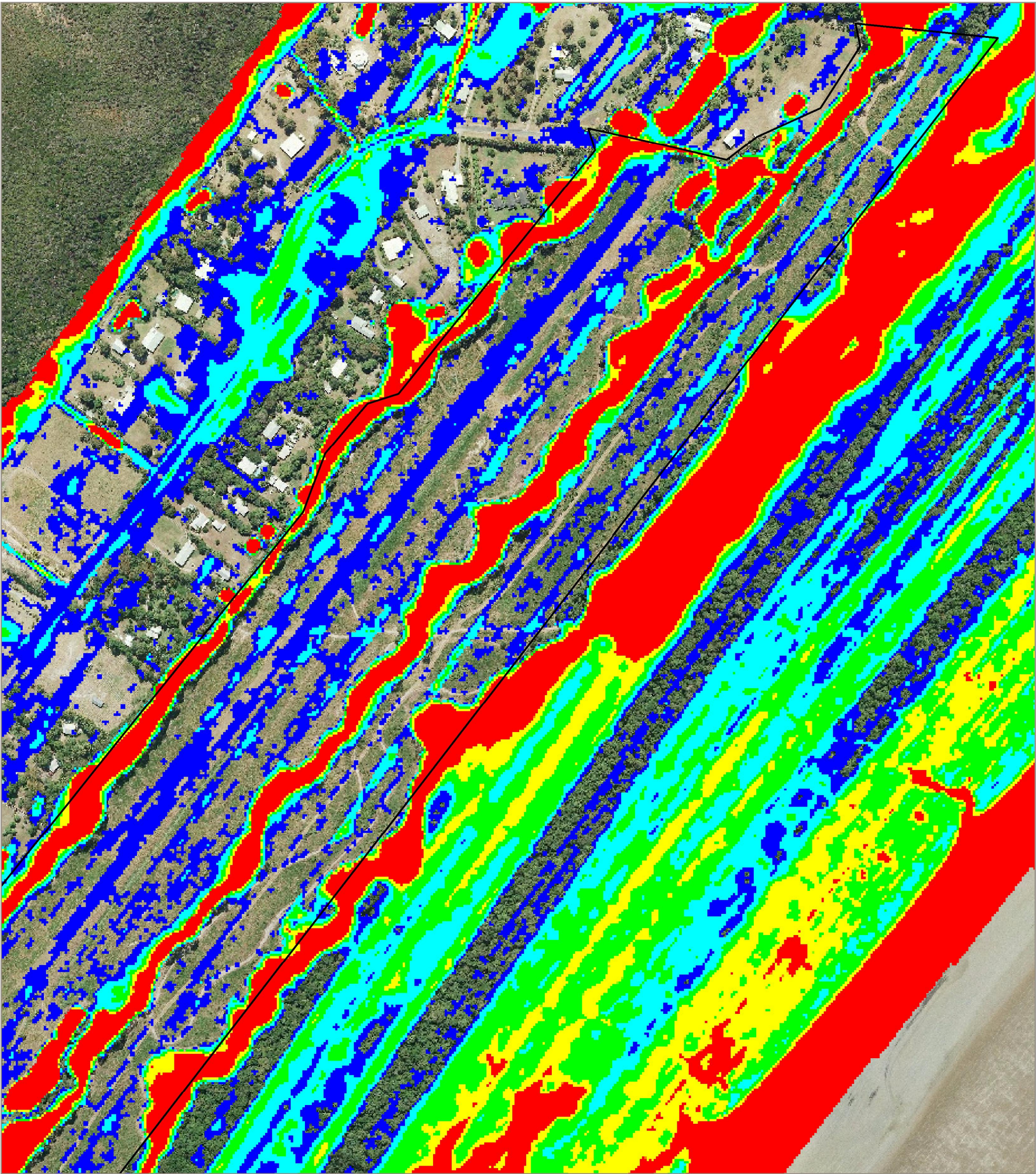
- 0 to 0.25
- 0.25 to 0.50
- 0.50 to 0.75
- 0.75 to 1.0
- > 1.0

Figure B5

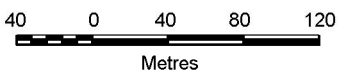
Wonga Beach

100 Year ARI
Flood Depths
(Southern End)
with Storm Surge
Existing Conditions





Scale: 1:4,000



SHEET A3
Project No: Q144007
Date: 30 September 2014
Revision Number:
Designed by:
Client Name: Scmazzon

LEGEND

100 Year ARI Flood Depth (m)

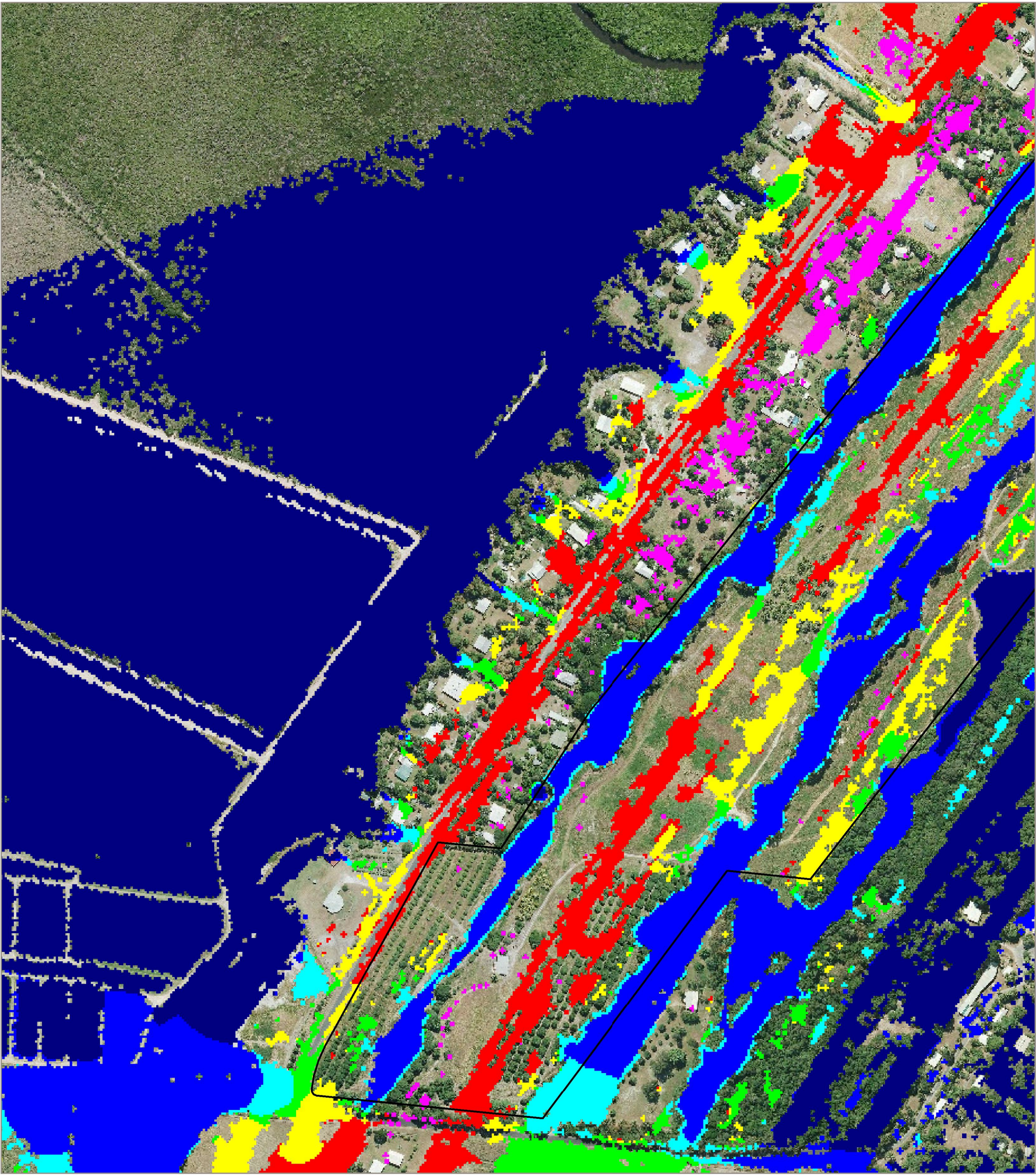
- 0 to 0.25
- 0.25 to 0.50
- 0.50 to 0.75
- 0.75 to 1.0
- > 1.0

Figure B6

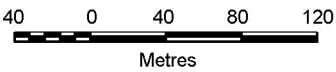
Wonga Beach

100 Year ARI
Flood Depths
(Northern End)
with Storm Surge
Existing Conditions





Scale: 1:4,000



SHEET A3
Project No: Q144007
Date: 30 September 2014
Revision Number:
Designed by:
Client Name: Scmazzone

LEGEND

100 Year ARI Flood Level (mAHD)

- 2.75 to 3.00
- 3.00 to 3.25
- 3.25 to 3.50
- 3.50 to 3.75
- 3.75 to 4.00
- 4.00 to 4.25
- 4.25 to 4.50

Figure B7

Wonga Beach

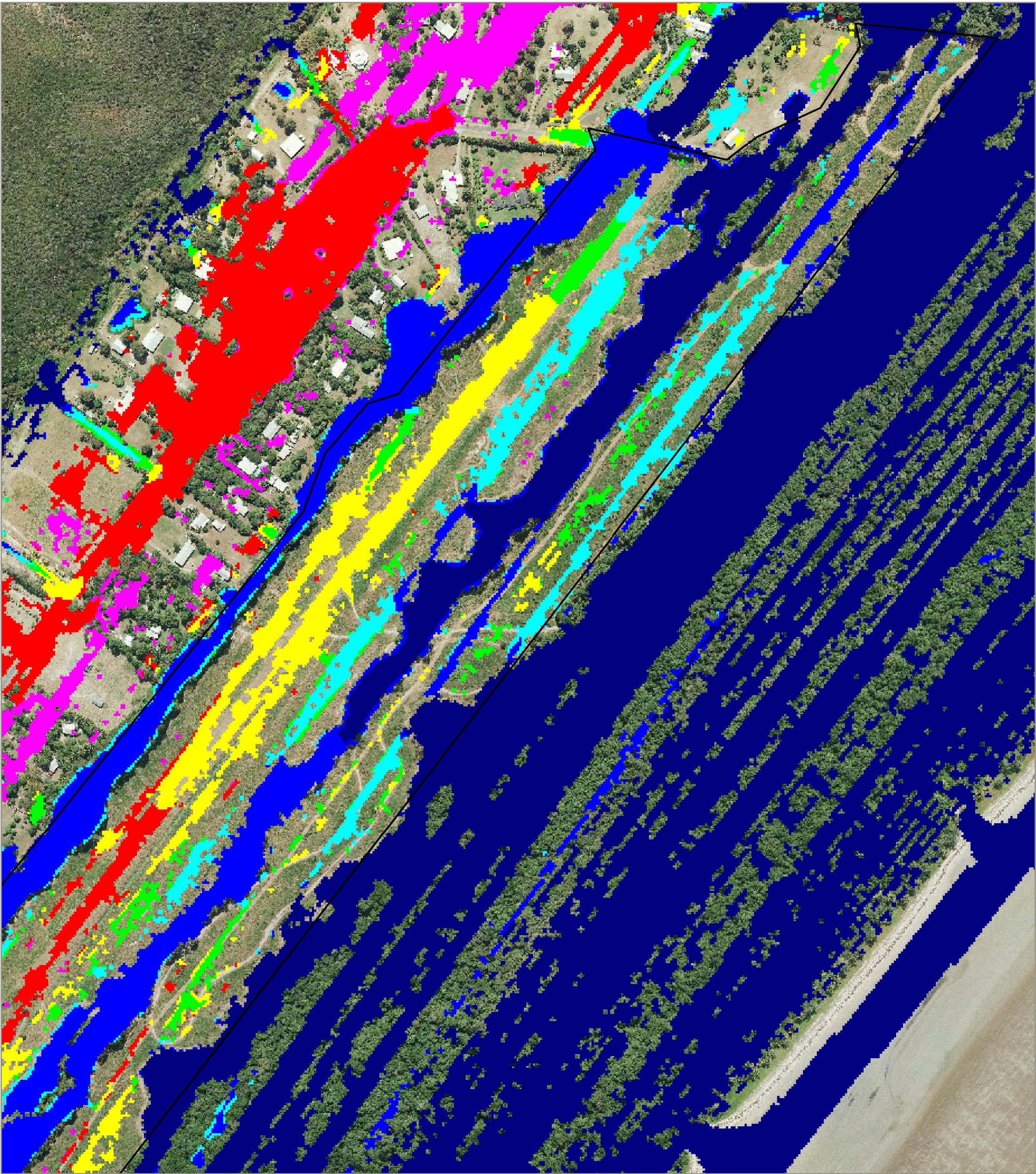
**100 Year ARI
Flood Levels
(Southern End)
with Outlets Sanded Up
Existing Conditions**



Cardno (QLD) Pty Ltd | ABN 57 051 074 992
Level 11, North Tower, 515 St Pauls Terrace
Locked Bag 4006, Fortitude Valley QLD 4006
Tel: 07 3369 9822 Fax: 07 3369 9722

© 2014 Cardno (Old) Pty Ltd All Rights Reserved. Copyright in the whole and every part of this drawing belongs to Cardno (Old) Pty Ltd and may not be used, sold, transferred, copied or reproduced in whole or in part in any manner or form or in or on any media to any person other than by agreement with Cardno (OLD) Pty Ltd.
This document is produced by Cardno (Old) Pty Ltd solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno (Old) Pty Ltd does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by any third party on the content of this document.





Scale: 1:4,000
40 0 40 80 120
Metres



SHEET A3
Project No: Q144007
Date: 30 September 2014
Revision Number:
Designed by:
Client Name: Scmazzon

LEGEND

100 Year ARI Flood Level (mAHD)

- 2.75 to 3.00
- 3.00 to 3.25
- 3.25 to 3.50
- 3.50 to 3.75
- 3.75 to 4.00
- 4.00 to 4.25
- 4.25 to 4.50

Figure B8

Wonga Beach

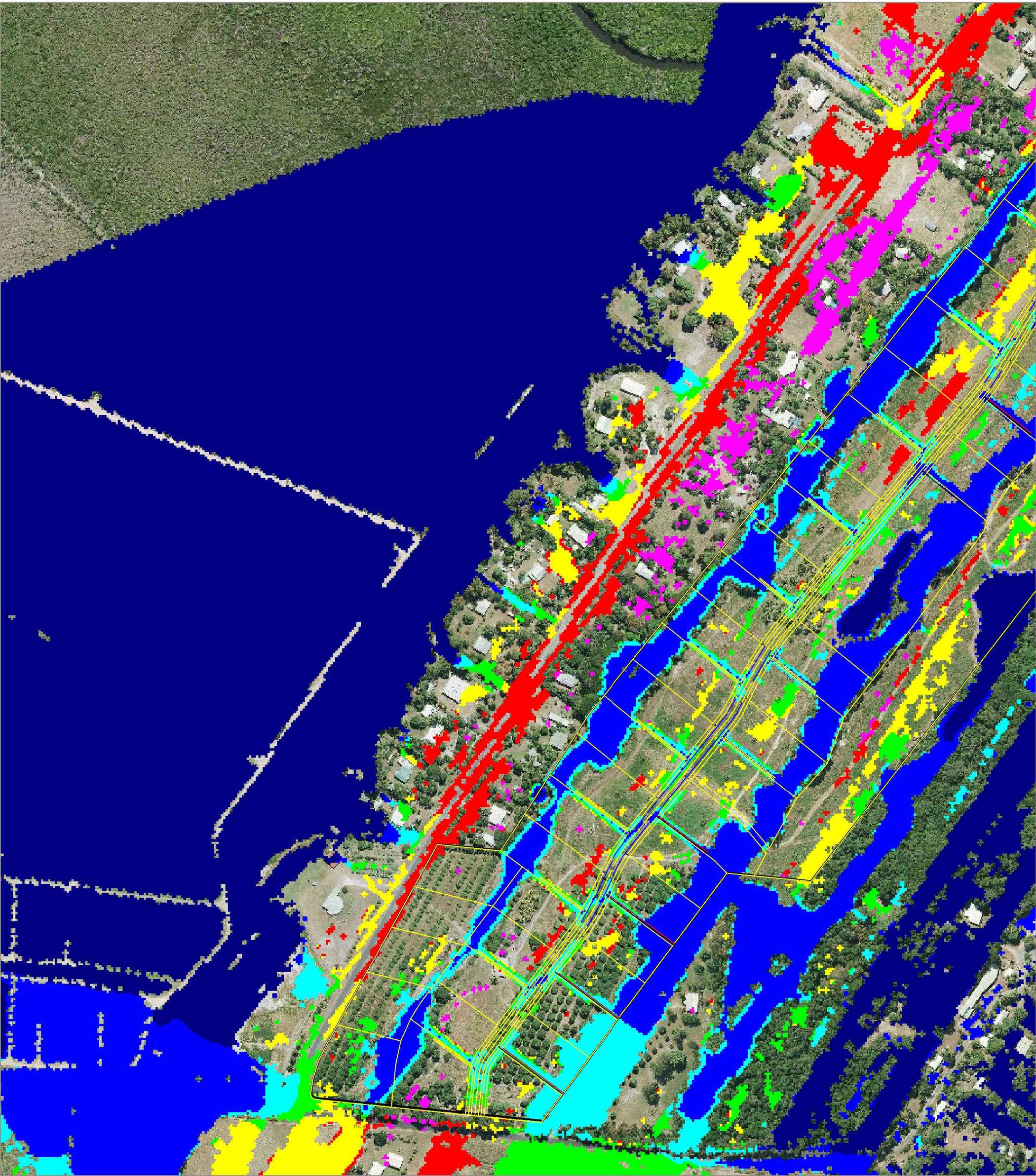
100 Year ARI
Flood Levels
(Northern End)
with Outlets Sanded Up
Existing Conditions



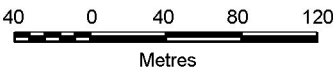
Flood Study

APPENDIX C

FLOOD MODEL RESULTS – DEVELOPED CONDITIONS



Scale: 1:4,000



SHEET A3
Project No: Q144007
Date: 30 September 2014
Revision Number:
Designed by:
Client Name: Scmazzon

LEGEND

100 Year ARI Flood Level (mAHD)

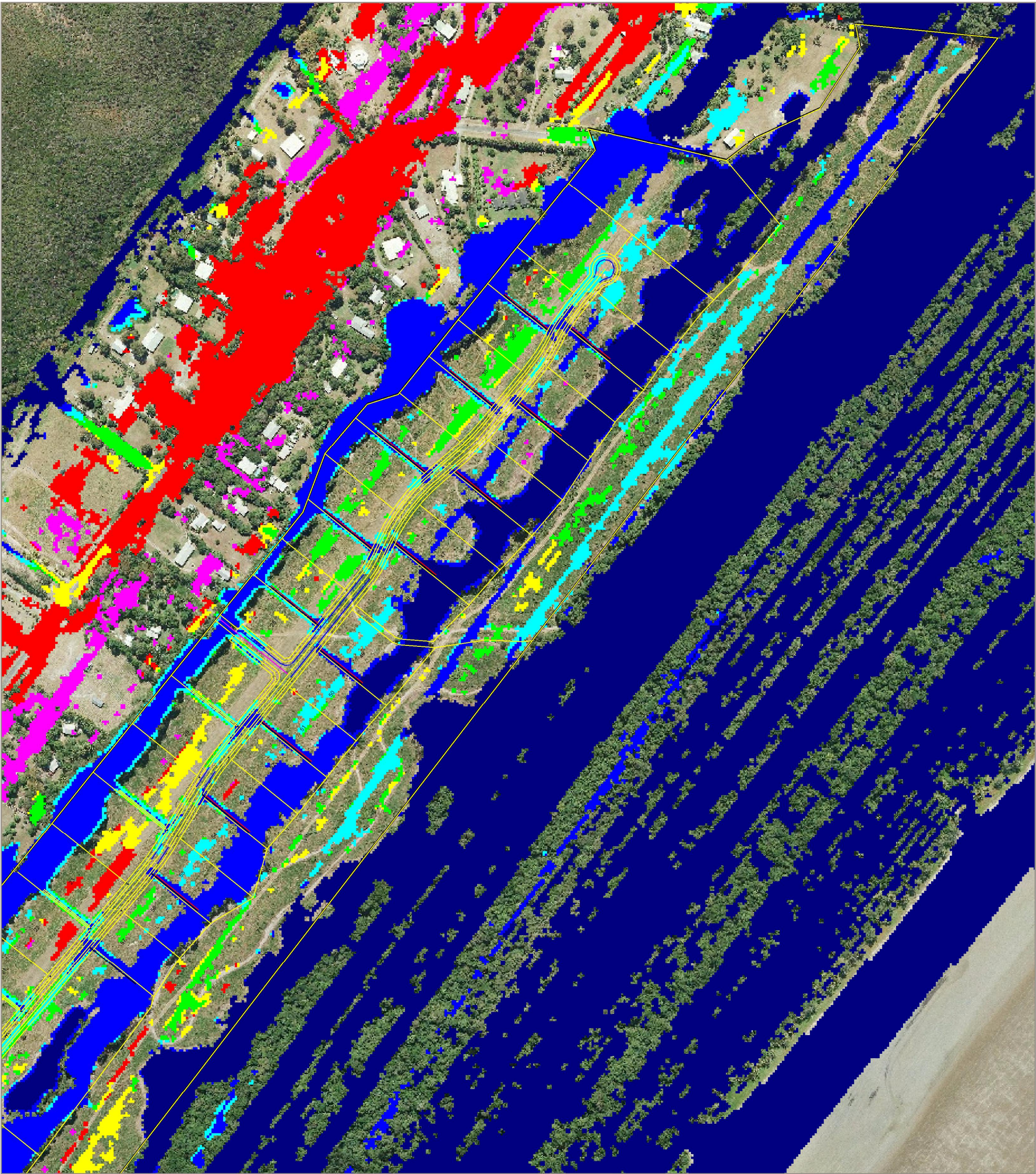
- 2.75 to 3.00
- 3.00 to 3.25
- 3.25 to 3.50
- 3.50 to 3.75
- 3.75 to 4.00
- 4.00 to 4.25
- 4.25 to 4.50

Figure C1

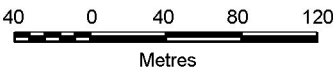
Wonga Beach

**100 Year ARI
Flood Levels
(Southern End)
with HAT
Developed Conditions**





Scale: 1:4,000



SHEET A3
Project No: Q144007
Date: 30 September 2014
Revision Number:
Designed by:
Client Name: Scomazzon

LEGEND

100 Year ARI Flood Level (mAHd)

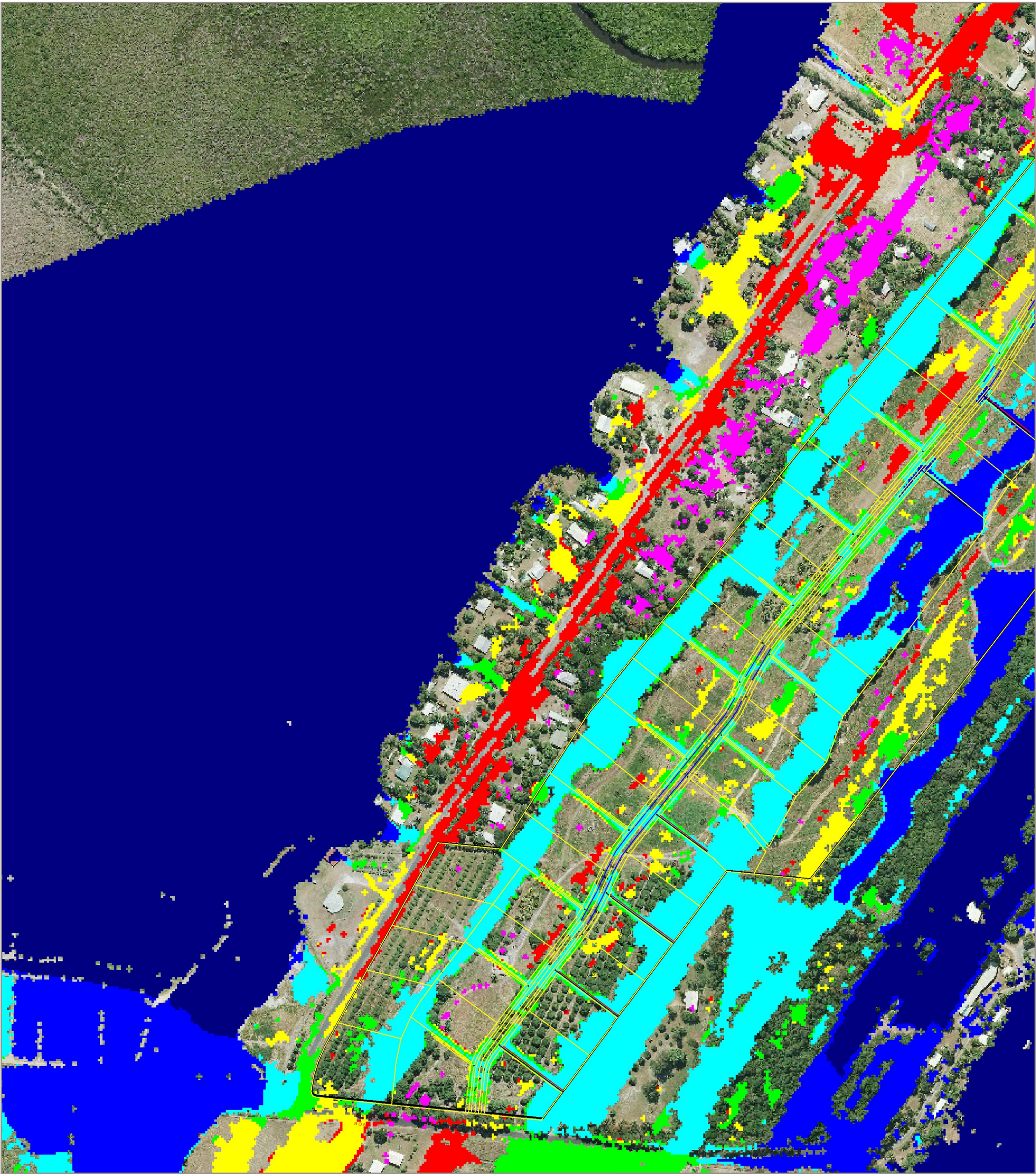
- 2.75 to 3.00
- 3.00 to 3.25
- 3.25 to 3.50
- 3.50 to 3.75
- 3.75 to 4.00
- 4.00 to 4.25
- 4.25 to 4.50

Figure C2

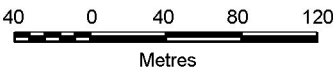
Wonga Beach

**100 Year ARI
Flood Levels
(Northern End)
with HAT
Developed Conditions**





Scale: 1:4,000



SHEET A3
Project No: Q144007
Date: 30 September 2014
Revision Number:
Designed by:
Client Name: Scmazzon

LEGEND

100 Year ARI Flood Level (mAHD)

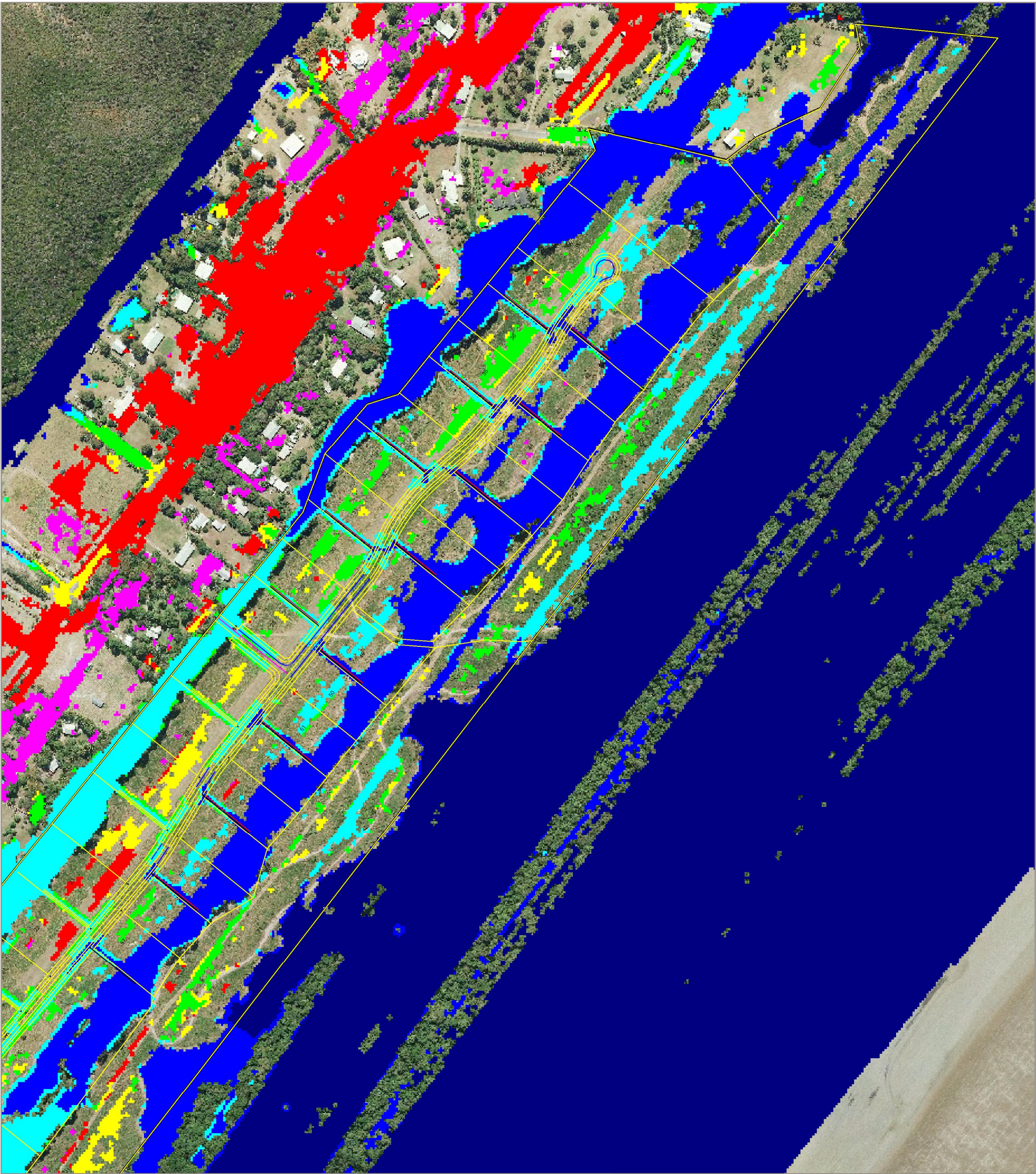
- 2.75 to 3.00
- 3.00 to 3.25
- 3.25 to 3.50
- 3.50 to 3.75
- 3.75 to 4.00
- 4.00 to 4.25
- 4.25 to 4.50

Figure C3

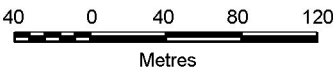
Wonga Beach

**100 Year ARI
Flood Levels
(Southern End)
with Storm Surge
Developed Conditions**





Scale: 1:4,000



SHEET A3
Project No: Q144007
Date: 30 September 2014
Revision Number:
Designed by:
Client Name: Scomazzon

LEGEND

100 Year ARI Flood Level (mAHd)

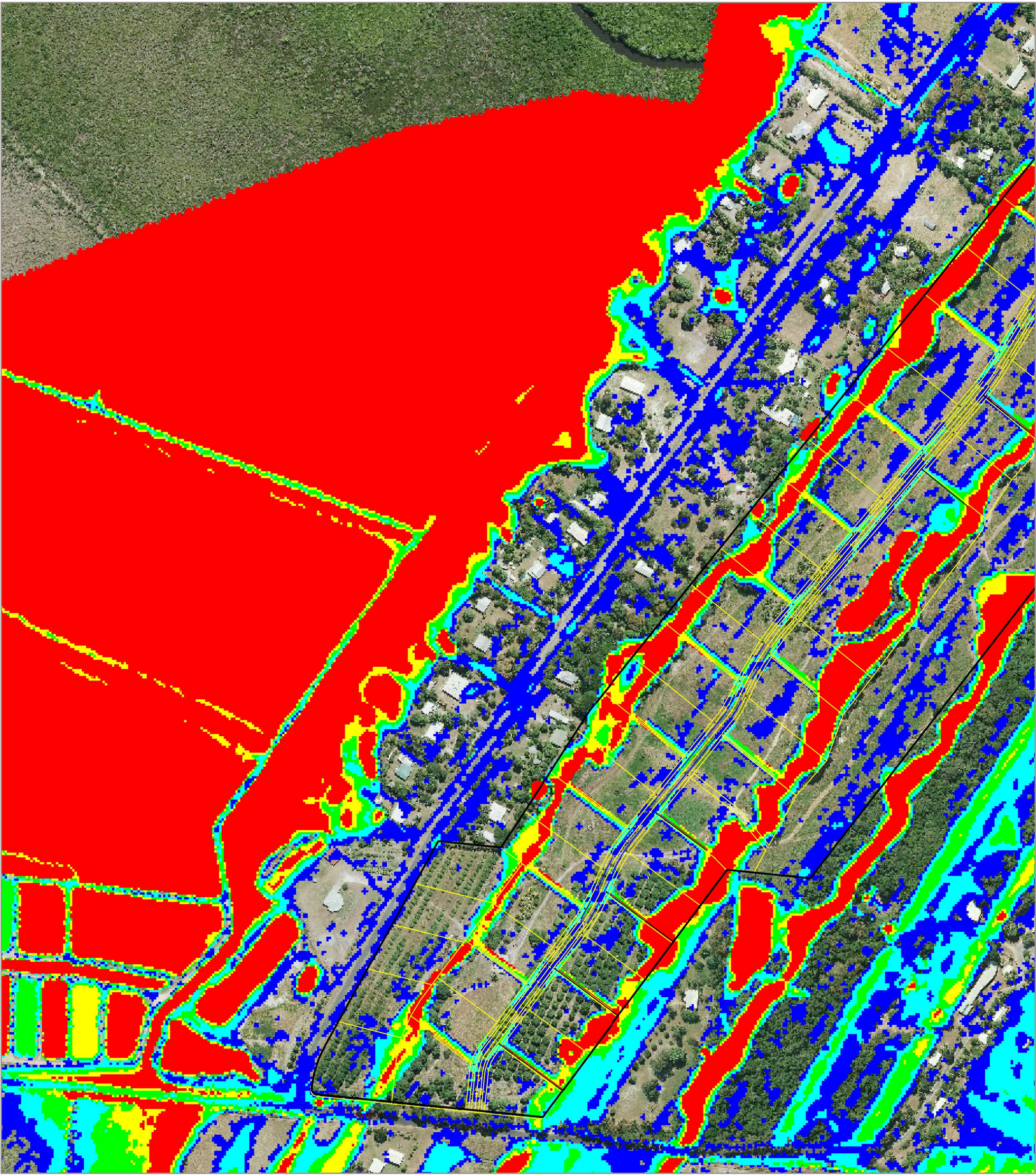
- 2.75 to 3.00
- 3.00 to 3.25
- 3.25 to 3.50
- 3.50 to 3.75
- 3.75 to 4.00
- 4.00 to 4.25
- 4.25 to 4.50

Figure C4

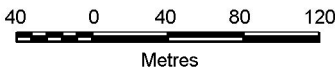
Wonga Beach

100 Year ARI
Flood Levels
(Northern End)
with Storm Surge
Developed Conditions





Scale: 1:4,000



SHEET A3
Project No: Q144007
Date: 30 September 2014
Revision Number:
Designed by:
Client Name: Scomazzon

LEGEND

100 Year ARI Flood Depth (m)

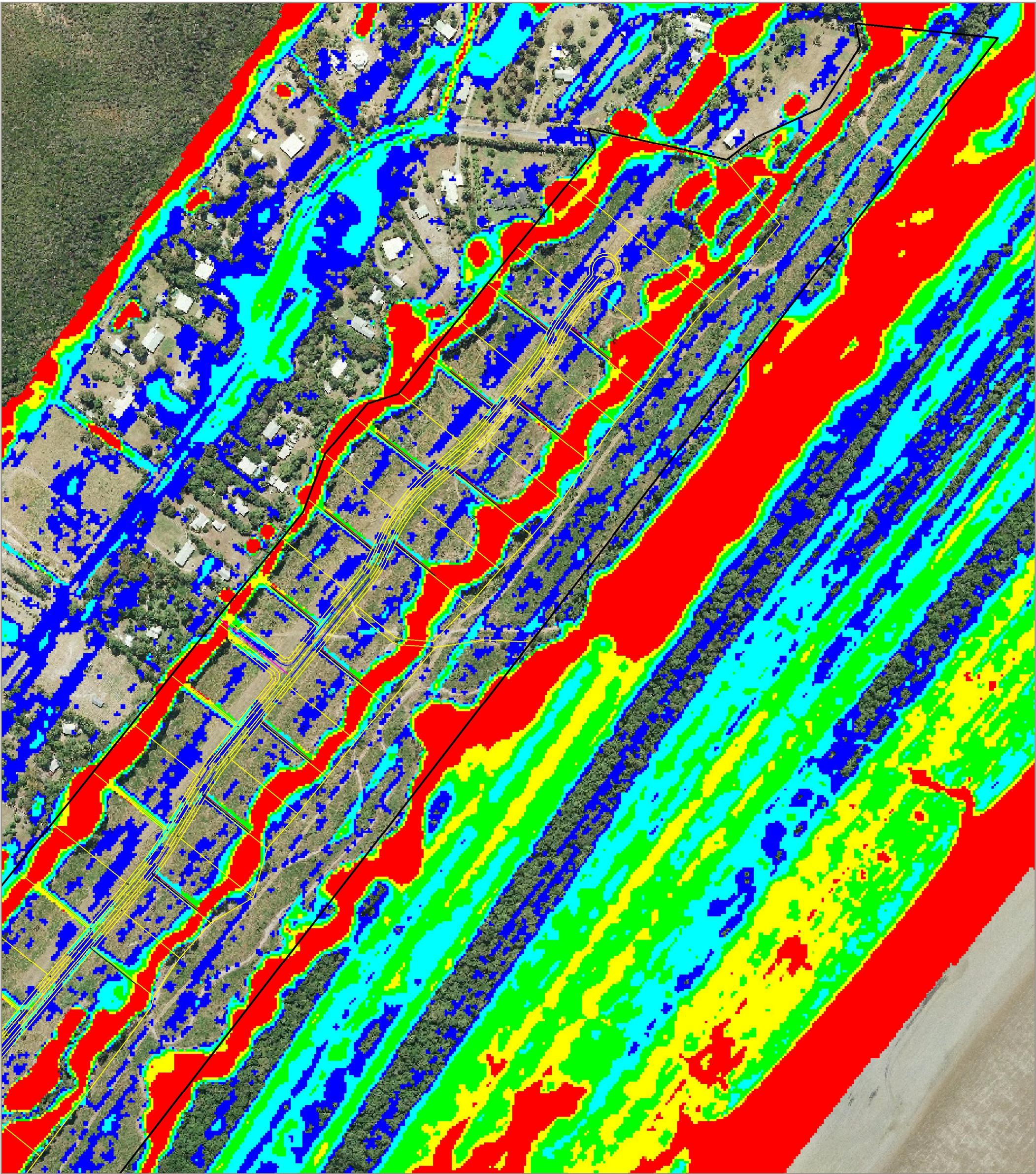
- 0 to 0.25
- 0.25 to 0.50
- 0.50 to 0.75
- 0.75 to 1.0
- > 1.0

Figure C5

Wonga Beach

100 Year ARI
Flood Depths
(Southern End)
with Storm Surge
Developed Conditions





Scale: 1:4,000

40 0 40 80 120
Metres



SHEET A3
Project No: Q144007
Date: 30 September 2014
Revision Number:
Designed by:
Client Name: Scomazzon

LEGEND

100 Year ARI Flood Depth (m)

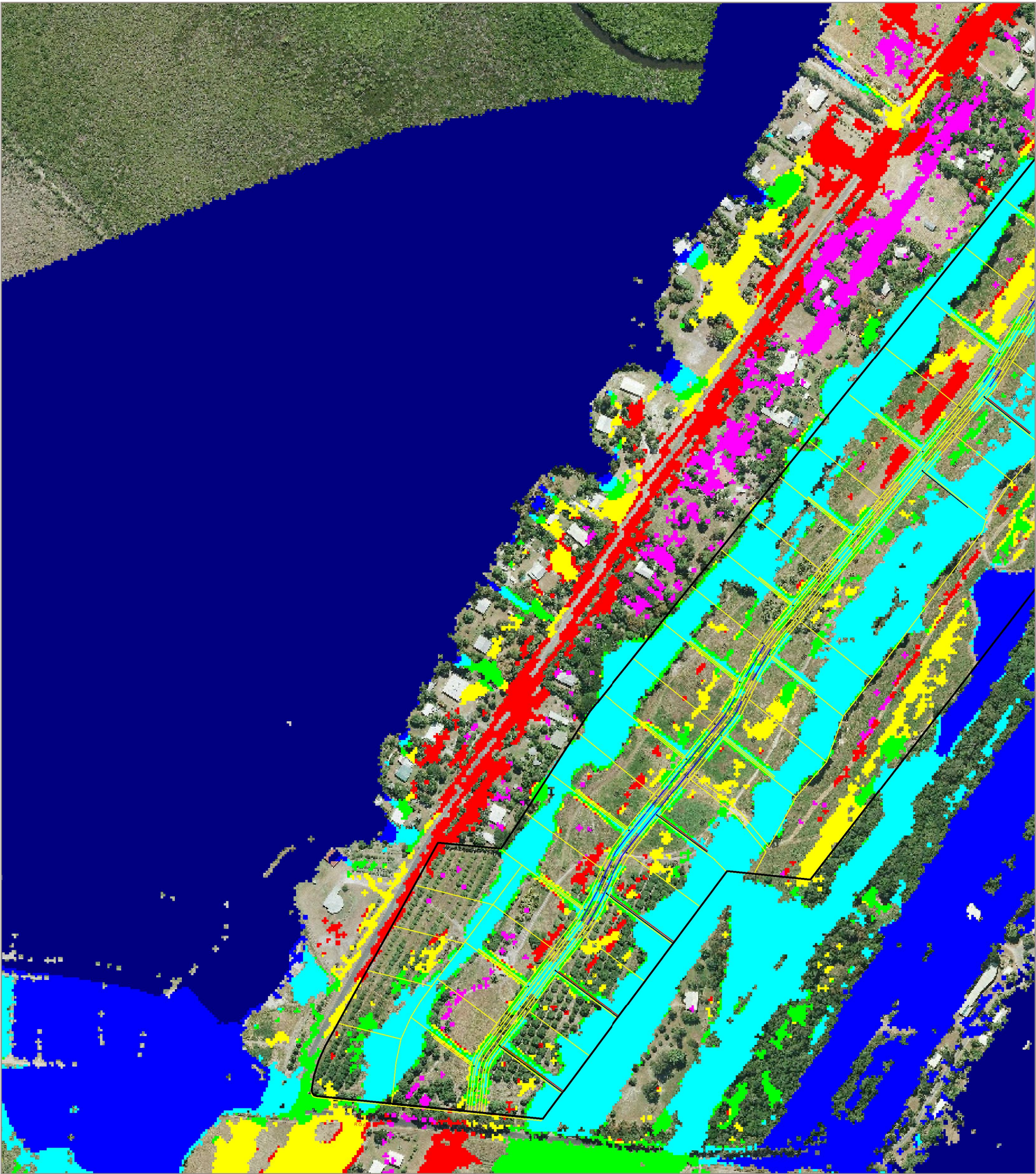
- 0 to 0.25
- 0.25 to 0.50
- 0.50 to 0.75
- 0.75 to 1.0
- > 1.0

Figure C6

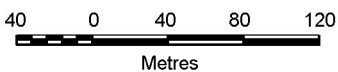
Wonga Beach

100 Year ARI
Flood Depths
(Northern End)
with Storm Surge
Developed Conditions





Scale: 1:4,000



SHEET A3
Project No: Q144007
Date: 30 September 2014
Revision Number:
Designed by:
Client Name: Scmazzon

LEGEND

100 Year ARI Flood Level (mAHD)

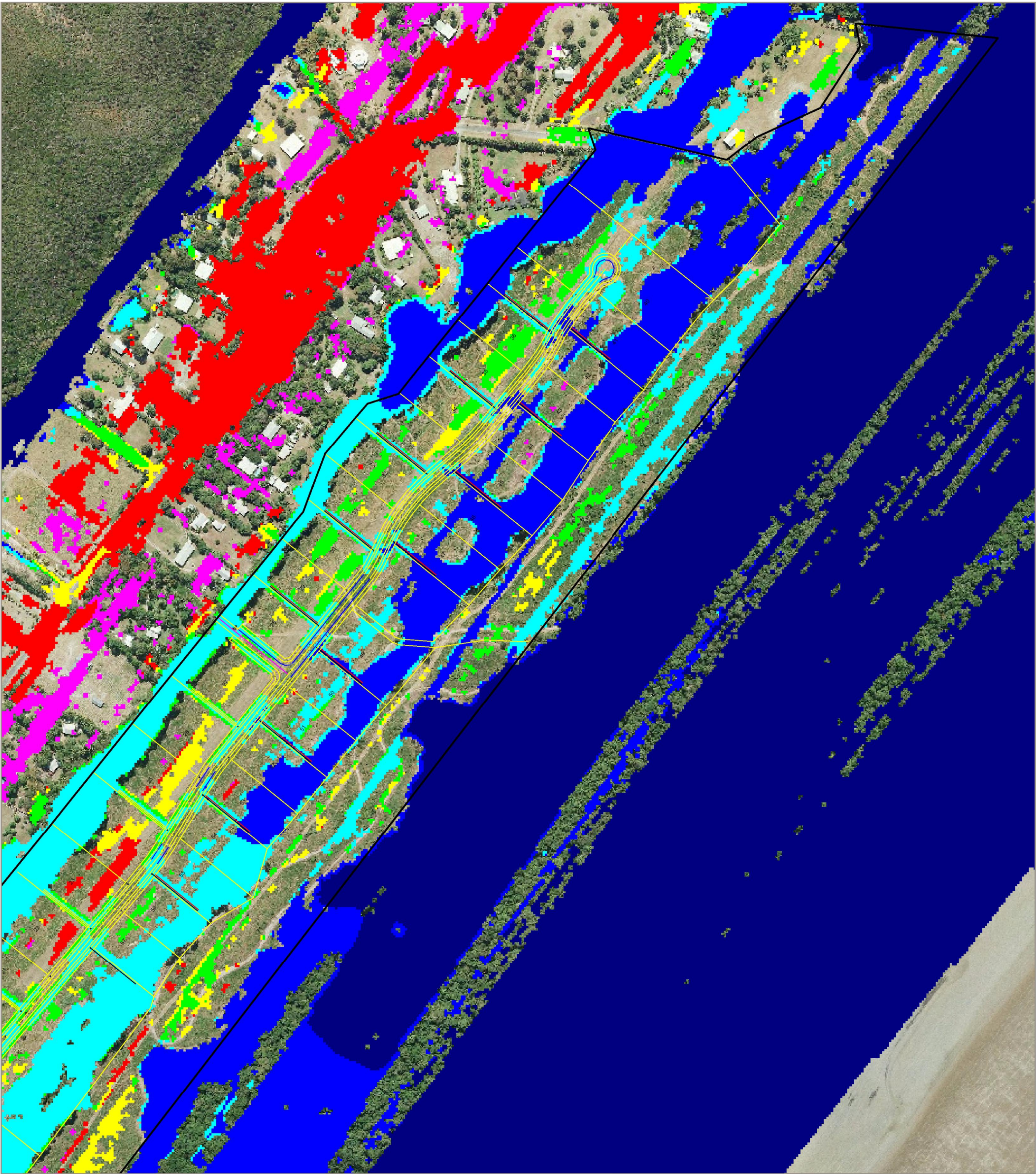
- 2.75 to 3.00
- 3.00 to 3.25
- 3.25 to 3.50
- 3.50 to 3.75
- 3.75 to 4.00
- 4.00 to 4.25
- 4.25 to 4.50

Figure C7

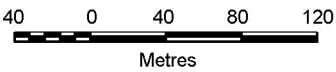
Wonga Beach

100 Year ARI
Flood Levels
(Southern End)
with Storm Surge
and Higher Roughness
Developed Conditions





Scale: 1:4,000



SHEET A3
Project No: Q144007
Date: 30 September 2014
Revision Number:
Designed by:
Client Name: Scomazzon

LEGEND

100 Year ARI Flood Level (mAHD)

- 2.75 to 3.00
- 3.00 to 3.25
- 3.25 to 3.50
- 3.50 to 3.75
- 3.75 to 4.00
- 4.00 to 4.25
- 4.25 to 4.50

Figure C8

Wonga Beach

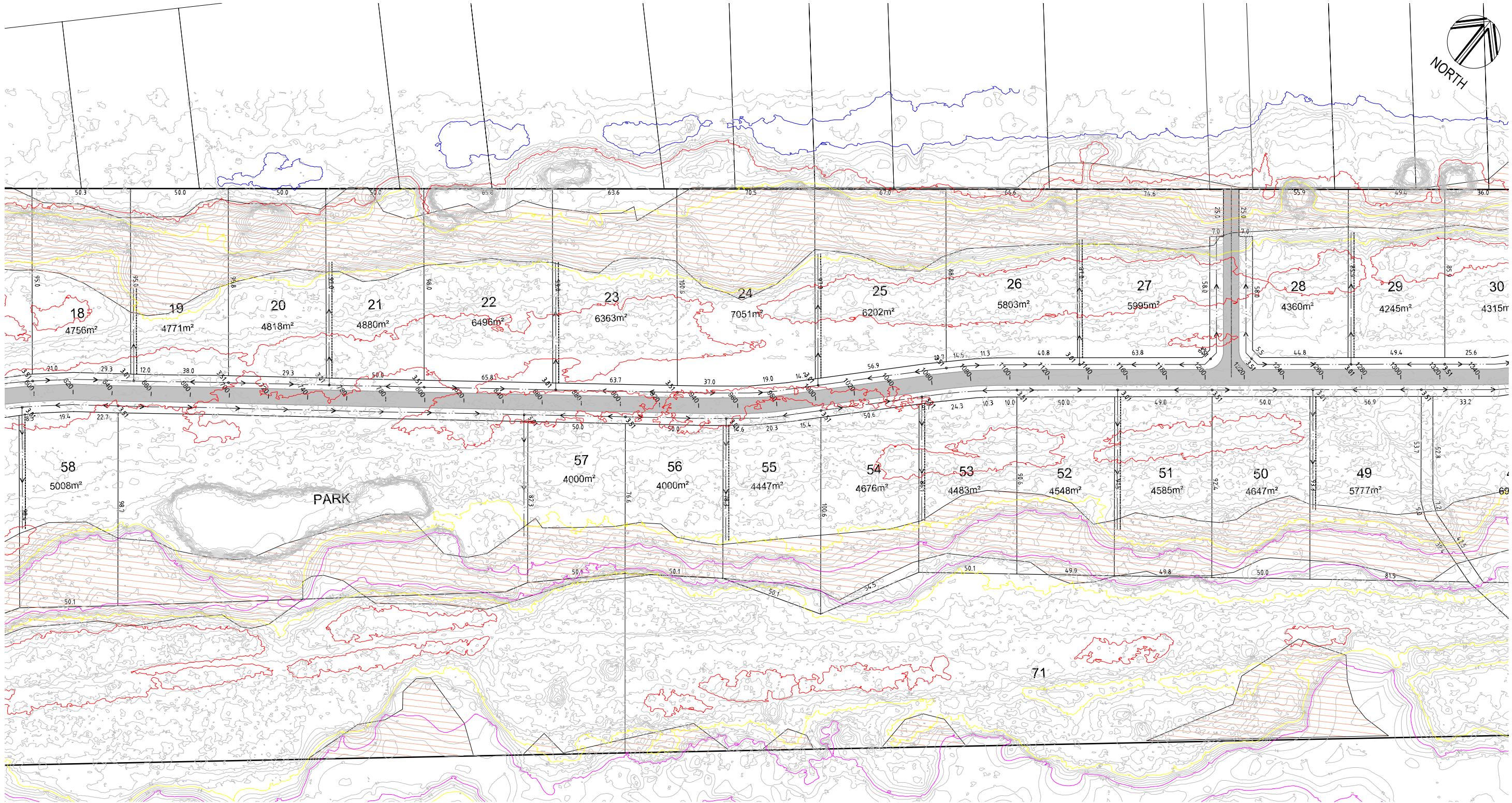
**100 Year ARI
Flood Levels
(Northern End)
with Storm Surge
and Higher Roughness
Developed Conditions**



Flood Study

APPENDIX D

CARDNO DRAWINGS



- LEGEND:**
- 5.0m CONTOUR
 - 4.0m CONTOUR
 - 3.0m CONTOUR
 - 2.0m CONTOUR
 - REMNANT VEGETATION

CONTOUR AND DRAINAGE PLAN - SHEET 2 OF 3
SCALE 1:1000



DATE PLOTTED: 20 November 2014 1:18 PM
CAD FILE: H:\2014\144007 - Vixies Road\Design\Acaad\001-144007-001-C02.dwg

						Verified	
						B.N.CLAYTON	
						Date	
						20.11.2014	
						Approved	
						B.N.CLAYTON	
						Date	
						20.11.2014	
02	20.11.2014	FOR COUNCIL TOWN PLANNING APPROVAL	AGP	BNC	BNC		
01	17.11.2014	PRELIMINARY ISSUE	AGP	BNC	BNC		
Rev	Date	Description	Des.	Verif.	Appr.	RPEQ No. 776	

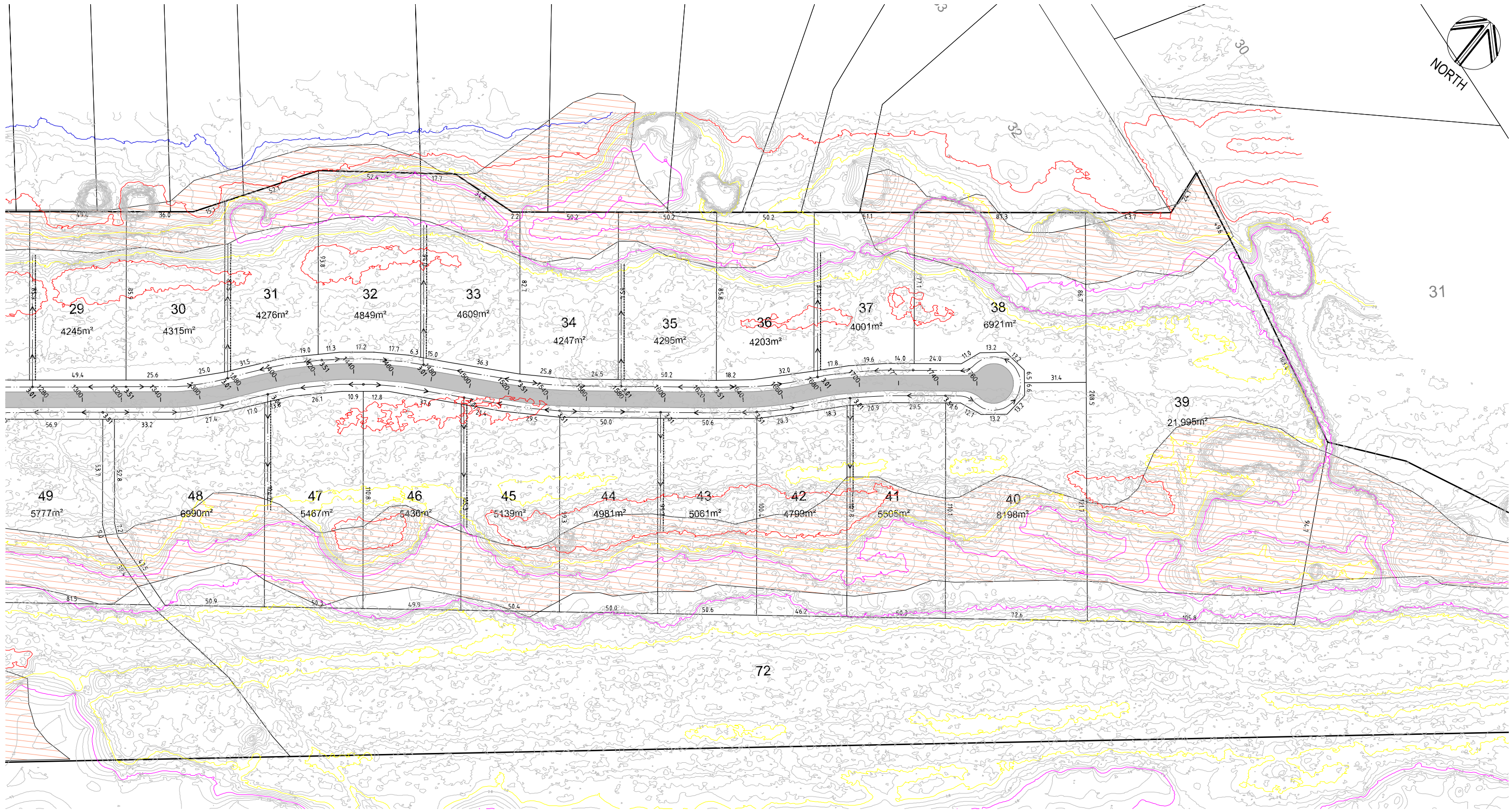
© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Drawn	AGP	Date	20.11.2014
Checked	BNC	Date	20.11.2014
Designed	BNC	Date	20.11.2014

Client	VIC SCOMAZZON
LOT 32 VIXIES ROAD WONGA BEACH	
CONTOUR AND DRAINAGE PLAN - SHEET 2 OF 3	

Status				FOR APPROVAL	
NOT TO BE USED FOR CONSTRUCTION PURPOSES					
Datum		Date		Scale	
A.H.D.		20.11.2014		AS SHOWN	
Size				A1	
Drawing Number				Revision	
Q144007-001-C02				02	



LEGEND:

- 5.0m CONTOUR
- 4.0m CONTOUR
- 3.0m CONTOUR
- 2.0m CONTOUR
- REMNANT VEGETATION

CONTOUR AND DRAINAGE PLAN - SHEET 3 OF 3
SCALE 1:1000



DATE PLOTTED: 20 November 2014 1:18 PM
CAD FILE: H:\2014\144007 - Vixies Road\Design\Acaad\001-144007-001-C03.dwg

							Verified
				</			

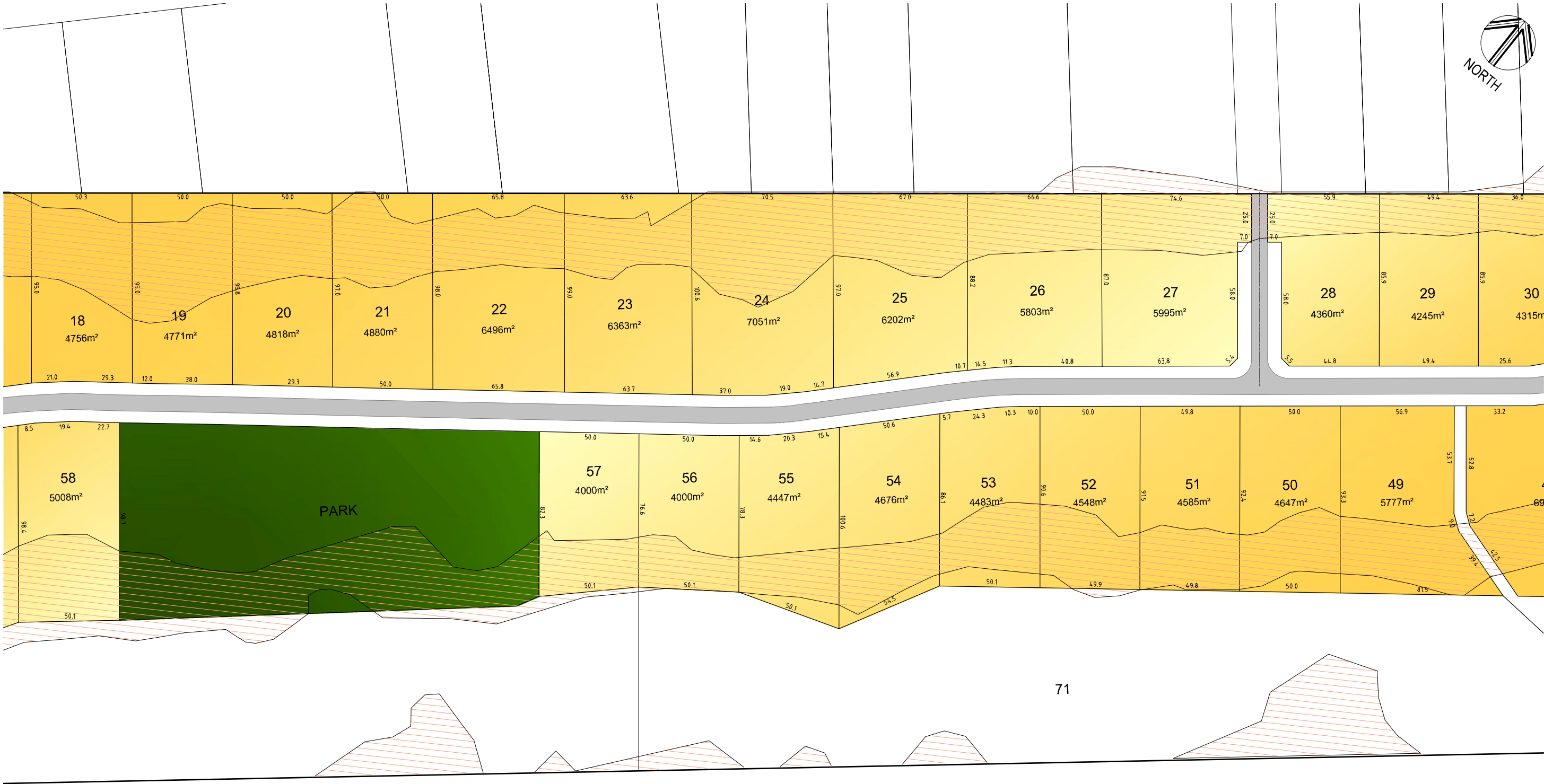
© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



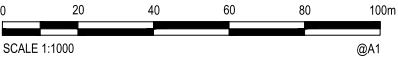
Drawn	AGP	Date	20.11.2014
Checked	BNC	Date	20.11.2014
Designed	BNC	Date	20.11.2014

Client	VIC SCOMAZZON
LOT 32 VIXIES ROAD WONGA BEACH	
CONTOUR AND DRAINAGE PLAN - SHEET 3 OF 3	

Status			
FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Datum	A.H.D.	Date	20.11.2014
Scale	AS SHOWN	Size	A1
Drawing Number	Q144007-001-C03		Revision
			02



LAYOUT PLAN - SHEET 2 OF 3
SCALE 1:1000



DATE PLOTTED: 20 November 2014 1:19 PM
CAD FILE: H:\2014\144007 - Vixies Road\Design\Acad\C0144007-001-L02.dwg

							Verified
							B.N.CLAYTON
							Date 20.11.2014
							Approved
01	20.11.2014	FOR COUNCIL TOWN PLANNING APPROVAL	AGP	BNC	BNC	B.N.CLAYTON	Date 20.11.2014
Rev	Date	Description	Des.	Verif.	Appr.	RPEQ No. 776	

© Cardno Limited All Rights Reserved,
This document is produced by Cardno Limited solely for the
benefit of and use by the client in accordance with the terms
of the retainer. Cardno Limited does not and shall not
assume any responsibility or liability whatsoever to any third
party arising out of any use or reliance by third party on the
content of this document.



Cardno
Shaping the Future

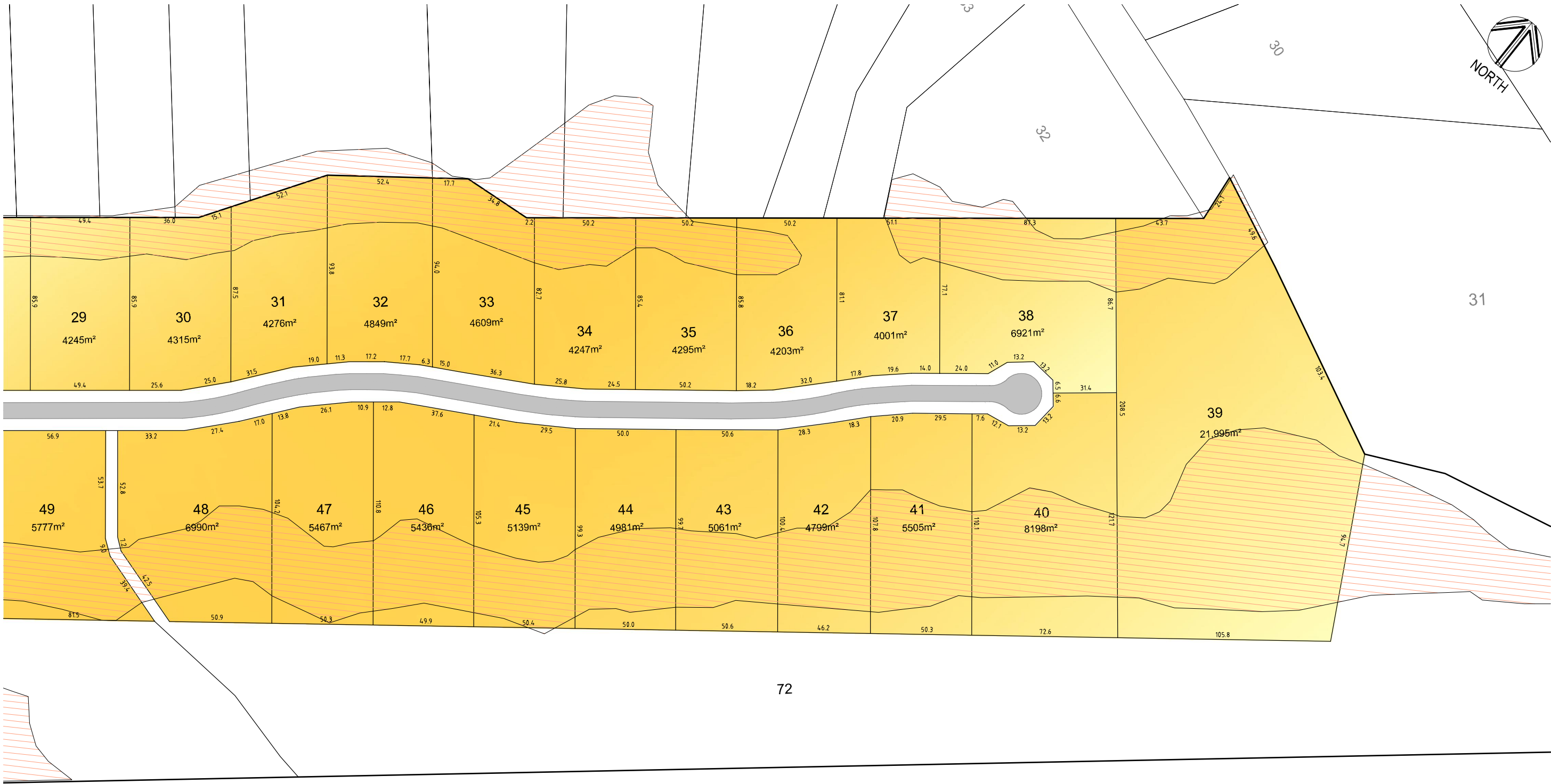
Cardno (Qld) Pty Ltd | ABN 57 051 074 992
Level 1, 280 Sheridan Street
Cairns North, Qld 4870
PO Box 1619, Cairns, Qld 4870
Tel (07) 4051 0288 Fax (07) 4051 0133
Email: cairns@cardno.com.au Web: www.cardno.com.au

Drawn	AGP	Date	20.11.2014
Checked	BNC	Date	20.11.2014
Designed	BNC	Date	20.11.2014

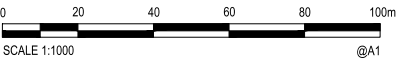
Client **VIC SCOMAZZON**
LOT 32 VIXIES ROAD WONGA BEACH

LAYOUT PLAN - SHEET 2 OF 3

Status		FOR APPROVAL					
NOT TO BE USED FOR CONSTRUCTION PURPOSES							
Datum	A.H.D.	Date	20.11.2014	Scale	AS SHOWN	Size	A1
Drawing Number						Revision	
Q144007-001-L02						01	



LAYOUT PLAN - SHEET 3 OF 3
SCALE 1:1000



							Verified
							B.N.CLAYTON
							Date 20.11.2014
							Approved
01	20.11.2014	FOR COUNCIL TOWN PLANNING APPROVAL	AGP	BNC	BNC	B.N.CLAYTON	Date
Rev	Date	Description	Des.	Verif.	Appr.	RPEQ No. 776	20.11.2014

© Cardno Limited All Rights Reserved,
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Cardno (Qld) Pty Ltd | ABN 57 051 074 992
Level 1, 280 Sheridan Street
Cairns North, Qld 4870
PO Box 1619, Cairns, Qld 4870
Tel (07) 4051 0288 Fax (07) 4051 0133
Email: cairns@cardno.com.au Web: www.cardno.com.au

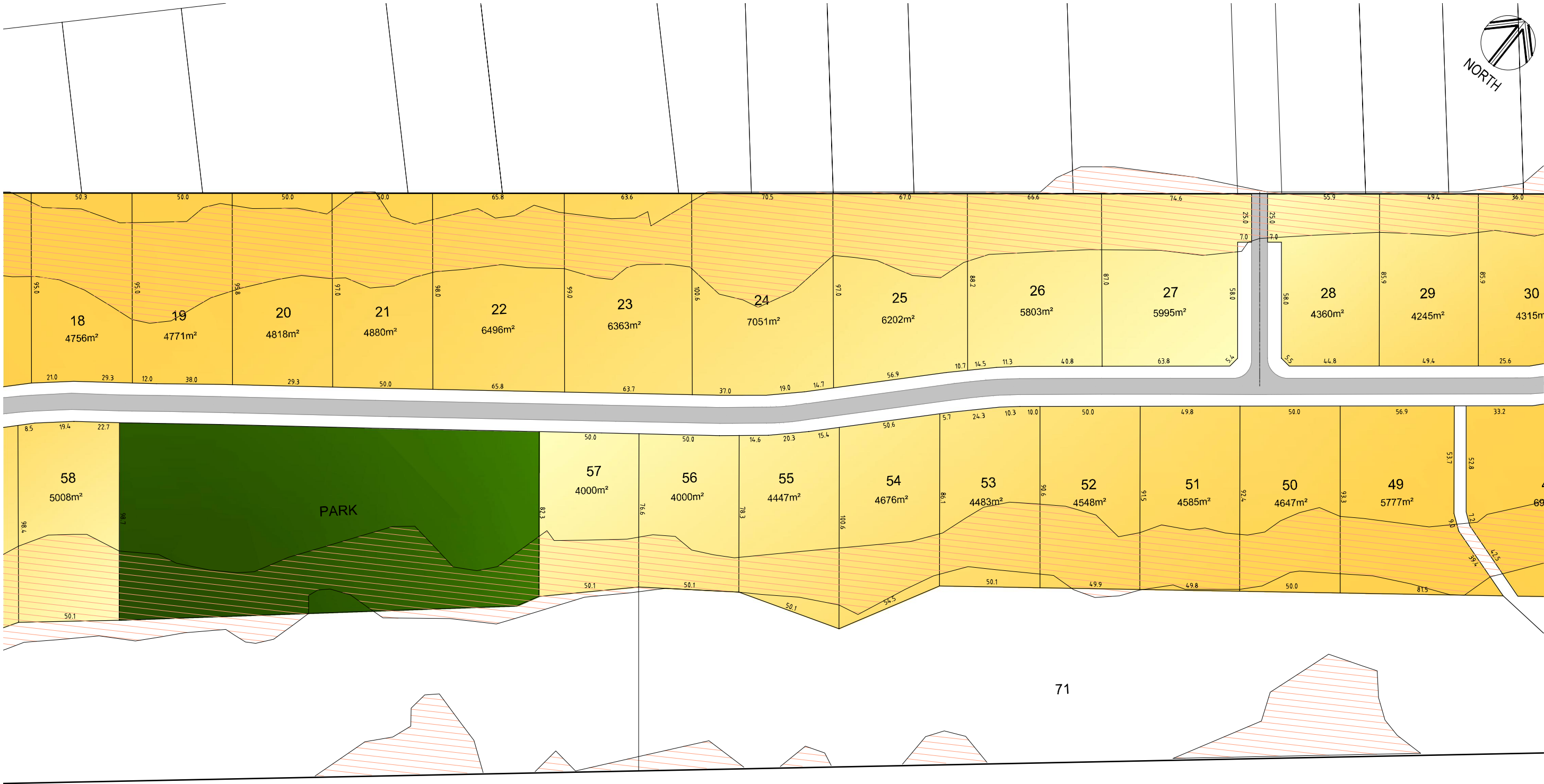
Drawn	AGP	Date	20.11.2014
Checked	BNC	Date	20.11.2014
Designed	BNC	Date	20.11.2014

Client **VIC SCOMAZZON**
LOT 32 VIXIES ROAD WONGA BEACH

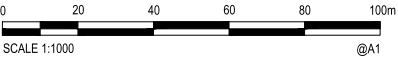
LAYOUT PLAN - SHEET 3 OF 3

Status				FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES							
Datum		Date		Scale		Size	
A.H.D.		20.11.2014		AS SHOWN		A1	
Drawing Number						Revision	
Q144007-001-L03						01	

Attachment B – Revised Reconfiguring a Lot Plans Prepared by Cardno



LAYOUT PLAN - SHEET 2 OF 3
SCALE 1:1000



DATE PLOTTED: 20 November 2014 1:19 PM
CAD FILE: H:\2014\144007 - Vixies Road\Design\Acad\C0144007-001-L02.dwg

							Verified
							B.N.CLAYTON
							Date 20.11.2014
							Approved
01	20.11.2014	FOR COUNCIL TOWN PLANNING APPROVAL	AGP	BNC	BNC	B.N.CLAYTON	Date 20.11.2014
Rev	Date	Description	Des.	Verif.	Appr.	RPEQ No. 776	

© Cardno Limited All Rights Reserved,
This document is produced by Cardno Limited solely for the
benefit of and use by the client in accordance with the terms
of the retainer. Cardno Limited does not and shall not
assume any responsibility or liability whatsoever to any third
party arising out of any use or reliance by third party on the
content of this document.



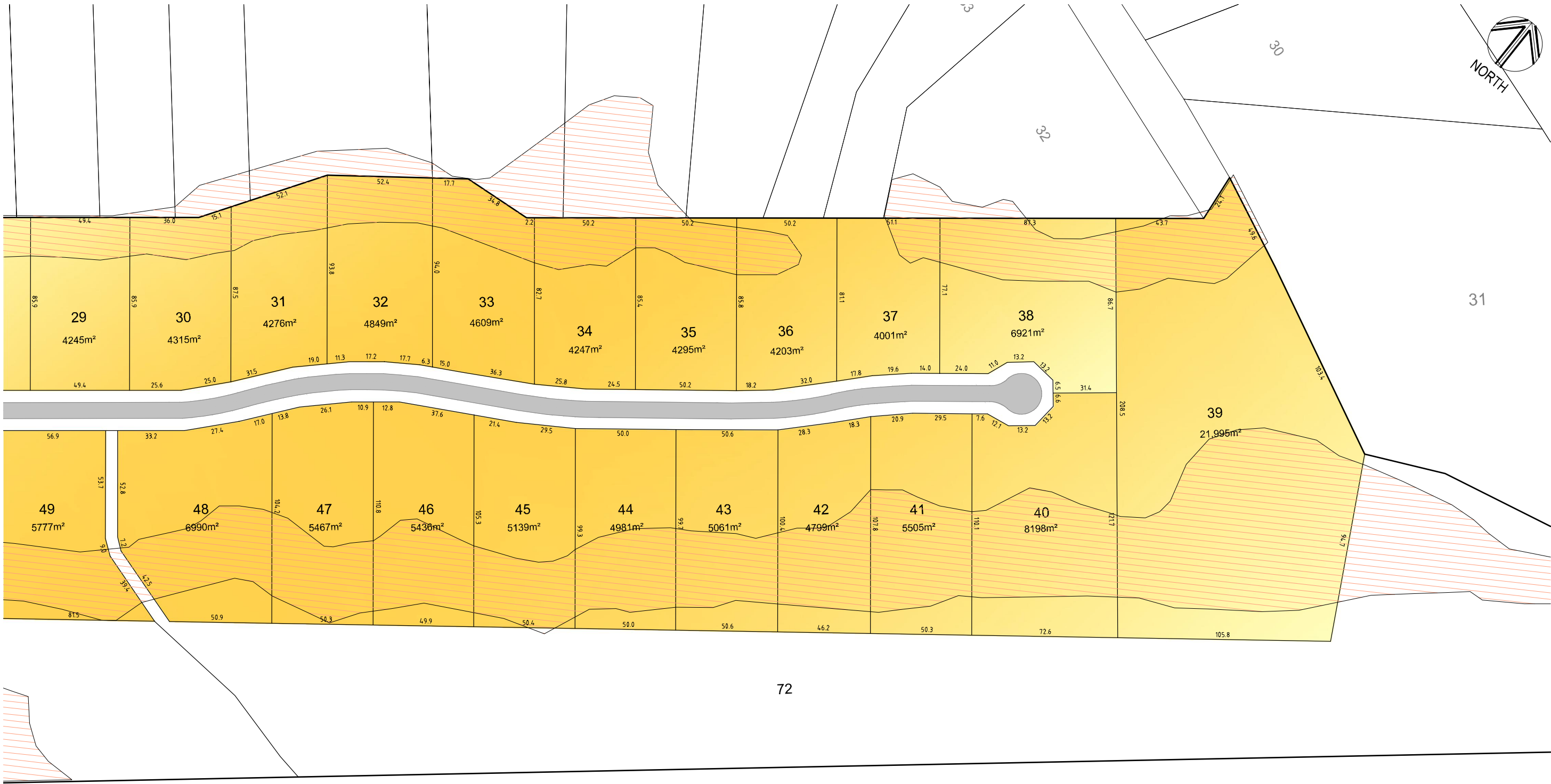
Cardno (Qld) Pty Ltd | ABN 57 051 074 992
Level 1, 280 Sheridan Street
Cairns North, Qld 4870
PO Box 1619, Cairns, Qld 4870
Tel (07) 4051 0288 Fax (07) 4051 0133
Email: cairns@cardno.com.au Web: www.cardno.com.au

Drawn	AGP	Date 20.11.2014
Checked	BNC	Date 20.11.2014
Designed	BNC	Date 20.11.2014

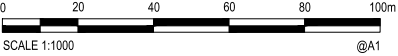
Client **VIC SCOMAZZON**
LOT 32 VIXIES ROAD WONGA BEACH

LAYOUT PLAN - SHEET 2 OF 3

Status	FOR APPROVAL			
	NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Datum	A.H.D.	Date 20.11.2014	Scale AS SHOWN	Size A1
Drawing Number	Q144007-001-L02			Revision 01



LAYOUT PLAN - SHEET 3 OF 3
SCALE 1:1000



DATE PLOTTED: 20 November 2014 1:20 PM
CAD FILE: H:\2014\144007 - Vixies Road\Design\Acad\C0144007-001-L03.dwg

							Verified
							B.N.CLAYTON
							Date 20.11.2014
							Approved
01	20.11.2014	FOR COUNCIL TOWN PLANNING APPROVAL	AGP	BNC	BNC	B.N.CLAYTON	Date 20.11.2014
Rev	Date	Description	Des.	Verif.	Appr.	RPEQ No. 776	

© Cardno Limited All Rights Reserved,
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Cardno
Shaping the Future

Cardno (Qld) Pty Ltd | ABN 57 051 074 992
Level 1, 280 Sheridan Street
Cairns North, Qld 4870
PO Box 1619, Cairns, Qld 4870
Tel (07) 4051 0288 Fax (07) 4051 0133
Email: cairns@cardno.com.au Web: www.cardno.com.au

Drawn	AGP	Date	20.11.2014
Checked	BNC	Date	20.11.2014
Designed	BNC	Date	20.11.2014

Client **VIC SCOMAZZON**
LOT 32 VIXIES ROAD WONGA BEACH

LAYOUT PLAN - SHEET 3 OF 3

Status					FOR APPROVAL		
NOT TO BE USED FOR CONSTRUCTION PURPOSES							
Datum	Date		Scale		Size		
A.H.D.	20.11.2014		AS SHOWN		A1		
Drawing Number					Revision		
Q144007-001-L03					01		

Attachment C – Cairns Regional Council Correspondence

Lyndall Bissett

From: Hewitt Ricky [R.Hewitt@caims.qld.gov.au]
Sent: Thursday, 7 June 2012 4:49 PM
To: Peter Robinson (peterrobinson@projexnorth.com)
Cc: Turner Jon; Warner Gary; Bancilhon Dom
Subject: WW Infrastructure, 8/13/1481, Scornazzon - Wonga Beach - water and sewerage options
Attachments: 20120601142704313.pdf, 20120601142704313.pdf

Hi Peter

Further to the meeting held on the 24th April water and Waste was to provide clarification and options on how the subdivision could be connected to Council's reticulated water and sewerage infrastructure given its out of sequence and the constraints associated with on-site sewerage.

Water Supply

Council would include in future infrastructure planning a water reticulation main extended from the existing water main in Mossman Daintree Road at Wonga Beach Drive intersection to the intersection of South Arm Drive and Vixies Road as per attached concept plan. A distance of approximately 2430m. The developer would be expected to contribute on a pro-rata basis to the cost of this water main.

The timing of construction of this water main by Council would be subject to funding availability and it's priority.

The conditions could be written based on the following:-

- The developer responsible for installing a water reticulation main and rider main within the development to the future connection point at South Arm Drive.
- A note would be placed on the rates file of each lot stating that the property owner is responsible for providing a Water Tank at the time of Building Approval. The tanks would be a minimum of 30,000L and subject to confirmation by QRFS on the fire storage capacity required.
- A note would be placed on the rates file of each lot stating that the property owner is responsible for making an application for a water service connection and paying the applicable fee within a reasonable time of Council requesting them to do so upon extending the reticulated supply to the subdivision.
- The developer would make a monetary contribution on a pro rata basis to the construction of a water main between Wonga Beach Road and South Arm Drive in accordance with an Infrastructure Agreement between Council and the developer.

At this stage it is not known whether the reticulated supply would be capable of providing a full service or trickle feed supply and this would be dealt with later.

The timing of the monetary contribution could be at plan sealing of each stage and be proportioned according to the number of lots sealed.

It would be expected that any infrastructure agreement be executed prior to issue of a Works Acceptance Certificate of the first stage.

Sewerage

As per previous meeting Council put forward an option which may be satisfactory to both parties whereby the subdivision is serviced by a low pressure sewerage system and a sewerage pump station rather than the on-site sewerage option. The pump station would be sited within the development site adjacent to Vixies Road on a freehold lot donated to Council and be used as a temporary pump out facility until the site is connected to Council's sewerage network.

12/06/2012

Council would include in future infrastructure planning a rising main from South Arm Drive to the proposed Wonga Beach Pump Station as per attached concept plan. A distance of approximately 4230m. Timing of the rising main would be subject to funding availability and its priority. The developer would be expected to contribute on a pro-rata basis to the cost of this trunk main.

Also the developer would be responsible for constructing that part of the rising main along Vixies Road between the proposed pump station to the intersection with South Arm Drive – a relatively short distance.

The conditions could be written based on the following:-

- The developer would be responsible for installing the low pressure sewer main internal of the subdivision in the road verge enabling future connection of each lot, construction of a pump station within a free hold lot and a short section of the rising main in Vixies Road from the pump station to the intersection with South Arm Drive.
- Council would request that the pump station be increased in size to cater for a larger catchment area and Council would reimburse the difference in costs in accordance with an Infrastructure Agreement between Council and the developer.
- A note would be placed on the rates file of each lot stating that property owners are responsible for supply, installation and maintenance of a domestic sized packaged sewerage pump station at the time of Building Approval. The package pump station and connection to the sewer pressure main would be subject to a plumbing application and paying the applicable fee by the property owner;
- The Developer would be responsible for all pump out costs from the pump station (as a temporary holding tank) until connection to Council's sewerage network is possible. An agreement between the developer and Council would be agreed prior to sealing the survey plan of the first stage.
- The developer would make a monetary contribution on a pro rata basis to the construction of a sewer rising main between Wonga Beach Road and South Arm Drive in accordance with an Infrastructure Agreement between Council and the developer.

There may be a number of options for managing the on-going pump out cost among property owners and the developer and these would need to be considered later.

It would be expected that any infrastructure agreement be executed prior to issue of a Works Acceptance Certificate of the first stage.

On-site sewerage

The options of lot based or community based on-site sewerage would still be entertained however as mentioned at the meeting Council's view is that the accumulative impacts of onsite sewerage disposal have not been addressed to the extent necessary to satisfy Council.

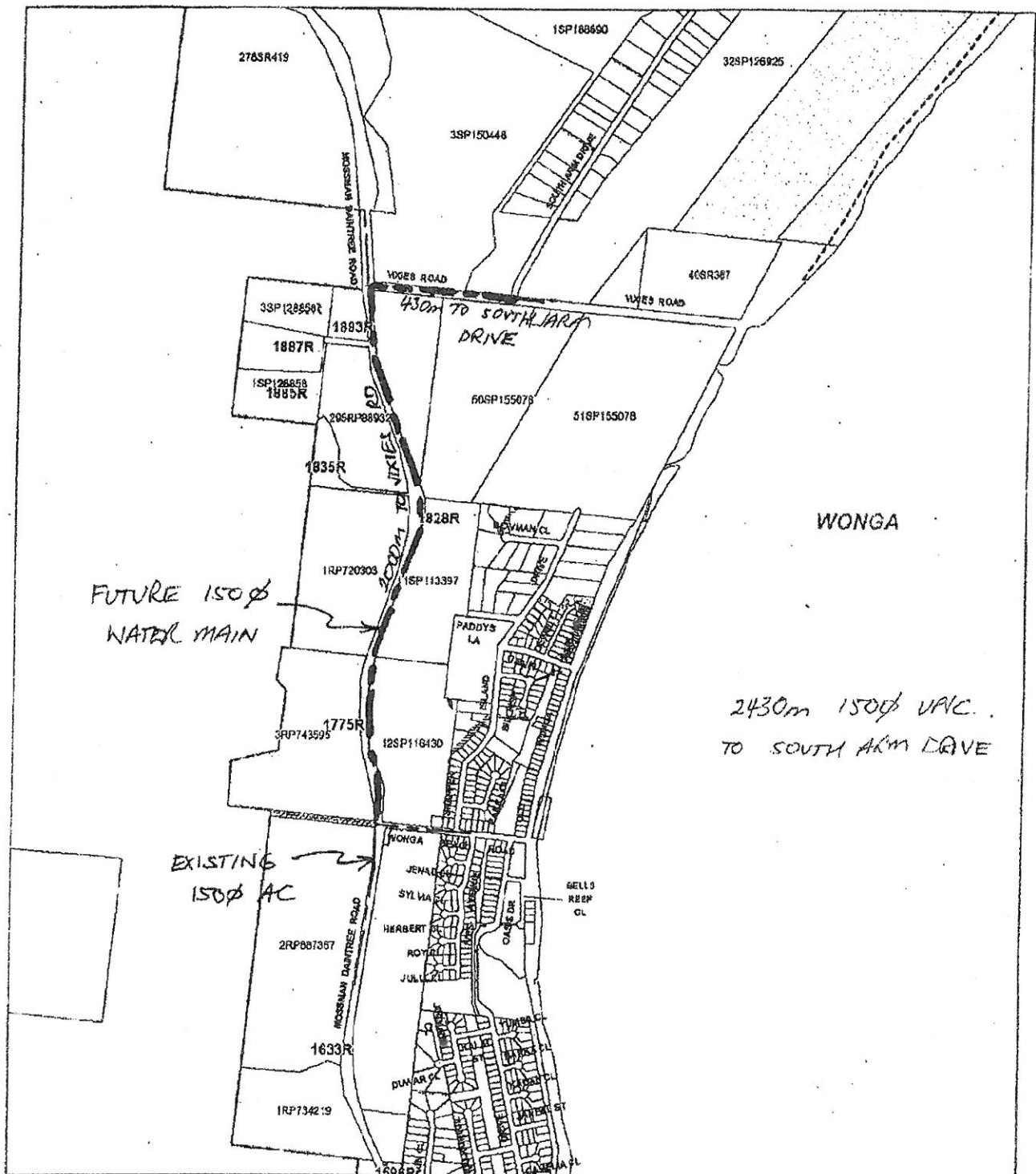
Regards

Ricky Hewitt | Senior Strat Infrast Engineer
 Infrastructure (Water) | Cairns Regional Council
 Phone: +61740448351 | Fax: +61740443870
 Email: R.Hewitt@cairns.qld.gov.au | URL: cairns.qld.gov.au
 Mail: PO Box 359, Cairns Q 4870 | Office: 119-145 Spence St, Cairns Q 4870

Cairns Regional Council Disclaimer

"This message, and any attachments, may contain privileged and confidential information intended only for the use of the intended addressee(s). Any unauthorized use of this material is prohibited. If

12/06/2012

WATER SUPPLY

Cairns Regional Council
COPYRIGHT

This document is and shall remain the property of the Cairns Regional Council. Using or copying this document or any part of it without specific authorisation is absolutely prohibited.

P.O. Box 359
Cairns Qld. 4870

Fax: (07) 4944 3022
Tel: (07) 4944 3044

Author: User
Date: Friday, 1 June 2012

CAIRNS REGIONAL COUNCIL

Map Scale: 1:17,980
DO NOT SCALE

Map Layer:
Sheet of



REVISION

Attachment D – IDAS Form 1 (amended)

IDAS form 1—Application details

(Sustainable Planning Act 2009 version 4.1 effective 4 July 2014)

This form must be used for **ALL** development applications.

You **MUST** complete **ALL** questions that are stated to be a mandatory requirement unless otherwise identified on this form.

For all development applications, you must:

- complete this form (*IDAS form 1—Application details*)
- complete any other forms relevant to your application
- provide any mandatory supporting information identified on the forms as being required to accompany your application.

Attach extra pages if there is insufficient space on this form.

All terms used on this form have the meaning given in the *Sustainable Planning Act 2009* (SPA) or the Sustainable Planning Regulation 2009.

This form and any other IDAS form relevant to your application must be used for development applications relating to strategic port land and Brisbane core port land under the *Transport Infrastructure Act 1994* and airport land under the *Airport Assets (Restructuring and Disposal) Act 2008*. Whenever a planning scheme is mentioned, take it to mean land use plan for the strategic port land, Brisbane core port land or airport land.

PLEASE NOTE: This form is not required to accompany requests for compliance assessment.

This form can also be completed online using MyDAS at www.dsdip.qld.gov.au/MyDAS

Mandatory requirements

Applicant details (Note: the applicant is the person responsible for making the application and need not be the owner of the land. The applicant is responsible for ensuring the information provided on all IDAS application forms is correct. Any development permit or preliminary approval that may be issued as a consequence of this application will be issued to the applicant.)

Name/s (individual or company name in full)

Vic Scomazzon c/o Cardno

For companies, contact name

Dominic Hammersley

Postal address

PO Box 1619

Suburb Cairns

State QLD

Postcode

4870

Country

Australia

Contact phone number

+617 4051 0288

Mobile number (non-mandatory requirement)

+617 417 361 232

Fax number (non-mandatory requirement)

Email address (non-mandatory requirement)

dominic.hammersley

@cardno.com.au

Applicant's reference number (non-mandatory requirement)

Q144007

1. What is the nature of the development proposed and what type of approval is being sought?

Table A—Aspect 1 of the application (If there are additional aspects to the application please list in Table B—Aspect 2.)

- a) What is the nature of the development? (Please only tick one box.)
- ☐ Material change of use ☒ Reconfiguring a lot ☐ Building work ☐ Operational work
- b) What is the approval type? (Please only tick one box.)
- ☐ Preliminary approval under s241 of SPA ☐ Preliminary approval under s241 and s242 of SPA ☒ Development permit
- c) Provide a brief description of the proposal, including use definition and number of buildings or structures where applicable (e.g. six unit apartment building defined as a *multi-unit dwelling*, 30 lot residential subdivision etc.)
- 72 lot residential subdivision and one (1) park lot
- d) What is the level of assessment? (Please only tick one box.)
- ☐ Impact assessment ☒ Code assessment

Table B—Aspect 2 of the application (If there are additional aspects to the application please list in Table C—Additional aspects of the application.)

- a) What is the nature of development? (Please only tick one box.)
- ☐ Material change of use ☐ Reconfiguring a lot ☐ Building work ☐ Operational work
- b) What is the approval type? (Please only tick one box.)
- ☐ Preliminary approval under s241 of SPA ☐ Preliminary approval under s241 and s242 of SPA ☐ Development permit
- c) Provide a brief description of the proposal, including use definition and number of buildings or structures where applicable (e.g. six unit apartment building defined as a *multi-unit dwelling*, 30 lot residential subdivision etc.)
-
- d) What is the level of assessment?
- ☐ Impact assessment ☐ Code assessment

Table C—Additional aspects of the application (If there are additional aspects to the application please list in a separate table on an extra page and attach to this form.)

- ☐ Refer attached schedule ☐ Not required

2. Location of the premises (Complete Table D and/or Table E as applicable. Identify each lot in a separate row.)

Table D—Street address and lot on plan for the premises or street address and lot on plan for the land adjoining or adjacent to the premises (Note: this table is to be used for applications involving taking or interfering with water). (Attach a separate schedule if there is insufficient space in this table.)

☒ Street address **and** lot on plan (All lots must be listed.)
☐ Street address **and** lot on plan for the land adjoining or adjacent to the premises (Appropriate for development in water but adjoining or adjacent to land, e.g. jetty, pontoon. All lots must be listed.)

Street address					Lot on plan description		Local government area (e.g. Logan, Cairns)
Lot	Unit no.	Street no.	Street name and official suburb/ locality name	Post-code	Lot no.	Plan type and plan no.	
i)			Vixies Road, Wonga Beach	4873	32	SP126925	Douglas Shire Council
ii)							
iii)							

Planning scheme details (If the premises involves multiple zones, clearly identify the relevant zone/s for each lot in a separate row in the below table. Non-mandatory)

Lot	Applicable zone / precinct	Applicable local plan / precinct	Applicable overlay/s
i)	Rural Settlement Area	N/A	Acid Sulphate Soils / Natural Hazard
ii)			
iii)			

Table E—Premises coordinates (Appropriate for development in remote areas, over part of a lot or in water not adjoining or adjacent to land e.g. channel dredging in Moreton Bay.) (Attach a separate schedule if there is insufficient space in this table.)

Coordinates (Note: place each set of coordinates in a separate row)				Zone reference	Datum	Local government area (if applicable)
Easting	Northing	Latitude	Longitude			
					<input type="checkbox"/> GDA94 <input type="checkbox"/> WGS84 <input type="checkbox"/> other	

3. Total area of the premises on which the development is proposed (indicate square metres)

4. Current use/s of the premises (e.g. vacant land, house, apartment building, cane farm etc.)

Vacant Land

5. Are there any current approvals (e.g. a preliminary approval) associated with this application? (Non-mandatory requirement)

☒ No ☐ Yes—provide details below

List of approval reference/s	Date approved (dd/mm/yy)	Date approval lapses (dd/mm/yy)

6. Is owner's consent required for this application? (Refer to notes at the end of this form for more information.)

☐ No
☒ Yes—complete either Table F, Table G or Table H as applicable

Table F

Name of owner/s of the land	
I/We, the above-mentioned owner/s of the land, consent to the making of this application.	
Signature of owner/s of the land	
Date	

Table G

Name of owner/s of the land	Vic Scomazzon
<input checked="" type="checkbox"/> The owner's written consent is attached or will be provided separately to the assessment manager.	

Table H

Name of owner/s of the land	
<input type="checkbox"/> By making this application, I, the applicant, declare that the owner has given written consent to the making of the application.	

7. Identify if any of the following apply to the premises (Tick applicable box/es.)

- ☐ Adjacent to a water body, watercourse or aquifer (e.g. creek, river, lake, canal)—complete Table I
- ☐ On strategic port land under the *Transport Infrastructure Act 1994*—complete Table J
- ☐ In a tidal water area—complete Table K
- ☐ On Brisbane core port land under the *Transport Infrastructure Act 1994* (No table requires completion.)
- ☐ On airport land under the *Airport Assets (Restructuring and Disposal) Act 2008* (no table requires completion)
- ☐ Listed on either the Contaminated Land Register (CLR) or the Environmental Management Register (EMR) under the *Environmental Protection Act 1994* (no table requires completion)

Table I

Name of water body, watercourse or aquifer

Table J	
Lot on plan description for strategic port land	Port authority for the lot

Table K	
Name of local government for the tidal area (if applicable)	Port authority for the tidal area (if applicable)

8. Are there any existing easements on the premises? (e.g. for vehicular access, electricity, overland flow, water etc)

☒ No ☐ Yes—ensure the type, location and dimension of each easement is included in the plans submitted

9. Does the proposal include new building work or operational work on the premises? (Including any services)

☒ No ☐ Yes—ensure the nature, location and dimension of proposed works are included in plans submitted

10. Is the payment of a portable long service leave levy applicable to this application? (Refer to notes at the end of this form for more information.)

☒ No—go to question 12 ☐ Yes

11. Has the portable long service leave levy been paid? (Refer to notes at the end of this form for more information.)

☒ No
☐ Yes—complete Table L and submit with this application the yellow local government/private certifier's copy of the receipted QLeave form

Table L		
Amount paid	Date paid (dd/mm/yy)	QLeave project number (6 digit number starting with A, B, E, L or P)

12. Has the local government agreed to apply a superseded planning scheme to this application under section 96 of the *Sustainable Planning Act 2009*?

☐ No
☐ Yes—please provide details below

Name of local government	Date of written notice given by local government (dd/mm/yy)	Reference number of written notice given by local government (if applicable)

- 13. List below all of the forms and supporting information that accompany this application** (Include all IDAS forms, checklists, mandatory supporting information etc. that will be submitted as part of this application. Note: this question does not apply for applications made online using MyDAS)

Description of attachment or title of attachment	Method of lodgement to assessment manager

14. Applicant's declaration

- ☒ By making this application, I declare that all information in this application is true and correct (Note: it is unlawful to provide false or misleading information)

Notes for completing this form

- Section 261 of the *Sustainable Planning Act 2009* prescribes when an application is a properly-made application. Note, the assessment manager has discretion to accept an application as properly made despite any non-compliance with the requirement to provide mandatory supporting information under section 260(1)(c) of the *Sustainable Planning Act 2009*

Applicant details

- Where the applicant is not a natural person, ensure the applicant entity is a real legal entity.

Question 1

- Schedule 3 of the Sustainable Planning Regulation 2009 identifies assessable development and the type of assessment. Where schedule 3 identifies assessable development as "various aspects of development" the applicant must identify each aspect of the development on Tables A, B and C respectively and as required.

Question 6

- Section 263 of the *Sustainable Planning Act 2009* sets out when the consent of the owner of the land is required for an application. Section 260(1)(e) of the *Sustainable Planning Act 2009* provides that if the owner's consent is required under section 263, then an application must contain, or be accompanied by, the written consent of the owner, or include a declaration by the applicant that the owner has given written consent to the making of the application. If a development application relates to a state resource, the application is not required to be supported by evidence of an allocation or entitlement to a state resource. However, where the state is the owner of the subject land, the written consent of the state, as landowner, may be required. Allocation or entitlement to the state resource is a separate process and will need to be obtained before development commences.

Question 7

- If the premises is listed on either the Contaminated Land Register (CLR) or the Environmental Management Register (EMR) under the *Environmental Protection Act 1994* it may be necessary to seek compliance assessment. Schedule 18 of the Sustainable Planning Regulation 2009 identifies where compliance assessment is required.

Question 11

- The *Building and Construction Industry (Portable Long Service Leave) Act 1991* prescribes when the portable long service leave levy is payable.
- The portable long service leave levy amount and other prescribed percentages and rates for calculating the levy are prescribed in the Building and Construction Industry (Portable Long Service Leave) Regulation 2002.

Question 12

- The portable long service leave levy need not be paid when the application is made, but the *Building and Construction Industry (Portable Long Service Leave) Act 1991* requires the levy to be paid before a development permit is issued.
- Building and construction industry notification and payment forms are available from any Queensland post office or agency, on request from QLeave, or can be completed on the QLeave website at www.qleave.qld.gov.au. For further information contact QLeave on 1800 803 481 or visit www.qleave.qld.gov.au.

Privacy—The information collected in this form will be used by the Department of State Development, Infrastructure and Planning (DSDIP), assessment manager, referral agency and/or building certifier in accordance with the processing and assessment of your application. Your personal details should not be disclosed for a purpose outside of the IDAS process or the provisions about public access to planning and development information in the *Sustainable Planning Act 2009*, except where required by legislation (including the *Right to Information Act 2009*) or as required by Parliament. This information may be stored in relevant databases. The information collected will be retained as required by the *Public Records Act 2002*.

OFFICE USE ONLY

Date received

Reference numbers

NOTIFICATION OF ENGAGEMENT OF A PRIVATE CERTIFIER

To

Council. I have been engaged as the private certifier for the building work referred to in this application

Date of engagement	Name	BSA Certification license number	Building classification/s

QLEAVE NOTIFICATION AND PAYMENT (For completion by assessment manager or private certifier if applicable.)

Description of the work	QLeave project number	Amount paid (\$)	Date paid	Date receipted form sighted by assessment manager	Name of officer who sighted the form

The *Sustainable Planning Act 2009* is administered by the Department of State Development, Infrastructure and Planning. This form and all other required application materials should be sent to your assessment manager and any referral agency.