Redland
CITY COUNCIL

MINUTES

GENERAL MEETING

Wednesday, 18 November 2020

The Council Chambers
91 - 93 Bloomfield Street
CLEVELAND QLD

Order Of Business

GENERAL MEETING
HELD AT THE COUNCIL CHAMBERS, 91 - 93 BLOOMFIELD STREET, CLEVELAND QLD
ON WEDNESDAY, 18 NOVEMBER 2020 AT 9.30AM

1 DECLARATION OF OPENING

The Mayor declared the meeting open at 09.35am and acknowledged the Quandamooka people, who are the traditional custodians of the land on which Council meets.

The Mayor also paid Council's respect to their elders, past and present, and extended that respect to other indigenous Australians who are present.

2 RECORD OF ATTENDANCE AND LEAVE OF ABSENCE

MEMBERS PRESENT: Cr Karen Williams (Mayor), Cr Wendy Boglary (Division 1), Cr Peter Mitchell (Division 2), Cr Paul Gollè (Division 3), Cr Lance Hewlett (Division 4), Cr Mark Edwards (Division 5), Cr Julie Talty (Deputy Mayor and Division 6), Cr Rowanne McKenzie (Division 7), Cr Tracey Huges (Division 8), Cr Adelia Berridge (Division 9), Cr Paul Bishop (Division 10)

EXECUTIVE LEADERSHIP TEAM: Andrew Chesterman (Chief Executive Officer), John Oberhardt (General Manager Organisational Services), Louise Rusan (General Manager Community & Customer Services), Sherry Clarke (Proxy for General Manager Infrastructure & Operations), Deborah Corbett-Hall (Chief Financial Officer), Andrew Ross (General Counsel)

MINUTES: Lizzi Striplin (Corporate Meetings & Registers Supervisor)

LEAVE OF ABSENCE

Nil

COUNCILLOR ABSENCES DURING THE MEETING

Cr Rowanne McKenzie left the meeting at 10.38am and returned at 10.41am (during Item 14.4)

Cr Peter Mitchell left the meeting at 10.46am and returned at 10.48am (during Item 14.4)

Cr Paul Bishop left the meeting at 11.28am and returned at 11.29am (during Item 14.5)

Cr Wendy Boglary left the meeting at 11.28am and returned at 11.30am (during Item 14.5)

Cr Rowanne McKenzie left the meeting at 11.49am and returned at 11.53am (during Item 14.5)

Cr Tracey Huges left the meeting at 11.55am and returned at 11.58am (during Item 15.1)

Cr Julie Talty left the meeting at 11.57am and returned at 11.59am (during Item 15.1)

Cr Paul Gollè left the meeting at 12.06pm and returned at 12.07pm (during Item 15.2)

Cr Mark Edwards left the meeting at 12.12pm and returned at 12.17pm (during Item 15.2)

Cr Mark Edwards left the meeting at 12.37pm and returned at 12.41pm (during closed session while discussing Item 19.4)

Cr Mark Edwards left the meeting at 12.45pm

3 DEVOTIONAL SEGMENT

Pastor Linda Grieves, C3 Church Redland Bay, also a member of the Minister's Fellowship led Council in a brief Devotional segment.

4 RECOGNITION OF ACHIEVEMENT

4.1 DANIEL AND WILLIAM CLARKE

The Mayor recognised Daniel and William Clarke as recipients of the 2020 Queensland Young Australian of the Year Award:

As you may know, the Queensland Australian of the Year Awards were recently held. These are the State Awards that lead to the Australian of the Year Awards to be announced in January 2021.

I am very pleased, and also extremely proud, to let you know that Redlands Coast residents have been honoured with nominations and awards this year.

*I congratulate Thornlands brothers **Daniel and William Clarke** who are the recipients of the 2021 Queensland Young Australian of the Year Award.*

This award acknowledges Daniel and William's remarkable efforts together as young conservationists to protect endangered orangutan populations in Borneo and Sumatra, and is a very fitting acknowledgment of the dedication and commitment they have shown to this very important cause over many, many years and for such young people as well.

On the City's behalf, I commend them on the work they do to raise awareness and funds to protect these animals and also on their commitment to inspiring other young people to make a difference in our local and global community.

No doubt Daniel and William have already become important role models for many young people and I certainly wish them well as Queensland's nominees for the Australian of the Year honour to be announced next year.

4.2 BETTY TAYLOR

The Mayor recognised another local, Betty Taylor, CEO of the Red Rose Foundation for her nomination in the 2021 Queensland Senior Australian of the Year category:

This nomination follows Betty's Queensland Greats Award in 2020, and is a very fitting acknowledgement of the valuable contribution she has made over almost 30 years supporting people in our community who have been impacted by domestic and family violence and her tireless and ongoing efforts to end domestic and family violence.

4.3 JACKY BURKETT

The Mayor recognised another local, Jacky Burkett, member of Soroptimist International Bayside for her nomination and receipt of the 2020 Florence Drury Award for Excellence as a Soroptimist:

I would also like to congratulate, in the same vein, Diner on Rouge organising committee and Soroptimist International Bayside representative Jacky Burkett on recently receiving the 2020 Florence Drury Award for Excellence as a Soroptimist.

Like many of our wonderful Redlands Coast Volunteers most of Jacky's work is to improve the lives of women and girls in our community. It is done behind the scenes and often goes unnoticed and unmentioned and so today we change that by acknowledging Jacky and her tireless work over many years in many roles to bring awareness to the issue of domestic and family violence in our community and to improving the lives of women and girls.

The award recognizes her efforts across many fronts, to support, educate and empower women which of course is the motto for our Soroptimists.

So I'd like to thank and congratulate Daniel, William, Betty and Jacky for their ongoing contributions to our Redlands Coast Community.

5 RECEIPT AND CONFIRMATION OF MINUTES

OFFICER'S RECOMMENDATION/COUNCIL RESOLUTION 2020/334

Moved by: **Cr Tracey Huges**
Seconded by: **Cr Rowanne McKenzie**

That the minutes of the General Meeting held on 4 November 2020 be confirmed.

CARRIED 11/0

Crs Karen Williams, Wendy Boglary, Peter Mitchell, Paul Gollè, Lance Hewlett, Mark Edwards, Julie Talty, Rowanne McKenzie, Tracey Huges, Adelia Berridge and Paul Bishop voted FOR the motion.

6 DECLARATION OF PRESCRIBED CONFLICT OF INTERESTS AND DECLARABLE CONFLICT OF INTERESTS

6.1 PRESCRIBED CONFLICT OF INTEREST – CR MARK EDWARDS

Cr Mark Edwards declared a Prescribed Conflict of Interest in Item 19.4 *Expressions of Interest – Macleay Island Industrial Land*, stating that he owns industrial property on Southern Moreton Bay Islands. (refer Item 19.4 for details)

6.2 DECLARABLE CONFLICT OF INTEREST – MAYOR KAREN WILLIAMS

Mayor Karen Williams declared a Declarable Conflict of Interest in Item 19.2 *Paige Pty Ltd V Redland City Council (Planning and Environment Court Appeal) 2893/2020*, stating that although the applicant is Paige, the neighbouring land owner is Sutgold as a co-respondent. Mayor Williams also stated that Sutgold were subject to a previous unsubstantiated complaint about her for failing to declare a Conflict of Interest, due to them having purchased her late mother's property. (refer Item 19.2 for details)

Mayor Williams considered her position and was firmly of the opinion that she could participate in the discussion and vote on the matter in the public interest.

A motion was put on as follows:

COUNCIL RESOLUTION 2020/335

Moved by: **Cr Rowanne McKenzie**
Seconded by: **Cr Tracey Huges**

That Mayor Williams may stay and participate in the meeting in relation to Item 19.2 *Paige Pty Ltd V Redland City Council (Planning and Environment Court Appeal) 2893/2020*, including voting on the matter.

CARRIED 10/0

Crs Wendy Boglary, Peter Mitchell, Paul Gollè, Lance Hewlett, Mark Edwards, Julie Talty, Rowanne McKenzie, Tracey Huges, Adelia Berridge and Paul Bishop voted FOR the motion.

Mayor Williams did not participate in the vote.

The motion was CARRIED as Council was of the opinion that Mayor Williams had no greater interest in the matter than that of other people in the local government area.

6.3 DECLARABLE CONFLICT OF INTEREST – MAYOR KAREN WILLIAMS

Mayor Karen Williams declared a Declarable Conflict of Interest in HUB68, stating that one of the proponents of the HUB68 Project, SS Signs, provided car-wrapping for her in the 2012 election. Mayor Williams also stated that while this was not in the current term, as it is now required under legislation, she wants to put this historic donation on the record.

Mayor Williams considered her position and was firmly of the opinion that she could participate in the discussion and vote on the matter in the public interest.

A motion was put on as follows:

COUNCIL RESOLUTION 2020/336

Moved by: Cr Lance Hewlett
Seconded by: Cr Mark Edwards

That Mayor Williams may participate in future Statutory Meetings (including voting on the matter), and Non-Statutory and Informal Meetings in relation to HUB68.

CARRIED 10/0

Crs Wendy Boglary, Peter Mitchell, Paul Gollè, Lance Hewlett, Mark Edwards, Julie Talty, Rowanne McKenzie, Tracey Huges, Adelia Berridge and Paul Bishop voted FOR the motion.

Mayor Williams did not participate in the vote.

The motion was CARRIED as Council was of the opinion that Mayor Williams had no greater interest in the matter than that of other people in the local government area.

6.4 DECLARABLE CONFLICT OF INTEREST – CR LANCE HEWLETT

Cr Lance Hewlett declared a Declarable Conflict of Interest in HUB68, stating that SS Signs, one of the applicants of the HUB68 development, was a sponsor of the Redlands Community Charity Breakfast which is organised by his wife Sheena Hewlett.

Cr Hewlett considered his position and was firmly of the opinion that he could participate in the discussion and vote on the matter in the public interest.

A motion was put on as follows:

COUNCIL RESOLUTION 2020/337

Moved by: Cr Rowanne McKenzie
Seconded by: Cr Paul Bishop

That Cr Hewlett may participate in future Statutory Meetings (including voting on the matter), and Non-Statutory and Informal Meetings in relation to HUB68.

CARRIED 10/0

Crs Karen Williams, Wendy Boglary, Peter Mitchell, Paul Gollè, Mark Edwards, Julie Talty, Rowanne McKenzie, Tracey Huges, Adelia Berridge and Paul Bishop voted FOR the motion.

Cr Lance Hewlett did not participate in the vote.

The motion was CARRIED as Council was of the opinion that Cr Hewlett had no greater interest in the matter than that of other people in the local government area.

7 MATTERS OUTSTANDING FROM PREVIOUS COUNCIL MEETINGS

7.1 INVESTIGATIONS TO POTENTIALLY ACQUIRE ADDITIONAL LAND FOR SPORT AND RECREATION PURPOSES

At the General Meeting 18 December 2019 (Item 19.3 refers), Council resolved as follows:

That the petition be received and referred to the Chief Executive Officer for consideration and a report to the local government.

A report will be brought to a future meeting of Council.

7.2 MAYORAL MINUTE - REPORT REVIEWING THE FUTURE OPERATIONS OF REDLAND INVESTMENT CORPORATION PTY LTD (RIC)

At the General Meeting 10 June 2020 (Item 13.6 refers), Council resolved as follows:

That Council resolves to extend the timeline for receiving a report on the future operations of the Redland Investment Corporation until 31 December 2020 or within two (2) months of the State Government adopting changes to controlled entity provisions, whichever comes first.

A report will be brought to a future meeting of Council.

7.3 NOTICE OF MOTION - CR WENDY BOGLARY RECREATIONAL VEHICLE PARKING

At the General Meeting 5 August 2020 (Item 17.1 refers), Council resolved as follows:

That Council resolves to proceed with investigating opportunities for Recreational Vehicle (RV) Overnight Parking in the Redlands and that a report be brought to a General Meeting of Council within three months.

A report addressing this matter was discussed at Item 15.2.

7.4 SOUTHERN REDLAND BAY EXPANSION AREA (SRBEA) - CONFIRMING THE PREFERRED APPROACH FOR PLANNING INVESTIGATIONS

At the General Meeting 2 September 2020, (Item 14.3 refers), Council resolved as follows:

That Council resolves that this item lie on the table and be brought back to a future General Meeting of Council.

A report will be brought to a future meeting of Council.

7.5 NOTICE OF MOTION MAJOR AMENDMENT TO THE CITY PLAN - ENVIRONMENTAL CORRIDORS

At the General Meeting 4 November 2020 (Item 17.1 refers), Council resolved as follows:

That Council resolves as follows:

1. *To undertake an urgent review regarding options to provide an enhanced level of statutory land use planning protection to environmental corridors within the Urban Footprint as identified in the Wildlife Connections Plan 2018-2028.*
2. *To request officers undertake the following:*
    a) *Prepare a report to Council outlining the findings of the review, as well as recommended changes to City Plan by the end of February 2021.*

b) Prepare a major amendment pursuant to Part 4 of the Minister's Guideline's and Rules under the Planning Act 2016, if required, incorporating the proposed changes to City Plan as supported by Council by the end of May 2021.

c) Consult with each divisional councillor regarding changes to City Plan that may be recommended.

A report will be brought to a future meeting of Council.

7.6 CONTENTS OF GENERAL MAJOR AMENDMENT PACKAGE 02/20

At the General Meeting 4 November 2020 (Item 19.2 refers), Council resolved as follows:

That Council resolves that this item lie on the table and be brought back to a future General Meeting of Council.

A report will be brought to a future meeting of Council.

8 MAYORAL MINUTE

Nil

9 PUBLIC PARTICIPATION

There was no public participation as the meeting was closed to the public due to the COVID-19 restrictions and subsequent *Local Government Regulation 2012* provisions.

10 PETITIONS AND PRESENTATIONS

10.1 PETITON CR EDWARDS – RESIDENTS REQUESTING AN OFF LEASH DOG AREA AT SANDPIPER BEACH MACLEAY ISLAND

OFFICER'S RECOMMENDATION/COUNCIL RESOLUTION 2020/338

Moved by: **Cr Mark Edwards**
Seconded by: **Cr Julie Talty**

That the petition is of an operational nature and be received and referred to the Chief Executive Officer for consideration.

CARRIED 11/0

Crs Karen Williams, Wendy Boglary, Peter Mitchell, Paul Gollè, Lance Hewlett, Mark Edwards, Julie Talty, Rowanne McKenzie, Tracey Huges, Adelia Berridge and Paul Bishop voted FOR the motion.

10.2 PETITION CR BISHOP – RESIDENTS REQUESTING COUNCIL RETAIN THE REDLANDS 2030 COMMUNITY PLAN AS THE LEAD DOCUMENT IN COUNCIL'S STRATEGIC PLANNING FRAMEWORK

OFFICER'S RECOMMENDATION/COUNCIL RESOLUTION 2020/339

Moved by: **Cr Paul Bishop**
Seconded by: **Cr Wendy Boglary**

That the petition be received and referred to the Chief Executive Officer for consideration and a report to the local government.

CARRIED 11/0

Crs Karen Williams, Wendy Boglary, Peter Mitchell, Paul Gollè, Lance Hewlett, Mark Edwards, Julie Talty, Rowanne McKenzie, Tracey Huges, Adelia Berridge and Paul Bishop voted FOR the motion.

11 MOTION TO ALTER THE ORDER OF BUSINESS

Nil

12 REPORTS FROM THE OFFICE OF THE CEO

Nil

13 REPORTS FROM ORGANISATIONAL SERVICES

13.1 OCTOBER 2020 MONTHLY FINANCIAL REPORT

Objective Reference: A5018418

Authorising Officer: Deborah Corbett-Hall, Chief Financial Officer

Responsible Officer: Deborah Corbett-Hall, Chief Financial Officer

Report Author: Udaya Panambala Arachchilage, Corporate Financial Reporting Manager

Attachments: 1. October 2020 Monthly Financial Report ⇩

PURPOSE

To note the year to date financial results as at 31 October 2020.

BACKGROUND

Council adopts an annual budget and then reports on performance against the budget on a monthly basis. This is not only a legislative requirement but enables the organisation to periodically review its financial performance and position and respond to changes in community requirements, market forces or other outside influences.

ISSUES

Capital carryover budget 2019-20

Council adopted a carryover budget on 19 August 2020 to accommodate capital works straddling two financial years. The attached monthly financial report for October includes the carryover budget adopted by Council.

2020-21 Budget review

Council officers are currently compiling submissions for a budget review. The monthly analysis will be consolidated to update Council's budget for the 2020-21 financial year. Officers are planning to table a revised budget for Council's consideration in February 2021.

STRATEGIC IMPLICATIONS

Council has either achieved or favourably exceeded the following key financial stability and sustainability ratios as at the end of October 2020.

- Operating surplus ratio
- Net financial liabilities
- Ability to pay our bills – current ratio
- Ability to repay our debt – debt servicing ratio
- Cash balance
- Cash balances – cash capacity in months
- Longer term financial stability – debt to asset ratio
- Operating performance
- Interest coverage ratio

The following ratios did not meet the target at the end of October 2020:

- Asset sustainability ratio
- Level of dependence on general rate revenue

The asset sustainability ratio did not meet the target at the end of October 2020 and continues to be a stretch target for Council with renewal spends of $5.82M and depreciation expense of $18.74M year to date on infrastructure assets. This ratio is an indication of how Council currently maintains, replaces and renews its existing infrastructure assets as they reach the end of their useful life. Capital spend on non-renewal projects increases the asset base and therefore increases depreciation expense, resulting in a lower asset sustainability ratio.

Council's Capital Portfolio Prioritisation Administrative Directive demonstrates its commitment to maintaining existing infrastructure and the adoption of a renewal strategy for its existing assets ahead of 'upgrade' and/or 'new' works.

The level of dependence on general rate revenue ratio moves in line with the rating cycle and for October 2020 it is 44.65% which is outside the target range of less than 40%. Increases in this ratio are expected to be cyclical and will occur in the months where the quarterly rates are levied.

Legislative Requirements

The October 2020 financial reports are presented in accordance with the legislative requirement of section 204(2) of the *Local Government Regulation 2012,* requiring the Chief Executive Officer to present the financial report to a monthly Council meeting.

Risk Management

The October 2020 financial reports have been noted by the Executive Leadership Team and relevant officers who can provide further clarification and advice around actual to budget variances.

Financial

There is no direct financial impact to Council as a result of this report; however it provides an indication of financial outcomes at the end of October 2020.

People

Nil impact expected as the purpose of the attached report is to provide financial information to Council based upon actual versus budgeted financial activity.

Environmental

Nil impact expected as the purpose of the attached report is to provide financial information to Council based upon actual versus budgeted financial activity.

Social

Nil impact expected as the purpose of the attached report is to provide financial information to Council based upon actual versus budgeted financial activity.

Human Rights

There are no human rights implications for this report as the purpose of the attached report is to provide financial information to Council based upon actual versus budgeted financial activity.

Alignment with Council's Policy and Plans

This report has a relationship with the following items of Council's 2018-2023 Corporate Plan:

8. Inclusive and ethical governance

   Deep engagement, quality leadership at all levels, transparent and accountable democratic processes and a spirit of partnership between the community and Council will enrich residents' participation in local decision-making to achieve the community's Redlands 2030 vision and goals.

8.2 Council produces and delivers against sustainable financial forecasts as a result of best practice Capital and Asset Management Plans that guide project planning and service delivery across the city.

CONSULTATION

Consulted	Date	Comment
Council departmental officers	Year to date October 2020	Consulted on financial results and outcomes
Financial Services Group officers	Year to date October 2020	Consulted on financial results and outcomes
Executive Leadership Team and Senior Leadership Team	Year to date October 2020	Recipients of variance analysis between actual and budget. Consulted as required

OPTIONS

Option One

That Council resolves to note the financial position, results and ratios for October 2020 as presented in the attached Monthly Financial Report.

Option Two

That Council resolves to request additional information.

OFFICER'S RECOMMENDATION/COUNCIL RESOLUTION 2020/340

Moved by: Cr Mark Edwards
Seconded by: Cr Adelia Berridge

That Council resolves to note the financial position, results and ratios for October 2020 as presented in the attached Monthly Financial Report.

CARRIED 11/0

Crs Karen Williams, Wendy Boglary, Peter Mitchell, Paul Gollè, Lance Hewlett, Mark Edwards, Julie Talty, Rowanne McKenzie, Tracey Huges, Adelia Berridge and Paul Bishop voted FOR the motion.

Monthly Financial Report

October 2020

CONTENTS

1. EXECUTIVE SUMMARY

This monthly report illustrates the financial performance and position of Redland City Council compared to its adopted budget at an organisational level for the period ended 31 October 2020. The year to date and annual revised budget referred to in this report incorporates the changes from budget capital carryovers adopted by Council on 19 August 2020.

Key Financial Highlights and Overview

Key Financial Results ($000)	Annual Revised Budget	YTD Revised Budget	YTD Actual	YTD Variance	YTD Variance %	Status Favourable ✓ Unfavourable ✗
Operating Surplus / (Deficit)	(1,473)	17,513	**23,199**	5,686	32%	✓
Recurrent Revenue	304,795	117,171	**117,433**	262	0%	✓
Recurrent Expenditure	306,268	99,658	**94,234**	(5,424)	-5%	✓
Capital Works Expenditure	91,150	15,278	**11,665**	(3,613)	-24%	✓
Closing Cash & Cash Equivalents	171,713	182,415	**176,346**	(6,069)	-3%	✗

Council reported a year to date operating surplus of $23.20M which is favourable to budget by $5.69M due to less than budget recurrent expenditure. The favourable variance in recurrent expenditure is mainly due to underspend in contractor costs. Of note, interest income is lower than budget due to lower than expected interest rates on investments. The second quarter rate notices were issued in October 2020.

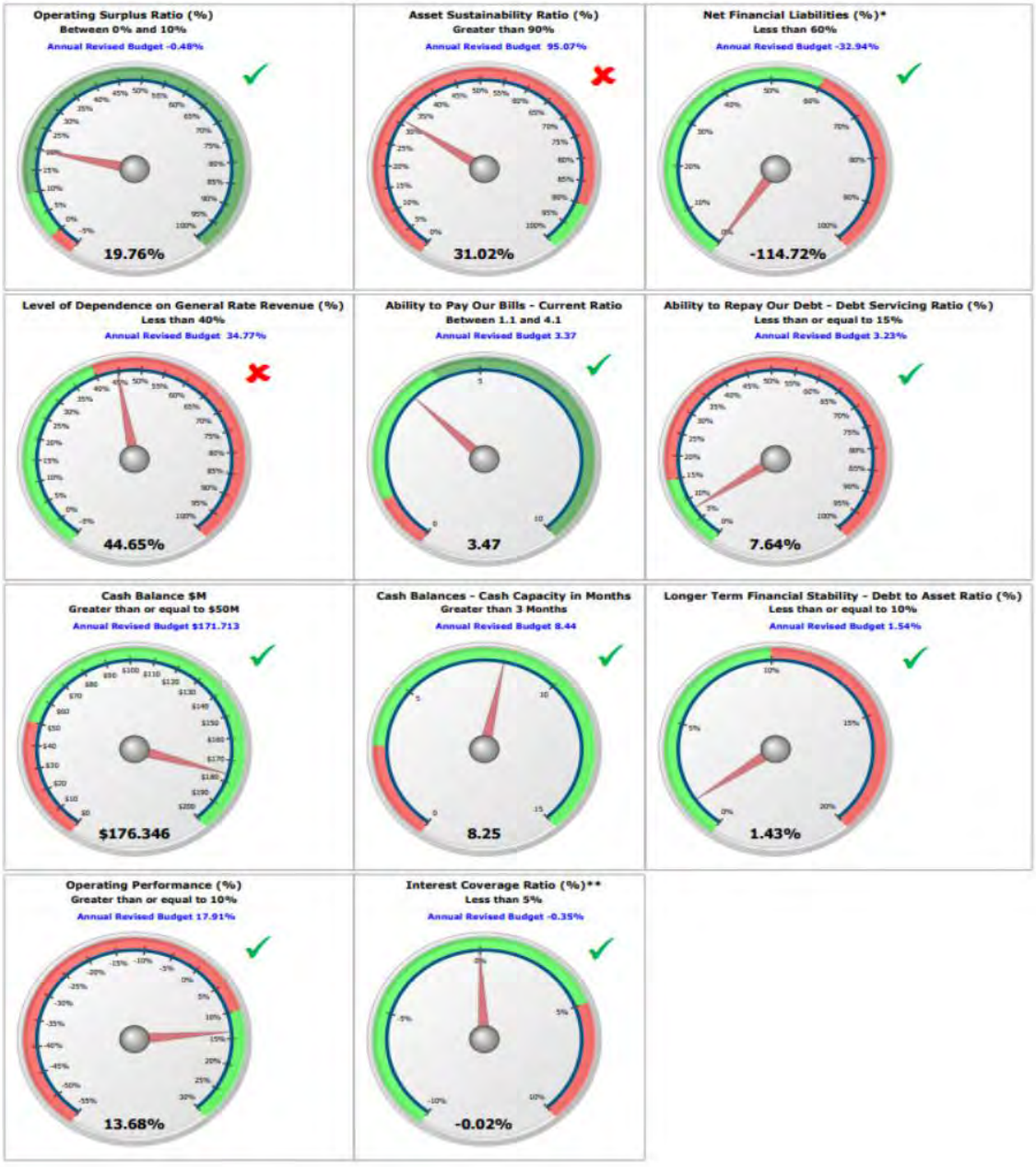
Capital grants, subsidies and contributions are below budget due to timing of developer cash contributions.

Council's capital works expenditure is below budget by $3.61M due to timing of works for a number of infrastructure projects.

Council's cash balance is behind budget due to higher than anticipated payments to suppliers. Constrained cash reserves represent 60% of the cash balance.

2. KEY PERFORMANCE INDICATORS

Target met Target exceeded Target not met



* The net financial liabilities ratio exceeds the target range when current assets are greater than total liabilities (and the ratio is negative)
** The interest coverage ratio exceeds the target range when interest revenue is greater than interest expense (and the ratio is negative)

3. STATEMENT OF COMPREHENSIVE INCOME

STATEMENT OF COMPREHENSIVE INCOME For the period ending 31 October 2020	Annual Original Budget $000	Annual Revised Budget $000	YTD Revised Budget $000	YTD Actual $000	YTD Variance $000
Recurrent revenue					
Rates charges	108,926	108,926	54,225	**53,925**	(300)
Levies and utility charges	160,082	160,082	52,222	**52,969**	747
Less: Pensioner remissions and rebates	(3,430)	(3,430)	(1,626)	**(1,727)**	(101)
Fees	13,554	13,554	4,721	**4,987**	266
Rental income	956	956	280	**328**	48
Interest received	2,999	2,999	999	**678**	(321)
Sales revenue	3,630	3,630	1,218	**1,000**	(218)
Other income	533	533	291	**614**	323
Grants, subsidies and contributions	14,896	17,545	4,841	**4,659**	(182)
Total recurrent revenue	302,146	304,795	117,171	**117,433**	262
Recurrent expenses					
Employee benefits	91,988	92,088	31,253	**30,675**	(578)
Materials and services	145,591	148,140	46,366	**42,055**	(4,311)
Finance costs	2,382	2,382	786	**811**	25
Depreciation and amortisation	64,938	64,938	21,712	**21,315**	(397)
Other expenditure	520	520	128	**32**	(96)
Net internal costs	(1,800)	(1,800)	(587)	**(654)**	(67)
Total recurrent expenses	303,619	306,268	99,658	**94,234**	(5,424)
OPERATING SURPLUS / (DEFICIT)	(1,473)	(1,473)	17,513	**23,199**	5,686
Capital revenue					
Grants, subsidies and contributions	25,922	32,449	8,282	**7,433**	(849)
Non-cash contributions	3,480	3,480	27	**-**	(27)
Total capital revenue	29,402	35,930	8,309	**7,433**	(876)
Capital expenses					
(Gain) / loss on disposal of non-current assets	289	289	96	**(238)**	(334)
Total capital expenses	289	289	96	**(238)**	(334)
TOTAL INCOME	**331,548**	**340,725**	**125,480**	**124,866**	**(614)**
TOTAL EXPENSES	**303,908**	**306,557**	**99,754**	**93,996**	**(5,758)**
NET RESULT	**27,641**	**34,168**	**25,726**	**30,870**	**5,144**
Other comprehensive income / (loss) **Items that will not be reclassified to a net result**					
Revaluation of property, plant and equipment	-	-	-	**-**	-
TOTAL COMPREHENSIVE INCOME	**27,641**	**34,168**	**25,726**	**30,870**	**5,144**

3. STATEMENT OF COMPREHENSIVE INCOME - CONTINUED

LEVIES AND UTILITY CHARGES ANALYSIS
For the period ending 31 October 2020

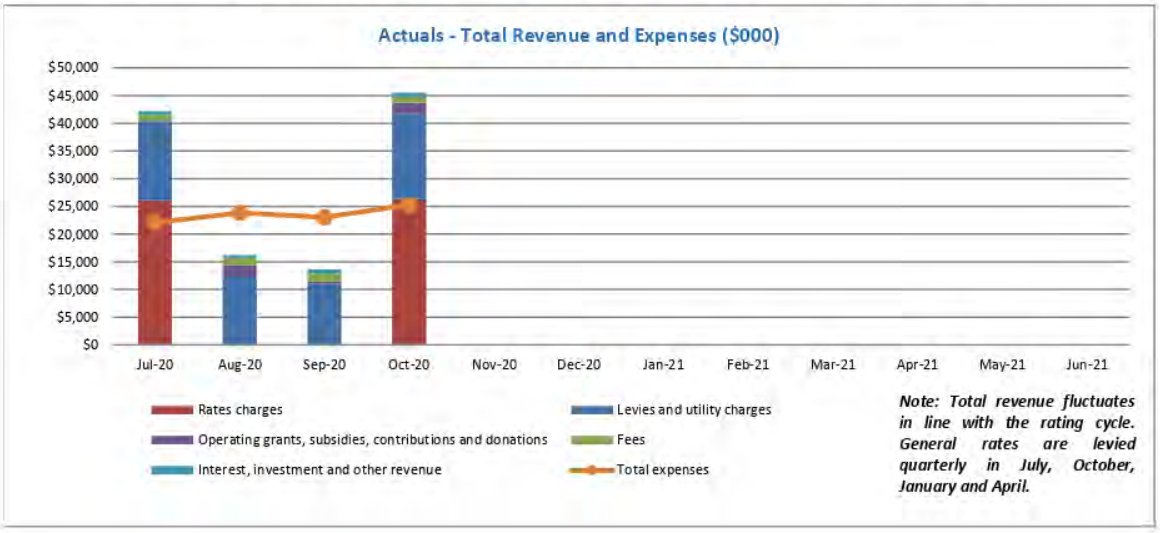
	Annual Original Budget $000	Annual Revised Budget $000	YTD Revised Budget $000	YTD Actual $000	YTD Variance $000
Levies and utility charges					
Refuse collection rate charge	29,127	29,127	9,627	**9,708**	81
SES separate charge	497	497	247	**247**	-
Environment separate charge	8,387	8,388	4,194	**4,165**	(29)
Separate charge landfill remediation	2,163	2,163	717	**716**	(1)
Wastewater charges	47,842	47,842	15,800	**15,754**	(46)
Water access charges	20,120	20,120	6,669	**6,681**	12
Water consumption charges	51,945	51,945	14,968	**15,698**	730
Total levies and utility charges	**160,082**	**160,082**	**52,222**	**52,969**	**747**

MATERIALS AND SERVICES ANALYSIS
For the period ending 31 October 2020

	Annual Original Budget $000	Annual Revised Budget $000	YTD Revised Budget $000	YTD Actual $000	YTD Variance $000
Materials and services					
Contractors	38,549	38,978	12,049	**9,649**	(2,400)
Consultants	2,813	3,323	997	**485**	(512)
Other Council outsourcing costs*	23,063	21,938	6,417	**6,572**	155
Purchase of materials	53,059	55,533	17,406	**17,002**	(404)
Office administration costs	11,685	11,748	3,859	**3,529**	(330)
Electricity charges	5,748	5,748	1,951	**1,795**	(156)
Plant operations	3,548	3,548	1,097	**964**	(133)
Information technology resources	3,067	3,300	1,099	**923**	(176)
General insurance	1,646	1,611	534	**447**	(87)
Community assistance**	1,777	1,777	714	**478**	(236)
Other material and service expenses	636	636	243	**211**	(32)
Total materials and services	**145,591**	**148,140**	**46,366**	**42,055**	**(4,311)**

** Other Council outsourcing costs are various outsourced costs including refuse collection and disposal, waste disposal, legal services, traffic control, external training, valuation fees, etc.*

*** Community assistance costs represent community related costs including community grants, exhibitions and awards, donations and sponsorships.*

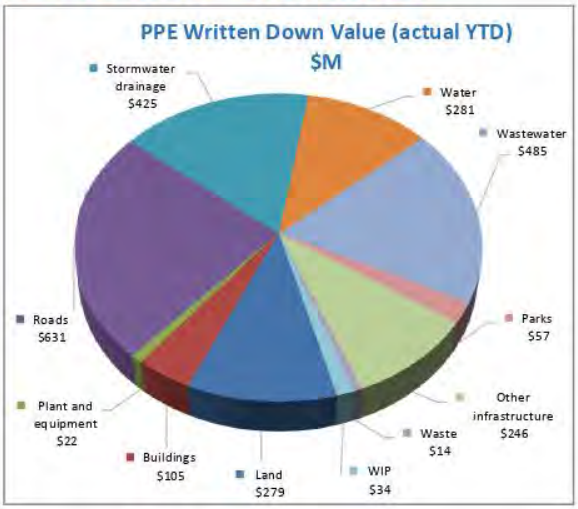


4. STATEMENT OF FINANCIAL POSITION

STATEMENT OF FINANCIAL POSITION
As at 31 October 2020

	Annual Original Budget $000	Annual Revised Budget $000	YTD Revised Budget $000	YTD Actual $000
CURRENT ASSETS				
Cash and cash equivalents	169,264	171,713	182,415	**176,346**
Trade and other receivables	45,924	45,900	74,724	**71,876**
Inventories	918	853	873	**918**
Non-current assets held for sale	-	118	118	**-**
Other current assets	1,955	2,956	2,956	**4,043**
Total current assets	**218,061**	**221,539**	**261,086**	**253,183**
NON-CURRENT ASSETS				
Investment property	1,091	1,225	1,225	**1,225**
Property, plant and equipment	2,572,288	2,617,957	2,582,573	**2,579,352**
Intangible assets	486	1,682	1,976	**1,924**
Right-of-use assets	5,919	5,911	6,655	**6,654**
Other financial assets	73	73	73	**73**
Investment in other entities	13,101	13,101	13,101	**13,101**
Total non-current assets	**2,592,958**	**2,639,948**	**2,605,603**	**2,602,329**
TOTAL ASSETS	**2,811,018**	**2,861,487**	**2,866,689**	**2,855,512**
CURRENT LIABILITIES				
Trade and other payables	28,839	41,895	47,521	**30,523**
Borrowings - current	6,361	8,326	8,326	**8,326**
Lease liability - current*	1,302	1,294	1,294	**1,294**
Provisions - current	10,769	12,188	13,672	**14,328**
Other current liabilities	-	1,960	18,504	**18,519**
Total current liabilities	**47,271**	**65,663**	**89,317**	**72,990**
NON-CURRENT LIABILITIES				
Borrowings - non-current	37,900	35,840	25,035	**25,044**
Lease liability - non-current*	5,481	5,481	6,275	**6,273**
Provisions - non-current	15,120	14,162	14,162	**14,162**
Total non-current liabilities	**58,501**	**55,483**	**45,472**	**45,479**
TOTAL LIABILITIES	**105,772**	**121,146**	**134,789**	**118,469**
NET COMMUNITY ASSETS	**2,705,246**	**2,740,341**	**2,731,900**	**2,737,043**
COMMUNITY EQUITY				
Asset revaluation surplus	1,008,120	1,035,840	1,035,840	**1,035,840**
Retained surplus	1,580,316	1,597,694	1,590,390	**1,596,024**
Constrained cash reserves	116,810	106,807	105,670	**105,179**
TOTAL COMMUNITY EQUITY	**2,705,246**	**2,740,341**	**2,731,900**	**2,737,043**

4. STATEMENT OF FINANCIAL POSITION - CONTINUED



RIGHT-OF-USE ASSETS
For the period ending 31 October 2020

	Annual Original Budget $000	Annual Revised Budget $000	YTD Revised Budget $000	YTD Actual Balance $000
Right-of-use asset				
Buildings	2,780	2,697	3,109	**3,117**
Land	2,763	2,847	3,114	**3,106**
Plant and Equipment	376	367	432	**431**
Closing balance	**5,919**	**5,911**	**6,655**	**6,654**

PROPERTY, PLANT AND EQUIPMENT (PPE) MOVEMENT*
For the period ending 31 October 2020

	Annual Original Budget $000	Annual Revised Budget $000	YTD Revised Budget $000	YTD Actual Balance $000
PPE movement				
Opening balance (includes WIP from previous years)	2,556,325	2,588,458	2,588,458	**2,588,458**
Acquisitions and WIP in year movement	81,096	94,632	15,305	**11,665**
Depreciation in year	(63,282)	(63,282)	(21,094)	**(20,644)**
Disposals	(1,851)	(1,851)	(96)	**(127)**
Closing balance	**2,572,288**	**2,617,957**	**2,582,573**	**2,579,352**

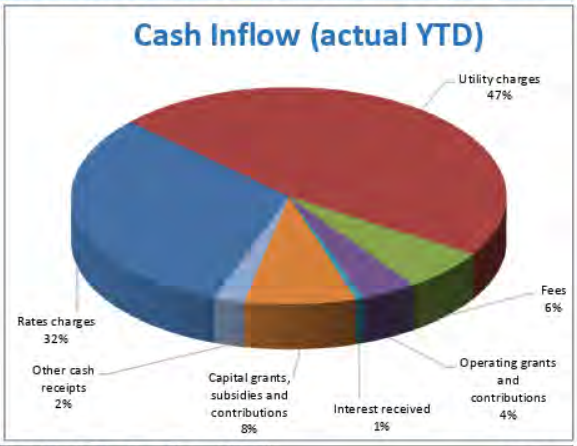
** This table includes movement relating to property, plant and equipment only and is exclusive of intangible assets.*

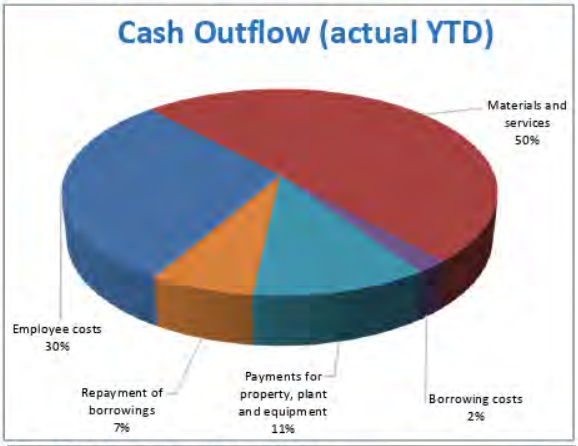
*** Other adjustments include transfers between asset classes, revaluation adjustments, prior period adjustments and depreciation thereon.*

5. STATEMENT OF CASH FLOWS

STATEMENT OF CASH FLOWS
For the period ending 31 October 2020

	Annual Original Budget $000	Annual Revised Budget $000	YTD Revised Budget $000	YTD Actual $000
CASH FLOWS FROM OPERATING ACTIVITIES				
Receipts from customers	276,486	276,486	91,616	**93,578**
Payments to suppliers and employees	(239,435)	(242,084)	(72,838)	**(83,367)**
	37,051	**34,402**	**18,778**	**10,211**
Interest received	2,999	2,999	1,000	**678**
Rental income	956	956	280	**328**
Non-capital grants and contributions	14,483	17,132	4,713	**4,419**
Borrowing costs	(2,052)	(2,052)	(2,052)	**(2,048)**
Right-of-use assets interest expense	(144)	(144)	(49)	**(49)**
Net cash inflow / (outflow) from operating activities	**53,294**	**53,294**	**22,670**	**13,539**
CASH FLOWS FROM INVESTING ACTIVITIES				
Payments for property, plant and equipment	(77,614)	(91,150)	(15,278)	**(11,665)**
Proceeds from sale of property, plant and equipment	1,562	1,562	-	**483**
Capital grants, subsidies and contributions	25,922	34,149	9,983	**8,959**
Net cash inflow / (outflow) from investing activities	**(50,131)**	**(55,439)**	**(5,295)**	**(2,223)**
CASH FLOWS FROM FINANCING ACTIVITIES				
Proceeds of borrowings	9,612	9,612	-	**-**
Repayment of borrowings	(6,361)	(6,361)	(6,361)	**(6,369)**
Right-of-use lease payment	(1,294)	(1,294)	(500)	**(502)**
Net cash inflow / (outflow) from financing activities	**1,957**	**1,957**	**(6,861)**	**(6,871)**
Net increase / (decrease) in cash held	**5,120**	**(188)**	**10,514**	**4,445**
Cash and cash equivalents at the beginning of the year	164,145	171,901	171,901	**171,901**
Cash and cash equivalents at the end of the financial year / period	**169,264**	**171,713**	**182,415**	**176,346**

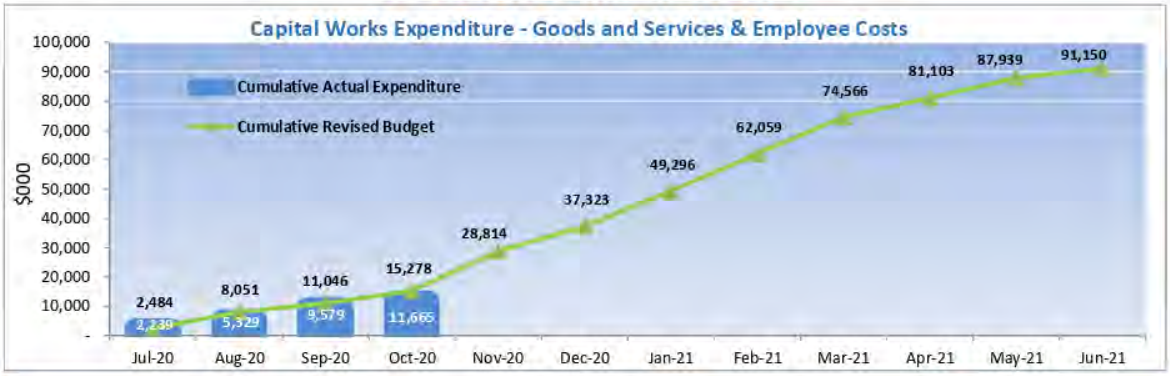




Total Cash Funding (Actual YTD)	**108,445**
Total Cash Funding (Annual Revised Budget)	342,897
% of Budget Achieved YTD	32%

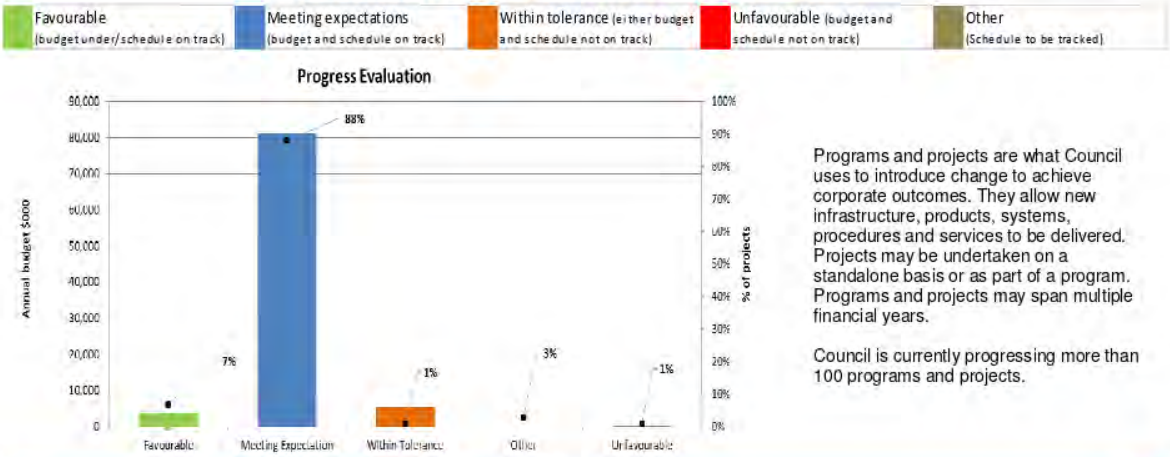
Total Cash Expenditure (Actual YTD)	**104,000**
Total Cash Expenditure (Annual Revised Budget)	343,085
% of Budget Achieved YTD	30%

6. CAPITAL EXPENDITURE



	Annual Revised Budget $000	YTD Revised Budget $000	YTD Actual $000	YTD Variance $000
Capitalised goods and services	82,717	12,631	**9,342**	(3,289)
Capitalised employee costs	8,433	2,647	**2,323**	(324)
Total	**91,150**	**15,278**	**11,665**	**(3,613)**

7. PROGRAM AND PROJECT UPDATE



Programs and projects are what Council uses to introduce change to achieve corporate outcomes. They allow new infrastructure, products, systems, procedures and services to be delivered. Projects may be undertaken on a standalone basis or as part of a program. Programs and projects may span multiple financial years.

Council is currently progressing more than 100 programs and projects.

Notable Projects

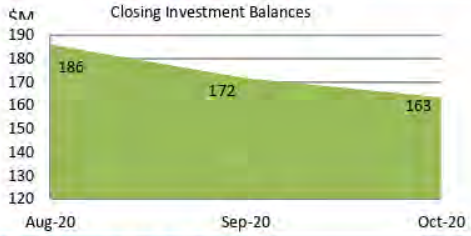
The status of two notable projects are as follows:

Project description	Progress
Raby Bay Groyne Renewal - This project is to repair and replace seawall (rock wall, timber and concrete) sections as required to maintain the integrity of the structure.	Meeting Expectations
Redlands Coast Destination Entry Signage - This project provides for design and construction for the first of many, new purposely built signature destination entry statements for the Redlands Coast area.	Meeting Expectations

8. INVESTMENT & BORROWINGS REPORT

For the period ending 31 October 2020

INVESTMENT RETURNS - QUEENSLAND TREASURY CORPORATION (QTC)



Total QTC Investment at End of Month was $163.45M

Council investments are currently held predominantly in the Capital Guaranteed Cash Fund, which is a fund operated by the Queensland Treasury Corporation (QTC). During the month $10M was transferred from QTC and invested in a term desposit to maximise interest earnings.

The movement in interest earned is indicative of both the interest rate and the surplus cash balances held, the latter of which is affected by business cash flow requirements on a monthly basis as well as the rating cycle.

Note: the Reserve Bank reduced the cash rate down to 0.25% during March 2020.

On a daily basis, cash surplus to requirements is deposited with QTC to earn higher interest as QTC is offering a higher rate than what is achieved from Council's transactional bank accounts. The current annual effective interest rate paid by QTC is 0.81%. Term deposit rates are being monitored to identify investment opportunities to ensure Council maximises its interest earnings.

Council adopted its Investment Policy (POL-3013) in June 2020 for the 2020/2021 financial year

BORROWINGS AND BORROWING COSTS (QTC)

The existing loan accounts were converted to fixed rate loans on 1 April 2016 following a QTC restructure of loans and policies. In line with Council's debt policy, debt repayment of $8.42M, being $6.37M principal and $2.05M interest has been made *annually* for 2020/2021 which will result in the loans being repaid approximately one year earlier.

The debt balance shows a decrease as the Annual Debt Service Payment (ADSP) was made during July 2020. Interest will accrue monthly on a daily balance until next ADSP in July 2021 which is reflected in the increasing debt balance.

In June 2020 additional borrowings of $9.80M were undertaken as part of Council's Capital Works Plan.

Total Borrowings at End of Month were $33.37M

Council adopted its Debt Policy (POL-1838) in June 2020 for the 2020/2021 financial year

BORROWINGS
For the period ending 31 October 2020

	Annual Original Budget $000	Annual Revised Budget $000	YTD Revised Budget $000	YTD **Actual Balance $000**
Borrowings				
Opening balance	(41,273)	(41,178)	(41,178)	**(41,178)**
Accrued interest on borrowings	(1,789)	(1,789)	(596)	**(609)**
Interest paid on borrowings	2,052	2,052	2,052	**2,048**
Principal repaid	6,361	6,361	6,361	**6,369**
Loan drawdown	(9,612)	(9,612)	-	**-**
Closing balance	**(44,261)**	**(44,166)**	**(33,361)**	**(33,370)**

9. CONSTRAINED CASH RESERVES

Reserves as at 31 October 2020	Purpose of reserve	Opening Balance $000	To Reserve $000	From Reserve $000	Closing Balance $000
Special Projects Reserve:					
Aquatic Paradise Revetment Wall Reserve	To fund Aquatic Paradise revetment wall works program	2	14	-	16
Weinam Creek Reserve	Maintenance and improvements associated with Weinam Creek projects	-	152	(152)	-
Waste Levy Reserve	To fund Waste Levy Program	-	2,192	(1,309)	883
Raby Bay Revetment Wall Reserve	To fund Raby Bay revetment wall works program	2,093	1,423	(186)	3,330
Fleet Plant & Capital Equipment Reserve	To support the long term fleet replacement program	2,536	475	(105)	2,906
		4,631	**4,256**	**(1,752)**	**7,135**
Constrained Works Reserve:					
Public Parks Trunk Infrastructure Reserve	Capital projects for public parks trunk infrastructure	6,662	1,164	(235)	7,591
Land for Community Facilities Trunk Infrastruture Reserve	Land for community facilities trunk infrastructure	3,086	525	-	3,611
Water Supply Trunk Infrastructure Reserve	Upgrade, expansion or new projects for water supply trunk infrastructure	14,626	90	-	14,716
Sewerage Trunk Infrastructure Reserve	Upgrade, expansion or new projects for sewerage trunk infrastructure	10,909	791	(1,146)	10,554
Local Roads Trunk Infrastructure Reserve	Capital projects for local roads trunk infrastructure	33,731	2,394	(424)	35,701
Cycleways Trunk Infrastructure Reserve	Capital projects for cycleways trunk infrastructure	11,923	873	(25)	12,771
Stormwater Trunk Infrastructure Reserve	Capital projects for stormwater trunk infrastructure	10,842	306	(1,278)	9,870
Tree Planting Reserve	Acquisition and planting of trees on footpaths	103	33	(4)	132
Koala Tree off-set Planting Reserve	Acquisition and planting of trees for koala habitat	12	-	(10)	2
		91,894	**6,176**	**(3,122)**	**94,948**
Separate Charge Reserve:					
Environment Charge Maintenance Reserve	Ongoing conservation and maintenance operations	-	4,165	(2,035)	2,130
SES Separate Charge Reserve	On-going costs of maintaining the Redland SES	38	247	(176)	109
		38	**4,412**	**(2,211)**	**2,239**
Special Charge Reserve - Canals:					
Aquatic Paradise Canal Reserve*	Maintenance and repairs of Aquatic Paradise canals	758	-	-	758
Sovereign Waters Lake Reserve*	Maintenance and repairs of Sovereign Lake	431	-	-	431
1718 Raby Bay Canal Reserve	Service, facility or activity of works in respect of the canals of the Raby Bay canal estate	219	-	-	219
1718 Aquatic Paradise Canal Reserve	Service, facility or activity of works in respect of the canals of the Aquatic Paradise canal estate	(495)	-	-	(495)
1718 Sovereign Waters Lake Reserve	Service, facility or activity of works in respect of the lake	(56)	-	-	(56)
		857	**-**	**-**	**857**
TOTALS		**97,420**	**14,844**	**(7,085)**	**105,179**
		Closing cash and cash equivalents			**176,346**
		Reserves as percentage of cash balance			**60%**

**No interest charged for these reserves October 2020 year to date due to low prevailing interest rate.*

10. CITY WATER STATEMENTS

CITY WATER SUMMARY OPERATING STATEMENT
For the period ending 31 October 2020

	Annual Original Budget $000	Annual Revised Budget $000	YTD Revised Budget $000	YTD Actual $000	YTD Variance $000
Total revenue	122,970	122,970	38,564	**39,159**	595
Total expenses	71,469	71,469	23,286	**23,222**	(64)
Earnings before interest, tax and depreciation (EBITD)	51,501	51,501	15,278	**15,937**	659
External interest expense	71	71	24	**37**	13
Internal interest expense	10,621	10,621	3,540	**3,540**	-
Depreciation	24,142	24,142	8,047	**8,017**	(30)
Operating surplus / (deficit)	**16,667**	**16,667**	**3,667**	**4,343**	**676**

CITY WATER CAPITAL FUNDING STATEMENT
For the period ending 31 October 2020

	Annual Original Budget $000	Annual Revised Budget $000	YTD Revised Budget $000	YTD Actual $000	YTD Variance $000
Capital contributions, donations, grants and subsidies	2,537	2,537	846	**881**	35
Net transfer (to) / from constrained capital reserves	(2,365)	(374)	217	**234**	17
Non-cash contributions	3,399	3,399	-	**-**	-
Funding from utility revenue	8,568	10,151	2,415	**226**	(2,189)
Total sources of capital funding	**12,138**	**15,714**	**3,478**	**1,341**	**(2,137)**
Contributed assets	3,399	3,399	-	**-**	-
Capitalised expenditure	8,258	11,833	3,318	**810**	(2,508)
Loan redemption	482	482	160	**531**	371
Total application of capital funds	**12,138**	**15,714**	**3,478**	**1,341**	**(2,137)**

11. CITY WASTE STATEMENTS

CITY WASTE OPERATING STATEMENT
For the period ending 31 October 2020

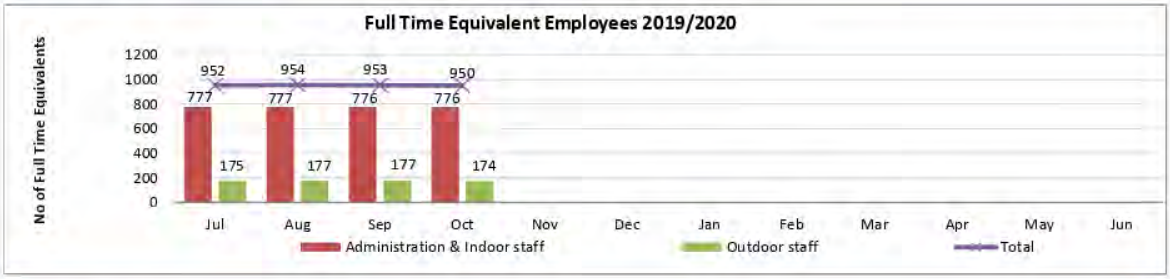
	Annual Original Budget $000	Annual Revised Budget $000	YTD Revised Budget $000	YTD Actual $000	YTD Variance $000
Total revenue	35,715	35,715	12,638	**12,532**	(106)
Total expenses	27,427	27,427	9,110	**9,041**	(69)
Earnings before interest, tax and depreciation (EBITD)	8,288	8,288	3,528	**3,491**	(37)
External interest expense	17	17	6	**6**	-
Depreciation	327	327	109	**111**	2
Operating surplus / (deficit)	**7,943**	**7,943**	**3,413**	**3,374**	**(39)**

CITY WASTE CAPITAL FUNDING STATEMENT
For the period ending 31 October 2020

	Annual Original Budget $000	Annual Revised Budget $000	YTD Revised Budget $000	YTD Actual $000	YTD Variance $000
Non-cash contributions	-	-	-	**-**	-
Funding from utility revenue	924	2,729	1,326	**363**	(963)
Total sources of capital funding	**924**	**2,729**	**1,326**	**363**	**(963)**
Capitalised expenditure	779	2,584	1,200	**253**	(947)
Loan redemption	145	145	126	**110**	(16)
Total application of capital funds	**924**	**2,729**	**1,326**	**363**	**(963)**

12. APPENDIX: ADDITIONAL AND NON-FINANCIAL INFORMATION

Workforce Reporting



October 2020: Headcount	Employee Type			
Department Level	Casual	Full Time	Part Time	Total
Office of CEO and People, Culture and Organisational Performance	7	43	7	57
Organisational Services	7	210	17	234
Community and Customer Services	32	269	70	371
Infrastructure and Operations	8	349	17	374
Total	54	871	111	1,036

Note: Full Time Equivalent Employees includes all full time employees at a value of 1 and all other employees, at a value less than 1. The table above demonstrates the headcount by department. Following Ourspace, the table includes contract of service and temporary personnel. It includes casual staff in their non-substantive roles as at the end of the period where relevant.

Overdue Rates Debtors & Statistics

Days Overdue	Oct-20	% Overdue	Oct-19	% Overdue	$ Variance	% Variance
0 - 30	$220	0.0%	$1,506	0.0%	-$1,286	0.0%
31 - 60	$711	0.0%	$2,290	0.0%	-$1,579	0.0%
61 - 90	$2,962,785	1.9%	$2,779,503	2.0%	$183,282	-0.1%
91 - 180	$1,634,744	1.1%	$1,491,920	1.0%	$142,824	0.1%
>180	$3,699,845	2.4%	$3,183,740	2.2%	$516,105	0.2%
Total	**$8,298,305**	**5.4%**	**$7,458,959**	**5.2%**	**$839,346**	**0.2%**

Rates & Charges Statistics	October 2020	October 2019
Levied (Billed) Rates & Charges since 1 July 2020	$139,614,706	$133,079,445
Rate arrears brought forward 1 July 2020	$12,988,652	$9,452,770
Total	**$152,603,358**	**$142,532,215**
Balance of overdue rates & charges	**$8,298,305**	**$7,458,959**
% Overdue	**5.4%**	**5.2%**

13. GLOSSARY

Key Terms

Written Down Value:
This is the value of an asset after accounting for depreciation or amortisation, and it is also called book value or net book value.

Work In Progress:
This represents an unfinished project that costs are still being added to. When a project is completed, the costs will be either capitalised (allocated to relevant asset class) or written off.

Definition of Ratios

Operating Surplus Ratio*: *This is an indicator of the extent to which revenues raised cover operational expenses only or are available for capital funding purposes*	Net Operating Surplus Total Operating Revenue
Asset Sustainability Ratio*: *This ratio indicates whether Council is renewing or replacing existing non-financial assets at the same rate that its overall stock of assets is wearing out*	Capital Expenditure on Replacement of Infrastructure Assets (Renewals) Depreciation Expenditure on Infrastructure Assets
Net Financial Liabilities*: *This is an indicator of the extent to which the net financial liabilities of Council can be serviced by operating revenues*	Total Liabilities - Current Assets Total Operating Revenue
Level of Dependence on General Rate Revenue: *This ratio measures Council's reliance on operating revenue from general rates (excludes utility revenues)*	General Rates - Pensioner Remissions Total Operating Revenue - Gain on Sale of Developed Land
Current Ratio: *This measures the extent to which Council has liquid assets available to meet short term financial obligations*	Current Assets Current Liabilities
Debt Servicing Ratio: *This indicates Council's ability to meet current debt instalments with recurrent revenue*	Interest Expense*** + Loan Redemption^ Total Operating Revenue - Gain on Sale of Developed Land
Cash Balance - $M: *Cash balance includes cash on hand, cash at bank and other short term investments.*	Cash Held at Period End
Cash Capacity in Months: *This provides an indication as to the number of months cash held at period end would cover operating cash outflows*	Cash Held at Period End [[Cash Operating Costs + Interest Expense] / Period in Year]
Longer Term Financial Stability - Debt to Asset Ratio: *This is total debt as a percentage of total assets, i.e. to what extent will our long term debt be covered by total assets*	Current and Non-current Debt** Total Assets
Operating Performance: *This ratio provides an indication of Council's cash flow capabilities*	Net Cash from Operations + Interest Revenue and Expense Cash Operating Revenue + Interest Revenue
Interest Coverage Ratio: *This ratio demonstrates the extent to which operating revenues are being used to meet the financing charges*	Net Interest Expense on Debt Service*** Total Operating Revenue

* These targets are set to be achieved on average over the longer term and therefore are not necessarily expected to be met on a monthly basis.

** Debt includes lease liabilities.

*** Interest expense includes interest on leases.

^ Loan redemption includes lease redemption.

14 REPORTS FROM COMMUNITY & CUSTOMER SERVICES

14.1 DECISIONS MADE UNDER DELEGATED AUTHORITY FOR CATEGORY 1, 2 AND 3 DEVELOPMENT APPLICATIONS

Objective Reference: **A5018917**

Authorising Officer: **Graham Simpson, Acting General Manager Community and Customer Services**

Responsible Officer: **David Jeanes, Group Manager City Planning & Assessment**

Report Author: **Jill Driscoll, Group Support Coordinator**

Attachments: **1. Decisions made Under Delegated Authority 27.09.2020 to 17.10.2020** ⇩

PURPOSE

To note decisions made under delegated authority for development applications (Attachment 1).

This information is provided for public interest.

BACKGROUND

At the General Meeting of 21 June 2017, Council resolved that development assessments be classified into the following four categories:

Category 1 – minor code and referral agency assessments
Category 2 – moderately complex code and impact assessments
Category 3 – complex code and impact assessments
Category 4 – major assessments (not included in this report)

The applications details in this report have been assessed under:

Category 1 – Minor code assessable applications, concurrence agency referral, minor operational works and minor compliance works, and minor change requests and extension to currency period where the original application was Category 1.

Delegation Level: Chief Executive Officer, General Manager, Group Managers, Service Manager, Team Leaders and Principal Planners as identified in the officer's instrument of delegation.

Category 2 – In addition to Category 1, moderately complex code assessable applications, including operational works and compliance works and impact assessable applications without objecting submissions; other change requests and variation request where the original application was Category 1,2,3 or 4*.

**Provided the requests do not affect the reason(s) for the call in by the Councillor (or that there is agreement from the Councillor that it can be dealt with under delegation).*

Delegation Level: Chief Executive Officer, General Manager, Group Managers and Service Managers as identified in the officer's instrument of delegation.

Category 3 – In addition to Category 1 and 2, applications for code or impact assessment with a higher level of complexity. They may have minor level aspects outside a stated policy position that are subject to discretionary provision of the planning scheme. Impact applications may involve submissions objecting to the proposal readily addressable by reasonable and relevant conditions. Assessing superseded planning scheme requests and approving a plan of subdivision.

Delegation Level: Chief Executive Officer, General Manager and Group Managers as identified in the officer's instrument of delegation.

Human Rights

There are no known human rights implication associated with this report.

OFFICER'S RECOMMENDATION/COUNCIL RESOLUTION 2020/341

Moved by: **Cr Julie Talty**
Seconded by: **Cr Peter Mitchell**

That Council resolves to note this report.

CARRIED 11/0

Crs Karen Williams, Wendy Boglary, Peter Mitchell, Paul Gollè, Lance Hewlett, Mark Edwards, Julie Talty, Rowanne McKenzie, Tracey Huges, Adelia Berridge and Paul Bishop voted FOR the motion.

Attachment 1 Decisions Made Under Delegated Authority 27.09.2020 to 17.10.2020

Decisions Made Under Delegated Authority 27.09.2020 to 03.10.2020

CATEGORY1

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
CAR20/0396	Build Over or Near Relevant Infrastructure	Coral Homes (Qld) Pty Ltd	382 Birkdale Road Wellington Point QLD 4160	Referral Agency Response - Engineering	28/09/2020	N/A	Approved	1
CAR20/0342	Build Over or Near Relevant Infrastructure	Australian Building Approvals	23 Masthead Drive Cleveland QLD 4163	Referral Agency Response - Engineering	01/10/2020	N/A	Approved	2
CAR20/0391	Design and Siting - pool deck	The Certifier Pty Ltd	6 Williams Street Coochiemudlo Island QLD 4184	Referral Agency Response - Planning	02.10.2020	N/A	Approved	4
CAR20/0383	Design and Siting - Carport	Debret Constructions	31 Hamilton Street Redland Bay QLD 4165	Referral Agency Response - Planning	29/09/2020	N/A	Approved	5
CAR20/0389	Design and Siting - Roofed Patio	Murrant Building Certification	37 Bouquet Street Mount Cotton QLD 4165	Referral Agency Response - Planning	30/09/2020	N/A	Approved	6
CAR20/0404	Design and Siting - Dwelling	Ausbuild Pty Ltd	88-90 Kinross Road Thornlands QLD 4164	Referral Agency Response - Planning	01/10/2020	N/A	Approved	7
CAR20/0346	Design and Siting - Dwelling	The Certifier Pty Ltd	122-124 Winston Road Sheldon QLD 4157	Referral Agency Response - Planning	30/09/2020	N/A	Approved	9
CAR20/0384	Design and Siting- Carport	The Certifier Pty Ltd	9 United Court Capalaba QLD 4157	Referral Agency Response - Planning	30/09/2020	N/A	Approved	9

Decisions Made Under Delegated Authority 27.09.2020 to 03.10.2020

CATEGORY1

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
CAR20/0268	Design and Siting - Carport	The Certifier Pty Ltd	13 Dorsal Drive Birkdale QLD 4159	Referral Agency Response - Planning	28/09/2020	N/A	Approved	10
CAR20/0335.01	Change to Development Approval - building height	Bartley Burns Certifiers & Planners	63 Mooroondu Road Thorneside QLD 4158	Minor Change to Approval	01/10/2020	N/A	Approved	10
DBW20/0030	Domestic Additions	Donna Ellenn HENDERSON	63 Thomas Street Birkdale QLD 4159	Code Assessment	28/09/2020	N/A	Development Permit	10

Decisions Made Under Delegated Authority 27.09.2020 to 03.10.2020

CATEGORY2

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
OPW20/0073	Prescribed Tidal Works - construction of new pontoon	Aqua Pontoons Ltd Ltd	3 Bonaventure Court Cleveland QLD 4163	Code Assessment	01/10/2020	N/A	Development Permit	2
OPW20/0011	Operational Works for RAL - 1 into 37 Lots	KN Group Pty Ltd	275-495 Serpentine Creek Road Redland Bay QLD 4165	Code Assessment	28/09/2020	N/A	Development Permit	6

Decisions Made Under Delegated Authority 04.10.2020 to 10.10.2020

CATEGORY1

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
CAR20/0407	Design and Siting - Secondary Dwelling	Lateral Certification Group	116 Gordon Street Ormiston QLD 4160	Referral Agency Response - Planning	07/10/2020	N/A	Approved	1
CAR20/0395	Design and Siting - Dwelling	Anna Shuk Yee WAN	45 Raby Bay Boulevard Cleveland QLD 4163	Referral Agency Response - Planning	06/10/2020	N/A	Approved	2
DBW20/0020	Domestic Additions - deck/stairs, upper balcony, lower pavilion	The Certifier Pty Ltd	43 Plymouth Court Cleveland QLD 4163	Code Assessment	08/10/2020	N/A	Development Permit	2
CAR20/0338	Amenity and Aesthetics - Dwelling House less than 60m²	Peter Anthony WAUD	27 Woomera Street Russell Island QLD 4184	Referral Agency Response - Planning	08/10/2020	N/A	Approved	5
CAR20/0394	Amenity and Aesthetics- Dwelling house	K P Building Approvals Pty Ltd	8 Paula Parade Lamb Island QLD 4184	Referral Agency Response - Planning	06/10/2020	N/A	Approved	5
CAR20/0408	Design and Siting - Patio	The Certifier Pty Ltd	4 Seagrass Place Redland Bay QLD 4165	Referral Agency Response - Planning	09/10/2020	N/A	Approved	5
CAR20/0402	Design and Siting - Carport and Shed	Bartley Burns Certifiers & Planners	21 Ridge Place Redland Bay QLD 4165	Referral Agency Response - Planning	07/10/2020	N/A	Approved	6
CAR20/0406	Design and Siting - Dwelling	Phillip James PARKES	37 Falkirk Parade Redland Bay QLD 4165	Referral Agency Response - Planning	07/10/2020	N/A	Approved	6
CAR20/0367.01	Change to Development Approval - CAR20/0367 - Carport	A1 Certifier Pty Ltd	202 Finucane Road Alexandra Hills QLD 4161	Minor Change to Approval	07/10/2020	N/A	Approved	8

Decisions Made Under Delegated Authority 04.10.2020 to 10.10.2020

CATEGORY1

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
CAR20/0397	Design and Siting/BOS - Shed	Christopher Richard SANDERS Megan Kathleen SANDERS	42 Prunda Circuit Wellington Point QLD 4160	Referral Agency Response - Planning	06/10/2020	N/A	Approved	8
CAR20/0401	Design and Siting - Secondary Dwelling	O'Brien Building Consultants Pty Ltd	51-53 Pioneer Road Sheldon QLD 4157	Referral Agency Response - Planning	07/10/2020	N/A	Approved	9
CAR20/0403	Design and Siting - Dwelling house	Metricon Homes C/- Suncoast Building Approvals	19 Pulbrook Drive Capalaba QLD 4157	Referral Agency Response - Planning	07/10/2020	N/A	Approved	9
CAR20/0399	Design and Siting - Carport	A1 Certifier Pty Ltd	15 Rhoades Street Capalaba QLD 4157	Referral Agency Response - Planning	07/10/2020	N/A	Approved	9
CAR20/0405	Design and Siting - Shed	Andrew John FOWLER	201 Railway Parade Thorneside QLD 4158	Referral Agency Response - Planning	09/10/2020	N/A	Approved	10

Decisions Made Under Delegated Authority 04.10.2020 to 10.10.2020

CATEGORY2

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
OPW20/0084	Driveway Crossover	Dixonbuild Pty Ltd	110 Bainbridge Street Ormiston QLD 4160	Code Assessment	09/10/2020	N/A	Development Permit	1
MCU19/0120.02	Change to Development Approval - MC012237 Apartment Building x 30 (originally 28)	Place Design Group Pty Ltd, Lago Constructions, Carbone Developments Pty Ltd	143-149 Esplanade Redland Bay QLD 4165	Minor Change to Approval	06/10/2020	N/A	Approved	5
MCU20/0089	Warehouse - new mezzanine floor	DTS Group Pty Ltd	Meregold 65-67 Steel Street Capalaba QLD 4157	Code Assessment	07/10/2020	N/A	Development Permit	9
OPW002300	Combined Civil and Landscaping Operational Works - Multiple Dwellings x 13 - Internal Roadworks, Earthworks, Stormwater & Vegetation Clearing	Hometown Australia Pty Ltd	18 Collingwood Road Birkdale QLD 4159	SPA - 15 Day Copliance Assessment	06/10/2020	N/A	Approved	10

Decisions Made Under Delegated Authority 11.10.2020 to 17.10.2020

CATEGORY1

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
CAR20/0393	Design and Siting - Shed	Michael Gregory LYNCH	138 Passage Street Cleveland QLD 4163	Referral Agency Response - Planning	14/10/2020	N/A	Approved	2
CAR20/0413	Design and Siting - Home lift	The Certifier Pty Ltd	37 Raby Bay Boulevard Cleveland QLD 4163	Referral Agency Response - Planning	12/10/2020	N/A	Approved	2
CAR20/0417	Design and Siting - Carport	O'Brien Building Consultants Pty Ltd	15 Creekside Circuit West Victoria Point QLD 4165	Referral Agency Response - Planning	16/10/2020	N/A	Approved	3
CAR20/0424	Design and Siting - Duplex	Bartley Burns Certifiers & Planners	19 Dawn Crescent Thornlands QLD 4164	Referral Agency Response - Planning	13/10/2020	N/A	Approved	3
CAR20/0385	Design and Siting and Build over/near Infrastructure - Shed	The Certifier Pty Ltd	2 Marroo Street Coochiemudlo Island QLD 4184	Referral Agency Response - Planning	16/10/2020	N/A	Approved	4
CAR20/0415	Design and Siting - Patio	Fastrack Building Certification	16 Creekwood Street Victoria Point QLD 4165	Referral Agency Response - Planning	14/10/2020	N/A	Approved	4
CAR20/0412	Amenity and Aesthetics - Dwelling	William Ernest YUILL	23 Coombah Drive Russell Island QLD 4184	Referral Agency Response - Planning	14/10/2020	N/A	Approved	5
CAR20/0419	Design and Siting - Dwelling House	Bay Island Designs	8 Beacon Drive Russell Island QLD 4184	Referral Agency Response - Planning	13/10/2020	N/A	Approved	5

Decisions Made Under Delegated Authority 11.10.2020 to 17.10.2020

CATEGORY1

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
CAR20/0428	Design and Siting - Dwelling	Platinum Building Approvals	12-14 Satton Street Russell Island QLD 4184	Referral Agency Response - Planning	13/10/2020	N/A	Approved	5
MCU19/0170.01	Change to Development Approval - MCU19/0170 Dwelling house	Bay Island Designs	22 Waterside Drive Macleay Island QLD 4184	Minor Change to Approval	15/10/2020	N/A	Approved	5
CAR20/0386	Build Over or Near Relevant Infrastructure - Retaining Wall	Brendan Mark DIXON Rikki Lea KELLY	12 Begonia Crescent Mount Cotton QLD 4165	Referral Agency Response - Engineering	14/10/2020	N/A	Approved	6
CAR20/0409	Design and Siting - Garage	Ken DUTTON	9 Weymouth Street Alexandra Hills QLD 4161	Referral Agency Response - Planning	15/10/2020	N/A	Approved	7
CAR20/0418	Design and Siting - Patio	Rahul KOTHARI	1 Wetheral Place Alexandra Hills QLD 4161	Referral Agency Response - Planning	12/10/2020	N/A	Approved	7
CAR20/0430	Design and Siting - Carport and Patio	Murrant Building Certification	25 Muskwood Street Capalaba QLD 4157	Referral Agency Response - Planning	13/10/2020	N/A	Approved	9
CAR20/0390	Build Over or Near Relevant Infrastructure - New Dwelling	Steve Bartley & Associates Pty Ltd	15-17 Lucy Street Thorneside QLD 4158	Referral Agency Response - Planning	16/10/2020	N/A	Approved	10
CAR20/0414	Design and Siting - Carport	The Certifier Pty Ltd	42 Hooper Street Birkdale QLD 4159	Referral Agency Response - Planning	15/10/2020	N/A	Approved	10

Decisions Made Under Delegated Authority 11.10.2020 to 17.10.2020

CATEGORY1

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
RAL19/0093.02	Change to Development Approval - RAL19/0093 Standard Format - 1 into 2 Lots	The Certifier Pty Ltd	3 Charles Street Birkdale QLD 4159	Minor Change to Approval	16/10/2020	N/A	Approved	10

Decisions Made Under Delegated Authority 11.10.2020 to 17.10.2020

CATEGORY2

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
OPW20/0078	Operational Works for RAL - 1 into 2 lots	Civil Dimensions Consulting Engineers	32-34 Ocean Street Cleveland QLD 4163	Code Assessment	13/10/2020	N/A	Development Permit	3
CWA20/0001.01	Change to Development Approval - Civil Works - Tyre Fitting Centre & Ancillary Uses	Leda Developments Pty Ltd	Victoria Point Shopping Centre 2-34 Bunker Road Victoria Point QLD 4165	Minor Change to Approval	13/10/2020	N/A	Approved	4
MCU19/0177.01	Change to Development Approval - MCU19/0177 - Dwelling house	The Certifier Pty Ltd	3A Wilson Esplanade Victoria Point QLD 4165	Minor Change to Approval	16/10/2020	N/A	Approved	4
MCU20/0094	Change to Development Approval - Child Care Centre	Ms Petrae T McLEAN, Sandpiper Beach Pty Ltd As Trustee	172 High Central Road Macleay Island QLD 4184	Minor Change to Approval	15/10/2020	N/A	Approved	5
MCU18/0059.02	Change to Development approval MCU18/0059 Combined – Indoor Recreation Facility and Refreshment Establishment	Cinque Projects Pty Ltd	89 Collins Street Redland Bay QLD 4165	Minor Change to Approval	12/10/2020	N/A	Approved	6
OPW20/0088	Change to Development Approval (OPW001117)	R V & S M COTTERELL Enterprise Pty Ltd As Trustee	62-64 Valantine Road Birkdale QLD 4159	Minor Change to Approval	12/10/2020	N/A	Approved	8

Decisions Made Under Delegated Authority 11.10.2020 to 17.10.2020

CATEGORY3

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
RAL20/0015	Reconfiguring a Lot - Standard Format 1 into 2 lots and access easement	Ms Valda N GLYNN Mr Joe R PAICE	245 Redland Bay Road Capalaba QLD 4157	Impact Assessment	16/10/2020	N/A	Refused	7

14.2 LIST OF DEVELOPMENT AND PLANNING RELATED COURT MATTERS AS AT 30 OCTOBER 2020

Objective Reference: A5019007

Authorising Officer: Graham Simpson, Acting General Manager Community and Customer Services

Responsible Officer: David Jeanes, Group Manager City Planning & Assessment

Report Author: Michael Anderson, Senior Appeals Planner

Attachments: Nil

PURPOSE

To note the current development and planning related appeals and other related matters/proceedings.

BACKGROUND

Information on appeals and other related matters may be found as follows:

1. **Planning and Environment Court**
   a) Information on current appeals and applications with the Planning and Environment Court involving Redland City Council can be found at the District Court website using the "Search civil files (eCourts) Party Search" service: http://www.courts.qld.gov.au/services/search-for-a-court-file/search-civil-files-ecourts
   b) Judgments of the Planning and Environment Court can be viewed via the Supreme Court of Queensland Library website under the Planning and Environment Court link: http://www.sclqld.org.au/qjudgment/

2. **Court of Appeal**
   Information on the process and how to search for a copy of Court of Appeal documents can be found at the Supreme Court (Court of Appeal) website: https://www.courts.qld.gov.au/courts/court-of-appeal/the-appeal-process

3. **Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP)**
   The DSDMIP provides a Database of Appeals that may be searched for past appeals and applications heard by the Planning and Environment Court:

   https://planning.dsdmip.qld.gov.au/planning/spa-system/dispute-resolution-under-spa/planning-and-environment-court/planning-and-environment-court-appeals-database

   The database contains:

   a) A consolidated list of all appeals and applications lodged in the Planning and Environment Courts across Queensland of which the Chief Executive has been notified.
   b) Information about the appeal or application, including the file number, name and year, the site address and local government.

4. **Department of Housing and Public Works (DHPW)**
   Information on the process and remit of development tribunals can be found at the DHPW website: http://www.hpw.qld.gov.au/construction/BuildingPlumbing/DisputeResolution/Pages/default.aspx

PLANNING & ENVIRONMENT COURT APPEALS & APPLICATIONS

1.	**File Number:**	2959 of 2019 (MCU013688)
Applicant:		**Quin Enterprises Pty Ltd**
Respondent:		**Redland City Council**
Proposed Development:		Material Change of Use for the extension of the existing Extractive Industry and Heavy Industry (office, truck weighbridge, car parking, storage area for materials with associated landscape buffers) 684-712 Mount Cotton Road, Sheldon (Lot 1 on RP109322 and 3 on SP238067)
Appeal Details:		Appeal against Council refusal.
Current Status:		Appeal filed 19 August 2019. The Appellant filed an application in pending proceeding on 4 September 2019, for orders to progress the appeal. A review was held on 11 September 2019. A site inspection was carried out on 18 September 2019. Reviews were held on 8 November 2019 and 24 January 2020. A mediation was held on 13 December 2019. A without prejudice meeting was held on 16 April 2020, in accordance with the Court Order. Further to the Appellants without prejudice correspondence dated 18 June 2020 it was ordered that Council was required to provide its response to the correspondence by 3 July 2020. A response was provided requiring an updated air quality and noise report. A further review was held on 17 July 2020. A without prejudice meeting was held on 12 August 2020. Following the meeting amended plans, noise report and air quality report were lodged. A briefing was provided to the General Meeting of Council on 19 August 2020. Council resolved to delegate authority to the Chief Executive Officer to instruct Council's solicitors to prepare for a hearing or in the alternative finalise and agree conditions that ought to be imposed in the event that the appeal is allowed. A review on the papers was undertaken on 21 August 2020. The Order included issuing draft conditions by 4 September 2020 and the Appellant is to provide details of a minor change application by 28 September 2020. Draft conditions were issued by Council on 3 September 2020. Conditions have been agreed and the Appellant provided its minor change request on 30 October 2020. The next review is set down for 3 November 2020.

2. File Number:	3829 of 2019
Appellant:	**Sutgold Pty Ltd v Redland City Council**
Respondent:	**Redland City Council**
Proposed Development:	Reconfiguring a Lot (8 lots into 176 lots and new roads) 72, 74, 78, 80, 82 Double Jump Road, 158-166, 168-172 and 174-178 Bunker Road, Victoria Point (Lots 12, 13, 15, 22 and 21 on RP86773, Lots 16 and 20 on SP293877 and Lot 12 on RP898198)
Appeal Details:	Appeal against deemed refusal by Council.
Current Status:	Appeal filed 23 October 2019. An early without prejudice meeting was held on 26 November 2019. A directions hearing was held on 6 February 2020. A list of matters supporting an approval was provided by the Appellant on 14 April 2020. The list of experts has been nominated and without prejudice conferences were held with the Appellant on 6, 14 and 21 May 2020 to discuss Council's position and proposed changes. A review was held on 17 June 2020 and it was ordered that the Appellant was to file and serve any application for a minor change by 26 June 2020. By 15 July 2020, the Respondent and Co-Respondent were to file and serve a written response to the Appellant's minor change application stating whether it will or will not oppose the declaration being made. Council was required to notify of its position on the appeal by 24 July 2020, should the Court determine the changes are minor. The matter was reported to the General Meeting of Council on 22 July 2020. It was confirmed that the proposed changes were a minor change but Council was still opposing the application. The parties were notified of Council's position on 24 July 2020. A without prejudice meeting was held with the appellant on 22 July 2020. The matter was considered at a hearing on 6 August 2020 where it was ordered that the infrastructure and traffic experts nominated by the parties are to meet and prepare a joint expert report (JER), to be completed by 18 September 2020. Further JERs are to be completed by 20 November 2020. A further review was held on 24 September 2020 and a without prejudice meeting held with the Appellant on 28 October 2020. The experts are to exchange individual expert and lay witness statements with the appeal allocated for a hearing in March 2021 for 8 days.

3. File Number:	4312 of 2019
Appellant:	**New Land Tourism Pty Ltd**
Respondent:	**Redland City Council**
First Co-respondents (By election):	**Benjamin Alistair Mackay and Renee Michelle Mackay**
Second Co-respondents (By election):	**Debbie Tye-Anderson, Kerri Vidler, Lee Nicholson, Peter Anderson, Vanessa Anderson, Thelma Anderson.**
Proposed Development:	Material change of use (tourist accommodation) 147-205 Rocky Passage Road, Redland Bay (Lot 3 on RP153333)
Appeal Details:	Appeal against Council's decision to give a preliminary approval for a development application.
Current Status:	Appeal filed 29 November 2019. A review was held on 11 June 2020 and it was ordered that the Appellant shall provide without prejudice material to all other parties by 24 June 2020. A without prejudice conference, chaired by the P & E ADR Registrar, was held on 22 July 2020. At a review on 5 August 2020 it was ordered that the appellant shall provide to the other parties without prejudice material addressing wastewater and landscaping issues by 21 August 2020. This material has not been provided by the Appellant. A review was held on 14 September 2020. The Appellant was to provide further without prejudice material by 25 September 2020. The Appellant provided the further material on 14 October 2020 and a further without prejudice conference was held on 19 October 2020. The respondent and co-respondents are required to attend a further without prejudice meeting on 19 November 2020.

4. File Number:	4703 of 2019
Applicant:	**Redland City Council**
Respondents:	**Canaipa Developments Pty Ltd**
	Ian Robert Larkman
	TLC Jones Pty Ltd
	TLC Supermarkets Unit Trust No 2
Site details:	29-39 High Street, Russell Island (Lot 100 on SP204183)
Application Details:	Application for interim and final relief with respect to alleged development offences under the *Planning Act 2016* and offences under the *Environmental Protection Act 1994.*
Current Status:	Application filed 20 December 2019. A directions hearing was held on 5 February 2020 and a review took place on 8 April 2020. A further review was held on 24 April 2020 and Orders were that Council is to notify the Respondents as to whether the proposed replacement on-site sewerage treatment facility complies with the requirements sought in the originating application. A 4 day trial commenced on 28 September 2020. Final written submissions are due on 16 October 2020. The Respondent has until 30 October 2020 to provide final submissions and a response to be provided by 6 November 2020.

5.	**File Number:**	566 of 2020
Appellant:		**Clay Gully Pty Ltd**
Respondent:		**Redland City Council**
Proposed Development:		Reconfiguration of a lot by standard format plan (3 lots into 289 lots over 7 stages, new road and park. 39 Brendan Way, 21-29 and 31 Clay Gully Road, Victoria Point. (Lot 1 on RP72635, Lot 4 on RP57455 and Lot 1 on RP95513)
Appeal Details:		Appeal against deemed refusal by Council.
Current Status:		Appeal filed 25 February 2020. Council notified of its position in the appeal on 1 May 2020 and provided reasons for refusal on 5 May 2020. A review was held on 8 May 2020 and it was ordered that the Appellant was to file and serve any request for further and better particulars by 15 May 2020. A request for further and better particulars was made by the Appellant on 15 May 2020. Council provided its response to the request for further and better particulars on 1 June 2020. The Appellant submitted its matters supporting approval of the proposed development on 15 June 2020. A without prejudice discussion with the appellant and co-respondent, chaired by the P & E ADR Registrar, was held on 18 June 2020. A further without prejudice meeting was held on 25 June 2020. The matter was adjourned on the papers until 17 August 2020, in order to facilitate further discussions between the parties. A without prejudice meeting was held with the appellant on 3 August 2020. It was ordered that the parties should engage in a further without prejudice meeting by 4 September 2020 and this was held on 3 September 2020. A review was held on 10 September 2020 and the Orders were that the parties engage in a further without prejudice meeting by 9 October 2020. A without prejudice meeting was held on 6 October 2020. The matter was considered at the General Meeting on 7 October 2020. A further review was held on 15 October 2020 and it is proposed that all parties participate in a further without prejudice meeting by 4 November 2020, the Appellant is to file its minor change application by 23 November 2020 and the matter is listed for further review on 7 December 2020.

6.	**File Number:**	1612 of 2020
Appellant:		**Sutgold Pty Ltd**
Respondent:		**Redland City Council**
Proposed Development:		Development permit for a reconfiguration of 9 Lots into 275 Residential Lots, 3 Balance Lots, 1 Load Centre Lot, 2 Park Lots, 2 Open Space Lots, 1 Pedestrian Connection Lot and 1 Multi-function Spine Lot in 12 stages. 36-56 Double Jump Road, 26 Prospect Crescent and 27 Brendan Way, Victoria Point more properly described as Lot 4 on RP57455, Lot 1 on RP95513, Lot 2 on RP86773, Lot 1 on RP86773, Lot 3 on RP148004, Lot 7 on RP57455, Lot 2 on RP169475, Lot 2 on RP165178, Lot 6 on SP145377, Lot 801 on SP261302 and Lot 5 on SP293881.
Appeal Details:		Appeal against deemed refusal by Council.
Current Status:		Appeal filed 5 June 2020. A hearing was held on 23 July 2020 where it was ordered that the respondent was required to notify the parties of its position and grounds if refused or conditions if it should be approved by 7 August 2020. The matter was considered at the General Meeting of Council on 5 August 2020 where it was resolved that the matter ought to be refused. The parties were notified of Council's position as respondent on 6 August 2020. A review was held on 19 August 2020. Orders were made on the papers that that the Appellant was to provide grounds for appeal by 2 September 2020. Council received the grounds of appeal on 9 September 2020. A without prejudice meeting was held on 23 September 2020. A review was held on 16 October 2020. It was ordered that that the parties engage in a further without prejudice meeting by 4 November 2020 and listed for review on 7 December 2020.

7.	**File Number:**	1724 of 2020
Appellant:		**Fort Street Real Estate Capital Pty Ltd**
Respondent:		**Redland City Council**
Proposed Development:		Combined development permit for a material change of use (fast food outlet) and reconfiguring a lot (access easement and subdivision by lease). Birkdale Fair Shopping Centre at 2-12 Mary Pleasant Drive, Birkdale and more properly described as Lot 1 on RP816847.
Appeal Details:		Appeal against refusal by Council.
Current Status:		Appeal filed on 17 June 2020. A review was held on 27 July 2020 where it was ordered that the appellant was to notify the parties of any changes to the development application by 31 July 2020. On 14 August 2020 the respondent (Council) notified the appellant that Council would not be opposing the minor change and notified its fully articulated grounds of refusal. A review was held on 19 August 2020 where it was ordered that the parties should exchange its list of experts by 26 August 2020 and that joint expert reports must be completed by 30 September 2020. All joint expert reports have been exchanged and a without prejudice meeting was held on 15 October 2020. A three day trial has been set down for 25-27 November 2020.

8.	**File Number:**	2080 of 2020
Appellant:		**Silkwear Developments Pty Ltd**
Respondent:		**Redland City Council**
Proposed Development:		Development permit for a reconfiguration of a lot (1 into 5 lots) respect of land at 1-13 Beckwith Street, Ormiston, more properly described as Lot 8 on RP895452 (Council ref: RAL19/0087).
Appeal Details:		Appeal against conditions.
Current Status:		Appeal filed on 7 July 2020. A review was undertaken on 2 September 2020. It was ordered that Council is to draft and serve the grounds for the conditions in dispute by 16 September 2020. The appellant is to file and serve any amended grounds for setting aside the disputed conditions by 25 September 2020. A without prejudice meeting was held on 2 October 2020. A further without prejudice meeting was held on 15 October 2020. The Appellant provided revised plans to address stormwater quality and road design on 29 October 2020 and a further without prejudice meeting is due to be held on 19 November 2020 and review on 20 November 2020.

9.	**File Number:**	2081 of 2020
Appellant:		**Silkwear Developments Pty Ltd**
Respondent:		**Redland City Council**
Proposed Development:		Development permit for a reconfiguration of a lot (1 into 5 lots) respect of land at 1-13 Beckwith Street, Ormiston, more properly described as Lot 8 on RP895452.
Appeal Details:		Appeal against infrastructure charges notice.
Current Status:		Appeal filed on 7 July 2020. A review was undertaken on 2 September 2020. A without prejudice meeting was held on 2 and 15 October 2020. A further without prejudice meeting is to be held on 19 November 2020.

10.	**File Number:**	**2490 of 2020**
Appellant:		**Miethke**
Respondent:		**Redland City Council**
Proposed Development:		Development permit for a material change of use for a dwelling house (SMBI) at 5 Bilambil Drive, Russell Island, more properly described as Lot 21 on RP 129010.
Appeal Details:		Declaration to enliven a development application that lapsed on or around 4 November 2019.
Current Status:		Appeal filed on 31 August 2020. A review was held on for 14 September 2020. It was ordered that by 15 October 2020 the Appellant is to file and serve any amended originating application. The Appellant prepared a revised originating application on 16 October 2020 and Council indicated in writing that it opposed the draft order. A review was held 30 October 2020. The matter is listed for a half day hearing on 24 November 2020.

11.	**File Number:**	2337 of 2020
Appellant:		**Bernard Diab and Tracey Diab**
Respondent:		**Redland City Council**
Proposed Development:		Development permit for a material change of use for home-based business in respect of land at 393 Mount Cotton Road, Capalaba and more properly described as Lot 4 on SP297142.
Appeal Details:		Appeal against refusal by Council.
Current Status:		Appeal filed on 17 August 2020. A review was held on 16 October 2020. The respondent (Council) issued its consolidated reasons for refusal on 30 October 2020. On or before 27 November the parties are to engage in a without prejudice conference chaired by the ADR Registrar. The appeal is listed for a three day hearing in March 2021.

APPEALS TO THE QUEENSLAND COURT OF APPEAL

12.	**File Number:**	8114 of 2018 (MCU012812)/ (QPEC Appeal 3641 of 2015)
Appellant:		**Redland City Council**
Respondent:		**King of Gifts Pty Ltd and HTC Consulting Pty Ltd**
Proposed Development:		Material Change of Use for Service Station (including car wash) and Drive Through Restaurant 604-612 Redland Bay Road, Alexandra Hills (Lot 21 on SP194117)
Appeal Details:		Appeal against the decision of the Planning and Environment Court to allow the appeal and approve the development.
Current Status:		Appeal filed by Council on 30 July 2018. Council's outline of argument was filed on 28 August 2018. The appellant's outline of argument was filed on 20 September 2018. The matter was heard before the Court on 12 March 2019. The Judgment of the Supreme Court on 13 March 2020 was that the appeal is allowed and the orders made on 18 June 2019 be set aside. The appeal is to be remitted back to the Planning and Environment Court and the respondent is to pay the appellant's costs of the appeal. At a review in the P & E Court on 15 June 2020 the Court ordered that written submissions are to be filed by 10 July 2020 with a hearing listed for 17 July 2020. The written submissions were filed on 10 July 2020. The judgment in the Planning and Environment Court was issued on 7 August 2020 and the appeal was allowed. A further appeal has been submitted by Council.

DEVELOPMENT TRIBUNAL APPEALS AND OTHER MATTERS

13.	**File Number:**	Appeal 20-021
Appellant:		Darren Horton
Respondent:		**Redland City Council**
Proposed Development:		Design and siting request for a swimming pool 11 Reserve Esplanade, Wellington Point (Lot 1 on RP53836)
Appeal Details:		Appeal against the decision of the Redland City Council to direct refusal of a swimming pool structure within the front boundary setback in a design and siting referral.
Current Status:		Appeal filed on 2 September 2020. A tribunal site visit and meeting has been scheduled for 13 November 2020.

Human Rights

There are no known human rights implications associated with this report.

OFFICER'S RECOMMENDATION/COUNCIL RESOLUTION 2020/342

Moved by: **Cr Peter Mitchell**
Seconded by: **Cr Rowanne McKenzie**

That Council resolves to note this report.

CARRIED 11/0

Crs Karen Williams, Wendy Boglary, Peter Mitchell, Paul Gollè, Lance Hewlett, Mark Edwards, Julie Talty, Rowanne McKenzie, Tracey Huges, Adelia Berridge and Paul Bishop voted FOR the motion.

14.3 ANIMAL MANAGEMENT SYSTEMATIC INSPECTION PROGRAM

Objective Reference: **A5019005**

Authorising Officer: **Graham Simpson, Acting General Manager Community and Customer Services**

Responsible Officer: **Donna Wilson, Acting Group Manager Environment and Regulation**

Report Author: **Donna Wilson, Acting Group Manager Environment and Regulation**

Attachments: **Nil**

PURPOSE

To seek approval to conduct systematic inspection programs for:

- unregistered cats throughout Redland City, under *the Local Government Act 2009*
- unregistered dogs throughout Redland City under the *Animal Management (Cats and Dogs) Act 2008*

BACKGROUND

1. Approved Systematic Inspection Program for unregistered cats

   Redland City Council resolved to retain cat registration at its meeting of 9 October 2013. Registration of cats is now a local law requirement under *Part 6 – Registration of Cats of Local Law No.2 (Animal Management) 2015.*

2. Approved Systematic Inspection Program for unregistered dogs

   The *Animal Management (Cats and Dogs) Act 2008* places a mandatory requirement throughout Queensland for all dogs over the age of 12 weeks to be registered with the local authority in which the dog/s reside.

In order to determine the accuracy of records, obtain new registrations for unregistered animals and follow up on overdue registrations, it is necessary for Council's Animal Management Team to carry out a Systematic Inspection Program (SIP) which covers all premises within Redland City for the period 4 January 2021 to 31 December 2021 inclusive.

ISSUES

1. Approved Systematic Inspection Program for unregistered cats

   The provisions contained within the *Local Government Act 2009* provide for a maximum approved inspection period of three (3) months per inspection program. The Systematic Inspection Program for unregistered cats will be undertaken in four (4) programs to enable the program to be active throughout Redland City during 2021.

   Program 1 is proposed to commence on 4 January 2021 and will operate for a period of three (3) months until 2 April 2021.

   Program 2 is proposed to commence on 5 April 2021 and will operate for a period of three (3) months until 2 July 2021.

   Program 3 is proposed to commence on 5 July 2021 and will operate for a period of three (3) months until 1 October 2021.

Program 4 is proposed to commence on 4 October 2021 and will operate for a period of three (3) months until 31 December 2021.

2. Approved Systematic Inspection Program for unregistered dogs

   The provisions contained within the *Animal Management (Cats and Dogs) Act 2008* provide for a maximum approved inspection period of six (6) months. The Systematic Inspection Program for unregistered dogs, if approved, will be undertaken in two (2) programs to enable the program to be active throughout Redland City during 2021.

   Program 1 is proposed to commence on 4 January 2021 and will operate for a period of six (6) months until 2 July 2021.

   Program 2 is proposed to commence on 5 July 2021 and will operate for a period of six (6) months until 31 December 2021.

   As noted, the purpose of the SIP is to verify the accuracy of Council's animal registration records including obtaining new registrations of animals not yet registered and obtain re-registration for out-of-date animal registrations. Penalty infringement notices may be issued in instances where pet owners have failed to either register or renew their animal's registration.

   The program will allow authorised officers to gain access to the front door of the dwelling, and to all business premises by way of normal public access. Officers will be directed not to access other parts of a property unless with the consent of the property owner.

   The program will be conducted between 8am and 5pm, Monday to Friday (except public holidays) within the approved period(s).

   Copies of the program providing details of the SIP will be made available at Council's Customer Contact Centres or can be viewed on Council's website. Members of the public can obtain a copy of the program at no charge.

   Education

   The Systematic Inspection Programs for both unregistered cats and unregistered dogs will be advertised in the local paper at least 14 days, but not more than 28 days prior to commencement of the approved inspection programs.

   A communication plan leading up to, and during the program will be implemented to assist in educating animal owners on the requirements of animal registration, the benefits and provide an overview of how animal registration fees are used across the city. The SIP also provides an opportunity to provide a range of domestic animal educational material to residents that may have city-wide or local importance, including the importance of controls such as enclosures and dog leads in public to reduce incidents of attacks on people, wildlife and other pets.

STRATEGIC IMPLICATIONS

Legislative Requirements

Undertaking the SIP for unregistered cats is in accordance with the provision of *sections 133* and *134* of the *Local Government Act 2009.*

Undertaking the SIP for unregistered dogs is in accordance with the provision of *sections 113, 114* and *115 of the Animal Management (Cats and Dogs) Act 2008.*

Risk Management

The SIP assists with regulating and managing the keeping of animals by minimising the risk to community health, safety and amenity.

Financial

The purpose of the SIP is to verify Council's animal registration records, obtain new registrations, obtain payment for out of date animal registrations and, where necessary, to issue penalty infringement notices to dog and cat owners who fail to renew their animal's registration. It is expected that this will assist Council collecting revenue to offset costs of operating its animal management responsibilities.

People

There are no identified implications for Council staff as existing staff from the Environment and Regulation Group will be utilised to undertake these programs.

Environmental

The SIPs are in accordance with the *Animal Management (Cats and Dogs) Act 2008* and Council's *Local Law No. 2 (Animal Management) 2015* to regulate and manage the keeping of animals to reduce environmental nuisance.

Social

The SIPs are in accordance with the *Animal Management (Cats and Dogs) Act 2008* and Council's *Local Law No. 2 (Animal Management) 2015* to regulate and manage the keeping of animals by supporting animal owners to keep their animals in a manner that is consistent with the expectations of the community, including public safety.

Human Rights

There are no known relevant human rights matters associated with this report.

Alignment with Council's Policy and Plans

Alignment to Council's Corporate Plan, Key Outcome 7 - Strong and connected communities

Our health, wellbeing and strong community spirit will be supported by a full range of services, programs, organisations and facilities, and our values of caring and respect will extend to people of all ages, cultures, abilities and needs.

To achieve this objective, Council is committed to encourage responsible dog and cat ownership through the enforcement of the provisions of *Local Law No. 2 (Animal Management) 2015*.

CONSULTATION

Consulted	Consultation Date	Comments/Actions
Senior Management Accountant – Business Partnering	9 October 2020	Reviewed report

OPTIONS

Option One

That Council resolves as follows:

1. That pursuant to *sections 133* and *134* of the *Local Government Act 2009*, Council resolves to approve four (4) systematic inspection programs for unregistered cats for the periods 4 January 2021 to 2 April 2021 (Program 1), 5 April 2021 to 2 July 2021 (Program 2), 5 July 2021 to 1 October 2021 (Program 3) and 4 October 2021 to 31 December 2021 (Program 4), inclusive.
2. That pursuant to *sections 113, 114* and *115* of the *Animal Management (Cats and Dogs) Act 2008*, Council resolves to approve the systematic inspection program for unregistered dogs for the periods 4 January 2021 to 2 July 2021 (Program 1) and 5 July 2021 to 31 December 2021 (Program 2), inclusive.

Option Two

That Council resolves to act only on complaints received.

OFFICER'S RECOMMENDATION

That Council resolves as follows:

1. That pursuant to *sections 133* and *134* of the *Local Government Act 2009*, Council resolves to approve four (4) systematic inspection programs for unregistered cats for the periods 4 January 2021 to 2 April 2021 (Program 1), 5 April 2021 to 2 July 2021 (Program 2), 5 July 2021 to 1 October 2021 (Program 3) and 4 October 2021 to 31 December 2021 (Program 4), inclusive.
2. That pursuant to *sections 113, 114* and *115* of the *Animal Management (Cats and Dogs) Act 2008*, Council resolves to approve the systematic inspection program for unregistered dogs for the periods 4 January 2021 to 2 July 2021 (Program 1) and 5 July 2021 to 31 December 2021 (Program 2), inclusive.

COUNCIL RESOLUTION 2020/343

Moved by: **Cr Tracey Huges**
Seconded by: **Cr Paul Bishop**

That Council resolves as follows:

1. **That pursuant to sections 133 and 134 of the Local Government Act 2009, Council resolves to approve four (4) systematic inspection programs for unregistered cats to inspect all premises, including residential and business premises, within the Local Government area for the periods 4 January 2021 to 2 April 2021 (Program 1), 5 April 2021 to 2 July 2021 (Program 2), 5 July 2021 to 1 October 2021 (Program 3) and 4 October 2021 to 31 December 2021 (Program 4), inclusive.**
2. **That pursuant to sections 113, 114 and 115 of the Animal Management (Cats and Dogs) Act 2008, Council resolves to approve the systematic inspection program for unregistered dogs to inspect all premises, including residential and business premises, within the Local Government area for the periods for the periods 4 January 2021 to 2 July 2021 (Program 1) and 5 July 2021 to 31 December 2021 (Program 2), inclusive.**

CARRIED 10/1

Crs Karen Williams, Wendy Boglary, Peter Mitchell, Paul Gollè, Lance Hewlett, Mark Edwards, Rowanne McKenzie, Tracey Huges, Adelia Berridge and Paul Bishop voted FOR the motion.

Cr Julie Talty voted AGAINST the motion.

14.4 RAL19/0103 CHANGE TO APPROVAL FOR RECONFIGURING A LOT FOR ONE(1) LOT INTO SEVEN(7) LOTS AT 20-28 BURBANK ROAD, BIRKDALE AND MCU19/0134 MATERIAL CHANGE OF USE FOR RESIDENTIAL CARE FACILITY AT 17-19 HONEYGEM PLACE, BIRKDALE

Objective Reference: A5018998

Authorising Officer: Graham Simpson, Acting General Manager Community and Customer Services

Responsible Officer: David Jeanes, Group Manager City Planning & Assessment

Report Author: Daniel Manathunga, Planning Officer

Attachments:

1. Site and Locality Plan ⇩
2. Existing Approval ⇩
3. Revised Amended Conditions ⇩
4. Proposal Plan ⇩
5. Noise Impact Assessment ⇩
6. Amended Development Conditions ⇩

PURPOSE

This application is referred to the General Meeting of Council for determination at the request of the Divisional Councillor.

BACKGROUND

Council has received the following applications relating to the same property:

- **PART A - an *'other change'* to a development approval for a reconfiguring a lot from one (1 lot) into seven (7 lots)** - seeking to amend conditions of the approval associated with the residential care facility over Lot 1 on SP174943 known as 20-28 Burbank Road, Birkdale.
- **PART B - an application for a development permit for a material change of use for a residential care facility** - over Lot 1 zoned within the environmental management and recreation and open space zone known as 17-19 Honeygem Place, Birkdale (Lot 1 SP174943).

The owner and applicant is Mr David William Shaw and Mrs Alexandra Margaret Shaw care of East Coast Surveys (Aust) Pty Ltd.

The applications have been made subsequent to a Show Cause notice issued for an unlawful use of the premises issued 29 July 2019 for the proposed use.

The level of assessment for the separate applications is impact assessable as per table 5.5.1 & 5.4.14 of City Plan where undertaken within the environmental management zone and recreation and open space zone. Key issues in the assessment of the two (2) applications are listed below:

- passive recreation on balance of the lot
- fauna friendly fencing
- suitability of the use
- acoustic impact
- environmental impact
- car parking
- traffic generation

The above issues have been assessed in the report and in accordance with section 60 of the *Planning Act 2016* (PAct) the change application and material change of use is recommended to be approved subject to amended development conditions.

ISSUES

Site & Locality

The subject site originally encompassed 1.7 hectares and was created through a historical reconfiguration of lot which included six (6) residential lots and balance lot (known as lot 1) zoned within recreation and open space and environmental management zone with access from Honeygem Place and Burbank Road.

Lot 1 has a site area of 1.373 hectares and is currently improved by a dwelling house, relative's apartment and domestic outbuildings in the form of a shed and carport structure as depicted in Attachment 2. All of which is confined to the building envelope area. While the balance of the site is constrained by a covenant and conditions restricting the use to passive recreation.

Adjoining the subject site to the east is low density residential zoned land consisting of dwelling houses within 17m of the premises. The site is part of a broader open space network that links Old Cleveland Road East (south) and Collingwood Road (north) and Birkdale Bushland Refuge to the east, albeit fragmented by a mix of State, Local and private tenure.

An important scenic feature of the site is a large dam on the north-west of the site. The dam is noted to have two (2) distinct purposes. Firstly, hydrology which provides stormwater retention for the site and surrounding catchment discharging to Moreton Bay. Second, the dam and riparian vegetation is both a scenic landscape and environmental linkage of local significance.

In terms of services, the site has existing provisions derived from Honeygem Place including water main, hydrant, sewerage and overhead power. Access is via a no through road (a local street). The topography of the site generally falls away from Honeygem Place towards an existing dam within the centre of the site.

Planning Act 2016

The applications have been made in accordance with the PAct and the *Development Assessment Rules* and is assessed below as follows:

- Part A will consider the change application to the approved reconfiguration; and
- Part B will consider the material change of use application.

PART A – other change (RAL19/0103)

Proposal

The proposed *'other change'* is to a development approval for a reconfiguration of lot one (1) into seven (7), which seeks to amend conditions of approval to allow active and passive recreation where conditions restricted use to passive recreation (see Attachment 3) as follows:

- remove condition 4.4.1 c) which restricts the use of land outside of the building envelope for passive recreational nature (walking, bird watching, etc.) and is to have minimal impact on vegetation and the natural environment;

- remove condition 4.4.2 which requires any proposal to amend the location, orientation or shape of the designated building envelope, to require a separate application and approval; and
- amend condition 4.4.8 to require fauna friendly fencing on the north and south property boundaries only.

Minor change

The applicant has made a number of changes to the application during the assessment period. The changes are considered to be a minor change under Schedule 2 of the PAct as it does not result in substantially different development, and/or responds to further advice by Council. Therefore, there is no effect on the assessment stages identified in accordance with the Development Assessment Rules.

Owners consent

In accordance with the PAct a *'change application must be accompanied by the written consent of the owners of the premises'*. Owner's consent was provided by the applicant in relation to Lot 1 on SP174943 (the premises). The applicant submitted representations that the premises complied with the *'excluded premises'* definition under the PAct where two (2) aspects are to be considered to determine owners consent.

The first aspect to consider is whether the change will materially impact the adjoining premises, which in this instance is not the case where retaining conditions of approval restricting use over the balance of the site as environmental and recreational purposes. Further access requirements are maintained for allotments. Therefore the proposed change will not materially impact the adjoining premises.

The second aspect considered is whether it is impractical to obtain consent given the premises has been subdivided and now has many owners. Given the premises has been subdivided and now has many owners, it is considered to meet this test and be impractical.

It is therefore considered that the written consent provided is appropriate for the change application as *'excluded premises'* in accordance with the two part test.

Assessment framework

The application has been made in accordance with the PAct, *Development Assessment Rules* and constitutes an impact assessable 'other change' application to a development approval for reconfiguring a lot under City Plan.

In accordance with section 82 of the PAct:

'(1) This section applies to a change application, other than for a minor change to a development approval.

(2) For administering the change application, and assessing and deciding the change application in the context of the development approval, the relevant provisions apply—

(a) as if—

(i) the responsible entity were the assessment manager; and

(ii) the change application were the original development application, with the changes included, but was made when the change application was made; and

(b) with necessary changes.

(3) However—

(a) section 53 does not apply to the change application if the change is not a minor change only because the change may cause—

(i) a referral to a referral agency if there were no referral agencies for the development application; or

(ii) a referral to extra referral agencies; or

(iii) a referral agency to assess the change application against extra matters; and

(b) the power—

(i) to direct that a development condition be imposed under section 56(1)(b)(i) includes a power to direct that a development condition be amended; and

(ii) to impose a development condition under section 60(2)(c) or (3)(b) or 64(6)(b) includes a power to amend a development condition; and

(c) if the responsible entity is, under section 78A(3), the Minister—

(i) the relevant provisions apply to the change application only if, and to the extent, those provisions would apply to a development application called in by the Minister; and

(ii) section 105(5) and (6) applies for assessing and deciding the change application.

(4) To remove any doubt, it is declared that the following matters apply, only to the extent the matters are relevant to assessing and deciding the change application in the context of the development approval—

(a) the assessment benchmarks;

(b) any matters a referral agency must, may, or may only assess the application against or have regard to under section 55(2);

(d) if the development to which the change application relates requires impact assessment—any matters the assessment must or may be carried out against or having regard to under section 45(5)(a)(ii) or (b).

(5) If a change application is made within 1 year after the development approval was given, any properly made submission for the application for the development approval is taken to be a properly made submission for the change application.

(6) In this section—

relevant provisions means—

(a) section 45(6) to (8); and

(b) part 2, division 2, other than section 51; and

(c) part 3, other than sections 63 and 64(8)(c); and

(d) the development assessment rules.

In accordance with section 45 of the PAct:

(5) An impact assessment is an assessment that—

(a) must be carried out—

(i) against the assessment benchmarks in a categorising instrument for the development; and

(ii) having regard to any matters prescribed by regulation for this subparagraph; and

(b) may be carried out against, or having regard to, any other relevant matter, other than a person's personal circumstances, financial or otherwise.

Examples of another relevant matter—

- *a planning need*
- *the current relevance of the assessment benchmarks in the light of changed circumstances*
- *whether assessment benchmarks or other prescribed matters were based on material errors*

(6) An assessment carried out against a statutory instrument, or another document applied, adopted or incorporated (with or without changes) in a statutory instrument, must be carried out against the statutory instrument or document as in effect when the application was properly made.

(7) However, if the statutory instrument or other document is amended or replaced before the assessment manager decides the application, the assessment manager may give the weight that the assessment manager considers is appropriate, in the circumstances, to the amendment or replacement.

Section 31 of the *Planning Regulation 2017* relevantly identifies that:

(1) For section 45(5)(a)(ii) of the Act, the impact assessment must be carried out having regard to—

(a) the matters stated in schedules 9 and 10 for the development; and

(d) if the prescribed assessment manager is a person other than the chief executive—

(i) the regional plan for a region; and

(ii) the State Planning Policy, to the extent the State Planning Policy is not identified in the planning scheme as being appropriately integrated in the planning scheme; and

(f) any development approval for, and any lawful use of, the premises or adjacent premises; and

(g) the common material.

(2) However—

(a) an assessment manager may, in assessing development requiring impact assessment, consider a matter mentioned in subsection (1) only to the extent the assessment manager considers the matter is relevant to the development; and

(b) if an assessment manager is required to carry out impact assessment against assessment benchmarks in an instrument stated in subsection (1), this section does not require the assessment manager to also have regard to the assessment benchmarks.'

In summary, the assessment manager is to assess and decide the application as if the change application were the original development application, but was made under City Plan. Further in this instance under City Plan the application would be impact assessable. In that, the application must be carried out against the assessment benchmarks, matters prescribed by the *Planning Regulation 2017* and may have regard to any other relevant matter. Matters considered in this report are detailed in the below sections.

Assessment Benchmarks

The application is subject to impact assessment and in this regard, is subject to assessment against the entire planning scheme. However, it is recognised that the following codes are relevant to the application:

- Environmental management zone code;
- Recreation and open space zone code;
- Reconfiguring a lot code;
- Healthy waters code;
- Infrastructure works code;
- Landscape code;
- Environmental significance overlay code;
- Flood and storm tide hazard overlay code; and
- Transport, servicing, access and parking code.

Matters prescribed by regulation

Section 30 of the *Planning Regulation 2017* refers to the assessment benchmarks the assessment manager must have regard to generally, however the assessment manager may, in assessing development requiring impact assessment, consider an assessment benchmark only to the extent the assessment benchmark is relevant to the development. The following matters have been considered:

- Schedules 9 and 10 of the *Planning Regulation 2017;*
- South East Queensland (SEQ) Regional Plan;
- State Planning Policy;
- Temporary State Planning Policy;
- Local Government Infrastructure Plan (LGIP) ;
- Schedule 11 of the *Planning Regulation 2017;*
- Common material; and
- Existing approvals.

Relevant matters

In accordance with s45(5)(b) of PAct the assessment manager may have regard to any other relevant matter, other than a person's personal circumstances, financial or otherwise in the decision of the application. There were no additional matters considered as part of the assessment of this application.

Decision making rules

Section 82 of the PAct states that: *'(2) For administering the change application, and assessing and deciding the change application in the context of the development approval, the relevant provisions apply—(a) as if—*

(i) the responsible entity were the assessment manager; and

(ii) the change application were the original development application, with the changes included, but was made when the change application was made; and

(b) with necessary changes.

(3) However—

(b) the power—

(i) to direct that a development condition be imposed under section 56(1)(b)(i) includes a power to direct that a development condition be amended; and

(ii) to impose a development condition under section 60(2)(c) or (3)(b) or 64(6)(b) includes a power to amend a development condition; and'

Section 60 of the PAct states that:

'(1) This section applies to a properly made application, other than a part of a development application that is a variation request.

(3) To the extent the application involves development that requires impact assessment, and subject to section 62, the assessment manager, after carrying out the assessment, must decide—

(a) to approve all or part of the application; or

(b) to approve all or part of the application, but impose development conditions on the approval; or

(c) to refuse the application.

(5) The assessment manager may give a preliminary approval for all or part of the development application, even though the development application sought a development permit.

(6) If an assessment manager approves only part of a development application, the rest is taken to be refused.'

Accordingly, the assessment manager after carrying out the assessment must decide the application in accordance with section 60(3) given the application is impact assessable under City Plan. The report seeks to provide assessment and resolves to decide the application in accordance with the above decision discretion applied under the PAct.

Application assessment

The historical context of conditions requiring the building envelope, Local Law 6 and covenant are summarised below:

- Under the *1988 Transitional Planning Scheme* and *1998 Strategic Plan*, the site was within the Public Open Space and Special Protection Area designation; therefore conditions of approval required a building envelope, declaration of a Vegetation Protection Order (VPO) and Vegetation Management Plan. These conditions of approval ensured that the site conserved the physical and natural features of the lot. Specifically, existing vegetation to be maintained and enhanced, revegetation restricted to native vegetation and allow fauna movements.

- Use of the site outside of the building envelope is restricted to passive recreational purposes to align with public open space zoning intent, with the land remaining in private ownership and not dedicated to public ownership.
- The covenant and building envelope were conditioned at operational works to align with the Q100 flood event which took into account the drainage and hydrology considerations relevant to the site considering the existing dam connected to the wider drainage catchment.
- The dam and riparian vegetation provide both scenic landscape and environmental linkage for adjoining natural and open spaces of local significance.

Overall, the assessment of this application will consider the change in the context of the development approval and relevance of the above intent if the application was lodged under the current City Plan.

Use of the land

The change application seeks removal of the following conditions:

'condition 4.4.1

c) Generally, use of the land outside of the building envelope is to be passive recreational nature (walking, bird watching, etc.) and is to have minimal impact on vegetation and the natural environment. Any proposed use of the outside of the designated building envelope is to be considered as a Column V use under the transitional planning scheme and shall require separate application and approval. Council shall not give favourable consideration to a Column V use, which does not protect, maintain or enhance the environmental values identified for proposed Lot 1.

4.4.2 Building Envelope Amendments

a) Any proposal to amend the location, orientation or shape of a designated building envelope shall require separate application and approval. Council shall not give favourable consideration to any such application that increases the area of the site beyond the approved designated building envelope, or causes loss of fauna habitat, or vegetation, above which would have occurred on the original site. Landowners shall be responsible for showing any approved amendments to the designated building envelope on a plan of survey and for re-pegging the amended location on site.

b) No amendment shall be allowed the reconfigures the envelope into smaller groups, or alters the shape from a regular, contiguous shape.

c) No amendment shall be permitted after clearing of a designated building envelope has occurred.'

The intent of the above conditions is divided into two (2) aspects:

- use of the land for passive recreation (walking, bird watching, etc.); and
- protect, maintain and enhance the environmental values of the site.

Taking into account City Plan, the use of the balance of the site would be managed by virtue of the table of assessment, which would elevate use of the land to assessable development where within the recreation and open space zone. Therefore the use of the site would be required to comply with the following performance outcomes PO1 and PO12 of the recreation and open space zone:

'PO1
Development predominantly facilitates passive or active recreational use of the land or supports the conservation and management of areas with significant environmental values.

PO12
The drainage and flood related functions of open space are maintained.

Overall Outcomes:

f) land used for privately operated recreational facilities is retained for open space-based recreational functions and development is limited to activities and facilities that support or have a nexus with the primary open space or recreational function of the land;

g) development is compatible with and does not detract from the visual quality or the ecological, buffering, drainage or flood related functions of the land;'

In respect to condition 4.4.1; assessable development would retain the use of the land to predominantly facilitate passive or active recreational use as detailed within the performance outcomes and overall outcomes of the recreation and open space zone. Further, conditions retained specifically building envelope and vegetation protection would prohibit additional building and structures associated with active recreation. Therefore the intent of the original condition is considered to be retained through the implementation of City Plan and is no longer relevant in this instance.

The second aspect, namely '*protect*, *maintain and enhance the environmental values of proposed lot 1'* is managed through retaining conditions of approval relating to a building envelope, covenant and Local Law 6 protection of vegetation. These conditions will ensure that the environmental significance of the site is protected and maintained.

In respect to condition 4.4.2, the PAct would require a further change application to the current approval to be submitted and assessed against the environmental significance overlay.

Future development and specifically amending the building envelope would be required to comply with performance outcomes PO2, PO3, PO6 and PO7 of the Environmental significance overlay code which state:

'PO2
Development does not result in a significant reduction in the level or condition of biodiversity and ecological functions and processes in the locality.

PO3
Development does not cause substantial fragmentation of habitat areas.

PO6
The design, scale and intensity of development minimises impacts on retained habitat.

PO7
Retained habitat is protected to ensure its on-going health and resilience, and to avoid degradation as a result of edge effects.'

Therefore, development would be required to not adversely impact on the level or condition of biodiversity and ecological functions of the site. The design, scale and intensity of development would be required to minimise impacts on retained habitat; aligning with the intent of the original condition.

Increasing the development footprint, specifically in relation to additional buildings and structures, would not be allowed where a current building envelope is relevant (condition 4.4.1) over the allotment, which is referenced within Attachment 3. Furthermore, clearing of vegetation would not be supported where conditions requiring a covenant and Local Law 6 Protection of Vegetation is retained outside of the building envelope.

It is therefore considered that under City Plan, the intent of the original conditions will be maintained through the intent of the zone, Environmental significance overlay and retention of conditions in respect to building envelope, covenant and Local Law 6 protection of vegetation.

The conditions are recommended to be removed in the context of the City Plan assessment and further conditions relating to the material change of use over the site, if approved.

Fauna friendly fencing

Secondly, the change application seeks removal of the following condition:

> *'4.4.8 Fauna Friendly Fencing*
>
> *Should new fencing be erected along the allotment boundary, the fencing is not to impede fauna movement and it is to be in compliance with any of the design options contained in Council's Fauna Friendly brochure.'*

The corresponding assessment benchmark under City Plan is performance outcomes PO4 and PO8 of the Environmental significance overlay state:

> *'PO4*
> *Connections between habitat areas are retained, so that movement of key species and normal gene flow between populations is not inhibited or made less safe. Connections may include both continuous corridors and "stepping stone" patches and refuges.*
>
> *PO8*
> *Barriers restricting the movement and dispersal of wildlife are removed, except where they are necessary for the safety of people or animals.'*

Under City Plan, fauna friendly fencing requirements are considered relevant. However, amending the condition is supported based on the following assessment.

The site is considered to be fragmented towards the east and west where expansion of the urban footprint has resulted in barriers for the movement of key species as depicted within Attachment 3. However, the north-south connection and north-eastern portion of the lot between habitat areas is relevant and it is considered necessary to retain connection between habitat areas. Therefore fauna friendly fencing specific to the site is required along the north, north-east and south boundaries in order to comply with performance outcome PO4 and PO8.

Accordingly, it is recommended that the condition requiring fauna friendly is amended to relate only to the north, north-east and southern boundaries and be updated to reflect Council's current fauna fencing guidelines as detailed within Attachment 3.

PART B – Material change of use (MCU19/0134)

Proposal

The proposed development is for a material change of use for a residential care facility, which is defined in the *Planning Regulation 2017* as:

> *'residential care facility means the use of premises for supervised accommodation, and medical and other support services, for persons who—*
>
> *(a) can not live independently; and*
> *(b) require regular nursing or personal care.*
>
> *Examples of a residential care facility—convalescent home, nursing home'*

The scale of the development is summarised below:

- accommodation and support for a maximum of six (6) children at any given time residing onsite with severe disabilities requiring regular personal care;
- a maximum of two (2) staff on-site at any given time;
- one (1) specialised bus parked onsite within a carport structure; and
- onsite car parking.

The proposed built form is confined to the existing building (previously a relatives apartment) measuring 12.9m by 8.4m; consisting of four (4) bedrooms, two (2) bathrooms, dining and kitchen including staff quarters. The proposal plans are included in Attachment 4.

Operationally the following is relevant:

- the balance of the lot to be used for active and passive recreational use for the resident children only, under the supervision of staff;
- resident children are taken to school each day by the onsite bus;
- during weekends resident children and associated parents or carers are taken out for day trips and activities off site; and
- the facility is open 24 hours a day, seven (7) days per week.

Assessment framework

In assessing this application section 45 of the PAct provides that:

> *(5) An **impact assessment** is an assessment that—*
>
> *(a) must be carried out—*
>
> *(i) against the assessment benchmarks in a categorising instrument for the development; and*
>
> *(ii) having regard to any matters prescribed by regulation for this subparagraph; and*
>
> *(b) may be carried out against, or having regard to, any other relevant matter, other than a person's personal circumstances, financial or otherwise.*
>
> *(6) Subsections (7) and (8) apply if an assessment manager is, under subsection (3) or (5), assessing a development application against or having regard to—*

(a) a statutory instrument; or

(b) another document applied, adopted or incorporated (with or without changes) in a statutory instrument.

(7) The assessment manager must assess the development application against or having regard to the statutory instrument, or other document, as in effect when the development application was properly made.

(8) However, the assessment manager may give the weight the assessment manager considers is appropriate, in the circumstances, to—

(a) if the statutory instrument or other document is amended or replaced after the development application is properly made but before it is decided by the assessment manager—the amended or replacement instrument or document; or

(b) another statutory instrument—

(i) that comes into effect after the development application is properly made but before it is decided by the assessment manager; and

(ii) that the assessment manager would have been required to assess, or could have assessed, the development application against, or having regard to, if the instrument had been in effect when the application was properly made.

Section 31 of the *Planning Regulation 2017* relevantly identifies that:

*(1) For section 45(5)(a)(ii) of the Act, the **impact assessment** must be carried out having regard to— (a) the matters stated in schedules 9 and 10 for the development; and*

(b) if the prescribed assessment manager is the chief executive—

(i) the strategic outcomes for the local government area stated in the planning scheme; and (ii) the purpose statement stated in the planning scheme for the zone and any overlay applying to the premises under the planning scheme; and

(iii) the strategic intent and desired regional outcomes stated in the regional plan for a region; and

(iv) the State Planning Policy, parts C and D; and

(v) for premises designated by the Minister—the designation for the premises; and

(c) if the prescribed assessment manager is a person other than the chief executive or the local government—the planning scheme; and

(d) if the prescribed assessment manager is a person other than the chief executive—

(i) the regional plan for a region; and
(ii) the State Planning Policy, to the extent the State Planning Policy is not identified in the planning scheme as being appropriately integrated in the planning scheme; and

(iii) for designated premises—the designation for the premises; and

(e) any temporary State planning policy applying to the premises; and

(f) any development approval for, and any lawful use of, the premises or adjacent premises; and

(g) the common material.

(2) However—

(a) an assessment manager may, in assessing development requiring impact assessment, consider a matter mentioned in subsection (1) only to the extent the assessment manager considers the matter is relevant to the development; and

(b) if an assessment manager is required to carry out impact assessment against assessment benchmarks in an instrument stated in subsection (1), this section does not require the assessment manager to also have regard to the assessment benchmarks.

In summary, the assessment manager is to assess and decide the application in accordance with section 45 of the PAct. In that, the application must be carried out against the assessment benchmarks, matters prescribed by the *Planning Regulation 2017* and may have regard to any other relevant matter. Matters considered in this report are detailed in the below sections.

Assessment Benchmarks

The application is subject to impact assessment and in this regard, is subject to assessment against the entire planning scheme. However, it is recognised that the following codes are relevant to the application:

- Environmental management zone code;
- Recreation and open space zone code;
- Healthy waters code;
- Infrastructure works code;
- Landscape code;
- Environmental significance overlay code;
- Flood and storm tide hazard overlay code; and
- Transport, servicing, access and parking code.

Matters prescribed by regulation

Section 30 of the *Planning Regulation 2017* refers to the assessment benchmarks the assessment manager must have regard to generally, however the assessment manager may, in assessing development requiring impact assessment, consider an assessment benchmark only to the extent the assessment benchmark is relevant to the development. The following matters have been considered:

- Schedules 9 and 10 of the *Planning Regulation 2017;*
- SEQ Regional Plan;
- State Planning Policy;
- Temporary State Planning Policy;
- Local Government Infrastructure Plan (LGIP) ;
- Schedule 11 of the *Planning Regulation 2017;*

- Common material; and
- Existing approvals.

Relevant matters

In accordance with s45(5)(b) of *Planning Act 2016* the assessment manager may have regard to any other relevant matter, other than a person's personal circumstances, financial or otherwise in the decision of the application. The following additional matters were considered as part of the assessment of the application:

- Scale and intensity.

Decision making framework

Section 60 of the *Planning Act 2016* states that:

> *'(1) This section applies to a properly made application, other than a part of a development application that is a variation request.*
>
> *(3) To the extent the application involves development that requires impact assessment, and subject to section 62, the assessment manager, after carrying out the assessment, must decide—*
>
> *(a) to approve all or part of the application; or*
>
> *(b) to approve all or part of the application, but impose development conditions on the approval; or*
>
> *(c) to refuse the application.*
>
> *(5) The assessment manager may give a preliminary approval for all or part of the development application, even though the development application sought a development permit.*
>
> *(6) If an assessment manager approves only part of a development application, the rest is taken to be refused.*

Accordingly, the assessment manager after carrying out the assessment must decide the application in accordance with section 60(3) given the application is impact assessable under City Plan. The report seeks to provide assessment and resolves to decide the application in accordance with the above decision discretion applied under the PAct.

Application assessment

Suitability of the use

The site has a split zoning with the development footprint confined to the Environmental management zone and the balance of the site zoned within the Recreation and open space zone. The zone intends the following:

Environmental management zone code:

'PO1
Development directly supports conservation and environmental management purposes or is a single dwelling house on a lot.

PO2
Development is of a small scale and low intensity, which maintains the natural character of the site and is compatible with nearby uses.

Overall outcomes:

a) the environmental values and ecological functions of land within this zone are maintained or enhanced;

b) land retains a generally undeveloped character;

c) reconfiguration avoids further fragmentation of land; and

d) development is generally limited to a single dwelling house on a large lot or small scale activities that facilitate the management or conservation of the environmental values on or near the land.'

Recreation and open space zone code:

'PO1
Development predominantly facilitates passive or active recreational use of the land or supports the conservation and management of areas with significant environmental values.

Overall outcomes:

'(f) land used for privately operated recreational facilities is retained for open space-based recreational functions and development is limited to activities and facilities that support or have a nexus with the primary open space or recreational function of the land;

(g) development is compatible with and does not detract from the visual quality or the ecological, buffering, drainage or flood related functions of the land;'

The proposed development is not intended within the Environmental management zone where not considered to directly support conservation and environmental management purposes and is not a single dwelling house. Therefore the proposed development is unable to comply with performance outcome PO1 and overall outcomes of the Environmental Management Zone code stated above.

However 'other relevant matters' have been considered in the assessment of the application including the scale and intensity of the proposed use. The proposed residential care facility is considered of similar scale to a *'community residence',* which under Schedule 6 of the *Planning Regulation 2017,* a local categorising instrument is prohibited from making assessable development, provided they are able to operate within the following parameters:

'6 Material change of use for community residence

(1) A material change of use of premises for a community residence, if—

a) the premises are included in a prescribed zone under a local categorising instrument; and

b) no more than 7 support workers attend the residence in a 24-hour period; and

c) at least 2 car parks are provided on the premises for use by residents and visitors; and

d) at least 1 of the car parks stated in paragraph (c) is suitable for persons with disabilities; and

e) at least 1 car park is provided on the premises for use by support workers.

(2) In this section—

prescribed zone means—

(a) any of the following zones stated in schedule 2—

(iv) environmental management and conservation zone;'

While the development could comply with the above, the use as proposed does not meet the definition of a *'community residence'* under Schedule 24 of the *Planning Regulation 2017*, as two (2) staff may be onsite at any given time. The definition states:

'community residence—

(a) means the use of premises for residential accommodation for—

(i) no more than—

(B) 6 persons who require assistance or support with daily living needs; and

(ii) no more than 1 support worker; and

(b) includes a building or structure that is reasonably associated with the use in paragraph (a).'

It considered reasonable to assume that the proposed development could largely comply with the exemptions if the proposed use had a maximum of one (1) staff member onsite at any given time and not require a development permit and associated conditions whereby confined to a prescribed zone being the Environmental management zoned part of the lot. The policy shows a clear intent from the State legislation to encourage small scale facilities providing accommodation and care for persons that require assistance without the need for a development permit. Local planning instruments such as City Plan have no jurisdiction to make assessable. The argument has been made to the State that prescribed zones should be limited where environmental zone is not considered compatible for such a use.

Meanwhile, use of land within the recreation and open spaces zone (land outside the building envelope) is proposed to be used for active and passive recreation by patients under supervision of staff, which meets the intent of the Recreation and open space zone code performance outcomes PO1 which states:

'PO1:

Development predominantly facilitates passive or active recreational use of the land or supports the conservation and management of areas with significant environmental values.'

Therefore, it is recommended that the development is suitable with the imposition of conditions restricting the scale and intensity of the use to be compatible with the exemptions applied to community residence as a defined within the *Planning Regulation 2017* above.

Further, conditions restricting use of the recreation and open space zoned land to passive and active recreational will ensure the development is consistent with the zone. Conditions proposed are within Attachment 6.

Acoustic impact

The proposed residential care facility is adjacent to an established Low density residential zoned neighbourhood with properties towards the south, east and west, which are considered sensitive land uses (refer to Attachment 5).

Performance outcome PO2 of the Environmental management zone code and performance outcome PO11 of the Recreation and open space zone states:

> *'Environmental management zone:*
> *PO2*
>
> *Development is of a small scale and low intensity, which maintains the natural character of the site and is compatible with nearby uses.*
>
> *Recreation and open space zone:*
>
> *PO11*
> *Development minimises lighting, noise and other impacts on nearby sensitive land uses and habitat areas.'*

In order to demonstrate compliance with the above performance outcomes, the applicant supplied a noise impact assessment undertaken by JT Environmental Pty Ltd. The key findings of the report are summarised below including recommendations to minimise noise impacts on nearby sensitive land uses including:

- Noise monitoring was undertaken onsite where existing free-field noise exposure levels were determined. The report states that ambient noise in the area was dominated by residential road traffic noise.
- The modelling took into account the likely source of the noise impact against the sensitive receptors adjoining the site with the results restricted to day time only (7am-6pm). The findings of the modelling confirm compliance with schedule 1 of the *Environmental Protection (Noise) Policy 2019* with the inclusion of a screen wall along the eastern edge of the shed play areas detailed within Attachment 5.
- The noise modelling also considered the use of the south-west corner of the site for passive and active recreational taking into account the likely noise emitted by the combined resident and staff while outside of the building as a relevant noise sources. This is discussed further below.

The noise impact assessment provided the following recommendations, including:

- Provide a 2.2m high acoustic barrier along the immediate edge (eastern edge) of the Shed Play Area as depicted within Attachment 5; and
- Restrict the use of the shed play area and any external play areas only to day-time periods (7am-6pm).

Importantly, submitter concerns in relation to the ongoing management and ensuring high standards of resident welfare is managed by an independent government body.

Specifically, the National Disability Insurance Scheme (NDIS) Quality and Safeguards Commission (NDIS Commission), which is an independent government body that works to improve the quality and safety of services and supports provided to people with disability under the NDIS (and in some cases, outside of the NDIS) by NDIS providers.

Therefore it is prudent to note that noise impacts are considered only within the confines of the relevant statutory planning instruments which are generally limited to the intensity and scale of the development rather than staff training standards and resident behaviour/welfare issues. Albeit, that the noise impact assessment has considered resident noise to be reasonable and comply with the corresponding *Environmental Protection (Noise) Policy 2019*.

In conjunction with the noise impact assessment recommendations; further development conditions limiting the number of employees, bedrooms and patients as detailed below is reasonable and relevant including:

- a maximum of two (2) support workers onsite at any given time;
- a maximum of four (4) bedrooms; and
- a maximum of six (6) resident patients onsite at any given time.

The restriction on intensity and scale will minimise impacts associated with the facility allowing enforceable conditions which the residential care facility is required to uphold. Any increase intensity is not permitted without further development application being issued.

Overall it is recommended that conditions be imposed to restrict the development to a low intensity inclusive of an acoustic barrier and restrict external operating hours to comply with the *Environmental Protection (Noise) Policy 2019*, schedule 1 and minimise impact on surrounding sensitive receptors (refer to Attachment 6).

Environmental impact

The proposed development is within the existing building, which is contained within the approved building envelope associated with the original reconfiguration of lot approval and located outside of the environmental significance overlay mapped areas as detailed in Attachment 1. No clearing of vegetation is proposed to facilitate the proposed development, including car parking area.

It is prudent to note that the premises has an existing covenant, building envelope and protection of vegetation conditions, which do not allow clearing of vegetation outside the envelope. Additionally, the site is within the Environmental management and Recreation and open space zone where all clearing of native vegetation is assessable development. Therefore the proponent would not be able to undertake any clearing without an operational works permit, which is code assessable against the Environmental significance overlay code.

Car parking

Performance outcome PO8 of the Transport, servicing, access and parking code states that:

'On-site vehicle parking:

1. *is clearly defined, safe and easily accessible;*
2. *accommodates a sufficient number of vehicles, having regard to:*
    1) *the type and size of development;*
    2) *expected resident, employee and customer movements;*

3) the location of the use;

4) the capacity of the existing road network to accommodate on-street parking; and

5) access to public transport;

3. includes dedicated parking spaces for people with a disability, motor cycles and bicycles.'

The applicant has supplied a car parking plan, which is within Attachment 4. In order to comply with performance outcome PO8 the assessment is considered in two (2) aspects. Firstly, whether a sufficient number of vehicles spaces are provided onsite considering the proposed use. Secondly, whether the vehicle parking area is safe and easily accessible to service the proposed development. The two (2) aspects are assessed below accordingly.

Firstly, the proposed development provides four (4) vehicle spaces onsite which is considered sufficient in terms number of vehicles anticipated by the development based on the following breakdown:

- one (1) spaces for visitor based on 1 visitor space per 10 beds;
- two (2) spaces dedicated for staff; and
- one (1) space dedicated for a bus or ambulance can stand. This will be conditioned so that other vehicle movements are not impeded.

On-site vehicle parking accommodates a sufficient number of vehicles and is considered to comply.

Secondly, the car parking area does not meet Australian Standard 2890.1 – Parking Facilities in respect to manoeuvrability, where insufficient aisle width is proposed. However, it is considered to comply with performance outcome PO8 based on the following basis:

- The proposed use is small scale and is not considered to result in substantial traffic generation or movements where staff parking is accommodated, bus parking is provided and the visitation is considered to be minimal. Considering the size of the use the onsite parking is considered safe and easily accessible with movement restricted onsite.
- The location of the use is within an established residential area where a large hardstand, commercial car parking area would not be compatible with the low scale environment. Therefore the existing car parking area where low key, screened with vegetation and generally compatible with a low density residential area. Additionally, the car parking plan provided is sufficient to allow vehicle movements to be retained within the premises, negating any impact to the lower order road of Honeygem Place. Therefore considering the location of use the existing parking area is sufficient in this instance.
- On-street parking is not required where conditioned to be retained onsite.
- Upgrading the car parking area to comply with Australian Standard 2890.1 – Parking Facilities would not be reasonable where the existing provisions are sufficient in terms of ease of access and safety.

Therefore the parking area is considered to be clearly defined, safe and easily accessible sufficient for the small scale use of the premises.

Overall, it is reasonable and relevant to condition the proposed development to provide all car parking wholly within the premises and limit the scale and intensity.

Accordingly, the proposed development is considered to comply with performance outcome PO8 with the imposition of development conditions detailed within Attachment 6.

Traffic generation

Performance outcome PO3 of the Transport, servicing, access and parking code states:

> *'PO3*
>
> *Development maintains or improves the safe and efficient operation of transport networks having regard to (amongst other things):*
>
> 1. *the existing or planned function of the roads affected;*
> 2. *available sight distances and the location and design of access points;*
> 3. *accessibility by public transport, pedestrians and cyclists;*
> 4. *the potential for conflict between vehicles, pedestrians and cyclists;*
> 5. *the loss or increase of on-street parking;*
> 6. *the location, construction and maintenance of utility infrastructure; and*
> 7. *the nature and intensity of traffic and parking generated by the development.'*

The proposed development is considered to comply with PO3 based on the following assessment:

- The Roads and Traffic Authority (RTA) Guide to Traffic Generation Developments provides traffic generation rates for various land uses. The rate suggested for housing for aged and disabled persons is compared to a dwelling house below. The traffic generated by the proposed use is considered to generate minimal traffic and is therefore appropriate for the local road network.

Land Use	**Rate**	
Housing for aged and disabled persons	Daily vehicle trips	1-2 per dwelling
	Weekday peak hour vehicle trips	0.1-0.2 per dwelling
Dwelling houses	Daily vehicle trips	9.0 per dwelling
	Weekday peak hour vehicle trips	0.85 per dwelling

Table 1: RTA- Guide to Traffic Generating Developments

- The access point is considered to have adequate sight distances where 45m is required in a 50km/hour speed limit as per the Australian Standard 2890.1:2004 (Attachment 3).
- The proposed development allocates all necessary car parking on site to ensure there is no impact on the supply of on-street parking.

Overall, the proposed development is considered to maintain the safe and efficient operation of the local street (Honeygem Place), in accordance with PO3 and subject to recommended conditions of approval within Attachment 6.

INFRASTRUCTURE CHARGES

PART A - Other change

No additional lots are created or dwelling houses proposed. Accordingly, the proposed development is not subject to infrastructure charges in accordance with the Adopted Infrastructure Charges Resolution.

PART B - Material change of use

The proposed development is defined as *'residential care facility'* under schedule 24 of the *Planning Regulation 2017*. Under schedule 16, the prescribed amount for a *'residential care facility'* is substantially greater than a *'community residence'*.

It is considered that for the purpose of infrastructure charges the use has a scale and intensity similar to a community residence. Therefore, no charge is considered applicable to the proposed development where no additional bedrooms are to be established and credits applied would exceed the prescribed amount.

STATE REFERRALS

Both applications did not trigger any referral requirements under Schedule 10 of the *Planning Regulation 2017*.

PUBLIC CONSULTION

The applications were both impact assessable and required public notification for fifteen (15) business days, as below:

- other change application: 27/02/2020 - 19/03/2020; and
- material change of use 16/01/2020 - 07/02/2020.

Notices of compliance for public notification were received on 20 March 2020 and 10 February 2020 respectively.

The matters raised as part of the submissions lodged as summarised below:

Part A - Other change submissions

In respect to the change application 67 properly made submissions received during the notification period. A further 24 submissions were received, which were not properly made.

All not properly made submissions were accepted under Part 4 Section 19 of the *Development Assessment Rules.*

1.	**Issue** Environmental impact • removal of covenant will impact fauna and flora and wildlife corridors; • adverse impacts on Koala habitat; • environmental significance of the site as a 'stepping stone' will be impacted; and • fencing fragmenting fauna movements.
	Applicant Response Not provided. Common material representations relevant.
	Officer's Comment Addressed in relevant section of the report.
2.	**Issue** Amenity: • waterway/dam, native flora and fauna and open space considered of local significance; and • adverse impacts from 'commercial' use within an existing residential and open space designation.

	Applicant Response Not provided. Common material representations relevant.
	Officer's Comment Addressed in relevant section of the report.
3.	**Issue** Drainage constraint: • adverse impacts to upstream and downstream properties from the possible removal of the covenant which could increase flood impacts; and • introduction of structures, fill and other items within the overland flow pathway leading to increased impacts where covenant would mitigate and ensure no impediment.
	Applicant Response Not provided. Common material representations relevant.
	Officer's Comment Drainage function of the land is maintained through limiting building within the building envelope which is outside of the defined flood event.
4.	**Issue** Use of the land: • use of the land for not only passive recreation will lead to potential nuisances including odour, noise and other potential nuisances; • increase the fragmentation of strategic park land connected from North to South of Birkdale; and • the removal of the covenant will reduce the open space and recreational use of the area and further fragment quality parkland areas.
	Applicant Response Not provided. Common material representations relevant.
	Officer's Comment Addressed in relevant section of the report.

Part B - Material change of use submissions

The material change of use resulted in 201 properly made submissions and a further 36 not properly made submissions were received.

All not properly made submissions were accepted under Part 4 Section 19 of the *Development Assessment Rules.*

1.	**Issue** Noise impact to residential zoned properties towards eastern boundary due to the proposed use. Including: • resident internal and external noise described as clients yelling and banging of equipment and walls; • traffic movements; and • customers onsite.
	Applicant Response Applicant provided a noise impact assessment.
	Officer's Comment The noise impact assessment was assessed and deemed to satisfy reasonable and industry standard modelling including recommendations. Recommendations are to be conditioned including acoustic barrier and operational restrictions upon use of external areas. Submissions detailed resident behaviour impacting on neighbouring residents through noise. It should be noted that operational Guidelines and Standards for resident behaviour are derived from State Government agencies with limited jurisdiction available under the *Planning Act 2016*. The impacts are considered to be somewhat minimised given the scale and intensity of the use being limited under the proposed development permit. That is, the noise impact associated with the residential care facility is considered to be minimised, as far as Council can regulate under planning instruments, through the imposition of development conditions.
2.	**Issue** Environmental Impacts • fragmentation; and

	• clearing of native vegetation.
	Applicant Response No clearing of native vegetation is relevant to this material change of use.
	Officer's Comment Refer to the assessment section above in relation to the environmental impacts.
3.	**Issue** Traffic • increased traffic generated from the proposed use; • traffic impacting local road network from car parking; and • dangerous crossover.
	Applicant Response No response provided.
	Officer's Comment The proposed use is of scale and intensity which is consistent with the capacity of the road network. No adverse impacts are relevant from the crossover as sight lines comply with Australian standard. Car parking will be conditioned to retain wholly within the lot.

STRATEGIC IMPLICATIONS

Legislative Requirements

In accordance with the *Planning Act 2016* this development application has been assessed against the City Plan and other relevant planning instruments.

Risk Management

The standard development application risks apply. In accordance with the *Planning Act 2016* the applicant or properly made submitter may appeal to the Planning and Environment Court against a condition of approval or against a decision to refuse.

Financial

The applicant or submitter can appeal to the Planning and Environment Court against this decision of Council. Such proceedings would incur legal and Court costs.

People

Given this matter relates to a current compliance issue further enforcement of applicable development conditions will continue at least in the short term by Council's Development Control Unit and Health and Environment Unit.

Environmental

Where relevant, the environmental implications are detailed within the assessment in the 'Issues' section of this report.

Social

Social implications are detailed within the assessment in the 'Issues' section of this report.

Human Rights

No human rights matters are relevant to the assessment of the application.

Alignment with Council's Policy and Plans

The assessment and officer's recommendation align with Council's policies and plans as described within the 'Issues' section of this report.

CONSULTATION

Consulted	Consultation Date	Comments/Actions
Councillor Division 10	August 2019 - October 2020	• Procedural internal referral to the relevant Councillor. • Community meeting undertaken by Councillor with residents. • Application called in for decision at Council General Meeting.
Health and Environment Unit and Development Control Unit	Throughout Development Application	Information provided in regards investigation of use of premises and noise impacts against *Environmental Protection (Noise) Policy 2019*.

OPTIONS

Option One

That Council resolves as follows:

1. To approve the change to approval for reconfiguring a lot for one (1) lot into seven (7) lots on land described as Lot 4 SP312736 and situated at 20-28 Burbank Road, Birkdale, subject to the conditions in Attachment 3.
2. To issue a development permit for the material change of use for residential care facility on land described as Lot 1 SP 174943 and situated at 17-19 Honeygem Place, Birkdale, subject to the conditions in Attachment 6.

Option Two

That Council resolves as follows:

1. To approve the change to development approval for the reconfiguring a lot for one (1) lot into seven (7) on land described as Lot 4 SP312736 and situated at 20-28 Burbank Road, Birkdale, subject to different or amended conditions.
2. To issue a development permit for the material change of use for residential care facility on land described as Lot 1 SP 174943 and situated at 17-19 Honeygem Place, Birkdale, subject to different or amended conditions.

Option Three

That Council resolves as follows:

1. To refuse the change to development approval for the reconfiguring a lot for one (1) lot into seven (7) on land described as Lot 4 SP312736 and situated at 20-28 Burbank Road, Birkdale, subject to grounds of refusal.
2. To refuse the material change of use for residential care facility on land described as Lot 1 SP 174943 and situated at 17-19 Honeygem Place, Birkdale, subject to grounds of refusal.

OFFICER'S RECOMMENDATION

That Council resolves as follows:

1. To approve the change to approval for reconfiguring a lot for one (1) lot into seven (7) lots on land described as Lot 4 SP312736 and situated at 20-28 Burbank Road, Birkdale, subject to the conditions in Attachment 3.
2. To issue a development permit for the material change of use for residential care facility on land described as Lot 1 SP 174943 and situated at 17-19 Honeygem Place, Birkdale, subject to the conditions in Attachment 6.

COUNCIL RESOLUTION 2020/344

Moved by: **Cr Paul Bishop**
Seconded by: **Cr Wendy Boglary**

That Council resolves as follows:

1. **To approve, in part, the change to approval for reconfiguring a lot for one (1) lot into seven (7) lots on land described as Lot 4 SP312736 and situated at 20-28 Burbank Road, Birkdale, subject to the conditions in Attachment 3 as amended.**
2. **To refuse the requested change to condition 4.4.1 c) based on the following grounds:**

   Allowing active recreation outside of the established building envelope will result in amenity impacts to neighbouring residential land, which was not anticipated by those residents when making their own purchasing and lifestyle decisions. The existing covenant and conditions in place were important in establishing the amenity of the locality and the community's expectations for the use of this site. This is considered a relevant matter in the assessment and the change to the condition relating to the use of the covenant area has therefore not been approved.
3. **To refuse the requested change to condition 4.4.2 based on the following grounds:**

   The existing condition in place was important in establishing the amenity of the locality and the community's expectations for the use of this site. This is considered a relevant matter in the assessment and the change to the condition relating to the amendments to the building envelope has therefore not been approved.
4. **To issue a development permit for the material change of use for residential care facility on land described as Lot 1 SP 174943 and situated at 17-19 Honeygem Place, Birkdale, subject to the conditions in Attachment 6 as amended.**

CARRIED 11/0

Crs Karen Williams, Wendy Boglary, Peter Mitchell, Paul Gollè, Lance Hewlett, Mark Edwards, Julie Talty, Rowanne McKenzie, Tracey Huges, Adelia Berridge and Paul Bishop voted FOR the motion.

Redland
SHIRE COUNCIL

Redland Shire Council
Cnr Bloomfield & Middle Sts.
Cleveland Qld 4163
PO Box 21,
Cleveland Qld 4163
Telephone (07) 3829 8999
Facsimile (07) 3829 8765
Email: rsc@redland.qld.gov.au
Web: www.redland.qld.gov.au

22 August, 2003.

Your Ref: H19A
Our Ref: AW:cpm
File No: SB473201
Contact: Land Development

Mr P Harrsion
Arnold Harrison and Associates Pty Ltd
PO Box 713
CLEVELAND QLD 4163

Development Application Decision Notice

Dear Mr Harrison,

Registered Owner / Developer:	**R.D. & P.H. Covill.**
Proposed Development:	**Reconfiguration of one lot into seven (six lots within the Residential A zoned portion of the site and the remaining lot (approximately 1.37 hectares in area) being located in the Special Facility – Bushland Residential).**
Application Reference No:	**SB473201.**
Legal Description:	**Lot 4 on S.312736, Parish of Capalaba.**
Site Location:	**20-28 Burbank Road, Birkdale.**

The development application for the reconfiguration of land described as Lot 4 on S.312736, Parish of Capalaba into six (6) standard format Residential A zoned allotments and the retention of the balance area as one (1) allotment (being Lot 1 as indicated on proposed Subdivison Plan, Reference No. H.19A/3 prepared by Arnold, Harrison & Associates Pty Ltd, dated 18/03/03) within the Special Facility – Bushland Residential zone, situated at 20-28 Burbank Road, Birkdale has been assessed and after considering the representations made, I advise that a **development permit** has been granted subject to conditions.

This decision was made on 21 August, 2003 under authority delegated to the undersigned.

The following schedule provides all the relevant details.

1. **Referral Agencies:** Not Applicable ☑ Yes See below ☐

2. **Development Permit Conditions:**
Assessment Manager's Conditions

Prior to Council being required to sign a Plan of Survey for the subject development the applicant shall be required to undertake the following:

1.0 PERIOD OF APPROVAL.

1.1 This Development Permit for a Standard Format Reconfiguration shall remain current for a period of two (2) years starting the day the approval takes effect, as per sections 3.5.21(3) and 3.5.19 of the Integrated Planning Act 1997 unless:

a) The change of use occurs within two (2) years starting the day the approval takes effect; or
b) the reconfiguration requires operational works, in which case this Development Permit shall remain current for a period of four (4) years starting the day the approval takes effect, as per sections 3.5.21(6) and 3.5.19 of the Integrated Planning Act 1997; or
c) A time for the approval to lapse is otherwise stated or implied by a condition of this approval.

2.0 DESIGN OF LAYOUT

2.1 The development shall be carried out generally in accordance with the layout indicated on Proposed Subdivision Plan, Ref No. H.19A/3 prepared by Arnold, Harrison & Associates Pty Ltd and dated 18/03/03.

3.0 GENERAL.

3.1 All relevant Council Local Laws, Regulations and Policies together with all conditions of Material Change of Use shall be complied with fully and to the complete satisfaction of the Council.

3.2 The applicant shall be required to relocate in accordance with Council standards any services (Water, Sewer, Energex, Telstra and roofwater) that are not wholly located within the lots that are being serviced.

3.3 Any existing fences, and / or incidental works which straddle the new boundaries shall be altered, as required, to align with the new property boundaries and / or be wholly contained within one of the respective properties prior to Council being required to sign a plan of survey.

3.4 These conditions imposed by Council on its approval are binding on successors in title unless amended or superseded by a subsequent application.

4.0 ENVIRONMENTAL REQUIREMENTS

4.1 General Environmental Management Requirements

The site shall be managed in an environmentally responsible manner complying with all Federal, State and Local laws and policies. An Environmental Management Plan (EMP) shall address the management of all environmental issues during the construction of the subdivision and specify features that will be incorporated into the site to ensure the future environmental integrity of the proposed subdivision. Relevant details of the EMP shall be included in all construction drawings and instructions to ensure that all contractors are aware of the requirements of the EMP and all its associated documents.

Prior to Council being required to determine an application for Operational Works for the development, the applicant shall submit detailed design relating to environmental aspects with specific attention to habitat protection and enhancement, and water quality management. Appropriately qualified professionals shall undertake the work.

Specific conditions to ensure the environmental management of the site during construction and operation are as follows:

4.1.1. Vegetation Management Plan (VMP)

A detailed Vegetation Management Plan (VMP), including both graphical and textual information, shall be prepared by a suitable qualified person in consultation with Council's Land Development Team. The VMP and all detailed landscape designs should reflect the

conservation, passive and active recreational proposed uses of the parkland. The VMP shall incorporate two sections as follows:

a) The Vegetation Management Plan (VMP) approved 4 August 1998, for proposed Lot 1 shall be implemented.

b) A detailed VMP incorporating all detailed landscape designs to rehabilitate the works in the road reserve and adjacent to the access driveway to proposed lots 5, 6 and 7.

Species used in regeneration works shall reflect the vegetation association detailed in the Vegetation Enhancement Strategy (Web site link http://www.redland.qld.gov.au/Environment_Management_Plans.cfm?doc_id=985), locally endemic wetland species and observations on site. The regeneration works shall achieve a bushland setting except in that area dedicated for recreational and active uses.

The following details are to be submitted within the VMP:

- A statement of objectives, a description of management strategies, potential impacts, actions/controls, maintenance, monitoring, performance indicators, corrective actions and reporting
- A survey accurate plot for all trees within 7.5 metres of any proposed civil works, lots or services and supporting text of all existing vegetation, including information on:
  a) Details of species classifications and locations
  b) Approximate diameter of trunk and canopy spread of trees
  c) Approximate locations of remnant patches of vegetation (ie clumps of shrubs and smaller trees)
  d) Details of how any works shall be undertaken which may impact on this vegetation
- Plant species to be utilised shall primarily comprise locally native species
- Plant densities shall reflect the requirement of the application to ensure site stability and maximum regeneration rates
- Planting schedules and timing, including any staging program
- Details of fertiliser and chemical use
- Weed management is to be addressed in terms of declared plants and environmental weeds as defined in the RSC *Pest Management Plan* and *Vegetation Enhancement Strategy*. The VMP is to outline the extent, location and methods of eradication
- The VMP shall be authorised by the applicants' hydraulic consultant to ensure stormwater overland flow paths and areas required for the treatment of stormwater are not affected in an inappropriate manner.

4.1.2 Erosion and Sediment Control

Areas of prime concern for erosion and sediment control during construction and operational phases shall be identified, treated and maintained to ensure that erosion does not occur and that the water quality standards are maintained to acceptable standards. The construction erosion and sediment control design and supervision shall be undertaken by an officer who has successfully completed an accredited Erosion and Sediment Control Course. The following issues shall be addressed as part of the ESCP:

a) Prior to the phase incorporating earthworks or construction, the applicant shall be responsible for the installation and maintenance of erosion and sediment management facilities until the development has been accepted as completed by Council. These facilities shall be modified on site as required by construction work to ensure compliance with environmental legislation.

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c) Recommended sediment and erosion control techniques include but are not limited to:

- diversion of runoff away from disturbed areas
- stabilisation of disturbed areas using mulches (straw, forest mulch, etc.) or other techniques. These mulches must be free of exotic, weed and declared pest plant seeds and other material capable of propagation
- gross pollutant traps, cut-off drains, check dams, silt fences and turfing
- reference to the "Best Practice Guidelines for the Control of Stormwater (Pollution from Building Sites)" published by Brisbane City and Gold Coast City Councils, 1998.

d) Stockpiles shall be protected to prevent them becoming a source of dust or sediment. Earth diversion banks upslope, cover crops of fast growing annual grass species or cereals, mulching and/or sediment containment measures shall be undertaken where stockpiles are to be located for more than 14 days. For periods of less than 14 days, the use of temporary perimeter banks and sediment fences is appropriate for daily protection.

e) The applicant shall be responsible for the restoration of the site and any adjoining affected lands where sediment deposition has occurred as a consequence of construction activity associated with the development until the expiration of the maintenance period of twelve (12) months. Such restoration shall be completed in a reasonable time determined by the Manager - Assessment Services.

4.2 Cultural Heritage

Should any aboriginal, archaeological or historic sites, items or places be identified, located or exposed during the course or construction or operation of the development, all activities shall cease and the Senior Cultural Heritage Officer (pH. 07 3225 1074) of the Environmental Protection Agency is to be contacted immediately. The above information and contact numbers are to be noted on the engineering drawings as part of the requirements of an Environmental Management Plan.

4.3 Fauna Management

All native fauna are protected under the *Nature Conservation Act* 1992. As such, all efforts are to be made to ensure vegetation removal is conducted in a manner that minimises unnecessary direct impacts to native fauna. Attention to the protection of fauna shall be made during the construction phase. During the removal of any potential fauna habitat on the site, a suitably qualified person shall assess the sites and ensure that fauna been removed in an acceptable manner before the habitat removal. Any fauna orphaned or injured native fauna shall be immediately reported to the Central Moreton District Officer of the Queensland Parks and Wildlife Service on 3202 0200.

4.4 Building Envelopes

4.4.1 Designation of Building Envelopes

a) A 3,000 square metre building envelope (to be termed "designated building envelope") is to be designated for proposed allotment 1 to the approval of the Manager, Assessment Services. The approved designated building envelope is to be surveyed, pegged on-site, and a copy of the plan of survey lodged with Council to be retained on the Reconfiguration of Allotment and the Property files.

b) All buildings and other improvements (including pools, cut/fill batters, sewage treatment and disposal areas, etc) shall be located entirely within the designated building envelope except for access driveways/pathways and services. Development outside of the designated building envelope or amended designated building envelope approved by Council shall generally not be approved.

c) Generally, use of the land outside of the building envelope is to be of a passive recreational nature (walking, bird watching, etc) and is to have minimal impact on vegetation and the natural environment. Any proposed use of the land outside of the designated building envelope is to be considered as a Column V use under the transitional Planning Scheme and shall require separate application and approval. Council shall not give favourable consideration to any Column V use, which does not protect, maintain or enhance the environmental values identified for proposed Lot 1.

4.4.2 Building Envelope Amendments

a) Any proposal to amend the location, orientation or shape of a designated building envelope shall require separate application and approval. Council shall not give favourable consideration to any such application that increases the area of the site beyond the approved designated building envelope, or alternatively causes loss of fauna habitat, or vegetation, above which would have occurred on the original site. Landowners shall be responsible for showing any approved amendments to the Designated Building Envelope on a plan of survey and for re-pegging the amended location on site.
b) No amendment shall be allowed that reconfigures the envelope into smaller groups, or alters the shape from a regular, contiguous shape.
c) No amendment shall be permitted after clearing of a designated building envelope has occurred.

4.4.3 Driveway Access

Roadworks, services and driveways are to be co-located where practicable to minimise loss or disturbance to native vegetation. The design of the access should incorporate minimal disturbance to any large and/or significant vegetation.

4.4.4 Vegetation Protection

All vegetation outside of the proposed building envelopes is 'protected vegetation' for the purposes of Division 4, Section 25 of Council's Local Law No. 6 – Protection of Vegetation.

The site's significant vegetation is defined in the Local Law No. 6 - Protection of Vegetation Part 1 Section 3 as – [h, i, l, m, p and r]. This vegetation is to be protected, maintained and enhanced as per the approved Vegetation Management Plan and the approved vegetation clearing provisions.

4.4.5 Tree Protection Zones

Vegetation to be retained outside of building envelopes and in the adjacent road reserves is to be clearly tagged. Fenced Tree Protection Zones (TPZ) are to be established prior to operational works approval for the commencement of any clearing of vegetation and construction activities. Those trees to be retained and their TPZ including suitable fencing and signage is to be approved by the Manager, Assessment Services to ensure that long term protection is provided.

4.4.6 Vegetation Clearing

Any vegetation removal from the site shall be permitted only within the designated building envelope and where necessitated by the construction of road works, services and access to the designated building envelope, or filling of the dam. Prior to any such clearing occurring, those trees to be removed are to be tagged and approved by the Manager, Assessment Services to ensure minimal disturbance to the existing native vegetation.

4.4.7 Revegetation

Replanting in cleared areas is to be determined in association with the submission of the Vegetation Management Plan (Refer to Condition 4.1.1 a). Revegetation outside the proposed building envelopes and within the proposed park shall include native species representative of the vegetation communities identified by the consultant. Plants are to include canopy, mid-storey, understorey and groundcover plants.

4.4.8 Fauna Friendly Fencing

Should new fencing be erected along the allotment boundary, the fencing is not to impede fauna movement and it is to be in compliance with any of the design options contained in Council's Fauna Friendly Fencing brochure.

4.4.9 Land Title Covenant

The applicant shall register a covenant with the Department of Natural Resources for each of the proposed allotment 1. The covenant is to relate to the conservation of the physical and natural features of the area outside of the proposed lot's designated building envelope as described by the approved Vegetation Management Plan. The covenant is binding on the covenantor and the covenantor's successors in title. The covenant shall indicate all conditions contained in Section 4.4 of this approval and shall be approved by Council prior to Council being required to sign a Plan of Survey and the covenant is to be registered with the Plan of Survey.

A copy of the approved covenant is to be lodged with Council and is to be retained on the Reconfiguration of Allotment file and the property file for each new allotment.

4.5 Temporary Fence

A temporary star picket and three strand wire fence shall be erected to Council's satisfaction along the development line separating proposed Lot 1 from all other development activities.

The fence shall be installed prior to the commencement of any construction works and will remain until the development has been put "on-maintenance" or an alternative approved barrier replaces it. The temporary fence is to include nominated access points to allow for access to proposed Lot 1, approved landscape treatments, weed removal and revegetation of the park and conservation/stormwater treatment areas.

No unapproved construction activity is to occur beyond this fence, including vehicle access, material stockpiling, storage of chemicals and/or maintenance fluids, site compound, the tapering of construction batters, site spoil or rubbish etc.

Similarly, all trees identified for preservation outside the proposed park area shall be protected prior to the start of construction works. This protection shall be by fencing the tree beyond the drip zone or 7.5m from the trunk which ever is the greater. Any proposed work inside this restriction zone shall only be undertaken under the guidance of a qualified arborist. The arborist shall supervise works to ensure that no damage to the trunk occurs and any roots, which may be disturbed, are treated to ensure the protection and preservation of the tree.

5.0 CONTAMINATED LAND

5.1 Council acknowledges receipt of the Contaminated Land Report prepared by Leo Newlands of Environmental Management International Pty Ltd.

Prior to application for operational works, Council requires that the applicant submit the following information in relation to contaminated land matters:

a) Representative sampling of the areas used for agricultural activities. The samples should include an analysis of pesticides, herbicides, fungicides
b) A comparison of these levels with the Environmental Protection Agency's investigation thresholds and any necessary remediation
c) Details of appropriate erosion and sediment control measures to be employed on site where contamination levels exceed Environmental Threshold Levels
d) Details of the qualifications and suitability of the author and investigators of this report including relevant experience

6.0 ENGINEERING

6.1 Provide electricity reticulation to each lot in accordance with the requirements of ENERGEX and Council.

6.2 Install telecommunications to service each lot in accordance with requirements of Australian Standards to accommodate carriers and submission of documentary evidence that an agreement has been entered into with a carrier for the provision of such a service to each lot prior to release of survey plans by Council.

6.3 Provide a water supply to the proposed allotments as per Council Standards.

Water connections and water meters shall be provided to each allotment in accordance with Council's approved Standard Drawings. The water meters are supplied by Council to the developer at approved rates. The details of the water meters and their locations shall be made.
available in the prescribed form prior to Council being required to accept the development "on maintenance".

6.4 Provide sewerage reticulation to each lot, in accordance with Council Standards.

6.5 Roofwater drainage shall be designed and constructed in accordance with Council Standards to accommodate drainage of those allotments that do not have adequate fall to the kerb and channel. Inter allotment drainage shall be provided where required.

6.6 Take up and relocate existing Telecommunications, Power, water, roofwater and sewerage house connections to the existing dwellings traversing the proposed allotments.

6.7 All allotments shall be required to have adequate flood immunity, in accordance with Redland Shire Council's Town Planning Scheme and relevant codes.

6.8 The applicant shall provide bin bays (1 metre by 2 metres per lot) for Lots 5, 6 and 7 in accordance with Council Standards.

6.9 The applicant shall design and construct, in accordance with Condition B1 of the Rezoning Approval RZ 127000, a concrete driveway, footpath and drainage works within the Burbank Road road reserve. The design of this driveway shall be such that adequately manoeuvring area for a refuse vehicle is available. The design and construction of these works shall seek to maximise the retention of existing vegetation within the road reserve.

7.0 CONTRIBUTIONS

7.1 Contribute to water supply augmentation in accordance with Council policies at rates applicable at the time of signing subdivision plans.
(Contributions are reviewed annually in July. The rate for 2003/04 in Region D is $3913).

7.2 Contribute to sewerage augmentation in accordance with Council policies at rates applicable at the time of signing subdivision plans.
(Contributions are reviewed annually in July. The rate for 2003/04 in Thorneside Area B is $4129).

7.3 a) The applicant shall submit a street tree planting plan in accordance with Council's 'Footpath Planting Guidelines' drawing number P8-2/98 and plant approved number of street trees or alternatively;

b) pay contribution to Council for the purpose of providing Street Tree Planting in accordance with Council's 'Street Tree Planting Policy' and with Council's standard detail 'Footpath Planting Guidelines' drawing number P8-2/98 calculated at $150.00 per tree.

7.4 Contribute a sum of $23.20 per allotment to Council for the purpose of paying the State Government Split Valuation Fees. This amount shall be paid prior to signing of the Plan of Survey and be for each allotment contained on the Plan of Survey.

8.0 OTHER

8.1 Operational Works

A development permit for operational works associated with this development maybe required. Those operational works, in the first instance in the form of engineering designs, will be reviewed in accordance with relevant codes including Council's Design Standards for Developments.

9.0 ADVISORY

9.1 Fire Ants

Areas within Redland Shire have been identified as having an infestation of the Red Imported Fire Ant (RIFA). The movement of extracted or waste soil, retaining soil, turf, pot plants, plant material, baled hay/straw, mulch or green waste/fuel into, within and/or out of the Shire from a property inside a restricted area, is to be with the advice of the Department of Primary Industries RIFA Movement Controls. Further information can be obtained from the DPI Call Centre 13 2523 or on their web site www.dpi.qld.gov.au/fireants.

9.2 Services Installation

Where installation of services will impact on the location of existing vegetation identified for retention, an arborist that is a member of the Queensland Arborist Association or equivalent organisation shall be commissioned on site to supervise these works.

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3. Reasons for Refusal: Not applicable.

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4. Approval Type:

	Development Permit	Preliminary Approval
Building works	☐	☐
Plumbing or Drainage Works	☐	☐
Operational Works	☐	☐
Reconfiguring a Lot	☑	☐
Material Change of Use	☐	☐

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5. Further Development Permits Required:

- Application for operational works associated with this development is required. Those operational works, in the first instance in the form of engineering designs, will be reviewed in accordance with relevant codes, including Council's Design Standards for Developments.

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6. Rights of Appeal:

A copy of the rights of appeal under Section 4.1.27 and Section 4.1.28 of the Act for Applicants is appended, together with Division 10 Part 1 (Chapter 4) of the Act which deals with the making of an Appeal to the Planning and Environment Court.

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7. In addition to the above information, I advise that:

(a) Submissions Received Not applicable.

(b) Written Notice:

The Applicants may wish to give the Assessment Manager (Council) written notice of their intention not to make representations on conditions of this approval (decided by Council) in advance of the ending of the Applicants' Appeal period; so that further action(s) can be initiated by the Assessment Manager (Council).

You are further advised that As Constructed details are required by the Infrastructure Development Group for any roofwater, stormwater, water or sewerage infrastructure installed/constructed as part of this development. The as constructed details shall

1. be supplied and presented in accordance with the standard requirements of the "*Design Standards for Developments*" and Redland Shire Council's *"Standard Drawing – Road, Sewerage and Water Supply*", and

2. be surveyed and presented on Redland Shire Council's Co-ordinate System, and have an AHD vertical datum based on PSM 43956 with an RL 20.378m AHDD

The following information is supplied by Council to assist the developer meet these requirements:

a) A map showing adjacent PSM's, coordinated and uncoordinated.
b) A list of Redland Shire Council co-ordinates for some adjacent coordinated PSMs.
c) Department of Natural Resources and Mines SCDB data on each adjacent PSM.
d) Redland Shire Council Control Accuracy Definitions.
e) Permanent Survey Mark sketch plan copies.

In order to expedite the processing of survey plans, a check list has been enclosed for your convenience that should be attached to the original survey plans when submitted to Council for signing and sealing.

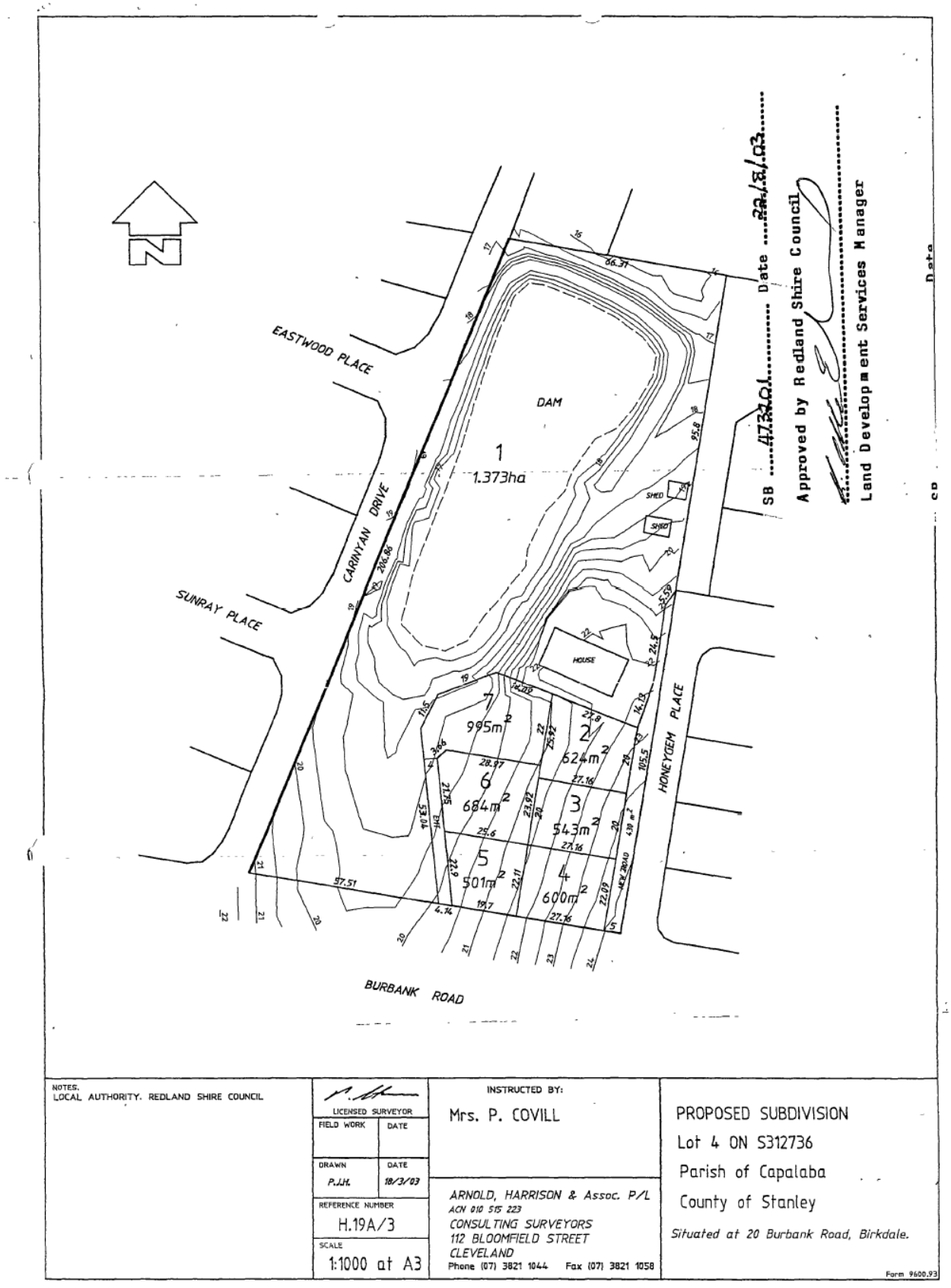
In accordance with Section 3.7.3 of the Integrated Planning Act 1997, no subdivision plan will be approved until rates and charges are paid in full.

Yours faithfully,

A Edwards
Land Development Services Manager
Assessment Manager - Delegate

Enc

B/C - Mr & Mrs RD Covill.


N
EASTWOOD PLACE
CARINYAN DRIVE
SUNRAY PLACE
HONEYGEM PLACE
BURBANK ROAD
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SHED
SHED
HOUSE
7
995m²
2
624m²
6
684m²
3
543m²
5
501m²
4
600m²
Approved by Redland Shire Council
Land Development Services Manager
SB 473/01
Date 22/8/03
NOTES.
LOCAL AUTHORITY. REDLAND SHIRE COUNCIL
LICENSED SURVEYOR
FIELD WORK
DATE
DRAWN
P.J.H.
DATE
18/3/03
REFERENCE NUMBER
H.19A/3
SCALE
1:1000 at A3
INSTRUCTED BY:
Mrs. P. COVILL
ARNOLD, HARRISON & Assoc. P/L
ACN 010 515 223
CONSULTING SURVEYORS
112 BLOOMFIELD STREET
CLEVELAND
Phone (07) 3821 1044 Fax (07) 3821 1058
PROPOSED SUBDIVISION
Lot 4 ON S312736
Parish of Capalaba
County of Stanley
Situated at 20 Burbank Road, Birkdale.
Form 9600,93

ATTACHMENT 3- Site and Locality Mapping

Aerial Imagery

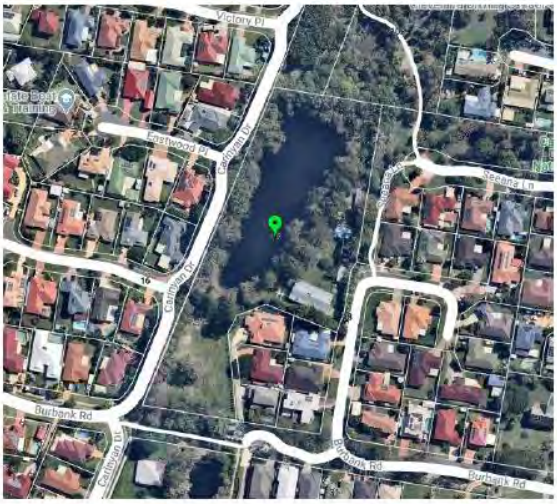

Figure 1: Aerial imagery

Covenant Area

Figure 2: Covenant map

Zoning Map

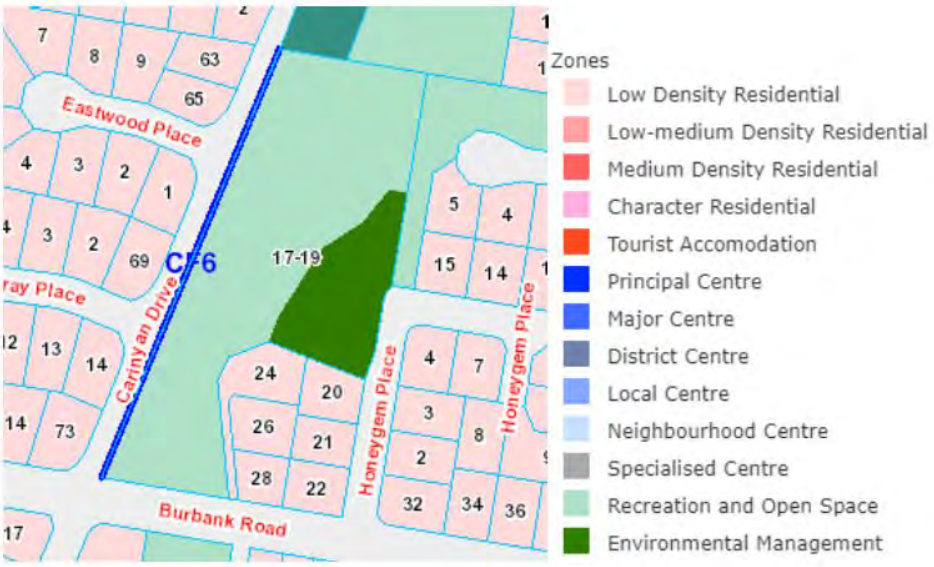

Figure 3: Zone

Environmental significance overlay

Figure 4: Environmental significance overlay

Flood and storm tide hazard overlay

Figure 5: Flood prone area

Traffic sight lines

Figure 6: Sight lines from driveway

ATTACHMENT 3 (AS AMENDED)- AMENDED CONDITIONS

That Council resolves to approve the change to development approval for the reconfiguration of one (1) lot into seven (7) on land described as Lot 4 S.312736 and situated at 20-28 Burbank Road, Birkdale, subject to the following amended conditions in:

a) Condition 4.4.8 is amended; and

b) All other conditions remain unchanged.

1.0 PERIOD OF APPROVAL

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ATTACHMENT 3 (AS AMENDED)- AMENDED CONDITIONS

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ATTACHMENT 3 (AS AMENDED)- AMENDED CONDITIONS

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d) Details of how any works shall be undertaken which may impact on this vegetation

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- diversion of runoff away from disturbed areas

ATTACHMENT 3 (AS AMENDED)- AMENDED CONDITIONS

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- gross pollutant traps, cut-off drains, check dams, silt fences and turfing
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4.4 Building Envelopes

4.4.1 Designation of Building Envelopes

ATTACHMENT 3 (AS AMENDED)- AMENDED CONDITIONS

a) A 3,000 square metre building envelope (to be termed "designated building envelope") is to be designated for proposed allotment 1 to the approval of the Manager, Assessment Services. The approved designated building envelope is to be surveyed, pegged on-site, and a copy of the plan of survey lodged with Council to be retained on the Reconfiguration of Allotment and the Property files.

b) All buildings and other improvements (including pools, cut/fill batters, sewerage treatment and disposal areas, etc.) shall be located entirely within the designated building envelope except for access driveways/pathways and services. Development outside of the designated building envelope or amended designated building envelope approved by Council shall generally not be approved.

c) Generally, use of the land outside of the building envelope is to be passive recreational nature (walking, bird watching, etc.) and is to have minimal impact on vegetation and the natural environment. Any proposed use of the outside of the designated building envelope is to be considered as a Column V use under the transitional planning scheme and shall require separate application and approval. Council shall not give favourable consideration to a Column V use, which does not protect, maintain or enhance the environmental values identified for proposed Lot 1.

4.4.2 Building Envelope Amendments

a) Any proposal to amend the location, orientation or shape of a designated building envelope shall require separate application and approval. Council shall not give favourable consideration to any such application that increases the area of the site beyond the approved designated building envelope, or causes loss of fauna habitat, or vegetation, above which would have occurred on the original site. Landowners shall be responsible for showing any approved amendments to the designated building envelope on a plan of survey and for re-pegging the amended location on site.

b) No amendment shall be allowed the reconfigures the envelope into smaller groups, or alters the shape from a regular, contiguous shape.

c) No amendment shall be permitted after clearing of a designated building envelope has occurred.

4.4.3 Driveway Access

Roadworks, services and driveways are to be co-located where practicable to minimise loss or disturbance to native vegetation. The design of the access should be incorporate minimal disturbance to any large and/or significant vegetation.

4.4.4 Vegetation Protection

All vegetation outside of the proposed building envelopes is 'protected vegetation' for the purposes of Division 4, Section 25 of Council's Local Law No. 6- Protection of Vegetation.

ATTACHMENT 3 (AS AMENDED)- AMENDED CONDITIONS

The site's significant vegetation is defined in the Local Law No. 6-Protection of Vegetation Part 1 Section 3 as – [h, I, l, m, p and r]. This vegetation is to be protected, maintained and enhanced as per the approved Vegetation Management Plan and the approved vegetation clearing provisions.

4.4.5 Tree Protection Zones

Vegetation to be retained outside of the building envelopes and in the adjacent road reserves is to be clearly tagged. Fenced Tree Protection Zone (TPZ) are to be established prior to operational works approval for the commencement of any clearing of vegetation and construction activities. Those trees to be retained and their TPZ including suitable fencing and signage is to be approved by the Manager, Assessment Services to ensure that long term protection is provided.

4.4.6 Vegetation Clearing

Any vegetation removal from the site shall be permitted only within the designated building envelope and where necessitated by the construction of road works, services and access to the designated building envelope, or filling in of the dam. Prior to any such clearing occurring, those trees to be removed are to be tagged and approved by the Manager, Assessment Services to ensure minimal disturbance to the existing native vegetation.

4.4.7 Revegetation

Replanting is cleared areas is to be determined in association with the submission of the Vegetation Management Plan (Refer to Condition 4.1.1 a). Revegetation outside the proposed building envelopes and within the proposed park shall include native species representative of the vegetation communities identified by the consultant. Plants are to include canopy, mid-storey, understorey and groundcover plants.

AMENDED CONDITION

~~**4.4.8 Fauna Friendly Fencing**~~

~~**Should new fencing be erected along the allotment boundary, the fencing is not to impede fauna movement and it is to be in compliance with any of the design options contained in Council's Fauna Friendly brochure.**~~

4.4.8 Fauna Friendly Fencing

Should new fencing be erected along any allotment boundary that is not shared with another private landowner, the fencing is not to impede fauna movement.

Note: Guidance on fencing design and fauna movement structures is provided in Planning Scheme Policy 1 – Environmental significance.

ATTACHMENT 3 (AS AMENDED)- AMENDED CONDITIONS

4.4.9 Land Title Covenant

The applicant shall register a covenant with the Department of Natural Resources for each of the proposed allotment 1. The covenant is to relate to the conservation of the physical and natural features of the area outside of the proposed lot's designated building envelope as described by the approved Vegetation Management Plan. The covenant is binding on the covenantor and the covenantor's successors in title. The covenant shall indicate all conditions contained in Section 4.4 of this approval and shall be approved by Council prior to Council being required to sign a Plan of Survey and the covenant is to be registered with the Plan of Survey.

A copy of the approved covenant is to be lodged with Council and is to be retained on the Reconfiguration of Allotment file and the property file for each new allotment.

4.5 Temporary Fence

A temporary star picket and three strand wire fence shall be erected to Council's satisfaction along the development line separating proposed Lot 1 from all other development activities.

The fence shall be installed prior to the commencement of any construction works and will remain until the development has been put "on-maintenance" or an alternative approved barrier replaces it. The temporary fence is to include nominated access points to allow for access to proposed Lot 1, approved landscape treatments, weed removal and revegetation of the park and conservation/stormwater treatment areas.

No unapproved construction activity is to occur beyond this fence, including vehicle access, material stockpiling, storage of chemicals and/or maintenance fluids, site compound, the tapering of construction batters, site spoil or rubbish etc.

Similarly, all trees identified for preservation outside the proposed park area shall be protected prior to the start of construction works. This protection shall be by fencing the tree beyond the drip zone or 7.5m from the trunk which ever is the greater. Any proposed work inside this restriction zone shall only be undertaken under the guidance of a qualified arborist. The arborist shall supervise works to ensure that no damage to the trunk occurs and any roots, which may be disturbed, are treated to ensure the protection and preservation of the tree.

5.0 CONTAMINATED LAND

5.1 Council acknowledges receipt of the Contaminated Land Report prepared by Leo Newlands of Environmental Management International Pty Ltd.

Prior to application for operational works, Council requires that the applicant submit the following information in relation to contaminated land matters:

a) Representative sampling of the areas used for agricultural activities. The samples should include an analysis of pesticides, herbicides, fungicides

b) A comparison of these levels with the Environmental Protection Agency's investigation thresholds and any necessary remediation

ATTACHMENT 3 (AS AMENDED)- AMENDED CONDITIONS

c) Details of appropriate erosion and sediment control measures to be employed on site where contamination levels exceed Environmental Threshold Levels

d) Details of the qualifications and suitability of the author and investigators of this report including relevant experience

6.0 ENGINEERING

6.1 Provide electricity reticulation to each lot in accordance with the requirements of ENERGEX and Council.

6.2 Install telecommunications to service each lot in accordance with requirements of Australian Standards to accommodate carriers and submission of documentary evidence that an agreement has been entered into with a carrier for the provision of such a service to each lot prior to release of survey plans by Council.

6.3 Provide a water supply to the proposed allotments as per Council Standards.

Water connections and water meters shall be provided to each allotment in accordance with Council's approved Standard Drawings. The water meters are supplied by Council to the developer at approved rates. The details of the water meters and their locations shall be made available in the prescribed form prior to Council being required to accept the development "on maintenance".

6.4 Provide sewerage reticulation to each lot, in accordance with Council Standards.

6.5 Roofwater drainage shall be designed and constructed in accordance with Council Standards to accommodate drainage of those allotments that do not have adequate fall to the kerb and channel. Inter allotment drainage shall be provided where required.

6.6 Take up and relocate existing Telecommunications, Power, water, roofwater and sewerage house connections to the existing dwellings traversing the proposed allotments.

6.7 All allotments shall be required to have adequate flood immunity, in accordance with Redland Shire Council's Town Planning Scheme and relevant codes.

6.8 The applicant shall provide bin bays (1 metre by 2 metres per lot) for Lots 5, 6 and 7 in accordance with Council Standards.

6.9 The applicant shall design and construct, in accordance with Condition B1 of the Rezoning Approval RZ 127000, a concrete driveway, footpath and drainage works within the Burbank Road road reserve. The design of this driveway shall be such that adequately manoeuvring area for a refuse vehicle is available. The design and construction of these works shall seek to maximise the retention of existing vegetation within the road reserve.

7.0 CONTRIBUTIONS

7.1 Contribute to water supply augmentation in accordance with Council policies at rates applicable at the time of signing subdivision plans.

(Contributions are reviewed annually in July. The rate for 2003/04 in Region D is $3913).

ATTACHMENT 3 (AS AMENDED)- AMENDED CONDITIONS

7.2 Contribute to sewerage augmentation in accordance with Council policies at rates applicable at the time of signing subdivision plans.

(Contributions are reviewed annually in July. The rate for 2003/04 in Thorneside Area B is

$4129).

7.3 a) The applicant shall submit a street tree planting plan in accordance with Council's 'Footpath Planting Guidelines' drawing number P8-2/98 and plant approved number of street trees or alternatively;

b) pay contribution to Council for the purpose of providing Street Tree Planting in accordance with Council's 'Street Tree Planting Policy' and with Council's standard detail 'Footpath Planting Guidelines' drawing number P8-2/98 calculated at $150.00 per tree.

7.4 Contribute a sum of $23.20 per allotment to Council for the purpose of paying the State Government Split Valuation Fees. This amount shall be paid prior to signing of the Plan of Survey and be for each allotment contained on the Plan of Survey.

8.0 OTHER

8.1 Operational Works

A development permit for operational works associated with this development maybe required. Those operational works, in the first instance in the form of engineering designs, will be reviewed in accordance with relevant codes including Council's Design Standards for Developments.

9.0 ADVISORY

9.1 Fire Ants

Areas within Redland Shire have been identified as having an infestation of the Red Imported Fire Ant (RIFA). The movement of extracted or waste soil, retaining soil, turf, pot plants, plant material, baled hay/straw, mulch or green waste/fuel into, within and/or out of the Shire from a property inside a restricted area, is to be with the advice of the Department of Primary Industries RIFA Movement Controls. Further information can be obtained from the DPI Call Centre 13 2523 or on their web site www.dpi.qld.gov.au/fireants.

9.2 Services Installation

Where installation of services will impact on the location of existing vegetation identified for retention, an arborist that is a member of the Queensland Arborist Association or equivalent organisation shall be commissioned on site to supervise these works.

ATTACHMENT 3 (AS AMENDED)- AMENDED CONDITIONS

NOTICE ABOUT DECISION – STATEMENT OF REASONS

Assessment Benchmarks:	The proposed development was assessed against the following assessment benchmarks: • City Plan (version 3): ○ environmental management zone code; ○ recreation and open space zone code; ○ healthy waters code; ○ infrastructure works code; ○ landscape code; ○ environmental significance overlay code; ○ flood and storm tide hazard overlay code; and ○ transport, servicing, access and parking code.
Matters Prescribed by a Regulation	The following regulations/policies were regarded in the assessment of the application: • State Planning Policy 2017 (SPP); • SEQ Regional Plan; and • Planning Regulation, Schedule 10, Part 10 Koala Habitat.
Relevant Matters	The following relevant matter was considered in the assessment of the application: • Community expectations and established amenity.

The key issues identified in the assessment were:

- use of the land; and
- fauna friendly fencing.

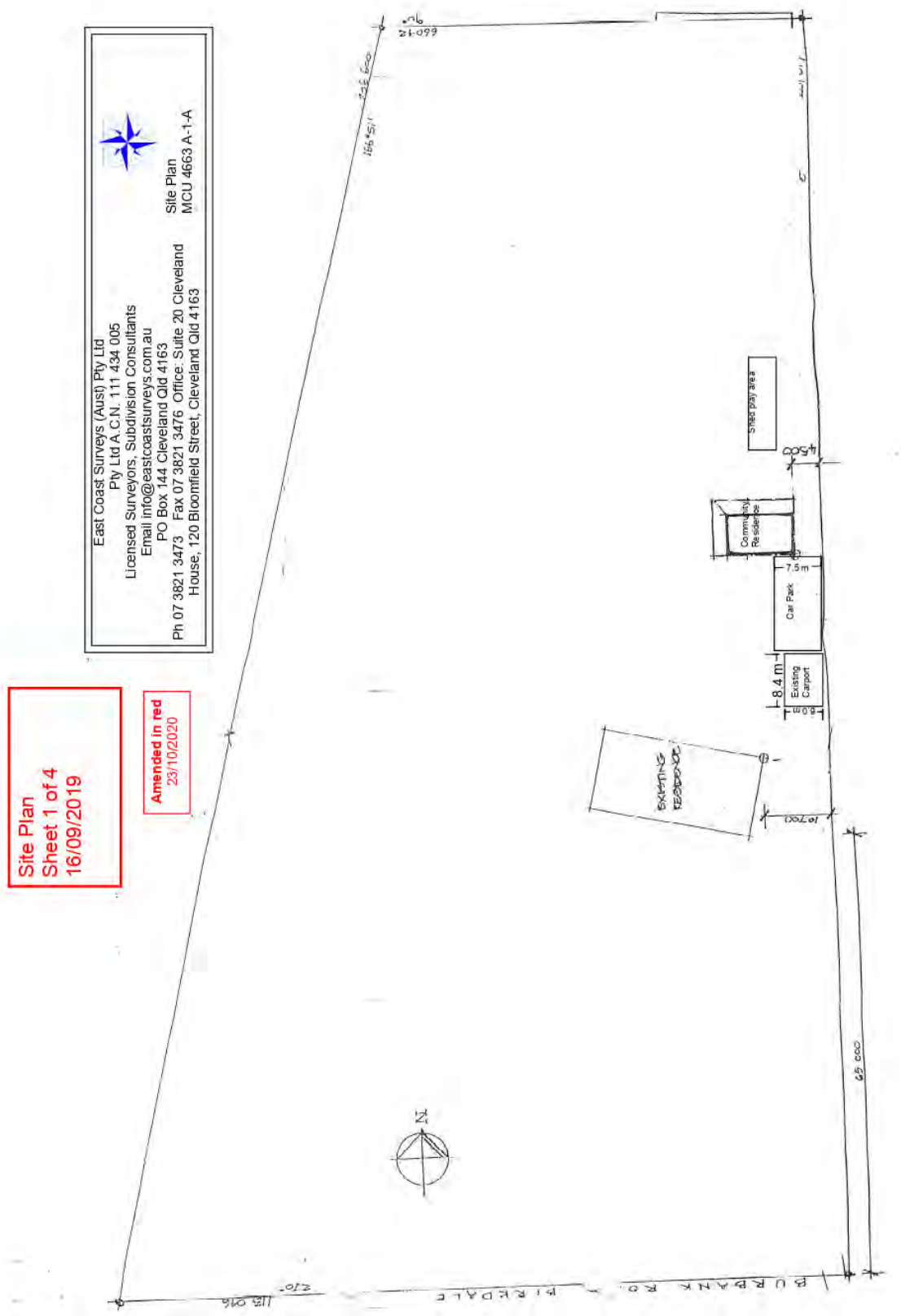
Issue	Performance assessment
Use of the land	Allowing active recreation outside of the established building envelope will result in amenity impacts to neighbouring residential land, which was not anticipated by those residents when making their own purchasing and lifestyle decisions. The existing covenant and conditions in place were important in establishing the amenity of the locality and the community's expectations for the use of this site. This is considered a relevant matter in the assessment and the change to the condition relating to the use of the covenant has therefore not been approved.
Fauna friendly fencing	Fauna friendly fencing conditions are amended to align with the current policy and guidelines within City Plan removing reference to redundant guidelines. Therefore the amended conditions will provide opportunities for safe and viable wildlife movement within and between habitat

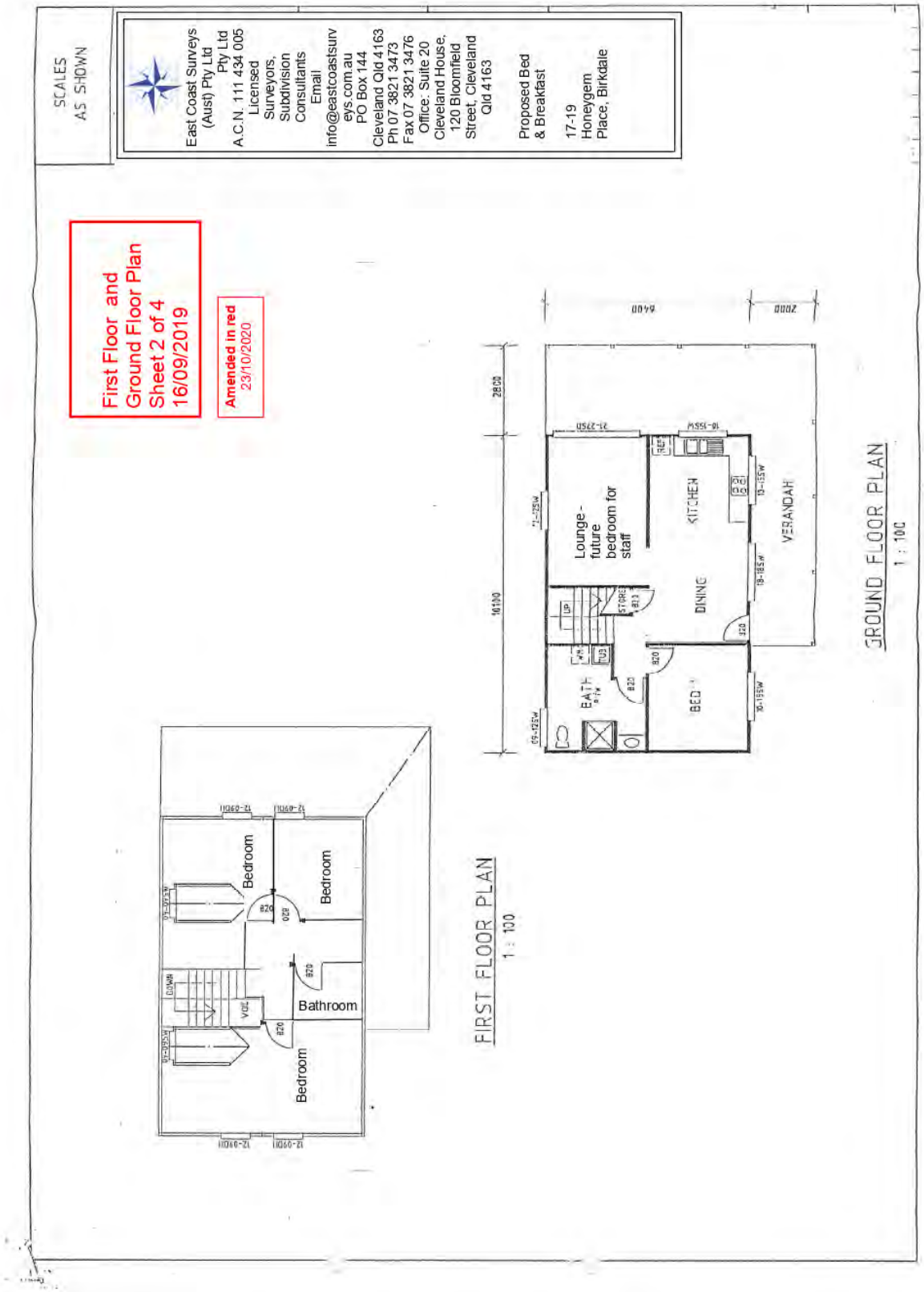
ATTACHMENT 3 (AS AMENDED)- AMENDED CONDITIONS

	areas specifically towards the north, south and north-east of the subject site.

The development application is approved as it complies with all of the relevant assessment benchmarks, or can be made to comply through the imposition of conditions on the approval.

Matters Raised in Submissions	
Matters Raised	**Description of how matters were dealt with in reaching the decision**
Environmental impacts	The proposed development retains existing conditions in relation to protecting native vegetation of environmental significance. In particular, conditions restricting the use to passive recreation, designated building envelope, local law 6 protection of native vegetation and a covenant registered over the land.
Amenity	The proposed development retains existing conditions in relation to protecting native vegetation of environmental significance. In particular, conditions restricting the use to passive recreation, designated building envelope, local law 6 protection of native vegetation and a covenant registered over the land. Therefore the scenic and landscaping values of local significance will be retained.
Drainage constraint	The dam and existing overland flow path will retain its drainage function through retention of the building envelope limiting building and structures within portion of the site not considered to be impacted by the drainage constraint.
Use of the land	The proposed change retains conditions restricting the use of land outside the building envelope as passive recreation and therefore is considered to maintain the primary function of open space albeit in private ownership.


East Coast Surveys (Aust) Pty Ltd
Pty Ltd A.C.N. 111 434 005
Licensed Surveyors, Subdivision Consultants
Email info@eastcoastsurveys.com.au
PO Box 144 Cleveland Qld 4163
Ph 07 3821 3473 Fax 07 3821 3476 Office: Suite 20 Cleveland House, 120 Bloomfield Street, Cleveland Qld 4163
Site Plan
MCU 4663 A-1-A
Site Plan
Sheet 1 of 4
16/09/2019
Amended in red
23/10/2020
Shed play area
Community Residence
7.5 m
Car Park
8.4 m
Existing Carport
EXISTING RESIDENCE
BURBANK RD
PIRKDALE
65 000
N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AS SHOWN
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Cleveland Qld 4163
Ph 07 3821 3473
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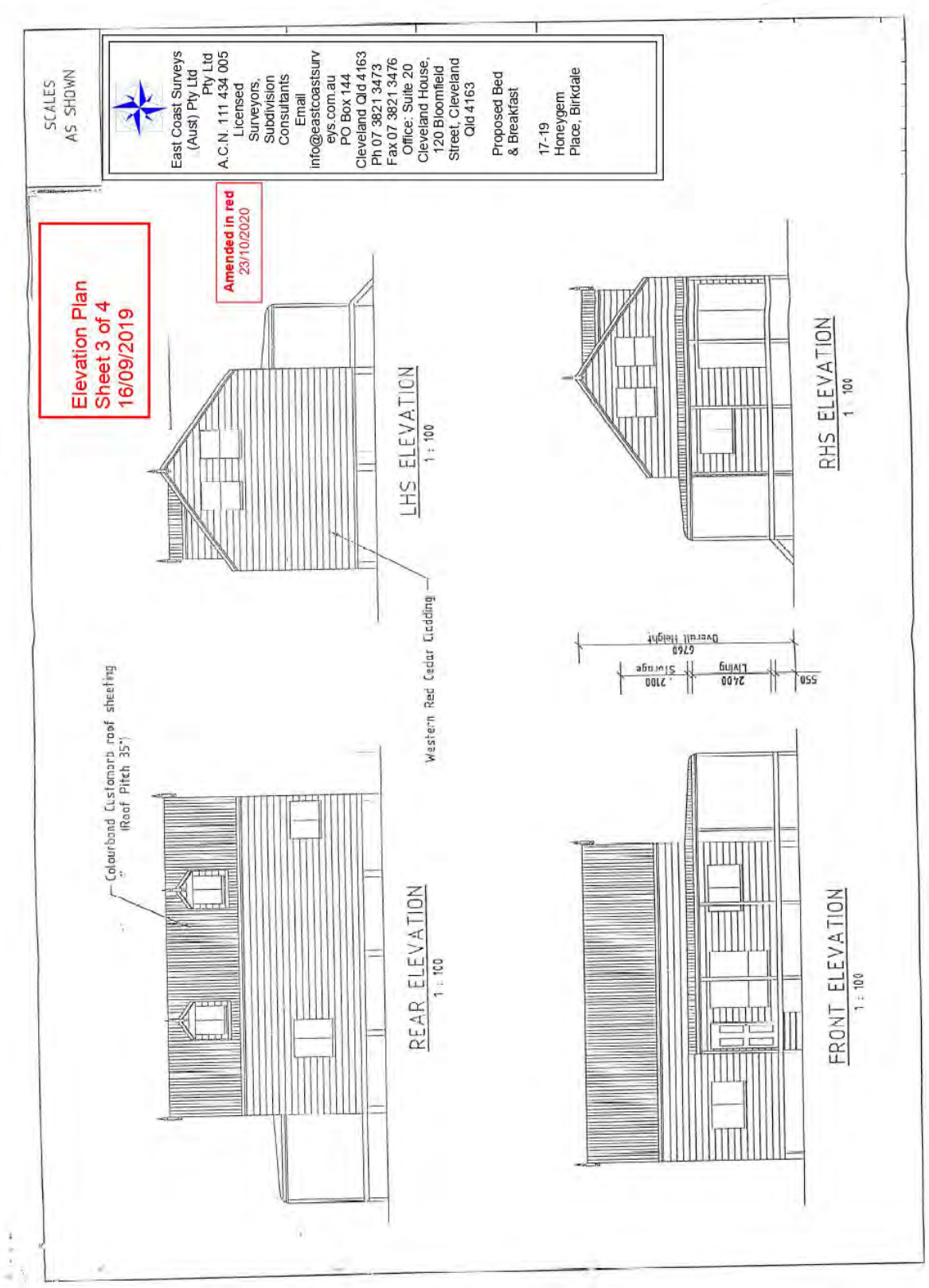
Office: Suite 20 Cleveland House, 120 Bloomfield Street, Cleveland Qld 4163
Proposed Bed & Breakfast
17-19 Honeygem Place, Birkdale
First Floor and Ground Floor Plan
Sheet 2 of 4
16/09/2019
Amended in red
23/10/2020
Lounge - future bedroom for staff
KITCHEN
DINING
VERANDAH
BED
BATH
GROUND FLOOR PLAN
1 : 100
Bedroom
Bedroom
Bathroom
Bedroom
FIRST FLOOR PLAN
1 : 100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120 Bloomfield
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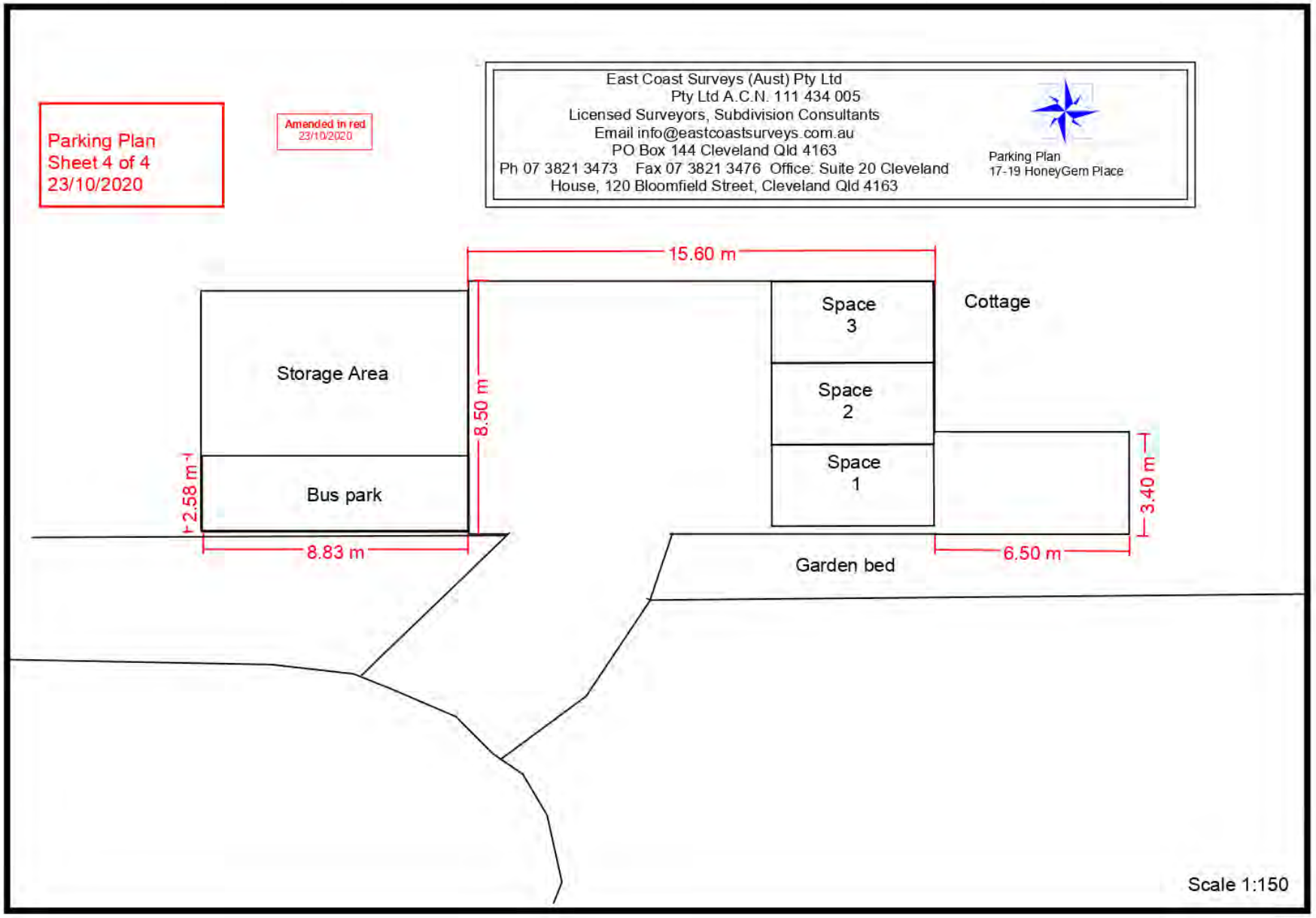
Qld 4163
Proposed Bed & Breakfast
17-19
Honeygem
Place, Birkdale
Amended in red
23/10/2020
Elevation Plan
Sheet 3 of 4
16/09/2019
LHS ELEVATION
1 : 100
RHS ELEVATION
1 : 100
Western Red Cedar Cladding
Colourbond Customorb roof sheeting
(Roof Pitch 35°)
REAR ELEVATION
1 : 100
FRONT ELEVATION
1 : 100
Overall Height
6760
Storage
2100
Living
2400
550


Parking Plan
Sheet 4 of 4
23/10/2020
Amended in red
23/10/2020
East Coast Surveys (Aust) Pty Ltd
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PO Box 144 Cleveland Qld 4163
Ph 07 3821 3473 Fax 07 3821 3476 Office: Suite 20 Cleveland House, 120 Bloomfield Street, Cleveland Qld 4163
Parking Plan
17-19 HoneyGem Place
15.60 m
Storage Area
Bus park
8.50 m
2.58 m
8.83 m
Space 3
Space 2
Space 1
Cottage
3.40 m
6.50 m
Garden bed
Scale 1:150

Oct 2020

JTENVIRONMENTAL
ENGINEERING
CONSULTANTS

• Telephone 0417 727 981
• Facsimile 07 5530 7521 • ABN 68 467 757 073

Application Details	
Application Type	Development Permit – Material Change of Use
Street Address	17-19 Honeygem Pl, Birkdale
Client	Tea Cup Cottage
Local Government Area	Redlands City Council
Date	Oct 2020

In support of an application for

Material Change of Use - Community Residence - Noise Impact Assessment

Oct 2020

ABN 64081048723

P.O Box 1057, Mudgeeraba Qld 4213
P: 0417 727 981
F: 07 5530 7521
E: tyson@jtenvironmental.com.au

Limitations

This report was prepared for the sole use of Tea Cup Cottage in accordance with generally accepted consulting practice. No other warranty, expressed or implied, is made as to the professional advice included in this report. This report has not been prepared for use by parties other than the client, the owner and their respective consulting advisors. It may not contain sufficient information for the purposes of other parties or for other uses. It is recommended that any works planned by others and relating specifically to the content of this report be reviewed by JT Environmental Pty Ltd to verify that the intent of our recommendations is properly reflected in the final design. To the best of our knowledge, information contained in this report is accurate at the date of issue.

Document Status					
Rev No.	**Author**	**Reviewer**	**Approved for Issue**		
			Name	**Signature**	**Date**
A	JLM	TCD	TCD		02.04.20
B	JLM	TCD	TCD		06.04.20
C	JLM	TCD	TCD		09.04.20
D	JLM	TCD	TCD		25.09.20
E	JLM	TCD	TCD		09.10.20

Oct 2020

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Oct 2020

EXECUTIVE SUMMARY

SITE DETAILS

Local Government Authority:	Redlands City Council
Address of Site:	17-19 Honeygem Pl, Birkdale

APPLICATION DETAILS

Type of Application:	Material Change of Use – Noise Impact Assessment
Description of Proposal:	Community residence
Applicant:	Tea Cup Cottage
Contact Person:	Tyson Dodd
Our Reference:	JT2012

Oct 2020

1.0 INTRODUCTION

JT Environmental has been commissioned by Tea Cup Cottage to prepare a Noise Impact Assessment in support of a Material Change of Use (MCU) for the proposed Community Residence and the operational aspects of the proposed site.

This report has been prepared to address the RCC Noise Planning Scheme Policy and the Environmental Protection Policy Noise Schedule 1 Acoustic Objectives for potential noise emissions from the client noises, plant and equipment, waste collection and delivery vehicles to the surrounding residential uses (east). The intent is to identify the worst-case potential noise impacts that are likely to occur at the nearest existing receptor locations identified within this report. These receptor locations have been modelled at the most exposed façade of the existing residential dwellings from the predicted emissions and accompanied by respective noise contours.

The purpose of this document is to provide a detailed Noise Impact Assessment using PEN3d Noise Prediction model in accordance with the Redlands City Council (RCC) Noise Policy to determine the impacts from all site environmental emissions (line and point source).

The purpose of this document is twofold:

1. To provide a current Noise Impact Investigation of the potential noise impacts on the nearby residential area.
2. To provide direction to ensure that the subject site is operated in a manner that will achieve internal noise levels where appropriate for the locality for sensitive receptors.

This NIA assesses:

- The current noise emissions onto the receptors to the east/south of the site; and
- Where required, to recommend noise control measures to ensure compliance with the relevant noise criteria (EPP Noise and Australian Standards).

This assessment has been conducted with reference to Australian Standard AS 1055:1997 *Description and Measurement of Environmental Noise* Parts 1, 2 and 3 and in accordance with the Queensland Environmental Protection (Noise) Policy 2019 (EPP Noise), the Environmental Protection Agency (EPA) Noise Measurement Manual (2000) and the Environmental Protection Agency's EcoAccess Guideline "Planning for Noise Control" (EcoAccess).

Oct 2020

2.0 SITE DESCRIPTION

2.1 AERIAL PHOTOGRAPH

Below illustrates the location of the subject site in Birkdale area and the location of sensitive receptors modelled to the immediate east and south as Sensitive Receptors (RL1-6) in the Noise Impact Assessment.

Figure 1: Site and modelled receptors (Source: Google Earth).

2.4 PROPOSED DEVELOPMENT

The current operation provides accommodation and support for four (4) children/clients (and no more than six) with disabilities with support workers who remain on site 24/7. Some of the children have profound incapacity and are unable to undertake simple tasks including toileting and showering. The service provides respite care for the children/clients staying at

the residence. The children also utilise the site for exercise and rest including the area around the dam where applicable to their individual capabilities. There is also a separate play room beside the cottage itself, located in a shipping container. Therefore, this operation best fits the definition of a community residence.

Resident and visiting children are taken to school each day in a bus owned by the service operator (typical small 1-seater with wheel chair access). On weekends children may be brought to the site by parents or carers and taken out for the day for day trips and activities. The bus is parked on site, the service also owns a small car used for errands. No office or admin activities are undertaken on site other than appropriate logs sheets and case notes taken by onsite carers.

Normally not more than 2 staff are on site at any one time. Car parking is provided beside the cottage in a second entrance off of Honey gem Place for staff to access the parking area beside the cottage. Resident parking for the dwelling is located in a garage attached to the house or a carport area.

The site is currently developed with a dwelling, relatives' apartment and various outbuildings. The activity currently uses the relatives' apartment as the community residence. The proposal seeks to "regularise" or obtain an approval for the so far informal use.

The existing building provides four bedrooms and is two storeys. The development is illustrated in plans in the appendix. The site is currently developed with a dwelling house, relatives' apartment and various outbuildings. The proposal will result in a conversion of the relatives' apartment to a community residence on the site located in the Environmental Management zone. The current zoning of the land is Environmental Management and Recreation and Open Space. The level of the assessment for the proposal is impact due to the proposed use for a community residence within the Environmental Management zone.

3.0 MEASURED NOISE LEVELS

3.1 MEASURED EXISTING AMBIENT NOISE LEVELS

Existing free-field noise exposure levels were determined and the typical noise levels measured at ML1 as detailed in the attached site plan are presented in Table 2. The ambient noise of the area was dominated by residential road traffic noise. Summaries of these results are shown in Table 2.0.

Table 2: Measured Ambient Noise Levels ML1 residential.

- Fast response, 15min sample
- SLM Rion 23, microphone @1.5m
- Weather noted as generally fine
- Monitoring conducted from 16th -21st March 2020.
- Daily graphs provided in the Appendix

Oct 2020

Parameter	Period	Recorded Noise Levels @ ML1
Lmax	Daytime (7am-6pm)	67.0
	Evening (6pm-10pm)	68.4
	Night-time (10pm-7am)	61.1
L10	Daytime (7am-6pm)	56.2
	Evening (6pm-10pm)	51.8
	18 Hour	54.3
	Night-time (10pm-6am)	49.4
L90	Daytime (7am-6pm)	46.0
	Evening (6pm-10pm)	52.1
	Night-time (10pm-7am)	40.2
Leq	Daytime (7am-6pm)	53.8
	Evening (6pm-10pm)	49.1
	Night-time (10pm-7am)	46.4

	Times as per EPP Noise 2019	16th March Monday	17th March Tuesday	18th March Wednesday	19th March Thursday	20th March Friday	21st March Saturday	Average	EPP Noise 2019
Leq	Daytime evening	51.5	53.8	54.1	50.9	51.4	52.8	52.4	50 - Leq
	Night-time	46.7	47.0	46.2	46.6	45.6		46.4	30 (indoors) - Leq
L10	Daytime evening	53.3	56.1	56.1	53.3	53.7	55.3	54.6	55 – L10
	Night-time	50.0	51.0	49.6	49.3	48.9		49.8	40 (indoors) – L10
L1	Daytime evening	62.2	65.8	67.2	62.2	65.0	65.5	64.6	65 – L1
	Night-time	63.0	63.0	60.5	61.1	60.8		61.7	45 (indoors) – L1
L90	Daytime	47.3	47.8	48.5	46.1	48.3	46.9	47.5	
	Evening	53.5	52.6	53.2	52.4	49.5	51.3	52.1	
	Night-time	41.1	41.6	39.9	41.6	39.6		40.8	
RBL	Daytime	44.8	47.8	47.9	43.6	46.9	45.2	46.0	
	Evening	49.7	45.4	49.8	47.2	49.8	47.1	48.2	
	Night-time	36.7	37.4	41.4	38.1	37.8		38.3	

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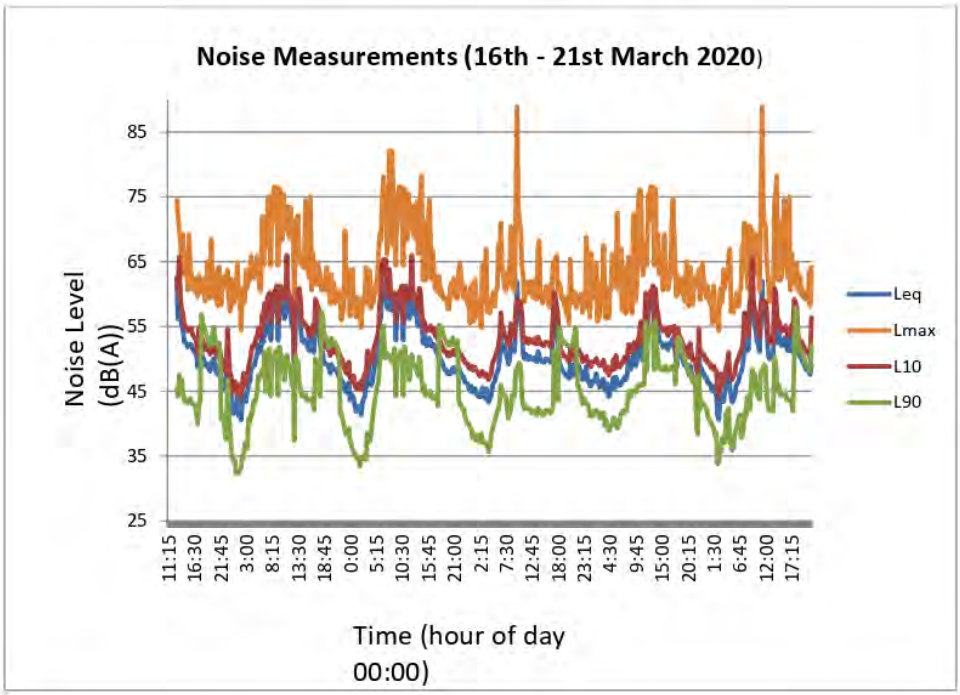

4.0 NOISE CRITERIA AND LIMITS

4.1 RCC SENSITIVE RECEPTOR CRITERIA

Based on the use of the site and the time of day that the noise sources are being emitted from the operation an appropriate assessment methodology can be determined from PSP6 – Environment – 6.3.2. Reference to the acoustic objectives detailed in EPP Noise for residential/sensitive uses includes:

Column 1	Column 2	Column 3			Column 4
Sensitive receptor	**Time of day**	**Acoustic quality objectives (measured at the receptor) *dB(A)***			**Environmental value**
		$L_{Aeq,adj,1hr}$	$L_{A10,adj,1hr}$	$L_{A1,adj,1hr}$	
dwelling (for outdoors)	daytime and evening	50	55	65	health and wellbeing
dwelling (for indoors)	daytime and evening	35	40	45	health and wellbeing
	night-time	30	35	40	health and wellbeing, in relation to the ability to sleep

EPP Noise 2019 AQO's.

Oct 2020

The 'Acoustic quality objectives measured at the receptor location will be modelled using the PEN3D2000 model for the expected noise emissions from the proposal. These will include vehicle movements to the car parking area, air-conditions plant, children/client noise, waste bins vehicles and site entry areas.

5.0 ASSESSMENT OF NOISE IMPACT

5.1 ON-SITE OPERATIONS

The closest sensitive receptors to the development are marked on the receiver map below. The noise sources associated with the use are also outlined below and PEN3D2000 modelling has been undertaken to determine the noise exposure at the residential façade to the east. Modelling includes the building structures proposed and the point sources (internal and external) at the proposed premises.

Table 4: Noise sources used in noise model relevant to the operation of the Tea Cup Cottage.

Machine/Activity	Noise Levels, dB(A) L_{A10} – unless noted	Source Library
Car/truck door closing	73 @ 1m	Standard Noise Library
Residence/client Van	68 @ 1m	On-site sampling of business van.
Waste/refuse collection vehicle	81.4dB(A) – L1.adj	On-site sampling during waste vehicle collection.
Plant and equipment noise as continuous	72.5dB(A) Leq -adj	Standard noise library for External A/C Plant.
External noise emission from internal resident - resident internal of community building (model as external source from measured reduction	58dB(A) L1	On-site sampling of internal noise source (open façade)
External noise emission from resident	74dB(A) L1 - Modelled ass L10 with other sources	Extrapolated from external measurement of internal noise emission.

- On-site noise measurement undertaken have been done so to review the noises from resident/clients visiting Teacup Cottage during its use to identify the emissions

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associated with the site and possible exposure to the surrounding residential receptors.

- Residents/clients enjoy external amenity of the Tea-cup cottage (lake, gardens and the shed play area). The nature of their disability is the very complexity of the presence/absence of noise emissions from the site. A review of the entire site operations identified that the primary concern has been addressed with the recommendation of the acoustic barrier at the boundary.
- External emissions to the north of the site where the shed play area is located have a potential to cause impacts while entry to and from the play area. Emissions modelling demonstrate compliance; however, the recommendation has been included to further demonstrate appropriate façade impact levels at receptors RL1-2.

5.2 PEN3D2000 NOISE MODELLING

The following provides an excerpt from the PEN3D2000 modelling. Full (per source) modelling is provided in the appendix.

Total daytime emissions as L10 noise emissions POINT CALCULATIONS

Pen3D2000 V 1.10.0
Project Code:JB....
Project Description:Noise assessment of ...
File:C:\Users\User\Dropbox\JT2012 - 17-19 Honeygem Place, Birkdale\Daytime Noise emisison run.PEN

Monday 06 Apr, 2020 at 14:59:21

Environmental Calculations

All point and line sources included. Line source segmentation angle: 10 degrees. Calculations for specified meteorology.
Noise level results are the logarithmic addition of all the noise sources
Noise level results incorporate the incoherent ground reflection algorithm
Meteorology :
Wind speed 0.0 (m/s) Wind direction 0 Mast height 10.0 (m)
Temperature 20.0 (C) Temperature Gradient 0.0 (C/100m) Humidity 50.0 (%)
Surface Roughness of terrain 0.023000000 (m) Zero plane offset 0.080000000 (m)

Receptor	X Posn	Y Posn	Height	Noise Level
	(m)	(m)	(m)	(dB(A))
RL1	521133.7	6958105.0	1.5	34.6
RL2	521135.8	6958116.0	1.5	33.9
RL3	521163.7	6958145.3	1.5	34.6
RL4	521132.7	6958071.5	1.5	43.1
RL5	521098.3	6958058.3	1.5	23.8
RL6	521072.0	6958067.6	1.5	22.5

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Total Noise-time emissions as L10 noise emissions - POINT CALCULATIONS

Pen3D2000 V 1.10.0
Project Code:JB....
Project Description:Noise assessment of ...
File:C:\Users\User\Dropbox\JT2012 - 17-19 Honeygem Place, Birkdale\Night-time Noise emisison run TOTAL Emissions.PEN
File Description:Data file covering area

Monday 06 Apr, 2020 at 16:21:42

Environmental Calculations

All point and line sources included. Line source segmentation angle: 10 degrees. Calculations for specified meteorology.
Noise level results are the logarithmic addition of all the noise sources
Noise level results incorporate the incoherent ground reflection algorithm
Meteorology :
Wind speed 0.0 (m/s) Wind direction 0 Mast height 10.0 (m)
Temperature 20.0 (C) Temperature Gradient 0.0 (C/100m) Humidity 50.0 (%)
Surface Roughness of terrain 0.023000000 (m) Zero plane offset 0.080000000 (m)

Receptor	X Posn	Y Posn	Height	Noise Level
	(m)	(m)	(m)	(dB(A))
RL1	521133.7	6958105.0	1.5	27.4
RL2	521135.8	6958116.0	1.5	23.4
RL3	521163.7	6958145.3	1.5	19.6
RL4	521132.7	6958071.5	1.5	37.2
RL5	521098.3	6958058.3	1.5	19.8
RL6	521072.0	6958067.6	1.5	17.0

5.3 NOISE IMPACT DISCUSSION

PEN3D2000 modelling has been undertaken to account for the noise emissions form the current operations and proposed extension. Additionally, plant and equipment, vehicles etc have been included in the modelling completed (complete with contours).

The External Shed play area to the norther of the existing communicate use building has been incorporated with emission sources during the day-time only (7am-6pm). Therefore, this area should only be used during the day-time periods.

Receptor	X Posn	Y Posn	Height	Noise Level - Daytime	Daytime Criterion - EPP 2019	Noise Level - Night-time	Night-time Criterion - EPP 2019
	(m)	(m)	(m)	(dB(A))		(dB(A))	
RL1	521133.7	6958105.0	1.5	34.6- External FC	55 dB(A)	27.4 - External FC	40 dB(A) - internal
RL2	521135.8	6958116.0	1.5	33.9- External FC	55 dB(A)	23.4- External FC	40 dB(A) - internal
RL3	521163.7	6958145.3	1.5	34.6- External FC	55 dB(A)	19.6- External FC	40 dB(A) - internal
RL4	521132.7	6958071.5	1.5	43.1- External FC	55 dB(A)	37.2- External FC	40 dB(A) - internal
RL5	521098.	6958058	1.5	23.8- External FC	55 dB(A)	19.8- External	40 dB(A) - internal

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	3	.3				FC	
RL6	521072.0	6958067.6	1.5	22.5- External FC	55 dB(A)	17.0- External FC	40 dB(A) - internal

5.4 NOISE IMPACT DISCUSSION – USE OF EXTERNAL AREAS INCLUING PARK AREA

For the proposed/existing development, with the comprehensive modelling undertaken has

'Environmental management zone:
PO2
Development is of a small scale and low intensity, which maintains the natural character of the site and is compatible with nearby uses.

Recreation and open space zone:
PO11
Development minimises lighting, noise and other impacts on nearby sensitive land uses and habitat areas.'

Further Request for Information has been received in relation to the abovementioned Performance Outcomes for the use of the surrounding areas of the property associated with the use. For the purposes of this consideration, this office has included an additional PEN3D2000 noise modelling of the use of these areas also to allow a single report to be conditioned accordingly.

Therefore, modelling comments of emissions:

- Addition of noise sources within the EMZ and the RecOSZ of the property by residents of the facility. Point sources have been placed so that no attenuation is provided by intervening structures (full line of sight to existing residents);
- Placement of 6-point sources in each of the areas providing for 12 separate point sources of loud conversation and communication noises by residents all simultaneously. This is an extremely conservative approach;
- Noise Contour Mapping has also been completed to provide the additional noise sources (while retaining the emissions from the existing areas already modelled in this noise report). Ie, these are additional point sources modelled, not replacing the previous included source.
- Source noises in the associated with the passive recreational area by staff and residents have been modelled as point sources:
  a. External Noise emission from resident – 74dB(A)Lq – modelled as L10

Result:
1. As indicated in the PEN3D2000 extract and the Noise Contour Mapping, the EPP 2019 Noise Criterion is also achieved with the conservative approach of all residents being in the EMZ and RecOSZ simultaneously enjoying outside time. As this would exceed the number of available staff, the modelling scenario demonstrates a very conservative consideration to demonstrate compliance with the RCC EMZ and Rec and OSZ performance criterion.

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2. Additional modelling been undertaken with the inclusion of further receptors (RL1-10) to provide for the use of the open space in the SW corner. The use of the gardens to the south west of the building now include a total of 12 external residents in addition to normal activites in and around the residence.
3. Noise Contour modelling has now also included these areas.

Total day-time emissions with 12 point noise sources in EMZ and RecOSZ as L10 noise emissions for passive recreation areas - POINT CALCULATIONS

Pen3D2000 V 1.10.0
Project Code:JB....
Project Description:Noise assessment of ...
File:C:\Users\User\Dropbox\JT2012 - 17-19 Honeygem Place, Birkdale\Daytime Noise emisison run and EZ TOTAL Emissions.PEN
File Description:Data file covering area

Friday 09 Oct, 2020 at 12:48:56

Environmental Calculations

All point and line sources included. Line source segmentation angle: 10 degrees. Calculations for specified meteorology.
Noise level results are the logarithmic addition of all the noise sources
Noise level results incorporate the incoherent ground reflection algorithm
Meteorology :
Wind speed 0.0 (m/s) Wind direction 0 Mast height 10.0 (m)
Temperature 20.0 (C) Temperature Gradient 0.0 (C/100m) Humidity 50.0 (%)
Surface Roughness of terrain 0.023000000 (m) Zero plane offset 0.080000000 (m)

	Receptor	X Posn	Y Posn	Noise Level
		(m)	(m)	(dB(A))
	RL1	521139.9	6958117.6	36.8
	RL2	521140.5	6958132.6	36.1
	RL3	521174.2	6958178.5	34.5
	RL4	521142.4	6958072.7	41.7
	RL5	521097.9	6958059.5	33.5
	RL8	521048.4	6958015.9	39.2
	RL6	521066.9	6958069.3	41.0
	RL10	521102.1	6958028.3	38.0
	RL9	521078.5	6957999.0	34.7
	RL7	521052.3	6958036.4	40.6

Receptor	X Posn	Y Posn	Height	Noise Level - Daytime	Daytime Criterion - EPP 2019
	(m)	(m)	(m)	(dB(A))	
RL1	521133.7	6958105.0	1.5	36.8- External FC	55 dB(A)
RL2	521135.8	6958116.0	1.5	36.1- External FC	55 dB(A)
RL3	521163.7	6958145.3	1.5	34.5- External FC	55 dB(A)
RL4	521132.	6958071	1.5	41.7- External FC	55 dB(A)

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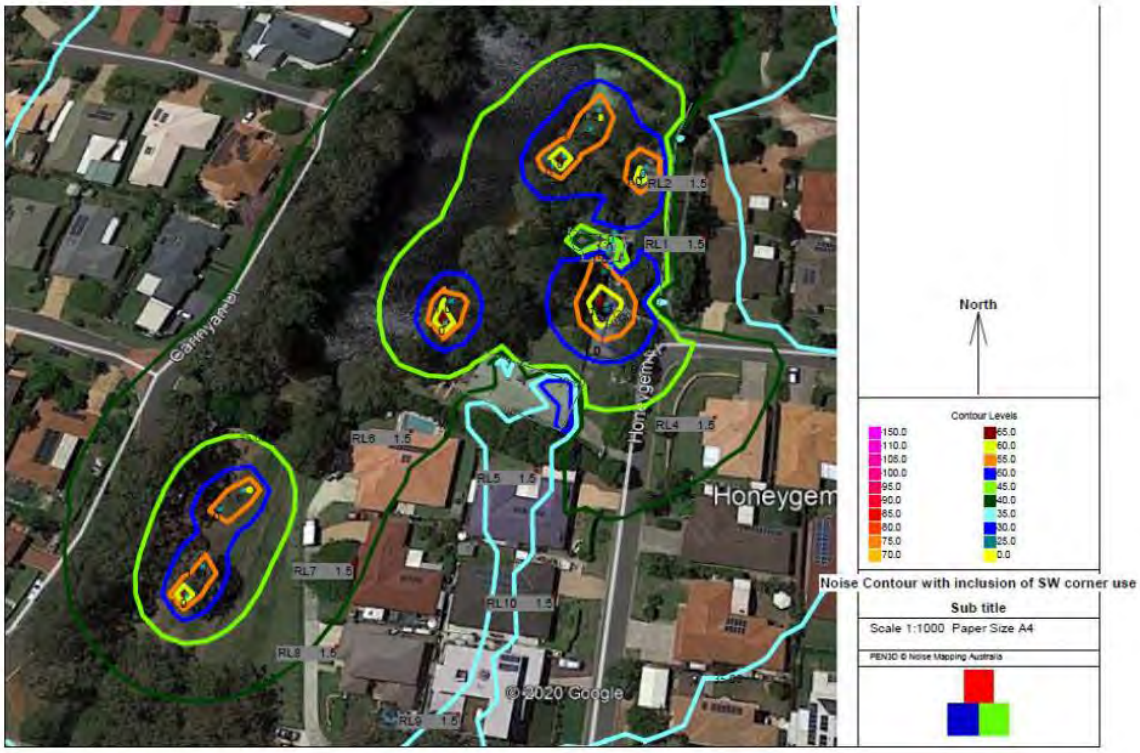
	7	.5			
RL5	521098.3	6958058.3	1.5	33.5- External FC	55 dB(A)
RL6	521072.0	6958067.6	1.5	41.0- External FC	55 dB(A)
RL7	521052.3	6958036.4	1.5	40.6- External FC	55 dB(A)
RL8	521048.4	6958015.9	1.5	39.2- External FC	55 dB(A)
RL9	521078.5	6957999.0	1.5	34.7- External FC	55 dB(A)
RL10	521102.1	6958028.3	1.5	38.0- External FC	55 dB(A)



5.4 NOISE IMPACT DISCUSSION – USE OF EXTERNAL AREAS INCLUING PARK AREA

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Recreation and open space zone:
PO11
Development minimises lighting, noise and other impacts on nearby sensitive land uses and habitat areas.'

Further Request for Information has been received in relation to the abovementioned Performance Outcomes for the use of the surrounding areas of the property associated with the use. For the purposes of this consideration, this office has included an additional PEN3D2000 noise modelling of the use of these areas also to allow a single report to be conditioned accordingly.

Therefore, modelling comments of emissions:

- Addition of noise sources within the EMZ and the RecOSZ of the property by residents of the facility. Point sources have been placed so that no attenuation is provided by intervening structures (full line of sight to existing residents);
- Placement of 6-point sources in each of the areas providing for 12 separate point sources of loud conversation and communication noises by residents all simultaneously. This is an extremely conservative approach;
- Noise Contour Mapping has also been completed to provide the additional noise sources (while retaining the emissions from the existing areas already modelled in this noise report). Ie, these are additional point sources modelled, not replacing the previous included source.
- Source noises in the associated with the passive recreational area by staff and residents have been modelled as point sources:
  a. External Noise emission from resident – 74dB(A)Lq – modelled as L10

Result:
1. As indicated in the PEN3D2000 extract and the Noise Contour Mapping, the EPP 2019 Noise Criterion is also achieved with the conservative approach of all residents being in the EMZ and RecOSZ simultaneously enjoying outside time. As this would exceed the number of available staff, the modelling scenario demonstrates a very conservative consideration to demonstrate compliance with the RCC EMZ and Rec and OSZ performance criterion.
2. Additional modelling been undertaken with the inclusion of further receptors (RL1-10) to provide for the use of the open space in the SW corner. The use of the gardens to the south west of the building now include a total of 12 external residents in addition to normal activites in and around the residence.
3. Noise Contour modelling has now also included these areas.

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Total day-time emissions with 12 point noise sources in EMZ and RecOSZ as L10 noise emissions for passive recreation areas - POINT CALCULATIONS

Pen3D2000 V 1.10.0
Project Code:JB....
Project Description:Noise assessment of ...
File:C:\Users\User\Dropbox\JT2012 - 17-19 Honeygem Place, Birkdale\Daytime Noise emisison run and EZ TOTAL Emissions.PEN
File Description:Data file covering area

Friday 09 Oct, 2020 at 12:48:56

Environmental Calculations

All point and line sources included. Line source segmentation angle: 10 degrees. Calculations for specified meteorology.
Noise level results are the logarithmic addition of all the noise sources
Noise level results incorporate the incoherent ground reflection algorithm
Meteorology :
Wind speed 0.0 (m/s) Wind direction 0 Mast height 10.0 (m)
Temperature 20.0 (C) Temperature Gradient 0.0 (C/100m) Humidity 50.0 (%)
Surface Roughness of terrain 0.023000000 (m) Zero plane offset 0.080000000 (m)

	Receptor	X Posn	Y Posn	Noise Level
		(m)	(m)	(dB(A))
	RL1	521139.9	6958117.6	36.8
	RL2	521140.5	6958132.6	36.1
	RL3	521174.2	6958178.5	34.5
	RL4	521142.4	6958072.7	41.7
	RL5	521097.9	6958059.5	33.5
	RL8	521048.4	6958015.9	39.2
	RL6	521066.9	6958069.3	41.0
	RL10	521102.1	6958028.3	38.0
	RL9	521078.5	6957999.0	34.7
	RL7	521052.3	6958036.4	40.6

Receptor	X Posn	Y Posn	Height	Noise Level - Daytime	Daytime Criterion - EPP 2019
	(m)	(m)	(m)	(dB(A))	
RL1	521133.7	6958105.0	1.5	36.8- External FC	55 dB(A)
RL2	521135.8	6958116.0	1.5	36.1- External FC	55 dB(A)
RL3	521163.7	6958145.3	1.5	34.5- External FC	55 dB(A)
RL4	521132.7	6958071.5	1.5	41.7- External FC	55 dB(A)
RL5	521098.3	6958058.3	1.5	33.5- External FC	55 dB(A)
RL6	521072.0	6958067.6	1.5	41.0- External FC	55 dB(A)

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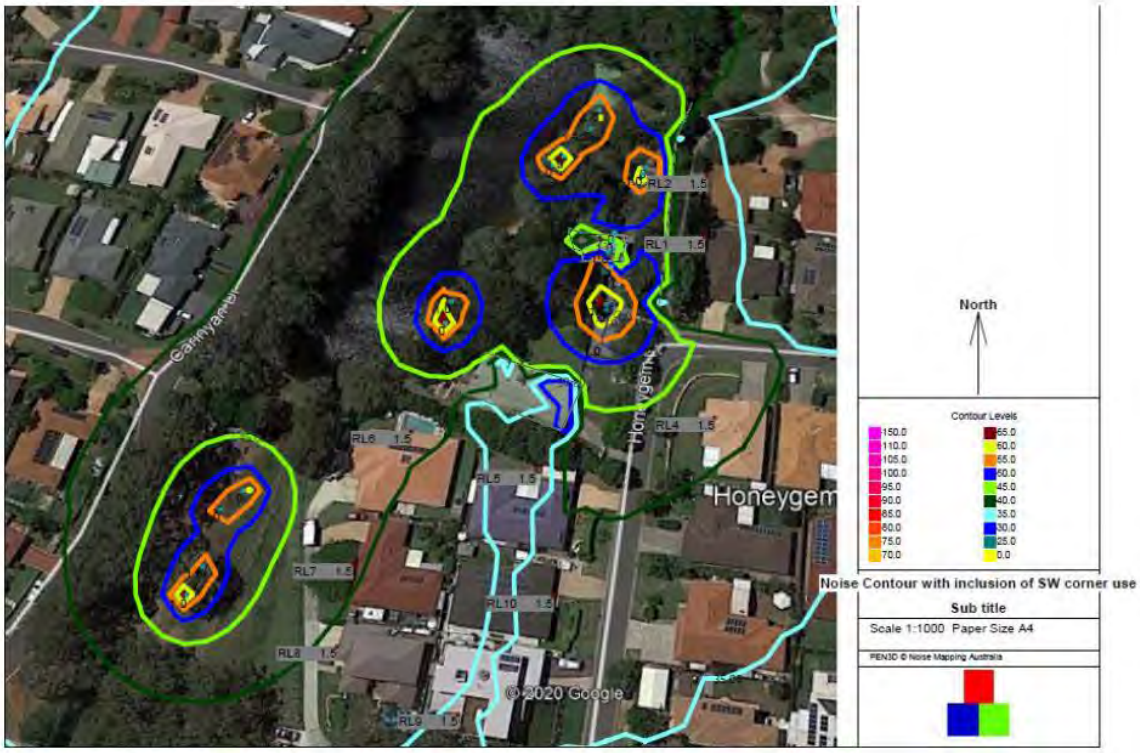

6.0 CONCLUSION

For the proposed/existing development, with the comprehensive modelling undertaken has considered the existing use of the site and the modelling of the potential emissions associated with the location. Compliance with the EPP 2019 Noise Acoustic objectives are achieved for operation of the site with the inclusion of a screening wall along the eastern edge of the Shed Play Area. PEN3D2000 modelling scenarios have been conducted for Vehicles, waste collection vehicles and plant and equipment and resident noise from the facility. Noise impact contours have been provided to visually demonstrate the impacts at the adjoining receptors.

This has demonstrated that the resultant levels at this closest receptor will be below the current background noise levels monitored at ML1. It is on this basis there seems to be no identified reason for the proposed extensions together with the current use to be maintained with the recommendations.

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7.0 RECOMMENDATIONS

1. The proposed use complies with the noise criterial from the planning scheme policy and EPP Noise Schedule 1.
2. Erection of a 2.2m screening wall along the boundary (eastern edge) of the Shed Play Area for screening from entry to and from the shed play area from client noise to closest residential receptors RL1-2.
    a. 15m long perpendicular to the shed play area.
    b. 2.2m-high relevant to the FFL of the shed play area.
        i. To be made of a weather resistant material or prepared and finished to be weather resistant;
        ii. Continuous and gap free – max 2% leakage or gaps for overland flow;
        iii. Be constructed of a material to achieve a min 10.5kg/m2.
3. The Shed Play area and any external play areas are to be only utilised during the day-time periods; 7am -6pm.

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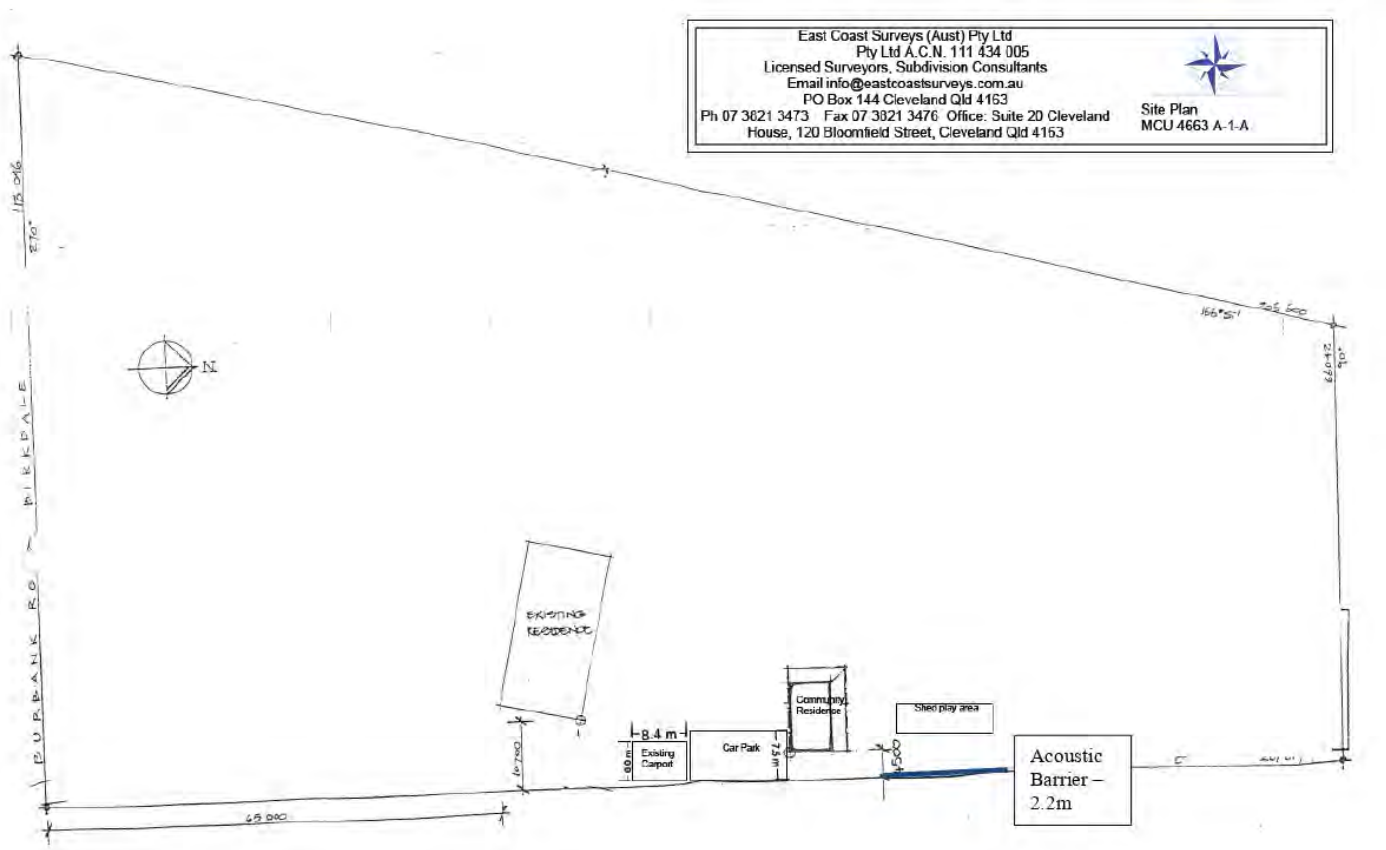
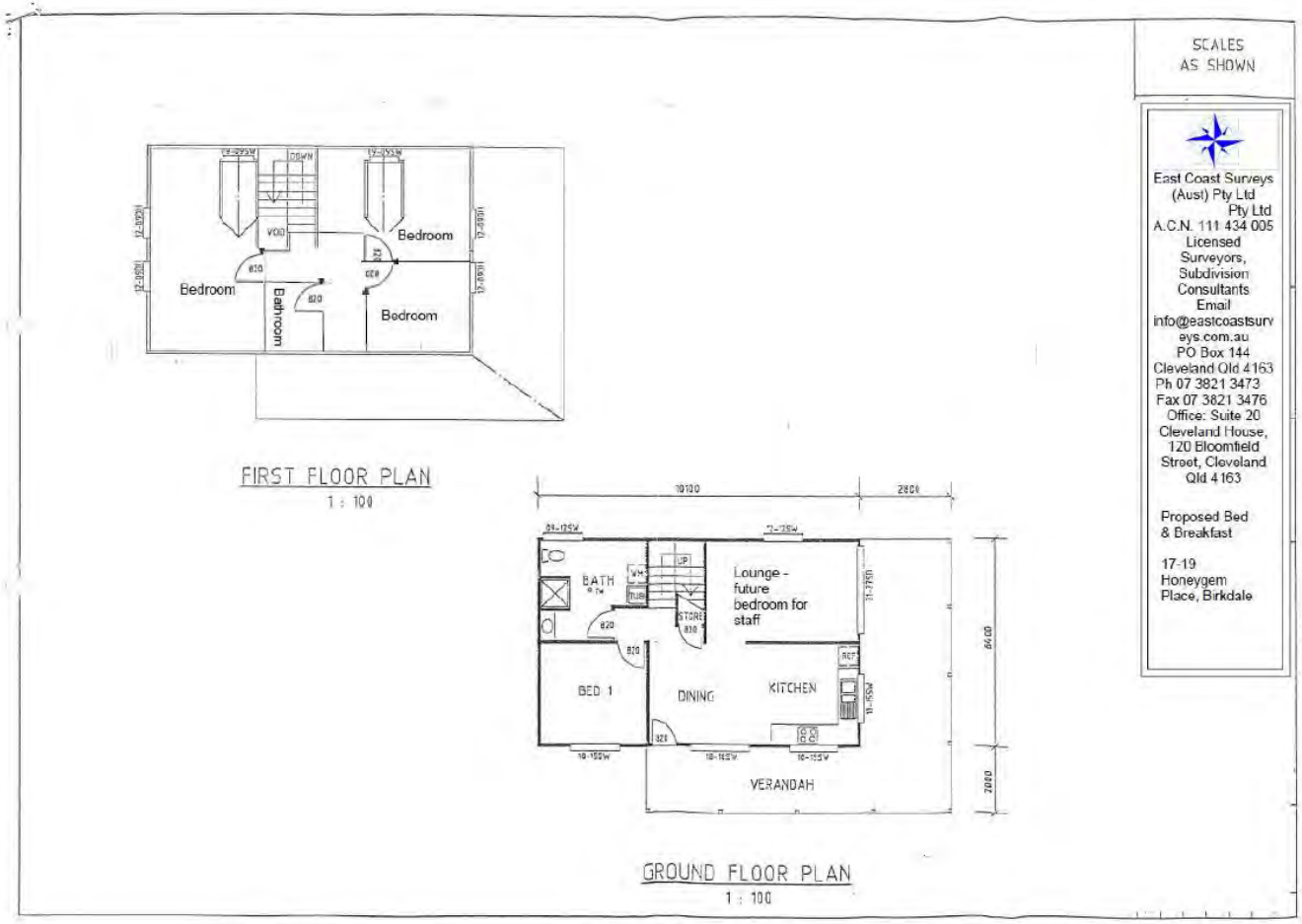
8.0 APPENDIX

8.1 APPENDIX A – SITE PLAN

Oct 2020


East Coast Surveys (Aust) Pty Ltd
Pty Ltd A.C.N. 111 434 005
Licensed Surveyors, Subdivision Consultants
Email info@eastcoastsurveys.com.au
PO Box 144 Cleveland Qld 4163
Ph 07 3821 3473 Fax 07 3821 3476 Office: Suite 20 Cleveland House, 120 Bloomfield Street, Cleveland Qld 4163
Site Plan
MCU 4663 A-1-A
N
PUBEANK RD
EXISTING RESIDENCE
8.4 m
Existing Carport
Car Park
Community Residence
Shed play area
Acoustic Barrier – 2.2m
65 000

Oct 2020


SCALES
AS SHOWN
East Coast Surveys (Aust) Pty Ltd
Pty Ltd
A.C.N. 111 434 005
Licensed Surveyors, Subdivision Consultants
Email info@eastcoastsurveys.com.au
PO Box 144
Cleveland Qld 4163
Ph 07 3821 3473
Fax 07 3821 3476
Office: Suite 20 Cleveland House, 120 Bloomfield Street, Cleveland Qld 4163
Proposed Bed & Breakfast
17-19 Honeygem Place, Birkdale
Bedroom
Bedroom
Bathroom
Bedroom
FIRST FLOOR PLAN
1 : 100
Lounge - future bedroom for staff
BATH
STORE
BED 1
DINING
KITCHEN
VERANDAH
GROUND FLOOR PLAN
1 : 100

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Colourbond Customorb roof sheeting
(Roof Pitch 35°)
REAR ELEVATION
1 : 100
Western Red Cedar Cladding
LHS ELEVATION
1 : 100
FRONT ELEVATION
1 : 100
2110
Storage
2400
Living
550
5760
Height Between
RHS ELEVATION
1 : 100
SCALES
AS SHOWN
East Coast Surveys (Aust) Pty Ltd
Pty Ltd
A.C.N. 111 434 005
Licensed Surveyors, Subdivision Consultants
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PO Box 144
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Fax 07 3821 3476
Office: Suite 20 Cleveland House, 120 Bloomfield Street, Cleveland Qld 4163
Proposed Bed & Breakfast
17-19 Honeygem Place, Birkdale

Oct 2020

8.2 APPENDIX B – NOISE CONTOUR PLANS

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RL1
RL2
RL3
RL4
RL5
RL6
Honeyeom Pl
© 2020 Google
North
Contour Levels
150.0
110.0
105.0
100.0
95.0
90.0
85.0
80.0
70.0
60.0
55.0
50.0
45.0
40.0
35.0
30.0
25.0
0.0
Night-time total emissions
Sub title
Scale 1:700 Paper Size A4
PEN3D © Noise Mapping Australia

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APPENDIX C – MODELLED RECEPTORS

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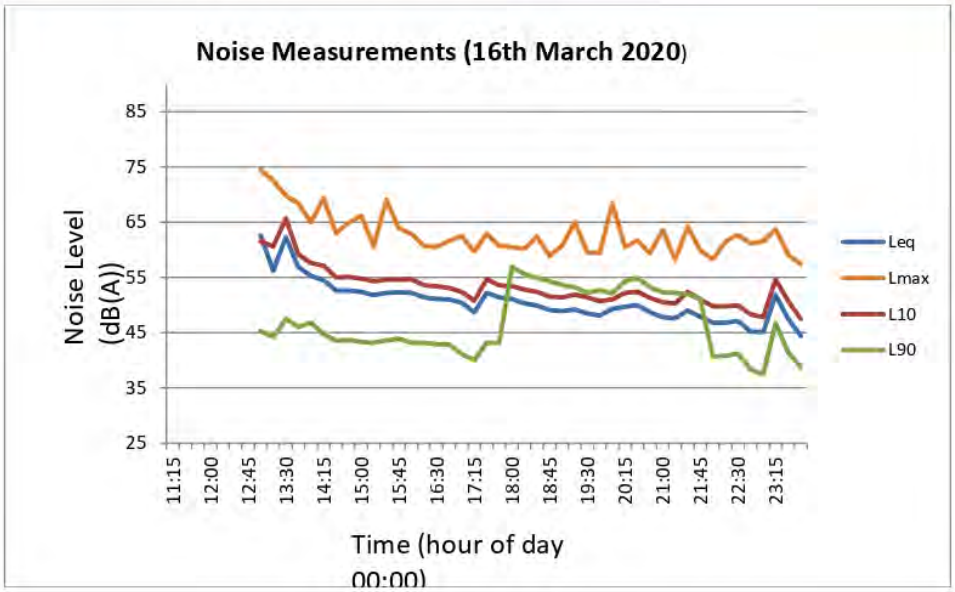
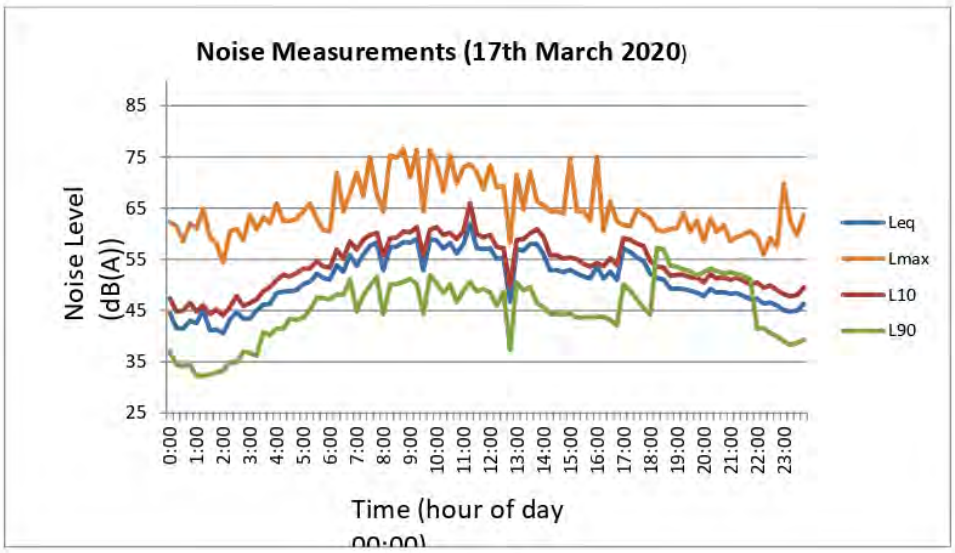
APPENDIX D – AMBIENT NOISE MODELLING.





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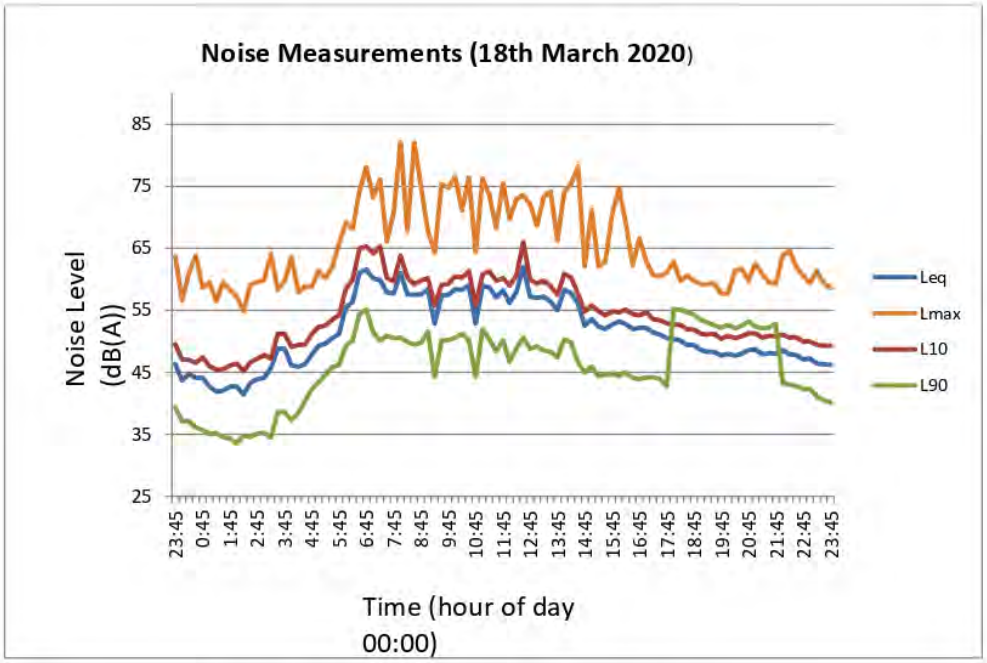
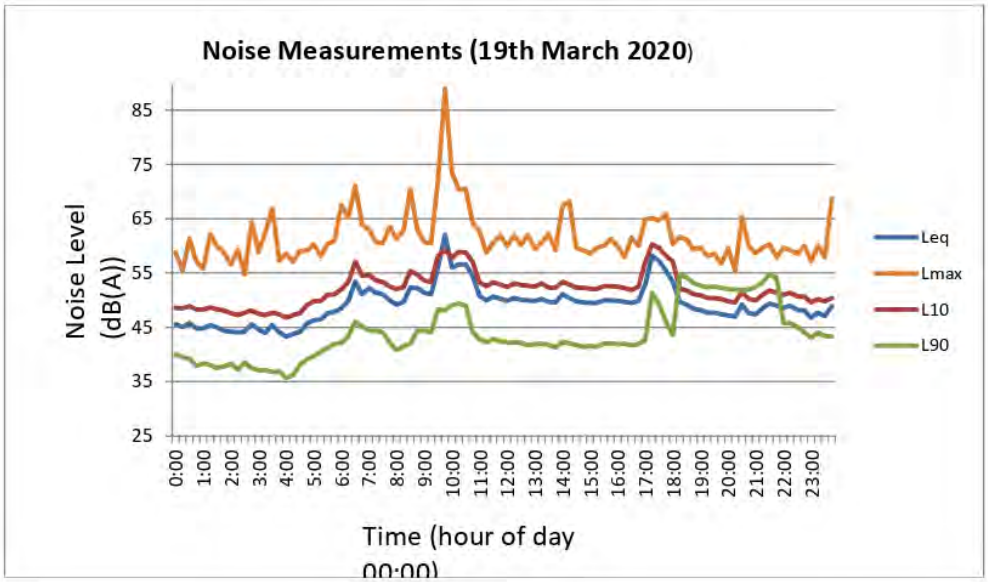

Noise Measurements (18th March 2020)
Noise Level (dB(A))
85
75
65
55
45
35
25
23:45
0:45
1:45
2:45
3:45
4:45
5:45
6:45
7:45
8:45
9:45
10:45
11:45
12:45
13:45
14:45
15:45
16:45
17:45
18:45
19:45
20:45
21:45
22:45
23:45
Time (hour of day 00:00)
Leq
Lmax
L10
L90


Noise Measurements (19th March 2020)
Noise Level (dB(A))
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75
65
55
45
35
25
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
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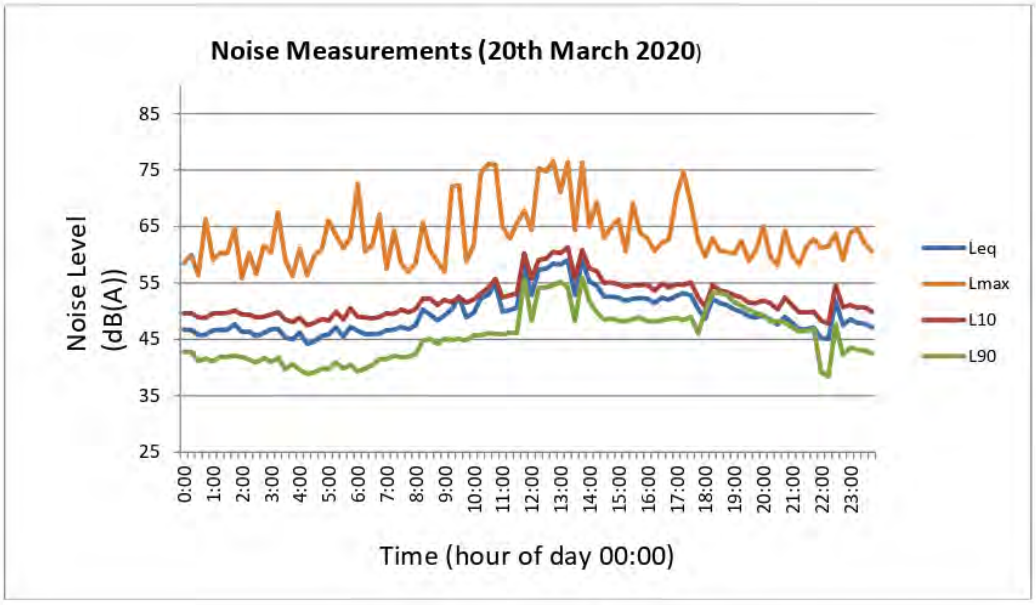
21:00
22:00
23:00
Time (hour of day 00:00)
Leq
Lmax
L10
L90

Oct 2020


Noise Measurements (20th March 2020)
Noise Level (dB(A))
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75
65
55
45
35
25
0:00
1:00
2:00
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4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
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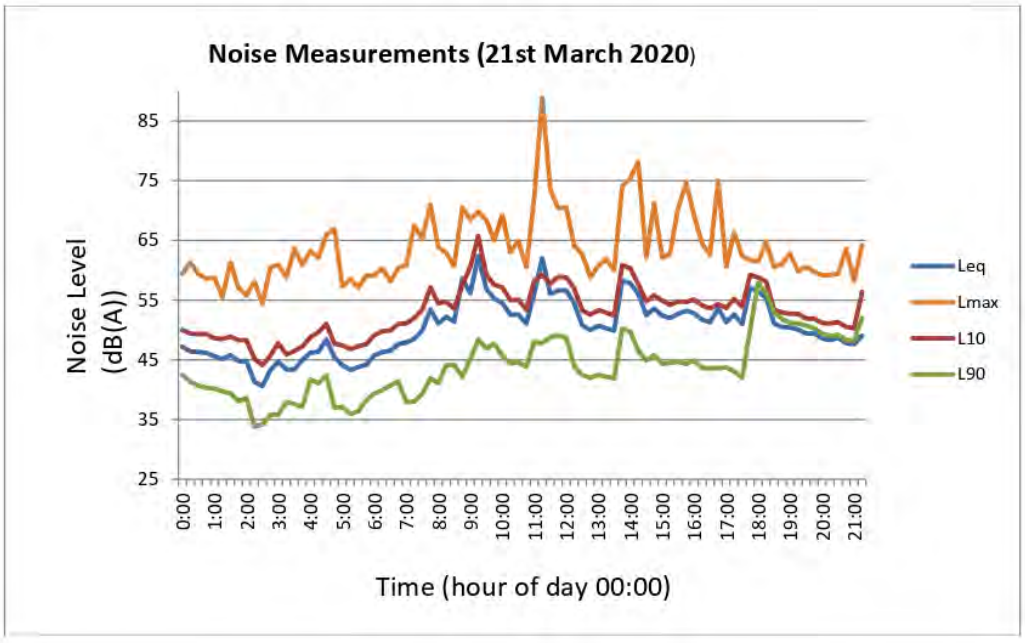
22:00
23:00
Time (hour of day 00:00)
Leq
Lmax
L10
L90


Noise Measurements (21st March 2020)
Noise Level (dB(A))
85
75
65
55
45
35
25
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
Time (hour of day 00:00)
Leq
Lmax
L10
L90

APPENDIX E – RESULTANT NOISE MODELLING.

Total daytime emissions as L10 noise emissions POINT CALCULATIONS

Pen3D2000 V 1.10.0
Project Code:JB....
Project Description:Noise assessment of ...
File:C:\Users\User\Dropbox\JT2012 - 17-19 Honeygem Place, Birkdale\Daytime Noise emisison run.PEN

Monday 06 Apr, 2020 at 14:59:21

Environmental Calculations

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Meteorology :
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Temperature 20.0 (C) Temperature Gradient 0.0 (C/100m) Humidity 50.0 (%)
Surface Roughness of terrain 0.023000000 (m) Zero plane offset 0.080000000 (m)

Receptor	X Posn	Y Posn	Height		Noise Level
	(m)	(m)	(m)		(dB(A))
RL1	521133.7	6958105.0	1.5		34.6
Source	X Posn	Y Posn	Height	Noise Level	
	(m)	(m)	(m)	(dB(A))	
Delivery Van	521116.6	6958099.6	1.0	2.6	
Delivery Van	521115.4	6958095.5	1.0	2.9	
Delivery Van	521114.3	6958092.0	1.0	-2.0	
Delivery Van0002	521116.1	6958090.1	1.0	2.1	
Delivery Van0002	521119.7	6958088.2	1.0	2.7	
Delivery Van0002	521122.3	6958086.9	1.0	0.6	
Waste Win collection	521115.2	6958099.5	1.0	32.1	
Plant 1 - AC	521113.2	6958102.1	1.0	11.6	
Plant 2 - AC0001	521115.1	6958108.8	1.0	23.1	
Plant 3 - AC0002	521108.6	6958104.2	1.0	9.4	
resident in outdoor shed play area	521123.6	6958120.9	1.0	25.3	
resident in outdoor shed play area0002	521123.8	6958119.4	1.0	25.8	
resident during loading/unloading van	521115.5	6958100.9	1.0	24.7	
resident internal of community building (model as external source from measured reduction	521119.6	6958104.0	1.0	10.7	
resident internal of community building (model as external source from measured reduction0002	521117.1	6958108.7	1.0	9.2	
resident internal of community building (model as external source from measured reduction0003	521111.1	6958102.3	1.0	-3.7	
Receptor	X Posn	Y Posn	Height		Noise Level
	(m)	(m)	(m)		(dB(A))
RL2	521135.8	6958116.0	1.5		33.9
Source	X Posn	Y Posn	Height	Noise Level	
	(m)	(m)	(m)	(dB(A))	
Delivery Van	521115.9	6958097.4	1.0	4.1	
Delivery Van	521114.2	6958091.6	1.0	-6.5	
Delivery Van0002	521116.7	6958089.8	1.0	1.5	

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Delivery Van0002	521121.2	6958087.5	1.0	1.6	
Waste Win collection	521115.2	6958099.5	1.0	30.4	
Plant 1 - AC	521113.2	6958102.1	1.0	9.0	
Plant 2 - AC0001	521115.1	6958108.8	1.0	22.3	
Plant 3 - AC0002	521108.6	6958104.2	1.0	8.1	
resident in outdoor shed play area	521123.6	6958120.9	1.0	27.4	
resident in outdoor shed play area0002	521123.8	6958119.4	1.0	27.8	
resident during loading/unloading van	521115.5	6958100.9	1.0	11.1	
resident internal of community building (model as external source from measured reduction	521119.6	6958104.0	1.0	8.6	
resident internal of community building (model as external source from measured reduction0002	521117.1	6958108.7	1.0	8.2	
resident internal of community building (model as external source from measured reduction0003	521111.1	6958102.3	1.0	-6.1	
Receptor	X Posn	Y Posn	Height		Noise Level
	(m)	(m)	(m)		(dB(A))
RL3	521163.7	6958145.3	1.5		34.6
Source	X Posn	Y Posn	Height	Noise Level	
	(m)	(m)	(m)	(dB(A))	
Delivery Van	521115.7	6958096.6	1.0	1.8	
Delivery Van0002	521118.7	6958088.8	1.0	1.0	
Waste Win collection	521115.2	6958099.5	1.0	11.6	
Plant 1 - AC	521113.2	6958102.1	1.0	1.1	
Plant 2 - AC0001	521115.1	6958108.8	1.0	19.0	
Plant 3 - AC0002	521108.6	6958104.2	1.0	1.1	
resident in outdoor shed play area	521123.6	6958120.9	1.0	31.5	
resident in outdoor shed play area0002	521123.8	6958119.4	1.0	31.3	
resident during loading/unloading van	521115.5	6958100.9	1.0	2.9	
resident internal of community building (model as external source from measured reduction	521119.6	6958104.0	1.0	3.9	
resident internal of community building (model as external source from measured reduction0002	521117.1	6958108.7	1.0	4.2	
resident internal of community building (model as external source from measured reduction0003	521111.1	6958102.3	1.0	-13.7	
Receptor	X Posn	Y Posn	Height		Noise Level
	(m)	(m)	(m)		(dB(A))
RL4	521132.7	6958071.5	1.5		43.1
Source	X Posn	Y Posn	Height	Noise Level	
	(m)	(m)	(m)	(dB(A))	
Delivery Van	521116.0	6958097.6	1.0	15.8	
Delivery Van	521114.5	6958092.7	1.0	13.6	
Delivery Van0002	521119.2	6958088.5	1.0	19.5	
Delivery Van0002	521122.9	6958086.6	1.0	10.2	
Waste Win collection	521115.2	6958099.5	1.0	41.0	
Plant 1 - AC	521113.2	6958102.1	1.0	31.4	
Plant 2 - AC0001	521115.1	6958108.8	1.0	4.9	
Plant 3 - AC0002	521108.6	6958104.2	1.0	30.5	
resident in outdoor shed play area	521123.6	6958120.9	1.0	30.9	
resident in outdoor shed play area0002	521123.8	6958119.4	1.0	31.1	
resident during loading/unloading van	521115.5	6958100.9	1.0	34.1	
resident internal of community building (model as external source from measured reduction	521119.6	6958104.0	1.0	17.0	
resident internal of community building	521117.1	6958108.7	1.0	-8.9	

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(model as external source from measured reduction0002					
resident internal of community building (model as external source from measured reduction0003	521111.1	6958102.3	1.0	16.5	
Receptor	X Posn	Y Posn	Height		Noise Level
	(m)	(m)	(m)		(dB(A))
RL5	521098.3	6958058.3	1.5		23.8
Source	X Posn	Y Posn	Height	Noise Level	
	(m)	(m)	(m)	(dB(A))	
Delivery Van	521115.4	6958095.6	1.0	-3.8	
Delivery Van0002	521116.9	6958089.7	1.0	14.0	
Delivery Van0002	521121.4	6958087.3	1.0	11.8	
Waste Win collection	521115.2	6958099.5	1.0	21.3	
Plant 1 - AC	521113.2	6958102.1	1.0	11.9	
Plant 2 - AC0001	521115.1	6958108.8	1.0	2.7	
Plant 3 - AC0002	521108.6	6958104.2	1.0	11.8	
resident in outdoor shed play area	521123.6	6958120.9	1.0	6.8	
resident in outdoor shed play area0002	521123.8	6958119.4	1.0	6.7	
resident during loading/unloading van	521115.5	6958100.9	1.0	13.2	
resident internal of community building (model as external source from measured reduction	521119.6	6958104.0	1.0	-3.0	
resident internal of community building (model as external source from measured reduction0002	521117.1	6958108.7	1.0	-11.4	
resident internal of community building (model as external source from measured reduction0003	521111.1	6958102.3	1.0	-2.7	
Receptor	X Posn	Y Posn	Height		Noise Level
	(m)	(m)	(m)		(dB(A))
RL6	521072.0	6958067.6	1.5		22.5
Source	X Posn	Y Posn	Height	Noise Level	
	(m)	(m)	(m)	(dB(A))	
Delivery Van	521115.5	6958095.8	1.0	-4.9	
Delivery Van0002	521118.3	6958088.9	1.0	-4.7	
Waste Win collection	521115.2	6958099.5	1.0	20.7	
Plant 1 - AC	521113.2	6958102.1	1.0	11.5	
Plant 2 - AC0001	521115.1	6958108.8	1.0	1.7	
Plant 3 - AC0002	521108.6	6958104.2	1.0	11.7	
resident in outdoor shed play area	521123.6	6958120.9	1.0	6.3	
resident in outdoor shed play area0002	521123.8	6958119.4	1.0	6.1	
resident during loading/unloading van	521115.5	6958100.9	1.0	12.7	
resident internal of community building (model as external source from measured reduction	521119.6	6958104.0	1.0	-12.7	
resident internal of community building (model as external source from measured reduction0002	521117.1	6958108.7	1.0	-12.9	
resident internal of community building (model as external source from measured reduction0003	521111.1	6958102.3	1.0	-3.1	

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Total Noise-time emissions as L10 noise emissions - POINT CALCULATIONS

Pen3D2000 V 1.10.0
Project Code:JB....
Project Description:Noise assessment of ...
File:C:\Users\User\Dropbox\JT2012 - 17-19 Honeygem Place, Birkdale\Night-time Noise emisison run TOTAL Emissions.PEN
File Description:Data file covering area

Monday 06 Apr, 2020 at 16:22:04

Environmental Calculations

All point and line sources included. Line source segmentation angle: 10 degrees. Calculations for specified meteorology.
Noise level results are the logarithmic addition of all the noise sources
Noise level results incorporate the incoherent ground reflection algorithm
Meteorology :
Wind speed 0.0 (m/s) Wind direction 0 Mast height 10.0 (m)
Temperature 20.0 (C) Temperature Gradient 0.0 (C/100m) Humidity 50.0 (%)
Surface Roughness of terrain 0.023000000 (m) Zero plane offset 0.080000000 (m)

	Receptor	X Posn	Y Posn	Height		Noise Level
		(m)	(m)	(m)		(dB(A))
	RL1	521133.7	6958105.0	1.5		27.4
	Source	X Posn	Y Posn	Height	Noise Level	
		(m)	(m)	(m)	(dB(A))	
	Plant 1 - AC	521113.2	6958102.1	1.0	11.6	
	Plant 2 - AC0001	521115.1	6958108.8	1.0	23.1	
	Plant 3 - AC0002	521108.6	6958104.2	1.0	9.4	
	resident during loading/unloading van	521115.5	6958100.9	1.0	24.7	
	resident internal of community building (model as external source from measured reduction	521119.6	6958104.0	1.0	10.7	
	resident internal of community building (model as external source from measured reduction0002	521117.1	6958108.7	1.0	9.2	
	resident internal of community building (model as external source from measured reduction0003	521111.1	6958102.3	1.0	-3.7	
	Delivery Van	521116.6	6958099.6	1.0	2.6	
	Delivery Van	521115.4	6958095.5	1.0	2.9	
	Delivery Van	521114.3	6958092.0	1.0	-2.0	
	Delivery Van0002	521116.1	6958090.1	1.0	2.0	
	Delivery Van0002	521119.7	6958088.2	1.0	2.7	
	Delivery Van0002	521122.3	6958086.9	1.0	0.6	
	Receptor	X Posn	Y Posn	Height		Noise Level
		(m)	(m)	(m)		(dB(A))
	RL2	521135.8	6958116.0	1.5		23.4
	Source	X Posn	Y Posn	Height	Noise Level	
		(m)	(m)	(m)	(dB(A))	
	Plant 1 - AC	521113.2	6958102.1	1.0	9.0	
	Plant 2 - AC0001	521115.1	6958108.8	1.0	22.3	
	Plant 3 - AC0002	521108.6	6958104.2	1.0	8.1	
	resident during loading/unloading van	521115.5	6958100.9	1.0	11.1	
	resident internal of community building (model as external source from measured reduction	521119.6	6958104.0	1.0	8.6	

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	resident internal of community building (model as external source from measured reduction0002	521117.1	6958108.7	1.0	8.2	
	resident internal of community building (model as external source from measured reduction0003	521111.1	6958102.3	1.0	-6.1	
	Delivery Van	521115.9	6958097.4	1.0	4.1	
	Delivery Van	521114.2	6958091.6	1.0	-6.5	
	Delivery Van0002	521116.7	6958089.8	1.0	1.5	
	Delivery Van0002	521121.2	6958087.5	1.0	1.6	
	Receptor	X Posn	Y Posn	Height		Noise Level
		(m)	(m)	(m)		(dB(A))
	RL3	521163.7	6958145.3	1.5		19.6
	Source	X Posn	Y Posn	Height	Noise Level	
		(m)	(m)	(m)	(dB(A))	
	Plant 1 - AC	521113.2	6958102.1	1.0	1.1	
	Plant 2 - AC0001	521115.1	6958108.8	1.0	19.0	
	Plant 3 - AC0002	521108.6	6958104.2	1.0	1.1	
	resident during loading/unloading van	521115.5	6958100.9	1.0	2.9	
	resident internal of community building (model as external source from measured reduction	521119.6	6958104.0	1.0	3.9	
	resident internal of community building (model as external source from measured reduction0002	521117.1	6958108.7	1.0	4.2	
	resident internal of community building (model as external source from measured reduction0003	521111.1	6958102.3	1.0	-13.7	
	Delivery Van	521115.7	6958096.6	1.0	1.8	
	Delivery Van0002	521118.7	6958088.8	1.0	1.0	
	Receptor	X Posn	Y Posn	Height		Noise Level
		(m)	(m)	(m)		(dB(A))
	RL4	521132.7	6958071.5	1.5		37.2
	Source	X Posn	Y Posn	Height	Noise Level	
		(m)	(m)	(m)	(dB(A))	
	Plant 1 - AC	521113.2	6958102.1	1.0	31.4	
	Plant 2 - AC0001	521115.1	6958108.8	1.0	4.9	
	Plant 3 - AC0002	521108.6	6958104.2	1.0	30.5	
	resident during loading/unloading van	521115.5	6958100.9	1.0	34.1	
	resident internal of community building (model as external source from measured reduction	521119.6	6958104.0	1.0	17.0	
	resident internal of community building (model as external source from measured reduction0002	521117.1	6958108.7	1.0	-8.9	
	resident internal of community building (model as external source from measured reduction0003	521111.1	6958102.3	1.0	16.5	
	Delivery Van	521116.0	6958097.6	1.0	15.8	
	Delivery Van	521114.5	6958092.7	1.0	13.6	
	Delivery Van0002	521119.2	6958088.5	1.0	19.5	
	Delivery Van0002	521122.9	6958086.6	1.0	10.2	
	Receptor	X Posn	Y Posn	Height		Noise Level
		(m)	(m)	(m)		(dB(A))
	RL5	521098.3	6958058.3	1.5		19.8
	Source	X Posn	Y Posn	Height	Noise Level	

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		(m)	(m)	(m)	(dB(A))	
	Plant 1 - AC	521113.2	6958102.1	1.0	11.9	
	Plant 2 - AC0001	521115.1	6958108.8	1.0	2.7	
	Plant 3 - AC0002	521108.6	6958104.2	1.0	11.8	
	resident during loading/unloading van	521115.5	6958100.9	1.0	13.2	
	resident internal of community building (model as external source from measured reduction	521119.6	6958104.0	1.0	-3.0	
	resident internal of community building (model as external source from measured reduction0002	521117.1	6958108.7	1.0	-11.4	
	resident internal of community building (model as external source from measured reduction0003	521111.1	6958102.3	1.0	-2.7	
	Delivery Van	521115.4	6958095.6	1.0	-3.8	
	Delivery Van0002	521116.9	6958089.7	1.0	14.0	
	Delivery Van0002	521121.4	6958087.3	1.0	11.8	
	Receptor	X Posn	Y Posn	Height		Noise Level
		(m)	(m)	(m)		(dB(A))
	RL6	521072.0	6958067.6	1.5		17.0
	Source	X Posn	Y Posn	Height	Noise Level	
		(m)	(m)	(m)	(dB(A))	
	Plant 1 - AC	521113.2	6958102.1	1.0	11.5	
	Plant 2 - AC0001	521115.1	6958108.8	1.0	1.7	
	Plant 3 - AC0002	521108.6	6958104.2	1.0	11.7	
	resident during loading/unloading van	521115.5	6958100.9	1.0	12.7	
	resident internal of community building (model as external source from measured reduction	521119.6	6958104.0	1.0	-12.7	
	resident internal of community building (model as external source from measured reduction0002	521117.1	6958108.7	1.0	-12.9	
	resident internal of community building (model as external source from measured reduction0003	521111.1	6958102.3	1.0	-3.1	
	Delivery Van	521115.5	6958095.8	1.0	-4.9	
	Delivery Van0002	521118.3	6958088.9	1.0	-4.7	

Total day-time emissions with 12 point noise sources in EMZ and RecOSZ as L10 noise emissions for passive recreation areas - POINT CALCULATIONS

Pen3D2000 V 1.10.0
Project Code:JB...
Project Description:Noise assessment of ...
File:C:\Users\User\Dropbox\JT2012 - 17-19 Honeygem Place, Birkdale\Daytime Noise emisison run and EZ TOTAL Emissions.PEN
File Description:Data file covering area

Friday 09 Oct, 2020 at 12:49:25

Environmental Calculations

All point and line sources included. Line source segmentation angle: 10 degrees. Calculations for specified meteorology.

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Noise level results are the logarithmic addition of all the noise sources
Noise level results incorporate the incoherent ground reflection algorithm
Meteorology :
Wind speed 0.0 (m/s) Wind direction 0 Mast height 10.0 (m)
Temperature 20.0 (C) Temperature Gradient 0.0 (C/100m) Humidity 50.0 (%)
Surface Roughness of terrain 0.023000000 (m) Zero plane offset 0.080000000 (m)

Receptor	X Posn	Y Posn		Noise Level
	(m)	(m)		(dB(A))
RL1	521139.9	6958117.6		36.8
Source	X Posn	Y Posn	Noise Level	
	(m)	(m)	(dB(A))	
Waste Win collection	521115.2	6958099.5	32.3	
Plant 1 - AC	521117.4	6958118.7	25.2	
Plant 2 - AC0001	521115.1	6958108.8	24.4	
Plant 3 - AC0002	521116.7	6958110.1	24.8	
resident in outdoor shed play area	521011.1	6958028.5	7.9	
resident in outdoor shed play area0002	521113.7	6958149.2	23.2	
resident during loading/unloading van	521115.5	6958100.9	25.1	
resident internal of community building (model as external source from measured reduction	521117.0	6958114.6	-3.9	
resident internal of community building (model as external source from measured reduction0002	521117.1	6958116.6	-3.8	
resident internal of community building (model as external source from measured reduction0003	521115.9	6958113.9	-4.0	
resident in outdoor shed play area	521125.4	6958135.0	26.2	
resident in outdoor shed play area0002	521124.5	6958133.3	26.5	
resident in outdoor shed play area	521019.4	6958050.0	8.8	
resident in outdoor shed play area0002	521102.0	6958135.3	22.9	
resident in outdoor shed play area	521025.1	6958054.6	9.1	
resident in outdoor shed play area0002	521015.0	6958035.7	8.2	
resident in outdoor shed play area	521111.5	6958144.3	23.5	
resident in outdoor shed play area	521104.9	6958137.7	23.2	
resident in outdoor shed play area	521075.3	6958096.2	19.4	
resident in outdoor shed play area	521076.9	6958101.7	8.0	
Delivery Van	521115.8	6958097.0	6.5	
Delivery Van	521114.1	6958091.3	-10.3	
Delivery Van0002	521117.0	6958089.6	3.9	
Delivery Van0002	521121.5	6958087.3	1.2	
Receptor	X Posn	Y Posn		Noise Level
	(m)	(m)		(dB(A))
RL2	521140.5	6958132.6		36.1
Source	X Posn	Y Posn	Noise Level	
	(m)	(m)	(dB(A))	
Waste Win collection	521115.2	6958099.5	30.5	
Plant 1 - AC	521117.4	6958118.7	24.2	
Plant 2 - AC0001	521115.1	6958108.8	8.0	
Plant 3 - AC0002	521116.7	6958110.1	7.7	
resident in outdoor shed play area	521011.1	6958028.5	1.3	
resident in outdoor shed play area0002	521113.7	6958149.2	24.8	
resident during loading/unloading van	521115.5	6958100.9	23.4	
resident internal of community building (model as external source from measured reduction	521117.0	6958114.6	-5.5	
resident internal of community building (model as external source from measured reduction0002	521117.1	6958116.6	-5.6	

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resident internal of community building (model as external source from measured reduction0003	521115.9	6958113.9	-5.4	
resident in outdoor shed play area	521125.4	6958135.0	28.4	
resident in outdoor shed play area0002	521124.5	6958133.3	28.3	
resident in outdoor shed play area	521019.4	6958050.0	2.3	
resident in outdoor shed play area0002	521102.0	6958135.3	23.3	
resident in outdoor shed play area	521025.1	6958054.6	2.7	
resident in outdoor shed play area0002	521015.0	6958035.7	1.6	
resident in outdoor shed play area	521111.5	6958144.3	24.8	
resident in outdoor shed play area	521104.9	6958137.7	23.8	
resident in outdoor shed play area	521075.3	6958096.2	7.6	
resident in outdoor shed play area	521076.9	6958101.7	8.0	
Delivery Van	521115.8	6958096.8	4.9	
Delivery Van0002	521117.9	6958089.2	3.3	
Delivery Van0002	521122.4	6958086.8	-4.1	
Receptor	X Posn	Y Posn		Noise Level
	(m)	(m)		(dB(A))
RL3	521174.2	6958178.5		34.5
Source	X Posn	Y Posn	Noise Level	
	(m)	(m)	(dB(A))	
Waste Win collection	521115.2	6958099.5	23.9	
Plant 1 - AC	521117.4	6958118.7	16.2	
Plant 2 - AC0001	521115.1	6958108.8	-0.4	
Plant 3 - AC0002	521116.7	6958110.1	-1.1	
resident in outdoor shed play area	521011.1	6958028.5	2.0	
resident in outdoor shed play area0002	521113.7	6958149.2	28.4	
resident during loading/unloading van	521115.5	6958100.9	16.6	
resident internal of community building (model as external source from measured reduction	521117.0	6958114.6	1.0	
resident internal of community building (model as external source from measured reduction0002	521117.1	6958116.6	-15.2	
resident internal of community building (model as external source from measured reduction0003	521115.9	6958113.9	-13.9	
resident in outdoor shed play area	521125.4	6958135.0	17.9	
resident in outdoor shed play area0002	521124.5	6958133.3	18.0	
resident in outdoor shed play area	521019.4	6958050.0	12.1	
resident in outdoor shed play area0002	521102.0	6958135.3	26.5	
resident in outdoor shed play area	521025.1	6958054.6	12.4	
resident in outdoor shed play area0002	521015.0	6958035.7	2.2	
resident in outdoor shed play area	521111.5	6958144.3	27.9	
resident in outdoor shed play area	521104.9	6958137.7	26.9	
resident in outdoor shed play area	521075.3	6958096.2	15.7	
resident in outdoor shed play area	521076.9	6958101.7	16.0	
Delivery Van	521115.7	6958096.5	-1.4	
Delivery Van0002	521118.6	6958088.8	-2.5	
Receptor	X Posn	Y Posn		Noise Level
	(m)	(m)		(dB(A))
RL4	521142.4	6958072.7		41.7
Source	X Posn	Y Posn	Noise Level	
	(m)	(m)	(dB(A))	
Waste Win collection	521115.2	6958099.5	39.8	
Plant 1 - AC	521117.4	6958118.7	3.0	
Plant 2 - AC0001	521115.1	6958108.8	4.9	
Plant 3 - AC0002	521116.7	6958110.1	29.5	
resident in outdoor shed play area	521011.1	6958028.5	22.0	
resident in outdoor shed play area0002	521113.7	6958149.2	18.9	

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resident during loading/unloading van	521115.5	6958100.9	33.0	
resident internal of community building (model as external source from measured reduction	521117.0	6958114.6	-9.8	
resident internal of community building (model as external source from measured reduction0002	521117.1	6958116.6	-9.6	
resident internal of community building (model as external source from measured reduction0003	521115.9	6958113.9	-10.1	
resident in outdoor shed play area	521125.4	6958135.0	19.4	
resident in outdoor shed play area0002	521124.5	6958133.3	19.7	
resident in outdoor shed play area	521019.4	6958050.0	22.9	
resident in outdoor shed play area0002	521102.0	6958135.3	6.8	
resident in outdoor shed play area	521025.1	6958054.6	23.4	
resident in outdoor shed play area0002	521015.0	6958035.7	22.4	
resident in outdoor shed play area	521111.5	6958144.3	19.2	
resident in outdoor shed play area	521104.9	6958137.7	7.0	
resident in outdoor shed play area	521075.3	6958096.2	28.0	
resident in outdoor shed play area	521076.9	6958101.7	27.9	
Delivery Van	521116.0	6958097.8	14.5	
Delivery Van	521114.6	6958092.8	12.0	
Delivery Van0002	521119.4	6958088.4	17.9	
Receptor	X Posn	Y Posn		Noise Level
	(m)	(m)		(dB(A))
RL5	521097.9	6958059.5		33.5
Source	X Posn	Y Posn	Noise Level	
	(m)	(m)	(dB(A))	
Waste Win collection	521115.2	6958099.5	21.8	
Plant 1 - AC	521117.4	6958118.7	1.5	
Plant 2 - AC0001	521115.1	6958108.8	11.4	
Plant 3 - AC0002	521116.7	6958110.1	11.2	
resident in outdoor shed play area	521011.1	6958028.5	25.7	
resident in outdoor shed play area0002	521113.7	6958149.2	6.3	
resident during loading/unloading van	521115.5	6958100.9	13.7	
resident internal of community building (model as external source from measured reduction	521117.0	6958114.6	-11.4	
resident internal of community building (model as external source from measured reduction0002	521117.1	6958116.6	-10.8	
resident internal of community building (model as external source from measured reduction0003	521115.9	6958113.9	-11.6	
resident in outdoor shed play area	521125.4	6958135.0	5.9	
resident in outdoor shed play area0002	521124.5	6958133.3	5.8	
resident in outdoor shed play area	521019.4	6958050.0	27.0	
resident in outdoor shed play area0002	521102.0	6958135.3	9.9	
resident in outdoor shed play area	521025.1	6958054.6	27.7	
resident in outdoor shed play area0002	521015.0	6958035.7	26.3	
resident in outdoor shed play area	521111.5	6958144.3	6.3	
resident in outdoor shed play area	521104.9	6958137.7	9.6	
resident in outdoor shed play area	521075.3	6958096.2	14.8	
resident in outdoor shed play area	521076.9	6958101.7	14.1	
Delivery Van	521115.4	6958095.6	-3.6	
Delivery Van0002	521116.8	6958089.7	14.1	
Delivery Van0002	521121.4	6958087.4	12.1	
Receptor	X Posn	Y Posn		Noise Level
	(m)	(m)		(dB(A))
RL8	521048.4	6958015.9		39.2
Source	X Posn	Y Posn	Noise	

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			Level	
	(m)	(m)	(dB(A))	
Waste Win collection	521115.2	6958099.5	16.1	
Plant 1 - AC	521117.4	6958118.7	-4.6	
Plant 2 - AC0001	521115.1	6958108.8	7.6	
Plant 3 - AC0002	521116.7	6958110.1	7.6	
resident in outdoor shed play area	521011.1	6958028.5	32.9	
resident in outdoor shed play area0002	521113.7	6958149.2	8.4	
resident during loading/unloading van	521115.5	6958100.9	8.4	
resident internal of community building (model as external source from measured reduction	521117.0	6958114.6	-17.5	
resident internal of community building (model as external source from measured reduction0002	521117.1	6958116.6	-16.7	
resident internal of community building (model as external source from measured reduction0003	521115.9	6958113.9	-17.9	
resident in outdoor shed play area	521125.4	6958135.0	1.5	
resident in outdoor shed play area0002	521124.5	6958133.3	1.3	
resident in outdoor shed play area	521019.4	6958050.0	31.8	
resident in outdoor shed play area0002	521102.0	6958135.3	22.5	
resident in outdoor shed play area	521025.1	6958054.6	31.8	
resident in outdoor shed play area0002	521015.0	6958035.7	33.0	
resident in outdoor shed play area	521111.5	6958144.3	8.6	
resident in outdoor shed play area	521104.9	6958137.7	22.3	
resident in outdoor shed play area	521075.3	6958096.2	26.4	
resident in outdoor shed play area	521076.9	6958101.7	25.9	
Delivery Van	521115.5	6958096.0	-10.0	
Delivery Van0002	521118.6	6958088.8	-10.4	
Receptor	X Posn	Y Posn		Noise Level
	(m)	(m)		(dB(A))
RL6	521066.9	6958069.3		41.0
Source	X Posn	Y Posn	Noise Level	
	(m)	(m)	(dB(A))	
Waste Win collection	521115.2	6958099.5	20.7	
Plant 1 - AC	521117.4	6958118.7	0.5	
Plant 2 - AC0001	521115.1	6958108.8	10.9	
Plant 3 - AC0002	521116.7	6958110.1	10.6	
resident in outdoor shed play area	521011.1	6958028.5	28.2	
resident in outdoor shed play area0002	521113.7	6958149.2	25.7	
resident during loading/unloading van	521115.5	6958100.9	12.7	
resident internal of community building (model as external source from measured reduction	521117.0	6958114.6	-12.1	
resident internal of community building (model as external source from measured reduction0002	521117.1	6958116.6	-11.2	
resident internal of community building (model as external source from measured reduction0003	521115.9	6958113.9	-12.4	
resident in outdoor shed play area	521125.4	6958135.0	5.8	
resident in outdoor shed play area0002	521124.5	6958133.3	5.7	
resident in outdoor shed play area	521019.4	6958050.0	30.7	
resident in outdoor shed play area0002	521102.0	6958135.3	27.5	
resident in outdoor shed play area	521025.1	6958054.6	31.9	
resident in outdoor shed play area0002	521015.0	6958035.7	29.2	
resident in outdoor shed play area	521111.5	6958144.3	26.2	
resident in outdoor shed play area	521104.9	6958137.7	27.1	
resident in outdoor shed play area	521075.3	6958096.2	35.6	
resident in outdoor shed play area	521076.9	6958101.7	34.1	
Delivery Van	521115.5	6958095.9	-4.9	
Delivery Van0002	521118.3	6958088.9	-5.4	

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Receptor	X Posn	Y Posn		Noise Level
	(m)	(m)		(dB(A))
RL10	521102.1	6958028.3		38.0
Source	X Posn	Y Posn	Noise Level	
	(m)	(m)	(dB(A))	
Waste Win collection	521115.2	6958099.5	34.5	
Plant 1 - AC	521117.4	6958118.7	-1.9	
Plant 2 - AC0001	521115.1	6958108.8	24.6	
Plant 3 - AC0002	521116.7	6958110.1	24.5	
resident in outdoor shed play area	521011.1	6958028.5	25.8	
resident in outdoor shed play area0002	521113.7	6958149.2	4.2	
resident during loading/unloading van	521115.5	6958100.9	27.6	
resident internal of community building (model as external source from measured reduction	521117.0	6958114.6	-15.0	
resident internal of community building (model as external source from measured reduction0002	521117.1	6958116.6	-14.3	
resident internal of community building (model as external source from measured reduction0003	521115.9	6958113.9	-15.3	
resident in outdoor shed play area	521125.4	6958135.0	24.2	
resident in outdoor shed play area0002	521124.5	6958133.3	24.3	
resident in outdoor shed play area	521019.4	6958050.0	26.4	
resident in outdoor shed play area0002	521102.0	6958135.3	10.1	
resident in outdoor shed play area	521025.1	6958054.6	26.8	
resident in outdoor shed play area0002	521015.0	6958035.7	26.2	
resident in outdoor shed play area	521111.5	6958144.3	4.0	
resident in outdoor shed play area	521104.9	6958137.7	9.9	
resident in outdoor shed play area	521075.3	6958096.2	11.1	
resident in outdoor shed play area	521076.9	6958101.7	11.4	
Delivery Van	521115.5	6958095.9	10.9	
Delivery Van0002	521118.7	6958088.8	11.5	
Receptor	X Posn	Y Posn		Noise Level
	(m)	(m)		(dB(A))
RL9	521078.5	6957999.0		34.7
Source	X Posn	Y Posn	Noise Level	
	(m)	(m)	(dB(A))	
Waste Win collection	521115.2	6958099.5	15.9	
Plant 1 - AC	521117.4	6958118.7	-4.8	
Plant 2 - AC0001	521115.1	6958108.8	7.4	
Plant 3 - AC0002	521116.7	6958110.1	7.4	
resident in outdoor shed play area	521011.1	6958028.5	27.7	
resident in outdoor shed play area0002	521113.7	6958149.2	2.2	
resident during loading/unloading van	521115.5	6958100.9	8.2	
resident internal of community building (model as external source from measured reduction	521117.0	6958114.6	-17.9	
resident internal of community building (model as external source from measured reduction0002	521117.1	6958116.6	-17.1	
resident internal of community building (model as external source from measured reduction0003	521115.9	6958113.9	-18.2	
resident in outdoor shed play area	521125.4	6958135.0	1.0	
resident in outdoor shed play area0002	521124.5	6958133.3	0.8	
resident in outdoor shed play area	521019.4	6958050.0	27.2	
resident in outdoor shed play area0002	521102.0	6958135.3	8.4	
resident in outdoor shed play area	521025.1	6958054.6	27.3	
resident in outdoor shed play area0002	521015.0	6958035.7	27.7	

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resident in outdoor shed play area	521111.5	6958144.3	8.2	
resident in outdoor shed play area	521104.9	6958137.7	8.4	
resident in outdoor shed play area	521075.3	6958096.2	25.2	
resident in outdoor shed play area	521076.9	6958101.7	24.7	
Delivery Van	521115.5	6958096.0	7.3	
Delivery Van0002	521118.6	6958088.8	7.6	
Receptor	X Posn	Y Posn		Noise Level
	(m)	(m)		(dB(A))
RL7	521052.3	6958036.4		40.6
Source	X Posn	Y Posn	Noise Level	
	(m)	(m)	(dB(A))	
Waste Win collection	521115.2	6958099.5	17.7	
Plant 1 - AC	521117.4	6958118.7	-3.1	
Plant 2 - AC0001	521115.1	6958108.8	9.0	
Plant 3 - AC0002	521116.7	6958110.1	9.0	
resident in outdoor shed play area	521011.1	6958028.5	32.4	
resident in outdoor shed play area0002	521113.7	6958149.2	22.7	
resident during loading/unloading van	521115.5	6958100.9	9.9	
resident internal of community building (model as external source from measured reduction	521117.0	6958114.6	-15.9	
resident internal of community building (model as external source from measured reduction0002	521117.1	6958116.6	-15.0	
resident internal of community building (model as external source from measured reduction0003	521115.9	6958113.9	-16.3	
resident in outdoor shed play area	521125.4	6958135.0	2.9	
resident in outdoor shed play area0002	521124.5	6958133.3	2.7	
resident in outdoor shed play area	521019.4	6958050.0	33.7	
resident in outdoor shed play area0002	521102.0	6958135.3	24.0	
resident in outdoor shed play area	521025.1	6958054.6	34.4	
resident in outdoor shed play area0002	521015.0	6958035.7	33.3	
resident in outdoor shed play area	521111.5	6958144.3	23.1	
resident in outdoor shed play area	521104.9	6958137.7	23.8	
resident in outdoor shed play area	521075.3	6958096.2	28.8	
resident in outdoor shed play area	521076.9	6958101.7	28.1	
Delivery Van	521115.5	6958096.0	-8.3	
Delivery Van0002	521118.5	6958088.9	-9.4	

ATTACHMENT 6 (AS AMENDED)- DEVELOPMENT CONDITIONS

ASSESSMENT MANAGER CONDITIONS		TIMING
1.	Comply with all conditions of this approval, at no cost to Council, at the timing periods specified in the right-hand column. Where the column indicates that the condition is an ongoing condition, that condition must be complied with for the life of the development.	On-going.
Approved plans and documents		
2.	Undertake the development in accordance with the approved plans and documents referred to in Table 1, subject to the conditions of this approval and any notations by Council on the plans.	Prior to the use commencing and ongoing.

Plan/document title	Reference number	Prepared by	Plan/doc. date
Site Plan (amended in red by Council)	Sheet 1 of 4 MCU 4663 A-1-A	East Coast Surveys (Aust) Pty Ltd	16/09/2019
First and Ground Floor Plan (amended in red by Council)	Sheet 2 of 4	East Coast Surveys (Aust) Pty Ltd	16/09/2019
Elevation Plan (amended in red by Council)	Sheet 3 of 4	East Coast Surveys (Aust) Pty Ltd	16/09/2019
Parking Plan (amended in red by Council)	Sheet 4 of 4	East Coast Surveys (Aust) Pty Ltd	23/10/2020
Material change of use-community residence - noise impact assessment	Revision E	JT Environmental Pty Ltd	09/10/2020

Table 1: Approved plans and documents

3.	Operate the residential care facility and associated activities only from the designated building envelope area identified for the use on the approved plans. All equipment and materials used for the residential care facility must be located within this area.	Ongoing.
4.	Restrict the residential care facility and associated activities to not operate within the existing residence onsite as identified on the approved plans.	Ongoing.

ATTACHMENT 6 (AS AMENDED)- DEVELOPMENT CONDITIONS

Land dedication and design	
5. Locate, design and install outdoor lighting, where required, to minimise the potential for light spillage to cause nuisance to neighbours.	Prior to the use commencing and ongoing.
Employees and patients	
6. Operate the residential care facility so that a maximum of two (2) support workers are onsite at any one time.	Ongoing.
7. Operate the residential care facility so that a maximum of four (4) bedrooms are utilised for the business and a maximum of six (6) persons who require assistance or support with daily living needs are on the premises at any given time.	Ongoing.
Parking	
8. Provide and operate the approved use with a minimum of four (4) car parks contained wholly within the site in accordance with approved parking plans. The minimum number of car parks must include: • one (1) space dedicated for a bus clear of other vehicle movements; • two (2) spaces dedicated for staff; and • one (1) spaces for visitors. Access to car parking spaces, bicycle spaces, bin bays, vehicle loading and manoeuvring areas and driveways must remain unobstructed and available during the approved hours of operation. Loading and unloading operations must be conducted wholly within the site.	Prior to the use commencing and ongoing.
Utilities	
9. Pay the cost of any alterations to existing public utility mains, services or installations due to building and works in relation to the proposed development, or any works required by conditions of this approval. Any cost incurred by Council must be paid at the time the works occur in accordance with the terms of any cost estimate provided to perform the works, or prior to plumbing final or the use commencing, whichever is the sooner.	At the time of works occurring.

ATTACHMENT 6 (AS AMENDED)- DEVELOPMENT CONDITIONS

Stormwater management	
10. Convey roof water and surface water to the existing lawful point of discharge in accordance with the City Plan Planning Scheme Policy 2 – Infrastructure Works.	Ongoing.
11. Manage stormwater discharge from the site in accordance with the City Plan Planning Scheme Policy 2 – Infrastructure Works, so as to not cause an actionable nuisance to adjoining properties.	Ongoing.
Easements	
12. Grant easements for the following and submit the relevant easement documentation to Council for approval. Once approved by Council, register the easements on the property title. a) Access purposes 1m wide to and around any sewer maintenance holes or structures in favour of Redland City Council and its agents.	Prior to the use commencing.
Acoustic requirements	
13. Construct a 2.2m high acoustic barrier along the boundary (eastern edge) of the shed play area as follows: i. 15m long perpendicular to the shed play area. ii. 2.2m high relevant to the finished floor level of the shed play area. iii. To be made of a weather resistant material or prepared and finished to be weather resistant. iv. Continuous and gap free – maximum 2% leakage or gaps for overland flow. v. Be constructed of a material to achieve a minimum 10.5kg/m2. Guidance on the design of the barriers is provided in the approved noise assessment report.	Prior to the use commencing and ongoing.
	On-going.

ATTACHMENT 6 (AS AMENDED)- DEVELOPMENT CONDITIONS

14.	The shed play area and any external play areas are only to be utilised between the hours of 7am to 6pm.	

ADDITIONAL APPROVALS

There are no further **development permits** necessary to allow the development to be carried out.

Please be aware that further approvals, other than a development permit, may still be required for your development. This includes, but is not limited to, the following:

- Plumbing and drainage works.

ASSESSMENT MANAGER ADVICE

- **COVID-19 Extension to currency period**
  The currency period for this approval is subject to any further extension of time declared by the State government for the 'COVID-19 emergency applicable event' pursuant to s275E of the Planning Act 2016

- **Infrastructure charges**
  Infrastructure charges apply to the development in accordance with the Adopted Infrastructure Charges Resolution (No. 2.3) 2016 levied by way of an Infrastructure Charges Notice. The infrastructure charges are contained in the attached Redland City Council Infrastructure Charges Notice.

- **Live connections**
  Redland Water is responsible for all live water and wastewater connections. Contact *must* be made with Redland Water to arrange live works associated with the development.

  Further information can be obtained from Redland Water on 07 3829 8999.

- **Coastal processes and sea level rise**
  Please be aware that development approvals issued by Redland City Council are based upon current lawful planning provisions which do not necessarily respond immediately to new and developing information on coastal processes and sea level rise. Independent advice about this issue should be sought.

ATTACHMENT 6 (AS AMENDED)- DEVELOPMENT CONDITIONS

- **Hours of construction**
  Please be aware that you are required to comply with the *Environmental Protection Act* in regards to noise standards and hours of construction.

- **Services installation**
  It is recommended that where the installation of services and infrastructure will impact on the location of existing vegetation identified for retention, an experienced and qualified arborist that is a member of the Australian Arborist Association or equivalent association, be commissioned to provide impact reports and on site supervision for these works.

- **Fire ants**
  Areas within Redland City have been identified as having an infestation of the Red Imported Fire Ant (RIFA). Biosecurity Queensland should be notified on 13 25 23 of proposed development(s) occurring in the Fire Ant Restricted Area before earthworks commence. It should be noted that works involving movements of soil associated with earthworks may be subject to movement controls and failure to obtain necessary approvals from Biosecurity Queensland is an offence. It is a legal obligation to report any sighting or suspicion of fire ants within 24 hours to Biosecurity Queensland on 13 25 23. The Fire Ant Restricted Area as well as general information can be viewed on the Department of Agriculture and Fisheries (DAF) website www.daf.qld.gov.au/fireants

- **Cultural heritage**
  The *Aboriginal Cultural Heritage Act 2003* requires anyone who carries out a land use activity to exercise a duty of care. Further information on cultural heritage duty of care is available on the Department of Aboriginal and Torres Strait Islander Partnerships (DATSIP) website:

  https://www.datsip.qld.gov.au/resources/datsima/people-communities/cultural-heritage/cultural-heritage-duty-care.pdf

  The DATSIP has established a register and database of recorded cultural heritage matters, which is also available on the Department's website:

  https://www.datsip.qld.gov.au/people-communities/aboriginal-torres-strait-islander-cultural-heritage/cultural-heritage-search-request

  Quandamooka Yoolooburrabee Aboriginal Corporation (QYAC) is the registered cultural heritage body in the Redland City local government area. It is recommended you consult with QYAC in relation to aboriginal and cultural heritage matters prior to the commencement of works on site. QYAC can be contacted on 07 3415 2816 or admin@QYAC.net.au

ATTACHMENT 6 (AS AMENDED)- DEVELOPMENT CONDITIONS

Should any aboriginal, archaeological or historic sites, items or places be identified, located or exposed during construction or operation of the development, the *Aboriginal and Cultural Heritage Act 2003* requires all activities to cease. Please contact DATSIP for further information.

- **Fauna protection**
  It is recommended an accurate inspection of all potential wildlife habitats be undertaken prior to removal of any vegetation on site. Wildlife habitat includes trees (canopies and lower trunk) whether living or dead, other living vegetation, piles of discarded vegetation, boulders, disturbed ground surfaces, etc. It is recommended that you seek advice from the Queensland Parks and Wildlife Service if evidence of wildlife is found.

- ***Environment Protection and Biodiversity Conservation Act***
  Under the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act* (the EPBC Act), a person must not take an action that is likely to have a significant impact on a matter of national environmental significance without Commonwealth approval. Please be aware that the listing of the Koala as **vulnerable** under this Act may affect your proposal. Penalties for taking such an action without approval are significant. If you think your proposal may have a significant impact on a matter of national environmental significance, or if you are unsure, please contact Environment Australia on 1800 803 772. Further information is available from Environment Australia's website at www.ea.gov.au/epbc

  Please note that Commonwealth approval under the EPBC Act is independent of, and will not affect, your application to Council.

NOTICE ABOUT DECISION – STATEMENT OF REASONS

Assessment Benchmarks:	The proposed development was assessed against the following assessment benchmarks: • City Plan (version 3): o environmental management zone code; o recreation and open space zone code; o healthy waters code; o infrastructure works code; o landscape code; o environmental significance overlay code;

ATTACHMENT 6 (AS AMENDED)- DEVELOPMENT CONDITIONS

	○ flood and storm tide hazard overlay code; and ○ transport, servicing, access and parking code.
Matters Prescribed by a Regulation	The following regulations/policies were regarded in the assessment of the application: • State Planning Policy 2017 (SPP); • SEQ Regional Plan; and • Planning Regulation, Schedule 10, Part 10 Koala Habitat.
Relevant Matters	The following relevant matter was considered in the assessment of the application: • Suitability of the use where exemption apply under Planning Regulation 2017.

The key issues identified in the assessment were:

- suitability of the use;
- acoustic impact;
- environmental impact;
- car parking; and
- traffic generation.

Issue	Performance assessment
suitability of use	The development is conditioned to be of a small scale and low intensity, which maintains the natural character of the site and is compatible with nearby uses. Furthermore the use relies on relevant matters including exemptions under the Planning Regulation 2017 to overcome the non-compliance where a community residence would be exemption from being made assessable development. Therefore relevant matters and development conditions are sufficient to justify the use within the environmental management zone.
acoustic impact	Development minimises impacts on the amenity of surrounding land in a residential zone, having regard to noise emissions by restricting audible activities to non-sensitive hours of operation and erecting an acoustic barrier adjoining play areas.
environmental impact	The proposed development is conditioned to be contained within the existing development footprint and building

ATTACHMENT 6 (AS AMENDED)- DEVELOPMENT CONDITIONS

	envelope including parking area and associated structures. As a result, development is considered to avoid, minimise and mitigate significant impacts on matters of national, state and local environmental significance through the retention of the building envelope, covenant and local laws protection of vegetation is considered to comply.
car parking	Onsite car parking is clearly defined, safe and easily accessible and accommodates a sufficient number of vehicles considering the use. It is considered reasonable and relevant that conditions are applied to retain all parking associated with the development to be onsite.
traffic generation	The proposed development is considered to maintain the safe and efficient operation of the local street (Honeygem Place) with conditions required to limit the scale and intensity, retain car parking onsite and restrict the frequency and duration of visitation to ensure no adverse impact on a local street.

The development application is approved as it complies with all of the relevant assessment benchmarks, or can be made to comply through the imposition of conditions on the approval.

Matters Raised in Submissions	
Matters Raised	**Description of how matters were dealt with in reaching the decision**
Acoustic impact on surrounding residential area	A noise impact assessment demonstrates noise associated with the use would be minimised through restricting outdoor operations to non-sensitive hours and providing an acoustic barrier adjoining the play area.
Environmental impacts associated with the development	The proposed development is restricted to the existing development footprint and will not incur removal of native vegetation. Where a building envelope, covenant and local law conditions protect the site from impact on environment significance.
Traffic impacts associated with the	The intensity and scale of the development is limited to two (2) employees and six (6) patient's onsite at any given time. Therefore

ATTACHMENT 6 (AS AMENDED)- DEVELOPMENT CONDITIONS

proposed use namely; increased traffic generated from the proposed use; traffic impacting local road network from car parking; and dangerous crossover	onsite car parking areas are considered sufficient to retain onsite. Visitors are restricted to the weekend during non-sensitive hours and an average of no more than 6 visitors per week. Traffic generation associated with the use is anticipated to be consistent with the residential area. The relevant vehicle crossover is considered to have adequate sight distances where 45m is required as per the Australian Standard 2890.1:2004 which is depicted below in a 50km/hour speed limit.

DEVELOPMENT APPROVAL NOTATIONS/AMENDMENTS

THIS SECTION IS NOT TO BE INSERTED INTO THE DECISION NOTICE

Notation/Amendments Summary	YES	NO
Zone changes proposed/recommended	☐	☒
Overlay amendments proposed/recommended	☐	☒
Covenants approved	☐	☒
Easements approved	☐	☒
Variation Approval	☐	☒
Superseded Planning Scheme Approval	☐	☒
Conflict with Planning Scheme approved	☐	☒
Flood study submitted	☐	☒
Land to be dedicated	☐	☒
Where applicable *('yes' has been checked)* further information can be found below.		

14.5 RAL20/0020 - 2 INTO 52 LOTS - SUBDIVISION PLUS ROAD, VENDOR LOT, AND OPEN SPACE LOT

Objective Reference: A5018981

Authorising Officer: Graham Simpson, Acting General Manager Community and Customer Services

Responsible Officer: David Jeanes, Group Manager City Planning & Assessment

Report Author: Brett Dibden, Planning Officer

Attachments:

1. Conditions & Statement of Reasons for RAL20_0020 ⇩
2. Locality Plan for RAL20_0020 ⇩
3. Zone Plan for RAL20_0020 ⇩
4. Subdivision Proposal Plan for RAL20_0020 ⇩
5. Erosion Prone Area Mapping for RAL20_0020 ⇩
6. Site Based Stormwater Management Plan for RAL20_0020 ⇩
7. Landscape Rehabilitation Plan for RAL20_0020 ⇩
8. Tree Retention Plan for RAL20_0020 ⇩
9. Cycleway and Trunk Sewer Plan for RAL20_0020 ⇩

PURPOSE

This application is referred to the General Meeting of Council for determination at the request of the Divisional Councillor.

BACKGROUND

Council has received an application on land at 124-134 Thornlands Road, Thornlands and part of 66-74 George Thorn Drive, Thornlands seeking a development permit for reconfiguring a lot for 2 into 52 lots plus road, retention lot and open space.

It is intended that the open space lot be dedicated to Council for drainage and open space purposes.

The owner of the property is Mr AC Daley and Mrs GM Daley (124-134 Thornlands Road) and Council (66-74 George Thorn Drive) and the applicant is the owner C/- JFP Urban Consultants.

Urgency

The application should be decided by 18 November 2020 in accordance with the *Planning Act 2016* (PAct). Should the decision not be made by that date, the application may be deemed approved.

Assessment framework issues addressed in report

The assessment of the application has occurred in line with the assessment framework outlined in the PAct. The key issues identified in the assessment, which have been address in the report, are:

- zoning
- lot layout and design
- erosion prone area
- environmental values
- flood prone land
- bushfire hazard

- dam dewatering
- stormwater management
- access and parking/road design/frontage works
- utility infrastructure
- waste management
- earthworks
- sediment and erosion control.

It is recommended that the application be granted a development permit subject to conditions.

ISSUES

Minor change

The original application involved 47 lots. Amended plans were provided in response to Council's information request increasing the number of lots to 53 (inclusive of the retention lot), which was achieved through internal reconfiguration without changing the overall development footprint. Part of Lot 900 on SP220340 has also been included in the development to facilitate the required extension of George Thorn Drive at the north-western boundary of the site, with owner's consent (Council) provided.

The changes are considered to be minor under Schedule 2 of the PAct. In this instance the change would not cause:

a) the inclusion of prohibited development in the application; or

b) referral to a referral agency if there were no referral agencies for the development application; or

c) referral to extra referral agencies; or

d) a referral agency, in assessing the application under section 55(2), to assess the application against, or have regard to, a matter, other than a matter the referral agency must have assessed the application against, or had regard to, when the application was made; or

e) public notification if public notification was not required for the development application.

Therefore, there is no effect on the assessment stages identified in accordance within the PAct and the development assessment rules.

Proposal

The application is for a two (2) into 52 lots reconfiguration plus road, vendor retention lot (2 ha) and open space lot (8.63 ha). The development will result in the creation of 52 new residential lots ranging in size from 400m² to 766m^2, each with frontages ≥10m (refer Attachment 4), in addition to the 2.068ha (vendor) retention lot.

To construct the George Thorn Drive extension, minor road works will be required in part of Council owned Lot 900 on SP220340.

The George Thorn Drive extension provides an esplanade treatment with the new lots to the west of this road and the (vendor) retention lot located to the east. The existing dwelling will be retained on the balance lot and a new access provided from the new esplanade road. The farm dams located on the southern part of the balance lot will be filled in and the land revegetated.

The northern dam will be re-profiled to provide a new bio-retention basin to manage stormwater from the development. The proposed open space lot is proposed to be revegetated where disturbed as a result of the proposed development.

Lots will gain access from the George Thorn Drive extension and form a new loop road connecting George Thorn Drive to Thornlands Road. Lots 9 and 10 are internal lots, which will have driveway access from the loop road.

Site and locality

The site has a total area of 144,300m², excluding the land required for road works on the Council-owned lot. The majority of the site is grassed except for lower laying land which is sparsely vegetated with native trees and shrubs, which become mangroves where the site adjoins Moreton Bay. The site is currently improved with a dwelling house and several sheds, which will be retained as part of the vendor retention lot (refer Attachment 4).

The site falls from approximately 10m Australian height datum (AHD) at the south-western corner to less than 2m AHD at the site's external boundaries with Moreton Bay.

The site is located approximately 1.6km east of Cleveland Redland Bay Road and 3.8km north of the Victoria Point Shopping Centre. The subject site has a mixed zone consisting of low density residential (LDR) zoned land in the flat higher part of the site to the west, and recreation and open space (ROS) zoned land in the lower part of the site to the north and east. The surrounding land to the south and west is also zoned LDR except for a strip of ROS zoned land providing a continuous buffer to Moreton Bay.

Planning History

Assessment framework

The application has been made in accordance with the PAct Development Assessment Rules and constitutes a code assessable application subject to table 5.5.1 for reconfiguring a lot under the City Plan.

In accordance with section 45 of thePAct:

> *'(3) A **code assessment** is an assessment that must be carried out only—*
>
> *(a) against the assessment benchmarks in a categorising instrument for the development; and*
>
> *(b) having regard to any matters prescribed by regulation for this paragraph.'*

Section 26 of the Planning Regulation 2017 states:

> *'(1) For section 45(3)(a) of the Act, the code assessment must be carried out against the assessment benchmarks for the development stated in schedules 9 and 10.*
>
> *(2) Also, if the prescribed assessment manager is the local government, the code assessment must be carried out against the following assessment benchmarks—*
>
> *(a) the assessment benchmarks stated in—*
>
> *(i) the regional plan for a region, to the extent the regional plan is not identified in the planning scheme as being appropriately integrated in the planning scheme; and*

(ii) the State Planning Policy, part E, to the extent part E is not identified in the planning scheme as being appropriately integrated in the planning scheme; and

(iii) any temporary State planning policy applying to the premises;

(b) if the local government is an infrastructure provider—the local government's LGIP.

(3) However, an assessment manager may, in assessing development requiring code assessment, consider an assessment benchmark only to the extent the assessment benchmark is relevant to the development'.

(6) Subsections (7) and (8) apply if an assessment manager is, under subsection (3) or (5), assessing a development application against or having regard to—

(a) a statutory instrument; or

(b) another document applied, adopted or incorporated (with or without changes) in a statutory instrument.

(7) The assessment manager must assess the development application against or having regard to the statutory instrument, or other document, as in effect when the development application was properly made.

Pursuant to section 45(5) of thePAct, the application was assessed against the following applicable assessment benchmarks.

Assessment Benchmarks:	City Plan Version 4.0 • low density residential (LDR) zone code • recreation and open space (ROS) zone code • healthy waters code • infrastructure works code • landscape code • transport, servicing, access and parking code • bushfire hazard overlay • coastal protection (erosion prone areas) overlay • environmental significance overlay • flood and storm tide hazard overlay • waterway corridors and wetlands overlay

Pursuant to section 45(5) of thePAct, Council had regard for the following matters in its assessment of the application.

Matters prescribed by Regulation:	• State Planning Policy 2017 • South East Queensland Regional Plan 2017

Decision making framework

Section 60 of the PAct states that:

'(2) To the extent the application involves development that requires code assessment, and subject to section 62, the assessment manager, after carrying out the assessment—

(a) must decide to approve the application to the extent the development complies with all of the assessment benchmarks for the development; and

(b) may decide to approve the application even if the development does not comply with some of the assessment benchmarks; and

Examples—

1 An assessment manager may approve an application for development that does not comply with some of the benchmarks if the decision resolves a conflict between the benchmarks.

2 An assessment manager may approve an application for development that does not comply with some of the benchmarks if the decision resolves a conflict between the benchmarks and a referral agency's response.

(c) may impose development conditions on an approval; and

(d) may, to the extent the development does not comply with some or all the assessment benchmarks, decide to refuse the application only if compliance cannot be achieved by imposing development conditions.

Example of a development condition—

A development condition that affects the way the development is carried out, or the management of uses or works that are the natural and ordinary consequence of the development, but does not have the effect of changing the type of development applied for.'

(5) The assessment manager may give a preliminary approval for all or part of the development application, even though the development application sought a development permit.

(6) If an assessment manager approves only part of a development application, the rest is taken to be refused.

Application assessment

Zoning

The subject site includes a split zoning, with the proposed residential lots contained wholly within the LDR zone, and with the esplanade road partly located in the ROS zone. The retention lot containing the existing dwelling is also located completely within the ROS zone. The purpose of the ROS zone is *"to provide for a range of sporting, recreation, leisure, cultural, leisure, cultural and educational activities and to protect ecological, drainage and flood related functions of the open space areas."*

The proposed esplanade road is located partly in the ROS zone, with the zone boundary aligning with zone mapping under the superseded Redlands planning scheme, which had specific zoning for road infrastructure. Relocating the road to be wholly located within the LDR zone would result in the road not aligning with George Thorn Drive to the north. The southern part of the road aligns with the existing dwelling access to Thornlands Road, with the balance located in a cleared part of the site, except for the northern dam which is intended to be re-profiled for stormwater purposes. The road will also provide storm tide immunity for the northern corner of the development. As such, the road will not have any significant impact on ecological, drainage or flood related functions within the ROS zone.

The Moreton Bay Cycleway (MBC) extends to the south-eastern and north-western boundaries of the site, and would provide the missing link in this trunk network if the proposed esplanade is constructed. The MBC will be located on the outside of this road and provides the only recreational value for the ROS zone within the subject site, given a recreational park is located nearby at 46-64 George Thorn Drive.

The primary function for the ROS zoned land on the subject site is to provide drainage and flood related functions, while providing a buffer to the coastal strip, which provides an ecological function in the form of habitat and movement corridor. Although a lot is proposed within the ROS zone, it is located in a cleared part of the site that is outside of the area required for drainage, flood storage and habitat. Also, the lot will contain the existing dwelling and outbuildings, and is an existing lawful use protected under section 260 of thePAct. This use is located in a cleared part of the site and would therefore not introduce any additional amenity or environmental impacts. It is considered that the purpose of the zone can be achieved despite the location of the retention lot within the ROS zone.

Lot layout and design

Performance outcome PO19 of the LDR zone code relevantly states:

> *'Reconfiguration maintains the low density character of the street. Lots less than 400m^2 are not created.'*

The lots layout includes 15 lots with a size between 400m² and 449m²; 32 lots between 450m² and 599m²; 5 lots of 600m² or more; and the 2.095 ha retention lot. The larger lots are proposed facing the esplanade road and the bay, providing an opportunity for larger lots with bay views while maintaining a low density character.

PO1 of the reconfiguration code relevantly states:

> *'Reconfiguration results in the creation of lots that:*
>
> 1. *are of a size and dimensions which facilitate the uses, character and other outcomes intended for the zone or precinct;*
> 2. *have practical, generally regular shapes; and*
> 3. *have a width and depth that can easily accommodate the intended end use, associated infrastructure, on-site open space and vehicular access.'*

In addition to meeting the minimum size criteria in PO1 of the LDR zone code, each lot has a width of 10m or more, with lots generally of a regular shape and of sufficient depth to accommodate future dwellings, private open space and vehicular access. Lots 9 and 10 are internal lots that will be accessed via an easement benefiting lot 9, which includes appropriate truncations to facilitate vehicular access, and providing a larger lots size (588m² and 766m²) to ensure dwellings can be accommodated outside of the access (refer Figure 1).

Accordingly, the lot layout and design is considered to comply with PO1 of the ROS and reconfiguration codes.

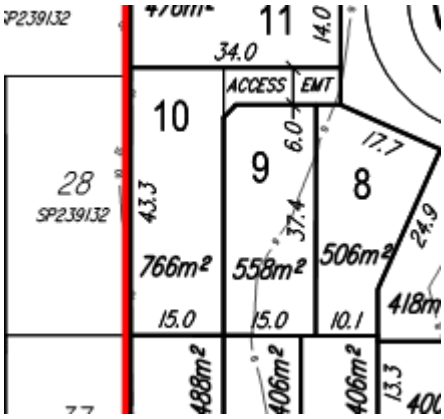

Figure 1 – Internal lot design

Erosion prone area

Overall outcome 8.2.3.2(2)(d) and performance outcome PO4 of the Coastal protection (erosion prone areas) overlay code requires that development does not increase the number of lots within the erosion prone area. Lots 38-43 are partly located in the erosion prone area as shown in the City Plan mapping (refer Figure 2).

The overlay mapping is statutory and may only be changed through a planning scheme amendment, and may be updated to reflect mapping updates by the State where applicable to the State Planning Policy (SPP) 2017.

In accordance with Section 60(2)(b) of the PAct, Council may decide to approve the development even if the development does not comply with some of the assessment benchmarks.

The applicant has submitted a report with a revised erosion area located further seaward. Council's engineers have reviewed the report and agree with the findings that the erosion risks for the site are less than what state mapping indicates. The State mapping is high level in nature and the applicant has demonstrated through ground truthing that the detailed mapping using site specific data is marginally less and all infrastructure is outside the mapping. The applicant has also provided advice from the State endorsing the mapping provided by the applicant's consultant engineer BMT as consistent with the latest digital elevation modelling, and confirming the State will update their mapping accordingly, in the next round of amendments.

The BMT report finds that erosion prone areas (EPA) apply to land subject to the highest astronomical tide (HAT), and that the EPA is defined by whichever of the following provides the greatest width:

1) 40m buffer from present day HAT contour;
2) calculated erosion distance for open coast areas; and
3) permanent inundation due to sea-level rise in 2100 (defined by present day HAT + 0.8).

The above information is presented in Figure 4 (below), which was determined using site specific survey data and the latest digital elevation data provided by the State.

Although the State have not updated their mapping to reflect the above changes prior to deciding the application (refer Figure 3 below), the written endorsement by the relevant State entity (Department of Environment and Science) clearly indicates the State's intention to update its erosion prone area mapping consistent with the BMT mapping.

Therefore, this aspect of the development can be supported despite the conflict with overall outcome 8.2.3.2(2)(d) and performance outcome PO4 of the coastal protection (erosion prone areas) overlay, subject to Section 60(2)(b) of thePAct. A note will be included on any approval noting the conflict with City Plan, should the development be approved.

Note some plans and mapping in this report are to demonstrate design or spatial features and hard to read text may be viewed in the application documents.

Figures 2 & 3 – City Plan & SPP erosion prone mapping

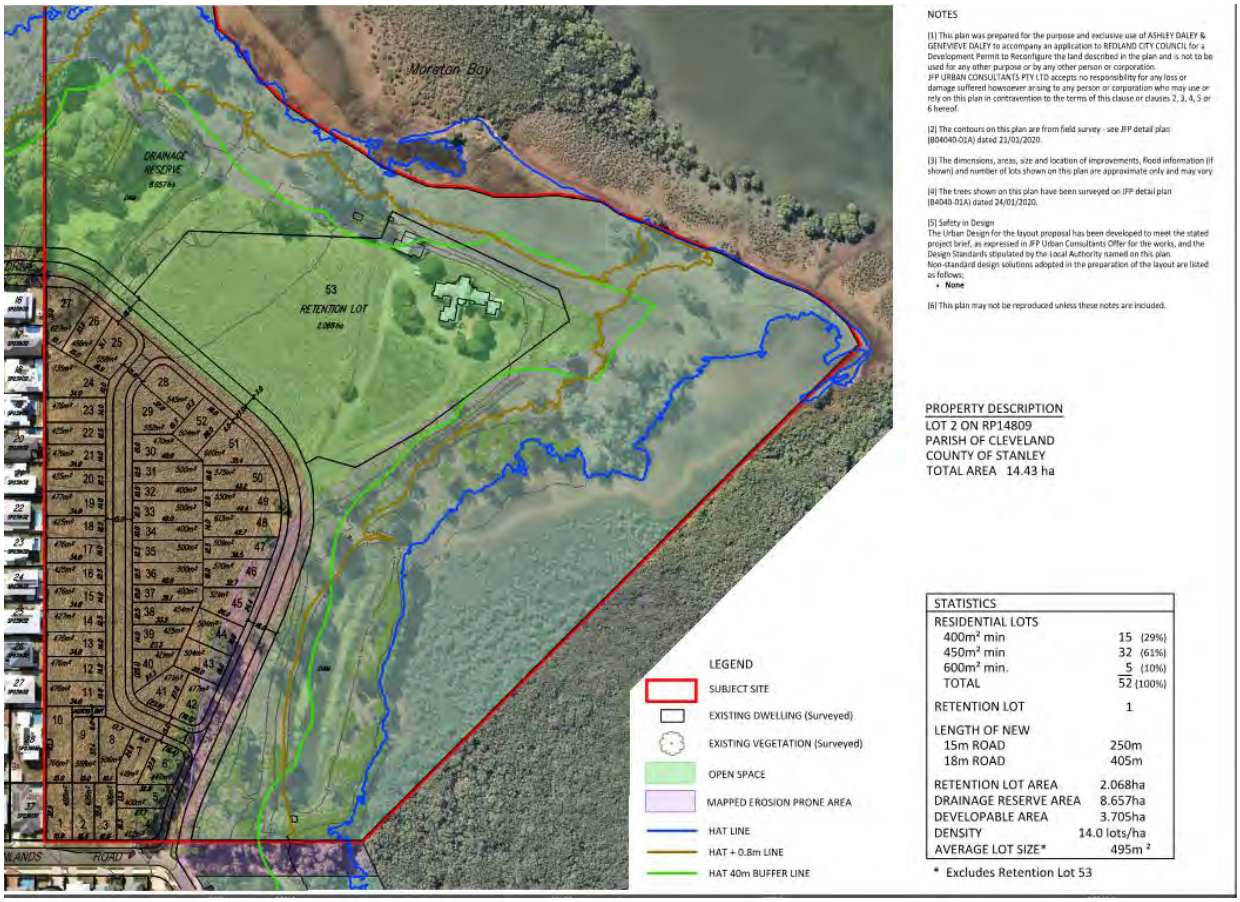

Figure 4 – BMT refined erosion prone area

Environmental values

State Planning Policy (SPP) 2017

State interests identified for the 2016 SPP have been appropriately integrated into City Plan, with no relevant changes in the 2017 SPP for the subject development, other than for bushfire hazard, which is addressed in the "bushfire hazard" section of the report.

Koala habitat

The primary lot is mapped as being in a koala priority area but does not contain a koala habitat area. Lot 900 on SP220340 contains does contain koala habitat but not on the part of the lot the subject of the application. Therefore, Schedule 11 Part 2 of the *Planning Regulation 2017* is not applicable to the development.

Environmental significance overlay

The site is within mapped areas of both matters of local environmental significance (MLES) and matters of State environmental significance (MSES) (refer Figure 5). The site is generally vegetated with native species, with a mix of grass pasture and native canopy over a weedy understorey.

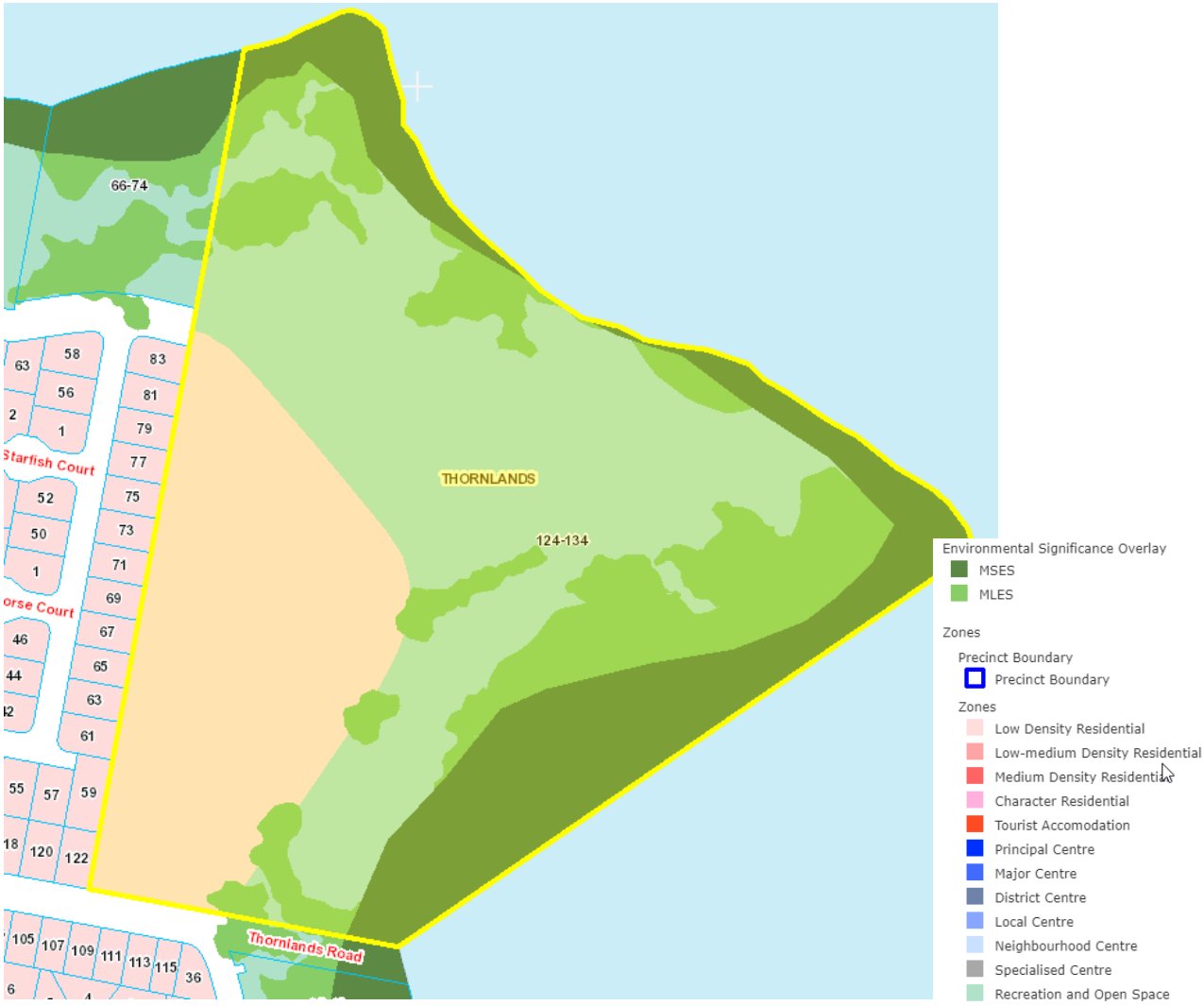

Figure 5 – Environmental significance overlay mapping

The development footprint largely avoids the area mapped by the overlay. Patches of overlay designated MLES surround the proposed development footprint, with some encroachment from the eastern row of lots and esplanade road, and future earthworks to fill on-site dams.

The submitted tree retention plan notes 481 trees onsite, with the majority of these being native species. There are a number of weed species, sick/dead trees, and trees that will be impacted by construction works, numbering 71 trees with 20 being native species. Six (6) living and eight (8) non-living trees are proposed to be removed within the overlay. The ecological reports indicates that no significant residual impact will occur and that landscaping and rehabilitation works will compensate for the associated construction impacts (discussed in detail in response to PO18 below). Areas mapped as MSES are outside of the affected development footprint.

Although there will be some impact on the environmental values as a result of site works, these are considered to have been minimised, with impacts able to be managed through conditions. An assessment against the relevant performance outcomes in the Environmental significance overlay is included below:

Values to be protected:

Performance outcomes PO2-PO4 of the Environmental significance overlay state:

> *'PO2*
>
> *Development does not result in a significant reduction in the level or condition of biodiversity and ecological functions and processes in the locality.*
>
> *PO3*
>
> *Development does not cause substantial fragmentation of habitat areas.*
>
> *PO4*
>
> *Connections between habitat areas are retained, so that movement of key species and normal gene flow between populations is not inhibited or made less safe. Connections may include both continuous corridors and "stepping stone" patches and refuges.'*

The overlay mapping occurs in several small patches either within the ROS zone or straddling the boundary with the LDR zone as shown in Figure 5. Some patches overlap slightly with the farm dams to be de-watered. Of the trees that will be removed, many are outside the overlay, and some are exotics.

Approximately 20 native trees (about 5%) out of approximately 370 native trees will be removed due to proximity of proposed works. Some of these may survive, depending on arborist assessment during construction works. However, the worst case scenario was used in estimating the number that could be impacted. Re-design of the layout may have possibly resulted in some of these being retained but at the expense of others.

Essentially the development footprint has been confined to the LDR zone on land that has been historically cleared for farming. There is minor encroachment on native vegetation where stormwater treatment is required, and dam de-watering.

The applicant proposes dam de-watering and filling practices such as non-compaction that should minimise inadvertent damage to fringing vegetation during these works. This will be under arborist supervision.

Habitat connectivity to the wider coastal area will be achieved post development along the northern and eastern property fringes where development will not encroach. The proposal is considered to not have a significant impact as the larger interconnected tracts of vegetation remain outside the development footprint.

Tree protection measures have been conditioned, and a detailed rehabilitation plan will be assessed as part of operational works. Accordingly, the development is considered to comply with PO2-PO4.

'Minimising and mitigating impacts.'

Performance outcomes PO5-PO12 of the Environmental significance overlay state:

> PO5
>
> *'Edge effects on retained habitat areas are minimised by providing the smallest possible perimeter to area ratio.'*
>
> PO6

'The design, scale and intensity of development minimises impacts on retained habitat.'

PO7

'Retained habitat is protected to ensure its ongoing health and resilience, and to avoid degradation as a result of edge effects.'

PO8

'Barriers restricting the movement and dispersal of wildlife are removed, except where they are necessary for the safety of people or animals.'

PO9

'Development does not result in the introduction of pest species (plant or animal), that pose a risk to ecological integrity or disturbance to native fauna.'

PO10

'Development minimises alterations to natural landforms, flow regimes, groundwater recharge and surface water drainage patterns.'

PO11

'Development minimises potential for disturbance of wildlife as a result of noise, light, vibration or other source.'

PO12

'Roads and public access within and adjacent to areas of ecological significance are located and designed to avoid disturbance of ecological values or danger to wildlife.'

Where minor encroachment occurs, this is along zone boundaries only, plus the north-western stormwater treatment area. Any impact on habitat is considered minor and will avoid the connected patches, with no significant degradation as a result of edge effects.

A tree retention plan is provided to protect retained habitat, which will ensure ongoing health and resilience.

The development does not propose any barriers to the movement and dispersal of wildlife. It is expected that the retention lot will be fenced. This will have no significant impact on fauna movement which will be maintained along the foreshore.

Conditions will be included for all weeds to be removed as part of the subsequent operational works application.

The development will require earthworks to facilitate stormwater flow to the bio basin and to provide flood immunity (for the northern part of the site). This will involve some re-profiling of an existing artificial dam in the same location. The bio-retention basin is designed to be well above HAT and therefore not subject to scouring risk. There will be further alterations due to dam de-watering, but this is not expected to have any significant impact on the existing hydrology given the artificial nature of this waterbody. Retaining walls are proposed along the eastern edge of the esplanade road to protect retained vegetation.

Given that the development is proposing 53 lots (including the retention lot), there will be an increase in noise, light and vibrations associated with normal housing developments, resulting in some disturbance. However, this is likely to be minor once construction of the dwellings is completed, and most wildlife is likely to use the fringes of the site where existing vegetation will be retained.

The esplanade road follows the zone interface between the LDR and ROS zones, and is considered to be generally responsive to the existing vegetation on site.

As such, the development is considered to comply with PO5-PO12.

Corridors and enhancement planting

Performance outcomes PO13-PO17 of the Environmental significance overlay state:

PO13

'Development contributes to the restoration of waterway or land based ecological corridors, where they would significantly enhance the health and resilience of habitat and wildlife on and near the site.'

PO14

'Corridors have sufficient width to maintain viable wildlife or habitat linkages.'

PO15

'Development incorporates opportunities for revegetation to enhance habitat condition, biodiversity and wildlife movement.'

PO16

'Enhancement plantings and landscaping utilise endemic native species which replicate or complement the composition of the habitat it is connected to, unless this would increase bushfire risk.'

PO17

'Where clearing occurs, it is sequenced and undertaken in a manner that provides opportunities for fauna to vacate affected land.'

The proposed development is considered to improve the existing corridor along the foreshore, and provide appropriate enhancement planting.

There is an area mapped as a waterways and wetlands corridor along the immediate shoreline. Any impact is considered minimal due to separation distance from development, with no expected to impact on shorebirds.

The development is restricted to the LDR zone part of the site (other than the retention lot), which ensures that the existing corridor is of sufficient width to provide viable wildlife or habitat linkages, consistent with the mapped waterways corridor, and aligning with the corridor to the north-west and south east of the adjoining lots.

Opportunities for revegetation to enhance habitat condition, biodiversity and wildlife movement, will be achieved through the landscape rehabilitation plan. This proposes six areas of revegetation (refer Figure 6), with appropriate native species to replicate or complement the composition of the habitat it is connected to:

A. Revegetate bio-basin to facilitate stormwater management.

B. Revegetation of re-profiled northern farm dam external to the bio-basin.

C. Rehabilitation of de-watered southern dam with grass and native trees, including koala habitat species.

D. Rehabilitation of stormwater outlet – turfed channel and planting out balance area.

E. Areas outside of civil works zones to be re-grassed where disturbed by works.

F. Tree plantings for an ecological purpose to enhance specifies diversity and screen stormwater treatment.

Figure 6 – Landscape concept rehabilitation plan

The submitted ecological report makes reference to a "wildlife habitat management plan" to be submitted as part of an operational works application, which will address matters of sequential clearing to allow fauna to vacate the affected land. A relevant condition is recommended.

Accordingly, the development is considered to comply with PO13 to PO17, or can be made to comply through relevant conditions (detailed rehabilitation plan and tree protection).

Offsets

Performance outcome PO18 of the environmental significance overlay states:

PO18
'Where development results in, or is likely to result in, a significant residual impact to areas of local environmental significance, despite all reasonable on-site mitigation measures, the impact will be offset.'

Given the minor encroachment into the mapped MLES, with low amount of clearing proposed well away from the shoreline, it is considered that there will be no significant residual impact resulting from the development.

Locally significant species associated with relevant regional ecosystems, and listed in Planning scheme policy (PSP) 1 include:

- 2 x large birds of prey - these species range over tens of square kilometres and unlikely to be significantly impacted by clearing of 8 native trees on a site of this size;
- 4 x migratory shorebirds - expected on mudflats, but not within this development footprint;
- Glossy Black Cockatoo - none of this species' food trees are being cleared;
- 3 x frog species - unlikely to be affected given the clearing proposed;
- 1 x small mammal species - not found outside of mangroves; and
- 1 x butterfly species – not found outside of mangroves.

There are no locally significant plants identified on the site.

An assessment against the criteria for determining significant residual impact for MLES with respect to section 1.4.1.3 of PSP 1 is included below:

'(5) An action will have a significant residual impact on MLES if the action is likely to:

(a) reduce the extent of the occurrence of a locally significant species;

(b) lead to a decrease in the size of the local population of a locally significant species;

(c) fragment an existing population for a locally significant species

(d) result in genetically distinct populations forming as a result of habitat isolation;

(e) result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered or vulnerable species habitat;

(f) introduce disease that may cause a locally significant species population to decline;

(g) interfere with the recovery of a locally significant species; and

(h) cause disruption to ecologically significant locations (breeding, feeding, nesting, migration or resting sites) of a locally significant species.'

The clearing of some scattered trees on the fringe of a grassed near-urban area would be unlikely to impact on any significant species (discussed above) if found to be present. The extent of the clearing is considered too small to have any observable effect on local populations, or result in any significant fragmentation or isolation of habitat, with development located outside of these areas. Invasive species such as weeds will be managed through appropriate conditions at operational works stage. The development will not impact on recovery programs as there are no current recovery programs in this area.

As such, it is considered that there will no significant residual impact resulting from the proposed clearing. Further, any clearing will be more than compensated for through proposed landscaping and rehabilitation works. As such, offsets are not required with respect to PO18, as enhancement planting is proposed as part of landscaping works in the ROS zone.

Storm tide hazard

The development is mapped as being affected by both 2016 and 2100 storm tide inundation (refer Figure 7).

Figure 7 – Flood prone land

Most of the affected area is located outside of the development footprint except for a section in the north-west corner of the site where George Thorn Drive will connect through, partly affecting the esplanade road and proposed lots 24-27. The following assessment benchmarks of the Flood and storm tide hazard overlay code are relevant to the assessment:

PO1

'In areas affected by the defined storm tide or flood event, development which results in the creation of additional lots or an increase in the number of dwellings on the land only occurs on land zoned for residential, commercial or industrial purposes.'

PO3
'Infrastructure that is likely to become a public asset is designed to withstand hydrodynamic forces of a defined flood or storm tide event.'

PO4
'Development does not increase the number of people living on the site unless it is provided with at least one road route that is trafficable for evacuation by a motor vehicle during a reasonable period prior to the defined flood or storm tide event.'

PO5
'The extent of filling utilised to achieve the necessary finished floor levels, evacuation routes and flood immunity for infrastructure is minimised.'

PO6
'Development does not change inundation characteristics outside the subject site in ways that result in:

1. *loss of flood storage;*
2. *loss of or changes to flow paths;*
3. *acceleration or retardation of flows;*
4. *any reduction in flood warning times elsewhere on the floodplain;*
5. *any other worsening of inundation impacts on other properties or public infrastructure.'*

PO8
'Any structures or works intended to mitigate the risk or impacts of inundation on a development site are located wholly on private land.'

PO9
'Emergency services and uses providing community support services are able to function effectively during and immediately after inundation events.'

PO10
'Minor electricity infrastructure which supplies new subdivision is designed and located to be able to function effectively during and immediately after inundation events.'

PO12
'Development contributes to effective and efficient disaster management response and recovery capabilities.'

The land is zoned for a residential purpose, and filling is proposed to provide flood immunity for both the road, including the Moreton Bay Cycleway (MBC), and the new residential lots. The retention lot is located outside of the mapped area. Details on earthworks are provided in the "earthworks" section of the report, however it is noted that the extent of earthworks has been minimised to provide for the new roads and level lots. The new esplanade road constructed above the inundation area will provide for evacuation of residents and access for emergency services.

Given the affected land is subject to tidal inundation rather than overland flow, the filling proposed to provide flood immunity will not significantly alter the inundation characteristics outside the subject site, as tidal inundation is absorbed along a wide coastal area.

The proposed bio basin is located within the storm tide inundation area and the outlet. Detailed design at operational works stage will ensure the development will withstand hydrodynamic forces of a defined flood or storm tide event, consistent with PO3.

Retaining walls are proposed along the outside edge of the road corridor in part to address the difference in levels along the ridgeline, with a maximum height up to 1.6m adjacent to the southernmost dam (refer Figure 8). Where adjacent to the northernmost dam, a 1 in 2 rock batter is proposed to manage tidal inundation (refer Figure 9). It is not possible to provide these works on private land, however a road and trunk cycleway are intended for this location, and the engineered design will ensure Council's maintenance burden is minimised.

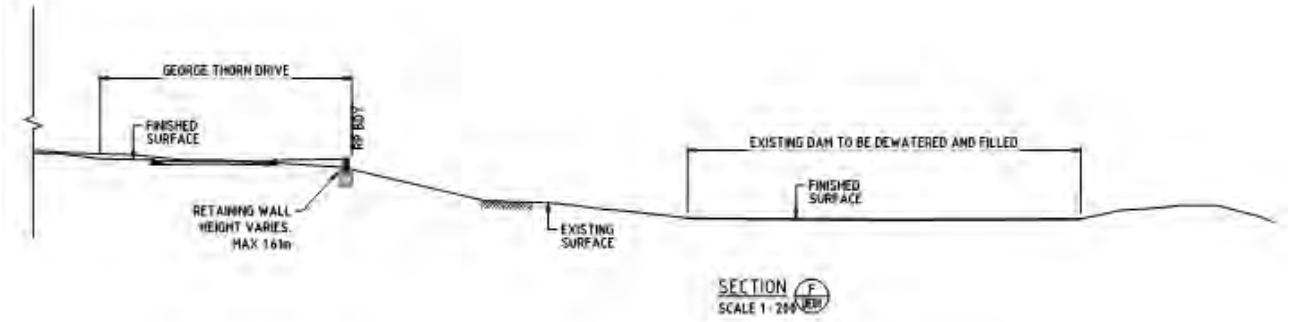

Figure 8 – Earthworks cross section southern end

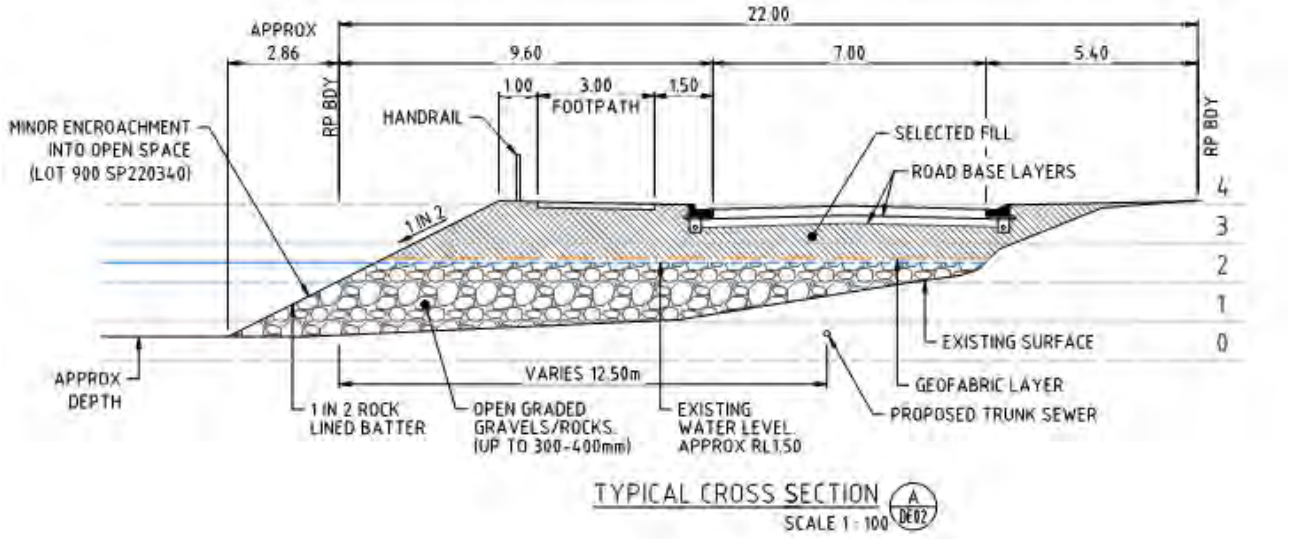

Figure 9 – Earthworks cross section northern end

Utility services will be located outside of the tidal area once the road corridor is filled. With regards to the above matters, the development is considered to comply with performance outcomes PO1, PO3, PO4, PO6, PO8 - PO10 and PO12 of the flood and storm tide hazard overlay code.

Bushfire hazard

The SPP mapping represents updated bushfire hazard mapping to that mapped under City Plan, and is therefore applicable to the assessment of this application. The SPP mapping identifies the north-western part of the site as "potential impact buffer" and "high bushfire hazard" (refer Figure 10).

The applicant provided a bushfire hazard assessment that determined that there is sufficient separation to hazardous vegetation for the residential lots achieve a radiant heat flux of better than 29 kW/m² as indicated in Figure 11.

Accordingly, the development is considered to comply with the assessment benchmarks in part E of the SPP 2017 – natural hazards, risk and resilience as follows:

- The low radiant heat flux provides for an acceptable level of bushfire risk without the need for further bushfire mitigation.
- Given the above, the proposed development will not exacerbate bushfire risk.
- The esplanade road and appropriate location of fire hydrants will ensure emergency service vehicle can access the site for firefighting purposes.

As such, the development is considered to comply with the identified State interest.

Figure 10 - SPP bushfire hazard mapping

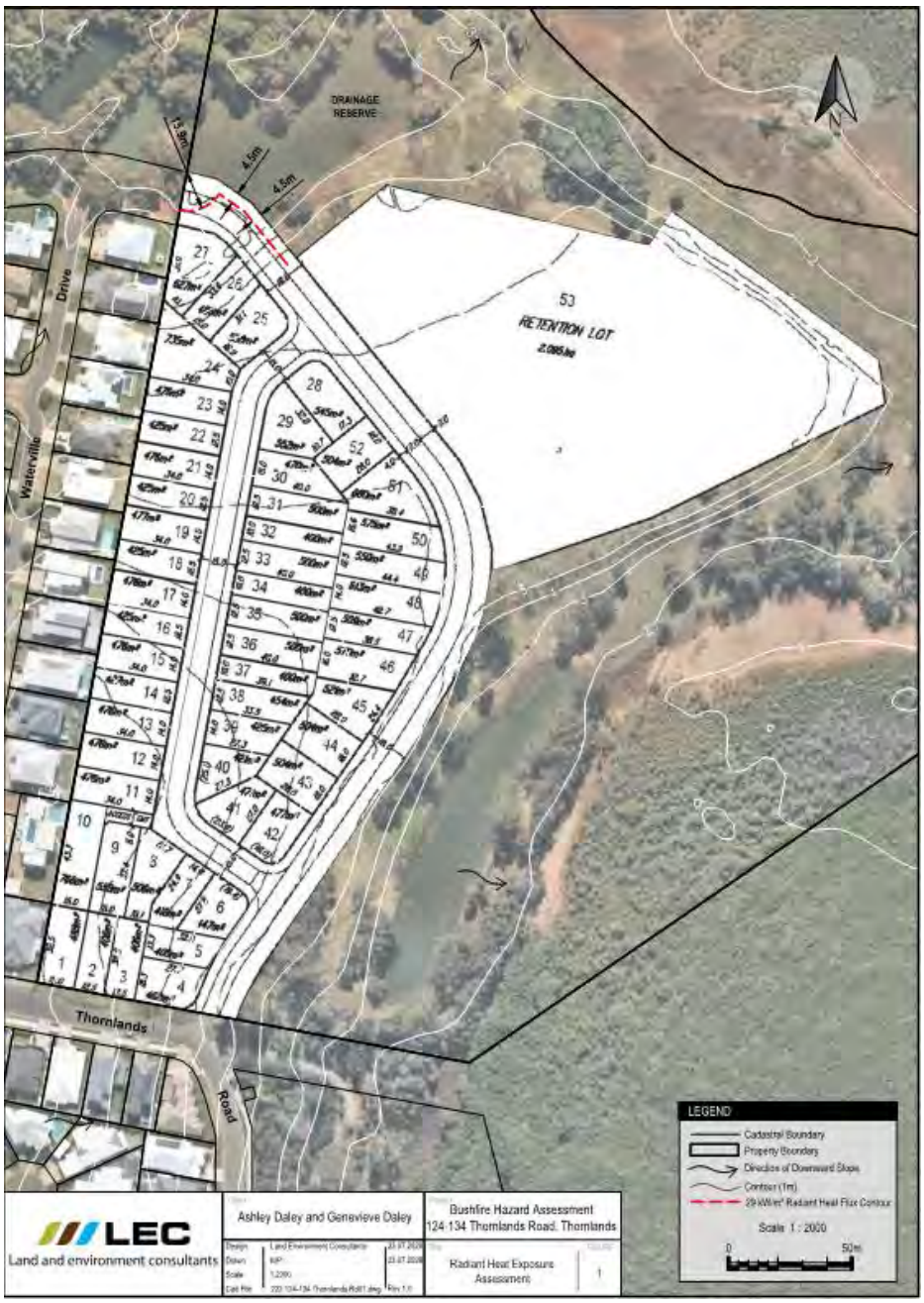

Figure 11 -29kW/m² radiant heat flux contour

The assessment benchmarks in the bushfire hazard overlay are considered to align with the SPP, except for performance outcome PO4 which states:

> *'Where reconfiguration creates lots of 2,000m^2 or less, a separation distance from hazardous vegetation is provided to achieve a radiant heat flux level of 29kW/m^2 at the edge of the proposed lot(s).'*

The bushfire assessment determined a radiant heat flux of better than 29kW/m² as discussed previously. As such, the development is considered to comply with the bushfire requirements for the SPP and the bushfire hazard overlay code.

Dam dewatering

There are two artificial waterbodies located to the north-west (NW) and south-east (SE) of the site, in the ROS zone (refer Figure 12). The SE dam was established between 1955 and 1964 (refer Figures 13 & 14). Officers are not certain when the NW dam was constructed although it is sometime after 1964 as indicated in the photo. Both waterbodies are identified as farm dams and are proposed to be filled (SE) and re-profiled (NW).

Figure 12 – Existing drainage and waterbodies

Figures 13 & 14 – 1955 & 1964 aerial imagery showing SE dam location with NE dam not established yet

Performance outcome PO2 of the healthy waters code is relevant to the assessment of artificial waterbodies:

> PO2
> *'On-site stormwater management systems do not rely on the retention of existing artificial water bodies, except where such water bodies:*
>
> 1. *perform significant ecological, water quality or recreation functions;*
> 2. *do not pose a significant risk to stream health or water quality;*
> 3. *are structurally sound;*
> 4. *do not pose any risk to community health and safety; and*
> 5. *will not impose a significant maintenance or cost burden on the community in the short or long terms.'*

The submitted water quality assessment and ecology reports find that the water quality of the existing artificial waterbodies (agricultural dams) is not within the acceptable range for most testing as outlined in Council's water quality indicators for artificial waterbodies (Table 3, Section 1.4.2, Planning Scheme Policy 2 – Infrastructure Works.). Further, the ecology report has stated that the dams provide limited ecological connectivity nor a functional corridor for native wildlife movement. It is therefore proposed to remove the existing dams on site and re-profile the northern dam for stormwater management purposes as detailed in the enclosed site based stormwater management plan.

Options

1. If the dams are left in place, sea level rise will eventually breach the dams and change the aquatic characterises from freshwater to saline, resulting in the loss of terrestrial vegetation while the area transitions from one habitat to another. These impacts can be managed through rehabilitation anticipating the saline transition, while water quality issues would have to be managed through the process.
2. The second option is to fill the dams, which will preserve the existing mature terrestrial flora until ultimately affected by sea level rise.
3. Manage the transition to intertidal habitat by removing the spillway. No information is available on the condition of the dam bed level and the immediate tidal connection or draining may expose acid sulphate soils. Draining may also have localised water quality impacts on the surrounding land, and given the dam level is below HAT, an immediate tidal connection may result in a sudden change in the aquatic community.

Ecological assessment

Whilst the dams provide a level of fauna movement, resources and foraging opportunities by virtue of being located within a larger ecological corridor along the coastal strip, it is considered that the waterbodies themselves do not provide essential habitat as recognised by the SPP biodiversity mapping (refer Figure 15). It is considered that habitat, resources and foraging opportunities are abundant within the immediate locality (i.e. the corridor north-west of the site and the broader marine wetlands). The dams are not considered critical for any locally significant fauna species that may be present within the locality from time to time. The dams are also considered to promote the proliferation of biting insects and cane toads.

The removal of the dams and rehabilitation of the land would provide a similar or better ecological function for conservation purposes on the edge of the proposed development.

Figure 15 – State MSES values mapping

The SE dam may be partly mapped within category B regulated vegetation (refer Figure 15), though the related regional ecosystem is designated 'of least concern' and is abundant throughout the locality. Also, this dam supports only scattered vegetation along the edge, most of which will be retained. Further, the removal of the dam will allow for the removal of weed species that have become established along the banks, and will provide opportunities for consolidating existing native vegetation and through rehabilitation.

It is not considered that the dams provide any amenity or recreation value due to their location on private land away from publicly accessible places. Further, should the land be made available for a public purpose in the future given the land on which the dams are located will be dedicated as part of the proposed development, the dams would present a potential risk to the public and would require some form of access restriction and regular maintenance to be made safe.

The filling of the dam is considered to be the best option to manage environmental values, reduce a potential safety risk, and reduce the potential maintenance burden to Council. As such, the development is considered to comply with PO2 of the healthy waters code.

The applicant was also requested to provide a desktop assessment on whether dam dewatering and associated earthworks are likely to disturb actual or potential acid sulphate soil below the 5m AHD elevation, to address performance outcome PO16 of the healthy waters code:

> PO16
> *'Within the areas identified as potential acid sulfate soils on Figure 9.3.1.3.1 — Potential acid sulfate soils, the generation or release of acid and metal contaminants into the environment is avoided by:*

1. *not disturbing acid sulfate soils when excavating or otherwise removing soil or sediment, draining or extracting groundwater, and not undertaking filling that results in actual acid sulfate soils being moved below the water table or previously saturated acid sulfate soils being aerated; or*
2. *where disturbance of acid sulfate soils cannot be avoided, development:*
    1. *neutralises existing acidity and prevents the generation of acid and metal contaminants; and*
    2. *prevents the release of surface or groundwater flows containing acid and metal contaminants into the environment.*

    Editor's note — Where works are proposed within the areas identified as potential acid sulfate soils, it is likely that an on-site acid sulfate investigation will be requested. Such an investigation should conform to the Queensland Sampling Guidelines and the Laboratory Methods Guidelines or Australian Standard 4969. Where acid sulfate soils will be disturbed, an environmental management plan must be prepared which outlines how the release of acid and metal contaminants will be prevented.'

The applicant undertook an acid sulphate soils (ASS) investigation that found the likelihood of ASS to be present within the context of the subsurface disturbance for dewatering and filling/re-profiling the dams, to be inconclusive. However, the soil on site was found to be naturally acidic and would need to be managed accordingly. The following treatment is recommended:

- excavated soil form the dams to be placed on a lime-covered and bunded treatment pad;
- excavated soils to be treated to neutralise acid contact through a liming process; and
- once neutralised, the treated soil can be reused on site.

An appropriate condition is recommended. Accordingly, the development is considered to comply with PO16 of the Healthy waters code.

Stormwater management

The following assessment benchmarks are relevant to stormwater management:

Reconfiguring a lot code

PO37
'New lots provided with services including water supply, wastewater infrastructure, stormwater drainage, waste disposal, electricity and telecommunications that are designed and located to:

1. *meet the needs of end users;*
2. *minimise risk of adverse environmental and amenity impacts;*
3. *to be cost effective over the life cycle of that infrastructure;*
4. *make effective use of existing infrastructure;*
5. *allow orderly and efficient infrastructure extensions and upgrades; and*
6. *minimise whole of lifecycle costs of the infrastructure.'*

Healthy waters code

PO1
'To the extent practicable, natural drainage lines are retained, and their hydraulic capacity and channel characteristics are maintained or re-established.'

PO2
'On-site stormwater management systems do not rely on the retention of existing artificial water bodies, except where such water bodies:

1. *perform significant ecological, water quality or recreation functions;*
2. *do not pose a significant risk to stream health or water quality;*
3. *are structurally sound;*
4. *do not pose any risk to community health and safety; and*
5. *will not impose a significant maintenance or cost burden on the community in the short or long terms.'*

PO3
'The stormwater drainage system maintains pre-development velocity and volume of run-off external to the site and does not otherwise worsen or cause nuisance to adjacent, upstream and downstream land.'

PO4
'Stormwater drainage is designed and constructed to convey stormwater flow resulting from the relevant design storm event under normal operating conditions'.

PO5
'The stormwater drainage system is designed to function in the event of a minor system blockage.'

PO6
'Roof and surface run-off is managed to prevent stormwater flows from entering buildings and be directed to a lawful point of discharge.'

PO7
'Where located within open space, stormwater devices or functions do not reduce the utility of that space for its intended recreational or ecological functions.'

PO8
'Maintenance requirements and costs associated with the devices used within the system are minimised.'

PO9
'Development protects and does not adversely impact the environmental values or water quality of receiving waterways.'

PO10
'The entry to and transport of contaminants in stormwater or waste water is avoided.'

PO11

'Development does not increase either:

1. *sediment concentration in waters or stormwater outside the development's sediment treatment train; or*
2. *run-off which causes erosion either on-site or off-site.'*

PO12
'Development avoids unnecessary disturbance to soil, waterways or drainage channels.'

PO13
'All soil surfaces are effectively stabilised against erosion.'

PO14
'The functionality of the stormwater treatment train is protected from the impacts of erosion, turbidity and sedimentation, both within and external to the development site.'

PO15
'Areas outside the development site are not adversely impacted by erosion or sedimentation.'

There are no natural drainage lines that will be impacted by the development, and dewatering of the existing dams has been discussed elsewhere in the assessment. Despite being located in the ROS zone, the stormwater management system will not reduce the recreational or ecological utility of the land, as the bio basin is essentially a smaller version of the existing farm dam.

The applicant has proposed no detention for the development because there are no private properties located between the development and the bay at the northern discharge point. There is no change in stormwater management for the retained dwelling. All drainage, including some of the external Thornlands Road catchment, will be conveyed to the proposed sag located towards the northern end of the development. From the sag, flows will be directed into the bio basin for stormwater quality treatment. A high flow channel to the east of the basin will drain north towards the lawful point of discharge in the bay, for major events. Detailed design will be required as part of an operational works application to ensure the proposed bio basin and outlets will function appropriately during a storm tide inundation.

The proposed bio retention basin of 600m^2 in the north-west has been demonstrated as adequate for the development footprint area. The stormwater quality model indicates that the design will adopt the deemed to comply solutions for water quality, thereby meeting performance outcomes PO9 and PO10. The stormwater management plan also includes recommendations for monitoring and maintenance post construction.

The bio basin will be located above HAT at 2.61m AHD (HAT 1.55m AHD) to avoid scouring during storm surge events. Conditions are recommended to manage sediment and erosion control.

Accordingly, the development is considered to comply with PO37 of the reconfiguration a lot code, and PO1 to PO15 of the healthy waters code.

Access and parking/road design/frontage works

The following assessment benchmarks are relevant to access and parking, and road design:

Reconfiguring a lot code

PO13
'Lots are provided with safe and efficient access for vehicles, cyclists and pedestrians,

which maintain the safety and efficiency of the road hierarchy. Wherever possible, reconfiguration enables alternative access for lots adjoining major roads.'

PO14
'The movement network provides:

1. *a high level of internal access and external connections for pedestrians, cyclists, vehicles and public transport;*
2. *safe conditions for pedestrians, cyclists and vehicles for day and night usage;*
3. *a connected and legible street network;*
4. *safe and efficient access for service vehicles;*
5. *as far as possible, continuous road adjacent to foreshore and open space areas; and*
6. *connections for future development that do not compromise the ability to achieve the outcomes listed above.'*

PO48
'Access to rear lots is safe and convenient.'

Transport, servicing, access and parking code

PO3
'Development maintains or improves the safe and efficient operation of transport networks having regard to (amongst other things):

1. *the existing or planned function of the roads affected;*
2. *available sight distances and the location and design of access points;*
3. *accessibility by public transport, pedestrians and cyclists;*
4. *the potential for conflict between vehicles, pedestrians and cyclists;*
5. *the loss or increase of on-street parking;*
6. *the location, construction and maintenance of utility infrastructure; and*
7. *the nature and intensity of traffic and parking generated by the development.'*

PO4
'Where new roads are constructed, their design and construction is sufficient to accommodate:

1. *their intended function;*
2. *safe and efficient movement of all users, including pedestrians and cyclists;*
3. *on-street parking;*
4. *bus movement and public transport stops;*
5. *street tree planting and streetscaping;*
6. *utility infrastructure, including stormwater management; and*
7. *treatments that prevent excessive speeds.'*

PO5
'Internal accessways in residential developments provide safe and efficient internal traffic operations. '

The proposed 18m wide esplanade road (7m verge park side; 7m pavement; and 4m verge and 15m wide loop road complies with the minimum widths nominated in Planning scheme policy 2, and is therefore considered to meet the deemed to comply requirements, including waste servicing. The esplanade road completes the road circuit and improves efficiency in the local road network.

The intersections at Thornlands Road and George Thorn Drive will need to be upgraded to allow the esplanade road to connect through, which can be resolved in detail at the operational works stage.

The internal access servicing proposed for lot 10 is appropriately truncated to allow safe access, and its location on the outside of a bend in the loop rood will ensure sightlines are maintained for both vehicular and pedestrian traffic.

The 6m wide access is appropriate for servicing two lots and the relatively short length of travel (20m). There is sufficient frontage on either of the two adjoining lots for bins for the internal lots to be placed on the verge on collection day. A footpath will be recommended by condition to be installed on one side of the loop road.

The lots are of sufficient size to provide for two car parking spaces in accordance with acceptable outcome A8 of the Queensland Development Code (QDC) MP1.1 and MP1.2. This reduces the demand for on-street parking within the new road corridors.

The esplanade road corridor will also complete the trunk MBC in accordance with the local government infrastructure plan (LGIP). The MBC will be 3m wide in accordance with LGIP requirements, with detailed design to be assessed as part of an operational works application. A new footpath will be required to be extended along Thornlands Road to join the existing pathway.

As such, the development is considered to comply with performance outcomes PO13 to PO14, and PO48 of the reconfiguration code, and PO3 to PO5 of the transport, servicing, access and parking code.

The following assessment benchmarks are relevant to frontage works:

Reconfiguring a lot code

PO37
'New lots provided with services including water supply, wastewater infrastructure, stormwater drainage, waste disposal, electricity and telecommunications that are designed and located to:

1. *meet the needs of end users;*
2. *minimise risk of adverse environmental and amenity impacts;*
3. *to be cost effective over the life cycle of that infrastructure;*
4. *make effective use of existing infrastructure;*
5. *allow orderly and efficient infrastructure extensions and upgrades; and*
6. *minimise whole of lifecycle costs of the infrastructure.'*

Infrastructure works code

PO12
'Kerb, channel, street trees, street furniture, footpaths and pavement treatments are established or reinstated along the full frontage of the development site, and any redundant crossovers are removed.'

Detailed design for frontage works will be considered as part of an operational works application, including details of street trees plantings and footpaths, as discussed previously.

An infrastructure agreement will include embellishments within the esplanade including seating, a water bubbler and cycle safe fencing at pinch points where the pathway is located close to the retaining wall in the southern part of the site. Accordingly, the development is considered to comply with performance outcome PO37 of the reconfiguration code, and PO12 of the infrastructure works code.

Utility infrastructure

Sewer

The following assessment benchmarks are relevant to the assessment of sewer infrastructure:

> Reconfiguring a lot code
>
> PO37
> *'New lots provided with services including water supply, wastewater infrastructure, stormwater drainage, waste disposal, electricity and telecommunications that are designed and located to:*
>
> 1. *meet the needs of end users;*
> 2. *minimise risk of adverse environmental and amenity impacts;*
> 3. *to be cost effective over the life cycle of that infrastructure;*
> 4. *make effective use of existing infrastructure;*
> 5. *allow orderly and efficient infrastructure extensions and upgrades; and*
> 6. *minimise whole of lifecycle costs of the infrastructure.'*
>
> Infrastructure works code
>
> PO11
> *'Wastewater is treated and disposed of in a manner that is sufficient for the volume of wastewater generated on the site and to a level that ensures risks to public health, water quality and the environment are minimised.'*

The proposed development will be serviced by sewer reticulation, with sufficient capacity in the network as supported by the residential zoning. The applicant has proposed to connect the existing 300Ømm trunk sewer on Thornlands Road into the existing manhole located on George Thorn Drive. This linkage section of 300Ømm sewer is classed as trunk infrastructure and will be located in the verge of the esplanade loop road. A detailed sewer design will be required as part of an operational works application.

Discussions with the applicant has resulted in an agreement that the sewer will be located in the front of the lots along George Thorn Drive and not the verge. The water located under the bike path will then shift to the verge in front of the lots where the sewer was located on the concept plans. This will provide a better outcome as the bike path will not have service lids, and will provide better access to the water main for maintenance in the future. This can be resolved at the operational works stage as it has no implications for the current application, with a note included in the sewer reticulation condition.

The existing dwelling will be required to be connected to sewer reticulation as part of the works. Standard sewer access easements are conditioned for the development to all maintenance structures on private property.

The development can be conditioned to comply with performance outcome PO37 of the reconfiguration code and PO11 of the Infrastructure works code.

Water Supply

The following assessment benchmarks are relevant to the assessment of water supply infrastructure:

Reconfiguring a lot code

PO37
'New lots provided with services including water supply, wastewater infrastructure, stormwater drainage, waste disposal, electricity and telecommunications that are designed and located to:

1. *meet the needs of end users;*
2. *minimise risk of adverse environmental and amenity impacts;*
3. *to be cost effective over the life cycle of that infrastructure;*
4. *make effective use of existing infrastructure;*
5. *allow orderly and efficient infrastructure extensions and upgrades; and*
6. *minimise whole of lifecycle costs of the infrastructure.'*

Infrastructure works code

PO9
'A reliable water supply is provided that is sufficient to meet the anticipated use of the premises, including potable and non-potable requirements.'

The development is in accordance with the zoning and therefore the water network is assumed to have capacity for the proposed development.

The applicant has proposed a new water main to service the whole development. The subject site can connect into an existing 100Ømm AC main located on the northern site of Thornlands Road, and a secondary connection is available to the north in the road reserve and is a 100Ømm DICL pipe. The proposed service plan has no dead ends and will involve a looped connection, which will assist with retaining pressure. The proposed size of the water main is not stated on the plans or the location of the fire hydrants, which can be resolved at operational works stage. *South East Queensland Water Supply and Sewerage Design and Construction Code* conditions are included.

A new water main will be required to be installed to service the existing dwelling which is proposed to be retained.

Subject to conditions, the development will comply with performance outcome PO37 of the reconfiguration code and PO9 of the infrastructure works code.

Electricity/telecommunications

The following assessment benchmarks are relevant to the assessment of electrical and telecommunications infrastructure:

Reconfiguring a lot code

PO37
'New lots provided with services including water supply, wastewater infrastructure, stormwater drainage, waste disposal, electricity and telecommunications that are designed and located to:

1. *meet the needs of end users;*
2. *minimise risk of adverse environmental and amenity impacts;*
3. *to be cost effective over the life cycle of that infrastructure;*
4. *make effective use of existing infrastructure;*
5. *allow orderly and efficient infrastructure extensions and upgrades; and*
6. *minimise whole of lifecycle costs of the infrastructure.'*

Infrastructure works code

PO13
'Electrical infrastructure is provided that meets the needs of the intended use and telecommunications infrastructure ensures access to conduits for fibre optics or secure wireless networking enabling the development of high speed broadband services.'

The lots will be conditioned to provide underground electrical supply to all of the residential lots. This outcome is consistent with undergrounding of power and telecommunications in the area; reduces maintenance costs for the service provider; and provides a better amenity outcome than the alternative. Detailed design can be undertaken as part of a subsequent operational works application. As such, the development is considered to comply with performance outcome PO37 of the reconfiguration code, and PO13 of the infrastructure works code.

Waste management

The following assessment benchmarks are relevant to waste management:

Infrastructure works code

PO15
'Waste management facilities are provided such that:

1. *there is a dedicated, sealed waste and recycling container storage area that is convenient and safe to use;*
2. *there is adequate volume and separate containers for waste and recyclables likely to be generated;*
3. *spills or wash down from waste containers can be adequately contained; and*
4. *nuisance to adjoining properties is minimised.'*

Transport, servicing, access and parking code

PO20
'Servicing and manoeuvring areas are located and designed to:

1. *be clearly defined, safe and easily accessible;*
2. *be separated from areas of pedestrian movement within the premises or on adjoining premises;*
3. *provide for the vehicle dimensions and turning paths for the design vehicles expected to access the site;*
4. *maintains clear access to waste containers for collection vehicles;*
5. *ensures that service vehicles entering a site do not queue across footpaths or onto external roads; and*

6. *prevents any manoeuvring occurring within the defined queuing area.'*

The development proposes on-street collection (new street) for all lots. For the internal lots there is sufficient frontage on adjoining lots for bins to be located on collection day. As such, the development is considered to comply with performance outcomes PO15 of the infrastructure works code and PO20 of the transport, servicing, access and parking code.

Earthworks

The following assessment benchmarks are relevant to earthworks:

Infrastructure works code

PO1
'Excavation and filling is minimised and does not reduce the amenity of adjoining properties or of individual lots or dwellings within a development site.'

PO2

'Excavation and filling involving retaining walls or structures ensures that they:

1. *are of an appropriate scale so they do not overbear or dominate buildings/structures and land uses in the locality; and*
2. *where they are visible from a public place, are constructed of materials that are of a high quality appearance and/or incorporate landscaping or other features to assist in reducing their visual prominence.'*

PO3
'Excavation and filling result in landforms and structures which are stable and designed to minimise the potential for failure over the long term. '

PO4
'Excavation and filling does not result in land or water contamination, or the spread of vermin or pest species.
Editor's note—Applicants should note that where the development requires the disturbance of soil within a fire ant restricted area, a risk management plan may be required by approved by Biosecurity Queensland within the Department of Agriculture, Fisheries and Forestry.'

PO17
'Excavation or filling does not worsen any flooding or drainage problems on the site or on neighbouring properties.'

The applicant has proposed filling and excavation. Existing dams are to be filled and new bio basins created. The retaining walls proposed vary in height and finishes.

Operational works for the earthworks will be required and a detailed design will be reviewed at that time. Retaining wall are proposed within the road reserve for George Thorn Drive and the esplanade road. The retaining walls along the esplanade road are required in order to retain the existing trees.

Safety fences for the tops of the retaining walls will be required and can be provided at operational works stage.

Retaining walls along the west side boundary will range from 0.1m to 1m, and will be retaining cut, which is sufficiently low so that a combination of retaining wall and fence would not result in amenity impacts for future residents while providing for adequate privacy for both the adjoining residents to the west and future residents in the development.

An existing retaining wall will be maintained for the northern part of the western boundary where filling is proposed, resulting in a height difference of up to 0.5m. Again, boundary fences will provide privacy without impacting on amenity. Other retaining walls are proposed internally to the site with the highest sections located in the southern part of the site, including a 1.85m to 2m section between proposed lots 3, 4 and 5.

The cut section is at the rear of lots 4 and 5, with these lots perpendicular to lot 3. It is considered that lots 3 and 4 have sufficient depth to provide separation to the walls along their rear boundaries to reduce amenity impacts.

A condition is included for boundary fences located on top of retaining walls to have contrasting materials, textures and colours to reduce amenity impacts, which given the interface is between the boundaries of new lots, would not be as significant as new lots bordering established lots. Other internal sections of retaining walls range from 0.75m to 0.95m and are located along rear boundaries of the lots, and therefore low enough to have no amenity impacts, and privacy will be protected by boundary fences.

Retaining walls are proposed along the outside of the esplanade road in the southern part of the site, to protect existing trees. The two sections of wall will range from 0.72m to 1.61m for the northernmost wall and 0.7m to 1.7m for the southern wall. Given the MBC will be located along the outside edge of the road corridor, appropriate cycle safety fencing will be required where the distance between the MBC and retaining wall make this feature necessary. Detailed engineering design will be considered at operational works stage. Preliminary earthworks plans are shown in Figure 16 and 17.

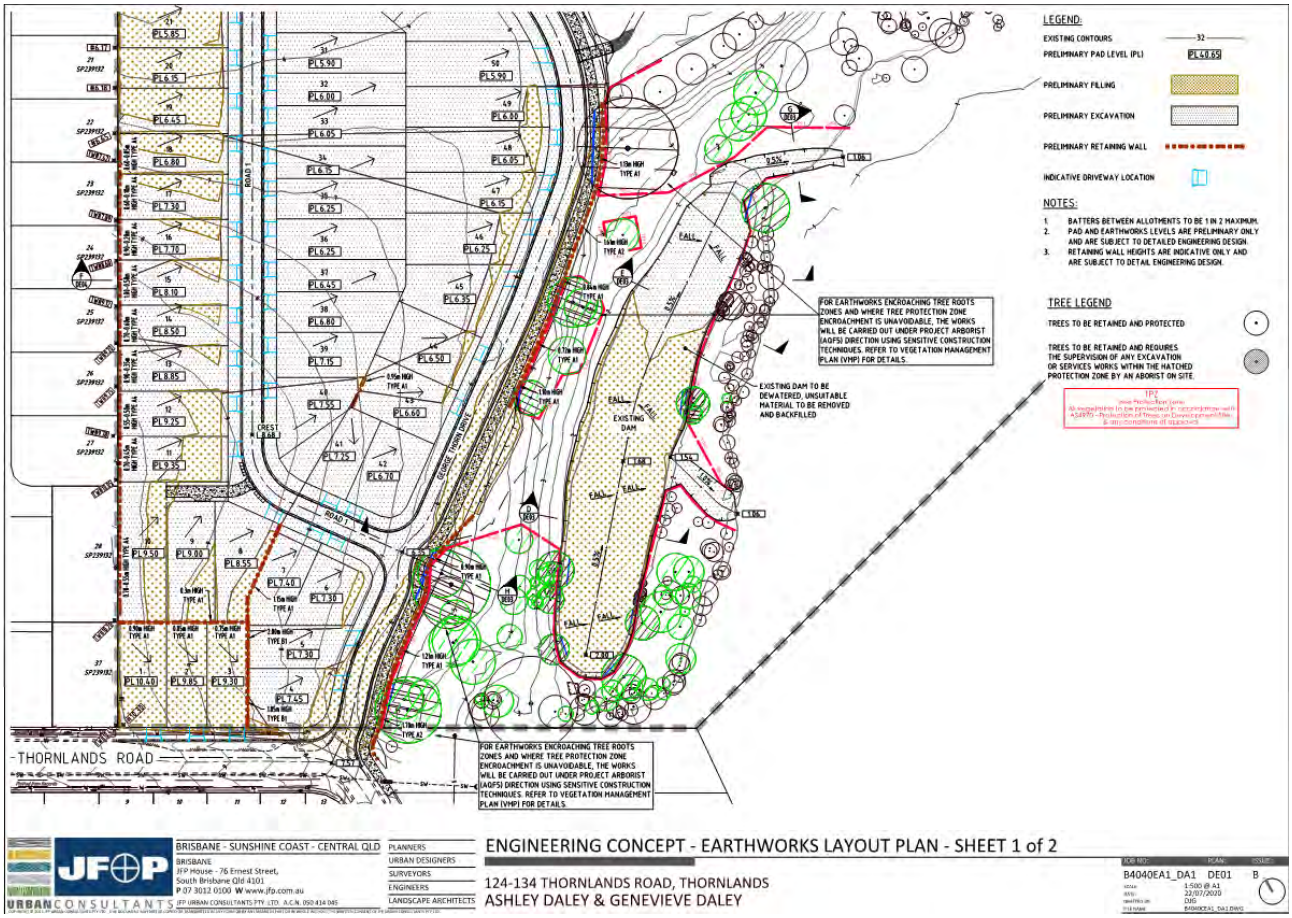

Figure 16 – Earthworks southern end

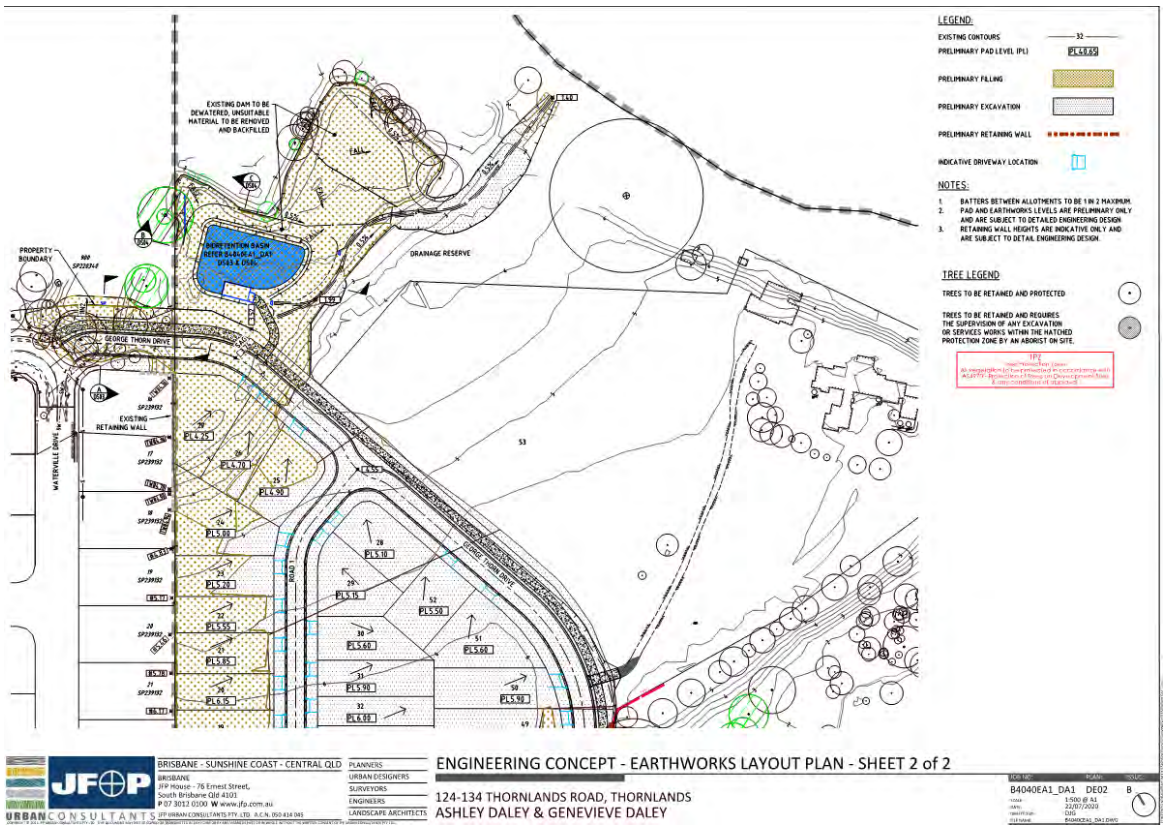

Figure 17 – Earthworks northern end

A rock and earth batter with a one-in-two slope is proposed along the northern edge of the George Thorn Drive extension in lot 900 up to the property boundary, with the works considered necessary to facilitate the road extension with the design appropriate for this waterlogged section. Detailed design will be considered at operational works stage, with the works generally in accordance with the section provided in Figure 18. The section includes a handrail on the outside of the MBC. A condition is recommended that as part of the trunk works for the MBC, a cycleway safety barrier is to be included where required as part of operational works. Earthworks plans are not recommended for approval as part of the current application as the ultimate levels are likely to change.

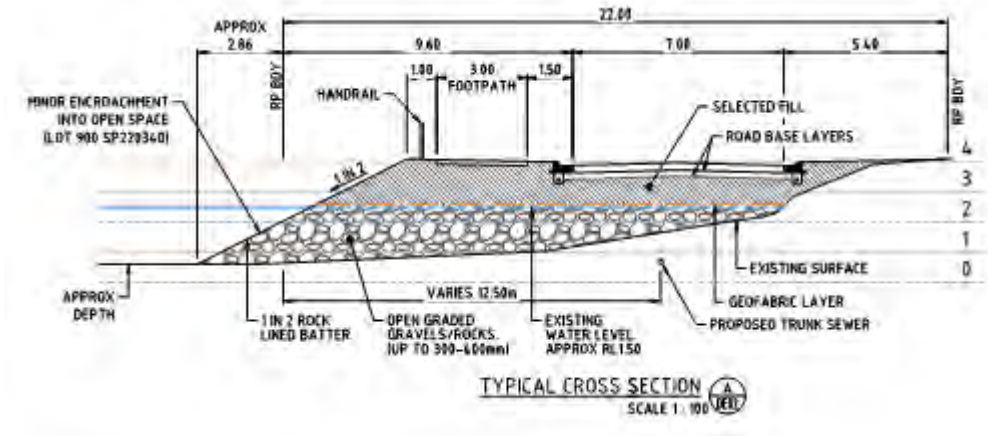

Figure 18 – George Thorn Drive extension earthworks in Lot 900

Accordingly, the development is considered to comply with, or can be made to comply though conditions, with performance outcomes PO1 to PO4 and PO17 of the infrastructure works code.

Erosion and sediment control

Construction works are proposed that will disturb the soil onsite, thereby triggering assessment against the Healthy waters code. Coastal erosion has been discussed previously. The following performance outcomes are considered relevant to this part of the assessment:

PO11

'Development does not increase either:

1. *the concentration of sediment in waters or stormwater outside the development's sediment treatment train; or*
2. *run-off which causes erosion either on-site or off-site.'*

PO12

'Development avoids unnecessary disturbance to soil, waterways or drainage channels.'

PO13

'All soil surfaces are effectively stabilised against erosion.'

PO14

'The functionality of the stormwater treatment train is protected from the impacts of erosion, turbidity and sedimentation, both within and external to the development site.'

PO15

'Areas outside the development site are not adversely impacted by erosion or sedimentation.'

To ensure erosion and sediment control measures function adequately during the construction phase, they must be updated regularly based on the site specific needs. As such, no one strategy is considered correct, however conditions are recommended to ensure the development can comply with the above performance outcomes of the Healthy waters code.

Landscaping

The following assessment benchmarks are relevant to landscaping:

LDR zone code

PO17
'Landscaping is provided along the full road frontage.

Recreation and open space code

PO9

'High quality landscape planting is provided to:

1. *reinforce the open space functions of the site;*
2. *complement habitat values and ecological functions where they exist;*
3. *soften the appearance of buildings or structures;*
4. *screen outdoor storage and service areas;*

5. *create shade; and*
6. *help define activity areas and entrances.'*

Reconfiguring a lot code

PO5

'The reconfiguration integrates with the surrounding locality and creates an attractive, accessible and functional neighbourhood, having regard to:

1. *connecting to and extending movement, open space and recreational and other infrastructure networks;*
2. *maintaining the continuity of habitat areas and ecological corridors;*
3. *maintaining natural hydrological regimes;*
4. *creating a compatible landscape and streetscape character;*
5. *managing the interface between potentially incompatible uses or sources of noise or other impacts; and*
6. *ensuring future development on adjacent and nearby land can occur in an orderly, efficient and cohesive manner.'*

PO12

'Where it is intended to incorporate an entry statement to an existing or proposed development, the entry statement:

1. *is located wholly within the property being reconfigured;*
2. *does not obstruct sight lines to the road(s) accessing the development;*
3. *is an architectural feature that reflects the character of the development;*
4. *is low maintenance; and*
5. *does not incorporate gates to residential development.'*

PO14

'The movement network provides:

1. *a high level of internal access and external connections for pedestrians, cyclists, vehicles and public transport;*
2. *safe conditions for pedestrians, cyclists and vehicles for day and night usage;*
3. *a connected and legible street network;*
4. *safe and efficient access for service vehicles;*
5. *as far as possible, continuous road adjacent to foreshore and open space areas; and*
6. *connections for future development that do not compromise the ability to achieve the outcomes listed above.'*

Landscape code

PO1

'Landscaping is undertaken to be consistent with the streetscape and landscape setting.'

PO2
'Landscaping provides for sensory interest through form, texture, fragrance and variations in seasonal colour.'

PO3

'Landscaping within on-site open space areas is fit for purpose, is predominantly comprised of soft landscape elements and provides substantial shading for users.'

PO6

'Landscaped surfaces are stable, non-slip and useable in all weather conditions.'

PO8
'Landscaping and planting is located and designed so that it does not interfere with or adversely affect structural integrity of buildings and structures or the function of existing or proposed utility infrastructure.'

PO9
'Plant species used are suited to:

1. *the function of the open space area;*
2. *the local climate and soil conditions;*
3. *optimum long term survival and easy maintenance;*
4. *minimisation of water use; and*
5. *contribution to local ecological functions wherever possible.'*

PO10
'Landscape design ensures maximum plant growth and health, having regard to:

1. *access to sunlight;*
2. *clearance from buildings, hardstand areas and infrastructure; and*
3. *soil conditions.'*

PO11
'Landscaping is designed for efficient and effective maintenance, with turfed areas accessible by standard lawn maintenance equipment, and where the area is not readily accessible, incorporates hardy plant species with long life expectancy and minimal litter drop, pruning, watering and fertilising requirements.'

PO12
'Landscaping avoids the introduction or spread of weed species and pests.'

PO13
'Landscaping is designed to:

1. *be adequately drained;*
2. *avoid alteration to natural drainage flow paths;*
3. *minimise water usage; and*
4. *maximise permeable surfaces and water infiltration on site.'*

PO15
'Retained vegetation is to be protected from damage during construction.'

PO16
'Street trees are provided in road reserves to:

1. *reinforce the character and identity of a locality;*
2. *provide shade for pedestrians;*
3. *soften the appearance of hard stand areas and the built form; and*
4. *avoid interfering with overhead and underground infrastructure.'*

PO19
'Landscaping maintains sight lines for vehicles and pedestrians, especially near intersections.'

PO20
'Landscaping within or beside vehicle movement areas is protected from damage by vehicles or pedestrians.'

A landscape concept plan (refer Figure 19) is provided that includes the following details:

- the location of stormwater facilities;
- proposed revegetation work/enhancement planting to open space areas;
- cycle/pedestrian paths details;
- streetscape planting;
- entry statement treatment; and
- details of street tree planting.

A tree retention plan has also been provided, which is intended to provide guidance for protection of trees and vegetation and will form the basis of the vegetation management plan to be submitted as part of an operational works application.

Landscaping is provided along the full road frontage of both new roads in the form of street trees, which will help create shade and soften the expanse of road and future built form. The ultimate street tree design will be assessed as part of an operational works application, with trees located to ensure appropriate line-of-sight is maintained for all road users at intersection locations.

The open space part of the site is intended to be dedicated to Council to maintain and protect identified environmental values (refer to "land dedication" section of the report). The dedicated area will allow the foreshore to link up with other open space in the control of Council to the south and west, providing continuity of habitat areas and ecological corridors, with the new esplanade road providing separation between the residential lots and the open space area. Rehabilitation works will be undertaken for the dewatered southern dam and the re-profiled northern dam. Elsewhere trees will be planted to provide screening to the bio-basin and stormwater outlet channel, and to improve habitat and wildlife linkages. Street tree and rehabilitations planting species will be determined at operational works stage, to ensure plantings will provide for appropriate sensory interest.

An entry statement is intended to be provided at the southern end of the George Thorn Drive extension in the form of an entry statement wall within proposed lot 4. The entry statement is included as a concept on the submitted landscape plan, with detailed design to be determined at operational works stage. PO12 of the reconfiguration code nominates that where an entry statement is to be provided, that it meets certain criteria with respect to sightlines, maintenance, location within the development site and architectural design. It is expected that the entry statement will achieves these outcomes. An appropriate condition is recommended.

Pedestrian connectivity is catered for in the extension of the MBC on the bay side of the esplanade road, with the extension completing the trunk cycleway network in this locality.

Landscape areas will provide stable, non-slip surfaces with turfed areas to be provided for the in-fill of the southern dam, and areas that will be disturbed during civil works. The stormwater channel will also be turfed for the section adjacent to the stormwater basin, with the balance area planted out with sedges for scour protection.

Detailed design at operational works stage will ensure species choice will be suited to local conditions, will be low maintenance, and planting location/spacing will not interfere with utility infrastructure. Conditions for weed management are included as part of any operational works approval. A condition is included to manage retained vegetation during construction.

Figure 19 – Landscape concept plan

Land dedication

Council officers have considered the merits of public ownership to ensure environmental values are managed in accordance with performance outcomes PO1, PO12 and PO13 of the recreation and open space zone and PO1 – PO11, PO13 – PO17 of the environmental significance overlay. The resulting assessment found that the environmental values of public ownership were considered to outweigh the costs associated with maintenance, with the values identified as:

- A dedication will connect separated parcels of council land along the foreshore.
- Under the *Wildlife Connections Plan 2018-2023*, the land comprises a coastal corridor and partially includes core habitat, with most of the land to be dedicated located within the primary area of the draft strategic priority area mapping. The mapping is intended to identify corridors and habitat locations of high conservation value. This will allow for operational areas to better target works to achieve higher conservation outcomes.

- The land is located on the edge of the Moreton Bay convention on wetlands of international importance (RAMSAR) site, which will have potential for state, federal and international threatened species as well as possible shorebird roost sites. The land has areas of remnant koala habitat (MSES); and includes ecological community of coastal saltmarsh, listed as vulnerable the *Environmental Protection and Biodiversity Conservation Act 1999*.
- The area has open space suitable for restoration (including small scale offsets). There is no trunk park anticipated on the subject site, and is unlikely to be canvassed in the future given a recreation park is located nearby at 46-64 George Thorn Drive.
- It is considered that the cost benefit is acceptable. Weeds are likely to be manageable if present (likely weeds include asparagus fern, pepper tree, mile-a-minute and grasses) and the open areas can be maintained by mowing, or following onsite assessments, some could be closed off for natural regeneration. Additionally, it is estimated that approximately 20% of the offered land area is within mangrove communities that rarely have any maintenance works, if any.
- Dedication of the land will require future operational budget commitment from Council to ensure appropriate levels of maintenance is carried out on the land.

An appropriate condition has been recommended to dedicate the part of the site shown as open space (excluding the retention lot) to Council as park.

PUBLIC CONSULTATION

The proposal is code assessable development and therefore not subject to public notification.

INFRASTRUCTURE CHARGES

An infrastructure agreement (IA) is being negotiated by the applicant. In the event the IA is not finalised in time for the general meeting, conditions are included for the relevant trunk infrastructure, with offsets identified in the Infrastructure Charges Notice.

The proposed development is subject to infrastructure charges in accordance with the Adopted Infrastructure Charges Resolution. The total charge applicable to this development is:

Total charge: $1,541,561.70

This charge has been calculated as follows in accordance with Council's Adopted Infrastructure Charges Resolution.

Residential Component

(52.00 X Dwelling House - 3 or more bedroom(Area A) X $30,226.70)	$1,571,788.40
Residential Demand Credit	
(1.00 X Dwelling House - 3 or more bedroom(Area A) X $30,226.70)	$-30,226.70

Total Council Charge:	**$1,541,561.70**

Offsets

The following offsets apply under Chapter 4 Part 2 of the PAct, calculated in accordance with Redland City Council's Adopted Infrastructure Charges Resolution:

Infrastructure works contributions are to be provided by the proponent in accordance with Conditions 6 and 7.

Establishment Cost

The Establishment Cost for the trunk infrastructure items will be determined at the detailed design phase in accordance with the Adopted Resolution.

Upon satisfactory completion of the proponent's obligations to determine the establishment cost of infrastructure, Council will make available offsets for the works against infrastructure charges levied upon the development as part of an Infrastructure Charges Notice.

In accordance with Redland City Council's Adopted Infrastructure Charges Resolution, any offset listed in the notice only accrues when the trunk infrastructure works is accepted on maintenance by Council. Any request for an early plan seal will require the bonding of any uncompleted trunk works.

Refunds

There are no refunds that apply under Chapter 4 Part 2 of the PAct.

State Referrals

SARA provided a referral agency response dated 1 October 2020 in regards to Schedule 10, Part 17, Division 3, Table 5, Item 1 (reconfiguring a lot in a coastal management district). The Department indicated no objection to the proposed development subject to referral agency conditions in regards to approved plans, rehabilitation works, site works, erosion and sediment control, and acid sulphate soils. The Department's referral response, including conditions, will be attached to Council's Decision Notice.

CONCLUSION

The application has been assessed against the relevant planning instruments and is considered to comply. It is therefore recommended that a development permit be issued subject to conditions.

STRATEGIC IMPLICATIONS

Legislative Requirements

The Development Application has been assessed in accordance with the PAct.

Risk Management

Standard development application risks apply. In accordance with the *PAct* the applicant may appeal a condition of approval or a decision to refuse the application.

Financial

Should an appeal be filed against the decision of Council subsequent legal costs will apply. The dedication of the public open space lot to Council will carry an on-going future maintenance cost requiring operation budget allocation.

People

There are no implications for staff associated with this report.

Environmental

Environmental impacts are discussed in the 'Issues' section of this report where relevant.

Social

Social impacts are discussed in the 'Issues' section of this report where relevant.

Human Rights

There are no known human rights implications associated with this report.

Alignment with Council's Policy and Plans

The assessment and officer's recommendation align with Council's policies and plans as described within the 'Issues' section of this report.

CONSULTATION

Consulted	Consultation Date	Comments/Actions
Councillor Division 3	31 July 2020	Application called in by the Councillor for a decision by Council.
Senior Advisor – Civic and Open Space Asset Management	20 April 2020	Land dedication advice
Community and Customer Service – Environment and Education Unit	23 April 2020	Land dedication advice

OPTIONS

Option One

That Council resolves to issue a development permit for reconfiguring a lot for two (2) into 52 lots plus road, retention lot and open space, on land described as Lot 2 on RP14809 and part of Lot 900 on SP220340, and situated at 124-134 Thornlands Road and part of 66-74 George Thorn Drive, Thornlands, subject to the conditions in Attachment 1.

Option Two

That Council resolves to approve the application without conditions or subject to amended conditions.

Option Three

That Council resolves to refuse the application (reasons for refusal must be identified).

OFFICER'S RECOMMENDATION

That Council resolves to approve the development for reconfiguring a lot for two (2) into 52 lots plus road, retention lot and open space, on land described as Lot 2 on RP14809 and part of Lot 900 on SP220340, and situated at 124-134 Thornlands Road and part of 66-74 George Thorn Drive, Thornlands, subject to the conditions in Attachment 1.

COUNCIL RESOLUTION 2020/345

Moved by: **Cr Paul Gollè**
Seconded by: **Cr Rowanne McKenzie**

That Council resolves to issue a preliminary approval for reconfiguring a lot plus road, retention lot, and open space, on land described as Lot 2 on RP14809 and part of Lot 900 on SP220340, and situated at 124-134 Thornlands Road and part of 66-74 George Thorn Drive, Thornlands, subject to the following conditions:

1. **Amend reconfiguration to include the original draft of 47 lots B4040PA1_DA1_R1/B to include no new residential lots.**
2. **Ensure the amended lot layout is located wholly within the low density residential zoned part of the site, other than the retention lot.**
3. **Retain the northern wetlands and amend stormwater quality treatment accordingly.**

LOST 3/8

Crs Paul Gollè, Lance Hewlett and Julie Talty voted FOR the motion.

Crs Karen Williams, Wendy Boglary, Peter Mitchell, Mark Edwards, Rowanne McKenzie, Tracey Huges, Adelia Berridge and Paul Bishop voted AGAINST the motion.

The motion was LOST and the Officer's Recommendation was moved as follows:

OFFICER'S RECOMMENDATION/COUNCIL RESOLUTION 2020/346

Moved by: **Cr Mark Edwards**
Seconded by: **Cr Rowanne McKenzie**

That Council resolves to approve the development for reconfiguring a lot for two (2) into 52 lots plus road, retention lot and open space, on land described as Lot 2 on RP14809 and part of Lot 900 on SP220340, and situated at 124-134 Thornlands Road and part of 66-74 George Thorn Drive, Thornlands, subject to the conditions in Attachment 1.

CARRIED 9/2

Crs Karen Williams, Wendy Boglary, Peter Mitchell, Mark Edwards, Julie Talty, Rowanne McKenzie, Tracey Huges, Adelia Berridge and Paul Bishop voted FOR the motion.

Crs Paul Gollè and Lance Hewlett voted AGAINST the motion.

ATTACHMENT 1

ASSESSMENT MANAGER CONDITIONS	TIMING
1. Comply with all conditions of this approval, at no cost to Council, at the timing periods specified in the right-hand column. Where the column indicates that the condition is an ongoing condition, that condition must be complied with for the life of the development.	
Approved plans and documents	
2. Undertake the development in accordance with the approved plans and documents referred to in Table 1, subject to the conditions of this approval and any notations by Council on the plans.	Prior to the use commencing and ongoing.

Plan/document title	Reference number	Prepared by	Plan/doc. date
Reconfiguration Plan (as amended in red)	B4040PA1_DA1-R1/B	JFP Urban Consultants	15-06-20
Site Based Stormwater Management Plan	B4040PE1_DA1-SBSMP/B	JFP Urban Consultants	27/07/2020
Landscape Concept Plans	B4040L A1 – DA1_LC1/B	JFP Consultants	18/09/2020
Tree retention plan	B4040L A1 – TR01/B	JFP Consultants	30/07/2020
Engineering Concept – Cycleway and Trunk Sewer Plan	B4040L A1 DS05/C	JFP Consultants	21/09/2020
Acid sulphate soils investigation	S50700CR002_V2.1	S5 Environmental	17/07/2020

Table 1: Approved plans and documents

Existing structures	
3. Remove any existing fences and/or incidental works that straddle the new boundaries, or alter to realign with the new property boundaries or to be wholly contained within one of the new properties.	Prior to Council approval of the survey plan.
Road naming	
4. Submit to Council, and gain approval for, a road naming plan, in accordance with Council's road naming guidelines, detailing specific road names and designations for all existing and proposed new public roads within the site. Use original road	Prior to preparing your survey plan.

ATTACHMENT 1

	names on all new roads to avoid duplication of any existing road names in the City.	
Split valuation		
5.	Pay a contribution to Council for the purposes of paying the State Government Split Valuation Fees. The current value of the contribution is $39.35 (excluding GST) per allotment (2020/2021 Financial Year). The amount of contribution must be paid at the rate applicable at the time of payment. A Split Valuation Fee is required for each allotment contained on the Plan(s) of Survey, including balance lots.	Prior to Council approval of the survey plan.
Trunk infrastructure		
6.	Design and construct a 300mm diameter gravity sewer main from point A to point B, as indicated on the approved cycleway and trunk sewer plan, in accordance with Redland City Council's Adopted Infrastructure Charges Resolution (No.3.1) 2020. This trunk infrastructure is subject to an offset.	Provide design as part of the application for operational works. Construct prior to Council approval of the survey plan.
7.	Design and construct a 3 metre wide shared bicycle and pedestrian pathway from point C to point D as indicated on the approved cycleway and trunk sewer plan, and to include a cycleway barrier (as required), signage, park seat and tap/bubbler, in accordance with Council's Adopted Infrastructure Charges Resolution (No.3.1) 2020. This item is identified in the Local Government Infrastructure Plan (TR-L-377). This trunk infrastructure is subject to an offset.	Provide design as part of the application for operational works. Construct prior to Council approval of the survey plan.
Utility services		
8.	Relocate any services (for example water, sewer, electricity, telecommunications and roofwater) that are not wholly located within the lots that are being serviced.	Prior to Council approval of the survey plan.
9.	Pay the cost of any alterations to existing public utility mains, services or installations due to building and works in relation to the proposed development, or any works required by	At the time the works occur, or prior to Council

ATTACHMENT 1

	conditions of this approval. Any cost incurred by Council must be paid in accordance with the terms of any cost estimate provided to perform the works.	approval of the survey plan, whichever is the sooner.
10.	Design and install underground electricity and telecommunication conduits to service all lots in accordance with the requirements of the relevant service providers and the City Plan Infrastructure Works Code and Infrastructure Works Policy. Provide Council with written confirmation from the service provider for the supply of electricity and telecommunication services. *Note: you need to engage the services of a telecommunications carrier to install and operate a telecommunications network. It is recommended you do this immediately after receiving this development approval to ensure a connection will be available to future residents. To find out if NBN is currently available for this development, visit the NBN website:* *https://www2.nbnco.com.au/develop-or-plan-with-the-nbn/new-developments.html*	Prior to Council approval of the survey plan.
Land dedication and design		
11.	Transfer the land shown as the approved site plan as "drainage reserve" to Council in fee simple (on trust) for the purpose of open space.	Prior to Council approval of the survey plan.
12.	Grant easements for the following and submit the relevant easement documentation to Council for approval. Once approved by Council, register the easements on the property title. a) Stormwater drainage purposes over Lots 31, 32, 34, 35, 37, 38, 39, 46, 48, 51 in favour of the upstream property owners. b) Access purposes 1m wide to and around any sewer maintenance holes or structures in favour of Redland City Council and its agents. c) Access & services purposes over Lot 10 in favour of Lot 9. d) Access & services purposes over Lot 10 in favour of Lot 8.	As part of the request for assessment of the survey plan.
Access and roadworks		

ATTACHMENT 1

13.	Submit to Council, and receive operational works approval for design of all roads in accordance with the provisions of Complete Streets, the City Plan Infrastructure Works Code, Planning Scheme Policy 2 – Infrastructure Works – 3.0 Transport, Servicing, Access and Parking, unless otherwise stated as part of a specific condition of this approval.	As part of the application for operational works or prior to Council approval of the survey plan, whichever is the sooner.
14.	Provide traffic calming consistent with the provisions of Complete Streets, the City Plan Transport, Servicing, Access and Parking Code and Policy.	Prior to Council approval of the survey plan.
15.	Submit to Council for approval, engineering plans and details showing the following frontage works along Thornlands Road a) Road construction including concrete kerb and channel and road pavement. Note: New kerb and channel to follow existing kerb and channel alignment extending from western side of Thornlands Road. b) Footpath earthworks, topsoiling and turfing of all disturbed footpath areas. c) Removal of all redundant vehicle crossovers. d) A minimum 2m wide concrete footpath at an alignment of 1.5m from the property boundary or in alignment with the existing footpath. e) Adjustment and relocations necessary to public utility services resulting from these works, including the relocation of overhead power to underground.	As part of the application for operational works or prior to Council approval of the survey plan, whichever is the sooner.
16.	Remove all redundant vehicle crossovers and reinstate kerb and channel, road pavement, service and footpaths as specified in accordance with the standards in the City Plan Transport, Servicing, Access and Parking Code and Policy.	Prior to Council approval of the survey plan.
Stormwater management		
17.	Convey roof water and surface water from each lot to a lawful point of discharge in accordance with the City Plan Planning Scheme Policy 2 – Infrastructure Works.	Prior to on maintenance or Council approval of the survey plan, whichever is the sooner.

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		Ongoing condition.
18.	Manage stormwater discharge from the site in accordance with the City Plan Planning Scheme Policy 2 – Infrastructure Works, so as to not cause an actionable nuisance to adjoining properties.	Prior to on maintenance or Council approval of the survey plan, whichever is the sooner. Ongoing condition.
19.	Submit to Council, and receive operational works approval for, a stormwater plan in accordance with the City Plan Planning Scheme Policy 2 – Infrastructure Works, including the following: • Design of allotment drainage. • Detailed drawing of the proposed stormwater system including longitudinal sections & cross section	As part of the application for operational works or prior to Council approval of the survey plan, whichever is the sooner.
Flood and storm tide		
20.	Any proposed fill must leave a clear path free of obstruction to allow for stormwater overland flow and for sea water to drain back to the sea after the water has reached a peak. No ponded areas are to be formed as a result of the fill and no stormwater is to be directed to adjoining lots.	Prior to the use commencing. Ongoing condition.
Water and wastewater		
21.	Connect all lots to the existing reticulated sewerage and reticulated water systems. Submit to Council for approval an application for operational works showing the proposed works are in accordance with the SEQ Water Supply and Sewerage Design and Construction Code and the City Plan Planning Scheme Policy 2 – Infrastructure Works. Note: water main is to be located in the western verge of the esplanade road. Sewer reticulation can be accepted on non-standard alignment within private lots to facilitate the water main relocation.	As part of the application for operational works or prior to Council approval of the survey plan, whichever is the sooner.

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22.	Remove any redundant sewerage connections within the site or servicing the development and provide documentary evidence to Council or its delegate that this has occurred.	Prior to Council approval of the survey plan.
23.	Reconnect the existing dwelling to new sewerage and/or water connections and services and locate all private plumbing and drainage associated with the dwelling wholly within the lot.	Prior to Council approval of the survey plan.
Excavation and fill		
24.	Apply to Council and obtain operational works approval for any earthworks associated with the reconfiguration, including verge earthworks. Design and construct all retaining structures in accordance with the Australian Standard for Earth-retaining structures (AS4678-2002), in particular the minimum 60 year design life requirements.	As part of the application for operational works or prior to Council approval of the survey plan, whichever is the sooner.
25.	Construct boundary fencing with materials, textures and colours that contrast with the associated retaining wall, where the combination of retaining wall and boundary fence exceeds 2.5m in height.	Prior to Council approval of the Survey Plan
Erosion and sediment control		
26.	Design, implement and maintain measures and practices in accordance with Best Practice Erosion and Sediment Control published by the International Erosion Control Association Australasian Chapter 2008 (IECA).	During construction phase.
Dust control		
27.	Implement dust control measures at each phase of site development and operation in accordance with IECA Best Practice Erosion and Sediment Control.	During site works and construction phase.
Landscape requirements		
28.	Submit a Landscape Plan, prepared in accordance with Plan Planning Scheme Policy 2 – Infrastructure Works, Section 5.0 – Parks, to Council for operational works approval. Include the following items in addition to the requirements of the Policy:	As part of the application for operational works.

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	a) Designs that are generally in accordance with the approved landscape concept rehabilitation plan. b) Details of street tree planting in accordance with the Landscaping Code with species selected from the City Plan, unless otherwise approved as part of the Operational Works approval. c) Details of landscaped buffer planting to any proposed fencing. d) Details of cycle/pedestrian paths throughout the whole site. e) Details of water bubbler/tap. f) Details of any proposed entry statements. g) All street trees shall have a Nylex (or equivalent) 600mm tree root barrier installed. Installation of tree root barriers must be confirmed with a Redland City Council representative at the time of planting trees. h) Details of all rehabilitation planting to the open space area. i) Details of stormwater facilities. j) Details of a metal slide rail stormwater facilities to allow access for maintenance vehicles. A plan showing the tree protection zones (TPZs) around existing trees identified for retention on the approved plans. The TPZs must be determined in accordance with Australian Standard A.S.4970-2009 – Protection of Trees on Development Sites.	
29.	Provide details of a maintenance plan/schedule for the entire landscaping component of the development including stormwater facilities, revegetated areas etc.	As part of the application for operational works.
Survey and as constructed information		
30.	Include on the survey plan connections from at least two separate corners to two Registered Permanent Survey Marks.	Prior to Council approval of the survey plan.
31.	Place Two (2) new Permanent Survey Marks (PSMs) in the approximate locations indicated on the annotated sketch the approved reconfiguration plan, and in accordance with the following: • secure each PSM site from works and make suitable for Global Navigation Satellite System (GNSS) observations • place PSMs as a standard brass plaque set in concrete to a minimum depth of 600mm • level each PSM placed to a minimum 4th Order standard.	Prior to Council approval of the survey plan.

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Environmental requirements	
32. Engage a minimum level 5 qualified Arborist to implement and supervise the tree protection measures as recommended in the approved tree retention plan.	During construction phase.
33. Protect those trees identified on the approved plans to be retained by implementing tree protection measures in accordance with Australian Standard AS4970-2009 – Protection of Trees on Development Sites. All tree protection measures must be in place prior to any development works commencing.	Prior to works commencing and during construction phase.
34. Provide Council with a written post-construction arborist report demonstrating compliance with the tree protection recommendations as outlined in the arborist report.	Prior to Council approval of the survey plan.
35. Undertake any corrective pruning of trees identified for retention on the approved plans in accordance with 'Australian Standard AS473:2007 – Pruning of amenity trees	During construction phase.
36. Undertake treatment of naturally occurring acid soils in accordance with Section 5.0 of the approved acid sulphate soils investigation.	During construction phase.
37. Provide a wildlife management plan for operational works approval. The plan is to provide details about the sequencing of vegetation clearing in a manner that provides opportunities for fauna to vacate affected land.	As part of the application for operational works.
ADDITIONAL APPROVALS	
The following further **development permits** are necessary to allow the development to be carried out. • Operational works approval is required for the following works as detailed in the conditions of this approval: o Stormwater Drainage o Roads	

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- Water & Wastewater
- Earthworks

Further approvals, other than a development permit, are also required for your development. This includes, but is not limited to, the following:

- Capping of sewer – for demolition of existing buildings on site.
- Road opening permit – for any works proposed within an existing road reserve.

REFERRAL AGENCY CONDITIONS

- **Queensland Treasury (QT)**
  Refer to the attached correspondence from the QT dated 01 October 2020 (QT reference 2004-16346 SRA).

ASSESSMENT MANAGER ADVICE

- **COVID-19 Extension to currency period**
  The currency period for this approval is subject to any further extension of time declared by the State government for the "COVID-19 emergency applicable event" pursuant to s275F of the Planning Act 2016.

- **Coastal processes and sea level rise**
  Please be aware that development approvals issued by Redland City Council are based upon current lawful planning provisions which do not necessarily respond immediately to new and developing information on coastal processes and sea level rise. Independent advice about this issue should be sought.

- **Hours of construction**
  Please be aware that you are required to comply with the *Environmental Protection Act* in regards to noise standards and hours of construction.

- **Services installation**
  It is recommended that where the installation of services and infrastructure will impact on the location of existing vegetation identified for retention, an experienced and qualified arborist that is a member of the Australian Arborist Association or equivalent association, be commissioned to provide impact reports and on site supervision for these works.

- **Fire ants**

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Areas within Redland City have been identified as having an infestation of the Red Imported Fire Ant (RIFA). Biosecurity Queensland should be notified on 13 25 23 of proposed development(s) occurring in the Fire Ant Restricted Area before earthworks commence. It should be noted that works involving movements of soil associated with earthworks may be subject to movement controls and failure to obtain necessary approvals from Biosecurity Queensland is an offence. It is a legal obligation to report any sighting or suspicion of fire ants within 24 hours to Biosecurity Queensland on 13 25 23. The Fire Ant Restricted Area as well as general information can be viewed on the Department of Agriculture and Fisheries (DAF) website www.daf.qld.gov.au/fireants

- **Cultural heritage**
  The *Aboriginal Cultural Heritage Act 2003* requires anyone who carries out a land use activity to exercise a duty of care. Further information on cultural heritage duty of care is available on the Department of Aboriginal and Torres Strait Islander Partnerships (DATSIP) website:

  https://www.datsip.qld.gov.au/resources/datsima/people-communities/cultural-heritage/cultural-heritage-duty-care.pdf

  The DATSIP has established a register and database of recorded cultural heritage matters, which is also available on the Department's website:

  https://www.datsip.qld.gov.au/people-communities/aboriginal-torres-strait-islander-cultural-heritage/cultural-heritage-search-request

  Quandamooka Yoolooburrabee Aboriginal Corporation (QYAC) is the registered cultural heritage body in the Redland City local government area. It is recommended you consult with QYAC in relation to aboriginal and cultural heritage matters prior to the commencement of works on site. QYAC can be contacted on 07 3415 2816 or admin@QYAC.net.au

  Should any aboriginal, archaeological or historic sites, items or places be identified, located or exposed during construction or operation of the development, the *Aboriginal and Cultural Heritage Act 2003* requires all activities to cease. Please contact DATSIP for further information.

- **Fauna protection**
  It is recommended an accurate inspection of all potential wildlife habitats be undertaken prior to removal of any vegetation on site. Wildlife habitat includes trees (canopies and lower trunk) whether living or dead, other living vegetation, piles of discarded vegetation, boulders, disturbed ground surfaces, etc. It is recommended that you seek advice from the Queensland Parks and Wildlife Service if evidence of wildlife is found.

ATTACHMENT 1

- ***Environment Protection and Biodiversity Conservation Act***
  Under the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act* (the EPBC Act), a person must not take an action that is likely to have a significant impact on a matter of national environmental significance without Commonwealth approval. Please be aware that the listing of the Koala as **vulnerable** under this Act may affect your proposal. Penalties for taking such an action without approval are significant. If you think your proposal may have a significant impact on a matter of national environmental significance, or if you are unsure, please contact Environment Australia on 1800 803 772. Further information is available from Environment Australia's website at www.ea.gov.au/epbc

  Please note that Commonwealth approval under the EPBC Act is independent of, and will not affect, your application to Council.

- ***Environmental Protection Act***
  Please be aware this approval does not remove obligations to comply with any of the requirements of the *Environmental Protection Act 1994*, including complying with the General Environmental Duty, section 440ZG and the Duty to Notify.

NOTICE ABOUT DECISION – STATEMENT OF REASONS

Assessment Benchmarks:	The proposed development was assessed against the following assessment benchmarks: • Redland City Plan V7.2: • Low density residential zone code • Recreation and open space zone code • Healthy waters code • Infrastructure works code • Landscape code • Transport, servicing, access and parking code • Bushfire hazard overlay code • Coastal protection (erosion prone areas) overlay code • Environmental significance overlay code • Flood and storm tide hazard overlay code • Waterway corridors and wetlands overlay code

The key issues identified in the assessment were:

- Zoning
- Lot layout and design
- Erosion prone area

ATTACHMENT 1

- Environmental values
- Flood prone land
- Bushfire hazard
- Dam dewatering
- Stormwater management
- Access and parking/road design/frontage works
- Utility infrastructure
- Waste management
- Earthworks
- Sediment and erosion control

For these issues, the development did not meet the deemed to comply probable solutions in the relevant code, but did meet the specific or overall outcomes, which therefore complies with the code as outlined below.

Issue	Performance assessment
Zoning	The subject site includes a split zoning, with the proposed new residential lots contained wholly within the low density residential zone, and with the esplanade road located partly located in the recreation and open space (ROS) zone, except for the retention lot, which will not have any additional impacts on the drain age, flood storage and environmental values of the ROS zone as the lot is already development and located in a cleared part of the site. The road follows the road alignment designated under the previous planning scheme and will include the trunk Moreton Bay Coast Cycleway within the road corridor, which will facilitate passive and active recreational use of the land in addition to protecting ecological values.
Lot layout and design	Lots achieve the 400m² minimum lots size requirements for the low density residential zone code, and are of sufficient width and depth to allow dwelling houses to be located on the lots. The two internal lots will ne accessed via an easement and include appropriate truncations within the easement to facilitate vehicle access.
Erosion prone area	The applicant provided updated erosion prone mapping that provides more up to date information on the erosion prone area. All residential development will be located outside of the new area. The State have advised they will update State erosion prone area mapping in the next round of mapping updates.
Environmental values	Environmental values are protected be ensuring the enhancement corridor mapped under the RPS along the western boundary is maintained for this purpose in addition to providing stormwater treatment for the development.

ATTACHMENT 1

Flood prone land	The part of the development site subject to storm tide will be filled to provide appropriate flood immunity without affecting downstream properties.
Bushfire hazard	The provided bushfire hazard assessment has adequately demonstrated that the bushfire hazard risk is at an acceptable level, with the road extension providing a suitable buffer to hazardous vegetation to the north. This road will also facilitate emergency access and fire hydrants will be located within the road verge.
Dam dewatering	The existing farm dams will be dewatered (southern dam) or re-profiled (northern dam to provide the bio-basin). The dams do not have a level of environmental value that would justify their retention when considering future maintenance costs that rate payers would otherwise be responsible for once the land containing the dams is dedicated to Council.
Stormwater management	The development provides appropriate stormwater management in the form of a stormwater bio-basin to treat stormwater prior to discharge to Moreton Bay.
Access and parking/road design/frontage works	Each lot will be able to accommodate onsite parking in accordance with MP1.1 and MP1.2 of the Queensland Development Code. New roads have been appropriately design to cater for all users, street trees, footpaths (including the extension of the Moreton Bay Coast Cycleway); and utility infrastructure.
Utility infrastructure	The development is able to serviced via connections to existing utility infrastructure.
Waste management	The development is able to be serviced by a waste collection vehicle with kerbside bin collection.
Earthworks	Earthworks will be minimised to provide level lots, and fall for stormwater management. A condition is included to ensure an appropriate level of amenity for future residents, Detailed design will be considered at operational works stage.
Sediment and erosion control	Appropriate conditions are included to ensure sediment and erosion control is managed appropriately during construction.

The development application is approved as it complies with all of the relevant assessment benchmarks, or can be made to comply through the imposition of conditions on the approval.

Matters Prescribed by a Regulation
• State Planning Policy 2017 • SEQ Regional Plan

ATTACHMENT 1

The development application is approved as it complies with all of the relevant assessment benchmarks, or can be made to comply through the imposition of conditions on the approval.

ATTACHMENT 1

DEVELOPMENT APPROVAL NOTATIONS/AMENDMENTS

THIS SECTION IS NOT TO BE INSERTED INTO THE DECISION NOTICE

Notation/Amendments Summary	YES	NO
Zone changes proposed/recommended	☐	☒
Overlay amendments proposed/recommended	☒	☐
Covenants approved	☐	☒
Easements approved	☐	☒
Variation Approval	☐	☒
Superseded Planning Scheme Approval	☐	☒
Conflict with Planning Scheme approved	☒	☐
Flood study submitted	☐	☒
Land to be dedicated	☒	☐
Where applicable *('yes' has been checked)* further information can be found below.		

Overlay Amendment Recommendations		
Overlay	**Post Approval** The following overlays should be present on the listed lot numbers *(note you will need to consider the lot layout with the current overlay mapping)*:	**Amendment Recommendation** It is recommended the overlay mapping be adjusted prior to plumbing final or signing of the survey plan so that the following lots or part lots are no longer subject to these overlays:
Coastal protection (erosion prone areas) overlay code	Coastal protection (erosion prone areas) overlay code	When the State updates their erosion prone area mapping (as per the State mapping changes)

Conflict with planning instrument (to be notated on planning scheme in accordance with s89 of the Planning Act 2016)	
Does the approval conflict with the planning scheme?	Overall outcome 8.2.3.2(2)(d) and performance outcome PO4 of the coastal protection (erosion prone areas) overlay code
What scheme/version:	City plan V4.0

Easements approved for:	
	Lots as per approved plan

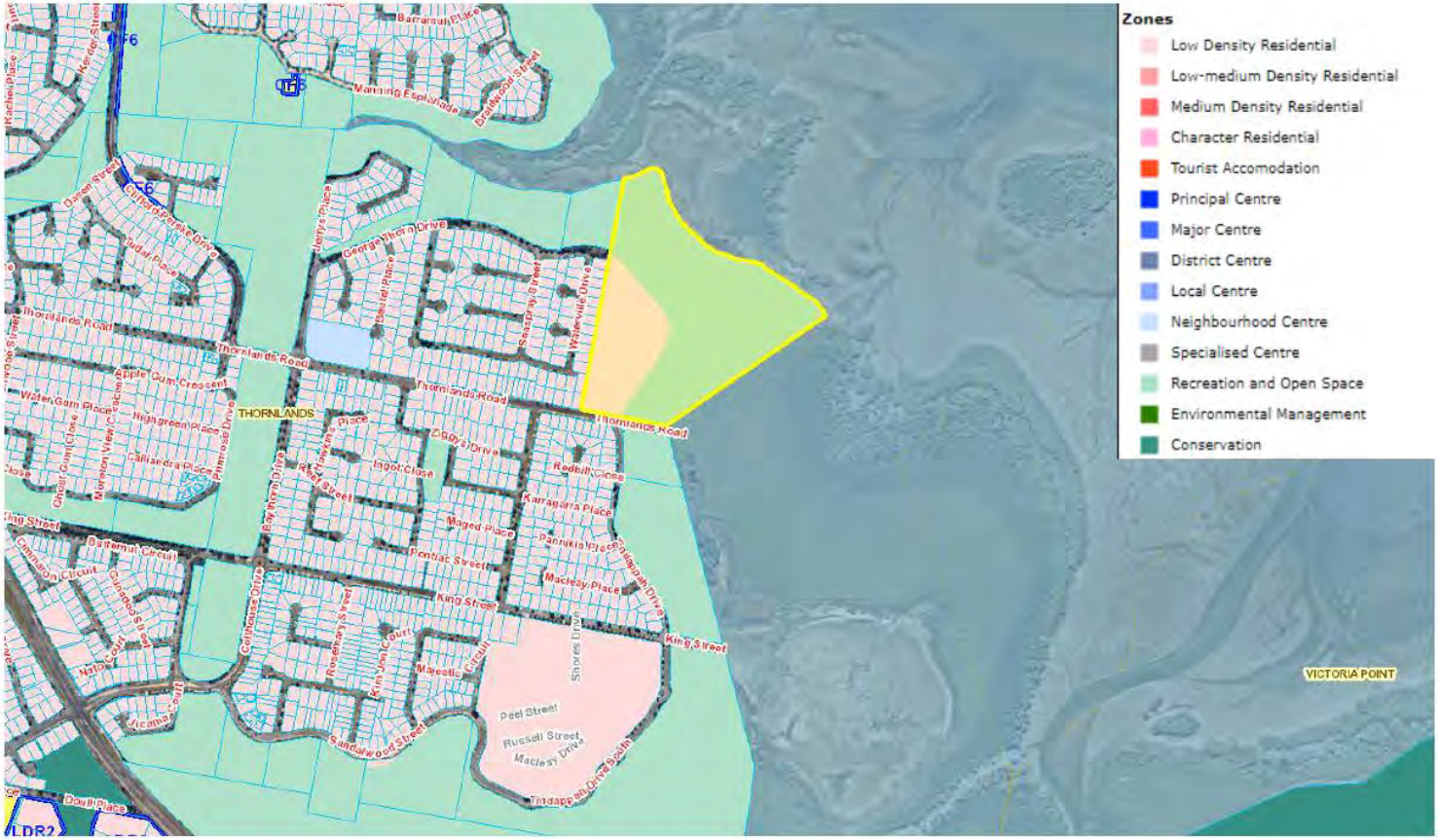
ATTACHMENT 1

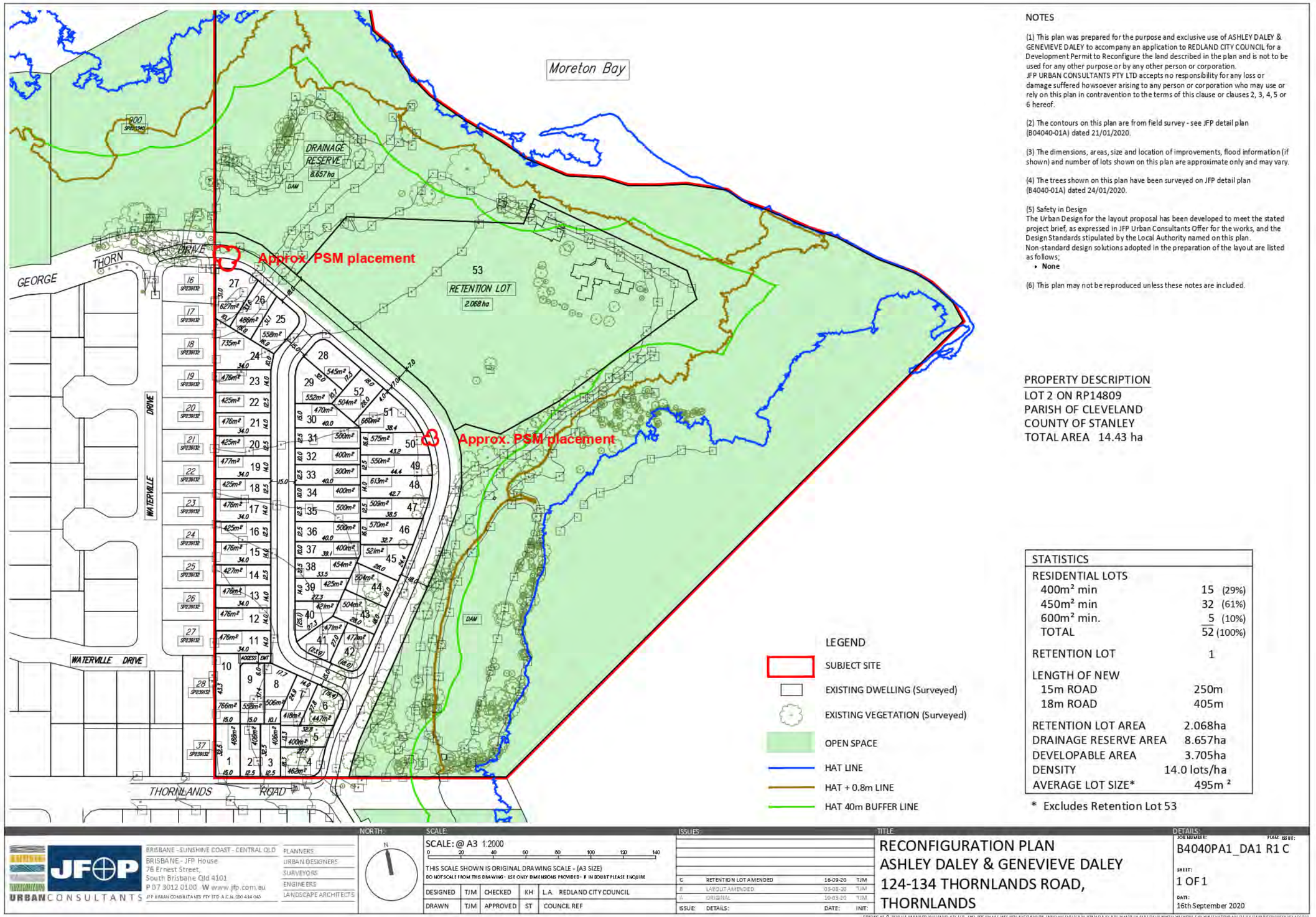
Stormwater drainage	Over Lots 31, 32, 34, 35, 37, 38, 39, 46, 48, 51 in favour of the upstream property owners
Sewer maintenance access	Over nay sewer maintenance holes/structures in favour of RCC
Access and service	Over Lot 10 in favour of Lot 9.
Access and services	Over Lot 10 in favour of Lot 8.

Land Dedication	
Lots as per approved plan	**Purpose of dedication (eg open space, roads)**
As indicated on the approved reconfiguration plan as "drainage reserve"	park

Attachment 2 – Locality Plan

Attachment 3 – Zone Plan





NOTES

(1) This plan was prepared for the purpose and exclusive use of ASHLEY DALEY & GENEVIEVE DALEY to accompany an application to REDLAND CITY COUNCIL for a Development Permit to Reconfigure the land described in the plan and is not to be used for any other purpose or by any other person or corporation.
JFP URBAN CONSULTANTS PTY LTD accepts no responsibility for any loss or damage suffered howsoever arising to any person or corporation who may use or rely on this plan in contravention to the terms of this clause or clauses 2, 3, 4, 5 or 6 hereof.

(2) The contours on this plan are from field survey - see JFP detail plan (B04040-01A) dated 21/01/2020.

(3) The dimensions, areas, size and location of improvements, flood information (if shown) and number of lots shown on this plan are approximate only and may vary.

(4) The trees shown on this plan have been surveyed on JFP detail plan (B4040-01A) dated 24/01/2020.

(5) Safety in Design
The Urban Design for the layout proposal has been developed to meet the stated project brief, as expressed in JFP Urban Consultants Offer for the works, and the Design Standards stipulated by the Local Authority named on this plan.
Non-standard design solutions adopted in the preparation of the layout are listed as follows;

- **None**

(6) This plan may not be reproduced unless these notes are included.

PROPERTY DESCRIPTION
LOT 2 ON RP14809
PARISH OF CLEVELAND
COUNTY OF STANLEY
TOTAL AREA 14.43 ha

STATISTICS		
RESIDENTIAL LOTS		
400m² min	15	(29%)
450m² min	32	(61%)
600m² min.	5	(10%)
TOTAL	52	(100%)
RETENTION LOT	1	
LENGTH OF NEW		
15m ROAD	250m	
18m ROAD	405m	
RETENTION LOT AREA	2.068ha	
DRAINAGE RESERVE AREA	8.657ha	
DEVELOPABLE AREA	3.705ha	
DENSITY	14.0 lots/ha	
AVERAGE LOT SIZE*	495m ²	

* Excludes Retention Lot 53

JFP URBAN CONSULTANTS
BRISBANE - SUNSHINE COAST - CENTRAL QLD
BRISBANE - JFP House
76 Ernest Street,
South Brisbane Qld 4101
P 07 3012 0100 W www.jfp.com.au
JFP URBAN CONSULTANTS PTY LTD A.C.N. 050 434 045
PLANNERS
URBAN DESIGNERS
SURVEYORS
ENGINEERS
LANDSCAPE ARCHITECTS

NORTH:

SCALE: SCALE: @ A3 1:2000
0 20 40 60 80 100 120 140
THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE - (A3 SIZE)
DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE

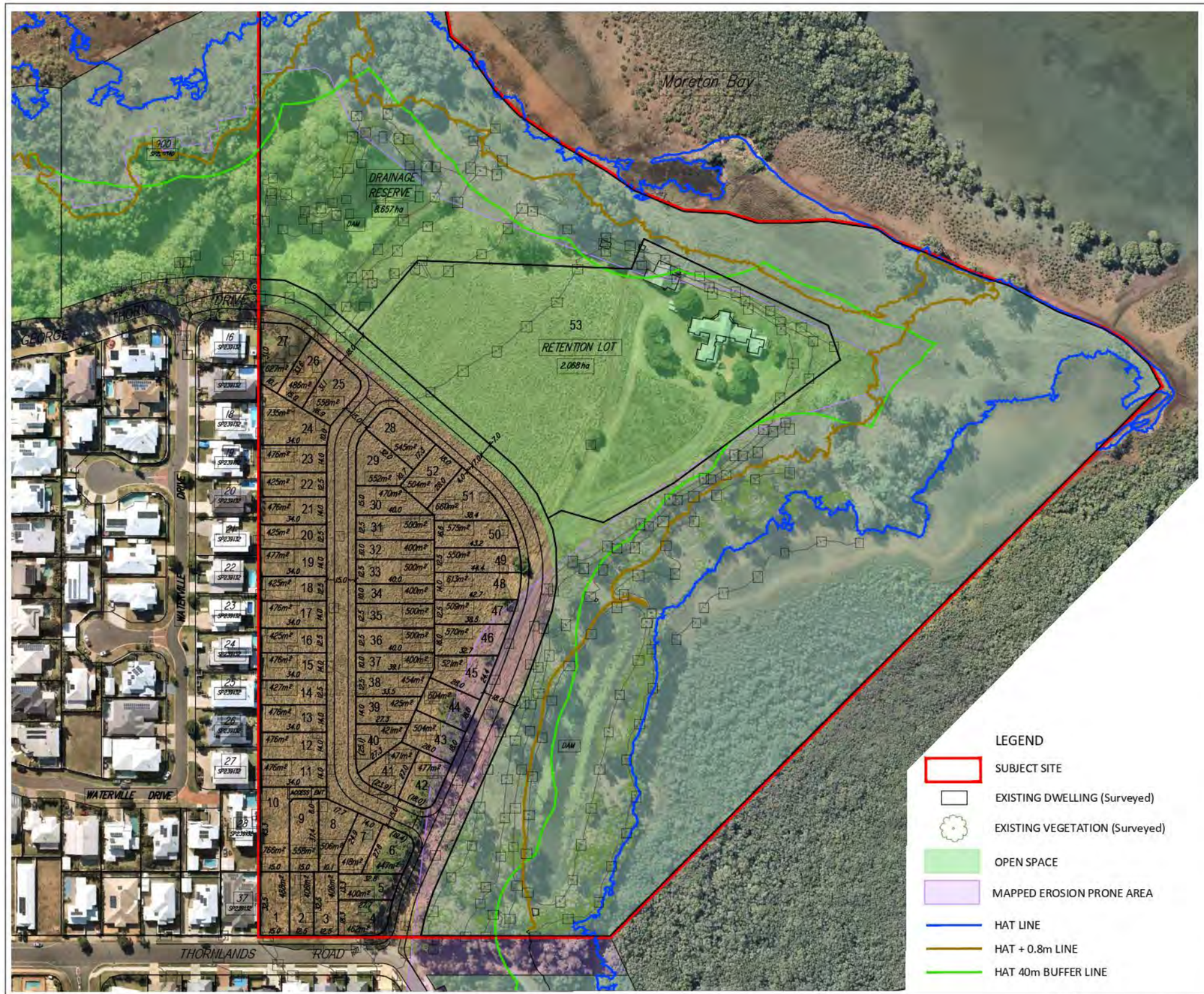
DESIGNED	TJM	CHECKED	KH	L.A.	REDLAND CITY COUNCIL
DRAWN	TJM	APPROVED	ST	COUNCIL REF	

ISSUES:

ISSUE	DETAILS:	DATE:	INIT:
C	RETENTION LOT AMENDED	16-09-20	TJM
B	LAYOUT AMENDED	03-09-20	TJM
A	ORIGINAL	10-03-20	TJM

TITLE:
RECONFIGURATION PLAN
ASHLEY DALEY & GENEVIEVE DALEY
124-134 THORNLANDS ROAD, THORNLANDS

DETAILS:
JOB NUMBER: B4040PA1_DA1 R1 C
PLAN: ISSUE: C
SHEET: 1 OF 1
DATE: 16th September 2020



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PROPERTY DESCRIPTION
LOT 2 ON RP14809
PARISH OF CLEVELAND
COUNTY OF STANLEY
TOTAL AREA 14.43 ha

LEGEND

- SUBJECT SITE
- EXISTING DWELLING (Surveyed)
- EXISTING VEGETATION (Surveyed)
- OPEN SPACE
- MAPPED EROSION PRONE AREA
- HAT LINE
- HAT + 0.8m LINE
- HAT 40m BUFFER LINE

STATISTICS	
RESIDENTIAL LOTS	
400m² min	15 (29%)
450m² min	32 (61%)
600m² min.	5 (10%)
TOTAL	52 (100%)
RETENTION LOT	1
LENGTH OF NEW	
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DESIGNED	TJM	CHECKED	KH	L.A. REDLAND CITY COUNCIL
DRAWN	TJM	APPROVED	ST	COUNCIL REF

ISSUES:

A	ORIGINAL	16-09-20	TJM
ISSUE:	DETAILS:	DATE:	INIT:

TITLE:
RECONFIGURATION PLAN WITH MAPPED EROSION PRONE AREA
ASHLEY DALEY & GENEVIEVE DALEY
124-134 THORNLANDS ROAD, THORNLANDS

DETAILS:
JOB NUMBER: B4040PA1_DA1 PLAN: M2 ISSUE: A
SHEET: 1 OF 1
DATE: 16th September 2020

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JFP URBAN CONSULTANTS

SITE BASED STORMWATER MANAGEMENT PLAN

Proposed Development at
124-134 THORNLANDS ROAD, THORNLANDS
for
ASHLEY DALEY & GENEVIEVE DALEY

TOWN PLANNING
URBAN DESIGN + MASTER PLANNING
SURVEYING + SPATIAL SERVICES
CIVIL + STORMWATER ENGINEERING
LANDSCAPE ARCHITECTURE
ECOLOGY + ARBORICULTURE

BRISBANE | SUNSHINE COAST | CENTRAL QLD

ISO 9001 CERTIFIED

SITE BASED STORMWATER MANAGEMENT PLAN

Proposed Development at
124-134 THORNLANDS ROAD, THORNLANDS
for
ASHLEY DALEY & GENEVIEVE DALEY

B4040EA1_DA1_SBSMP –Revision B
July 2020

JFP Urban Consultants Pty Ltd
Prepared by: C. Blair
Approved by: T. McKinney

Revision	Date	Details	Prepared By	Approved By	Signature
A	16/03/2020	For Client Review & Authority Submission	CB	TMcK (RPEQ 5087)	
B	27/07/2020	Information Request Response	CB	TMcK (RPEQ 5087)	

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TABLE OF CONTENTS

1. INTRODUCTION

JFP Urban Consultants Pty Ltd has been commissioned by Ashley Daley & Genevieve Daley to compile this *Site Based Stormwater Management Plan* (*SBSMP*) for the site located at 124-134 Thornlands Road, Thornlands. Refer to **Appendix A** for the proposed layout. RCC application reference is **RAL20/0020.**

The analyses in this report present strategies for managing stormwater quantity and quality for the site generally in accordance with the prelodgement minutes (**Appendix D**), Redland City Council (RCC) City Plan (2020) and the *State Planning Policy* (2017). The report objective and scope of works are presented below.

Revision B of this SBSMP has been updated specifically to address items 13 and 14 of the RCC Information Request dated 28/04/2020 and item 2 of the SARA Information Request dated 01/05/2020. Refer to **Section 1.2** and **Section 1.3** for these items and our responses.

1.1 OBJECTIVE & SCOPE

The objectives & scope of investigations undertaken for this report is as follows:

- Flood Assessment
  - Determine the relevant flood / storm tide level applicable for the site.
  - Address PO3, PO6, PO8 & PO10 of the *Flood & Storm Tide Hazard Overlay Code* as per the prelodgement advice.
  - Nominate flood immunity levels for the new allotments.
- Stormwater Quantity:
  - Determine the lawful point/s of discharge.
  - Determine the peak flow discharge rate/s at the lawful point/s of discharge.
  - Provide commentary to demonstrate site discharge will not adversely impact adjoining private properties, PO3 of the *Stormwater Code*.
- Stormwater Quality
  - Determine the Water Quality Objectives applicable for the site.
  - Develop a stormwater quality management strategy
  - Undertake MUSIC modelling to demonstrate that Water Quality Objectives can be achieved.
  - Address waterway stability management criteria required under the *State Planning Polity* (2017).

Based on the outcomes of the above investigations, this report provides recommendations, including concept drawings for stormwater management. These recommendations should be incorporated into future detailed design and subsequent construction documentation.

1.2 COUNCIL INFORMATION REQUEST

Item 13. *Confirm whether the proposed bio-retention will be impacted or not by scouring flows in the event of storm surge or flooding events, to address performance outcome PO14 of the healthy waters code. Refer to Section 3.4.5 Bioretention Technical Design Guidelines v1.1, Water by Design, 2014.*

Response: The proposed bioretention filter surface level is 2.61m AHD. The Highest Astronomical Tide (HAT) level at the nearest gauge (Victoria Point) is 1.55m AHD. The bioretention basin is therefore located well above the HAT level.

Only up to the Q3-month development flows are proposed to be discharged into a coarse sediment forebay and then into the bioretention basin. This is in accordance with the Water by Design *Bioretention Technical Design Guidelines* (2014). Flows greater than the Q3-month will be discharged into a high-flow bypass channel located to the east of the basin.

A scour velocity check has been undertaken in accordance with *Section 3.4.5* of the Water by Design *Bioretention Technical Design Guidelines* (2014). The Q3-month flow velocity over the filter media is 0.04m/s which is well below the recommended maximum of 1m/s. Refer to **Appendix C** for the calculation details.

As a sensitivity check, the scour velocities for Q2 (39% AEP) and Q100 (1% AEP) have also been checked even though these flows are not proposed to be discharged into the basin. The results show Q2 (39% AEP) flow velocity over the filter media is 0.11m/s and Q100 (1% AEP) flow velocity over the filter media is 0.24m/s. Both below the recommended maximum of 1m/s. Refer to **Appendix C** for the calculation details.

Item 14. *Provide an electronic copy of the MUSIC model to confirm all input values and calculated performance. Please provide as an SQZ email attachment to avoid possible corruption of data when registered through the Council system.*

Response: An electronic copy of the MUSIC model (.sqz) is included within the Information Request Response submission package.

1.3 SARA INFORMATION REQUEST

Item 2. *Please provide further justification as to how the proposed development plans to avoid and mitigate the cumulative impacts of stormwater runoff into this site of High Ecological Significance wetland, utilised by these Matters of State Environmental Significance (MSES) species. In particular, please justify how impacts will be avoided or mitigated in the event of an overtopping of the adjacent bioretention basin.*

Response: stormwater runoff from the development is proposed to be managed via the drainage infrastructure proposed. The Q3-month flows will be discharged into the proposed bioretention basin for stormwater quality treatment. The basin is not expected to be overtopped as it will only receive the Q3-month flow. The overflow pit and the outlet pipe from the basin will be sized appropriately for the Q3-month flows, incorporating relevant blockage factors in accordance with RCC guidelines and the *QUDM* (2016). The overflow pit will have a [redacted] any overtopping flows and direct them into the adjacent high-flow bypass channel.

Flows larger than the Q3-month will be conveyed around the bioretention basin via a high-flow bypass channel (size to be confirmed during detailed design). Landscape and rehabilitation works are also proposed within the area. Refer to the *'Landscape Rehab Intent Concept Plan'* and the *'Tree Retention Plan'* prepared by JFP Urban Consultants for details.

2. SITE CHARACTERISTICS

2.1 LOCATION

The site is located in Redland City Council (RCC) local government area. The real property description is Lot 2 on RP14809. The street address is 124-134 Thornlands Road, Thornlands. The total site area is 14.43ha, however as the site is located adjacent to Moreton Bay, much of the site is mapped under 'Erosion Prone Area'. This area is proposed to be amended as part of the development application. The proposed developable area is approximately 3.705ha. Please refer to the '*Technical Memo – Erosion Prone Area*' prepared by BMT WBM associated with this development application for further details regarding the ground truthed extent of the Erosion Prone Area. As detailed in this document, the proposed development footprint is not within the Erosion Prone Area

The site is bounded by Moreton Bay to the north & east, private properties to the west and Thornlands Road to the south. Refer to **Figure 1**.

Figure 1 – Site Location (Source: Red-e-map, Feb. 2020)

2.2 EXISTING LAND USE, TOPOGRAPHY & DRAINAGE

The majority of the site is currently undeveloped, with a single residential dwelling is located toward the north-eastern portion of the site. The site has two waterbodies, one located toward the south-east corner of the site, and the other located toward the north-west corner of the site. Refer to **Figure 2**.

Figure 2 – Existing Contours, Drainage & Waterbodies (Source: Red-e-map, Feb. 2020)

The site slopes down toward the bay to the north and east. The slope varies. The site levels range from approximately RL 10m AHD at the highest (south-western corner) down to approximately RL 1m AHD at the bay frontages.

As depicted in **Figure 2** there is 600mm diameter RCP pipe drainage running along the southern side of Thornlands Road. None of the existing site however, connects to this drainage line.

Based on Red-e-map contours and the adjacent land parcels, the existing site does not appear to receive any significant external catchments flows.

Portions of the site is affected by storm-tide flooding. This is discussed further in **Section 3** of this report.

3. FLOOD ASSESSMENT

3.1 STORM TIDE FLOOD CONDITIONS

RCC's flood and storm tide hazard overlay mapping identifies the northern and eastern perimeters of the site affected by storm-tide Inundation. Refer to **Figure 3** below.

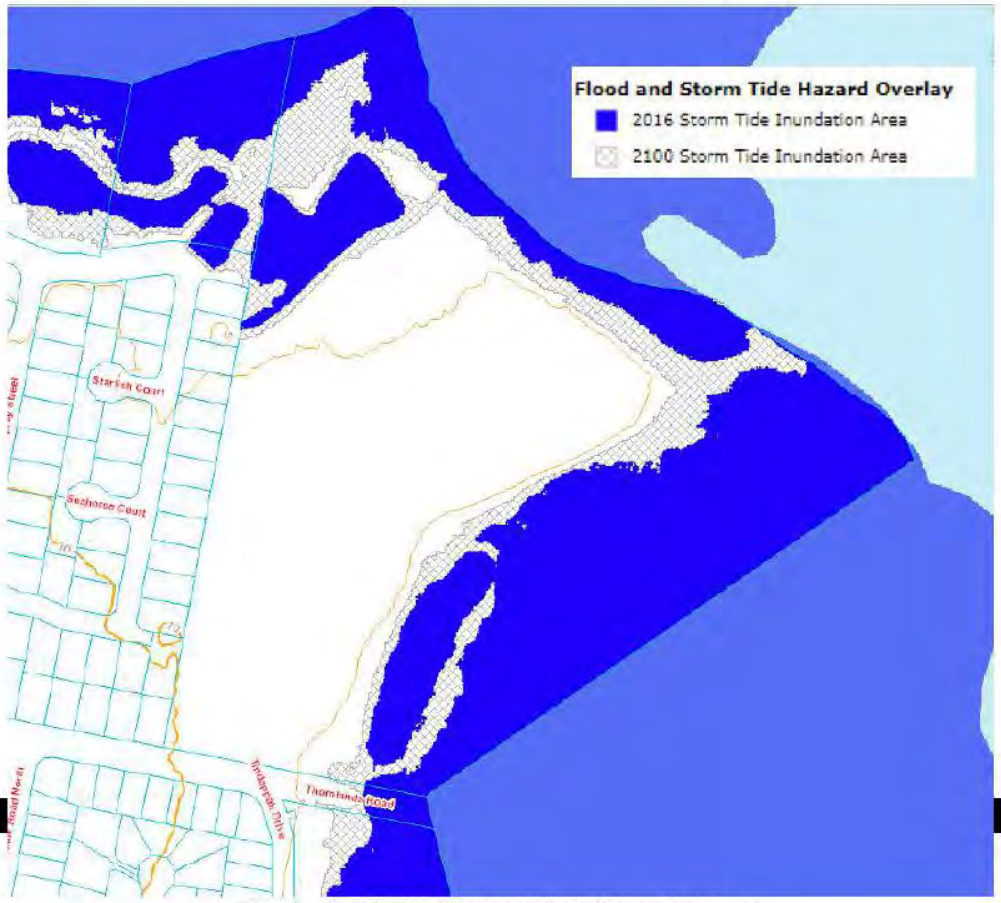

Figure 3 – Flood & Storm Tide Hazard Overlay (Source: Red-e-map)

Table 1 presents the 2100 storm tide level as per RCC's prelodgement advice (refer to **Appendix D**).

Table 1 – Site Flood Levels

Description	Level (m AHD)
2100 Storm-Tide	3.22

3.2 PROPOSED DEVELOPMENT EXTENT

The proposed development extent is located well outside of the 2100 storm tide inundation area. As per RCC's *Healthy Waters Code*, the existing waterbodies will be removed (i.e. filled); however, filling of the existing waterbodies is not expected to affected the storm tide inundation conditions as these waterbodies are not known to be providing any storage for storm tide inundation flows.

There are no overland flow paths traversing the existing site that will be obstructed by the proposed development or the removal of the existing waterbodies. The development will comply with PO6 of the *Flood & Storm Tide Hazard Overlay Code,* because the development will not result in:

(1) loss of flood storage;
(2) loss of or changes to flow paths;
(3) acceleration or retardation of flows;
(4) any reduction in flood warning times elsewhere on the floodplain;
(5) any other worsening of inundation impacts on other properties or public infrastructure.

The development area is generally located outside of the storm tide inundation extent (i.e. above RL 3.22m AHD). However, in accordance with PO3 of the *Flood & Storm Tide Hazard Overlay Code,* any infrastructure located adjacent to storm tide affected area that is likely to become a public asset, such as the new road, is to be designed to withstand hydrodynamic forces of the defined storm tide even. If required, this can be undertaken with professional structural engineering input during the detailed design.

3.3 FLOOD IMMUNITY LEVELS

RCC *Flood & Storm Tide Hazard Overlay Code* does not appear to specify additional freeboard to the defined flood/storm tide event. PO5 of *Flood & Storm Tide Hazard Overlay Code* states that "the extent of filling utilised to achieve the necessary finished floor levels, evacuation routes and flood immunity for infrastructure is minimised."

As best practice, we have adopted the freeboard requirements nominated in Brisbane City Council's City Plan 2014 for this site. In accordance with *Table 8.2.6.3.C* of the *Coastal Hazard Overlay Code* (BCC City Plan 2014), the following minimum flood immunity levels are proposed.

Table 2 – Minimum Flood Immunity Levels

2100 Storm Tide Level (m AHD)	Minimum Recommended Level (m AHD)				
	Habitable Floor *(+0.5m freeboard)*	Essential Electrical Infrastructure *(+0.5m freeboard)*	Non-Habitable Floor *(+0.3m freeboard)*	Allotment Pad Level *(+0.3m freeboard)*	Road Level
3.22	3.72	3.72	3.42	3.42	3.22

Based on the existing topography over the development area, the new lots will be located well above the minimum lot level required. Moreover, with the above recommended 0.5m freeboard, the electricity infrastructure which supplies new subdivision (i.e. pad mount transformers) will be located on land that is well above the defined flood level 3.22m AHD (PO10 of *Flood & Storm Tide Hazard Overlay Code*).

4. STORMWATER QUANTITY

4.1 LAWFUL POINT OF DISCHARGE

The lawful point of discharge for the development is the bay to the north. All site area, including some of the external Thornlands Road catchment, is proposed to be conveyed to the proposed sag located toward the northern end of the development. Underground pipe drainage is to be designed for the minor design storm 39% AEP (Q2), in accordance with *Table 9.3.1.3.2* of the *Healthy Waters Code*. Larger 1% AEP (Q100) flows are to be conveyed as road flows.

At the sag, the frequent $Q_{3\text{-month}}$ flows will be directed into the bioretention basin for stormwater quality treatment. Larger flows are to be discharged into the high flow bypass swale located on the eastern side of the basin. The swale will then tie into the natural surface levels near the northern site boundary with scour protection, subject to detailed design.

There are no private properties between the bay and the development. The development will discharge stormwater runoff directly into the bay without passing through any external private properties. Therefore, on-site detention is not proposed, nor appropriate for peak flow mitigation at this site. The development discharge will not adversely impact any adjoining private properties and complies with PO3 of the *Stormwater Code*.

Rational Method calculation has been undertaken to quantify the peak flow discharge rates at the proposed sag.

4.2 RATIONAL METHOD CALCULATION

4.2.1 CATCHMENT DATA

The Rational Method Calculation has been undertaken for the development area. Refer to **Table 3** for the catchment data and refer to Drawing No. **B4040EA1_DA1_SK01** in **Appendix B** for the catchment plan. Refer to **Appendix C** for additional Rational Method Calculation details.

The C_{10} values were obtained from *Table 4.5.3* and *Table 4.5.4* of the *QUDM* (2016) based on the estimated fraction impervious.

Table 3 – Post-Development Scenario Catchment Data

Catchment	Area (ha)	Fraction Impervious	C_{10}
Catchment 1	4.04	80%	0.86

4.2.2 TIME OF CONCENTRATION

The time of concentration (t_c) for each catchment was calculated using the Standard Inlet Time and pipe flow travel time in accordance with the *QUDM* (2016). Refer to **Table 4**.

Table 4 – Time of Concentration (Post-Development Scenario)

Catchment	Standard Inlet Time (mins)	Pipe Flow Time (mins)			Total Tc (mins)
		Length (m)	Assumed Velocity (m/s)	Time (mins)	
Catchment 1	13	400	2	3.3	16.3

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4.2.3 RAINFALL INTENSITIES

Site specific rainfall intensity-frequency-duration (IFD) was sourced from *Bureau of Meteorology* (*BoM*).

Location Coordinates:
- Latitude: 27.5625 (S)
- Longitude: 153.2875 (E)

Extract of the IFDs presented in **Table 5**. Interpolation has been undertaken to determine the rainfall intensities for the Tc of 16.3 minute.

Table 5 – Rainfall IFD

Duration (mins)	63% AEP (Q1)	39% AEP (Q2)	20% AEP (Q5)	10% AEP (Q10)	5% AEP (Q20)	2% AEP (Q50)	1% AEP (Q100)
5	116	146	180	213	245	288	321
10	95	119	146	172	197	229	253
15	80.6	101	124	146	167	194	214
16.3	**78**	**98**	**120**	**141**	**161**	**188**	**207**
20	70.2	88.2	108	127	146	170	188
25	62.3	78.4	96.3	113	130	152	168
30	56.2	70.7	87.1	103	118	138	154
45	44	55.4	68.5	81.3	93.9	111	124
60	36.6	46.1	57.3	68.2	79	93.7	105

4.2.4 RATIONAL METHOD PEAK FLOW RATES

Table 6 presents the Rational Method peak flow rates. Refer to Drawing No. **B4040EA1_DA1_SK01** in **Appendix B** for the catchment plan and refer to **Appendix C** for additional Rational Method Calculation details.

Table 6 – Rational Method Peak Flow Rates

AEP	Catchment 1 (m^3/s)
63% (Q1)	0.60
39% (Q2)	0.80
[redacted]	[redacted]
10% (Q10)	1.36
5% (Q20)	1.63
2% (Q50)	2.09
1% (Q100)	2.32

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5. STORMWATER QUALITY

5.1 CONSTRUCTION PHASE STORMWATER QUALITY MANAGEMENT

5.1.1 INTRODUCTION

This section provides conceptual stormwater quality management strategies for construction phase. These strategies are applicable for all stages of the development. No modelling has been undertaken for the construction phase stormwater quality management. Detailed Erosion and Sediment Control Plans will be prepared during detailed design phase and implemented during construction.

5.1.2 POLLUTANTS

Typical pollutants generated during the construction phase of an urban development are shown in **Table 7**. These based on *Table C4.1* BCC's *Subdivision & Development Guidelines Part C Section 4.1.1* (2008).

Table 7 – Construction Phase Pollutants

Pollutant	Potential Source
Litter	Paper, construction packaging, food packaging, cement bags, off-cuts.
Sediment	Unprotected exposed soils and stockpiles during earthworks and building works.
Hydrocarbons	Fuel/oil spills, leaks from construction equipment, and temporary car park areas.
Toxic Materials	Cement Slurry, asphalt primer, solvents, cleaning agents, washwaters (e.g. from tile works)
pH altering substances	Cement slurry, acid sulfate soils, and washwaters

5.1.3 WATER QUALITY OBJECTIVES

It is recommended that the amount of runoff crossing and leaving the site is kept to a minimum during the construction phase to restrict soil erosion and mobilisation of sediments and pollutants through and off the site. **Table 8** presents an extract from *Table A, Appendix 2* of the *State Planning Policy* (2017) objectives for construction phase stormwater quality management

Table 8 – Construction Phase Performance Criteria

Issue	Desired Outcomes
Erosion control	1. Stage clearing and construction works to minimise the area of exposed soil at any one time. 2. Effectively cover or stabilise exposed soils prior to predicted rainfall. 3. Prior to completion of works for the development, and prior to removal of sediment controls, all site surfaces must be effectively stabilised using methods which will achieve effective short-term stabilisation.
Sediment Control	1. Direct runoff from exposed site soils to sediment controls that are appropriate to the extent of disturbance and level of erosion risk. 2. All exposed areas greater than 2500m² must be provided with sediment controls which are designed, implemented and maintained to a standard which would achieve at least 80% of the average annual runoff volume of the contributing catchment treated (i.e. 80% hydrological effectiveness) to 50mg/L Total Suspended Solids (TSS) or less, and pH in the range (6.5–8.5).

5.1.4 STORMWATER QUALITY MANAGEMENT STRATEGY

An erosion and sediment control plans are to be prepared during detailed design phase and implemented during construction phase. Erosion and sediment control measures may include, but not limited to, devices such as:

- temporary sediment basin,
- diversion drains,
- temporary check dams,
- silt fences, and
- construction entry/exit pads.

5.1.5 MONITORING & MAINTENANCE

The general requirement of monitoring during the construction phase will be:

- Work activities to be restricted to designated construction areas.
- Earthworks and site clearing to be undertaken in accordance with the erosion and sediment control plans prepared during detailed design phase.
- Erosion and sediment control devices to be constructed in accordance with the erosion and sediment control plans prepared during detailed design phase.
- Inspect sediment fences and erosion and sediment control structures/devices on a weekly basis as well as after any rain event exceeding 25mm in 24hrs.
- Stormwater discharges from the site are not to have any adverse effect on the downstream environment.
- Monitor and record of the performance of the drainage control devices including water quality testing where required.
- Any failure in the stormwater system to be immediately rectified to prevent uncontrolled discharge from the site.
- Any failure to the stormwater system causing damage to surroundings should implement immediate remedial work to the damaged area.

5.1.6 RESPONSIBILITY & REPORTING

- The contractor shall be responsible for monitoring the performance of all drainage control and erosion and sediment control devices.
- Records of any failures to devices should be kept and reported to the Construction Manager.
- Regular inspections of the devices shall be reported to the Construction Manager.
- Inspections of the devices after heavy rainfall shall be reported to the Construction Manager.

5.2 OPERATIONAL PHASE STORMWATER QUALITY MANAGEMENT

5.2.1 INTRODUCTION

The site is greater than 2,500m² and triggers compliance with the *State Planning Policy* (2017) for stormwater quality management and meeting required Water Quality Objectives (WQOs). This is referred to in BCC *Stormwater Management Code* (City Plan 2014).

5.2.2 POLLUTANTS

The key pollutants typically generated during the operational phase of an urban development are shown below (source: *Table C4.2 BCC's 2008 Subdivision & Development Guidelines Part C Section 4.1.1*).

- **Litter (gross pollutants)**
- **Sediment (total suspended solids)**
- Oxygen demanding substances (organic & chemical matter)
- **Nutrients (nitrogen & phosphorus)**
- Pathogens / Faecal coliforms (bacteria & viruses)
- Heavy metals (often associated with fine sediment)
- Surfactants (e.g. detergents from car washing)
- Organochlorines & organophosphates
- Thermal pollution
- pH altering substances

This report only addresses the key pollutants, which are highlighted in **bold text** above. Although not modelled, the proposed stormwater quality management devices will provide some treatment to other pollutants also. For instance, as heavy metals are predominately associated with fine sediment, devices that reduce total suspended solids will also reduce loads of heavy metals.

5.2.3 WATER QUALITY OBJECTIVES

Table 9 presents the WQOs required for the site in accordance with the *State Planning Policy* (2017).

Table 9 –Operational Phase Water Quality Objectives

Pollutant	Load Based Pollutant Reduction WQO (%)
Total Suspended Solids (TSS)	80
Total Phosphorus (TP)	60
Total Nitrogen (TN)	45
Gross Pollutants (GP)	90

5.2.4 STORMWATER QUALITY MANAGEMENT STRATEGY

For stormwater quality treatment an end of line bioretention basin, generally in accordance with IPWEAQ standard drawing DS-071, is proposed. The bioretention basin will utilise sandy loam soil-based media to filter runoff. Sediments and TSS are trapped within vegetation. The micro-organisms and vegetation remove dissolved nutrients (TP and TN) through biological uptake processes. The sub-soil drainage provided will collect the treated runoff, and discharge into the drainage reserve to the north via a new headwall outlet and scour protection. Ultimately the discharge will enter Morton Bay.

5.2.5 BIORETENTION BASIN DESIGN CRITERIA

The following sections provide some of the key bioretention basin design criteria. Additional design elements are to be undertaken during detailed design phase.

5.2.5.1 *PRE-TREATMENT*

Pre-treatment is proposed via a coarse sediment forebay, which is to be located at the inflow point.

Only the frequent Q3-month flows are proposed to enter the bioretention basin for stormwater quality treatment. Larger flows are proposed to bypass the basin.

Preliminary sizing of the sediment forebay has been undertaken in accordance with *Section 3.4.3.2* of the Healthy Waters *Bioretention Technical Design Guidelines* (2014). Refer to **Table 10**.

Table 10 – Sediment Forebay Sizing

Parameter	Value
Catchment Area, A_c (ha)	4.04
Capture Efficiency, R	0.8
Sediment Loading Rate, L_o (m^3/ha/yr)	0.6
Cleanout Frequency, F_c (years)	1
Min. Sediment Forebay Vol (m^3)	1.94
Settling Velocity, v_s (m/s)	0.1
$Q_{3\text{-month}}$ (m^3/s)	0.30
Turbulence, n	0.5
Min. Sediment Forebay Area (m^2)	36

Please refer to *Section 3.4.3.2* of the Healthy Waters *Bioretention Technical Design Guidelines* (2014) for additional design requirement details for the sediment forebay.

5.2.5.2 *EXTENDED DETENTION DEPTH*

The proposed extended detention depth is 300mm. This complies with the recommendations of Healthy Waters *Bioretention Technical Design Guidelines* (2014).

5.2.5.3 *FILTER MEDIA LAYER*

The proposed filter media depth is 500mm. This complies with the recommendations of Healthy Waters *Bioretention Technical Design Guidelines* (2014).

5.2.5.4 *TRANSITION LAYER*

The transition layer must be minimum 200mm so that the top of the saturated zone is located within the transition layer and at least 100mm below the underside of the filter media. Refer to **Section 5.2.5.5** for more details regarding the saturated zone.

5.2.5.5 *DRAINAGE LAYER*

DRAINAGE PROFILE

The bioretention basin will be located at low-lying tidal ground levels. Due to level constraints, a Type 1 (saturated zone) drainage layer is proposed. The top of the saturated zone must be located within the transition layer and at least 100mm below the underside of the filter media. Refer to **Figure 4.**

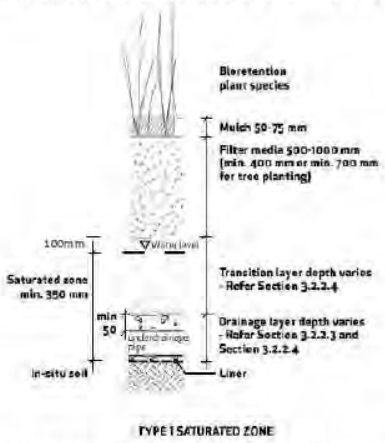

Figure 4 – Drainage Profile (Bioretention Tech. Design Guidelines 2014)

SATURATED ZONE DEPTH

The saturated zone of the bioretention basin has been calculated in accordance with *Section 3.2.2.4* of the *Bioretention Technical Design Guidelines* (2014). The same rainfall data (Redlands Station No. 40265, January 1997 to December 2006) has been used to determine the average longest annual dry period (t).

Saturated Zone Depth = 8mm/day x t
= 8mm/day x 35 days
= 280mm

Since the calculated saturated zone is less than the recommended min. of 350mm, the 350mm has been adopted.

IMPERMEABLE LINER

[redacted]

biota (plants, bacteria, fungi etc) is not harmed by tidal water infiltrating into the bioretention system.

The impermeable liner can comprise of 300mm deep compacted non-dispersive clay or manufactured products such as bentonite liners or HDPE membranes. The liner is required to create a seal around all relevant hydraulic connections. In accordance with Healthy Waters *Bioretention Technical Design Guidelines* (2014), the impermeable liner must achieve a hydraulic connectivity of less than $1x10^{-9}$m/s.

As a minimum, the impermeable liner must extend up to the higher of:

- RL 1.85m AHD (300mm above the Highest Astronomical Tide (HAT) 1.55m AHD at Victoria Point, *Semidiurnal Tidal Plans* 2020); or
- Top of the Saturated Zone

Please refer to *Section 3.2.4.1* of Healthy Waters *Bioretention Technical Design Guidelines* (2014) for additional details regarding impermeable liners.

5.2.6 MUSIC MODELLING

Modelling of the operational phase stormwater quality management strategy has been undertaken using the MUSIC version 6.3. The following sections discuss the MUSIC modelling parameters. MUSIC modelling has been undertaken generally in accordance with Water by Design's *MUSIC Modelling Guidelines V1.0* (2010) and *MUSIC Modelling Guidelines* (2010) *V3 draft* (2018).

5.2.6.1 *RAINFALL PARAMETERS*

The following rainfall parameters have been used:

- Redlands (Station No. 40265) 6-minute pluviographic rainfall data was utilised for the MUSIC modelling as this is the nearest to the site which has 6-minute rainfall data.
- The 10-year period from 1st January 1997 to 31st December 2006 was modelled using a 6-minute time-step in accordance with *Table 3.1* of the *MUSIC Modelling Guidelines* (2010).
- The mean evapo-transpiration data from *Table 3.1* of the *MUSIC Modelling Guidelines* (2010).

5.2.6.2 *SOURCE NODES*

Source Nodes has been used to set up catchment details in MUSIC. The split catchment approach, where the surface types are split into roof, road and ground, has been adopted in accordance the *MUSIC Modelling Guidelines* (2010). The following parameters and assumptions have been adopted for the MUSIC modelling:

- The base flow and storm flow parameters for source nodes were taken from *Table 3.8* of the *MUSIC Modelling Guidelines* (2010) for 'urban residential' land use with stochastic flow generation.
- The rainfall-runoff parameters for source nodes were adopted from *Table 3.7* of the *MUSIC Modelling Guidelines* (2010) for 'urban residential' land use.
- Road area was measured from the layout presented in **Appendix A.**
- Roof area has been calculated based on 250m² per lot.
- External road excluded from MUSIC analysis.

The modelled source node data are shown in **Table 11**. The catchment delineation is presented on Drawing No. **B4040EA1_DA1_SK02** in **Appendix B.**

Table 11 – MUSIC Source Node Areas

Node Name	Area (ha)	Fi
A. Roof	1.300	100%
A. Road	1.150	60%
A. Ground	1.240	20%

5.2.6.3 *LINKS*

MUSIC links have been used to connect source nodes and treatment nodes. The default settings have been adopted for the model links. No routing has been incorporated. *Section 4.17* of the *MUSIC Modelling Guidelines* (2010) states that is a conservative approach because it assumes all flows and pollutants from the catchment arrive at the treatment node at the same time.

5.2.6.4 *TREATMENT NODES*

The proposed bioretention basin has been modelled using MUSIC's Bioretention Treatment Node. Table 12 presents the parameters modelled.

The sediment forebay has not been included within MUSIC modelling. The sediment forebay area is to be provided in addition to the filter media area nominated below.

Table 12 – MUSIC Bioretention Model Parameters

Bioretention Basin	Parameter
Modelled Surface Area (m^2)	600
Filter Area (m^2)	600
Extended Detention Depth (m)	0.3
Filter Media Depth (m)	0.5
Saturated Hydraulic Conductivity of Filter Media (mm/hr)	180
TN Content of Filter Media (mg/kg)	400
Orthophosphate Content of Filter Media (mg/kg)	30
Saturated Zone Depth (m)	0.35
[A] Modelled Overflow Weir (m)	60

[A] 10% of the surface area

5.2.6.5 *MUSIC LAYOUT*

The MUSIC model layout incorporating source nodes, links and treatment node is shown in Figure 5.

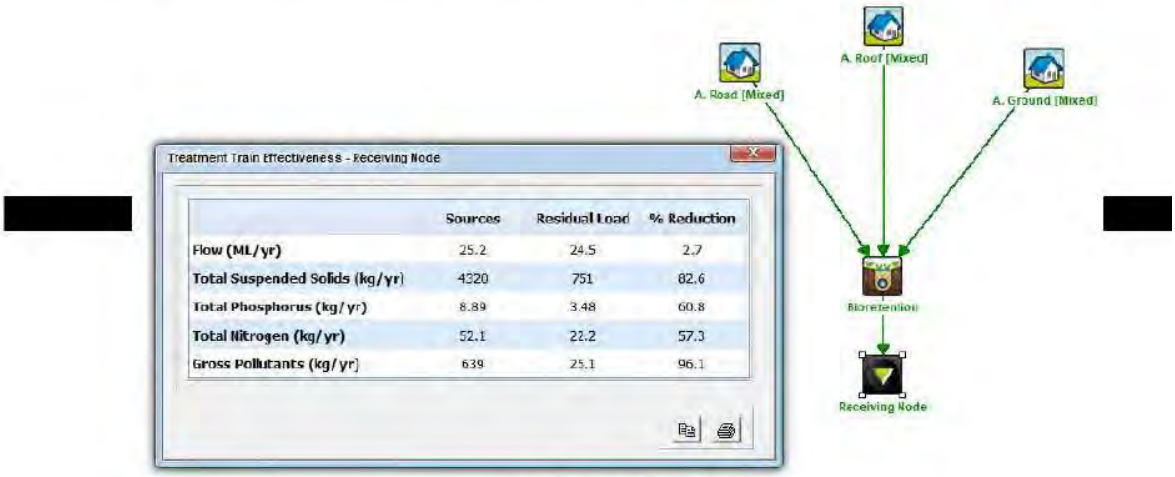

Figure 5 – MUSIC Layout

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5.2.6.6 *MUSIC RESULTS*

The MUSIC model results, read at the 'Receiving Node', are shown in Table 13.

Table 13 – MUSIC Results

Pollutant	WQO (%)	Reduction Achieved (%)	WQO Achieved?
TSS	80	83	Yes
TP	60	61	Yes
TN	45	57	Yes
GP	90	96	Yes

The results demonstrate that the development overall achieves the required WQOs, and complies with the *State Planning Policy* (2017) with respect to stormwater quality.

5.3 WATERWAY STABILITY MANAGEMENT

The waterway stability management in accordance with the *State Planning Policy* (2017) is not applicable for this site as the receiving waterway is the Moreton Bay (i.e. tidal).

[redacted]

6. BIORETENTION MONITORING & MAINTENANCE

Maintenance for the bioretention basin is generally expected to include the following:

- Manage vegetation and weed growth,
- Remove accumulated litter including leaves and other debris from the filter surface,
- Unblock hydraulic infrastructure,
- Replace filter media and underdrainage if required.

6.1 MAINTENANCE ACCESS

Maintenance access to the basin is proposed from the adjacent road, as shown in the preliminary engineering drawings.

6.2 MONITORING SCHEDULE

The recommended frequency for inspections and maintenance in sub-tropical regions is every 2 months during wet season, and every 4 months during the dry season. The bioretention may need to be inspected and maintained more often than these frequencies if:

- Activities within the catchment are producing higher than expected loads of litter, sediment or weeds (e.g. poorly managed garden areas),
- A high standard of amenity is a priority,
- Requests from the community/authority,
- There are recurring problems.

Ideally bioretention systems should be inspected at least once a year or immediately after a significant rainfall event (i.e. more than 50mm/day). The inspection should check for erosion, the condition of structures, and the cover and health of the vegetation. Also check that bioretention system is free-draining. A typical bioretention maintenance checklist is provided in **Appendix E.**

6.3 MINIMUM MAINTENANCE REQUIRED FOR A NON-FUNCTIONING ASSET

If a bioretention asset is not functioning, refer to *Water by Design - Managing Vegetated Stormwater Assets* for advice on how to return it to a functional state (http://waterbydesign.com.au/guidelines/).

It may take some time between identifying the problem and implementing a solution. While developing a solution ensure that the asset is not causing hazards and the regulatory requirements are met. Consider the following.

- **Maintain Public Safety:** Use access controls such as fences and signposts to prevent the public from accessing parts of the asset that may cause safety or security concerns. In particular, protect areas that pose trip/fall hazards (e.g. steep batters and eroded areas). Ensure appropriate controls are in place to manage other risks such as needle-stick injuries or excessive algae.
- **Maintain Flood Conveyance:** This is particularly important if the asset is online (i.e. no diversions or high-flow bypass). If there is a problem with the asset that is impeding its capacity for stormwater conveyance (e.g. sediment/litter blockage), it will need to be cleared or an alternative passage for the stormwater will need to be provided as soon as possible.
- **Manage Environmental Issues:** Consider the control of noxious weeds and waterway impacts, including statutory requirements. Pollutants may be discharging from the failing asset in to a sensitive aquatic environment downstream. Address environmental issues as soon as possible.

6.4 HEALTH & SAFETY ISSUES

Staff involved in managing and maintaining bioretention filters should be cognisant of health and safety issues associated with the activities. Some of the relevant issues include the handling of litter and working in confined spaces. Implementation of an appropriate Safe Work Method Statement (SWMS) is recommended. A SWMS should, as a minimum, deal with potential needle stick injuries, working within and around polluted water, working on slopes, working in confined spaces, and working adjacent to roads.

6.5 UNBLOCKING INLETS & OUTLETS

If the inlets and outlets of bioretention systems are blocked, they pose a risk to flooding, particularly if there is no alternative flow path. The vegetation will also be at risk (the plants may drown) and the bypassing of stormwater quality treatment may pose a threat to downstream waterway health.

To unblock a blocked inlet or outlet, remove litter and debris by hand or with hand tools (e.g. shovels, forks, tongs etc). Special opening tools (e.g. grate/gatic openers) may be required for some outlets while in extreme cases, machinery may be required. If blocking persists, consider alternative solutions such as an upstream GPT.

6.6 REMOVING SEDIMENT

Sediment build-up in bioretention systems can smother vegetation, change the surface profile (influences flow patterns), and prevent infiltration. If infiltration is reduced or blocked, stormwater will bypass treatment and the filter media may become boggy, which can attract mosquitoes and generate unpleasant odours.

Remove sediment in dry weather and ideally at the end of the dry season. To maintain the integrity of the vegetation and prevent compaction of the filter media, remove sediment by hand (if possible) using flat shovels. If machinery is used, use an excavator located on the edge of the bioretention or a pozitrack bobcat to avoid compaction of the filter media. Minimise the number of times the machinery passes over the bioretention surface. Re-profile and replant the area as required.

If the top layer of the filter media is to be replaced, this should be done in accordance with a detailed design prepared by a qualified consultant. Due to its high permeability, it is not expected that removal of the gravel drainage layer would be required. However, if it is decided to remove the gravel layer, the slotted pipe system should first be excavated by hand, removed and replaced as required. Removed filter material or gravel should be disposed of at Council's refuse tip and the new material should conform to the original design specification.

6.7 REMOVING LITTER & DEBRIS

While litter and debris are mainly an aesthetic issue, they can smother vegetation, provide habitat for mosquito breeding, be a source of pollutants, block inlet and outlet structures, and pose a risk to public safety. If litter is able to enter downstream waterways it can cause environmental harm.

Remove litter and debris by hand or with hand tools such as shovels, forks, or tongs. In extreme cases, small machinery such as bobcats may be required. Take appropriate precautions to avoid contact with hazardous objects. Collected litter should be disposed of in an appropriate manner at Council's refuse tip.

6.8 MAINTAINING MOSQUITOES

Shallow, isolated pools of water in water-logged areas over several days provide habitat for mosquitoes. Permanent water bodies are less likely to cause mosquito issues because they support predator species that keep mosquito populations under control.

To minimise mosquito breeding, fill and re-profile isolated pools of water. Re-plant if necessary. If the problem is recurring refer to Water by Design's *Rectifying Vegetated Stormwater Assets*.

6.9 REPLANTING

Bioretention systems should have dense, evenly distributed vegetation across all planted areas. Maintaining vegetation is crucial to the performance of bioretention systems because:

- It assists to spread and slow the runoff and reduces erosion,
- Minimises the establishment of weeds by shading and competing for nutrients,
- Preserves hydraulic conductivity in filter media,
- Traps coarse litter,
- Acts as a deterrent to public access.

Some water plants will dieback (senesce) in winter. This doesn't equate to dead vegetation. Follow the landscape specifications and Water by Design's *Bioretention Technical Design Guideline* (2014) for choosing plant species.

6.10 CONTROLLING WEEDS

A weed is a plant that grows where it is not wanted. Some plants are considered weeds because they compete with or displace native plants, reduce biodiversity, impact ecosystems, alter natural habitats, restrict natural processes, reduce amenity, and cause blockages to hydraulic structures.

Managing weed species in bioretention systems is a part of the regular maintenance program. A low level of undeclared weed cover may be okay if it doesn't hinder the functioning of the bioretention system. A persistent weed ingress or excessive weed cover however, may require the maintenance frequency to be increased.

When managing weeds, consider the following:

- [redacted]
- The biology and ecology of the weed species,
- Methods to remove weeds, including their costs and benefits.

Weeds should be removed manually. The use of herbicides should be managed to avoid the unintentional destruction of other vegetation.

Weeds should be disposed of offsite at an appropriate waste management facility. In areas that have been extensively weeded, the filter should be replanted with suitable plant species.

7. CONCLUSION & RECOMMENDATIONS

JFP Urban Consultants Pty Ltd has prepared this *Site Based Stormwater Management Plan* for the proposed residential subdivision at 124-134 Thornlands Road, Thornlands. The analyses presented in this report achieve the following outcomes:

- All new allotments are to be located above the 2100 Storm Tide Level (3.22m AHD). Recommended minimum flood immunity levels are provided in **Section 3.3.**
- Given that the site is located immediately adjacent to the bay, on-site detention is not proposed. The development will discharge stormwater runoff directly into the bay without passing through any external private properties. The development discharge will not adversely impact any adjoining private properties and complies with PO3 of the *Stormwater Code*.
- Peak discharge rates are presented in **Section 4.2.4.** Underground pipe drainage is to be designed for the minor design storm 39% AEP (Q2), as per *Table 9.3.1.3.2* of the *Healthy Waters Code*. Larger 1% AEP (Q100) flows are to be conveyed as road flows.
- Stormwater quality management is proposed to be achieved via an end of line bioretention basin with 600m² filter area and min. 350mm deep saturated zone. Refer to **Section 5.2.5** for other basin design criteria. MUSIC modelling shows that the relevant WQOs are achieved.
- Responses to items 13 and 14 of the Council Information Request and item 2 of the SARA Information Request are provided in **Section 1.2** and **Section 1.3** respectively.

It is recommended that the stormwater management strategies presented within this report are incorporated into future detailed design and subsequent construction. While variations to the concepts are allowed during detailed design phase, the design objectives are to be maintained.

[redacted]

8. DISCLAIMER

This report has been prepared for the purpose and exclusive use of Ashley Daley & Genevieve Daley as an investigation into the stormwater management issues related for the proposed development of the land described in the report. The information presented in this report is not to be used for any other purpose or by any other person or corporation.

JFP Urban Consultants Pty Ltd accepts no responsibility for any loss or damage suffered howsoever arising to any person or corporation who may use or rely on this report without further input and/or advice from JFP Urban Consultants Pty Ltd.

The investigations, calculations, analysis and recommendations presented in this report rely on information sourced from third-parties. JFP Urban Consultants Pty Ltd accepts no responsibility for the accuracy of the information sourced from third-parties.

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9. APPENDICES

- Appendix A – Site Layout
- Appendix B – Concept Plans
- Appendix C – Calculations
- Appendix D – Prelodgement Meeting Minutes
- Appendix E – Bioretention Maintenance Checklist

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APPENDIX A – SITE LAYOUT

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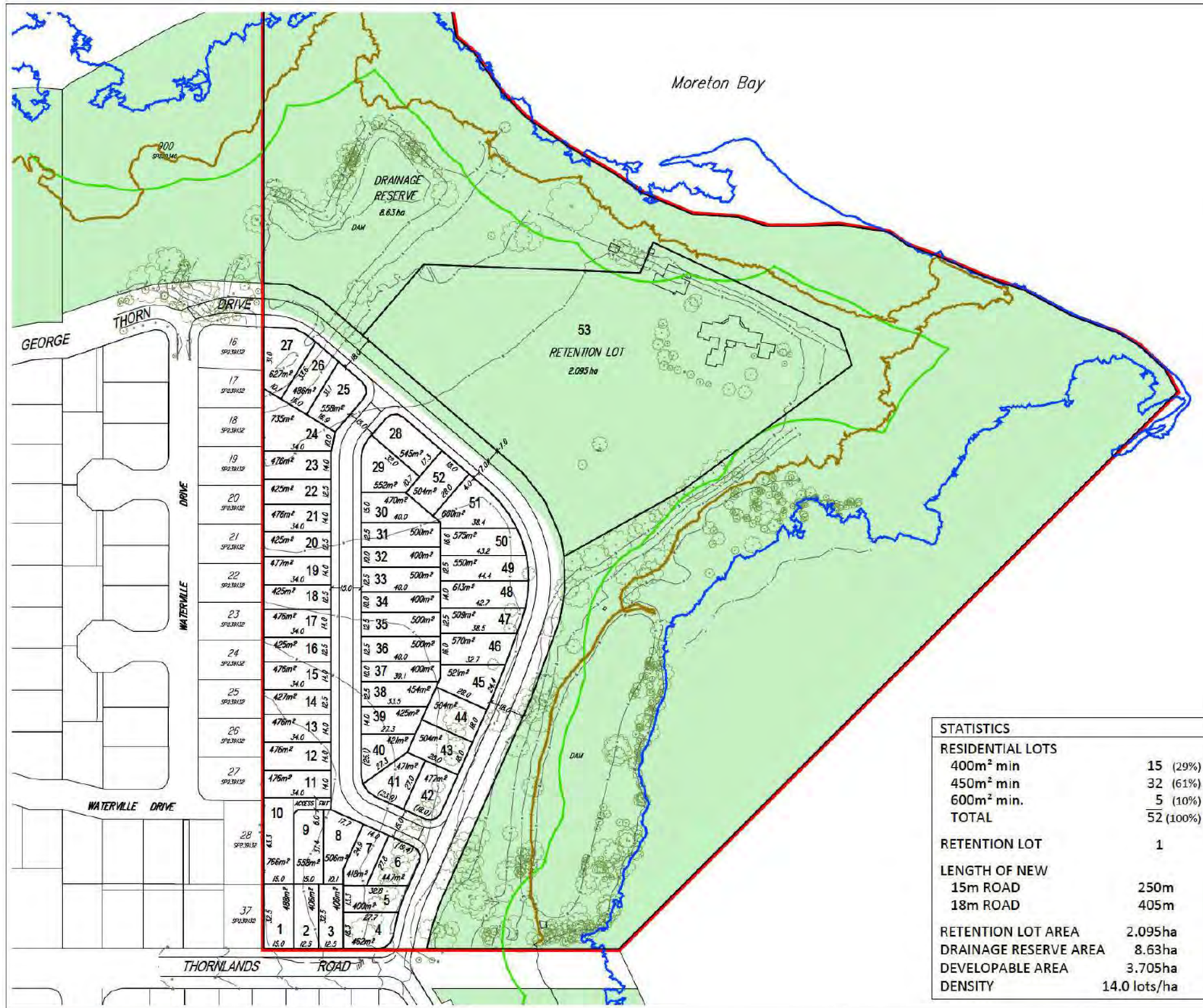

NOTES

(1) This plan was prepared for the purpose and exclusive use of ASHLEY DALEY & GENEVIEVE DALEY to accompany an application to REDLAND CITY COUNCIL for a Development Permit to Reconfigure the land described in the plan and is not to be used for any other purpose or by any other person or corporation.
JFP URBAN CONSULTANTS PTY LTD accepts no responsibility for any loss or damage suffered howsoever arising to any person or corporation who may use or rely on this plan in contravention to the terms of this clause or clauses 2, 3, 4, 5 or 6 hereof.

(2) The contours on this plan are from field survey - see JFP detail plan (B04040-01A) dated 21/01/2020.

(3) The dimensions, areas, size and location of improvements, flood information (if shown) and number of lots shown on this plan are approximate only and may vary.

(4) The trees shown on this plan have been surveyed on JFP detail plan (B4040-01A) dated 24/01/2020.

(5) Safety in Design
The Urban Design for the layout proposal has been developed to meet the stated project brief, as expressed in JFP Urban Consultants Offer for the works, and the Design Standards stipulated by the Local Authority named on this plan.
Non-standard design solutions adopted in the preparation of the layout are listed as follows;
- None

(6) This plan may not be reproduced unless these notes are included.

PROPERTY DESCRIPTION
LOT 2 ON RP14809
PARISH OF CLEVELAND
COUNTY OF STANLEY
TOTAL AREA 14.43 ha

STATISTICS		
RESIDENTIAL LOTS		
400m² min	15	(29%)
450m² min	32	(61%)
600m² min.	5	(10%)
TOTAL	52	(100%)
RETENTION LOT	1	
LENGTH OF NEW		
15m ROAD	250m	
18m ROAD	405m	
RETENTION LOT AREA	2.095ha	
DRAINAGE RESERVE AREA	8.63ha	
DEVELOPABLE AREA	3.705ha	
DENSITY	14.0 lots/ha	

LEGEND
- SUBJECT SITE
- EXISTING DWELLING (Surveyed)
- EXISTING VEGETATION (Surveyed)
- OPEN SPACE
- HAT LINE
- HAT + 0.8m LINE
- HAT BUFFER LINE

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NORTH:

SCALE: SCALE: @ A3 1:2000
THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE - (A3 SIZE)
DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE

DESIGNED	TJM	CHECKED	KH	L.A. REDLAND CITY COUNCIL
DRAWN	TJM	APPROVED	ST	COUNCIL REF

ISSUES:

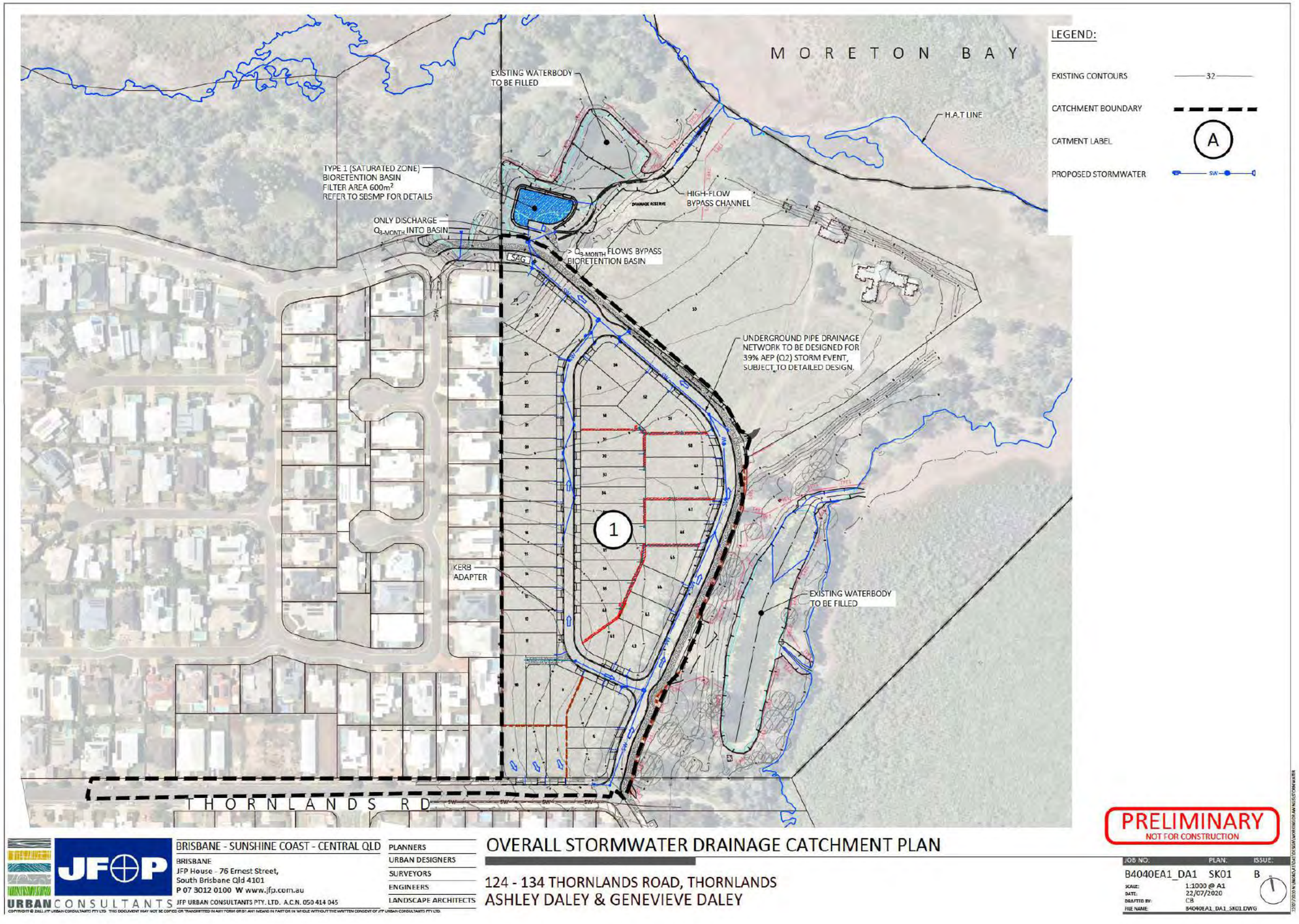
ISSUE:	DETAILS:	DATE:	INIT:
B	LAYOUT AMENDED	15-06-20	TJM
A	ORIGINAL	10-03-20	TJM

TITLE:
RECONFIGURATION PLAN
ASHLEY DALEY & GENEVIEVE DALEY
124-134 THORNLANDS ROAD,
THORNLANDS

DETAILS:
JOB NUMBER: B4040PA1_DA1 PLAN ISSUE: R1 B
SHEET: 1 OF 1
DATE: 15th June 2020

APPENDIX B – CONCEPT PLANS

[redacted]



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OVERALL STORMWATER DRAINAGE CATCHMENT PLAN

124 - 134 THORNLANDS ROAD, THORNLANDS
ASHLEY DALEY & GENEVIEVE DALEY

PRELIMINARY
NOT FOR CONSTRUCTION

JOB NO:	PLAN:	ISSUE:
B4040EA1_DA1	SK01	B
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DATE:	22/07/2020	
DRAFTED BY:	CB	
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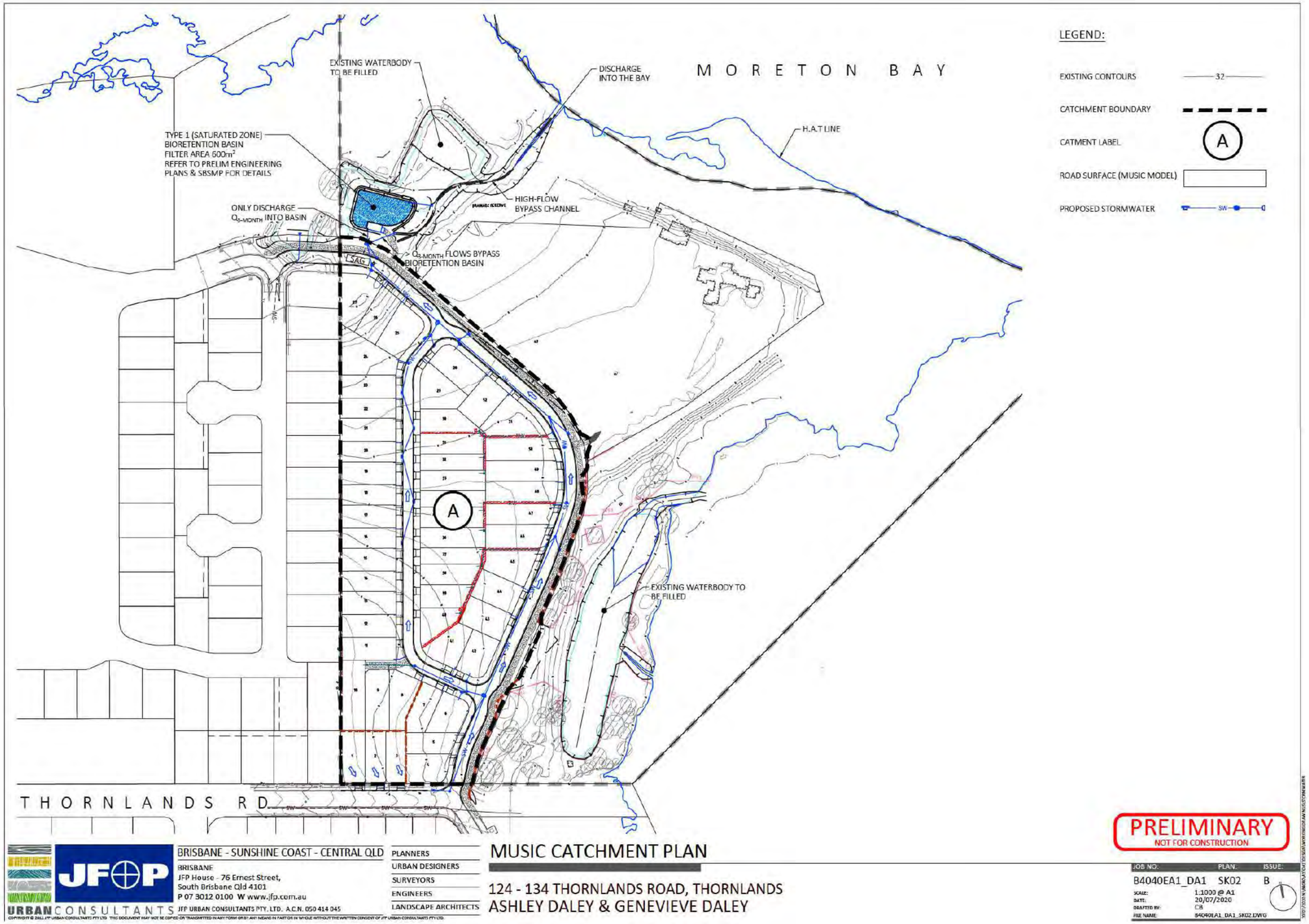
MORETON BAY
EXISTING WATERBODY TO BE FILLED
DISCHARGE INTO THE BAY
H.A.T LINE
TYPE 1 (SATURATED ZONE) BIORETENTION BASIN
FILTER AREA 600m²
REFER TO PRELIM ENGINEERING PLANS & SBSMP FOR DETAILS
ONLY DISCHARGE Q3-MONTH INTO BASIN
HIGH-FLOW BYPASS CHANNEL
Q3-MONTH FLOWS BYPASS BIORETENTION BASIN
SAG
A
EXISTING WATERBODY TO BE FILLED
THORNLANDS RD
LEGEND:
EXISTING CONTOURS 32
CATCHMENT BOUNDARY
CATMENT LABEL A
ROAD SURFACE (MUSIC MODEL)
PROPOSED STORMWATER SW
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MUSIC CATCHMENT PLAN
124 - 134 THORNLANDS ROAD, THORNLANDS
ASHLEY DALEY & GENEVIEVE DALEY
PRELIMINARY
NOT FOR CONSTRUCTION
JOB NO. PLAN. ISSUE:
B4040EA1_DA1 SK02 B
SCALE: 1:1000 @ A1
DATE: 20/07/2020
DRAFTED BY: CB
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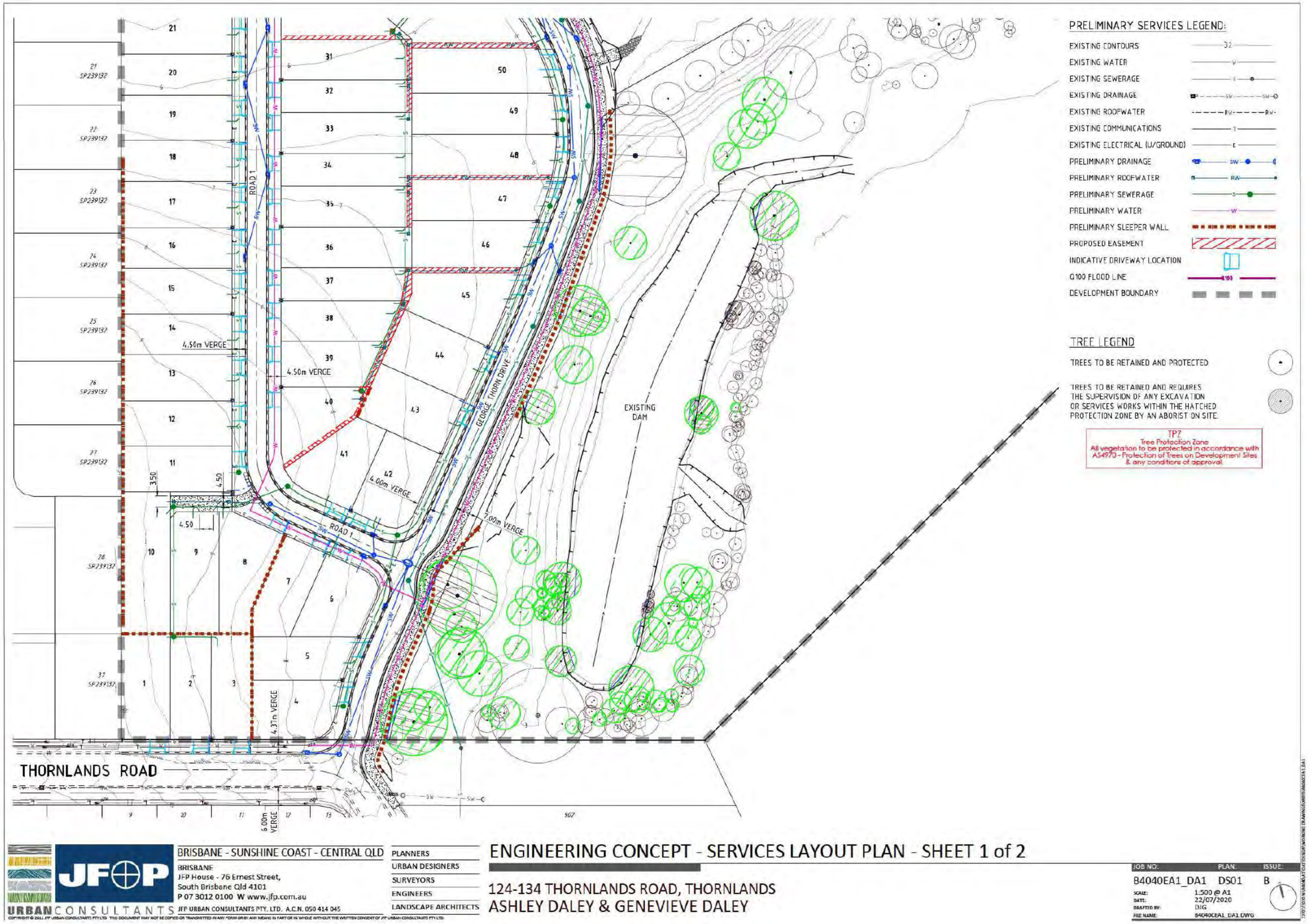

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ENGINEERING CONCEPT - SERVICES LAYOUT PLAN - SHEET 1 of 2

124-134 THORNLANDS ROAD, THORNLANDS
ASHLEY DALEY & GENEVIEVE DALEY

JOB NO:	PLAN:	ISSUE:
B4040EA1_DA1	DS01	B
SCALE:	1:500 @ A1	
DATE:	22/07/2020	
DRAFTED BY:	DJG	
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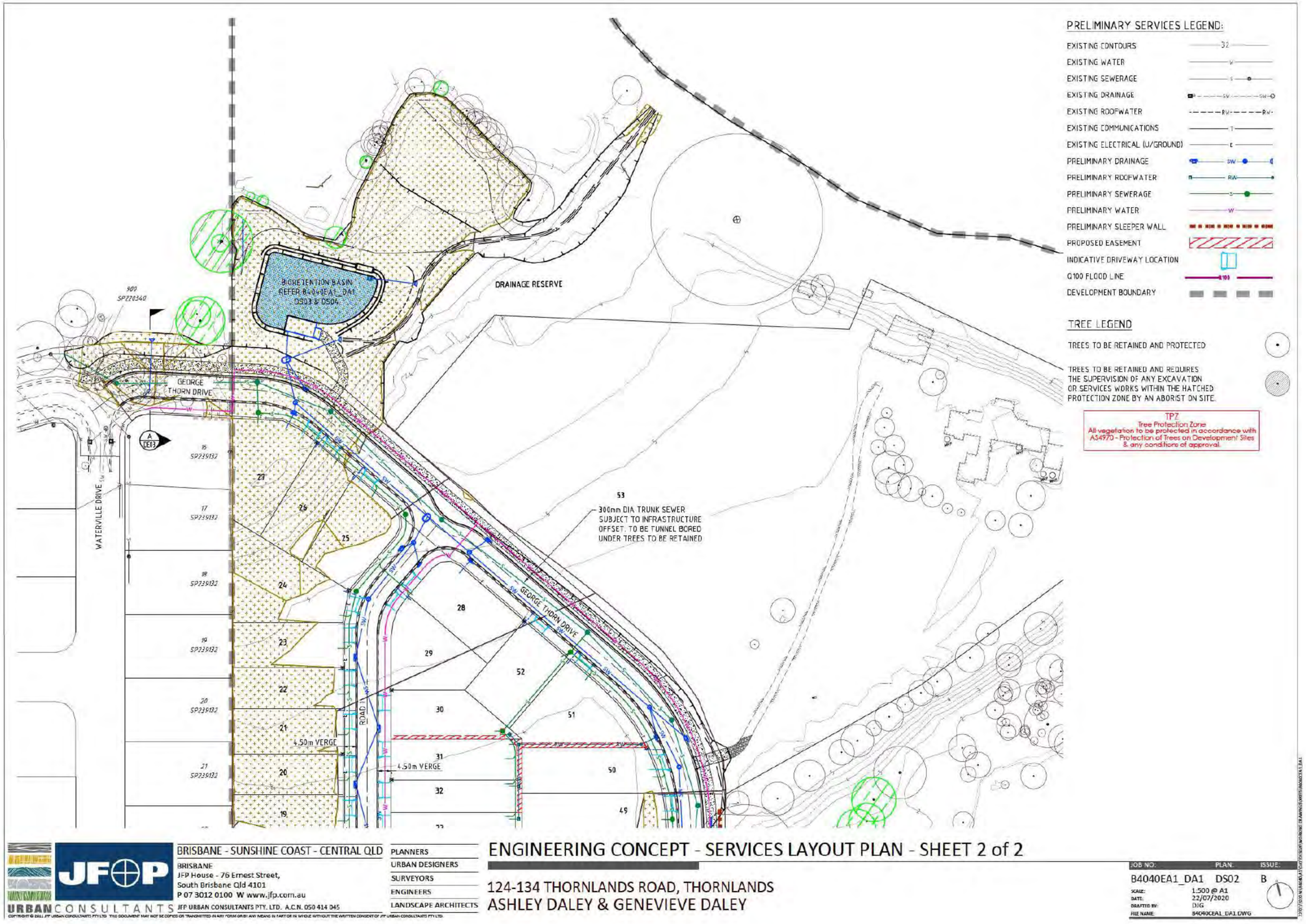
PRELIMINARY SERVICES LEGEND:
EXISTING CONTOURS
EXISTING WATER
EXISTING SEWERAGE
EXISTING DRAINAGE
EXISTING ROOFWATER
EXISTING COMMUNICATIONS
EXISTING ELECTRICAL (U/GROUND)
PRELIMINARY DRAINAGE
PRELIMINARY ROOFWATER
PRELIMINARY SEWERAGE
PRELIMINARY WATER
PRELIMINARY SLEEPER WALL
PROPOSED EASEMENT
INDICATIVE DRIVEWAY LOCATION
Q100 FLOOD LINE
DEVELOPMENT BOUNDARY
TREE LEGEND
TREES TO BE RETAINED AND PROTECTED
TREES TO BE RETAINED AND REQUIRES THE SUPERVISION OF ANY EXCAVATION OR SERVICES WORKS WITHIN THE HATCHED PROTECTION ZONE BY AN ABORIST ON SITE.
TPZ
Tree Protection Zone
All vegetation to be protected in accordance with AS4970 - Protection of Trees on Development Sites & any conditions of approval.
BIORETENTION BASIN REFER B4040EA1_DA1 DS03 & DS04
DRAINAGE RESERVE
GEORGE THORN DRIVE
WATERVILLE DRIVE
ROAD 1
4.50m VERGE
300mm DIA TRUNK SEWER SUBJECT TO INFRASTRUCTURE OFFSET. TO BE TUNNEL BORED UNDER TREES TO BE RETAINED
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ENGINEERING CONCEPT - SERVICES LAYOUT PLAN - SHEET 2 of 2
124-134 THORNLANDS ROAD, THORNLANDS
ASHLEY DALEY & GENEVIEVE DALEY
JOB NO: B4040EA1_DA1
PLAN: DS02
ISSUE: B
SCALE: 1:500 @ A1
DATE: 22/07/2020
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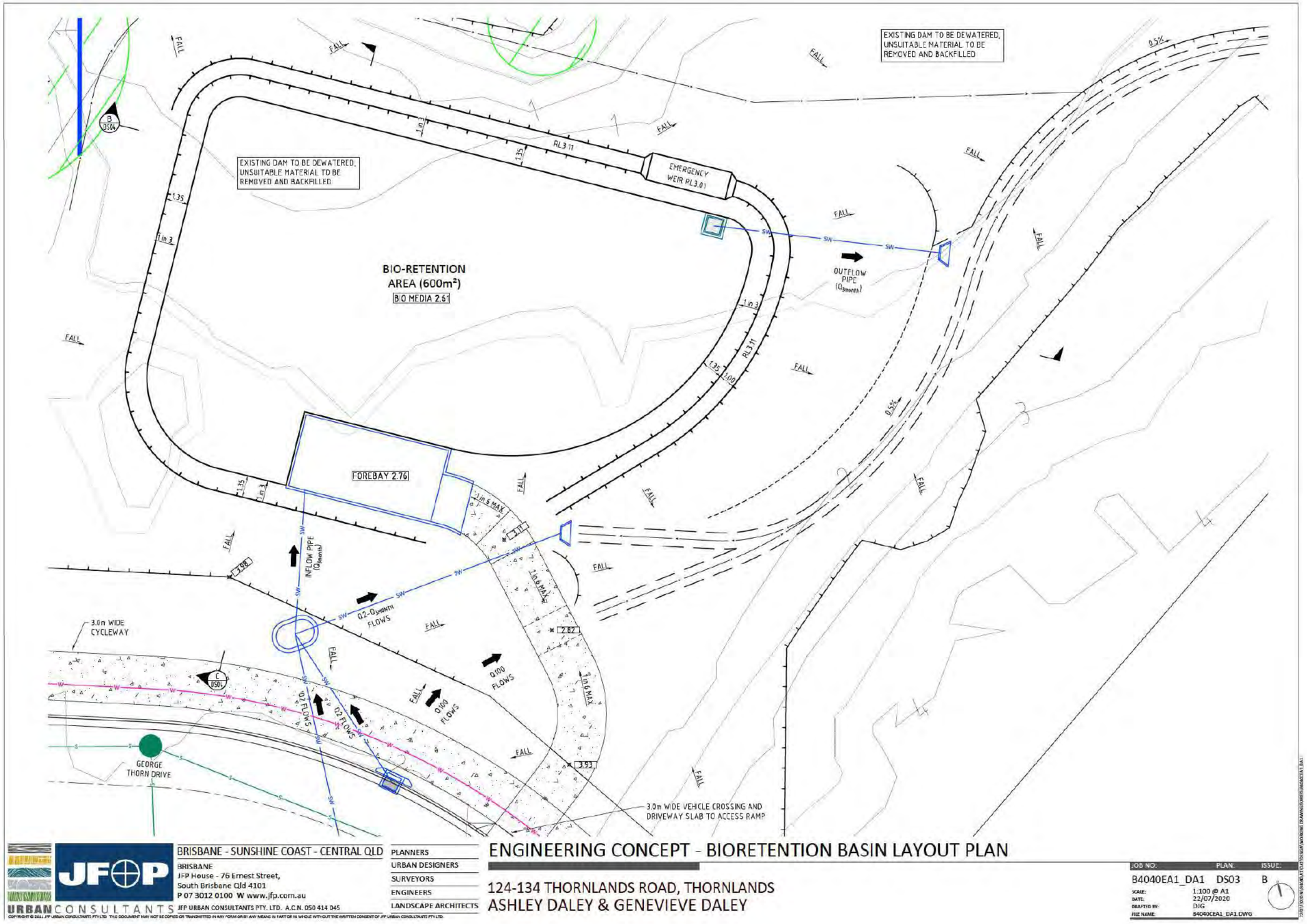
EXISTING DAM TO BE DEWATERED, UNSUITABLE MATERIAL TO BE REMOVED AND BACKFILLED
EXISTING DAM TO BE DEWATERED, UNSUITABLE MATERIAL TO BE REMOVED AND BACKFILLED
EMERGENCY WEIR RL3.01
RL3.11
BIO-RETENTION AREA (600m²)
BIO MEDIA 2.61
FOREBAY 2.76
OUTFLOW PIPE
INFLOW PIPE
0.2-0.5MONTH FLOWS
0.100 FLOWS
0.2 FLOWS
3.0m WIDE CYCLEWAY
GEORGE THORN DRIVE
3.0m WIDE VEHICLE CROSSING AND DRIVEWAY SLAB TO ACCESS RAMP
FALL
1 in 3
1 in 6 MAX
1 in 5 MAX
0.5%
SW
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ENGINEERING CONCEPT - BIORETENTION BASIN LAYOUT PLAN
124-134 THORNLANDS ROAD, THORNLANDS
ASHLEY DALEY & GENEVIEVE DALEY
JOB NO: B4040EA1_DA1
PLAN: DS03
ISSUE: B
SCALE: 1:100 @ A1
DATE: 22/07/2020
DRAFTED BY: DJG
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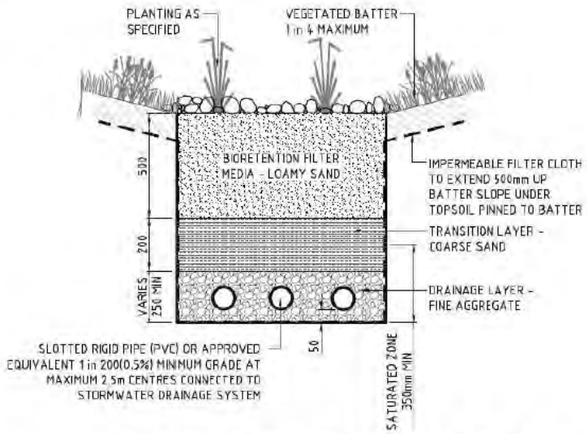
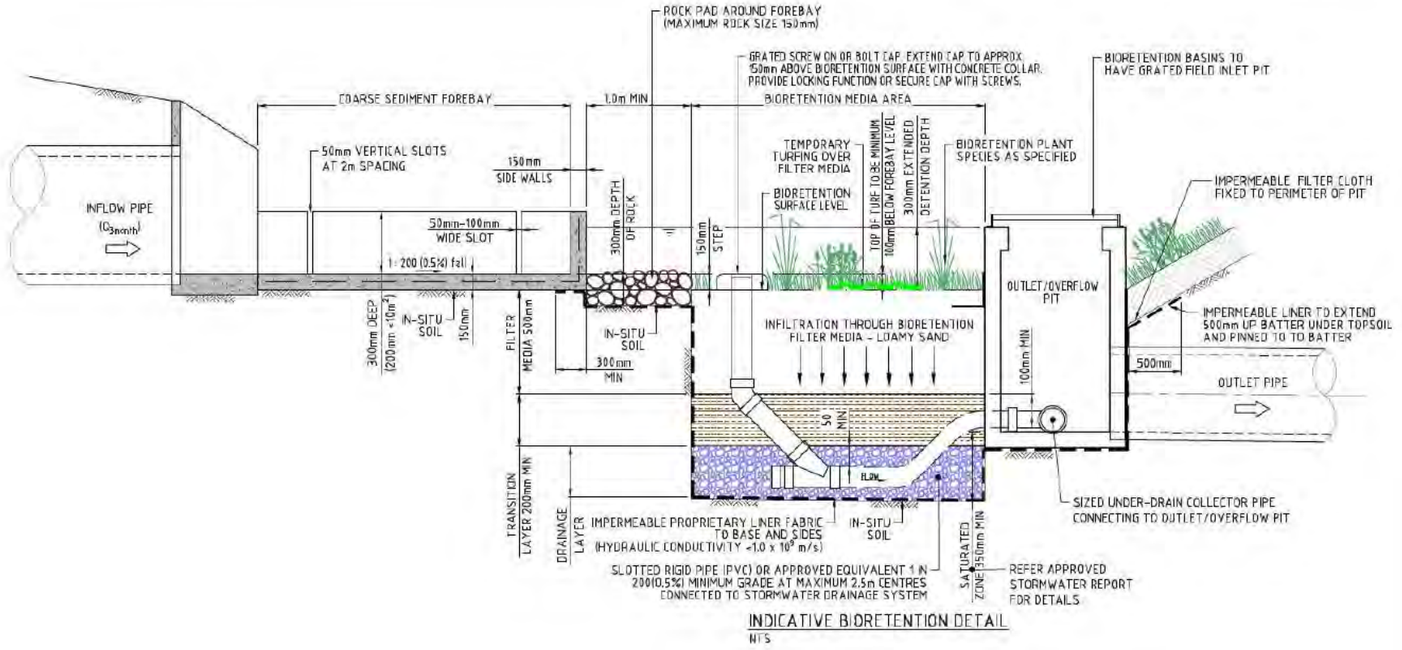


BIORETENTION FILTER MATERIAL DETAIL

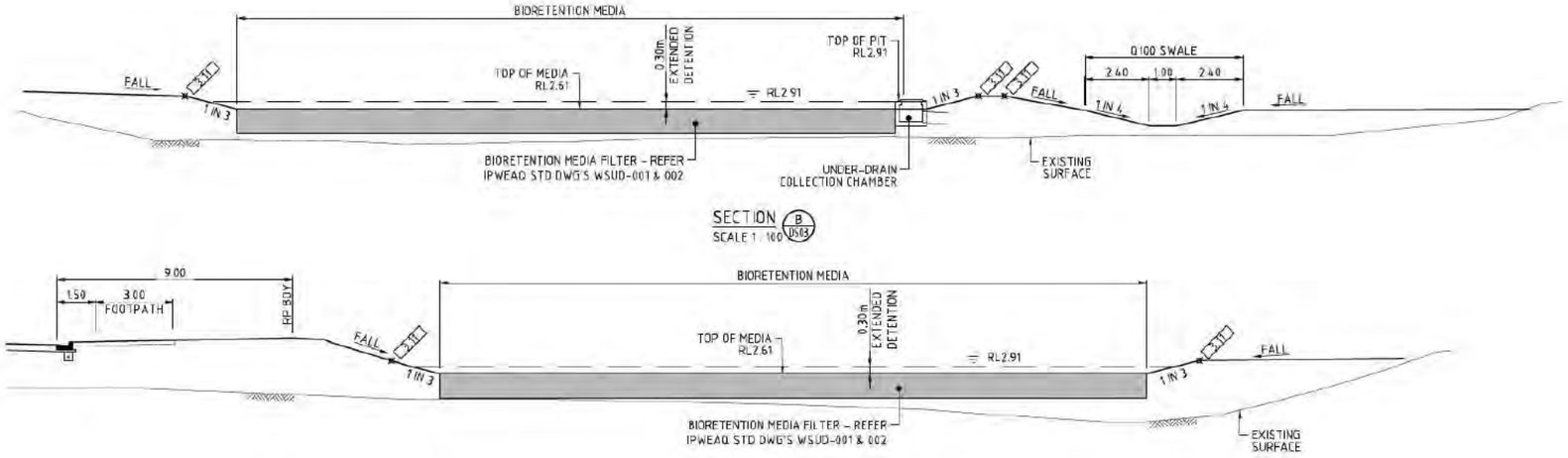
NOT TO SCALE

1. CONSTRUCTION TOLERANCES AS DOCUMENTED IN THE "WATER SENSITIVE URBAN DESIGN CONSTRUCTION AND ESTABLISHMENT GUIDELINES - SWALES, BIORETENTION SYSTEMS AND WETLANDS" (WATER BY DESIGN) MUST BE ACHIEVED.
2. FILTER CLOTH IS NOT TO BE PLACED BETWEEN ANY FILTER LAYERS. FILTER CLOTH IS TO EXTEND 500mm UP BATTER UNDER TOPSOIL PINNED TO BATTER.
3. UNDER-DRAIN: SLOTTED RIGID PIPE (uPVC OR SIMILAR TO AS 2439.1) OR APPROVED EQUIVALENT, 0.5% MIN. GRADE. PIPE JOINS SHOULD BE GLUED USING PLUMBING CEMENT. PIPE SHOULD NOT BE INSTALLED WITH A FILTER SOCK AT MAX 2.5m CENTRES.



INDICATIVE BIORETENTION DETAIL

NTS



SECTION B (DS03)
SCALE 1:100

SECTION C (DS03)
SCALE 1:100

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ENGINEERING CONCEPT - BIORETENTION BASIN SECTIONS

124-134 THORNLANDS ROAD, THORNLANDS
ASHLEY DALEY & GENEVIEVE DALEY

JOB NO:	PLAN:	ISSUE:
B4040EA1_DA1	DS04	B
SCALE:	1:100 @ A1	
DATE:	22/07/2020	
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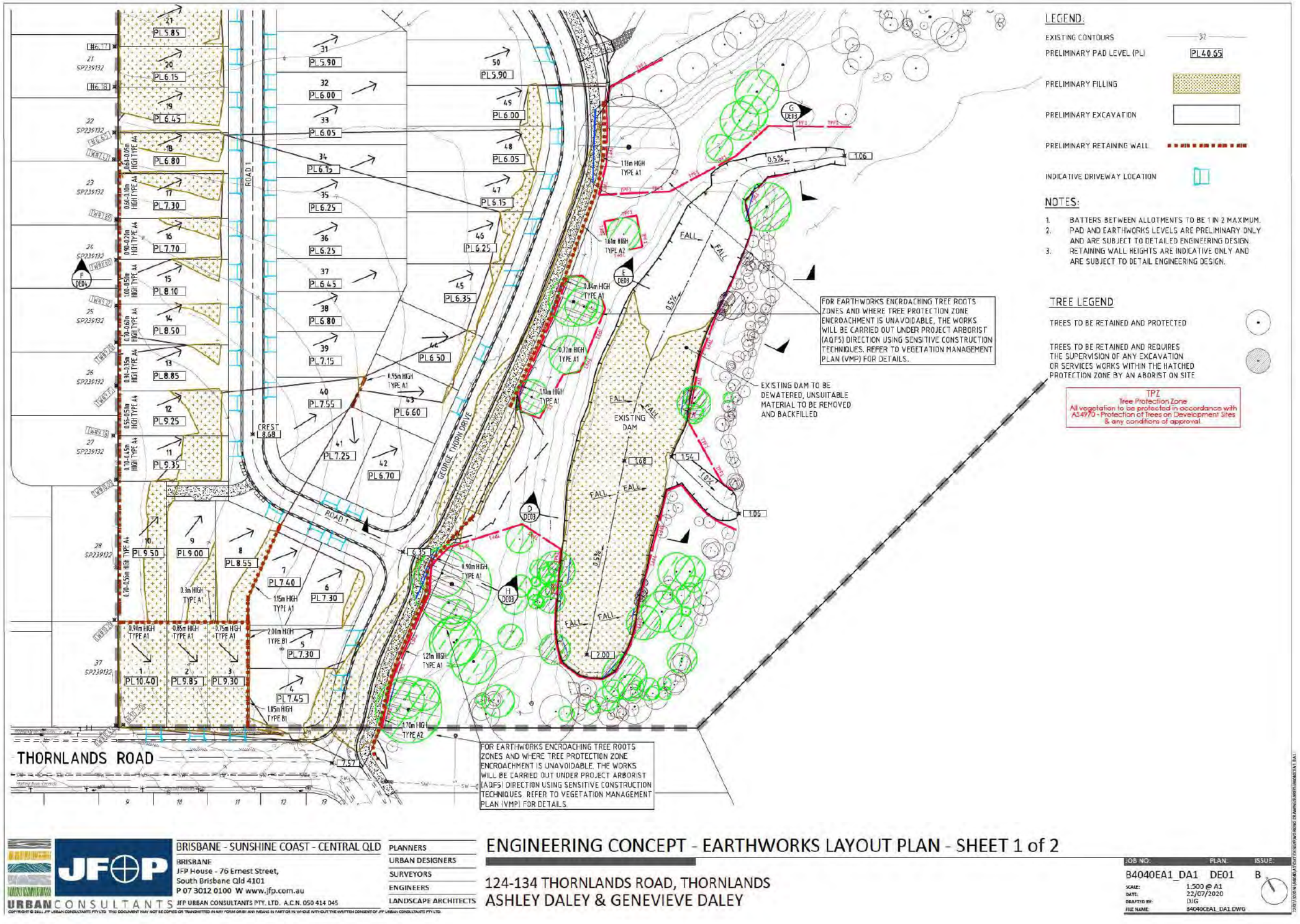
LEGEND:
EXISTING CONTOURS
PRELIMINARY PAD LEVEL (PL)
PRELIMINARY FILLING
PRELIMINARY EXCAVATION
PRELIMINARY RETAINING WALL
INDICATIVE DRIVEWAY LOCATION
NOTES:
1. BATTERS BETWEEN ALLOTMENTS TO BE 1 IN 2 MAXIMUM.
2. PAD AND EARTHWORKS LEVELS ARE PRELIMINARY ONLY AND ARE SUBJECT TO DETAILED ENGINEERING DESIGN.
3. RETAINING WALL HEIGHTS ARE INDICATIVE ONLY AND ARE SUBJECT TO DETAIL ENGINEERING DESIGN.
TREE LEGEND
TREES TO BE RETAINED AND PROTECTED
TREES TO BE RETAINED AND REQUIRES THE SUPERVISION OF ANY EXCAVATION OR SERVICES WORKS WITHIN THE HATCHED PROTECTION ZONE BY AN ABORIST ON SITE
TPZ
Tree Protection Zone
All vegetation to be protected in accordance with AS4970 - Protection of Trees on Development Sites & any conditions of approval
FOR EARTHWORKS ENCROACHING TREE ROOTS ZONES AND WHERE TREE PROTECTION ZONE ENCROACHMENT IS UNAVOIDABLE, THE WORKS WILL BE CARRIED OUT UNDER PROJECT ARBORIST (AQFS) DIRECTION USING SENSITIVE CONSTRUCTION TECHNIQUES. REFER TO VEGETATION MANAGEMENT PLAN (VMP) FOR DETAILS.
EXISTING DAM TO BE DEWATERED, UNSUITABLE MATERIAL TO BE REMOVED AND BACKFILLED
FOR EARTHWORKS ENCROACHING TREE ROOTS ZONES AND WHERE TREE PROTECTION ZONE ENCROACHMENT IS UNAVOIDABLE. THE WORKS WILL BE CARRIED OUT UNDER PROJECT ARBORIST (AQFS) DIRECTION USING SENSITIVE CONSTRUCTION TECHNIQUES. REFER TO VEGETATION MANAGEMENT PLAN (VMP) FOR DETAILS.
THORNLANDS ROAD
ROAD 1
GEORGE HORN DRIVE
EXISTING DAM
CREST 8.68
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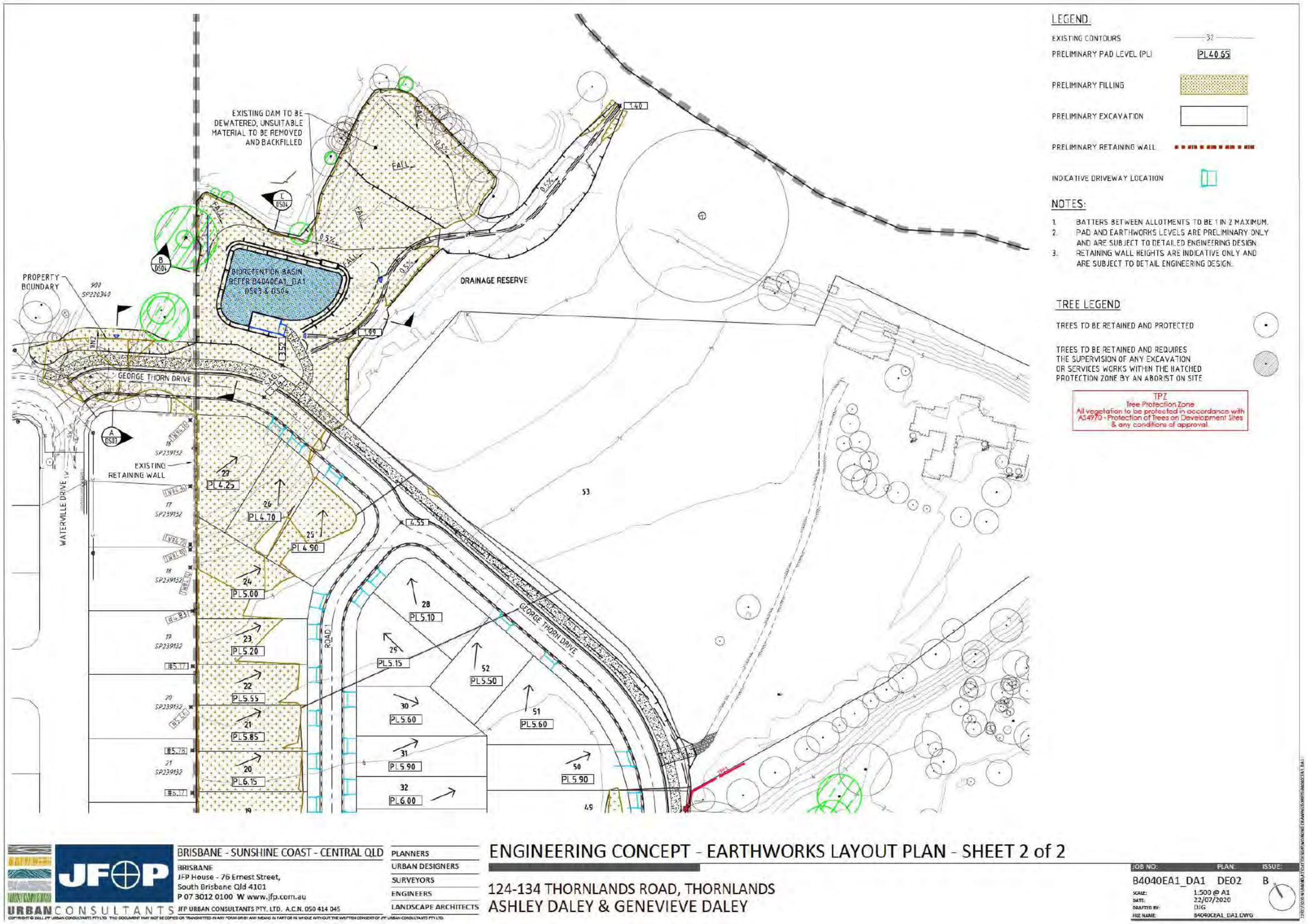
ENGINEERING CONCEPT - EARTHWORKS LAYOUT PLAN - SHEET 1 of 2
124-134 THORNLANDS ROAD, THORNLANDS
ASHLEY DALEY & GENEVIEVE DALEY
JOB NO: PLAN: ISSUE:
B4040EA1_DA1 DE01 B
SCALE: 1:500 @ A1
DATE: 22/07/2020
DRAFTED BY: DJG
FILE NAME: B4040EA1_DA1.DWG



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ENGINEERING CONCEPT - EARTHWORKS LAYOUT PLAN - SHEET 2 of 2

124-134 THORNLANDS ROAD, THORNLANDS
ASHLEY DALEY & GENEVIEVE DALEY

JOB NO:	PLAN:	ISSUE:
B4040EA1_DA1	DE02	B
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DATE:	22/07/2020	
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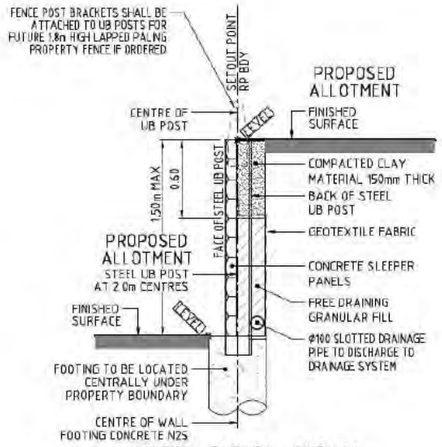
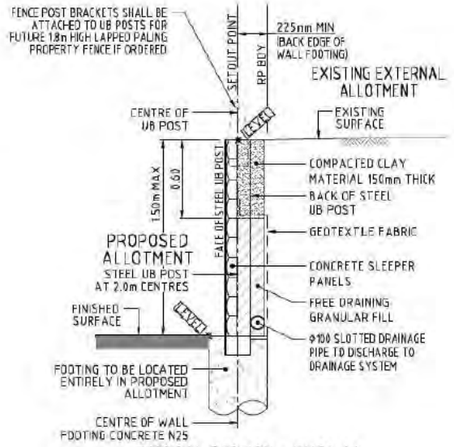


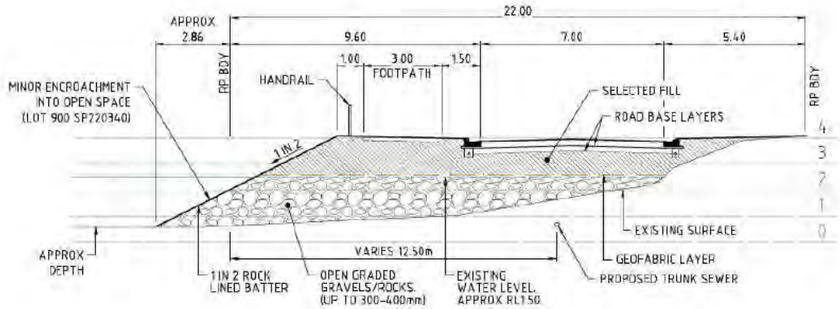
TYPICAL SECTION – TYPE A1
CONCRETE SLEEPER/UB POST RETAINING WALL
SCALE 1:20

NOTE: RETAINING WALL DESIGN (INCLUDING FENCE POST BRACKETS AND FITTINGS) AND CONSTRUCTION CERTIFICATION TO INCORPORATE LOADING FROM FUTURE 1.8m HIGH LAPPED PALING PROPERTY FENCE

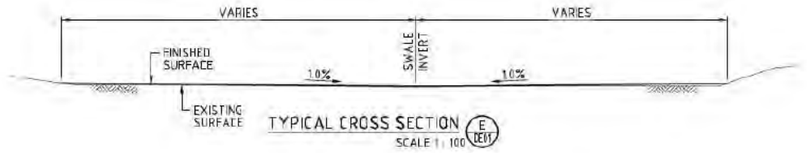


TYPICAL SECTION – TYPE A4
CONCRETE SLEEPER/UB POST RETAINING WALL
SCALE 1:20

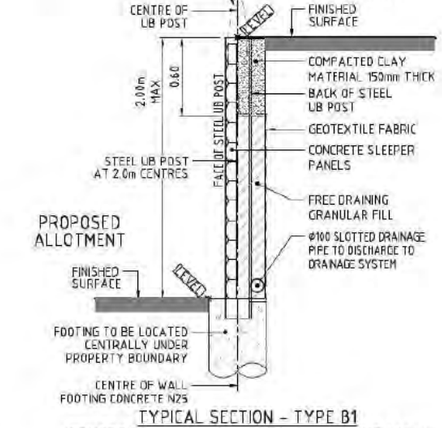
NOTE: RETAINING WALL DESIGN (INCLUDING FENCE POST BRACKETS AND FITTINGS) AND CONSTRUCTION CERTIFICATION TO INCORPORATE LOADING FROM FUTURE 1.8m HIGH LAPPED PALING PROPERTY FENCE



TYPICAL CROSS SECTION (A DE02)
SCALE 1: 100

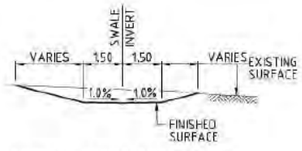


TYPICAL CROSS SECTION (E DE01)
SCALE 1: 100



TYPICAL SECTION – TYPE B1
CONCRETE SLEEPER/UB POST RETAINING WALL
SCALE 1:20

NOTE: RETAINING WALL DESIGN (INCLUDING FENCE POST BRACKETS AND FITTINGS) AND CONSTRUCTION CERTIFICATION TO INCORPORATE LOADING FROM FUTURE 1.8m HIGH LAPPED PALING PROPERTY FENCE



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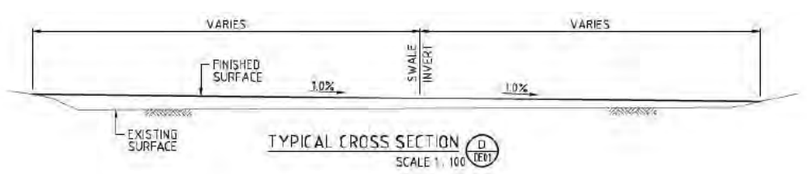

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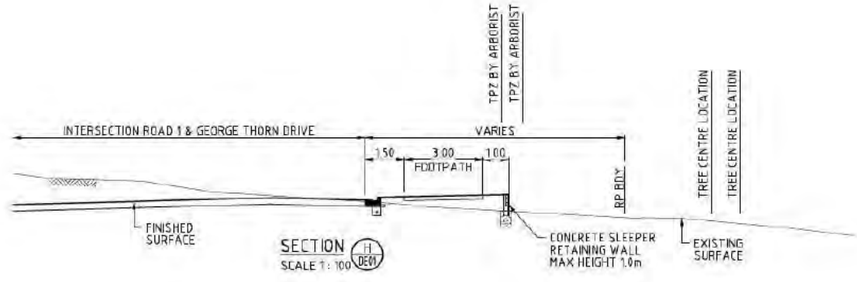

SECTION (H DE01)
SCALE 1: 100

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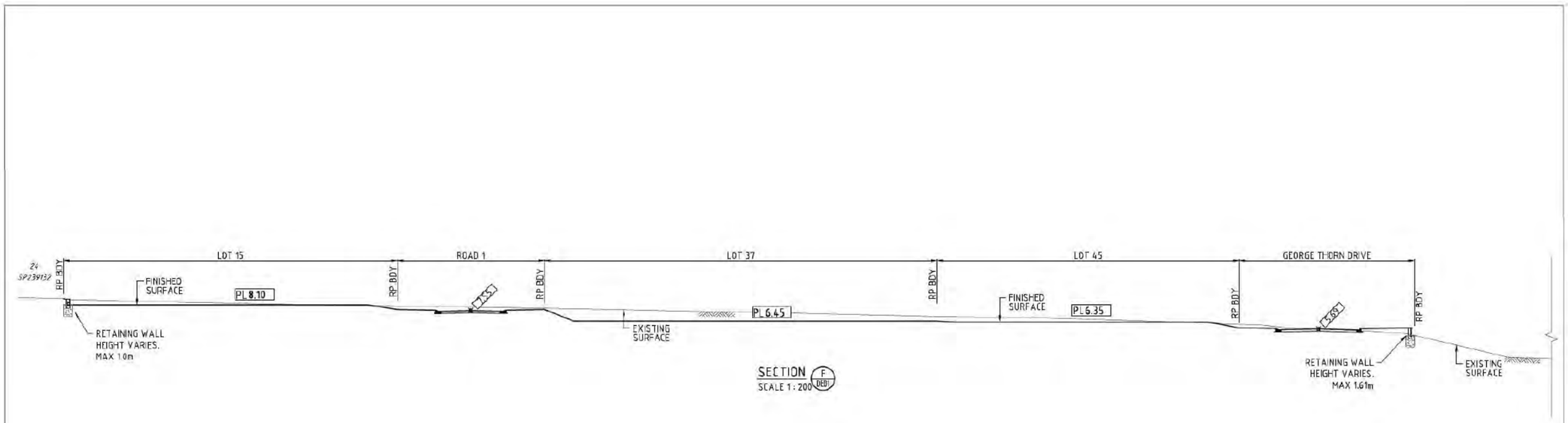
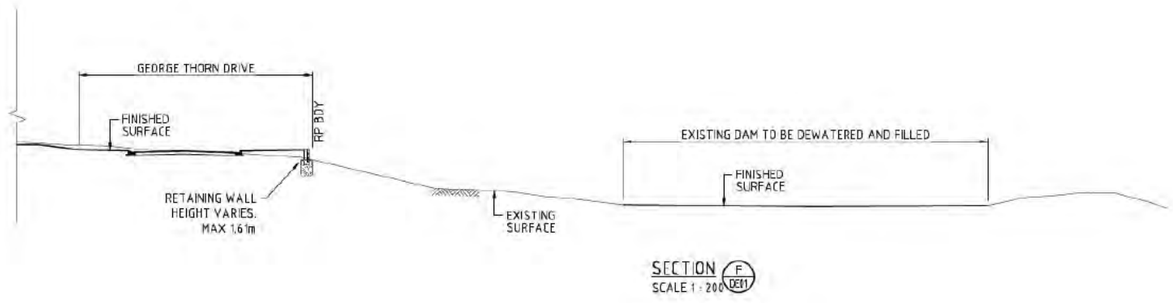
ENGINEERING CONCEPT - EARTHWORKS DETAILS PLAN

124-134 THORNLANDS ROAD, THORNLANDS
ASHLEY DALEY & GENEVIEVE DALEY

JOB NO:	PLAN:	ISSUE:
B4040EA1_DA1	DE03	B
SCALE:	1:20 & 1:100 @ A1	
DATE:	22/07/2020	
DRAFTED BY:	DJG	
FILE NAME:	B4040EA1_DA1.DWG	





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LANDSCAPE ARCHITECTS

ENGINEERING CONCEPT - EARTHWORKS SECTION

124-134 THORNLANDS ROAD, THORNLANDS
ASHLEY DALEY & GENEVIEVE DALEY

JOB NO:	PLAN:	ISSUE:
B4040EA1_DA1	DE04	B
SCALE:	1:200 @ A1	
DATE:	22/07/2020	
DRAFTED BY:	DJG	
FILE NAME:	B4040EA1_DA1.DWG	

APPENDIX C – CALCULATIONS

Rational Method Calculations
124 - 134 Thornlands Road, Thornlands

Dev. Category	Catchment 1 Area (ha)	Co-efficients of Runoff C1	C2	C5	C10	C20	C50	C100
Central Business	0	0.72	0.77	0.86	0.90	0.95	1.00	1.00
Commercial & Industrial	0	0.70	0.75	0.84	0.88	0.92	1.00	1.00
Road Catchment (60% fi)	0	0.66	0.70	0.78	0.82	0.86	0.94	0.98
Residential B	0	0.70	0.74	0.83	0.87	0.91	1.00	1.00
Res A Incl Roads >=750m2	0	0.66	0.70	0.78	0.82	0.86	0.94	0.98
Res A Incl Roads 600-750m2	0	0.68	0.72	0.81	0.85	0.89	0.98	1.00
Res A Incl Roads 450-599m2	**4.04**	**0.69**	**0.73**	**0.82**	**0.86**	**0.90**	**0.99**	**1.00**
Res A Incl Roads 300-449m2	0	0.70	0.74	0.83	0.87	0.91	1.00	1.00
Res A Excl Roads >=750m2	0	0.65	0.69	0.77	0.81	0.85	0.93	0.97
Res A Excl Roads 600-750m2	0	0.66	0.70	0.78	0.82	0.86	0.94	0.98
Res A Excl Roads 450-599m2	0	0.66	0.71	0.79	0.83	0.87	0.95	1.00
Res A Excl Roads 300-449m2	0	0.68	0.72	0.81	0.85	0.89	0.98	1.00
Rural Res	0	0.59	0.63	0.70	0.74	0.78	0.85	0.89
Open Space & Parks	0	0.56	0.60	0.67	0.70	0.74	0.81	0.84

Time of Concentration (min)

Catchment	Std Inlet Time	Pipe Flow	Gully Flow	Total tc
Catchment 1	13	3.3	0	16.3

[redacted]

Rainfall Intensities (mm/hr)

Catchment	$I_{3\text{-month}}$	I1	I2	I5	I10	I20	I50	I100
Catchment 1	39	78	98	120	141	161	188	207

Stormwater Quantities (m^3/s)

Catchment	$Q_{3\text{-month}}$	Q1	Q2	Q5	Q10	Q20	Q50	Q100
Catchment 1	0.30	0.60	0.80	1.10	1.36	1.63	2.09	2.32

Sediment Forebay Sizing
Bioretention Technical Design Guidelines (2014
124 - 134 Thornlands Road, Thonland

Equation 3 (Min Forebay Volume)		
min. Vol	**1.94**	**m^3**
Ac	4.04	ha
R	0.8	
Lo	0.6	m^3/ha/yr
Fc	1	yr (Cleanout frequency)

Equation 4 (Min Forebay Area)		
R	0.8	
n	0.5	
vs	0.1	m/s
Q3mth	0.3	m^3/s
min. Area	**36**	**m^2**

Equation 5 (Depth Check)		
Ds	**54**	**mm (≤ 300m)**
min Vol.	1.94	m^3
min. Area	36	m^2

[redacted]

Section 3.4.5 Filter Media Scour Velocity Check

Water by Design, *Bioretention Technical Design Guidelines* (2014)

Equation 6

$$v = \frac{Q}{w \times d}$$

Where: v = velocity of flow over filter media surface (m/s)

Q = flow rate in the design storm event (m^3/s)

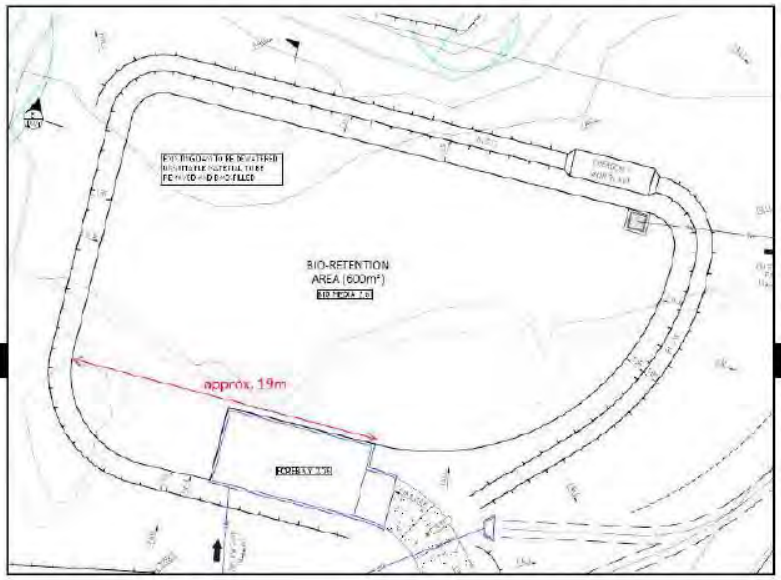
w = bioretention basin width at narrowest point (m)

d = depth of flow in accordance with Table 14 (m)

Table 14 Scour velocity limits over the surface of the bioretention system

Design flow	Depth of flow over surface
Minor storm (2–10 year ARI)	Extended detention depth + 0.1 m
Major storm (50–100 year ARI)	Lesser of the bypass weir level + 0.1 m or the maximum water level

ARI	Q (m^3/s)	w (m)	d (m)	v (m/s)	v < 1m/s?
$Q_{3\text{-month}}$	0.30	19	0.4	0.04	yes
Q_2	0.80	19	0.4	0.11	yes
Q_{100}	2.32	19	0.5	0.24	yes



APPENDIX D – PRELODGEMENT MEETING MINUTES

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Pre-Lodgement Meeting Minutes

Redland CITY COUNCIL

COUNCIL REFERENCE: CRID528650

ADDRESS OF PROPERTY 124-134 Thornlands Road Thornlands QLD 4164

PROPOSED USE Reconfiguration By Lease

DATE/TIME OF MEETING 14 January 2018
2:00pm – 3:00pm

VENUE Peel Room, Ground floor Council Administration Building, Cleveland

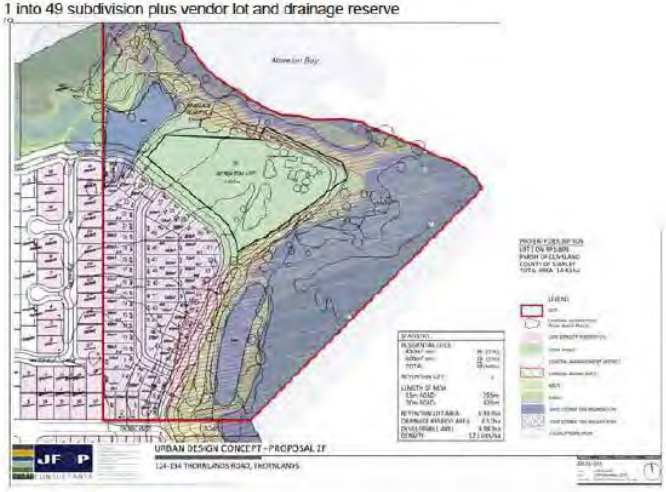
PLEASE NOTE: DO NOT SEND MINUTES UNTIL FEES HAVE BEEN PAID – Delete this before sending

ATTENDEES:

Council Representatives	External Representatives (Name / Company)
Brett Dibden (Coordinator) George Anderson (planning Officer) Peter Miles (Infrastructure Charging Officer) Sara Jensen (Environmental Assessment) Edward McDermott (Engineering Assessment)	

Proposal

1 into 49 subdivision plus vendor lot and drainage reserve



City Planning and Assessment

Enquiries: please contact Planning Assessment on (07) 3829 8999
Redland City Council PO Box 21 Cleveland Qld 4163

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Zone: Low Density Residential (LDR) & Recreation and Open Space (ROS)

Overlays:

- Bushfire Hazard Overlay – potential impact buffer in LDR zoned land

- Coastal Protection Overlay – erosion prone area and coastal management district

- Environmental Significance Overlay – MSES & MLES

- Flood & Storm Tide Hazard Overlay – 2016 & 2100 storm tide inundation area

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ISSUES:

1. Proposed esplanade road located partially within Recreation and Open Space Zone
2. Proposed stormwater basin location (NW dam)
3. Proposed vendor retention lot
4. Any layout or vegetation retention issues

RPS Zoning

City Plan Zoning

Proposed esplanade road located partially within Recreation and Open Space Zone - The location of the proposed road looks as though it has shifted from the old CP7 zoning into the New Recreation and Open Space zoning – increasing the proposed development footprint. This should align with the old CP7 zoning and the proposed new lots should not extend into the ROS Zone. Correct meets and bounds information can be provided Council's GIS unit by contacting Council on 3829 8999.

Road is need to provide a loop for existing properties.

Proposed stormwater basin location (NW dam) – Performance Outcome PO2 of the Healthy Waters Code states:

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'On-site water management systems do not rely on existing artificial water bodies being retained, except where such water bodies:

1. *perform significant ecological, water quality or recreation functions;*
2. *do not pose a significant risk to stream health or water quality;*
3. *are structurally sound;*
4. *do not pose any risk to community health and safety, and*
5. *will not create a significant maintenance or cost burden on the community over the short or long terms.'*

Proposed vendor retention lot –

The site is zoned as *Low Density Residential* with a large portion of the property zoned as *Recreation and Open Space*. The proposal has a large vendor allotment which doesn't align with some of the points listed in *6.2.12.2 Purpose of the Recreation and Open Space Zone Code*, with specific reference to the environmental functions and compatibility. It is acknowledged that existing use rights prevail however **the size of the vendor lot may be an issue, further advice will be provided once it is received from Council's Senior Adviser – Civic and Open Space.**

Any layout or vegetation retention issues – layout generally ok. Lot density achieves Performance Outcome PO9(4)(c) of the Reconfiguration Code. Bin pads required for internal lot. Lots size and frontage width accord with Table 9.3.4.3.2—Lot size and dimensions, of the Reconfiguration Code. Consider City Plan Overlay and SPP constraints in ultimate design.

Other

- Divisional Councillor – Lance Hewlett

Environmental

Overlays

Environmental Significance Overlay – There are areas mapped as **MLES** and **MSES** – which are located within the Open Space Zone of the site. The overlay code will need to be address.
Coastal Protection – the site is mapped as *Erosion Prone* and *Coastal Management District* – address the overlay code. There are some benchmark requirements with the City Plan to locate development outside of these areas. The overlay code will need to be address.

Other Requirements – Stormwater will need to be addressed for water quality requirements are outlined in the Healthy Waters Code. It cannot be confirmed if the surrounding developments catered for this site in any of the Regional facilities – the initial thoughts are it wasn't but if it can be demonstrated it was this will need to be confirmed that the reduction levels meet current standards.

Dams – assessment criteria is address in **SC6.3 Planning Scheme Policy 2 – Infrastructure works** – there is a table of assessment to help navigate the retention or remove of onsite dams.

Koala Regulations – Only part of the site falls within the Assessable area of the Priority Assessable Area of the Koala regulations. The assessable area is mapped as *Medium Value Rehab*.

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Engineering

- Coastal Protection (Erosion Prone Areas) Overlay –
  - Does not comply with PO2, P04, PO5, PO6, PO7, PO8 & PO9 – Need to demonstrate or confirm the current mapping is not accurate thus moving the zone. This would need to be carried out by competent engineers and it is recommended to contact Sel Sultmann, Principal Coastal Scientist at Dept. of Environment & heritage Protection (see below). If erosion control structure is proposed then further details will be required and acceptance from City Infrastructure Group will be required.
  - State Referral required for coastal management district
- Flood and Storm Tide Hazard Overlay

2100 Storm Tide Level : 3.22 (m AHD)
Road, dam and any other council assets will need to comply with PO3
Address/demonstrate compliance with PO6 in regards to inundation characteristics
Comply with PO8
Comply with PO10

Sewer:

- Trunk sewer 300mm connected at both ends will be required and located within road reserve. Retic will be connected into manholes on trunk line. No additional MH's are to be constructed to accommodate retic. Trunk analysis and pump reconfiguration works as part of trunk works may be required. JFP is recommended to contact David Heape at Redland Water for further information – 03 8298 913.

Water:

- Plan showing how development is to be serviced in accordance with SEQ Code is required including the requirement for fire hydrants to service Lots.
- JFP is required to carry out a network analysis on water connections.

Stormwater:

- Demonstrate compliance with PO3 – No worsening downstream of the property
- Stormwater management plan demonstrating compliance with Healthy Water Way Code
- Re profiling of the dam or removal of the dam will be required to cater for the construction of the road and infrastructure.
- Need to relocate existing headwall within dam area.
- Stormwater drainage design considers the full extent of maintenance requirements and costs associated with devices used within the system, given Council will ultimately be responsible for maintenance requirements and costs associated with the dam. If the dams are to be retained a structural engineering assessment is required to determine the structural integrity, and compare future maintenance costs (comparing dam retention versus removal).
- Stormwater management plan to address the requirements of the Stormwater Management Code with regards to both quality and quantity.
- Conceptual drawings are required with road cross sections.
- What are the applicant's intentions with the existing western dam?

Traffic / Access:

- The applicant must connect Thornlands Rd to George Thorn Drive. Council require this to form ring road.
- The road connection from the existing George Thorn Drive will impact on the existing dam

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and vegetation on that properly. Provide more than just conceptual information for this part of the site. Further information will be required on the engineering of the road and the alteration to the dam.

- Thornlands Rd will require widening with new kerb and channel and extension of footpath.
- Trunk cycle way as part of MBC to be 3.0m wide.

Electrical:

- Pad mounted transformers will need to be above storm tide and flood inundation level.
- All proposed lots will required lo be supplied with underground power
- Existing dwelling property pole will need to be relocated. Connect existing dwelling with new underground connection.

Excavation and Fill

- Any planned retaining wall structures will require a 60year design life.
- Any filling greater than 400mm will require level 1 certification.

Other Information

- Sel Sultmann

  Principal Coastal Scientist

  Environment Policy and Planning

  Dept of Environment and Heritage Protection

  Ph: (07) 33305768
  E-mail: sel.sultmann@ehp.qld.gov.au
  GPO Box 2454 BRISBANE, QLD, 4001
  Level 10 400 George St Brisbane

Infrastructure Charging

- Infrastructure Charges are levied in accordance with Councils Adopted Infrastructure Charges Resolution (No.2.3) 2016.
- Sewer infrastructure associated with the creation of a 300mm sewer main is considered trunk infrastructure and eligible for offsets against infrastructure charges.
- The Moreton Bay Cycleway (3m) is identified to traverse this site (LGIP item TR-L-377). This item would be trunk infrastructure and eligible for offsets against infrastructure charges.
- Enter into an Infrastructure Agreement with Council for the delivery of trunk works. The applicable fee for preparation and assessment of an infrastructure agreement is $1,130.00 under the 2018 – 2019 Fees and Charges schedule.

Landscape

No landscape plan/s or details were submitted as part of this assessment; to do an accurate assessment a concept landscape plan is required.

- Entry Statement;
- Street Tree Requirement;
- Bio basin;

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- Pedestrian Linkages through the site;
- Ecological and Arborist Reports

With a future application Provide a Concept Landscape Plans drawn by a qualified Landscape Architect addressing the relevant Performance Outcomes(s) PO6 (3), PO7, PO9, PO10, PO12, PO13 of the Recreation and open space zone code –Table 6.2.12.3 - PO12 and PO16 Low–medium density residential zone code - Table 6.2.2.3.1. PO3, P05, PO6, PO11, P012, P013, P014, PO41 – Table 9.3.4 Reconfiguring a lot code and PO1 to PO13, P015, PO16 and PO20 of the Landscape Code - Table 9.3.3.3.1.

SPP & State Referrals

State Planning Policy (SPP) triggers – consider applications on subdivision layout with any future application including any related State referrals:

BIODIVERSITY
- MSES - Wildlife habitat
- MSES - Regulated vegetation (essential habitat)
- MSES - Regulated vegetation (wetland)
- MSES - High ecological significance wetlands

COASTAL ENVIRONMENT
- Coastal management district

NATURAL HAZARDS RISK AND RESILIENCE
- Bushfire prone area
- Erosion prone area
- Medium storm tide inundation area
- High storm tide inundation area

TRANSPORT INFRASTRUCTURE
- Active transport corridor

FURTHER ADVICE:

- **Cultural Heritage**
  Please be aware that should any aboriginal, archaeological or historic sites, items or places be identified, located or exposed during the course of construction or operation of a development, the *Aboriginal and Cultural Heritage Act 2003* requires all activities to cease. For indigenous cultural heritage, contact the Department of Environment and Heritage Protection.

Disclaimer
The aim of this Pre-Lodgement meeting is to provide initial advice on likely significant issues relevant to a development proposal to assist in the timely processing of applications. It is not intended to replace an in-depth investigation normally associated with the formal assessment of an application and possible need to consider any public submissions received as part of that assessment. While the advice is given in good faith, it in no way binds a decision by the Council.

Signed: **Council Coordinator**

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APPENDIX E – BIORETENTION MAINTENANCE CHECKLIST

[redacted]

4.3 Inspection and maintenance checklist for bioretention systems

ASSET TYPE	Bioretention	ASSET ID
Location		
Date		
Date of last rainfall		Weather
Officer's name		

Bioretention plan

Insert diagram or plan of the asset showing key features e.g. locations of inlet, outlet, and overflow

Additional information	
Time taken to complete inspection or maintenance	
Photos of site (explanatory notes)	1. 2. 3. 4. 5. 6.
General comments and sketches	
Officer's signature	

What to look for	Performance indicator (PI)	Condition rating*	Maintenance undertaken**	Additional work needed
SURROUNDS				
Damaged or removed structures e.g. traffic bollards	No damage that poses a risk to public safety or structural integrity			
INLET				
Erosion	Inlet is structurally sound and there is no evidence of erosion or subsidence/settlement			
Damaged or removed structures e.g. pit lids or grates	No damage that poses a risk to public safety or structural integrity			
Sediment, litter, or debris	No blockage			
COARSE SEDIMENT FOREBAY (IF PRESENT)				
Erosion	Minor erosion only that does not pose a risk to public safety or structural integrity and would not worsen if left unattended			
Sediment	Coarse sediment forebay <75% full and no litter			

*1 – PI met; 2–PI met after maintenance activity undertaken; 3 – Additional maintenance needed; 4 – Rectification may be needed; NI – not inspected; NA – not applicable

** Quantify where possible e.g. amount of sediment or litter removed

What to look for	Performance indicator (PI)	Condition rating*	Maintenance undertaken**	Additional work needed
BATTER SLOPES AND BASE INVERT				
Erosion	Minor erosion only that does not pose a risk to public safety or structural integrity and would not worsen if left unattended			
Crust of fine sediment	No surface crusting			
Depressions or mounds	No surface depressions or mounds > 100 mm			
Hydraulic conductivity or permeability	Filter media is draining freely, whereby water is not ponded on the surface for more than 12 hours after rainfall and there is no obvious impermeable or clay-like surface on the filter media**			
Underdrains/clean out points	Clean out points not damaged and end caps securely in place			
Litter	Maximum 1 piece litter per 4 m²			
Unusual odours, colours, or substances (e.g. oil and grease)	None detected			
Vegetation	Minimum 95% vegetation cover (minimal bare batches)			
	Plants healthy and free from disease			
	Average plant height > 500 mm			

* 1 – PI met; 2–PI met after maintenance activity undertaken; 3 – Additional maintenance needed; 4 – Rectification may be needed; NI – not inspected; NA – not applicable
** Quantify where possible e.g. amount of sediment or litter removed

What to look for	Performance Indicator (PI)	Condition rating*	Maintenance undertaken**	Additional work needed
Algal or moss growth	Maximum 10% of surface covered in algae			
	No moss growth			
OUTLET (OVERFLOW WEIR, PIPE, OR OUTFALL)				
Erosion	Outlet is structurally sound and there is no evidence of erosion or subsidence/settlement, including around edges of rock protection or toe of weir for large systems			
Damaged or removed structures e.g. pit lids or grates	No damage that poses a risk to public safety or structural integrity			
Sediment, litter or debris	No blockage			
Outlet freely draining to receiving drainage or waterway	No downstream impediments to the release of water, no erosion or damage to the outfall structure, and no evidence of malfunction (e.g. excessive sediment accumulated)			

*1 – PI met; 2–PI met after maintenance activity undertaken; 3 – Additional maintenance needed; 4 – Rectification may be needed; NI – not inspected; NA – not applicable

** Quantify where possible e.g. amount of sediment or litter removed

*** Presence of *Typha* is an indicator of poorly draining filter media

LEGEND

- Site Boundary
- MSES Line
- Highest Astronomical Tide 1.53m

Street tree planting to internal and external streets. George Thorn Drive and Thornlands Road to be planted with similar species to already planted.

Existing Surveyed Trees to be retained. All existing vegetation not surveyed to be retained.

Tree Plantings- Trees in grass mulch collars. Koala Habitat and Endemic species to be planted. Species used per RCC council rehabilitation guidelines.

New Footpath

A Bio-Retention Basin. Civil constructed stormwater infrastructure to be planted out according to stormwater landscaping treatment guidelines.

B Revegetated drainage reserve. Refer to Arborist reporting regarding potential impacts to existing tree TPZ.

C Infill dam- Hydroseed turf and tree planting trees with trees contributing to Koala Habitat, for example Eucalyptus tereticornis.

D Stormwater Outlet rehabilitation, refer to Intent expanded notes below.

E Disturbed areas during civil works to be turfed / grass seeded.

F Tree Plantings- Koala species to be included - Eucalyptus tereticornis, Eucalyptus siderophloia, Lophostemon suaveolens and Melaleuca quinquenervia.

G Weed Management, refer to below intent statement and to (future) VMP detailed eradication methods.

H Entry Statement to be located in Lot 4

REHABILITATION INTENT

The aims of the Rehabilitation and Landsape Concept Plan are to provide realised outcomes following various landscape and rehabilitation works, and to retain as many native trees as possible. The Project Arborist (AQF5) is in consultation with civil design to coordinate native tree retention. From site ecological reporting the regional ecosystem designation is 12.1.3- Predominant Mangrove shrubland extending to low closed forest and with marine clay plain and estuary.

Rehabilitation has five objectives or target areas (as shown on plan) to; **A)** revegetate constructed bio basin to facilitate site storm water management, to **B)** revegetate with native species the drainage reserve following civil dam infill. At the location of the southern dam **C) & F)** which is to be drained and earthwork filled, grass seeding and tree planting, particularly Koala (KHT) species including Eucalyptus species. Tree planting adjacent Stormwater treatment infrastructure to provide some screening effect.

D) Stormwater Outlet Rehabilitation. Channel to be turfed to section adjacent basin (to maximise drainage) and planted out for balance areas. Planting with sedge eg. Carex and Juncus at high density to; a) reduce potential fo scouring, b) to provide bio filtration of flows to the bay, and c) to reduce occurrence of mosquito. Arborist consultation for civil stormwater design (per the Site BAsed Stormwater Management Plan) and civil preliminary design to maximise tree retention to minmise impact to MSES.

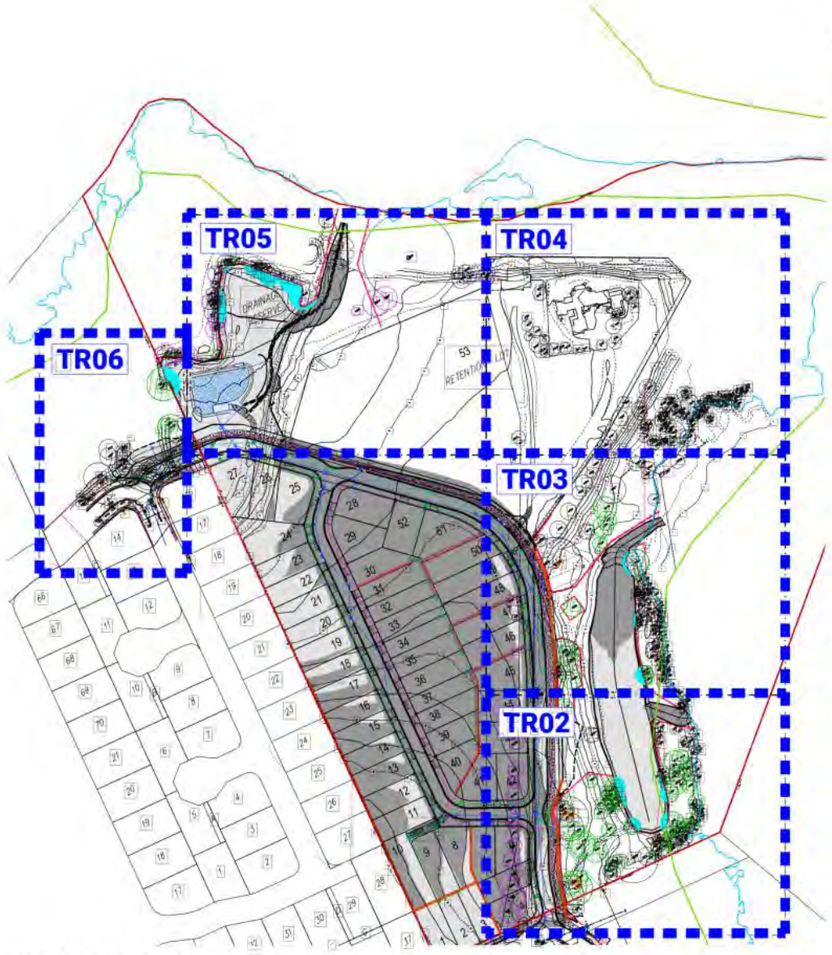
E) Areas outside of civil works zones to be regrassed to integrate with adjacent grass cover, where ground disturbance has taken place.

F) Tree plantings to infill for ecological purpose, to provide species diversity and to faciliate screening to basins and outlet channel. Species per RCC Guidelines, RE and KHT.

G) Weed management for all site areas and particularly to areas noted on plan. Weed species referred to in the Biosecurity Act 2014, Redlands Coast Biosecurity Plan 2018-2023 and weed species listed under 'RCC- Weeds of the Redlands Coast' are to be removed from the site, with the site remaining weed free for the prescribed maintenance period.

Streetscape tree planting is proposed to be native species and in keeping with species on Thornlands Road and George Thorn Drive, for external plantings. Native amenity species to internal streets - Flindersia australis to minor street and Lophostemon confertus to main street. **H)** Entry Statement Wall is proposed at southern entry point.

LANDSCAPE CONCEPT REHABILITATION PLAN 124 - 134 THORNLANDS ROAD, THORNLANDS | B4040L A1-DA1-LC01 [B] | 2020-09-18



KEY PLAN

Tree Retention Plan (TRP)

OVERVIEW

- The intention of the TRP is to assess site vegetation for development and tree retention. With project Arborist (AQF5) guidance the TRP is produced to provide pre-detailed design summary of retain and remove intention for existing trees.
- The TRP is subject to council approval and is to become a VMP for Operational Works - Landscape and Civil
- This TRP provides direction and guidance for the protection of trees and vegetation and forms the basis of the Vegetation Management Plan for Operational Works.
- VMP will address sequential clearing and Fauna management at development felling stage.
- Refer to the Vegetation Assessment Schedule (VAS) attached to this plan for location and description of all assessable vegetation.
- For all vegetation required to be retained on this plan, the following protection measures are to be followed.

1 TREE PROTECTION ZONES (TPZ) -

- The TPZ is the area above & below ground set aside for the protection of a tree (roots & crown) where it is potentially subject to damage by development.
- Thg Structural Root Zone (SRZ) is the area within the TPZ necessary for tree stability. No activity is permitted within the SRZ.
- All works within a TPZ will be carried out under the supervision and direction of the appointed *Arborist (AQF5)* including offsite trees.
- Where TPZ encoachment is greater than 10% or inside the SRZ, root location, size & depth will be determined prior to any works within the TPZ using non-destructive methods such as hand-dig or air/water vacuum.
- TPZ works will comply with the Australian Standard, Protection of Trees on Development Sites (AS.4970-2009).
- Additional construction activities not specified in the endorsed/stamped plans must be authorised the appropriate Consent Authority and the appointed Arborist (AQF5).
- The stockpiling or dumping of materials and waste, placement of sheds, parking of vehicles or any other activity that will compact the soil or may physically damage a tree is PROHIBITED.

2 TREE PROTECTION FENCING (TPF) -

- Prior to any works TPF will be installed as shown on the approved drawings or plans and as directed by the appointed Arborist (AQF5).
- TPF will be erected in accordance with AS 4687.
- Repositioning or changes to TPF MUST be authorised by the appointed Arborist (AQF5).
- TPF will remain in place until all site work has been completed unless authorised by the appointed Arborist (AQF5).

2.1 SIGNAGE -

- Signs identifying the TPZ area & its purpose must be attached to the TPF at suitable intervals.
- The lettering on the sign must comply with AS 1319.

2.2 ACCESS -

- TPF entry is ONLY permitted where authorised by the appointed Arborist (AQF5) and/or the Site Superintendent.

3 TPZ WORKS -

- All works will be carried out under supervision & direction of the appointed Arborist (AQF5).
- The SRZ will remain undisturbed and be protected where work is carried out within the TPZ.
- Ground, trunk & limb protection will be provided where determined by the appointed Arborist (AQF5)
- All work will be carried out using tree sensitive construction techniques & light weight machinery.
- All soil removal will be undertaken with care to minimise the disturbance of roots, including roots beyond the immediate area of excavation.
- Exposed roots will be protected from direct sunlight, drying out and extremes of temperature with appropriate covering (eg.Jute matting, geo-textile fabric) & watering as directed by the appointed Arborist (AQF5).
- Fill will be installed in incremental layers by hand &/or light-weight machinery. A setback >200m will be provided around any retained tree root.

4 BRANCH/ROOT PRUNING & TREE REMOVAL

- All tree/arboricultural work including root pruning will be carried out under the direction of the appointed Arborist (AQF5).
- All pruning and/or tree removal work will be carried out by a certified Tree Worker with a minimum AQF Level 3 qualification or equivalent in Arboriculture.
- All pruning will be in accordance with Australian Standard, *Pruning of Amenity Trees*, (AS 4373-2007).
- The removal or pruning of a tree will not impact any tree or vegetation identified to be retained

5 MONITORING/MAINTENANCE -

- Any incident of harm or accidental damage to a tree or TPF will be recorded & reported to the appointed Arborist(AQF5) as soon as practicable.
- Prior to the commencement of works & for the duration of Civil Works the appointed Arborist (AQF5) will carry out regular inspections of the trees & tree protection measures to ensure they are maintained & compliant with the approved drawings and plans.
- During operational works trees assessed as significantly stressed & requiring maintenance will be provided with remediation eg.hydration, mulching as directed by the appointed Arborist (AQF5).

LEGEND

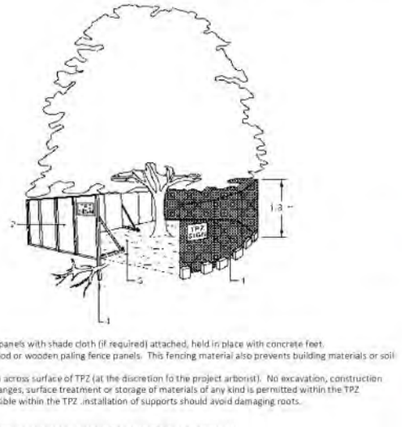
- TREES TO BE RETAINED AND PROTECTED
- EUCALYPTUS SPECIES
- TREES TO BE RETAINED AND REQUIRING SUPERVISION BY ARBORIST ONSITE DUE TO SERVICES / CUT&FILL
- TREES FOR REMOVAL — REFER TO VEGETATION ASSESSMENT SCHEDULE
- DEAD TREES — REFER TO VEGETATION ASSESSMENT SCHEDULE
- WEED SPECIES — REFER TO VEGETATION ASSESSMENT SCHEDULE
- TREES TO BE RETAINED <10% TPZ INCURSION — REFER TO VEGETATION ASSESSMENT SCHEDULE
- TREE PROTECTION FENCE — REFER TO DETAIL
- SERVICE — Stormwater Location
- SERVICE — Water Location
- SERVICE — Roofwater Location
- SERVICE — Sewer Location
- SERVICE — Electrical Location
- FILL — Refer Civil Plans
- CUT — Refer Civil Plans
- EARTHWORKS FILL AREAS TO BE NON-COMPACTED FILL AND NO NATURAL GROUND DISTURBED
- EARTHWORKS EXTENTS BTY
- CIVIL RETAINING WALLS

LANDSCAPE ARCHITECTURE · ECOLOGY · ARBORICULTURE
JFDP URBAN CONSULTANTS
BRISBANE · GOLD COAST · SUNSHINE COAST · CENTRAL QLD

APPROVAL ISSUE

TREE PROTECTION FENCE No.1
TPF1 - 1800 nigh steel mesh fence. Installed following survey setout fence to be supported an, clamped and to have Arborist signage cable tied fixed in place.

TREE PROTECTION FENCE No.2
TPF2 - Orange mesh with steel staking to be used in support locations and where ground conditions limit the access for TP1. Fence line to be based on surveyed positioning.



LEGEND
1. Chain wire mesh panels with shade cloth (if required) attached, held in place with concrete feet.
2. Alternative plywood or wooden paling fence panels. This fencing material also prevents building materials or soil entering the TPZ.
3. Mulch installation across surface of TPZ (at the discretion to the project arborist). No excavation, construction activity, grade changes, surface treatment or storage of materials of any kind is permitted within the TPZ
4. Bracing is permissible within the TPZ .installation of supports should avoid damaging roots.

TREE PROTECTION FENCE INSTALLATION DETAIL
Signage to be fixed to all TPF by project Arborist

NO ENTRY
TREE & VEGETATION PROTECTION ZONE
ANY CHANGE TO FENCING REQUIRES PROJECT ARBORIST AUTHORISATION
CONTACT: PROJECT SUPERINTENDENT / PROJECT ARBORIST

ARBORIST SIGNAGE
Signage to be fixed to all TPF by project Arborist

F	REVISED FOR APPROVAL	2020-07-30	SJ	RW DM
E	FOR APPROVAL	2020-07-20	SJ	RW DM
D	FOR APPROVAL	2020-03-26	SJ	RW DM
C	POST 28 SOUTH REVIEW	2020-03-23	SJ	RW DM
B	PRELIMINARY	2020-03-16	SJ	RW DM
A	PRELIMINARY	2020-03-13	SJ	RW DM

ISSUE: DETAIL: DATE: DRN: CHK: QA:

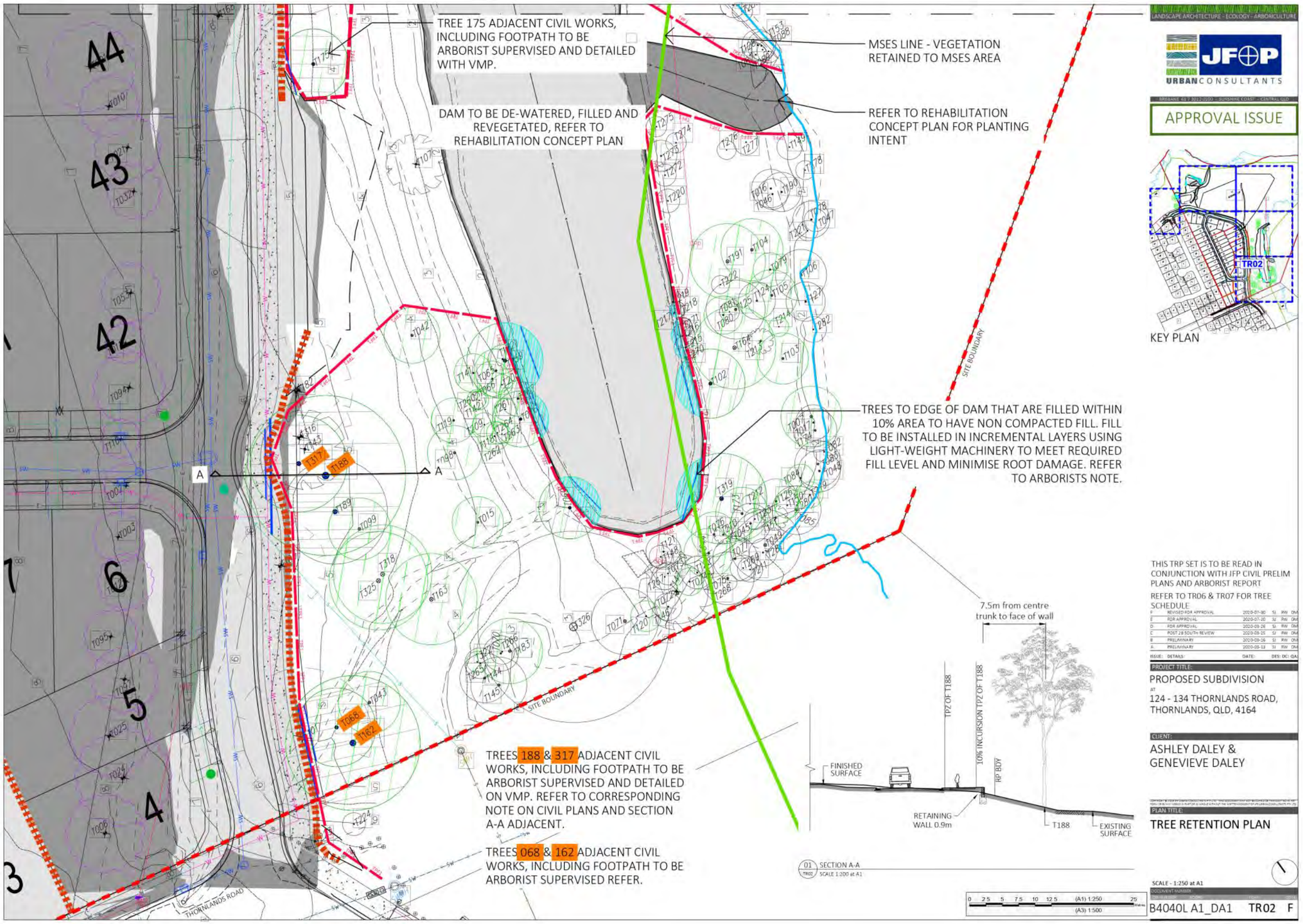
PROJECT TITLE:
PROPOSED SUBDIVISION
AT
124 - 134 THORNLANDS ROAD, THORNLANDS, QLD, 4164

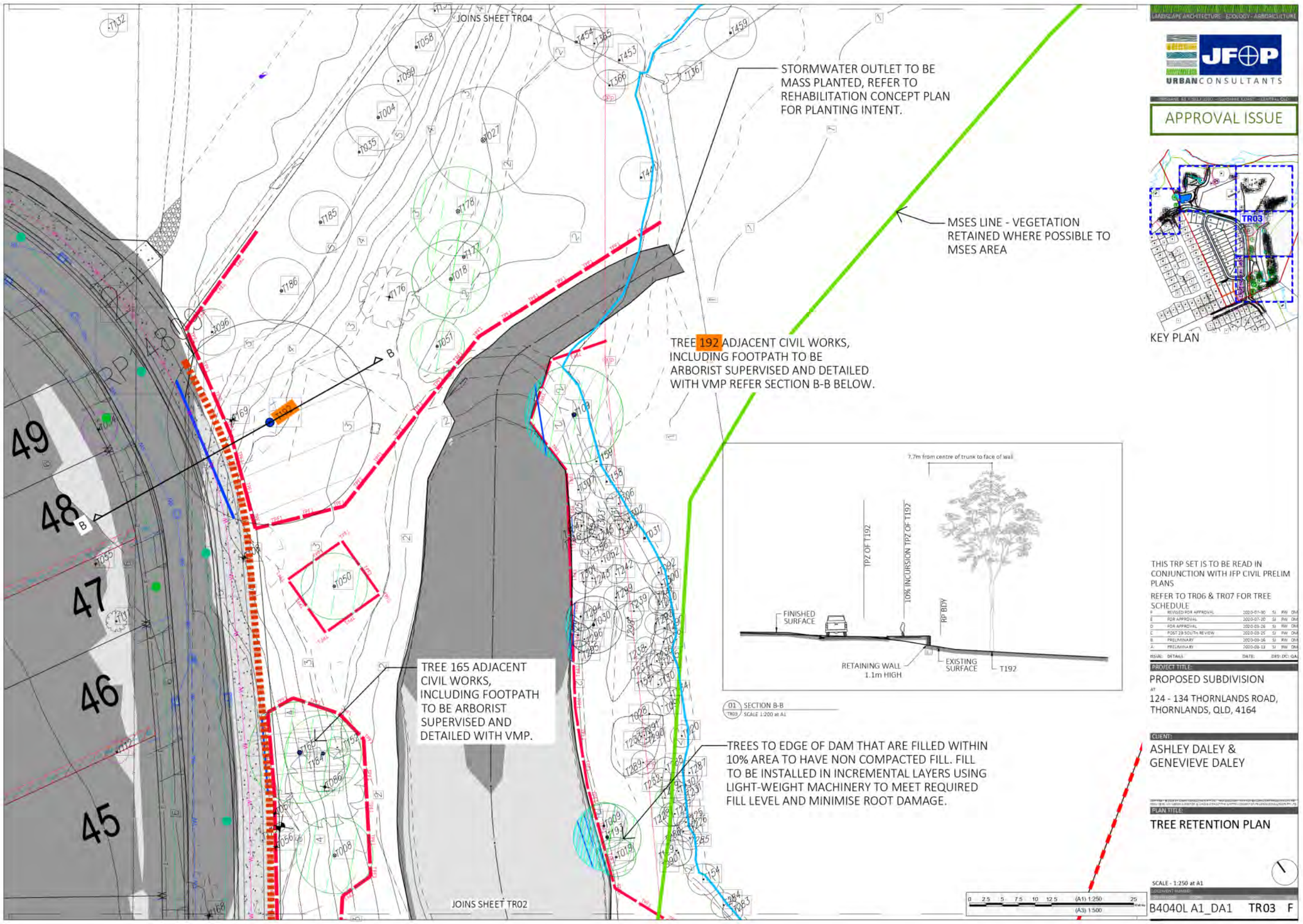
CLIENT:
ASHLEY DALEY & GENEVIEVE DALEY

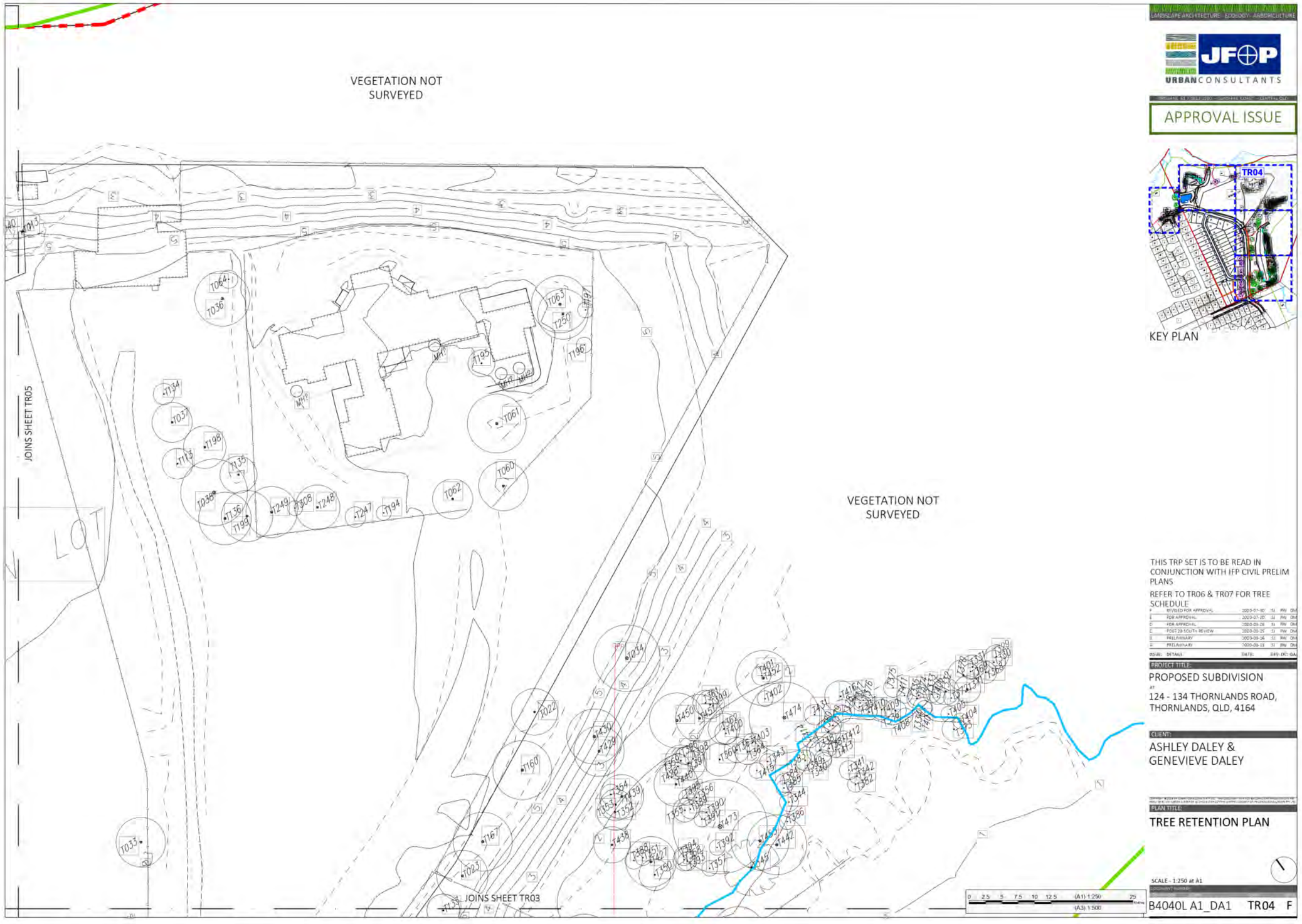
PLAN TITLE:
TREE RETENTION PLAN COVER SHEET

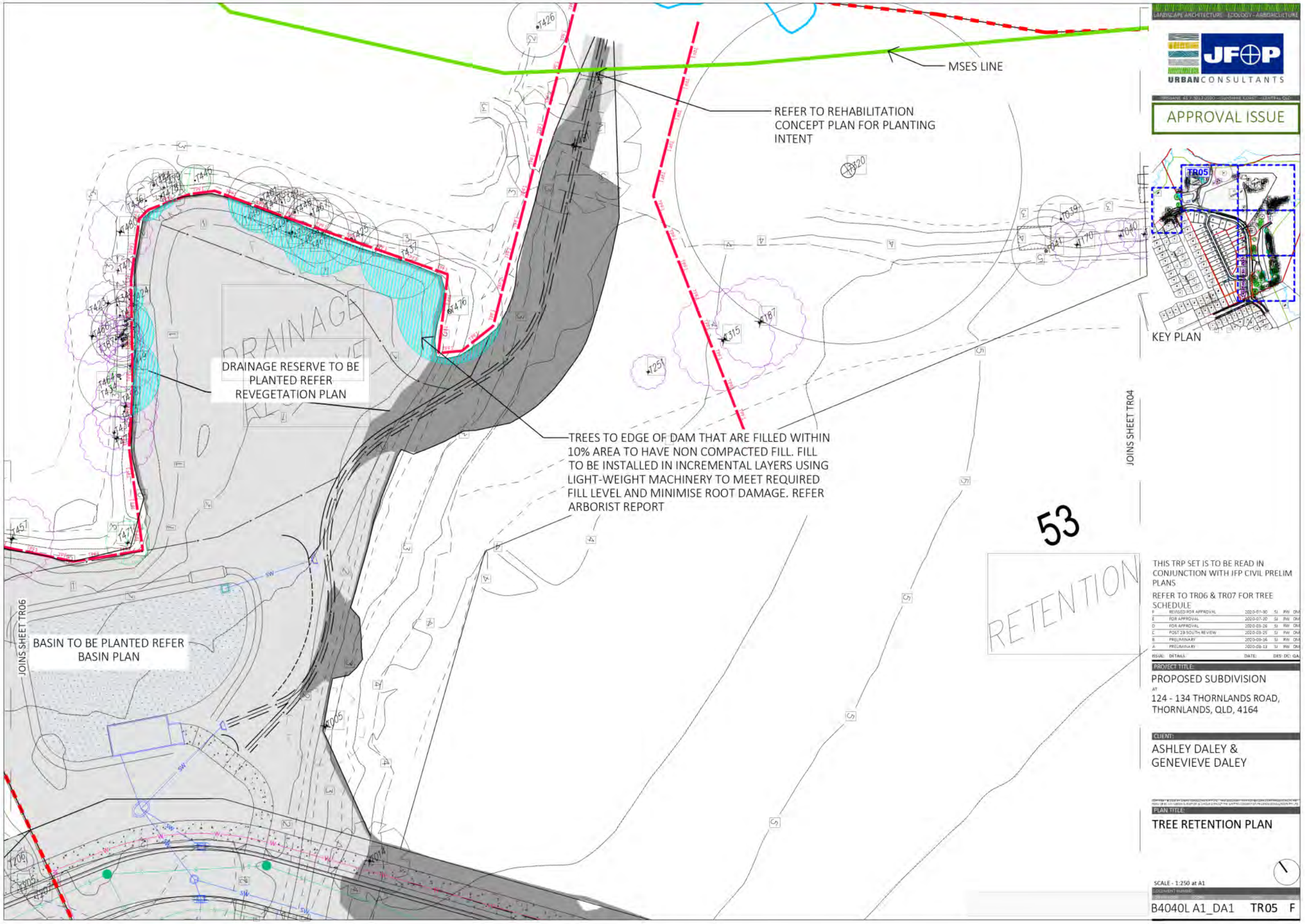
SCALE: 1:1500 at A1
DOCUMENT NUMBER:
B4040L A1_DA1 TR 01 F

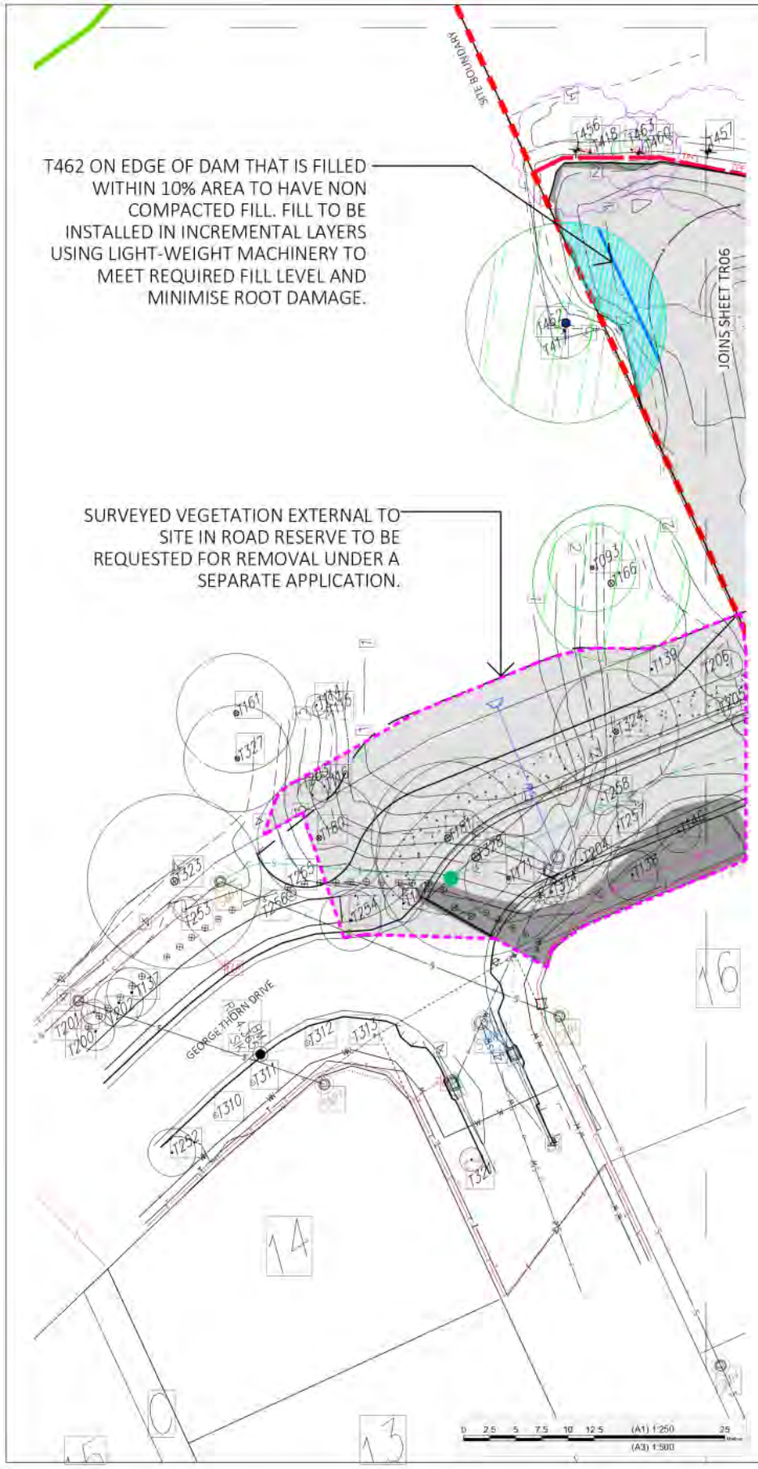
TREE RETENTION PLAN


TREE 175 ADJACENT CIVIL WORKS, INCLUDING FOOTPATH TO BE ARBORIST SUPERVISED AND DETAILED WITH VMP.
DAM TO BE DE-WATERED, FILLED AND REVEGETATED, REFER TO REHABILITATION CONCEPT PLAN
MSES LINE - VEGETATION RETAINED TO MSES AREA
REFER TO REHABILITATION CONCEPT PLAN FOR PLANTING INTENT
TREES TO EDGE OF DAM THAT ARE FILLED WITHIN 10% AREA TO HAVE NON COMPACTED FILL. FILL TO BE INSTALLED IN INCREMENTAL LAYERS USING LIGHT-WEIGHT MACHINERY TO MEET REQUIRED FILL LEVEL AND MINIMISE ROOT DAMAGE. REFER TO ARBORISTS NOTE.
TREES 188 & 317 ADJACENT CIVIL WORKS, INCLUDING FOOTPATH TO BE ARBORIST SUPERVISED AND DETAILED ON VMP. REFER TO CORRESPONDING NOTE ON CIVIL PLANS AND SECTION A-A ADJACENT.
TREES 068 & 162 ADJACENT CIVIL WORKS, INCLUDING FOOTPATH TO BE ARBORIST SUPERVISED REFER.
SITE BOUNDARY
THORNLANDS ROAD
7.5m from centre trunk to face of wall
TPZ OF T188
10% INCURSION TPZ OF T188
RP BDY
FINISHED SURFACE
RETAINING WALL 0.9m
T188
EXISTING SURFACE
01 SECTION A-A
SCALE 1:200 at A1
LANDSCAPE ARCHITECTURE - ECOLOGY - ARBORICULTURE
JFP URBAN CONSULTANTS
APPROVAL ISSUE
KEY PLAN
THIS TRP SET IS TO BE READ IN CONJUNCTION WITH JFP CIVIL PRELIM PLANS AND ARBORIST REPORT
REFER TO TR06 & TR07 FOR TREE SCHEDULE
PROJECT TITLE:
PROPOSED SUBDIVISION
AT
124 - 134 THORNLANDS ROAD, THORNLANDS, QLD, 4164
CLIENT:
ASHLEY DALEY & GENEVIEVE DALEY
PLAN TITLE:
TREE RETENTION PLAN
SCALE - 1:250 at A1
B4040L A1_DA1 TR02 F


JOINS SHEET TR04
STORMWATER OUTLET TO BE MASS PLANTED, REFER TO REHABILITATION CONCEPT PLAN FOR PLANTING INTENT.
MSES LINE - VEGETATION RETAINED WHERE POSSIBLE TO MSES AREA
TREE 192 ADJACENT CIVIL WORKS, INCLUDING FOOTPATH TO BE ARBORIST SUPERVISED AND DETAILED WITH VMP REFER SECTION B-B BELOW.
TREE 165 ADJACENT CIVIL WORKS, INCLUDING FOOTPATH TO BE ARBORIST SUPERVISED AND DETAILED WITH VMP.
TREES TO EDGE OF DAM THAT ARE FILLED WITHIN 10% AREA TO HAVE NON COMPACTED FILL. FILL TO BE INSTALLED IN INCREMENTAL LAYERS USING LIGHT-WEIGHT MACHINERY TO MEET REQUIRED FILL LEVEL AND MINIMISE ROOT DAMAGE.
JOINS SHEET TR02
7.7m from centre of trunk to face of wall
TPZ OF T192
10% INCURSION TPZ OF T192
RP BDY
FINISHED SURFACE
RETAINING WALL 1.1m HIGH
EXISTING SURFACE
T192
01 SECTION B-B
SCALE 1:200 at A1
LANDSCAPE ARCHITECTURE · ECOLOGY · ARBORICULTURE
JFP URBAN CONSULTANTS
APPROVAL ISSUE
KEY PLAN
TR03
THIS TRP SET IS TO BE READ IN CONJUNCTION WITH JFP CIVIL PRELIM PLANS
REFER TO TR06 & TR07 FOR TREE SCHEDULE
F REVISED FOR APPROVAL 2020-07-30
E FOR APPROVAL 2020-07-20
D FOR APPROVAL 2020-03-26
C POST 29 SOUTH REVIEW 2020-03-25
B PRELIMINARY 2020-03-16
A PRELIMINARY 2020-03-13
PROJECT TITLE:
PROPOSED SUBDIVISION
AT
124 - 134 THORNLANDS ROAD, THORNLANDS, QLD, 4164
CLIENT:
ASHLEY DALEY & GENEVIEVE DALEY
PLAN TITLE:
TREE RETENTION PLAN
SCALE - 1:250 at A1
(A1) 1:250
(A3) 1:500
B4040L A1_DA1 TR03 F


VEGETATION NOT SURVEYED
JOINS SHEET TR05
LOT
VEGETATION NOT SURVEYED
JOINS SHEET TR03
LANDSCAPE ARCHITECTURE · ECOLOGY · ARBORICULTURE
JFDP
URBAN CONSULTANTS
APPROVAL ISSUE
TR04
KEY PLAN
THIS TRP SET IS TO BE READ IN CONJUNCTION WITH JFP CIVIL PRELIM PLANS
REFER TO TR06 & TR07 FOR TREE SCHEDULE
F REVISED FOR APPROVAL 2020-07-30 SJ RW DM
E FOR APPROVAL 2020-07-20 SJ RW DM
D FOR APPROVAL 2020-03-26 SJ RW DM
C POST DA SOUTH REVIEW 2020-03-25 SJ RW DM
B PRELIMINARY 2020-03-16 SJ RW DM
A PRELIMINARY 2020-03-13 SJ RW DM
ISSUE: DETAIL: DATE: DRN: DES: QA:
PROJECT TITLE:
PROPOSED SUBDIVISION
AT
124 - 134 THORNLANDS ROAD, THORNLANDS, QLD, 4164
CLIENT:
ASHLEY DALEY & GENEVIEVE DALEY
PLAN TITLE:
TREE RETENTION PLAN
SCALE - 1:250 at A1
0 2.5 5 7.5 10 12.5 (A1) 1:250 25 metres
(A3) 1:500
B4040L A1_DA1 TR04 F


MSES LINE
REFER TO REHABILITATION CONCEPT PLAN FOR PLANTING INTENT
DRAINAGE RESERVE TO BE PLANTED REFER REVEGETATION PLAN
TREES TO EDGE OF DAM THAT ARE FILLED WITHIN 10% AREA TO HAVE NON COMPACTED FILL. FILL TO BE INSTALLED IN INCREMENTAL LAYERS USING LIGHT-WEIGHT MACHINERY TO MEET REQUIRED FILL LEVEL AND MINIMISE ROOT DAMAGE. REFER ARBORIST REPORT
BASIN TO BE PLANTED REFER BASIN PLAN
JOINS SHEET TR06
JOINS SHEET TR04
LANDSCAPE ARCHITECTURE · ECOLOGY · ARBORICULTURE
JFP URBAN CONSULTANTS
APPROVAL ISSUE
KEY PLAN
TR05
53
RETENTION
THIS TRP SET IS TO BE READ IN CONJUNCTION WITH JFP CIVIL PRELIM PLANS
REFER TO TR06 & TR07 FOR TREE SCHEDULE
PROJECT TITLE:
PROPOSED SUBDIVISION
AT
124 - 134 THORNLANDS ROAD, THORNLANDS, QLD, 4164
CLIENT:
ASHLEY DALEY & GENEVIEVE DALEY
PLAN TITLE:
TREE RETENTION PLAN
SCALE - 1:250 at A1
B4040L A1_DA1 TR05 F



Tree ID	Spread	Species	DBH (mm)	Height (m)	Health	Structure	Retain/Remove	Notes
T001	13	Carya illinoinensis	560	13	Fair	Fair	Remove	Co-Dom - 395+395 Fruit/Nut Impacted by Works
T002	8	Carya illinoinensis	285	12	Fair	Fair	Remove	Fruit/Nut Impacted by Works
T003	8	Carya illinoinensis	320	12	Fair	Fair	Remove	Co-Dom - 255+195 Fruit/Nut Impacted by Works
T004	13	Carya illinoinensis	420	17	Fair	Fair	Retain	Co-Dom - 295+295 Fruit/Nut
T005	13	Eucalyptus tereticornis	560	14	Fair	Fair	Remove	Co-Dom - 395+395 Deadwood≥100mm/Waterlogged ground / Impacted by Works / Species Confirmed by 28 South
T006	10	Carya illinoinensis	500	15	Fair	Fair	Remove	Co-Dom - 305+395 Fruit/Nut Impacted by Works
T007	13	Eucalyptus tereticornis	385	21	Fair	Fair	Retain	
T008	13	Eucalyptus siderophloia	485	23	Fair	Fair	Retain	Species Confirmed by 28 South
T009	13	Eucalyptus tereticornis	295	12	Fair	Fair	Retain	
T010	10	Carya illinoinensis	385	14	Fair	Fair	Remove	Fruit/Nut Impacted by Works
T011	8	Carya illinoinensis	255	13	Fair	Fair	Remove	Fruit/Nut Impacted by Works
T012	10	Carya illinoinensis	355	14	Fair	Fair	Remove	Fruit/Nut Impacted by Works
T013	10	Fruit spp.	295	11	Fair	Fair	Remove	Fruit/Nut
T014	10	Dead Tree	500	9		Fair	Remove	Dead Tree
T015	10	Eucalyptus tereticornis	325	7	Fair	Fair	Retain	
T016	10	Casuarina glauca	245	23	Fair	Fair	Retain	
T017	10	Casuarina glauca	225	11	Fair	Fair	Retain	Phototropic /Trunks≤10°
T018	10	Eucalyptus tereticornis	495	20	Fair	Fair	Retain	
T019	10	Eucalyptus tereticornis	250	17	Fair	Fair	Retain	Multi-stem - 125+125+125+125
T020	10	Casuarina glauca	145	14	Fair	Fair	Retain	
T021	9	Carya illinoinensis	420	11	Fair	Fair	Remove	Co-Dom - 300+300 Fruit/Nut Impacted by Works
T022	9	Persea americana	295	8	Fair	Fair	Retain	Wound lower Trunk Fruit/Nut Offsite Retention Lot
T023	9	Carya illinoinensis	325	10	Fair	Fair	Retain	Fruit/Nut
T024	10	Carya illinoinensis	610	18	Fair	Fair	Remove	Co-Dom - 355+485 Fruit/Nut Impacted by Works
T025	9	Carya illinoinensis	510	12	Fair	Fair	Remove	Co-Dom - 320+395 Fruit/Nut Impacted by Works
T026	9	Eucalyptus tereticornis	355	19	Fair	Fair	Retain	
T027	9	Allocasuarina torulosa	675	14	Fair	Poor	Retain	Wound lower Trunk / Trunks≤10° / Storm Damage / Species Confirmed by 28 South
T028	9	Casuarina glauca	145	10	Fair	Fair	Retain	
T029	9	Casuarina glauca	165	10	Fair	Fair	Retain	
T030	9	Casuarina glauca	365	14	Fair	Fair	Retain	
T031	9	Casuarina glauca	325	16	Fair	Fair	Retain	
T032	8	Carya illinoinensis	345	13	Fair	Fair	Remove	Fruit/Nut Impacted by Works
T033	8	Annona reticulata	315	6	Fair	Fair	Retain	Fruit/Nut Offsite Retention Lot / Species Confirmed by 28 South
T034	8	Casuarina glauca	425	15	Fair	Fair	Retain	
T035	8	Carya illinoinensis	325	15	Fair	Fair	Retain	Fruit/Nut / Storm Damage
T036	8	Macaranga tanarius	350	6	Fair	Fair	Retain	Multi-Stem - 200+200+200 / Offsite Retention Lot / Species Confirmed by 28 South
T037	8	Harpullia pendula	255	8	Fair	Fair	Retain	Offsite Retention Lot / Species Confirmed by 28 South
T038	8	Pistacia vera	425	9	Fair	Fair	Retain	Fruit/Nut Offsite Retention Lot
T039	8	Cupaniopsis anacardioides	295	8	Fair	Fair	Retain	
T040	8	Persea americana	200	7	Fair	Fair	Remove	Co-Dom 200+200 Fruit/Nut
T041	8	Cupaniopsis anacardioides	435	12	Fair	Fair	Retain	
T042	8	Eucalyptus tereticornis	355	16	Fair	Fair	Retain	
T043	8	Eucalyptus tereticornis	395	22	Fair	Fair	Retain	Phototropic
T044	8	Eucalyptus tereticornis	315	24	Fair	Fair	Retain	Deadwood≥100mm/ Vine
T045	8	Casuarina glauca	255	18	Fair	Fair	Retain	
T046	8	Casuarina glauca	195	22	Fair	Fair	Retain	
T047	8	Casuarina glauca	145	5	Fair	Fair	Retain	Trunks≤20
T048	8	Casuarina glauca	265	13	Fair	Fair	Retain	Phototropic / Trunks≤10°
T049	8	Melaleuca quinquenervia	450	18	Fair	Fair	Retain	
T050	8	Eucalyptus tereticornis	420	10	Fair	Fair	Retain	Co-Dom - 300+300
T051	8	Eucalyptus tereticornis	345	15	Fair	Fair	Retain	
T052	8	Casuarina glauca	145	15	Fair	Fair	Retain	
T053	9	Carya illinoinensis	375	14	Fair	Fair	Remove	Fruit/Nut Impacted by Works
T054	7	Annona reticulata	225	6	Fair	Fair	Remove	Fruit/Nut Impacted by Works / Species Confirmed by 28 South
T055	7	Annona reticulata	173	4	Fair	Fair	Remove	Fruit/Nut Impacted by Works / Species Confirmed by 28 South
T056	7	Callitris spp.	355	20			Remove	Impacted by Works / Species Confirmed by 28 South
T057	7	Callitris spp.	335	13			Remove	Impacted by Works / Species Confirmed by 28 South
T058	7	Carya illinoinensis	365	11	Fair	Fair	Retain	Fruit/Nut
T059	7	Carya illinoinensis	195	8	Fair	Fair	Retian	Fruit/Nut
T060	7	Cupaniopsis anacardioides	315	6	Fair	Fair	Retain	Offsite Retention Lot
T061	7	Cupaniopsis anacardioides	375	7	Fair	Fair	Retain	Offsite Retention Lot
T062	7	Cupaniopsis anacardioides	255	7	Fair	Fair	Retain	Offsite Retention Lot
T063	7	Dypsis decaryi	365	5	Fair	Fair	Retain	Offsite Retention Lot
T064	7	Macaranga tanarius	115	5	Fair	Fair	Retain	Offsite Retention Lot / Species Confirmed by 28 South
T065	7	Eucalyptus tereticornis	275	9	Fair	Fair	Retain	
T066	7	Corymbia intermedia	225	14	Fair	Fair	Retain	
T067	7	Corymbia intermedia	225	15	Fair	Fair	Retain	
T068	10	Eucalyptus spp	500	25	Fair	Fair	Retain	Co-Dom - 350+345 Deadwood≥100mm/ Arborist supervision
T069	7	Eucalyptus tereticornis	395	9	Fair	Fair	Retain	
T070	6	Melaleuca quinquenervia	225	8	Fair	Fair	Retain	
T071	8	Araucaria cunninghamii	425	26	Fair	Fair	Retain	
T072	8	Araucaria cunninghamii	385	23	Fair	Fair	Retain	
T073	8	Casuarina glauca	145	9	Fair	Fair	Retain	Phototropic
T074	7	Eucalyptus tereticornis	175	10	Fair	Fair	Retain	Phototropic / Vine
T075	7	Melaleuca quinquenervia	335	10	Fair	Fair	Retain	Vine
T076	7	Eucalyptus tereticornis	285	16	Fair	Fair	Retain	Vine
T077	7	Melaleuca quinquenervia	285	15	Fair	Fair	Retain	
T078	7	Casuarina glauca	235	15	Fair	Fair	Retain	
T079	7	Eucalyptus tereticornis	215	12	Fair	Fair	Retain	
T080	7	Casuarina glauca	125	7	Fair	Fair	Retain	Suppressed
T081	7	Eucalyptus tereticornis	245	11	Fair	Fair	Retain	Vine
T082	6	Casuarina glauca	135	6	Fair	Fair	Retain	Trunks≤20° / Phototropic
T083	7	Casuarina glauca	295	17	Fair	Fair	Retain	
T084	7	Eucalyptus tereticornis	175	10	Fair	Fair	Retain	
T085	6	Casuarina glauca	305	11	Fair	Fair	Retain	Vine/ Deadwood≥100mm
T086	7	Dead Tree	500	20			Remove	Dead
T087	7	Casuarina glauca	145	13	Fair	Fair	Retain	
T088	7	Casuarina glauca	145	13	Fair	Fair	Retain	
T089	7	Casuarina glauca	145	9	Fair	Fair	Retain	
T090	7	Casuarina glauca	165	9	Fair	Fair	Retain	
T091	7	Casuarina glauca	125	10	Fair	Fair	Retain	
T092	7	Casuarina glauca	195	11	Fair	Fair	Retain	
T093	7	Eucalyptus spp	350	16	Fair	Fair	Retain	Multi-Stem 200+200+200
T094	9	Carya illinoinensis	455	13	Fair	Fair	Remove	Fruit/Nut Impacted by Works
T095	8	Carya illinoinensis	340	12	Fair	Fair	Remove	Co-Dom - 305+155 / Fruit/Nut Impacted by Works
T096	11	Carya illinoinensis	295	12	Fair	Fair	Retain	Fruit/Nut
T097	8	Carya illinoinensis	420	15	Fair	Fair	Remove	Co-Dom - 305+295 / Fruit/Nut Impacted by Works
T098	11	Corymbia intermedia	345	18	Fair	Fair	Retain	
T099	11	Eucalyptus tereticornis	395	18	Fair	Fair	Retain	Suppressed / Deadwood≥100mm
T100	11	Eucalyptus siderophloia	645	19	Fair	Poor	Remove	Storm Damage / Species Confirmed by 28 South
T101	11	Eucalyptus tereticornis	985	27	Fair	Fair	Remove	Wound lower trunk /Deadwood≥100mm/ Impacted by Works
T102	11	Eucalyptus tereticornis	440	20	Fair	Fair	Retain	Co-Dom 325+295
T103	11	Eucalyptus tereticornis	325	16	Fair	Fair	Retain	

LANDSCAPE ARCHITECTURE · ECOLOGY · ARBORICULTURE

JFP URBAN CONSULTANTS

APPROVAL ISSUE

KEY PLAN

THIS TRP SET IS TO BE READ IN CONJUNCTION WITH JFP CIVIL PRELIM PLANS

REFER TO TR06 & TR07 FOR TREE SCHEDULE

F	REVISED FOR APPROVAL	2020-11-10	SJ	RW
E	FOR APPROVAL	2020-07-20	SJ	RW
D	FOR APPROVAL	2020-03-26	SJ	RW
C	POST 28 SOUTH REVIEW	2020-03-25	SJ	RW
B	PRELIMINARY	2020-03-04	SJ	RW
A	PRELIMINARY	2020-02-28	SJ	RW

ISSUE: DETAILS: DATE: DES. DC: DA

PROJECT TITLE:

PROPOSED SUBDIVISION

AT

124 - 134 THORNLANDS ROAD, THORNLANDS, QLD, 4164

CLIENT:

ASHLEY DALEY & GENEVIEVE DALEY

PLAN TITLE:

TREE RETENTION PLAN

SCALE - 1:250 at A1

DRAWING NUMBER:

B4040L A1_DA1 TR06 F

Tree ID	Spread	Species	DBH (mm)	Height (m)	Health	Structure	Retain/Remove	Notes
T104	11	Eucalyptus tereticornis	395	25	Fair	Fair	Retain	
T105	11	Eucalyptus tereticornis	325	21	Fair	Fair	Retain	
T106	11	Casuarina glauca	325	18	Fair	Fair	Retain	
T107	11	Dead Tree	375	18			Remove	Dead Tree
T108	11	Araucaria cunninghamii	570	24	Fair	Fair	Remove	Co-Dom - 400+400 Impacted by Works
T109	16	Eucalyptus tereticornis	625	24	Fair	Fair	Retain	
T110	8	Carya illinoinensis	250	9	Fair	Fair	Remove	Co-Dom - 195+155 / Fruit/Nut Impacted by Works
T111	6	Dead Tree	130	4			Remove	Dead Tree Impacted by Works
T112	6	Annona reticulata	150	4	Fair	Fair	Remove	Fruit/Nut Impacted by Works / Species Confirmed by 28 South
T113	6	Pistacia vera	195	5	Fair	Fair	Retain	Fruit/Nut Offsite Retention Lot
T114	6	GM	85	8	Fair	Fair	Retain	Offsite
T115	6	GM	75	8	Fair	Fair	Retain	Offsite
T116	6	Eucalyptus spp	120	6	Fair	Fair	Retain	Offsite
T117	6	Melaleuca quinquenervia	150	7	Fair	Fair	Retain	Impacted by Works / Offsite
T118	4	Corymbia intermedia	215	11	Fair	Fair	Retain	
T119	6	Eucalyptus tereticornis	2858	16	Fair	Fair	Retain	
T120	3	Eucalyptus tereticornis	195	12	Fair	Fair	Retain	
T121	6	Casuarina glauca	225	11	Fair	Fair	Retain	
T122	6	Casuarina glauca	205	12	Fair	Fair	Retain	Phototropic / Vine
T123	6	Casuarina glauca	135	9	Fair	Fair	Retain	Phototropic / Vine
T124	6	Casuarina glauca	235	11	Fair	Fair	Retain	
T125	6	Casuarina glauca	375	17	Fair	Fair	Retain	Vine
T126	6	Eucalyptus tereticornis	285	19	Fair	Fair	Retain	Vine
T127	6	Casuarina glauca	250	14	Fair	Fair	Retain	Co-Dom - 195+155 / Vine
T128	6	Casuarina glauca	200	8	Fair	Fair	Retain	
T129	6	Casuarina glauca	200	15	Fair	Fair	Retain	
T130	6	Casuarina glauca	150	8	Fair	Fair	Retain	
T131	6	Casuarina glauca	150	9	Fair	Fair	Retain	
T132	5	Annona reticulata	115	3	Fair	Fair	Retain	Fruit/Nut Offsite Retention Lot / Species Confirmed by 28 South
T133	5	Carya illinoinensis	210	9	Fair	Fair	Retain	Co-Dom - 150+150 / Fruit/Nut
T134	5	Xanthostemon chrysanthus	135	5	Fair	Fair	Retain	Supressed / Offsite Retention Lot / Species Confirmed by 28 South
T135	5	Callistemon viminalis	235	7	Fair	Fair	Retain	Offsite Retention Lot
T136	5	Brachychiton acerifolius	335	7	Fair	Fair	Retain	Offsite Retention Lot
T137	5	Eucalyptus spp	200	15	Fair	Fair	Retain	Sapling Offsite
T138	5	Eucalyptus spp	200	11	Fair	Fair	Retain	Impacted by Works / Offsite
T139	5	Eucalyptus spp	195	12	Fair	Fair	Retain	Vine / Impacted by Works / Offsite
T140	5	Eucalyptus spp	170	7	Fair	Fair	Retain	Multi-Stem - 100+100+100 /Sapling Impacted by Works / Offsite
T141	5	Eucalyptus tereticornis	245	10	Fair	Fair	Retain	
T142	5	Eucalyptus tereticornis	120	10	Fair	Fair	Retain	
T143	5	Dead Tree	495	20	Fair	Fair	Remove	Dead Tree / Vine
T144	4	Melaleuca quinquenervia	315	6	Fair	Fair	Retain	
T145	7	Melaleuca quinquenervia	355	8	Fair	Fair	Retain	
T146	5	Araucaria cunninghamii	175	11	Fair	Fair	Retain	Phototropic / Trunks10°
T147	5	Dead Tree	475	24			Retain	Dead Tree / Vine
T148	5	Casuarina glauca	145	6	Fair	Fair	Retain	
T149	5	Casuarina glauca	160	12	Fair	Fair	Retain	
T150	5	Eucalyptus tereticornis	165	12	Fair	Fair	Retain	Suppressed / Vine
T151	5	Dead Tree	159	10			Retain	Dead Tree / Vine
T152	5	Eucalyptus tereticornis	145	8	Fair	Fair	Retain	
T153	5	Casuarina glauca	180	9	Fair	Fair	Retain	
T154	5	Casuarina glauca	200	11	Fair	Fair	Retain	
T155	5	Casuarina glauca	150	10	Fair	Fair	Retain	
T156	5	Casuarina glauca	150	11	Fair	Fair	Retain	
T157	5	Casuarina glauca	130	14	Fair	Fair	Retain	
T158	5	Casuarina glauca	220	14	Fair	Fair	Retain	
T159	5	Casuarina glauca	200	14	Fair	Fair	Retain	
T160	14	Carya illinoinensis	375	17	Fair	Fair	Retain	Fruit/Nut
T161	14	Eucalyptus tereticornis	475	21	Fair	Fair	Remove	Impacted by Works
T162	14	Eucalyptus tereticornis	855	22	Fair	Fair	Retain	Arborist Supervision
T163	14	Eucalyptus tereticornis	585	26	Fair	Fair	Retain	
T164	14	Eucalyptus tereticornis	525	20	Fair	Fair	Retain	
T165	14	Eucalyptus sideraphloia	645	23	Fair	Fair	Retain	Arborist Supervision / Species Confirmed by 28 South
T166	14	Eucalyptus spp	625	18	Fair	Fair	Retain	
T167	12	Carya illinoinensis	375	15	Fair	Fair	Retain	Fruit/Nut
T168	12	Araucaria cunninghamii	445	20	Fair	Fair	Remove	Impacted by Works
T169	12	Corymbia intermedia	645	30	Fair	Fair	Remove	Arboreal termites Impacted by Works
T170	12	Persea americana	310	7	Fair	Fair	Remove	Fruit/Nut
T171	12	Melaleuca quinquenervia	350	16	Fair	Fair	Retain	Multi-Stem - 300+200+200 / Impacted by Works / Offsite
T172	12	Eucalyptus tereticornis	185	12	Fair	Fair	Retain	
T173	12	Eucalyptus tereticornis	335	18	Fair	Fair	Retain	
T174	10	Casuarina glauca	275	18	Fair	Fair	Retain	Vine
T175	12	Eucalyptus tereticornis	445	18	Fair	Fair	Retain	Arborist Supervision
T176	12	Dead Tree	380	17			Remove	Dead Tree
T177	12	Eucalyptus sideraphloia	460	18	Fair	Poor	Retain	Wound lower Trunk /Trunks20° / Species Confirmed by 28 South
T178	12	Corymbia intermedia	565	18	Fair	Fair	Retain	Co-Dom at 2m
T179	18	Eucalyptus tereticornis	1275	32	Fair	Fair	Remove	Co-Dom at 2.2m Impacted by Works
T180	18	Eucalyptus spp	490	25	Fair	Fair	Retain	Co-Dom at 1m 350+350 / Impacted by Works / Offsite
T181	18	Melaleuca quinquenervia	610	18	Fair	Fair	Retain	Co-Dom 430+430 / Impacted by Works / Offsite
T182	18	Eucalyptus sideraphloia	785	25	Fair	Fair	Remove	Impacted by Works / Species Confirmed by 28 South
T183	10	Eucalyptus tereticornis	415	16	Fair	Fair	Retain	
T184	18	Eucalyptus sideraphloia	485	24	Fair	Fair	Retain	Arborist Supervision / Species Confirmed by 28 South
T185	15	Carya illinoinensis	400	17	Fair	Fair	Retain	Fruit/Nut
T186	15	Carya illinoinensis	420	17	Fair	Fair	Retain	Co-Dom 300+300 / Fruit/Nut
T187	15	Carya illinoinensis	570	17	Fair	Fair	Remove	Co-Dom 400+400 / Fruit/Nut
T188	19	Eucalyptus tereticornis	1015	38	Fair	Fair	Retain	Deadwood≥100mm
T189	15	Eucalyptus tereticornis	665	30	Fair	Fair	Retain	Phototropic /Deadwood≥100mm/Arborist supervision
T190	15	Casuarina glauca	250	24	Fair	Fair	Retain	
T191	15	Eucalyptus tereticornis	480	24	Fair	Fair	Retain	Multi-Stem - 385+205+195
T192	15	Eucalyptus tereticornis	1300	25	Fair	Fair	Retain	Co-Dom at 2.2m Arborist supervison
T193	15	Eucalyptus tereticornis	430	25	Fair	Fair	Retain	Co-Dom - 315+295
T194	3	Mangifera indica	95	3	Fair	Fair	Retain	Fruit/Nut Offsite Retention Lot
T195	3	Murraya paniculata	170	4	Fair	Fair	Retain	Multi-Stem - 100+100+100 / Shrub Offsite Retention Lot
T196	3	Mangifera indica	100	3	Fair	Fair	Retain	Fruit/Nut Offsite Retention Lot
T197	3	Mangifera indica	100	3	Fair	Fair	Retain	Fruit/Nut Offsite Retention Lot
T198	3	Brachychiton acerifolius	270	8	Fair	Fair	Retain	Offsite Retention Lot
T199	3	Brachychiton acerifolius	325	8	Fair	Fair	Retain	Offsite Retention Lot
T200	3	Casuarina glauca	150	7	Fair	Fair	Retain	Offsite
T201	3	Casuarina glauca	100	11	Fair	Fair	Retain	Offsite
T202	3	Eucalyptus spp	195	12	Fair	Fair	Retain	Offsite
T203	3	Eucalyptus spp	120	7	Fair	Fair	Retain	Offsite
T204	3	Eucalyptus spp	95	7	Fair	Fair	Retain	Vine / Impacted by Works / Offsite
T205	3	Casuarina glauca	100	8	Fair	Fair	Retain	Impacted by Works / Offsite
T206	3	Melaleuca quinquenervia	120	7	Fair	Fair	Retain	Impacted by Works / Offsite
T207	3	Melaleuca quinquenervia	100	6	Fair	Fair	Retain	Impacted by Works / Offsite

Tree ID	Spread	Species	DBH (mm)	Height (m)	Health	Structure	Retain/Remove	Notes
T208	3	Eucalyptus tereticornis	130	8	Fair	Fair	Retain	
T209	3	Eucalyptus tereticornis	150	9	Fair	Fair	Retain	
T210	3	Dead Tree	115	6			Retain	Dead Tree / Vine
T211	3	Casuarina glauca	180	14	Fair	Fair	Retain	Vine
T212	3	Eucalyptus tereticornis	115	6	Fair	Fair	Retain	Vine
T213	3	Dead Tree	160	6			Retain	Dead Tree
T214	3	Eucalyptus tereticornis	125	6	Fair	Fair	Retain	
T215	3	Casuarina glauca	150	7	Fair	Fair	Retain	
T216	3	Casuarina glauca	150	7	Fair	Fair	Retain	
T217	3	Casuarina glauca	150	7	Fair	Fair	Remove	Impacted by Works
T218	3	Casuarina glauca	100	7	Fair	Fair	Retain	
T219	3	Casuarina glauca	100	7	Fair	Fair	Remove	Impacted by Works
T220	3	Casuarina glauca	150	6	Fair	Fair	Retain	
T221	3	Casuarina glauca	130	15	Fair	Fair	Retain	
T222	3	Casuarina glauca	115	9	Fair	Fair	Retain	
T223	3	Eucalyptus spp	135	7	Good	Good	Remove	Sapling Impacted by works
T224	3	Eucalyptus spp	145	7	Good	Good	Retain	Sapling
T225	3	Casuarina glauca	110	8	Fair	Fair	Retain	
T226	3	Casuarina glauca	110	8	Fair	Fair	Retain	
T227	3	Casuarina glauca	150	8	Fair	Fair	Retain	
T228	3	Casuarina glauca	150	8	Fair	Fair	Retain	
T229	3	Eucalyptus sideraphloia	120	7	Fair	Fair	Retain	Species Confirmed by 28 South
T230	3	Casuarina glauca	120	9	Fair	Fair	Retain	
T231	3	Casuarina glauca	120	9	Fair	Fair	Retain	
T232	3	Casuarina glauca	120	9	Fair	Fair	Retain	
T233	3	Casuarina glauca	110	8	Fair	Fair	Retain	
T234	3	Casuarina glauca	110	8	Fair	Fair	Retain	
T235	3	Casuarina glauca	140	8	Fair	Fair	Retain	
T236	3	Casuarina glauca	140	8	Fair	Fair	Retain	
T237	3	Casuarina glauca	140	9	Fair	Fair	Retain	
T238	3	Casuarina glauca	130	14	Fair	Fair	Retain	
T239	3	Casuarina glauca	130	10	Fair	Fair	Retain	
T240	3	Casuarina glauca	140	9	Fair	Fair	Retain	
T241	3	Casuarina glauca	120	11	Fair	Fair	Retain	
T242	3	Casuarina glauca	120	12	Fair	Fair	Retain	
T243	3	Casuarina glauca	130	14	Fair	Fair	Retain	
T244	3	Casuarina glauca	130	14	Fair	Fair	Retain	
T245	3	Casuarina glauca	120	14	Fair	Fair	Retain	
T246	3	Casuarina glauca	120	10	Fair	Fair	Retain	
T247	4	Mangifera indica	130	4	Fair	Fair	Retain	Fruit/Nut Offsite Retention Lot
T248	4	Brachychiton acerifolius	285	4	Poor	Fair	Retain	Offsite Retention Lot
T249	4	Brachychiton acerifolius	325	5	Fair	Fair	Retain	Offsite Retention Lot
T250	4	Dypsis decary	320	5	Fair	Fair	Retain	Offsite Retention Lot
T251	4	Eriobotrya japonica	220	5	Poor	Fair	Remove	Fruit/Nut / stunted growth
T252	4	Melaleuca quinquenervia	190	7	Fair	Fair	Retain	Offsite
T253	4	Ficus spp.	100	7	Fair	Fair	Retain	Sapling / Trunks10° Offsite
T254	4	Melaleuca quinquenervia	245	8	Fair	Fair	Retain	Impacted by Works / Offsite
T255	4	Eucalyptus spp	40	6	Fair	Fair	Retain	Offsite
T256	4	Eucalyptus spp	40	4	Fair	Fair	Retain	Offsite
T257	4	Eucalyptus spp	165	12	Fair	Fair	Retain	Vine / Impacted by Works / Offsite
T258	4	Eucalyptus spp	125	11	Fair	Fair	Retain	Vine / Impacted by Works / Offsite
T259	4	Corymbia intermedia	485	16	Fair	Fair	Retain	
T260	4	Eucalyptus tereticornis	120	10	Fair	Fair	Retain	
T261	4	Eucalyptus tereticornis	140	7	Fair	Poor	Retain	Suppressed
T262	6	Eucalyptus tereticornis	185	16	Fair	Fair	Retain	
T263	4	Eucalyptus tereticornis	120	7	Fair	Fair	Retain	
T264	4	Eucalyptus tereticornis	140	14	Fair	Fair	Retain	Stunted / Surpressed
T265	4	Eucalyptus tereticornis	195	10	Fair	Fair	Retain	Vine
T266	4	Eucalyptus tereticornis	160	10	Fair	Fair	Retain	
T267	4	Casuarina glauca	165	11	Fair	Fair	Retain	Vine
T268	4	Melaleuca quinquenervia	95	6	Fair	Fair	Retain	Suppresed
T269	4	Casuarina glauca	165	14	Fair	Fair	Retain	
T270	4	Casuarina glauca	140	6	Fair	Fair	Remove	Impacted by Works
T271	4	Casuarina glauca	120	8	Fair	Fair	Retain	
T272	4	Casuarina glauca	140	8	Fair	Fair	Retain	
T273	4	Casuarina glauca	200	11	Fair	Fair	Retain	
T274	4	Casuarina glauca	130	8	Fair	Fair	Retain	
T275	4	Casuarina glauca	130	7	Fair	Fair	Retain	
T276	4	Casuarina glauca	120	9	Fair	Fair	Retain	
T277	4	Casuarina glauca	160	13	Fair	Fair	Retain	
T278	4	Casuarina glauca	120	11	Fair	Fair	Retain	
T279	4	Eucalyptus tereticornis	165	8	Fair	Fair	Retain	
T280	8	Casuarina glauca	310	11	Poor	Poor	Retain	Vine /Deadwood≥100mm
T281	4	Casuarina glauca	175	16	Fair	Fair	Retain	
T282	4	Casuarina glauca	165	15	Fair	Fair	Retain	
T283	4	Casuarina glauca	130	8	Fair	Fair	Retain	
T284	4	Casuarina glauca	160	8	Fair	Fair	Retain	
T285	4	Casuarina glauca	150	9	Fair	Fair	Retain	
T286	4	Casuarina glauca	130	10	Fair	Fair	Retain	
T287	4	Casuarina glauca	160	11	Fair	Fair	Retain	
T288	4	Casuarina glauca	150	12	Fair	Fair	Retain	
T289	4	Casuarina glauca	150	12	Fair	Fair	Retain	
T290	4	Casuarina glauca	100	9	Fair	Fair	Retain	
T291	4	Casuarina glauca	100	9	Fair	Fair	Retain	
T292	4	Casuarina glauca	130	14	Fair	Fair	Retain	
T293	4	Casuarina glauca	140	12	Fair	Fair	Retain	
T294	4	Casuarina glauca	180	12	Fair	Fair	Retain	
T295	4	Casuarina glauca	150	11	Fair	Fair	Retain	
T296	4	Casuarina glauca	150	11	Fair	Fair	Retain	
T297	4	Casuarina glauca	150	10	Fair	Fair	Retain	
T298	4	Casuarina glauca	180	14	Fair	Fair	Retain	
T299	4	Casuarina glauca	150	16	Fair	Fair	Retain	
T300	4	Casuarina glauca	130	14	Fair	Fair	Retain	
T301	4	Casuarina glauca	150	15	Fair	Fair	Retain	
T302	4	Casuarina glauca	130	8	Fair	Fair	Retain	
T303	4	Casuarina glauca	130	12	Fair	Fair	Retain	
T304	4	Casuarina glauca	170	12	Fair	Fair	Retain	
T305	4	Casuarina glauca	170	12	Fair	Fair	Retain	
T306	4	Casuarina glauca	160	14	Fair	Fair	Retain	
T307	4	Casuarina glauca	150	14	Fair	Fair	Retain	
T308	1	Brachychiton acerifolius	95	3	Fair	Fair	Retain	Offsite Retention Lot
T309	1	Cupaniopsis anacardioides	10	1	Fair	Fair	Retain	Offsite
T310	1	Shrub	20	1	Fair	Fair	Retain	Offsite
T311	1	Shrub	20	1	Fair	Fair	Retain	Offsite

JFDP URBAN CONSULTANTS

APPROVAL ISSUE

F	REVISED FOR APPROVAL	2020-07-30	PW
E	FOR APPROVAL	2020-07-27	PW
D	FOR APPROVAL	2020-03-26	PW
C	POST 28 SOUTH REVIEW	2020-03-25	PW
B	PRELIMINARY	2020-03-04	PW
A	PRELIMINARY	2020-02-03	PW

ISSUE: DETAIL DATE: APR. DES. DRN.

PROJECT TITLE:
PROPOSED SUBDIVISION
AT
124 - 134 THORNLANDS ROAD, THORNLANDS, QLD, 4164

CLIENT:
ASHLEY DALEY & GENEVIEVE DALEY

PLAN TITLE:
TREE RETENTION PLAN SCHEDULES

DRAWING NUMBER:
B4040L A1_DA1 TR07 F

Tree ID	Spread	Species	DBH (mm)	Height (m)	Health	Structure	Retain/Remove	Notes
T312	1	Shrub	20	1	Fair	Fair	Retain	Offsite
T313	1	Shrub	10	2	Fair	Fair	Retain	Offsite
T314	1	Dead Tree	100	3			Remove	Dead Tree
T315	16	Carya illinoinensis	640	17	Fair	Fair	Remove	Co-Dom - 455+455 / Fruit/Nut
T316	16	Eucalyptus tereticornis	755	27	Fair	Fair	Remove	Live limb loss Impacted by Works
T317	16	Eucalyptus siderophloia	615	22	Fair	Fair	Retain	Trunk ≤10° / Phototropic / 1 Sided canopy
T318	16	Eucalyptus tereticornis	625	28	Fair	Fair	Retain	Deadwood>100mm
T319	12	Eucalyptus siderophloia	575	22	Fair	Fair	Retain	Species Confirmed by 28 South
T320	26	Ficus macrophylla	2200	25	Fair	Fair	Retain	Root Rot / Live Limb Loss /Inclusion / Decay at primary junct.
T321	2	Cupaniopsis anacardioides	95	3	Fair	Poor	Retain	Offsite
T322	3	Eucalyptus tereticornis	135	9	Fair	Fair	Retain	Vine
T323	20	Eucalyptus tereticornis	695	27	Fair	Fair	Retain	Offsite
T324	20	Eucalyptus spp	495	26	Fair	Fair	Remove	Deadwood≥100mm Impacted by Works
T325	12	Eucalyptus crebra	625	18	Fair	Poor	Retain	Storm Damage / Deadwood≥100mm / Species Confirmed by 28 South
T326	20	Eucalyptus siderophloia	1215	28	Fair	Fair	Retain	Deadwood>100mm / Live Limb Loss / Species Confirmed by 28 South
T327	22	Eucalyptus tereticornis	425	25	Fair	Fair	Remove	Impacted by Works
T328	24	Eucalyptus tereticornis	725	24	Fair	Fair	Retain	Impacted by Works / Offsite
T336	4	Casuarina glauca	140	9	Fair	Fair	Retain	2x100
T337	4	Casuarina glauca	130	13	Fair	Fair	Retain	
T338	4	Casuarina glauca	170	15	Fair	Fair	Retain	
T339	4	Casuarina glauca	110	10	Fair	Fair	Retain	
T340	4	Casuarina glauca	100	8	Fair	Fair	Retain	
T341	4	Casuarina glauca	120	8	Fair	Fair	Retain	
T342	4	Casuarina glauca	100	8	Fair	Fair	Retain	
T343	4	Casuarina glauca	100	13	Fair	Fair	Retain	
T344	4	Casuarina glauca	120	12	Fair	Fair	Retain	
T345	4	Dead Tree	350	12			Retain	Dead Tree
T346	4	Casuarina glauca	120	15	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T347	4	Casuarina glauca	100	8	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T348	4	Casuarina glauca	200	17	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T349	4	Casuarina glauca	200	22	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T350	4	Casuarina glauca	200	14	Fair	Fair	Retain	
T351	4	Eucalyptus spp	100	4	Fair	Fair	Retain	
T352	4	Casuarina glauca	230	18	Fair	Fair	Retain	
T353	4	Casuarina glauca	200	17	Fair	Fair	Retain	
T354	4	Casuarina glauca	130	16	Fair	Fair	Retain	
T355	4	Casuarina glauca	150	14	Fair	Fair	Retain	
T356	4	Casuarina glauca	110	14	Fair	Fair	Retain	
T357	4	Casuarina glauca	100	6	Fair	Fair	Retain	
T358	4	Casuarina glauca	140	15	Fair	Fair	Retain	
T359	4	Casuarina glauca	200	18	Fair	Fair	Retain	
T360	4	Casuarina glauca	210	18	Fair	Fair	Retain	
T361	4	Casuarina glauca	160	18	Fair	Fair	Retain	
T362	4	Casuarina glauca	200	17	Fair	Fair	Retain	
T363	4	Casuarina glauca	160	17	Fair	Fair	Retain	
T364	4	Casuarina glauca	160	18	Fair	Fair	Retain	
T365	4	Casuarina glauca	180	15	Fair	Fair	Retain	
T366	4	Casuarina glauca	200	16	Fair	Fair	Retain	
T367	4	Casuarina glauca	100	10	Fair	Fair	Retain	
T376	3	Casuarina glauca	120	16	Fair	Fair	Retain	
T377	3	Casuarina glauca	100	9	Fair	Fair	Retain	
T378	3	Casuarina glauca	110	11	Fair	Fair	Retain	
T379	3	Casuarina glauca	110	12	Fair	Fair	Retain	
T380	3	Casuarina glauca	160	15	Fair	Fair	Retain	
T381	3	Casuarina glauca	100	12	Fair	Fair	Retain	
T382	3	Casuarina glauca	100	8	Fair	Fair	Retain	
T383	3	Casuarina glauca	130	8	Fair	Fair	Retain	
T384	3	Casuarina glauca	120	10	Fair	Fair	Retain	
T385	3	Casuarina glauca	100	10	Fair	Fair	Retain	
T386	3	Casuarina glauca	100	11	Fair	Fair	Retain	
T387	3	Pinus elliottii	100	8	Fair	Fair	Remove	Weed / Species Confirmed by 28 South
T388	3	Casuarina glauca	110	8	Fair	Fair	Retain	
T389	3	Casuarina glauca	120	16	Fair	Fair	Retain	
T390	3	Casuarina glauca	100	14	Fair	Fair	Retain	
T391	3	Casuarina glauca	100	14	Fair	Fair	Retain	
T392	3	Casuarina glauca	100	8	Fair	Fair	Retain	
T393	3	Casuarina glauca	120	14	Fair	Fair	Retain	
T394	3	Casuarina glauca	120	14	Fair	Fair	Retain	
T395	3	Casuarina glauca	100	11	Fair	Fair	Retain	
T396	3	Casuarina glauca	110	14	Fair	Fair	Retain	
T397	3	Casuarina glauca	220	18	Fair	Fair	Retain	
T398	3	Casuarina glauca	100	14	Fair	Fair	Retain	
T399	3	Casuarina glauca	180	13	Fair	Fair	Retain	
T400	3	Casuarina glauca	140	17	Fair	Fair	Retain	
T401	3	Casuarina glauca	120	6	Fair	Fair	Retain	
T402	3	Casuarina glauca	100	8	Fair	Fair	Retain	
T403	3	Casuarina glauca	120	14	Fair	Fair	Retain	
T408	2	Casuarina glauca	100	8	Fair	Fair	Retain	
T409	2	Casuarina glauca	130	11	Fair	Fair	Retain	
T410	2	Casuarina glauca	100	10	Fair	Fair	Retain	
T412	2	Casuarina glauca	100	8	Fair	Fair	Retain	
T413	2	Casuarina glauca	100	9	Fair	Fair	Retain	
T414	2	Casuarina glauca	100	9	Fair	Fair	Retain	
T415	2	Casuarina glauca	100	11	Fair	Fair	Retain	
T416	6	Casuarina glauca	200	16	Fair	Fair	Retain	
T417	6	Eucalyptus tereticornis	220	13	Fair	Fair	Retain	Offsite / Species Confirmed by 28 South
T418	6	Eucalyptus tereticornis	120	7	Fair	Fair	Retain	Arborist Supervision / Species Confirmed by 28 South
T419	6	Pinus elliottii	300	18	Fair	Fair	Remove	Weed / Species Confirmed by 28 South
T420	6	Pinus elliottii	270	24	Fair	Fair	Remove	Weed / Species Confirmed by 28 South
T421	6	Pinus elliottii	280	23	Fair	Fair	Remove	Weed / Species Confirmed by 28 South
T422	6	Casuarina glauca	300	20	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T423	6	Pinus elliottii	280	18	Fair	Fair	Remove	Weed / Species Confirmed by 28 South
T424	6	Casuarina glauca	170	17	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T425	6	Casuarina glauca	340	20	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T426	6	Casuarina glauca	380	18	Fair	Fair	Retain	Species Confirmed by 28 South
T427	6	Casuarina glauca	320	16	Fair	Fair	Retain	
T428	6	Casuarina glauca	160	13	Fair	Fair	Retain	
T429	6	Casuarina glauca	320	19	Fair	Fair	Retain	
T430	6	Casuarina glauca	350	19	Fair	Fair	Retain	
T431	5	Casuarina glauca	130	13	Fair	Fair	Retain	
T432	5	Pinus elliottii	210	17	Fair	Fair	Remove	Weed / Species Confirmed by 28 South
T433	5	Pinus elliottii	100	6	Fair	Fair	Remove	Weed / Species Confirmed by 28 South
T434	5	Eucalyptus tereticornis	170	6	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T435	5	Casuarina glauca	200	17	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T436	5	Casuarina glauca	250	19	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T437	5	Melaleuca quinquenervia	500	14	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T438	5	Melaleuca quinquenervia	230	15	Fair	Fair	Retain	
T439	5	Casuarina glauca	280	15	Fair	Fair	Retain	
T440	5	Casuarina glauca	280	15	Fair	Fair	Retain	
T441	5	Casuarina glauca	270	13	Fair	Fair	Retain	
T442	7	Casuarina glauca	380	16	Fair	Fair	Retain	
T443	7	Melaleuca quinquenervia	200	14	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T444	7	Casuarina glauca	340	16	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T445	7	Eucalyptus tereticornis	200	12	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T446	7	Melaleuca quinquenervia	300	11	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T447	7	Melaleuca quinquenervia	120	14	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T448	7	Casuarina glauca	310	18	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T449	7	Melaleuca quinquenervia	200	12	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T450	7	Casuarina glauca	350	20	Fair	Fair	Retain	
T451	7	Casuarina glauca	300	22	Fair	Fair	Retain	
T452	7	Eucalyptus spp	350	24	Fair	Fair	Retain	
T453	7	Casuarina glauca	330	20	Fair	Fair	Retain	
T454	7	Casuarina glauca	350	14	Fair	Fair	Retain	
T455	12	Eucalypats spp	370	19	Fair	Fair	Retain	
T456	12	Pinus elliottii	520	25	Fair	Fair	Remove	Weed / Species Confirmed by 28 South
T457	12	Pinus elliottii	520	27	Fair	Fair	Remove	Weed / Species Confirmed by 28 South
T458	12	Pinus elliottii	420	27	Fair	Fair	Remove	Weed / Species Confirmed by 28 South
T459	9	Casuarina glauca	330	11	Fair	Fair	Retain	
T460	9	Pinus elliottii	330	24	Fair	Fair	Remove	Weed / Species Confirmed by 28 South
T461	9	Casuarina glauca	300	20	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T462	15	Eucalyptus tereticornis	800	25	Fair	Fair	Retain	Offsite / Arborist Supervision / Species Confirmed by 28 South
T463	8	Eucalyptus tereticornis	180	8	Fair	Fair	Remove	Impacted by Works / Species Confirmed by 28 South
T464	8	Melaleuca quinquenervia	300	14	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T465	8	Melaleuca quinquenervia	400	12	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T466	8	Pinus elliottii	350	23	Fair	Fair	Remove	Weed / Species Confirmed by 28 South
T467	8	Casuarina glauca	200	20	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T468	8	Melaleuca quinquenervia	300	20	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T469	8	Melaleuca quinquenervia	300	15	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T470	8	Melaleuca quinquenervia	300	17	Fair	Fair	Remove	Impacted by Works / Species Confirmed by 28 South
T471	18	Eucalyptus tereticornis	720	23	Fair	Fair	Remove	Impacted by Works / Species Confirmed by 28 South
T472	13	Pinus elliottii	470	24	Fair	Fair	Remove	Weed / Species Confirmed by 28 South
T473	13	Eucalyptus spp	600	30	Fair	Fair	Retain	
T474	13	Casuarina glauca	450	20	Fair	Fair	Retain	
T475	14	Casuarina glauca	180	6	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T476	14	Melaleuca quinquenervia	300	17	Fair	Fair	Retain	Impacted by Works / Species Confirmed by 28 South
T477	1	Dead Tree	190	3			Remove	Dead
T478	1	Dead Tree	800	1			Remove	Dead
T479	1	Dead Tree	170	3			Remove	Dead
T480	10	Pinus elliottii	400	22	Fair	Fair	Remove	Weed / Species Confirmed by 28 South
T481	10	Dead Tree	600	10			Remove	Dead

JFDP URBAN CONSULTANTS

APPROVAL ISSUE

D	REVISED FOR APPROVAL	2020-07-02	TD
C	FOR APPROVAL	2020-06-26	JD
B	FOR APPROVAL	2020-06-26	TD
A	FOR 28 SOUTH REVIEW	2020-05-25	TD

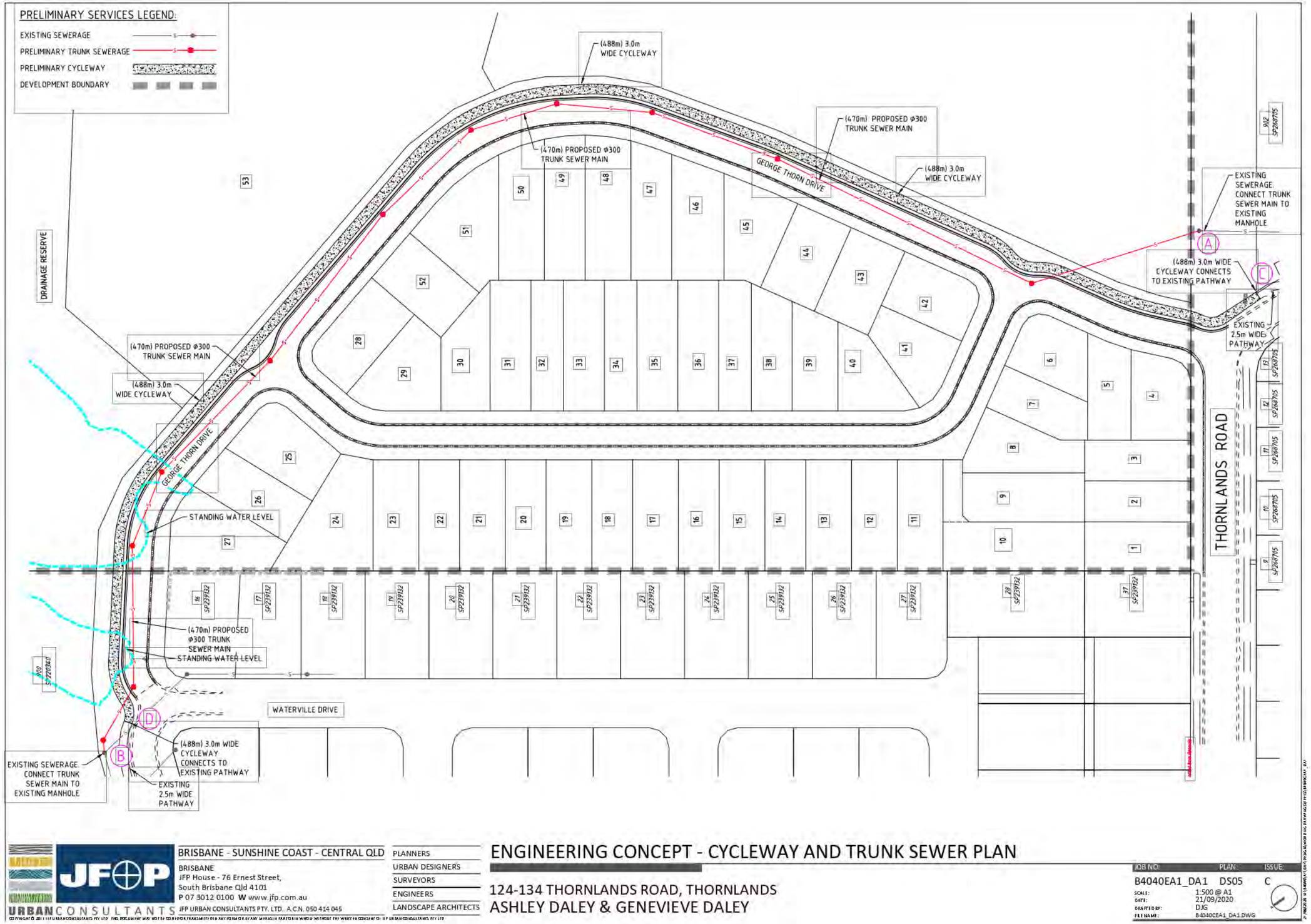
ISSUE DETAILS DATE DRN DES QA

PROJECT TITLE:
PROPOSED SUBDIVISION
AT
124 - 134 THORNLANDS ROAD,
THORNLANDS, QLD, 4164

CLIENT:
ASHLEY DALEY &
GENEVIEVE DALEY

PLAN TITLE:
TREE RETENTION PLAN
SCHEDULES

B4040L A1_DA1 TR08 D


PRELIMINARY SERVICES LEGEND:
EXISTING SEWERAGE
PRELIMINARY TRUNK SEWERAGE
PRELIMINARY CYCLEWAY
DEVELOPMENT BOUNDARY
(488m) 3.0m WIDE CYCLEWAY
(470m) PROPOSED Φ300 TRUNK SEWER MAIN
GEORGE THORN DRIVE
EXISTING SEWERAGE: CONNECT TRUNK SEWER MAIN TO EXISTING MANHOLE
(488m) 3.0m WIDE CYCLEWAY CONNECTS TO EXISTING PATHWAY
EXISTING 2.5m WIDE PATHWAY
THORNLANDS ROAD
DRAINAGE RESERVE
STANDING WATER LEVEL
(470m) PROPOSED Φ300 TRUNK SEWER MAIN
WATERVILLE DRIVE
EXISTING SEWERAGE: CONNECT TRUNK SEWER MAIN TO EXISTING MANHOLE
(488m) 3.0m WIDE CYCLEWAY CONNECTS TO EXISTING PATHWAY
EXISTING 2.5m WIDE PATHWAY
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JFP House - 76 Ernest Street,
South Brisbane Qld 4101
P 07 3012 0100 W www.jfp.com.au
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ENGINEERING CONCEPT - CYCLEWAY AND TRUNK SEWER PLAN
124-134 THORNLANDS ROAD, THORNLANDS
ASHLEY DALEY & GENEVIEVE DALEY
JOB NO: PLAN: ISSUE:
B4040EA1_DA1 DS05 C
SCALE: 1:500 @ A1
DATE: 21/09/2020
DRAFTED BY: DJG
FILE NAME: B4040CEA1_DA1.DWG

15 REPORTS FROM INFRASTRUCTURE & OPERATIONS

15.1 DRAFT COASTAL HAZARD ADAPTATION STRATEGY

Objective Reference: A5018974

Authorising Officer: Dr Nicole Davis, General Manager Infrastructure & Operations

Responsible Officer: Bradley Salton, Group Manager City Assets

Report Author: Lachlan Mcclure, Planning Officer

Attachments: 1. Coastal Hazard Adaptation Strategy - Draft ⇩

PURPOSE

To present the draft Coastal Hazard Adaptation Strategy (draft Strategy) and seek endorsement to proceed with community consultation.

BACKGROUND

Project Background

On 14 December 2016 Redland City Council (Council) resolved to commence work on a Coastal Hazard Adaptation Strategy focusing on emerging risks. Work has progressed and a draft Strategy has been produced.

A Coastal Hazard Adaptation Strategy (CHAS) is a city wide strategy that outlines the likely impact of coastal erosion, sea-level rise and storm tide inundation, and recommends how Council can manage the impacts of these hazards. The information provided by the CHAS will enable effective decision making by Council in its planning and operations. It will also assists other stakeholders such as state government departments, utility providers, businesses, organisations and landowners to plan for the assets that they are responsible for.

The CHAS project is funded by the Local Government Association of Queensland (LGAQ) QCoast2100 program and follows the programs standards and guideline. The project follows the 8 phases identified below:

Phase 1 – Stakeholder communication and engagement plan
Phase 2 – Scoping of coastal hazard issues and knowledge gaps
Phase 3 – Modelling of coastal hazards – coastal erosion, sea level rise and storm tide inundation
Phase 4 – Identification assets exposure and vulnerability
Phase 5 – Risk assessment of key asset to coastal hazards
Phase 6 – Identification of potential adaptation pathways and options
Phase 7 – Cost benefit analysis and multi-criteria analysis of options
Phase 8 – Draft and final Coastal Hazard Adaptation Strategy

Phase 1 was undertaken by Council officers, Phase 2 to 5 were delivered by a project team led by the Quandamooka Yoolooburrabee Aboriginal Corporation (QYAC), Phase 6 to 8, including the draft Strategy, were completed by coastal engineering consultancy Alluvium. Each phase has been reviewed by a Technical Working Group, Coastal Adaptation Steering Committee and LGAQ Expert Panel. The draft Strategy brings together and presents the findings of all 8 Phases.

Technical Analysis

The draft strategy is underpinned by detailed and thorough scientific and technical analysis. Hazard extents were determined by reviewing existing modelling and undertaking new and revised modelling where needed. A detailed risk assessment was undertaken to determine the risk and vulnerability of key asset categories throughout the city. A cost benefit analysis was commissioned to estimate the economic costs of hazard impacts and establish the economic justification for mitigation works.

Stakeholder Consultation

Extensive stakeholder and community consultation has guided the development of the draft Strategy. This has involved both targeted stakeholders and broader community engagement as follows:

- Technical Working Group - workshops/webinars were held with 18 technical officers from across relevant Council groups and teams.
- External stakeholder advisory group - workshops/webinars were held with 26 participants representing relevant industry bodies, asset owners and community services.
- Coastal Adaptation Steering Committee - project progress and interim reporting reviewed by committee chaired by Mayor Williams and including representatives from various State Government Departments, the National Committee for Coastal and Ocean Engineers, Healthy Land and Waters and QYAC and senior Council officers.
- Quandamooka Yoolooburrabee Aboriginal Corporation - has representatives on both the External Stakeholder group, and Steering Committee and delivered the Phase 2-5 work.

Broader Community Engagement included:

- Your Say page – project updates, question and answer portal
- Project fact sheets (six)
- Bus shelter adverts
- Project updates in Councillor Newsletters
- Articles in Our Redlands Coast magazine
- Media releases
- Social media campaign including boosted Facebook posts
- Community survey (374 responses)

It was initially planned to hold ‘open house’ or ‘talk-to-a coastal engineer’ events at community halls however this was not possible due to COVID-19 restrictions. As a result, engagement activities were refocused on those above, including the social media campaign and the online survey.

ISSUES

Content of Draft Strategy

The draft strategy provides a high level plan for addressing coastal hazards throughout the city. Section 3 provides a high level overview of the impact of coastal hazards, the types of assets at risk, and an estimate of the economic costs of these impacts both now and into the future. Section 4 outlines a strategic approach to adapting to coastal hazards; it identifies Councils responsibilities and objectives and introduces possible responses pathways and options.

Section 5 identifies a number of city-wide actions to address coastal hazards, while Section 6 specifies the actions suited to suburb level localities throughout the city. Adaptation actions are categorised as: enhancing adaptive capacity, planning, modifying infrastructure, or coastal engineering.

What the Strategy will not do

The draft Strategy does not commit Council to protecting private property. Works to protect private land remains the responsibility of private landowners. Councils coastal defence works are focused on public land and assets. The draft strategy does recommend that Council facilitate informed decision-making by providing information and advice to landowners.

The draft Strategy provides high level guidance on when works are likely to be required and what type of works are suited to particular localities. The draft Strategy is not the final opportunity for community engagement on coastal protection works and further targeted consultation will be undertaken when specific works are being planned and delivered.

The draft Strategy will not add any new regulations that impact on the use and development of land. The Redland City Plan already includes overlays that address coastal hazards. The strategy may be used to inform future land use planning decisions but this would follow the standard amendment process.

Community Consultation on Draft

During the consultation period, members of the community have an opportunity to review the draft strategy and provide feedback. This feedback will be reviewed and used to inform the final strategy. As part of the co-funding agreement that governs the project, LGAQ has reviewed the draft Strategy before consultation, any changes resulting from consultation will need to be reviewed and approved by LGAQ.

The key message of the consultation material is that Council is *'Planning for the future of Redlands Coast… the CHAS is a city-wide strategy for the protection of the city's coastline, including islands'*. An engagement plan has been prepared to promote the draft Strategy and includes:

- Updated Your Say page, including access to the draft Strategy, explainer video, fact sheets, and feedback portal
- Advertisements in a range of local and community newspapers
- Consultation phase notice in Councillor newsletters
- Posters and pull-up banners at RCC libraries and customer service centres
- Posters on community notice boards
- Social media campaign, including boosted Facebook posts in lead up to and during consultation phase
- RCC Website and Facebook banner, intranet tile
- Promotional/explanatory video hosted on Council YouTube and Facebook
- Media release and emails to stakeholder networks.

STRATEGIC IMPLICATIONS

Legislative Requirements

Permits and approvals are required for most coastal protection works under State legislation including the Planning Act 2016, Coastal Protection and Management Act 1995 and Marine Parks Act 2004. There can be further requirements under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999.

Any permits and approvals required by legislation will need to be secured for any works proposed by the draft Strategy. Having a CHAS that outlines the clear justification for the proposed works will assist in securing approvals from State and Federal Governments where required.

Risk Management

There is an existing and increasing risk to Council assets and operations from coastal erosion, storm tide inundation and sea level rise. Progressing the draft Strategy increases Council ability to anticipate and respond to these risks.

Ongoing consultation and engagement activities ensure that there is a high level of awareness and understanding of the project among the community. A delay to the commencement of community consultation may impact on the project completion timeline and a delay to the finalisation of project deliverables may impact on the ability of Council to access the final instalment of funding from LGAQ. Financial

Funding has been allocated for community consultation on the CHAS in the financial year 2020-2021 budget.

People

Consultation on activities will be managed by the project manager and communications advisor from City Assets Group in line with guidelines and with support from the Communication, Engagement and Tourism Group.

Environmental

There are no environmental implications to proceeding with consultation on the draft Strategy.

Social

There are no social implication to proceeding with consultation on the draft Strategy.

Human Rights

Proceeding with consultation on the draft Strategy does not infringe on any human rights.

Alignment with Council's Policy and Plans

Proceeding with consultation on the draft Strategy is consistent with Councils Operational Plan – it advances *Outcome 3 Embracing the bay.* Section 3.3 aims to ensure that *'*the community is ready for and adapting to changing coastlines, storm tide and severe weather' and Section 3.3.1 commits to 'continue to develop and implement the Redland City Council Coastal Adaptation Strategy.'

CONSULTATION

Consulted	Consultation Date	Comments/Actions
External Stakeholder Group – refer above description of members	Webinar/workshops: 26/05/2020 28/07/2020	Provided input into the identification of potential adaptation pathways (phase 6) and the analysis of adaptation options (phase 7).
Technical Working Group – refer above description of members	Webinar/workshops: 26/05/2020 28/07/2020 – Review reports: 18/06/2020 15/09/2020	Provided input into the identification of potential adaptation pathways (phase 6) and the analysis of adaptation options (phase 7). Reviewed and provided feedback on phase 6 and phase 7 summary report.
Coastal Adaptation Steering Committee – refer above description of members	Review reports: 30/01/2020 24/06/2020 18/09/2020	Reviewed and provided feedback on summary reports for phase 1-7.
Service Manager Risk and Liability Services, Organisational Services	1/10/2020	Provided feedback on draft city-wide adaptation actions and a sample of location summaries.
Adviser Waterway and Shoreline Assets, Infrastructure and Operations	1/10/2020	Provided feedback on draft city-wide adaptation actions and a sample of location summaries.
Principal Strategic Planner, Community and Customer Services	1/10/2020	Provided feedback on draft city-wide adaptation actions and a sample of location summaries.
Service Manager Marine Infrastructure Asset Management, Infrastructure and Operations	16/10/2020	Reviewed and provided input on the draft Strategy document.

OPTIONS

Option One

That Council resolves to endorse progressing to community consultation on the draft Coastal Hazard Adaptation Strategy.

Option Two

To not endorse progressing to community consultation on the draft Strategy and request further information from officers.

OFFICER'S RECOMMENDATION

That Council resolves to endorse progressing to community consultation on the draft Coastal Hazard Adaptation Strategy.

COUNCIL RESOLUTION 2020/347

Moved by: **Cr Peter Mitchell**
Seconded by: **Cr Julie Talty**

That Council resolves as follows:

1. **To endorse community consultation on the draft Coastal Hazard Adaptation Strategy.**
2. **To undertake community consultation for 28 days (as specified by LGAQ) commencing immediately (November 19).**
3. **To consider the submissions and feedback received from the community during this time.**

CARRIED 11/0

Crs Karen Williams, Wendy Boglary, Peter Mitchell, Paul Gollè, Lance Hewlett, Mark Edwards, Julie Talty, Rowanne McKenzie, Tracey Huges, Adelia Berridge and Paul Bishop voted FOR the motion.

Redland CITY COUNCIL

Draft Coastal Hazard Adaptation Strategy

November 2020

Foreword

Redlands Coast is blessed with approximately 335 kilometres of coastline and foreshore areas.

The city has a rich and long history and is the traditional and spiritual home of the Quandamooka People. The coastal zone has significant ecological value and includes Ramsar listed sites and parts of the Moreton Bay Marine Park.

The coastal environment also holds significant recreational, commercial, and eco- and cultural tourism value. Renowned for scuba diving, boating, and recreational and commercial fishing, these values have seen Redlands Coast become a popular place for us to live and work, and is home to more than 150,000 residents, many of who live adjacent to or within proximity to the coastline. The coastal landscape and access to the coast underpins our economy.

Coastlines are dynamic, ever-changing with each tide and storm event. Erosion and storm tide inundation are natural processes that shape the coast over long timeframes. These processes are referred to as coastal hazards when they impact on how we use and enjoy the coast.

The Redlands Coast is currently prone to coastal hazard impacts, driven by cyclones and storm events. Coastal hazard impacts are also predicted to increase with a changing climate.

The Queensland State Government and Local Government Association of Queensland (LGAQ) provided funding to Queensland coastal councils to develop a strategic approach to managing coastal hazards. With the funding awarded to Redland City Council, we have been able to develop this Coastal Hazard Adaptation Strategy.

Our Coastal Hazard Adaptation Strategy enables us to be better prepared to reduce the impacts of coastal hazards on our communities, environment, cultural values, infrastructure, liveability and services, now and to the years 2070 and 2100.

Gorge Walk, North Stradbroke Island (Minjerrabah)

This report has been prepared by:

alluvium

Front cover image: Southern Moreton Bay Islands

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Foreshore area at Lamb Island

1 Introduction

1.1 Redland City

The Redland City Local Government Area (LGA), also known as Redlands Coast, includes approximately 335 kilometres of coastline and foreshore (Figure 1).

The coastal zone extends from Tingalpa Creek at Thorneside south to the mouth of the Logan River and across the Southern Moreton Bay Islands and North Stradbroke Island (Minjerribah). North Stradbroke Island forms a barrier between the Coral Sea and Moreton Bay (Mulgumpin).

The Traditional Owners are the Quandamooka People who have cared for the land and sea of this ancient landscape for thousands of years. The Quandamooka Yoolooburrabee Aboriginal Corporation (QYAC) has recognised Native Title rights under the *Native Title Act 1993*.

The landscape has been shaped by coastal processes over thousands of years. Erosion and accretion of the shoreline, and inundation of coastal areas, are part of these natural processes. However, these processes can become coastal hazards when they have the potential to impact on infrastructure, access, services, our lifestyle and the economy.

Figure 1. Redlands Coast (within the Redland City LGA)

1.2 Strategy purpose and approach

Context

The QCoast2100 program is a statewide initiative of the Queensland State Government and Local Government Association of Queensland (LGAQ). The program was launched to help Queensland coastal councils proactively plan for managing coastal hazard impacts, from present-day to the years 2070 and 2100.

Redland City Council was awarded funding through the QCoast2100 program to develop its Coastal Hazard Adaptation Strategy.

The Coastal Hazard Adaptation Strategy has been:

- Developed to proactively manage the impact of coastal hazards, now and into the future
- Developed in consultation with stakeholders and communities
- Tailored to include our full coastal landscape and communities.

Purpose

The purpose of the Strategy is to:

- Inform future decisions regarding the protection and management of our coast and foreshore
- Inform future land use planning
- Guide the management of public utilities and facilities
- Guide the management of areas of environmental and cultural significance
- Foster collaboration, and the shared care of our coastline.

Raby Bay canal estate


GJ Walter Park, Cleveland

Approach

The Coastal Hazard Adaptation Strategy has been developed through an eight-phase process (Figure 2) as outlined in the QCoast2100 Minimum Standards & Guidelines (LGAQ and DEHP 2016)[1].

The process has included a series of studies and activities that sought to:

- Identify coastal hazard areas
- Understand vulnerabilities and risks to assets
- Engage with the community to understand the preferred approaches to adaptation
- Determine adaptation actions, costs, priorities, and timeframes for implementation.

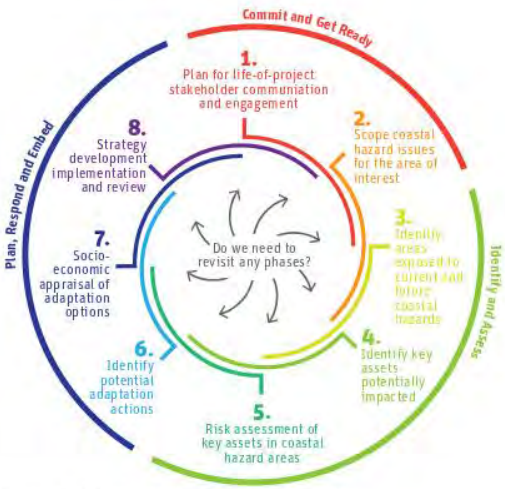


Figure 2. QCoast2100 eight-phase process

1.3 Engagement

Process

The Strategy development has been informed through consultation with key stakeholder groups and our Redlands Coast communities.

Engagement activities have included:

- Information sessions in August 2018 for business owners, community groups, and residents at risk from coastal hazards to provide background information on the Coastal Hazard Adaptation Strategy development
- Workshops with Council and external asset owners in August and September 2018, and February 2019, to help build awareness, prioritise coastal assets and values, and outline the risk assessment approach. This included representatives from local businesses, Redland City Council, QYAC, and cultural heritage experts
- Online workshops and discussions with key stakeholders occurred from May to November 2020
- An online 'Our Coastal Values and Experiences' survey was open from June to July 2020 to seek feedback from the community on coastal values and preferences for adaptation approaches
- Consultation on the draft Strategy from November to December 2020.

[1] https://www.qcoast2100.com.au/

Communication

A dedicated page on Redland City Council's Your Say website was used for publicising the project, sharing information, and encouraging registration and participation.

A range of communication materials was produced during the development of the Strategy. These included project updates, Frequently Asked Questions, an explainer video, climate adaptation-related resources, and a series of tailored fact sheets pertinent to coastal hazard adaptation.

The fact sheets include:

- Terminology
- Coastal Landscapes and Hazards
- Coastal Resilience and Adaptation
- Adaptation Framework
- Economics
- Strategy Summary

Outcomes

All input and feedback assisted in shaping the direction of technical investigations underpinning the Strategy and priority adaptation actions for Redlands Coast.

Additional outcomes include:

- A shared understanding of needs and opportunities in the adaptation planning process for Redlands Coast
- Appreciation of objectives for coastal management and preferred approaches to adaptation.

1.4 Strategy content

Council's Coastal Hazard Adaptation Strategy includes:

Section 2: An overview of landscape features, values, history, and critical elements of a resilient Redlands Coast.

Section 3: An overview of coastal hazards, including erosion and inundation, areas that may be exposed to coastal hazards, and the implications of exposure, including potential economic costs.

Section 4: Redland City Council's approach to adaptation, including a framework for shared responsibilities, adaptation responses, and options.

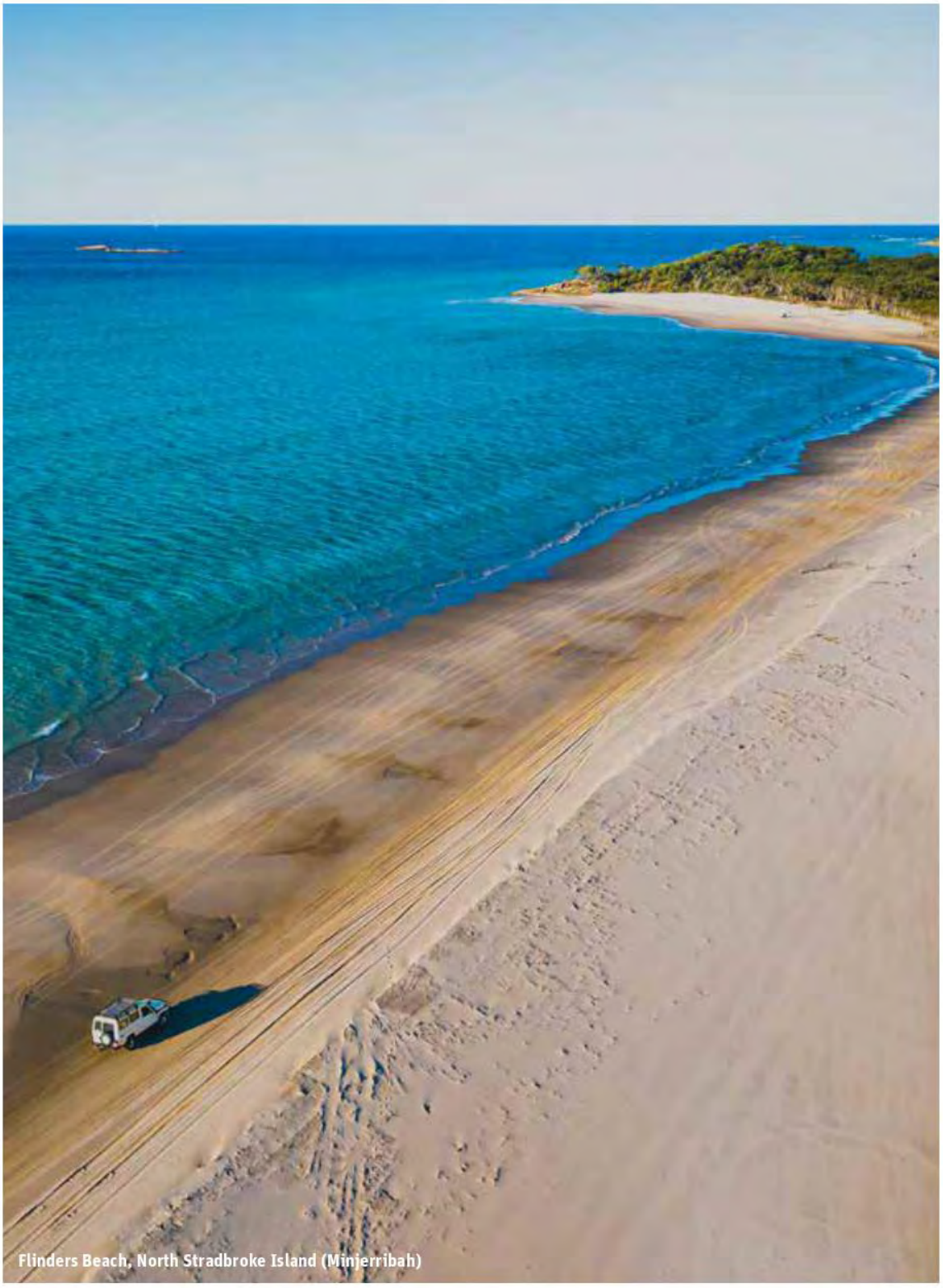
Section 5: Priority adaptation actions across the city.

Section 6: Locality summaries with tailored adaptation actions for different communities.

Section 7: The approach to implementation, including adaptive management and change management planning.

The Strategy actions have been developed based on outcomes from the technical investigations and engagement undertaken over phases one to eight of the Strategy development process.

Raby Bay, Cleveland


Flinders Beach, North Stradbroke Island (Minjerribah)

2 Our Redlands Coast

Beach between groynes at Raby Bay Foreshore Park

Key environmental values include:

Coastal landforms – including the bay and intertidal areas, inlets and coastal plains, and sandy beach systems of Minjerribah

Vegetation communities and ecosystems – including the wetlands, seagrass, mangroves, and native dune vegetation

Significant and endangered species – including both land and marine wildlife (e.g. turtles, dugongs, birds, and fish).

2.1 Coastal landscape

Values

Redlands Coast is a key part of the traditional homeland of the Quandamooka People. Quandamooka means "people of the land and seas" and reflects the strong cultural ties to the landscape. The coastal landscape has high cultural significance for the Traditional Owners who value the protection and sustainability of the land and sea.

The coastal zone also has significant ecological value and includes Ramsar listed sites and parts of the Moreton Bay Marine Park. Moreton Bay (Mulgumpin) provides a habitat for a diverse range of unique plants, and animals including rare, vulnerable, and endangered species such as migratory shorebirds, frogs, dugongs, and turtles.

Well-known features of the Redlands Coast coastline include:

- The Ramsar listed Moreton Bay Marine Park, including the Geoff Skinner Wetlands Reserve
- Barrier dunes on the world's second-largest sand island, North Stradbroke Island (Minjerribah).

The coastal environment also holds significant lifestyle, recreational, commercial, and eco- and cultural tourism value. The region is renowned for scuba diving, boating, recreational and commercial fishing, and a diversity of active and passive recreational activities.

Economy

Redlands Coast has a diverse economy. The four largest sectors are health care and social assistance, construction, professional, scientific and technical services, and manufacturing. Together, these sectors contribute 40% of the total value-added economic activity in the LGA, which is slightly higher than the state average.

Moreton Bay (Mulgumpin) is Queensland's most important commercial fishery and provides significant economic value to Redlands Coast.

The city also attracts an average of more than 1 million local and international visitors per year, and the added value to the economy was $158.2 million in 2018/19[2]. Employment in the tourism industry is estimated at 1,382 full-time equivalent jobs. In 2018/19, most visitors to Redlands Coast were domestic overnight visitors (53.7%), followed by domestic daytrips (24.0%) and international visitors (22.3%).

While Redlands Coast's economy is generally well-diversified and resilient to disruption, the tourism industry and local businesses rely heavily on the coastal environment and coastal zones, and, therefore, may be vulnerable to coastal hazard events. Strategic planning and adaptation initiatives will assist in mitigating these potential impacts.

[2] Phase 7 summary report (RCC 2020b)

2.2 Towards resilience

Change, resilience and adaptation

One of the more challenging aspects of the coastal landscape is that it experiences constant and often rapid change.

Wind and waves continually work to move sediment and shape the shoreline, and extreme weather events can periodically result in substantial erosion and inundation of coastal land.

A resilient coast has social, economic, and environmental systems in place to avoid, manage, and mitigate the impact of hazardous events or disturbances (e.g. coastal hazards). Resilience also means the ability to respond or reorganise in ways that maintain the essential function, identity, and values of a region, while also being able to adapt to change.

For Redland City, coastal hazard adaptation options included in the Strategy are in accordance with the identity and values of our coastal communities.

The top three values of the coast identified during the consultation activities are:

- Natural ecosystem values
- Unique landscape and natural beauty
- Recreation and access.

There is a strong preference for nature-based options as the primary/initial pathway for coastal hazard adaptation.

Redlands Coast CHAS Survey June-July 2020

An online survey was available from June to July 2020 and received over 370 responses. The survey results have informed an understanding of key values and preferences for coastal hazard adaptation options. Highlights from the survey findings include:

Natural values of the landscape and access to the coast are key values. Over 80% of respondents noted the top values of the coast as natural ecosystem values, unique landscape and natural beauty (encompassing natural and cultural values), recreation and access.

There is strong community support for adaptation and planning. More than 75% of respondents support the need for proactive adaptation planning.

There is a significant preference for natural adaptation options. Over 70% of respondents have a preference for nature-based solutions for Redlands Coast in the future, including mangroves, dune protection, planning, and nourishment.

Wilson Esplanade, Victoria Point

3 Coastal hazards

3.1 Hazards

Coastal hazards include inundation of low-lying coastal land, and/or erosion of the shoreline.

Periodic inundation and erosion are natural processes and contribute to shaping the unique landforms of our coastal zone. However, when these processes have an adverse impact on communities, infrastructure and some natural assets, they are considered coastal hazards.

In southeast Queensland, major coastal hazard impacts are typically associated with East Coast Lows and occasional Tropical Cyclones.

3.2 Storm tide inundation

Storm tide inundation is the flooding of low-lying coastal land from a locally elevated sea level (the 'storm tide'). The storm tide is a combination of the predicted tide, storm surge, and wave action (Figure 3). Storm surge is driven by the combined influence of low atmospheric pressure and high winds associated with events such as Tropical Cyclones.

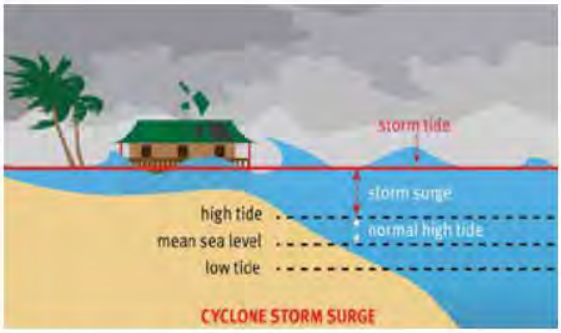


Figure 3. Components of storm tide

3.3 Coastal erosion

Coastlines naturally erode and accrete over time, driven by variations in sediment supply and climate patterns.

Short-term erosion

Coastal erosion occurs when winds, waves, and coastal currents act to shift sediment away from the shoreline. This can be a short-term shift, often associated with storm activity (termed storm bite), and the beach will then gradually rebuild (Figure 4).

When a beach is stable, all of the sand moved offshore during a storm eventually moves back onto the beach (over timeframes of months to years). In this case, periodic beach erosion does not result in a long-term landward movement of the shoreline.

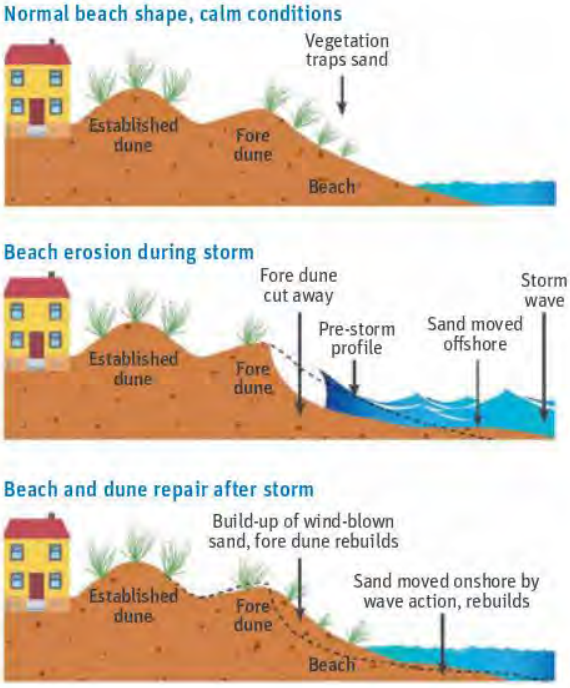


Figure 4. Natural short-term erosion and dune rebuilding process

Long-term erosion

In other cases, due to changing sediment supply or climate conditions, the beach may not have sufficient capacity to rebuild between storm events. In the absence of intervention, long-term erosion (termed recession) may occur, which is the landward movement of the shoreline over a longer timeframes.

Both short-term and long-term erosion processes may impact on coastal assets, depending on how close to the foredune assets are located.

3.4 Tidal inundation due to sea level rise

Tidal inundation is regular or permanent inundation from the tidal cycle, including up to the Highest Astronomical Tide. Areas of low-lying coastal land will be prone to an increased extent of tidal inundation with sea level rise. A 0.8m sea level rise by 2100 is currently planned for by the Queensland Government.

3.5 Current and future exposure

Redlands Coast is prone to storm events, and coastal hazard impacts are predicted to increase with a changing climate. A tailored approach to mapping coastal hazards for Redlands Coast has informed the Strategy development[3].

Storm tide inundation mapping

Storm tide mapping was produced in 2011 for Redland City Council, including planning horizons for 2016 and 2100 storm tide inundation. This was later revised in 2016 using an updated elevation model. In 2017, an intermediate, 2070 planning horizon, was also included.

The development of the Coastal Hazard Adaptation Strategy has utilised these existing 2016, 2070 and 2100 mapped hazard areas.

Erosion Prone Area (EPA) mapping

The Queensland Government define "Erosion Prone Areas" to the year 2100 as:

- Open coast erosion: A calculated component of open coast erosion potential, informed by erosion modelling
- Tidal zones: The combined area inundated by the Highest Astronomical Tide plus a defined horizontal buffer, plus any additional area inundated due to sea level rise.

The development of the Coastal Hazard Adaptation Strategy has included refinements to the Queensland Government's 2100 EPA mapping, as well as modelling of erosion for 2070 and present-day planning horizons.

As required by the Queensland Government, a sea level rise of 0.8m by 2100 has been adopted for the Coastal Hazard Adaptation Strategy (with 0.41m by 2070).

Event likelihood

Mapping for both erosion and storm tide inundation is based on a 1% Annual Exceedance Probability (AEP) event for all planning horizons (Table 1). Additional sensitivity analysis of more frequent AEPs was included to inform the assessment of adaptation options through the economic analysis.

Likelihood of occurrence	Hazard AEP	Planning horizons
Possible	1%	Present-day, 2070, 2100

Table 1. Likelihood of occurrence scenarios

Erosion Prone Areas and storm tide inundation indicate areas that may be exposed to erosion or inundation processes, now or in the future. They do not represent a predicted loss of coastal land. In many cases, hazard extents and impacts can be avoided, mitigated, or managed through adaptation planning.

Future coastal hazards

Projected sea level rise and an increase in cyclone intensity for the Queensland coastline is anticipated to increase the extent and impact of coastal hazards.

Coastal erosion:

- Increased water levels will accelerate coastal erosion
- Sediment transport patterns may be altered by shifts in wave direction, triggering changes to the form and location of shorelines
- Low-lying land may be permanently inundated
- Increased cyclone and storm activity will escalate the severity of coastal erosion events

Storm tide inundation:

- Sea level rise will increase the apparent severity and frequency of storm tide inundation and will cause inundation to occur further inland
- Increased cyclone and storm intensity will add to the magnitude of storm tide events and the extent of inundation

Source: Coastal Hazard Technical Guideline (DEHP 2013)

Hazard exposure

The mapped coastal hazard extents indicate areas and assets that may be exposed to different hazards now, and/or in the future.

For Redlands Coast, there is a range of land and asset types, as well as cultural resources that are likely to experience increased exposure to erosion and inundation by 2100. These include housing, commerce, recreation, health and safety, heritage, agriculture, land, transport, urban services, environment, and natural resources.[4]

The potential impact or consequence of exposure provides an appreciation of the relative risk of coastal hazards, as presented in the following section.

[3]Phase 3 Summary report (RCC 2019c)

[4]Phase 4 Summary report (RCC 2019d)

3.6 Land and assets at risk

Approach

Coastal hazards have the potential to have adverse impacts on Redlands Coast's coastal communities, services, and lifestyle, in both the present-day and by 2100.

As part of the Strategy development, new technical assessments were undertaken to review coastal hazard risk for a range of assets across the region[5].

The risk assessment includes an analysis of:

- Data on infrastructure assets (drainage, sewerage, water, roads, marine, beach, and foreshore)
- The Redland City Council planning scheme land parcels
- New information collated on dwellings (building locations, types)
- Environmental and land use overlays.
- Assets include tangible and intangible assets, as well as public and privately owned assets.

The risk is assessed against the likelihood of an asset being exposed to a coastal hazard, combined with the consequence of that exposure. The Redlands Coast tailored risk assessment for the 2070 and 2100 planning horizons considers:

- Exposure – realisation of the hazard event
- Sensitivities – inherent asset value impacted by exposure, design life and connectedness
- Potential impact – calculated by multiplying exposure and sensitivity; included connectedness for some calculations
- Vulnerability – assessed how much adaptive capacity and business-as-usual capacity would ameliorate the raw potential impact
- Value – environmental, social, and economic and governance support an asset provided to other assets.

Emerging risk profile

The present-day coastal hazard risk is relatively low for the majority of Redlands Coast. Less than 1% of residential, commercial, and community zoned areas are currently at risk from coastal hazards (Table 2). Around 5% of industrial areas and 8% of Indigenous places are at risk from storm tide inundation.

Coastal hazard risk increases notably into the future for some zones, with up to 4.4% of residential areas at risk by 2100 and a similar increase in the risk profile for commercial and community zoned areas and industrial areas.

Indigenous places have the highest increase in coastal hazard risk by 2100, with up to 31.9% of areas at risk from open coast erosion by 2100 and 14.7% of zones at risk from storm tide inundation.

	EPA			Storm tide (1% AEP)		
% planning scheme zone at risk from coastal hazards	**Present-day**	**2070**	**2100**	**Present-day**	**2070**	**2100**
Residential properties	-	1.2	2.1	0.7	2.4	4.4
Industrial buildings	-	6.6	6.9	4.1	6.3	8.4
Commercial buildings	-	1.6	2.0	0.5	2.1	3.9
Community buildings	-	0.4	0.8	0.4	1.2	1.7
Indigenous places	-	26.9	31.9	8.1	12.6	14.7

Table 2. Areas of planning scheme zones at risk

The risk assessment data has been used to inform the development of adaptation pathways for different locations along Redlands Coast. Data on individual asset risk will also be adopted into Council's asset management systems to inform renewal, upgrade, and betterment programs to improve asset resilience.

[5]Phase 5 Summary report (RCC 2019e)


Aquatic Paradise Park West, Birkdale

Economic risk (base case)

In the absence of intervention or adaptation, there are economic costs associated with coastal hazards.

Economic analysis is critical for determining the best approach to coastal hazard adaptation for different localities. Economics is used in several ways, including:

- Value assets and key industries
- Define a base case (cost of no action)
- Assess adaptation options.

After assigning values to key infrastructure and natural assets[6], the foundational step of an economic assessment in coastal hazard adaptation is to define a base case (Figure 5). This means determining the potential economic costs or losses associated with coastal hazards (and no additional adaptation/intervention). This becomes the baseline for a cost-benefit assessment of implementing adaptation options.

The base case for the Strategy has been determined by examining the likelihood and consequence of coastal hazard impacts on assets and at different timeframes (e.g. present-day, 2070, and 2100).

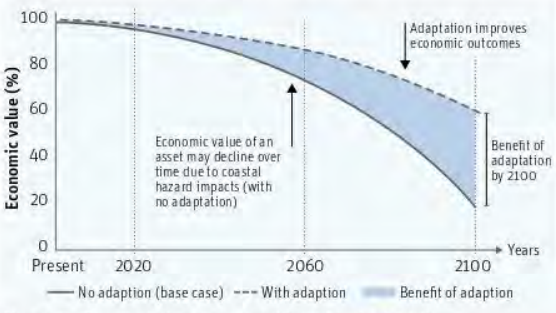


Figure 5. Economic base case and benefit of adaptation

[6] Refer to Phase 7 Summary report (RCC 2019b)

Four key components of damages and losses have been considered for the base case:

1. **Damage to buildings and facilities –** Buildings and facilities include various public and private residences/buildings. This considers the financial cost of repairing or replacing assets.
2. **Damage to other infrastructure (Council-owned) –** These Council-owned assets include Council roads, car parks, pathways, flood mitigation and foreshore infrastructure, stormwater and waste infrastructure, and recreation facilities (e.g. golf courses and pools). This considers the financial cost of replacing these assets.
3. **Damage to infrastructure (non-Council-owned) –** These non-Council owned assets include road, water and rail transport infrastructure, electricity and other energy infrastructure, telecommunication infrastructure, emergency services infrastructure, and water and sewerage infrastructure. This considers the financial cost of repairing or replacing these assets.
4. **Land, environmental, and cultural asset damages –** Land, environmental, and cultural assets include land classifications such as wetlands, coastal forests, irrigated agriculture, and native grazing. Damage is estimated as the lost value from a reduction in the area and quality of these assets.

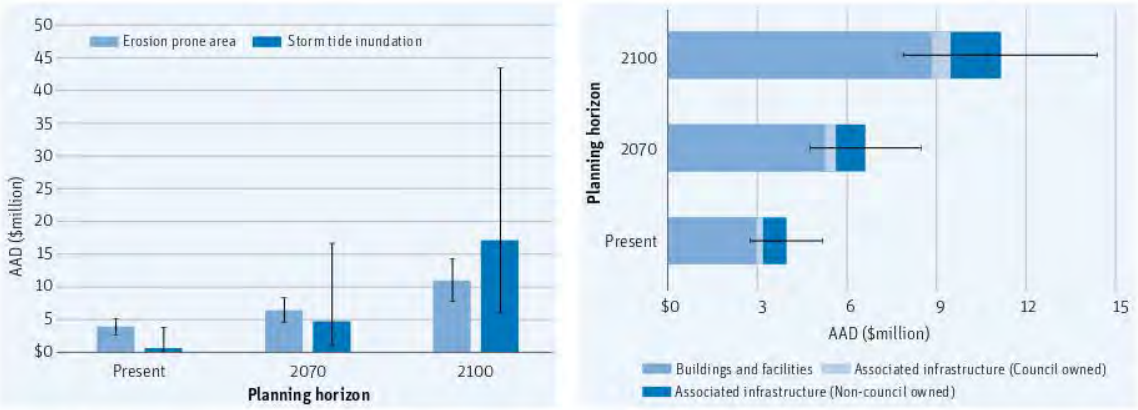


Figure 6. Potential average annual damages from coastal hazards for infrastructure assets (base case)

For Redlands Coast, the present-day average annual damages (AAD) associated with combined coastal hazard impacts on infrastructure assets are estimated to be in excess of $4 million (Figure 6). This is the average cost impact that could be expected to occur annually due to coastal hazards. This will vary from year to year, and link to weather events.

In the absence of adaptation, this is likely to increase to $11.5 million annually (AAD) by 2070 and over $28 million annually by 2100. The predicted increase in tidal zones linked to sea level rise is the main driver of the increase.

Losses of natural assets has also been considered in addition to infrastructure assets. Potential coastal hazard impacts for natural assets may be over $2.5 million annually (AAD) by 2100.

The estimated damages are largely linked to marsh/wetland, conservation and natural environments, predominantly around the Southern Moreton Bay Islands and North Stradbroke Island (Minjerribah).

Coastal hazards may also impact on cultural heritage assets. Should the underlying natural assets be damaged, these Indigenous values would be at risk.

Strategic adaptation can assist to avoid, mitigate and manage the impacts and potential economic damage associated with coastal hazards.

Implementing the adaptation approach and actions in the Coastal Hazard Adaptation Strategy will help avoid potential economic costs to Redland City of up to:

- Present-day: $4 million per annum
- By 2070: $11.5 million per annum
- By 2100: $30+ million per annum.

4 Approach to adaptation

4.1 Framework

Council's role

Redland City Council recognises a shared responsibility for the management of coastal hazard risk; shared by all land managers, private landowners, and Council.

Council's primary responsibility is the maintenance and protection of Council land and assets, and to inform statutory planning. Council is not responsible for undertaking any foreshore protection works on privately-owned land across Redlands Coast.

Council's role in adaptation varies depending on the type and ownership of different assets (Table 3). Council's role includes to:

- **Inform –** Council will make available to all stakeholders (including public and private land and asset owners) the outcomes of relevant Council-led investigations on coastal hazard risk, planning, and adaptation options.
- **Observe –** Council will actively observe/monitor coastal hazard risk for Council owned land and assets. For land and assets owned or managed by others, Council may, as part of everyday activities, observe a risk from coastal hazards and will notify the relevant landowner/manager.
- **Plan –** Council will develop strategic planning measures to mitigate the risk of coastal hazard impacts on Council-owned land and assets, and to inform appropriate land use planning across the region.
- **Act –** Council will implement strategic planning measures to mitigate the risk of coastal hazard impacts on Council-owned land and assets, and to inform appropriate land use planning across the region.

Initiatives in the Coastal Hazard Adaptation Strategy also seek to foster and enable other stakeholders to proactively manage coastal hazard impacts on their own/land assets per the Strategy and in consultation with Council.

		Land or asset type		
		Council-owned	Managed by other authorities	Privately-owned
Council's role	Inform	✓	✓	✓
	Observe	✓	○	✗
	Plan	✓	✗	✗
	Act	✓	✗	✗

Table 3. Council's role in coastal hazard adaptation

A strategic approach

Across Australia and internationally, coastal land managers are taking a strategic approach to manage the risk of coastal hazards and enhance the resilience of our coastal zones.

Common elements of this strategic approach include:

- Assigning a strategic adaptation response to various localities to guide decision making with a pathways approach across present-day, intermediate, and 2100 planning horizons
- Assessing the range of adaptation options suitable in different locations to help avoid, mitigate, and manage the risk of coastal hazards
- Developing a strategy for coastal adaptation, with prioritised actions over a 5–10-year timeframe.

A tailored approach has been developed to guide decision making on adaptation response and options across Redlands Coast.

Cleveland Point

Adaptation objectives

The purpose of clarifying adaption objectives is to help guide an appropriate adaptation response and to screen adaptation options across different localities.

Objectives for Redlands Coast, as informed by consultation with stakeholders and the community, include:

- Retain the natural beauty of the coast
- Limit adverse impacts on scenic amenity
- Protect ecosystems
- Protect freshwater and tidal waterways and wetland habitats that support our unique and diverse wildlife such as dolphins, dugongs, and migratory shorebirds
- Minimise potential impacts on tourism
- Protect significant and vulnerable areas (environment and biodiversity)
- Retain sandy beaches
- Maintain access to the coast, including the beach, bay, and foreshore.

These objectives provide a reference for considering the suitability of different coastal hazard adaptation options across the coast.

Adaptation response

The tailored framework includes the following four adaptation responses: Avoid, Monitor, Maintain, and Prepare, Mitigate, and Transition, as outlined in Table 4.

Adaptation response	Coastal hazard adaptation		
Avoid	**Monitor, maintain, and prepare**	**Mitigate**	**Transition**
Avoid placing new development or assets in coastal hazard areas	Monitor the risk of coastal hazards. Monitor until local trigger levels are reached to initiate mitigation. + Maintain existing arrangements and prepare for future actions	Actively mitigate the risk of coastal hazards through a range of additional adaptation options. Mitigate until local trigger levels are reached to initiate transition.	A strategic decision to transition to an alternative land use in some areas. Mitigation may be part of the transition process.
Adaptation options	Full range of adaptation options		

Table 4. Adaptation response

Avoid

The first principle is to avoid placing new development or assets in coastal hazard areas. The preference is to ensure land use in coastal hazard areas is one that is low risk for coastal hazard impacts while also maximising economic, social, and environmental value to the region.

Any new development/infrastructure that is placed in coastal hazard areas will need to be in accordance with Queensland Government planning policy and approvals requirements and include necessary migration measures.

Monitor, maintain, and prepare

At localities where the coastal hazard risk profile is relatively low, Council will continue to monitor risk and undertake existing maintenance and asset management activities (including planned upgrades), planning and preparation for future mitigation works, and broader stewardship initiatives for the coastline. If over time, the risk profile is observed to increase (as indicated by local trigger levels), then the adaptation response may shift to mitigate.

Mitigate

At localities where coastal hazard risks have been identified, Council will actively manage the risk through implementing a range of adaptation options.

Mitigation will be tailored to each locality, incorporating site-specific processes, community input, and statutory planning considerations. If, over time, the risk profile is observed to increase (as indicated by local trigger levels), and mitigation becomes infeasible (due to economic or other factors), then the adaptation response may shift to transition.

Transition

In some specific areas within a locality, if the coastal hazard risk profile is very high, and/or mitigation becomes infeasible (due to economic or other factors), Council may make a strategic decision to transition to an alternative land use. Transition is likely to be a gradual process over time, where mitigating hazards for a period is part of the transition process.

Adaptation options

Four themes of adaptation options have been defined for the Strategy, with a range of options that relate to avoiding, mitigating, and managing the risk of coastal hazards. The themes include:

1. Enhancing adaptive capacity
2. Planning updates
3. Modifying infrastructure
4. Coastal management and engineering.

The adaptation options across these themes are described in Table 5. More detailed descriptions of the options are provided in the Adaptation Actions sheets available on Council's Your Say website.


Aquatic Paradise

Theme	Adaptation options	Description	Adaptation Actions sheet number
Initiatives to enhance adaptive capacity	Community stewardship	Developing programs and partnerships to enhance stewardship of the coastline	Sheet 1
	Knowledge sharing	Facilitating knowledge sharing and education on hazards and adaptation	Sheet 2
	Monitoring	Monitoring changes in coastal hazard risk and effectiveness of adaptation	Sheet 3
Planning	Land use planning	Informing statutory planning and other plans Includes consideration of land purchase or land swap/relocation	Sheet 4
	Disaster management	Updating emergency response planning	Sheet 4
Modifying infrastructure	Increase infrastructure resilience	• Modifying critical infrastructure (e.g. raising floor levels) • Modifying drainage networks • Building resilient homes	Sheet 5
	Relocate infrastructure	Relocating critical infrastructure	Sheet 5
Coastal management and engineering	Dune protection and maintenance	Minimising dune disturbance, maintaining vegetation	Sheet 6
	Beach nourishment	Providing additional sand to the beach (scraping and/or importing sand)	Sheet 7
	Structures to assist with sand retention	Using structures (groynes) to help retain sand	Sheet 8
	Structures to dissipate wave energy	Constructing offshore breakwaters or artificial reefs to dissipate wave energy (submerged or exposed)	Sheet 9
	Last line of defence structures	Constructing seawalls/revetment walls	Sheet 10
	Structures to minimise inundation	Constructing levees/dykes	Sheet 11

Table 5. Adaptation options by theme

4.2 Adaptation response by locality

An adaptation response has been assigned for key localities across Redlands Coast.

The adaptation response takes into consideration what is at risk, for example land and assets, and how the risk is changing over time – the emerging risk profile (present-day, 2070, and 2100)[8] (Table 6).

Mitigation is already ongoing at a number of locations, including on the Southern Moreton Bay Islands and North Stradbroke Island (Minjerribah), typically in response to shoreline erosion.

CHAS Zone	Present-day	2040	2070	2100
Thorneside	Mitigate			
Birkdale	Monitor, maintain, and prepare	Mitigate		
Wellington Point	Monitor, maintain, and prepare		Mitigate	
Ormiston	Monitor, maintain, and prepare		Mitigate	
Cleveland	Monitor, maintain, and prepare	Mitigate		
Thornlands	Monitor, maintain, and prepare			
Victoria Point	Monitor, maintain, and prepare	Mitigate		
Redland Bay	Monitor, maintain, and prepare	Mitigate		
Coochiemudlo Island	Monitor, maintain, and prepare		Mitigate	
Karragarra Island	Monitor, maintain, and prepare	Mitigate		
Lamb Island	Monitor, maintain, and prepare		Mitigate	
Macleay Island	Monitor, maintain, and prepare		Mitigate	
Russell Island	Monitor, maintain, and prepare	Mitigate		
Dunwich	Monitor, maintain, and prepare		Mitigate	
Amity Point	Mitigate			
Point Lookout	Monitor, maintain, and prepare			

*Note: Monitor, maintain, and prepare includes maintaining existing works and implementing actions already planned, and continuing to monitor the risk profile.

Table 5. Adaptation response for each locality

4.3 Determining adaptation actions

A range of actions has been defined to enable a strategic approach to coastal hazard adaptation across Redlands Coast. A suite of priority actions across the four themes (Table 7) have been defined at:

- The city-wide scale (outlined in Section 5)
- The locality scale as part of the adaptation response pathway (outlined in Section 6).

The priority actions were informed by initial screening of options, as well as a detailed cost-benefit analysis (CBA) for tailored coastal engineering options[9].

While there is not a strong economic case at present-day for investing in the majority of options considered, there are other drivers for considering the suitability of these options and willingness to invest. This includes broader strategic initiatives to maintain access and local uses and values. The economic case for investment does strengthen by 2070 and 2100.

Baseline actions of dune protection and maintenance, and mangrove protection and enhancement, will be critical for enhancing resilience, and there is benefit in commencing trials early to monitor effectiveness and update economic assessments accordingly in the future.

Actions across capacity building, land use planning, and commencing nature-based trials and adaptation options are the core focus for most localities, combined with some site-specific targeted investigations to inform future updates to the adaptation pathways.

Results may also change over time and should be the subject of future Strategy updates.

[8]As per technical investigations in the Phase 5, 6 and 7 summary reports (RCC 2019e, 2020a, 2020b)

[9]Refer Phase 7 summary report (RCC 2020b)

5 City-wide actions summary

The Coastal Hazard Adaptation Strategy priority actions across the region include actions relevant to the four themes identified for the Strategy:

1. Initiatives to enhance adaptive capacity
2. Planning
3. Modifying infrastructure
4. Coastal engineering and management

Priority city-wide 5–10-year actions for each of these themes are summarised in Table 7, with some additional information/guidance in the Adaptation Actions sheets available on Council's Your Say website.

Adaptation response and actions specific to different localities across the region are provided in the location summaries (Section 6).


South Gorge Beach, North Stradbroke Island (Minjerribah)

Theme	Strategic action no.	2020 Priority strategic actions (completed within 5–10 years)
1. Adaptive capacity initiatives	1.1 Coastal resilience stewardship program	1.1.1 Establish coastal resilience program and designated program officer role for the stewardship program and broader Coastal Hazard Adaptation Strategy implementation 1.1.2 Establish and implement the stewardship program, including coordination of location-based activities to enhance adaptive capacity. This includes environmental enhancement (vegetation - mangroves and dune systems), signage, and information (linked to actions 1.2, 1.3, 1.4 and locality based actions) 1.1.3 Investigate social vulnerabilities and adaptive capacity needs for the coast, and identify actions to enhance resilience in particular related to inundation hazards and access/services disruption 1.1.4 Seek co-funding/resources for further initiatives
	1.2 Knowledge sharing	1.2.1 Identify networks/forums for knowledge sharing (internal and external) 1.2.2 Generate communication materials (on Strategy implementation), including the role of mangrove and dune systems in mitigating coastal hazards, pilots of nature-based solutions, and resilient homes 1.2.3 Facilitate training/education workshops/events, focusing on nature-based solutions (mangroves, dunes, living shorelines), and resilient homes 1.2.4 Co-ordinate cross-agency information sharing 1.2.5 Create network of signage about coastal resilience at key locations (linked to action 1.1.2)
	1.3 Monitoring	1.3.1 Establish photo point monitoring system (coast snap or similar) at key locations (linked to locality based actions) 1.3.2 Create a platform/process for data management 1.3.3 Develop monitoring/evaluation metrics for implementation of actions, and effectiveness of actions, including focus on living shoreline effectiveness (also a potential student project) 1.3.4 Establish drone survey (elevation and aerial imagery) monitoring (every five – 10 years), or other tailored monitoring and reporting needed to inform adaptive management and the 10-year planning scheme review 1.3.5 Establish photo competition for high tide level monitoring and link into existing tidal morning data sets (link to 1.1.2)
	1.4 Research	1.4.1 Establish collaboration with key universities and research centres to progress suitable actions in the Strategy 1.4.2 Apply for collaborative government funding grants for relevant actions 1.4.3 Identify key pilot sites for nature-based solutions where research partnerships/collaborations may be feasible

Theme	Strategic action no.	2020 Priority strategic actions (completed within 5–10 years)
2. Planning	2.1 Land use planning	2.1.1 Formally adopt the Strategy to inform planning across Council 2.1.2 Investigate incorporating updated and refined Erosion Prone Area mapping into the Coastal Protection (Erosion Prone Areas) Overlay through a future amendment to the Redland City Plan 2.1.3 Review development outcomes in hazard areas to assess whether amendments are needed to overlay codes to ensure development accounts for predicted or emerging hazards and future planned infrastructure upgrades and mitigation works
	2.2 Disaster management	2.2.1 Use the updated Erosion Prone Area and storm tide mapping, risk assessment, and economic implications to update disaster management plans
3. Modifying infrastructure	3.1 Build resilience	3.1.1 Review at risk infrastructure and embed risk mitigation into current asset management plans. This could include 'betterment' at critical asset refurbishment/renewals points 3.1.2 Develop/update design guidelines for infrastructure (stormwater drainage assets, wastewater assets, water assets, waste assets, community and cultural assets, property assets, information and communication technology assets, roads, fleet assets, marine assets, parks and open space assets) 3.1.3 Promote resilient homes within the community and building sector (link in with action 1.2) 3.1.4 Review opportunities to improve drainage networks in locations where the risk of inundation for infrastructure is high (embedded within asset management plan) 3.1.5 Undertake more detailed risk assessments of specific assets that create 'pinch point' risk of failure of broader systems (infrastructure networks)
4. Coastal management and engineering	4.1 Environmental enhancement and living shorelines – pilot studies	4.1.1 Commence environmental enhancement program (vegetation, mangroves) at three pilot sites (linked to action 1.1.2 and location-based actions) 4.1.2 Pilot living shoreline establishment at two pilot sites (as per location-based actions) 4.1.3 Pilot dune protection and maintenance program at two pilot sites (linked to action 1.1.2) 4.1.4 Extend the environmental enhancement and maintenance programs to all relevant areas (linked to outcomes of 1.3)
	4.2 Additional shoreline erosion mitigation actions	4.2.1 Implement Shoreline Erosion Management Plan (SEMP) for Amity Point and Coochiemudlo Island 4.2.2 Implement planned works incorporated into present-day capital work planning and embedded in adaptation pathways for relevant locations 4.2.3 Clarify Council perspectives and potential funding models/mechanisms for open coast erosion mitigation works that have differing levels of private and public benefit. Establish a more formal policy on co-funding where applicable (e.g. a special levy) 4.2.4 Review and update the CBA and associated adaptation pathway options every 10 years for open coast erosion mitigation works (in combination with review of the Strategy, and linked to outcomes of 1.3 and 4.1)
	4.3 Additional inundation mitigation actions	4.3.1 Investigate the concept design of works to provide increased protection from tidal area expansion and storm tide inundation for the Raby Bay canal estate. Establish indicative costings to inform any 'betterment' opportunities that arise from disaster relief funding following actual events 4.3.2 Review and update the CBA and associated adaptation pathway options every 10 years for works to mitigate inundation (in combination with review of the Strategy) – linked to outcomes of action 2.1.5

Table 7. City-wide actions

6 Location summaries

Adaptation pathways for Redland City Council suburbs are summarised over the following pages.

In addition to applying the city-wide actions, the location-based pathways include:

- Two focus sites for environmental stewardship activities - to enhance vegetation and mangroves, and monitor the effectiveness of these actions for mitigating coastal hazard risk
- Two trial sites for the design and establishment of living shorelines, using combined vegetation and minor structural protection works and monitoring the effectiveness of this approach for mitigating coastal hazard risk
- Maintenance and upgrades for existing shoreline protection works and new works for relevant locations
- Reviewing the effectiveness of adaptation actions and hazard mitigation works and using this information to inform updates to the long-term adaptation pathway

Southern Moreton Bay Islands

Thorneside

Thorneside is located at the northern end of the Redlands Coast coastal zone, and it is bounded by Tingalpa Creek to the northwest (Figure 7).

Low-lying areas adjacent to the river frontage and bay foreshore may be increasingly exposed to storm tide inundation and expanding tidal areas in the future.

Existing areas of mangroves are protecting adjacent land and assets from erosion and inundation hazards. Sections of the bayside shoreline have additional protection measures, including seawalls (rock and geotextile).

The present-day adaptation response for Thorneside is to mitigate coastal hazard risk, and continue mitigation actions into the future.

The adaptation pathway includes a focus on environmental enhancement, upgrading and extending existing seawall protection works, and reviewing the adaptation pathway over time, and considering future alternatives (Table 8). City-wide actions also apply where relevant to this locality.

Figure 7. Thorneside

	Present-day	By 2040	By 2070	By 2100
THORNESIDE	Mitigate			
Enhance adaptive capacity	As per city-wide actions as applicable			
Planning	As per city-wide actions as applicable Review and investigate planning measures for long-term inundation hazard mitigation in developed areas			
Modifying infrastructure	As per city-wide actions as applicable, including: Promote resilient homes program – linked to action 3.1.3			
Coastal engineering and management	Complete concept designs and approvals and implement upgrade for Queens Esplanade seawall – replacement and extension of existing geo-bag seawall	Maintain shoreline protection works	Review adaptation pathway options Undertake concept planning for additional structural protection or upgrades with reference to planning directions: may include seawall upgrades/possible levee/road and services raising	Implement additional structural protection/ upgrades or alternative adaptation actions
Other considerations	Establish indicators (with concept designs) to monitor level of acceptable service and trigger change of pathway.			

Table 8. Thorneside adaptation pathway

Birkdale

Birkdale is located towards the northern end of the Redlands Coast coastal zone, and includes the bayside areas either side of the Tarradarrapin Creek estuary mouth, and estuarine areas to the south west along Tingalapa Creek (Figure 8).

Low-lying areas adjacent to the bay foreshore, the canal estates, and creek river frontage may be increasingly exposed to storm tide inundation and expanding tidal areas in the future.

Existing areas of mangroves are protecting adjacent land and assets from erosion and inundation hazards. The majority of the bayside shoreline has additional protection measures, including seawalls and revetments along the bay frontage and the canal estates.

The present-day adaptation response for Birkdale is to continue to monitor coastal hazard risk (and maintain existing arrangements), and begin preparations for additional hazard mitigation in the future.

The adaptation pathway includes a focus on maintaining existing shoreline protection works, trialling a living shoreline design, and reviewing the adaptation pathway over time, and considering future alternatives (Table 9). City-wide actions also apply where relevant to this locality.

Figure 8. Birkdale

	Present-day	By 2040	By 2070	By 2100
BIRKDALE	Monitor, maintain, and prepare	Mitigate		
Enhance adaptive capacity	As per city-wide actions as applicable, including: • Establish Aquatic Paradise Park (east) or Three Paddocks Park as a focus site for action 1.2.5 - enhance signage on hazards and role of vegetation • Establish Aquatic Paradise Park (east) or Three Paddocks Park as a key site for action 1.3.1 - a photo monitoring station (Coast snap to similar) to monitor potential living shoreline site, and potential research collaboration – action 1.4.1			
Planning	As per city-wide actions as applicable			
Modifying infrastructure	As per city-wide actions as applicable, including: Promote resilient homes program – linked to action 3.1.3			
Coastal engineering and management	Maintain existing shoreline protection works and integrate into living shoreline design Develop concept design and monitoring plan for living shoreline at Aquatic Paradise Park (east) or Three Paddocks Park (link to action 4.1.2 and 1.3.3)	Implement living shoreline design	Review of effectiveness of living shoreline design Review pathway options Concept planning for additional structural protection or upgrades (if applicable)	Review of effectiveness of living shoreline design Review pathway options Implement additional structural protection or upgrades (if applicable) Undertake feasibility study for potential tidal barrier for canal estate
Other considerations	Establish indicators (with concept designs) to monitor level of acceptable service and trigger change of pathway Examples include: • Living shoreline does not achieve expected level of service → Pathway is reviewed and planning for additional works may commence • Water levels at canal estate are too high too often by 2100 → Feasibility is reviewed for a tidal barrier for canal estate			

Table 9. Birkdale adaptation pathway

Amity Point, North Stradbroke Island (Minjerribah)

Wellington Point

Wellington Point extends from Three Paddocks Park in the west to Hilliards Creek to the south and includes the bayside frontage around Wellington Point and extensive estuarine and wetland areas to the southeast (Figure 9).

The point is at a higher elevation than adjacent areas, however low-lying areas on the west side of the point, and creek frontage to the south east, may be increasingly exposed to storm tide inundation and expanding tidal areas in the future.

Existing areas of mangroves are protecting adjacent land and assets from erosion and inundation hazards. Limited sections of the shoreline have additional protection measures, including seawalls and revetments.

The present-day adaptation response for Wellington Point is to continue to monitor coastal hazard risk, and begin preparations for additional hazard mitigation in the future.

The adaptation pathway includes a focus on maintenance of existing coastal shoreline works, and reviewing the adaptation pathway over time and considering future alternatives, including beach nourishment at the reserve, and new protection works for critical assets (Table 10). City-wide actions also apply where relevant to this locality.

Figure 9. Wellington Point

Foreshore area at Wellington Point

	Present-day	By 2040	By 2070	By 2100
WELLINGTON POINT	Monitor, maintain, and prepare		Mitigate	
Enhance adaptive capacity	As per city-wide actions as applicable, including: Establish Wellington Point Recreation Reserve as a key site for action 1.3.1 - a photo monitoring station (CoastSnap or similar)			
Planning	As per city-wide actions as applicable, including: Promote resilient homes program – linked to action 3.1.3			
Modifying infrastructure	As per city-wide actions as applicable			
Coastal engineering and management	Maintain existing shoreline protection works Develop concept design and approvals (with triggers) for the western end of the Wellington Point Recreation Reserve beach (Champion Lane) Establish monitoring site for beach dynamics at Wellington Point Recreation Reserve beach (linked action 1.3.1) Confirm approach to providing technical support/ guidance to private owners to self-manage private seawalls	Maintain existing shoreline protection works Review erosion risk to causeways and develop concept design for additional protection works (if applicable) Review beach dynamics/ erosion rate of change at Wellington Point Recreation Reserve. Develop concept design for beach nourishment program (if feasible) Provide technical support/ guidance to private owners to self-manage private seawalls	Maintain and upgrade existing shoreline protection works – including a review of seawall heights (raised or wave barrier added) Review pathway options Implement new seawalls at the Wellington Point Recreation Reserve beach Implement beach nourishment at Wellington Point Recreation Reserve (if triggered) Prepare concept design and approvals for additional hazard mitigation works (seawall or other) including for Main Road, Wellington Point, and implement (if triggered)	
Other considerations	Establish indicators (with concept designs) to monitor level of acceptable service and trigger change of pathway Examples include: • Rate of shoreline recession exceeds defined point, or effectiveness of existing works is below required levels of service or beyond design life → Nourishment program and/or additional mitigation works may commence			

Table 10. Wellington Point adaptation pathway

Ormiston

Ormiston is situated in the central part of the Redlands Coast mainland, bounded by Hilliards Creek to the west (Figure 10).

Existing areas of mangroves span the majority of the coastal and estuarine frontage, and are protecting adjacent land and assets from erosion and inundation hazards.

Only a limited extent of low-lying area around the estuarine and bayside frontage is likely to be exposed to storm tide inundation and expanding tidal areas in the future. Limited sections of the shoreline have additional protection measures, including seawalls and revetments.

The present-day adaptation response for Ormiston is to continue to monitor coastal hazard risk, and begin preparations for additional hazard mitigation in the longer term.

The adaptation pathway includes a focus on protecting the existing natural coastal hazard defences (mangroves and vegetation), maintaining existing coastal protection structures, and reviewing the adaptation pathway over time, and considering future alternatives (Table 11). City-wide actions also apply where relevant to this locality.

Figure 10. Ormiston

	Present-day	By 2040	By 2070	By 2100
ORMISTON	Monitor, maintain, and prepare		Mitigate	
Enhance adaptive capacity	As per city-wide actions as applicable, including: Establish Raby Esplanade Park as a focus site for action 1.2.5 - enhance signage on hazards and role of vegetation			
Planning	As per city-wide actions as applicable			
Modifying infrastructure	As per city-wide actions as applicable, including: Promote resilient homes program – linked to action 3.1.3			
Coastal engineering and management	Maintain existing shoreline protection works and monitor effectiveness	Review effectiveness of existing shoreline protection works Prepare concept design and approvals for upgrade of existing shoreline protection works (seawalls), including seawall upgrade at Sleath Street	Review pathway options Implement upgrade to existing shoreline protection works (if triggered) Prepare concept design and approvals for upgrades and/ or additional hazard mitigation works (seawall or other) if applicable, and implement (if triggered)	
Other considerations	Establish indicators (with concept designs) to monitor level of acceptable service and trigger change of pathway Examples include: • Rate of shoreline recession or exceeds defined point, or effectiveness of existing works is below required levels of service or beyond design life → Planning and implementation of additional mitigation works or alternatives may commence			

Table 11. Ormiston adaptation pathway

Karragarra Island

Cleveland

Cleveland is situated in the central part of the Redlands Coast mainland, including the canal estates of Raby Bay, Cleveland Point, and the bayside frontage extending south (Figure 11).

Existing areas of mangroves along the bay frontage south of Cleveland Point are protecting adjacent land and assets from erosion and inundation hazards. The canal estates and Cleveland Point waterfront areas have extensive shoreline infrastructure protection, including seawalls, revetments, and groynes.

Low-lying areas including Raby Bay and bayside frontage to the south are likely to be exposed to storm tide inundation and expanding tidal areas in the future.

The present-day adaptation response for Cleveland is to continue to monitor coastal hazard risk, and begin preparations for additional hazard mitigation in the future.

The adaptation pathway includes a focus on maintenance of existing shoreline protection works, trialling a living shoreline design, and reviewing the pathway over time and considering future alternatives including new protection works for critical assets (Table 12). City-wide actions also apply where relevant to this locality.

Figure 11. Cleveland

Cleveland Point

	Present-day	By 2040	By 2070	By 2100
CLEVELAND	Monitor, maintain, and prepare	Mitigate		
Enhance adaptive capacity	As per city-wide actions as applicable, including: • Establish Oyster Point Park as a focus site for action 1.2.5 - enhance signage on hazards and role of mangroves and vegetation • Establish Oyster Point Park as a focus site for action 1.3.1 - a photo monitoring station (CoastSnap to similar) to monitor potential living shoreline site, and potential research collaboration – action 1.4.1			
Planning	As per city-wide actions as applicable			
Modifying infrastructure	As per city-wide actions as applicable, including: Promote resilient homes program – linked to action 3.1.3 Undertake a feasibility study on elevating Shore St North			
Coastal engineering and management	Maintain existing shoreline protection works Develop concept design and monitoring plan for living shoreline at Oyster Point Park (link to action 4.1.2 and 1.3.3) Confirm approach to providing technical support/ guidance to private owners to self-manage private seawalls	Maintain existing shoreline protection works Implement living shoreline design Provide technical guidance to owners of private seawalls	Maintain and upgrade existing protection works Review of effectiveness of living shoreline design Review pathway options Prepare concept design and approvals for upgrades and/ or additional hazard mitigation works (if applicable), and implement (if triggered), including for Cleveland Point and Raby Bay bayside Undertake feasibility study (if applicable) for potential tidal barrier for canal estates at Raby Bay, Columbus Canal and Ross Creek	
Other considerations	Establish indicators (with concept designs) to monitor level of acceptable service and trigger change of pathway Examples include: • Living shoreline does not achieve expected level of service → Pathway is reviewed and planning for additional works may commence • Water levels at canal estate are too high too often by 2100 → Feasibility is reviewed for a tidal barrier for canal estate			

Table 12. Cleveland adaptation pathway

Thornlands

Thornlands extends south of Cleveland to Eprapah Creek (Figure 12).

Existing areas of mangroves along the bay frontage are protecting adjacent land and assets from erosion and inundation hazards.

Low-lying areas are likely to be exposed to storm tide inundation and expanding tidal areas in the future. However, very limited public or private assets are expected to be impacted.

The adaptation response for Thornlands is to continue to monitor coastal hazard risk. The adaptation pathway includes a focus on protecting existing natural coastal hazard defences (mangroves and vegetation) and reviewing the adaptation pathway over time (Table 13). City-wide actions also apply where relevant to this locality.

Figure 12. Thornlands

	Present-day	By 2040	By 2070	By 2100
THORNLANDS	Monitor, maintain, and prepare			
Enhance adaptive capacity	As per city-wide actions as applicable			
Planning updates	As per city-wide actions as applicable			
Modifying infrastructure	As per city-wide actions as applicable			
Coastal engineering and management	Maintain existing arrangements and monitor	Review effectiveness of existing arrangements		
Other considerations	Establish indicators to monitor level of acceptable service and trigger change of pathway Examples include: • Mangroves and shoreline vegetation is unstable/condition declining and/or risk exposure is increasing → Pathway reviewed			

Table 13. Thornlands adaptation pathway

Victoria Point

Victoria Point is bounded by Epapah Creek in the north and Moogurrapum Creek to the south (Figure 13).

Existing areas of mangroves along the creek frontage and limited areas of the bayside frontage are protecting adjacent land and assets from erosion and inundation hazards. The majority of the bayside shoreline has additional protection measures including seawalls (rock and geotextile).

Low-lying areas adjacent to the river frontage and bay foreshore may be increasingly exposed to storm tide inundation and expanding tidal areas in the future.

The present-day adaptation response for Victoria Point is to continue to monitor coastal hazard risk, and begin preparations for additional hazard mitigation in the future.

The adaptation pathway includes a focus on maintaining existing shoreline protection works, implementing new works, and reviewing the adaptation pathway over time and considering future alternatives (Table 14). City-wide actions also apply where relevant to this locality.

Figure 13. Victoria Point

	Present-day	By 2040	By 2070	By 2100
VICTORIA POINT	Monitor, maintain, and prepare	Mitigate		
Enhance adaptive capacity	As per city-wide actions as applicable			
Planning	As per city-wide actions as applicable			
Modifying infrastructure	As per city-wide actions as applicable, including: Promote resilient homes program – linked to action 3.1.3 Develop concept design for Victoria Point Waste Water Treatment Plan protection (possible levee or alternative required) and implementation (when triggered)			
Coastal engineering and management	Maintain existing shoreline protection works Develop concept designs and approvals for beach nourishment and rock groynes at Wilson Esplanade (Wilson Street to Barron Street) Develop concept designs and approvals for seawall at Wilson Esplanade (Barron Street to Les Moore Park) Confirm approach to providing technical support/ guidance to private owners to self-manage private seawalls	Maintain existing shoreline protection works Implement beach nourishment and groyne construction (Wilson Street to Barron Street) Implement seawall construction (Barron Street to Les Moore Park) (when triggered) Provide technical support/ guidance to private owners to self-manage private seawalls	Review pathway options Prepare concept design and approvals for upgrades and/ or additional hazard mitigation works (if applicable), and implement (if triggered)	
Other considerations	Establish indicators (with concept designs) to monitor level of acceptable service and trigger change of pathway. Examples include: • Rate of shoreline recession exceeds defined point, or effectiveness of existing works is below required levels of service or beyond design life → Nourishment program and/or additional mitigation works may commence			

Table 14. Victoria Point adaptation pathway

Redland Bay

Redland Bay is located at the southern end of the Redlands Coast mainland, extending from Moogurrapum Creek to the north to the Logan River to the south (Figure 14).

Existing areas of mangroves along the creek and bayside frontage are protecting adjacent land and assets from erosion and inundation hazards. Sections of the bayside shoreline have additional protection measures, including seawalls and revetments.

Low-lying areas adjacent to the creek frontage and bay foreshore may be increasingly exposed to storm tide inundation and expanding tidal areas in the future.

The present-day adaptation response for Redland Bay is to continue to monitor coastal hazard risk, and begin preparations for additional hazard mitigation in the future.

The adaptation pathway includes a focus on environmental stewardship, maintaining and upgrading existing shoreline protection works and preparation for new works, and reviewing the adaptation pathway over time and considering future alternatives (Table 15). City-wide actions also apply where relevant to this locality.

Figure 14. Redland Bay

Foreshore area at Redland Bay

	Present-day	By 2040	By 2070	By 2100
REDLAND BAY	Monitor, maintain, and prepare	Mitigate		
Enhance adaptive capacity	As per city-wide actions as applicable, including: • Establish Sel Outridge Park as a focus site for action 1.1.2 - environmental enhancement stewardship • Establish Sel Outridge Park as a focus site for action 1.2.5 - enhance signage on hazards and role of mangroves and vegetation			
Planning	As per city-wide actions as applicable			
Modifying infrastructure	As per city-wide actions as applicable, including: Promote resilient homes program – linked to action 3.1.3			
Coastal engineering and management	Maintain existing shoreline protection works Establish environmental enhancement trial site and monitoring program at Sel Outridge Park (link to action 4.1.1), and develop concept design for vegetation enhancement Investigate foreshore protection management options for the foreshore from Bay Street to Boundary Street Confirm approach to providing technical support/ guidance to private owners to self-manage private seawalls	Maintain existing shoreline protection works Implement vegetation management concept design for Sel Outridge Park Implement foreshore protection management option/s - Bay Street to Boundary Street (if triggered) Undertake a feasibility study for a seawall upgrade north and south of Weinam Creek, and Talburpin Point Provide technical support/ guidance to private owners to self-manage private seawalls	Review effectiveness of environmental enhancement trials Review pathway options Prepare concept design and approvals for upgrades and/ or additional hazard mitigation works or upgrades – living shoreline, seawall or other if applicable, and implement (if triggered)	
Other considerations	Establish indicators (with concept designs) to monitor level of acceptable service and trigger change of pathway Examples include: • Environmental enhancement does not achieve expected level of service, rate of shoreline recession or exceeds defined point, or effectiveness of existing works is below required levels of service or beyond design life → Planning for additional mitigation works or alternatives may commence			

Table 15. Redland Bay adaptation pathway

Coochiemudlo Island

Coochiemudlo Island is a bay island situated off the central Redlands Coast mainland (Figure 15).

The east and southern coastline is predominantly open sandy shorelines, and extensive mangrove communities span the western shoreline.

The sandy coastline is prone to open coast erosion processes and a Shoreline Erosion Management Plan has recently been developed to mitigate erosion risk. Limited low-lying areas of the island may also be increasingly exposed to storm tide inundation and expanding tidal areas in the future.

The present-day adaptation response for Coochiemudlo Island is to continue to monitor coastal hazard risk, and begin preparations for additional hazard mitigation in the future.

The adaptation pathway includes a focus on implementing the Shoreline Erosion Management Plan and reviewing the adaptation pathway over time and considering future alternatives (Table 16). City-wide actions also apply where relevant to this locality.

Figure 15. Coochiemudlo Island

	Present-day	By 2040	By 2070	By 2100
COOCHIEMUDLO ISLAND	Monitor, maintain, and prepare		Mitigate	
Enhance adaptive capacity	As per city-wide actions as applicable, including: • Establish Norfolk Beach as a focus site for action 1.1.2 – environmental stewardship (dune protection and enhancement)			
Planning	As per city-wide actions as applicable			
Modifying infrastructure	As per city-wide actions as applicable, including: Promote resilient homes program – linked to action 3.1.3		Undertake feasibility study for raising Victoria Parade South or alternative adaptation options, and implementation triggers	
Coastal engineering and management	Implement Shoreline Erosion Management Plan Develop concept plan for dune protection and enhancement activities, and implement (focus on trial site at Norfolk Beach)	Review and update Shoreline Erosion Management Plan Undertake a beach and dune nourishment feasibility study at Victoria Parade East and other relevant locations	Review pathway options Implement beach nourishment (if triggered) Prepare concept design and approvals for upgrades and/or additional hazard mitigation works (if applicable), and implement (if triggered), including potential seawalls at Victoria Parade East and Main Beach	
Other considerations	Establish indicators (with concept designs) to monitor level of acceptable service and trigger change of pathway Examples include: • Rate of shoreline recession exceeds defined point → Nourishment program or alternative works commence			

Table 16. Coochiemudlo Island adaptation pathway

Karragarra Island

Karragarra Island is a bay island situated off the southern Redlands Coast mainland (Figure 16).

Vegetation, including mangroves, spans several areas of the shoreline, and pockets of sandy beaches, are present at the northwest end of the island.

The open coast and limited low-lying areas (mainly the central parts of the island) are likely to be increasingly exposed to erosion and inundation into the future.

The present-day adaptation response for Karragarra Island is to continue to monitor coastal hazard risk and begin preparations for additional hazard mitigation in the future.

The adaptation pathway includes maintaining arrangements, preparations for potential new shoreline protection works, and reviewing the adaptation pathway over time, and considering future alternatives including, infrastructure protection works in the long term (Table 17). City-wide actions also apply where relevant to this locality.

Figure 16. Karragarra Island

	Present-day	By 2040	By 2070	By 2100
KARRAGARRA ISLAND	Monitor, maintain, and prepare	Mitigate		
Enhance adaptive capacity	As per city-wide actions as applicable			
Planning	As per city-wide actions as applicable			
Modifying infrastructure	As per city-wide actions as applicable, including: Promote resilient homes program – linked to action 3.1.3			
Coastal engineering and management	Maintain existing arrangements and monitor effectiveness Prepare concept design and approvals for foreshore protection management option/s at The Esplanade east of the ferry terminal, including triggers for implementation	Maintain existing arrangements and monitor effectiveness Implement foreshore protection management option/s if triggered Feasibility study for additional structural protection works for The Esplanade – Maryanne St	Review pathway options Prepare concept design and approvals for upgrades and/or additional hazard mitigation works (if applicable), and implement (if triggered), including for The Esplanade – Maryanne St, and south side of the Island	
Other considerations	Establish indicators (with concept designs) to monitor level of acceptable service and trigger change of pathway Examples include: • Rate of shoreline recession or exceeds defined point → Planning and implementation of additional mitigation works or alternatives may commence			

Table 17. Karragarra Island adaptation pathway

Lamb Island

Lamb Island is a bay island situated off the southern Redlands Coast mainland, separated from MacLeay Island by a narrow canal (Figure 17).

Vegetation, including mangroves, spans several areas of the shoreline. Limited low-lying areas (mainly the northern parts of the island) are likely to be increasingly exposed to erosion and inundation into the future.

The present-day adaptation response for Lamb Island is to continue to monitor coastal hazard risk and begin preparations for additional hazard mitigation in the future.

The adaptation pathway includes scoping of additional shoreline protection works, reviewing the adaptation pathway over time, and considering future alternatives (Table 18). City-wide actions also apply where relevant to this locality.

Figure 17. Lamb Island

	Present-day	By 2040	By 2070	By 2100
LAMB ISLAND	Monitor, maintain, and prepare		Mitigate	
Enhance adaptive capacity	As per city-wide actions as applicable			
Planning	As per city-wide actions as applicable			
Modifying infrastructure	As per city-wide actions as applicable, including: Promote resilient homes program – linked to action 3.1.3			
Coastal engineering and management	Maintain existing arrangements and monitor effectiveness	Maintain existing arrangements and monitor effectiveness Feasibility/scoping study for additional structural protection works for critical assets/key access roads	Review pathway options Prepare concept design and approvals for upgrades and/or additional hazard mitigation works (if applicable), and implement (if triggered)	
Other considerations	Establish indicators (with concept designs) to monitor level of acceptable service and trigger change of pathway Examples include: • Rate of shoreline recession or exceeds defined point, or effectiveness of existing works is below required levels of service or beyond design life → Planning and implementation of additional mitigation works or alternatives may commence			

Table 18. Lamb Island adaptation pathway

Macleay Island

Macleay Island is one of the larger inner-bay islands situated off the southern end of the Redlands Coast mainland (Figure 18).

Vegetation, including mangroves, spans several areas of the shoreline, interspersed with limited pockets of sandy beaches. There are localised areas with additional shoreline infrastructure protection, such as seawalls.

Limited low-lying areas of the island are likely to be increasingly exposed to erosion and inundation into the future.

The present-day adaptation response for Macleay Island is to continue to monitor coastal hazard risk and begin preparations for additional hazard mitigation in the future.

The adaptation pathway includes scoping of additional shoreline protection works, reviewing the adaptation pathway over time, and considering future alternatives (Table 19). City-wide actions also apply where relevant to this locality.

Figure 18. Macleay Island

	Present-day	By 2040	By 2070	By 2100
MACLEAY ISLAND	Monitor, maintain, and prepare		Mitigate	
Enhance adaptive capacity	As per city-wide actions as applicable			
Planning	As per city-wide actions as applicable			
Modifying infrastructure	As per city-wide actions as applicable, including: Promote resilient homes program – linked to action 3.1.3		Undertake feasibility/concept design (and implementation if triggered) to raise road level at Pine Gate Place and Calm Water Crescent; maintain access to Perulpa Island	
Coastal engineering and management	Maintain existing arrangements and monitor effectiveness	Maintain existing arrangements and monitor effectiveness Develop scope for a site management plan to mitigate erosion and storm tide inundation at Sand Piper beach, with a focus on revegetation Undertake feasibility/ scoping study for additional structural protection works for critical assets/key access roads	Review pathway options Implement site management plan for Sand Piper beach (if triggered) Prepare concept design and approvals for upgrades and/or additional hazard mitigation works (if applicable), including for key access roads, and implement (if triggered)	
Other considerations	Establish indicators (with concept designs) to monitor level of acceptable service and trigger change of pathway Examples include: • Rate of shoreline recession or exceeds defined point, or effectiveness of existing works is below required levels of service or beyond design life → Planning and implementation of additional mitigation works or alternatives may commence			

Table 19. Macleay Island adaptation pathway

Russell Island

Russell Island is the largest of the inner-bay islands situated toward the southern extent of the Redland City LGA (Figure 19).

Vegetation, including mangroves, spans several areas of the shoreline. There are localised areas with additional shoreline infrastructure protection (seawalls).

Low-lying areas of the island, particularly the southern areas of the island, are likely to be increasingly exposed to erosion and inundation into the future.

The present-day adaptation response for Russell Island is to continue to monitor coastal hazard risk and begin preparations for additional hazard mitigation in the future.

The adaptation pathway includes a focus on environmental stewardship, maintaining existing shoreline protection works and preparation for new works, and reviewing the adaptation pathway over time and considering future alternatives (Table 20). City-wide actions also apply where relevant to this locality.

Figure 19. Russell Island

Jock Kennedy Park, Russell Island

	Present-day	By 2040	By 2070	By 2100
RUSSELL ISLAND	Monitor, maintain, and prepare	Mitigate		
Enhance adaptive capacity	As per city-wide actions as applicable, including: • Establish The Boulevard (south east of the island) as a focus site for action 1.1.2 - environmental enhancement stewardship • Establish The Boulevard (south east of the island) as a focus site for action 1.2.5 - enhance signage on hazards and role of mangroves and vegetation			
Planning	As per city-wide actions as applicable			
Modifying infrastructure	As per city-wide actions as applicable, including: Promote resilient homes program – linked to action 3.1.3		Undertake feasibility/concept design (and implementation if triggered) to raise roads, as required	
Coastal engineering and management	Maintain existing shoreline protection works Establish environmental enhancement trial site and monitoring program at The Boulevard (link to action 4.1.1), and develop concept design for vegetation enhancement Finalise concept design and approvals for planned seawalls at Rocky Point Park (Glendale Road) Confirm approach to providing technical support/ guidance to private owners to self-manage private seawalls	Maintain existing shoreline protection works Implement vegetation management concept design for The Boulevard Implement planned seawalls (when triggered) for Rocky Point Park Undertake concept design for coastal protection (seawalls) at Russell Island Ferry Terminal (east and west) Provide technical support/ guidance to private owners to self-manage private seawalls	Review effectiveness of environmental enhancement trials. Review pathway options Implement protection works (if triggered) for Russell Island Ferry Terminal (east and west) Prepare concept design and approvals for upgrades and/ or additional shoreline protection works – living shoreline, seawall or other if applicable, and implement (if triggered)	
Other considerations	Establish indicators (with concept designs) to monitor level of acceptable service and trigger change of pathway Examples include: • Environmental enhancement does not achieve expected level of service, rate of shoreline recession or exceeds defined point, or effectiveness of existing works is below required levels of service or beyond design life → Planning for additional mitigation works or alternatives may commence			

Table 20. Russell Island adaptation pathway

Dunwich

Dunwich is a small suburb located on the west side of North Stradbroke Island (Minjerribah), where the island's main ferry terminal is located (Figure 20).

The shoreline includes sandy beaches, vegetated areas, and open space with infrastructure services. There are several areas with existing shoreline infrastructure protection (seawalls/revetments).

Sandy sections of the coastline are likely to be increasingly prone to erosion in the future. Limited low-lying areas, particularly in the north around Bradbury's Beach, are likely to be increasingly exposed to storm tide inundation.

The present-day adaptation response for Dunwich is to continue to monitor coastal hazard risk and begin preparations for additional hazard mitigation in the future.

The adaptation pathway includes a focus on maintaining existing arrangements, monitoring effectiveness, and reviewing the adaptation pathway over time and considering future alternatives, including shoreline protection works in the long term (Table 21). City-wide actions also apply where relevant to this locality.

Figure 20. Dunwich

	Present-day	By 2040	By 2070	By 2100
DUNWICH	Monitor, maintain, and prepare		Mitigate	
Enhance adaptive capacity	As per city-wide actions as applicable			
Planning	As per city-wide actions as applicable			
Modifying infrastructure	As per city-wide actions as applicable, including: Promote resilient homes program – linked to action 3.1.3			
Coastal engineering and management	Maintain existing arrangements and monitor effectiveness	Maintain existing arrangements and monitor effectiveness	Review pathway options Prepare concept design and approvals for upgrades and/or additional hazard mitigation works (if applicable), and implement (if triggered)	
Other considerations	Establish indicators (with concept designs) to monitor level of acceptable service and trigger change of pathway Examples include: • Rate of shoreline recession or exceeds defined point, or effectiveness of existing works is below required levels of service or beyond design life → Planning and implementation of additional mitigation works or alternatives may commence			

Table 21. Dunwich adaptation pathway


Dunwich, North Stradbroke Island (Minjerribah)

Amity Point

Amity Point is a small suburb on the northwest tip of North Stradbroke Island (Minjerribah), facing the South Passage, a very dynamic channel separating Moreton Island (Mulgumpin) and North Stradbroke Island (Minjerribah) (Figure 21).

The majority of the shoreline has existing formal or informal structural protection works, including seawalls, flow-slide structures, revetments and groynes.

A Shoreline Erosion Management Plan has been recently adopted to provide a coordinated approach to mitigating ongoing erosion challenges. Limited low-lying areas may also be increasingly prone to storm tide inundation in the future.

The present-day adaptation response for Amity Point is to continue to mitigate coastal hazard risk, and begin preparations for additional hazard mitigation in the longer term.

The adaptation pathway includes a focus on Shoreline Erosion Management Plan implementation, and reviewing the adaptation pathway over time, and considering future alternatives, including infrastructure protection works in the long term (Table 22). City-wide actions also apply where relevant to this locality.

Figure 21. Amity Point

	Present-day	By 2040	By 2070	By 2100
AMITY POINT	Mitigate			
Enhance adaptive capacity	As per city-wide actions as applicable			
Planning	As per city-wide actions as applicable			
Modifying infrastructure	As per city-wide actions as applicable, including: Promote resilient homes program – linked to action 3.1.3			
Coastal engineering and management	Implement Shoreline Erosion Management Plan (SEMP) Confirm concept designs and approvals to upgrade the existing flow-slide barrier at Old Schoolhouse Park and Cabarita Park	Review and update Shoreline Erosion Management Plan Implement flow-slide barrier upgrades	Review pathway options Prepare concept design and approvals for upgrades and/ or additional hazard mitigation works (if applicable), and implement (if triggered)	
Other considerations	Establish indicators (with implementation of SEMP) to monitor level of acceptable service and trigger change of pathway Examples include: • Rate of shoreline recession or damage to existing protection structures exceeds defined point → Planning for additional structural works or alternatives may commence			

Table 22. Amity Point adaptation pathway

Point Lookout

Point Lookout, the eastern-most suburb of North Stradbroke Island (Minjerribah) and Redland City, is located on an elevated rocky outcrop facing the Pacific Ocean (Figure 22).

The shoreline includes iconic sandy beaches that are naturally nourished by the sediment transport belt, which moves sand northwards along the east coast of Australia.

Long-term coastal hazard exposure is likely to be relatively low. However, the beach may be prone to episodic erosion events with storm activity.

The present-day adaptation response for Point Lookout is to continue to monitor coastal hazard risk into the future (Table 23).

Figure 22. Point Lookout

	Present-day	By 2040	By 2070	By 2100
POINT LOOKOUT	Monitor, maintain, prepare			
Enhance adaptive capacity	As per city-wide actions, include specific actions of: • Establish at Point Lookout as a focus site for action 1.2.5 - enhance signage on coastal hazards and the role of dunes and vegetation • Establish Point Lookout surf club as a key site for action 1.3.1 - a photo monitoring station (CoastSnap to similar) to monitor foreshore, beach and dune changes over time			
Planning	As per city-wide actions			
Modifying infrastructure	As per city-wide actions			
Coastal engineering and management	**Primary action:** Dune vegetation enhancement and monitoring, including Main Beach, Cylinder Beach and Flinders Beach			

Table 23. Point Lookout adaptation pathway

7 Implementation

Redland City Council will implement the Coastal Hazard Adaptation Strategy through a range of mechanisms including:

- An adaptive management framework
- Embedding outcomes and actions from the Strategy into existing Council process and activities
- Implementing new initiatives from the Strategy.

To guide implementation, a plan has been developed that includes additional detail on:

- Timeframes for actions
- Costing for priority 5–10 year actions
- Instruments, plans and processes (existing, modified, new) required to deliver adaptation options
- Potential funding sources
- Monitoring and evaluation
- Barriers to implementation and change management actions
- Partnership opportunities with stakeholders.

The Coastal Hazard Adaptation Strategy will be reviewed every 10 years, commencing at least two years prior to the Planning Scheme Review, which is also undertaken on a 10-year timeframe. The next review of the Plan will be in 2030. The review will include consideration of:

✓ Success of implementation to date:

- Integration into Council and stakeholder plans and processes
- Delivery of on-ground activities
- Community perspectives
- Reduction in coastal hazard risk.

✓ Triggers to update the Strategy including consideration of:

- Any changes in the policy environment (e.g. sea level risk predictions, approach to defining coastal hazard areas)
- Updated technical information that may be available
- Any new development and landscape changes in the region.

Cylinder Beach, North Stradbroke Island (Minjerribah)

References

LGAQ & DEHP (2016) QCoast2100 Developing a Coastal Hazard Adaptation Strategy: Minimum Standards and Guideline for Queensland Local Governments. Local Governments Association Queensland and Department of Environment Heritage and Protection, QLD.

RCC (2019a). Redland City Council Coastal Hazard Adaptation Strategy Communication and Engagement Plan. Report by Quandamooka Yoolooburrabee Aboriginal Corporation (QYAC) for Redland City Council.

RCC (2019b). Redland City Council Coastal Hazard Adaptation Strategy Phase 2: Scoping Study. Report by QYAC for Redland City Council.

RCC (2019c). Redland City Council Coastal Hazard Adaptation Strategy Phase 3: Identify areas exposed to current and future coastal hazards. Report by QYAC and Healthy Land and Water for Redland City Council.

RCC (2019d). Redland City Council Coastal Hazard Adaptation Strategy Phase 4: Identify key assets potentially impacted by future coastal hazards. Report by QYAC and Healthy Land and Water for Redland City Council.

RCC (2019e). Redland City Council Coastal Hazard Adaptation Strategy Phase 5: Risk Assessment Redlands-Quandamooka Coast. Report by QYAC and Healthy Land and Water for Redland City Council.

RCC (2020a). Redland City Council Coastal Hazard Adaptation Strategy Phase 6: Summary Report. Report by Alluvium for Redland City Council.

RCC (2020b). Redland City Council Coastal Hazard Adaptation Strategy Phase 7: Summary Report. Report by Alluvium, Jeremy Benn Pacific (JBP) and Natural Capital Economics (NCE) for Redland City Council.

Southern Moreton Bay Islands

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15.2 OPPORTUNITIES FOR SHORT STAY FACILITIES FOR SELF-CONTAINED RECREATIONAL VEHICLES AND CARAVANS ON REDLANDS COAST

Objective Reference: **A5018968**

Authorising Officer: **Anthony Burrows, Acting General Manager Infrastructure and Operations**

Responsible Officer: **Bradley Salton, Group Manager City Assets**

Report Author: **Julian Bunting, Senior Advisor Civic & Open Space**
Frances Hudson, Service Manager Civic & Open Space

Attachments:
1. **History and Background** ⇩
2. **Industry Trends and Core Principles for Basic Camping Ground Facilities** ⇩
3. **Essential and Desirable Criteria** ⇩
4. **Basic Camping Ground Site Suitabilty Assessment** ⇩
5. **Preferred Sites Permanent and Temporary Locations** ⇩

PURPOSE

To present opportunities for short stay facilities for self-contained recreational vehicles (RVs) and caravans on Redlands Coast and to seek endorsement to undertake an economic needs assessment of non-commercial camping.

BACKGROUND

The value of short stay facilities for self-contained RVs and caravans in supporting the local economy and tourism opportunities for Redlands Coast has been acknowledged. Over the last five years Council has not only considered but trialed various enabling options.

On 5 August 2020 Council resolved to proceed with:

Investigating opportunities for Recreational Vehicle (RV) Overnight Parking in the Redlands and that a report be brought to a General Meeting of Council within three months.

The current opportunities that are continuing to be explored include:

Non-commercial camping - provision of a short stay site for self-contained RVs and caravans with minimal infrastructure.

Commercial camping - expression of interest at 61-73 MacArthur Street, Alexandra Hills for a high quality tourist park integrating an appropriate mix of accommodation types, such as RVs, camping and glamping.

Planning scheme amendment allowing self-contained camping sites on private property to be accepted development (up to a certain number).

Non-Commercial Camping

Over the past five years, Council officers have undertaken detailed investigations for a number of sites to determine their suitability for overnight parking of self-contained RVs and caravans. In the early phase of investigations a four week site test was undertaken in early 2016 at John Fredericks Reserve and Capalaba Regional Park. Attachment 1 includes a detailed history of investigations into short stay facilities for self-contained RVs and caravans.

As detailed in attachment 1, CMCA was encouraged to explore the option to use privately owned land behind Capalaba Tavern as preferred site. In summary, in September 2020 the leasing property manager of the Capalaba Tavern advised CMCA that they did not wish to proceed with a Short Stay RV facility as the site is used for other sponsored events.

Attachment 2 provides further background on industry trends such as growth in the drive tourism market, changing consumer preferences grounds and state government core principles for provision of short stay camping facilities.

Commercial camping

In July 2020, an expression of interest (EOI) campaign for the former Department of Agriculture and Fisheries (DAF) land at MacArthur Street, Alexandra Hills was released to the market with the intent of attracting opportunities for developing a commercial tourist facility providing higher levels of recreation infrastructure and attracting longer stays. Some of the potential ideas for this site EOI included options for a large, formal facility with a mix of camping, caravan/RV and cabin accommodation. The intention of this was not to compete or conflict with opportunities to accommodate short stay facilities for self-contained recreational vehicles (RVs) and caravans as explored in this report. The EOI is now closed with Council reviewing all received responses. A report is being prepared for presentation to Council in late 2020.

Planning scheme amendment

A general major planning scheme amendment is currently being drafted. This amendment package will include an item which considers allowing limited self-contained camping on private, rural properties and the potential thresholds for accepted development. Given the timeframes for a major amendment, it is unlikely that such an amendment, if supported, will take effect until late 2021 at the earliest.

ISSUES

Non-commercial camping - short stay facility for self-contained RVs and caravans

Economic needs assessment

An economic needs assessment is part of the due diligence and best practice in the Queensland Government's *Guide to Managing Caravanning, Camping and RVs 2018,* and is suggested to be undertaken in order to progress the options for a short stay facility.

There are two private commercial caravan parks operating on the mainland with limited capacity and availability to accommodate RV travelers. This includes the Mobile Home Park (Thorneside) and Greenacres Caravan Park (Mount Cotton) which are designed around permanent low-cost residency. Additionally, the Karingal Scout Camp site (Mount Cotton) and Strawberry Museum (Thornlands) have some capacity to accommodate self-contained RVs and caravans albeit a more rural and natural setting.

Based on the above, there may appear to be a lack of capacity and venues on the mainland to a growing demand for affordable short stay (three to five nights) RV facilities. Therefore, to determine the best option going forward, it is recommended that an economic needs assessment is undertaken. This assessment would focus on market needs, determine gaps in the market, impacts on commercial caravan parks/camping grounds, the appropriate operational model (seasonal or year round) and include listed preferred temporary and permanent sites.

Management model

The four week site testing period in early 2016 demonstrated the potential behavioural issues associated with no active and present management of free camping grounds. Across Queensland and Australia various models are used to accommodate short stay RVs. In more urban settings the more desired model is for the not for profit sector to manage sites through *good neighbour* policies and a camp host or on-site custodian.

An economic assessment will also identify the resources needed to manage potential sites over the short or longer term if directly managed by Council. Additionally, the cost of initial establishment will be outlined as infrastructure costs will vary from site to site and largely depend on the location and availability of services such as sewer, water and power, and whether the site includes a dump point. Based on a number of site investigations, design layouts and input from industry stakeholders' basic infrastructure could cost up to $100,000 per site.

For the economic assessment to be valuable, preferred sites for temporary and permanent short stay facilities should be analysed. Based on their locational advantages and physical characteristics (slope, cleared areas, size and shape of site) 11 public and privately owned sites were initially identified as potentially suitable for short stay facilities for self-contained RVs and caravans. Attachment 3 provides the essential and desirable criteria to determine the suitability of each site. The sites were then further divided into two categories, permanent facility and temporary facility (three to five nights). Attachment 4 outlines site assessments for permanent and temporary locations for short stay facilities of self-contained RVs and caravans. Attachment 5 outlines the preferred sites for permanent and temporary locations of short stay facilities for self-contained RV's and caravans, as these meet all of the essential criteria.

Legislative Requirements

Depending on the location proposed and type of opportunity endorsed, relevant statutory approvals may be required. These approvals may include:

City Plan - Planning Act, 2017.

Local Law 1 *Administration* 2015 and Subordinate Local Law 1.8 Operation of Accommodation Parks 2015 – *Local Government Act* 2009.

Activities (camping) requiring a permit within a State Government Road Corridor – *Transport Infrastructure Act* 1994.

Risk Management

An economic assessment and analysis of preferred sites will further reduce risks to Council by determining need, demand and model/approach to enabling short stay facilities for self-contained recreational vehicles (RVs) and caravans within suitable sites, which will provide strong opportunities for delivering economic benefits across the Redlands Coast.

Financial

Preliminary advice suggests that an economic needs assessment to determine the current gap in the market, impacts on commercial caravan parks/camping grounds and the appropriate model (seasonal or year round) would be in the order of $30,000. Establishment and ongoing management costs should be identified through the economic needs assessment.

Currently there is no operational budget approved in the financial year 2020-2021 to cover the cost of an economic assessment. A budget will be sought through the standard budget development, review and approval processes.

People

Support to continue to progress short stay RVs for Redlands Coast can be accommodated to a limited extent, however funding will be required to undertake the economic needs assessment.

Environmental

There are no known environmental implications associated with this report.

Social

There are no known social implications associated with this report.

Human Rights

There are no known human rights implications associated with this report.

Alignment with Council's Policy and Plans

- Redland City Plan 2018
- Corporate Plan 2018 - 2023
- Tourism Strategy and Action Plan 2015 - 2020

CONSULTATION

Consulted	Consultation Date	Comments/Actions
Service Manager Strategic Planning	7/10/2020	Provided advice with respect to planning scheme amendments.
Program Manager – Strategic Land (Program Lead)	8/10/2020	Provided advice with respect to EOI and potential commercial tourist facility opportunities.
Project Manager – Civic and Open Space Asset Management	8/10/2020	Advised of potential use demands and within a 3-5 year timeframe.
Service Manager Strategic Economic Development	12/10/20	Provided advice in relation to the likely cost estimate for an economic needs assessment.
Group Manager City Operations	13/10/20	Interested in proposed model and operational costs to Council. To be determined through economic assessment.

OPTIONS

Option One

That Council resolves as follows:

1. To note the contents of the report including the opportunities presented for preferred temporary and permanent sites.
2. To endorse the undertaking of an economic needs assessment for short stay, non-commercial camping of self-contained RV’s and caravans on Redlands Coast, subject to budget approval.

Option Two

That Council resolves as follows:

1. To note the contents of the report including the opportunities presented for preferred temporary and permanent sites.
2. To not proceed with an economic needs assessment for short stay, non-commercial camping of self-contained RVs and caravans on Redlands Coast.

OFFICER'S RECOMMENDATION

That Council resolves as follows:

1. To note the contents of the report including the opportunities presented for preferred temporary and permanent sites.
2. To endorse the economic needs assessment for short stay, non-commercial camping of self-contained RVs and caravans in Redlands Coast, subject to budget approval.

COUNCIL RESOLUTION 2020/348

Moved by: Cr Julie Talty
Seconded by: Cr Wendy Boglary

That Council resolves as follows:

1. **To note the contents of the report including:**
   a) **the assessment criteria used to determine suitable sites at Attachment 3 – Essential and Desirable Criteria; and**
   b) **the assessment of all identified sites at Attachment 4 – Site Suitability Assessment; and**
   c) **the preferred sites at Attachment 5 – Preferred Sites**
2. **That a report be brought back to Council with further details including the preferred operational model and indicative costs of minor infrastructure for the preferred sites.**
3. **To endorse the undertaking of an economic needs assessment for short stay, non-commercial camping of self-contained RVs and caravans in Redlands Coast within four (4) months, subject to budget approval.**
4. **To communicate the current opportunities and limitations for not-for-profit and community based organisations to provide for short stay basic camping ground options in Redlands Coast for self-contained RVs and caravans.**

CARRIED 11/0

Crs Karen Williams, Wendy Boglary, Peter Mitchell, Paul Gollè, Lance Hewlett, Mark Edwards, Julie Talty, Rowanne McKenzie, Tracey Huges, Adelia Berridge and Paul Bishop voted FOR the motion.

Attachment 1: History and Background

12 Month Trial 2015

- Late 2015 the Chief Executive Officer authorised 12 month trial of 4 sites for RV parking
    1. Capalaba Regional Park
    2. John Frederick Reserve
    3. Wellington Pt Recreation Reserve
    4. No.4 William, Street Cleveland (Boat Ramp)
- Before commencing the 12 month trial it was decided to undertake a short 4 week site test to see if the sites could accommodate large RV's and caravans.

Site testing January and February 2016

- Four week site testing at Capalaba Regional Park and John Frederick Reserve.
- A range of unacceptable behavior was reported in Capalaba Regional Park (eg. not abiding by compliance signs, parking in the incorrect location, antisocial behavior, non self-contained vehicles use, trees used to hang out washing etc).

- Wellington Point Recreation Reserve and No.4 William Street were excluded due to site constraints and conflict between user groups including:
    - Wellington Point Recreation Reserve would require fencing to control access. Perimeter fencing will reduce vehicle movement areas and car parking capacity and industry stakeholders do not support this site; and
    - No. 4 William Street has significant demand for boat trailer parking. A new short stay facility has the potential to create significant conflict between user groups.

Councillor Workshop August 2016

- The Results of the four week trial were presented to Council
- Officer recommendation:
    - 12 month trial only at John Frederick Reserve
- 12 month trial did not occur due to State Government requirement for a Land Management Plan (LMP) on a state reserve.

Councillor Workshop 21 August 2018

- Provided a status update - investigations to establish an RV park within Redland City.
- Suggested that an RV Park be managed by a professional third party operator.
- Officer recommendations:
    1. Develop a LMP for an RV Parking site on part of John Frederick Reserve;
    2. Develop LMP in consultation with surrounding community;
    3. Findings of the LMP be presented to Council.

- Investigations resulting from LMP development and consultation within industry stakeholders confirmed limitations of John Frederick Reserve in terms of constraints (flooding and vegetation) and insufficient land area to viably accommodate RV's and caravans.

Councillor Workshop 27 August 2019

- The presentation entitled "Site Investigations – overnight parking of recreation vehicle".
- Purpose to investigate a short stay RV facility on Council owned or controlled land.
- Status update of detailed investigations for sites at:
    1. John Frederick Reserve;
    2. Norm Price Park – Showgrounds;
    3. No.4 William St, Cleveland (Raby Boulevard Park/ Boat ramp).
- Detailed investigations included plan of layout (capacity), infrastructure costing, industry and stakeholder feedback.
- Officer recommendation:
    1. endorse in-principle a short stay RV facility at No.4 William St, Cleveland - short term (12-24 month).
    2. endorse a short stay RV facility at the Redland Showgrounds over the longer term subject to further investigations.

- Councillor feedback suggested that privately owned or industry managed sites may provide a better option and it was requested that industry representatives be invited to speak to Council in relation to the requirements of a short stay for self-contained RV's and caravans. Councillors suggested that potential location options could occur on a private site, Council owned land or state reserves (Council trustee).
- Due to previous commitments Caravan Clubs of Queensland were not available for a presentation until December 2019.

Councillor Workshop 3 December 2019

- The presentation entitled "Redlands City Short Term stays RV facility".
- Campervan & Motorhome Club Association (CMCA) and Caravan Clubs of Queensland (including the affiliated Explorers Caravan Club of Queensland) were invited to present to Councillors.
- CMCA and Explorers Caravan Club of Queensland were provided with four example (potential) sites that included two State reserves and two privately owned sites to help develop their presentation.
- CMCA presented the most viable and preferred site for their organisation and management model to be land behind the Capalaba Tavern (privately owned) but also gave favourable consideration to the Showgrounds – Site A.
- CMCA indicated possible investment with a long term arrangement for permanent location of up to $90,000.
- Councillors appeared interested in facilitating a private provision option for RV's short stays, due to a suitable and preferred Council site not being identified, confirmed or currently available (e.g. Showgrounds), or constrained with future plans (e.g. Raby Bay Boulevard Park).

Discussions with CMCA

- January 2020 Council officer's advised CMCA - The workshop in December 2019 is not a formal decision of Council, however it provided a broad level of support for a short stay facility on the private cleared grassed area behind the Capalaba Tavern at No. 30 Old Cleveland Road, Capalaba.
- March - April 2020 CMCA attempted to find contacts for the Capalaba Tavern.
- April 2020 Council on behalf of CMCA sought introductions with Capalaba Tavern (COVID 19 – presented challenges in terms of closure and further contact with the Tavern).

- On 28 April 2020 CMCA contacted an affiliate of the Capalaba Tavern and on 29 April 2020 an EOI for potential land use and terms were exchanged for consideration.

Attachment 2: Industry trends and core principles for basic camping ground facilities

ECONOMIC BENEFIT

The drive tourism market (Caravanning, camping and RV) is worth more than $8 billion in Australia. According to Tourism Research Australia, the RV traveller market has been the fastest growing tourism sector in last 15 years. The Queensland Department of Innovation, and Tourism Industry Development's (DITID) *Guide to Managing Caravanning, Camping and RVs 2018* indicates that:

- in 2017 647,310 Recreational Vehicles were registered in Australia (growing by 29% since 2012)
- the highest percentage (29%) being registered in Queensland
- since 2013 there has been an increase in 430,000 camping visitors to Queensland.

Data from CMCA suggests that on average, members travel 106 days per year and spend $600 per week whist travelling. The potential spending and flow-on benefits from RV travellers could support local businesses and complementary tourism operators at Redlands Coast.

Changing consumer preferences

There is a growing trend towards self-contained RVs and caravans and a preference towards affordable non-commercial camping sites. The DITID's *Guide to Managing Caravanning, Camping and RVs 2018* indicates that a high proportion of travellers seek a low-cost / affordable camping option with:

- 34% of the drive tourism market staying only in caravan parks
- 50% staying in a combination of commercial and non-commercial accommodation
- 16% staying only in non-commercial accommodation.

Consequently, there is no 'one size fits all' approach to tourism development and facilities that accommodate the RV traveller market. To meet a growing trend of self-contained RVs and caravans, changing consumer preferences, and the gradual decline of caravan parks, alternative camping options may need to be considered. Whilst there are a broad range of camping options available, not all camping typologies will suit the context of Redlands Coast or meet community expectations. In the majority of cases and in accordance with the DITID's *Guide to Managing Caravanning, Camping and RVs 2018* the first option should be to use an existing facility, where possible.

Supported camping options should meet the following core principles.

Core principles - *Guide to Managing Caravanning, Camping and RVs 2018*	
Safety	• *Manage places in a manner that does not compromise visitor safety through effective design and compliance measures* • *Maintain the safety and enjoyment of local residents*
Healthy environments	• *Protect the health and wellbeing of visitors* • *Ensure environmental values are not compromised*
Innovation	• *Seek to meet the needs of the broadest range of consumers by finding innovative solutions that support local businesses*
Quality experiences	• *Offer quality camping experiences to a broad range of markets*

Transparency	• *Make decisions about camping options in consultation with the industry and the community.*

Attachment 3 Essential and desirable criteria

To determine suitability, each site was evaluated against a range of essential and desirable criteria as tabled below. Attachment 2 documents the evaluation for sites. The criteria are based on key principles from the Queensland Government's *Camping Options Toolkit (2014)* and *Guide to Managing Caravanning, Camping and RVs (2018)*, including input from industry operators.

Essential Criteria	
Min. land size 5000m^2/ Capacity	• The site has a minimum area of 5000m^2 (permanent sites) / 2500m^2 (temporary sites) or • The shape and size of the site can accommodate a minimum of 20-40 RVs (permanent sites) / 12-15 RV's (temporary sites).
Flat to gentle slope	• The site is relatively flat with no steep embankments.
Dump point	• A dump is available to dispose of grey and black water or • for a temporary facility a communal toilet is available or • Underground sewer reticulation is available in the immediate vicinity (within 200m) to provide a dump point at minimal cost.
Tap / one powered site	• A tap is available or • Underground water mains are available in the immediate vicinity to provide a tap at minimal cost.
Fencing / security	• Fencing or bollards and gate access are available to control access or • Perimeter fencing and gate access can be provided at minimal cost.
Shopping facilities - 500m	• Local shopping facilities and food outlets are within easy walking distance (within 500m) providing meals and opportunities to replenish supplies.
Desirable Criteria	
Visible from main roads	• Visitors can identify the facility from main roads, key locations or tourist attractions.
Grassed areas / shade trees	• The site includes flat grassed areas with some shade trees. • Tree canopy should allow for a 4.0m clearance to protect RV's and caravans.
Vehicle access – lowest order road	• Vehicle access is provided from local streets.
Impact on adjoining land use	• Short stay RV facilities do not have unreasonable impacts on the amenity or operational requirements of adjoining land uses / established activities or vice versa. • Example – sporting clubs or boat ramps do not adversely impact on visitor experience through noise, pedestrian movement or other activities associated with the use. • Example – short stay RV facilities do not adversely impact on boat ramps or parks through unreasonable loss of car spaces, or space for outdoor recreation, or formal and informal sporting activities.
Proximity to tourist attractions	• The site facility is close to tourist attractions / ferry terminals providing access too regionally and internationally significant natural features like Moreton Bay and North Stradbroke Island.

Attachment 4: Basic camping ground site suitability assessment

TABLE A: PERMANENT SITES

Site	Key Issues	Site suitability	Essential Criteria						Desirable criteria					
			Min. land size 5000m² / Capacity	Flat to gentle slope	Dump point	Tap / one powered site	Fencing / gate	Shopping facilities - 500m	Visible from main roads	Grassed areas / shade trees	Vehicle access – lowest order road	Impact on adjoining land use	Proximity to local attractions	Industry support
30 Old Cleveland, Capalaba (Tavern) Lot 172/SL7497 	• Site area = 7200m² • Shape and size allows 30-40 RV's • Minor infrastructure required: perimeter fencing, gate access, power and water • Land held in private ownership • Industry operator unsuccessful in negotiating terms (third party agreement) with current landowner	✓	✓ 30-40 RV's	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
44 Smith Street Cleveland Norm Price Park (Showgrounds) Lot 1/SP236501 	• Site A = 6000m², Site B= 4600m² • Shape and size allows 25-30 RV's (each site) • Currently occupied by a sporting club • Relies on current sports club decanting to another location in the next 3-5 years • Minor infrastructure required: dump point (public toilets are available), GPO's may need to be upgraded to current standards • State Reserve (Council is trustee) requires an amendment to the current land management plan which only allows camping in association with events	✓	✓ 25-30 RV's	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wellington Point Recreation Reserve 182/SL10824 and 54/SP109487 	• Site area 450m² • Shape and size allows 6 RV's • Site is too small for a viable basic camp ground. Loss of 12 parking spaces for 6 RV's with a 3.0m fire separation between bays. • Significant conflict with boat trailer parking and water craft activities (loss of 12 spaces • Minor infrastructure required: perimeter fencing, gate access, power and water • Potential conflict with boat users through noise and loss of boat trailer parking.	✗	✗ 6 RV's	✓	✓	✓	✓	✗	✗	✓	✓	✗	✓	✗

Site	Key Issues	Site suitability	Essential Criteria						Desirable criteria					
			Min. land size 5000m² /capacity	Flat to gentle slope	Dump point	Tap / one powered site	Fencing / gate	Shopping facilities - 500m	Visible from main roads	Grassed areas / shade trees	Vehicle access – lowest order road	Impact on adjoining land use	Proximity to local attractions	Industry support
Indigscape Nursery 377-385 Redlands Bay Rd, Capalaba Lot 1/RP154965 	• Site area 1900m² • Shape and size allows 10-15 RV's • Land area outside of designated area too steep for manoeuvring of vehicles and would require significant excavation and fill • Minor infrastructure required: perimeter fencing, gate access, power and water • Land held in council ownership • Not within close proximity of shopping facilities	✗	✓ 10-15 RV's	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✗
Jack and Edna Finney Reserve Lot 119 - 131 /RP14138 	• Site area 5400m² • Shape and size allows 20 RV's • Minor infrastructure required: On site sewer (pump out), gate access, power and water • No reticulated gravity sewer main in the vicinity • Public toilet facilities available within Park (within 150m) • Land held in council ownership • Within close proximity of shopping facilities	✓	✓ 20 RV's	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

TABLE B: TEMPORARY SITES

Site	Key Issues	Site suitability	Essential Criteria						Desirable criteria					
			Min. land size 5000m²/ Capacity	Flat to gentle slope	Dump point	Tap / one powered site	Fencing / gate	Shopping facilities - 500m	Visible from main roads	Grassed areas / shade trees	Vehicle access – lowest order road	Impact on adjoining land use	Proximity to local attractions	Industry support
Redland Showgrounds adjacent to Edgar Harley Pavillion 	• Site area = 2500m² • Shape and size allows 20 RV's • Minor infrastructure required:, gate access, power and water • Land held in private ownership – existing Land Management Plan in place • The area is used for back-of-house activities for major events and the number of events would require the RV park to be closed for an extensive period of time (68 days over 8 months) • A range of community groups and sporting clubs using this section of the Showgrounds may have a negative impact on the experience toursist using the RV Park (noise). • Touch football and soccer use the adjoining sports fields (curfew till 10pm)	✗	✓ 20 RV's	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✗
William Taylor Memorial Park Lot 10/B4276 	• Site area = 1800m² • Shape and size allows 12 RV's • Majority of car park is located within a State controlled Road Reserve. DTMR approval required. • Minor infrastructure required: gate access, power and water • Public toilets available • Part state reserve and part State Controlled Road • Council trustee Reserve – requires a Land Management Plan	✓	✓ 12 RV's	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Raby Bay Boulevard Park No.4 William Street, Cleveland Lot 868/SP273267 	• Site area = 3500m² • Shape and size allows 15RV's • Minor infrastructure required: gate access, power and water • Dump point available • Redland City's premier boat ramp with plans to increase capacity and boat trailer parking area. • Significant conflict with boat trailer parking and water craft activities • Council trustee Reserve – requires a Land Management Plan	✗	✓ 15 RV's	✓	✓	✓	✓	✗	✓	✓	✓	✗	✓	✓

Site	Key Issues	Site suitability	Essential Criteria						Desirable criteria					
			Min. land size 2500m² / Capacity	Flat to gentle \slope	Dump point	Tap/one powered site	Fence / gate	Shopping facilities - 500m	Visible from main roads	Grassed areas / some shade trees	Vehicle access – lowest order road	Impact on Adjoining land use	Proximity to local attractions	Industry support
John Frederick Park 2-14 Old Cleveland Road, Capalaba Lot 83/SL5432 	• Site area = 2700m² • Shape and size allows 7 RV's • Significantly constrained by vegetation, local heritage place (cobblestone crossing), and children's playground. • Minor infrastructure required: gate access, power and water • Council trustee Reserve – requires a Land Management Plan	✗	✗ 7 RV's	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
Island St Cleveland (Part of road reserve) adjoining Cleveland Sharks Bowls Club 	• Site area = 2400m² • Shape and size allows 9 RV's • Constrained by shape and configuration. • However, additional land (cleared grass area) from adjoining bowls club (Lot 5/C6113) is required to increase capacity by an additional 3 bays • Minor infrastructure required: perimeter fencing, gate access, turn-around areas, power and water, and dump point.	✓	✓ 12 RV's	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
201 Middle St Cleveland lot 1/RP146420 	• Site area = 2450m² • Shape and size allows 10 RV's • Constrained by shape and configuration • Minor infrastructure required: perimeter fencing, gate access, power and water • Land held in private ownership • Relies on third party agreement between industry operator and current landowner	✗	✗ 10 RV's	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗

Attachment 5: Preferred sites permanent and temporary locations

Permanent - short stay facilities for self-contained RV's and caravans		
Sites	Key Issues	Site suitability
30 Old Cleveland, Capalaba (Tavern) Lot 172/SL7497 	• Site area = 7200m² • Shape and size allows 30-40 RV's • Minor infrastructure required: perimeter fencing, gate access, power and water • Land held in private ownership • Industry operator unsuccessful in negotiating terms (third party agreement) with current landowner	✓
44 Smith Street Cleveland Norm Price Park (Showgrounds) Lot 1/SP236501 	• Site A = 6000m², Site B= 4600m² • Shape and size allows 25-30 RV's (each site) • Currently occupied by a sporting club • Relies on current sports club decanting from the site in 3-5 years • Minor infrastructure required: dump point (public toilets are available), GPO's may need to be upgraded to current standards	✓
Jack and Edna Finney Reserve Lot 119 - 131 /RP14138 	• Site area 5400m² • Shape and size allows 20 RV's • Minor infrastructure required: On site sewerage solution required, gate access, power and water • No reticulated gravity sewer main in the vicinity • Public toilet facilities available within Park (150m) • Land held in council ownership • Within close proximity of shopping facilities	✓

Temporary (3-5 years) - short stay facilities for self-contained RV's and caravans		
Sites	Key Issues	Site suitability
William Taylor Memorial Park Lot 10/B4276 	• Site area = 1800m² • Shape and size allows 12 RV's • Majority of car park is located within a State controlled Road Reserve. DTMR approval required. • Minor infrastructure required: perimeter fencing/bollards, gate access, water, and power for on-site custodian • tap and public toilets available within park • Part State Reserve and part State Controlled Road • Council trustee Reserve – requires a Land Management Plan	✓
Island St Cleveland (road reserve) adjoining Cleveland Sharks Bowls Club 	• Site area = 2400m² • Shape and size allows 9 RV's • Constrained by shape and configuration • However, additional land (highlighted in green) from adjoining bowls club (Lot 5/C6113) if secured will increase capacity by an additional 3 bays • Minor infrastructure required: gate access, turn-around area, water, dump point, concrete pad and power for on-site custodian	✓
Jack and Edna Finney Reserve Lot 119 - 131 /RP14138 	• Site area 5400m² • Shape and size allows 20 RV's • Minor infrastructure required: perimeter fencing/bollards, gate access, water, concrete pad and power for on-site custodian • No reticulated gravity sewer main in the vicinity • Public toilet facilities available within Park (150m) • Land held in council ownership • Within close proximity of shopping facilities	✓

16 NOTICES OF INTENTION TO REPEAL OR AMEND A RESOLUTION

Nil

17 NOTICES OF MOTION

Nil

18 URGENT BUSINESS WITHOUT NOTICE

Nil

19 CONFIDENTIAL ITEMS

MOTION TO MOVE INTO CLOSED SESSION AT 12.19pm

COUNCIL RESOLUTION 2020/349

Moved by: **Cr Julie Talty**
Seconded by: **Cr Tracey Huges**

That Council considers the confidential report(s) listed below in a meeting closed to the public in accordance with Section 254(J) of the *Local Government Regulation 2012*:

19.1 Redland Investment Corporation Financial Report for Period Ending 30 September 2020

This matter is considered to be confidential under Section 254J(3)(g) of the *Local Government Regulation 2012*, and the Council is satisfied that discussion of this matter in an open meeting would, on balance, be contrary to the public interest as it deals with negotiations relating to a commercial matter involving the local government for which a public discussion would be likely to prejudice the interests of the local government.

Overview

To present Redland Investment Corporation's (RIC) management accounts to Redland City Council (Council) as required by the Service Level Agreement between RIC and Council.

19.2 Paige Pty Ltd v Redland City Council (Planning and Environment Court Appeal) 2893/2020

This matter is considered to be confidential under Section 254J(3)(e) of the *Local Government Regulation 2012*, and the Council is satisfied that discussion of this matter in an open meeting would, on balance, be contrary to the public interest as it deals with legal advice obtained by the local government or legal proceedings involving the local government including, for example, legal proceedings that may be taken by or against the local government.

Overview

To provide Council with an update on the Paige Pty Ltd (Paige) v Redland City Council (Council) (Planning and Environment Court Appeal 2893/2020) which is a deemed refusal appeal. Council (the respondent) is required to confirm its position on the development application in the Planning and Environment Court (P & E Court) by 20 November 2020. It is referred to Council for determination.

19.3 Acquisition of Land - Birkdale

This matter is considered to be confidential under Section 254J(3)(g) of the *Local Government Regulation 2012*, and the Council is satisfied that discussion of this matter in an open meeting would, on balance, be contrary to the public interest as it deals with negotiations relating to a commercial matter involving the local government for which a public discussion would be likely to prejudice the interests of the local government.

Overview

For Council to consider reconfirming its interest in acquiring a parcel of land in Birkdale, nominate an acceptable purchase price range and allocate funds to enable the purchase.

19.4 Expressions of Interest - Macleay Island Industrial Land

This matter is considered to be confidential under Section 254J(3)(g) of the *Local Government Regulation 2012*, and the Council is satisfied that discussion of this matter in an open meeting would, on balance, be contrary to the public interest as it deals with negotiations relating to a commercial matter involving the local government for which a public discussion would be likely to prejudice the interests of the local government.

Overview

To provide Council with the outcomes of the Macleay Island Industrial land Expressions of Interest campaign and to seek a resolution to proceed to inviting tenders from suitable applicants for the development of the land.

19.5 Disposal of Surplus Land

This matter is considered to be confidential under Section 254J(3)(g) of the *Local Government Regulation 2012,* and the Council is satisfied that discussion of this matter in an open meeting would, on balance, be contrary to the public interest as it deals with negotiations relating to a commercial matter involving the local government for which a public discussion would be likely to prejudice the interests of the local government.

Overview

To resolve to dispose of surplus Council-owned freehold land in Cleveland, via public auction or tender.

CARRIED 10/1

Crs Karen Williams, Wendy Boglary, Peter Mitchell, Paul Gollè, Mark Edwards, Julie Talty, Rowanne McKenzie, Tracey Huges, Adelia Berridge and Paul Bishop voted FOR the motion.

Cr Lance Hewlett voted AGAINST the motion.

MOTION TO MOVE INTO OPEN SESSION AT 12.42pm

COUNCIL RESOLUTION 2020/350

Moved by: **Cr Rowanne McKenzie**
Seconded by: **Cr Tracey Huges**

That Council moves out of Closed Council into Open Council.

CARRIED 11/0

Crs Karen Williams, Wendy Boglary, Peter Mitchell, Paul Gollè, Lance Hewlett, Mark Edwards, Julie Talty, Rowanne McKenzie, Tracey Huges, Adelia Berridge and Paul Bishop voted FOR the motion.

19.1 REDLAND INVESTMENT CORPORATION FINANCIAL REPORT FOR PERIOD ENDING 30 SEPTEMBER 2020

OFFICER'S RECOMMENDATION/COUNCIL RESOLUTION 2020/351

Moved by: **Cr Peter Mitchell**
Seconded by: **Cr Rowanne McKenzie**

That Council resolves as follows:

1. **To note the financial report for the period ending 30 September 2020.**
2. **To maintain the attachment to the report as confidential including maintaining the confidentiality of legally privileged, private and commercial in confidence information. The annual certified financial statements are published by Redland Investment Corporation in accordance with section 213B of *Local Government Regulation 2012.***

CARRIED 11/0

Crs Karen Williams, Wendy Boglary, Peter Mitchell, Paul Gollè, Lance Hewlett, Mark Edwards, Julie Talty, Rowanne McKenzie, Tracey Huges, Adelia Berridge and Paul Bishop voted FOR the motion.

Mayor Karen Williams declared a Declarable Conflict of Interest in the following Item, stating that although the applicant is Paige, the neighbouring land owner is Sutgold as a co-respondent. Mayor Williams also stated that Sutgold were subject to a previous unsubstantiated complaint about her for failing to declare a Conflict of Interest, due to them having purchased her late mother's property.

Mayor Williams considered her position and was firmly of the opinion that she could participate in the discussion and vote on the matter in the public interest.

A vote was taken, and Council was of the opinion that Mayor Williams had no greater interest in the matter than that of other people in the local government area (refer Item 6.2 for details).

Mayor Williams remained in the room and voted FOR the motion.

19.2 PAIGE PTY LTD V REDLAND CITY COUNCIL (PLANNING AND ENVIRONMENT COURT APPEAL) 2893/2020

OFFICER'S RECOMMENDATION/COUNCIL RESOLUTION 2020/352

Moved by: **Cr Tracey Huges**
Seconded by: **Cr Paul Bishop**

That Council resolves as follows:

1. **To oppose the development application and the request to re-classify the koala habitat designation on the site, for the reasons generally in accordance with those identified in Attachment 2.**
2. **To authorise the Chief Executive Officer to finalise the reasons for refusal after consultation with the relevant experts and Counsel advice.**
3. **To instruct its solicitors to notify the parties that it opposes the development application, for the reasons generally in accordance with those identified in Attachment 2.**
4. **That Council officers and solicitors engage experts and Counsel to assist with the appeal with a view to narrowing the issues and resolve the appeal using delegated authority where appropriate.**
5. **That this report and attachments remain confidential until the conclusion of the appeal, subject to maintaining the confidentiality of legally privileged and commercial in confidence information.**

CARRIED 9/2

Crs Karen Williams, Wendy Boglary, Peter Mitchell, Paul Gollè, Mark Edwards, Rowanne McKenzie, Tracey Huges, Adelia Berridge and Paul Bishop voted FOR the motion.

Crs Lance Hewlett and Julie Talty voted AGAINST the motion.

19.3 ACQUISITION OF LAND - BIRKDALE

COUNCIL RESOLUTION 2020/353

Moved by: **Cr Tracey Huges**
Seconded by: **Cr Paul Bishop**

That Council resolves as follows:

1. **To reconfirm its interest to acquire the land through an off-market purchase.**
2. **To negotiate the purchase of the Land as a strategic land acquisition at fair market value consistent with the current market valuation report.**
3. **To authorise the purchase of the property at fair market value and fund ongoing maintenance costs during the 2020/21 and 2021/22 financial years, offset by the sale of surplus land from Council's existing land assets.**
4. **To delegate authority to the Chief Executive Officer under Section 257(1)(b) of the *Local Government Act 2009*, to negotiate, make, vary and discharge all documents relevant to the acquisition of the land at fair market value.**
5. **To maintain the report and attachments as confidential in accordance with any legal and statutory obligation, subject to maintaining confidentiality of legally privileged, private and commercial in confidence information until such time as the acquisition is finalised.**

CARRIED 10/1

Crs Karen Williams, Wendy Boglary, Peter Mitchell, Paul Gollè, Mark Edwards, Julie Talty, Rowanne McKenzie, Tracey Huges, Adelia Berridge and Paul Bishop voted FOR the motion.

Cr Lance Hewlett voted AGAINST the motion.

Cr Mark Edwards declared a Prescribed Conflict of Interest in the following Item, stating that he owns industrial property on Southern Moreton Bay Islands.

Cr Edwards left the meeting at 12.37pm (before discussion commenced on the item – during closed session) and returned at 12.41pm (after the item was discussed - during closed session).

Cr Edwards left the meeting at 12.45pm.

19.4 EXPRESSIONS OF INTEREST - MACLEAY ISLAND INDUSTRIAL LAND

OFFICER'S RECOMMENDATION/COUNCIL RESOLUTION 2020/354

Moved by: **Cr Julie Talty**
Seconded by: **Cr Peter Mitchell**

That Council resolves as follows:

1. **To instruct officers to invite tenders from the applicants shortlisted through the Expressions of Interest process, including the allocation of funds to assist with investigations required to draft tender documents.**
2. **To authorise the Group Manager, Environment and Regulation to evaluate submissions and, if appropriate, award a tender for development of the land in accordance with tender documents.**
3. **If a tender is awarded, authorise the Chief Executive Officer to negotiate, make, vary and discharge a contract, including signing all relevant documents to dispose of the subject land by lease and/or sale pursuant to the tender documents.**
4. **That this report and attachments remain confidential to ensure proposed commercial arrangements and details pertaining to individuals are kept private, subject to maintaining the confidentiality of legally privileged and commercial in confidence information.**

CARRIED 10/0

Crs Karen Williams, Wendy Boglary, Peter Mitchell, Paul Gollè, Lance Hewlett, Julie Talty, Rowanne McKenzie, Tracey Huges, Adelia Berridge and Paul Bishop voted FOR the motion.

Cr Mark Edwards was not present when the motion was put.

19.5 DISPOSAL OF SURPLUS LAND

OFFICER'S RECOMMENDATION/COUNCIL RESOLUTION 2020/355

Moved by: **Cr Peter Mitchell**
Seconded by: **Cr Julie Talty**

That Council resolves as follows:

1. **To dispose of the valuable non-current land asset by tender or auction, as per section 227 of the *Local Government Regulation 2012.***
2. **To authorise the Chief Executive Officer to negotiate, make, vary and discharge any resultant contracts and related documentation to dispose of the land.**
3. **To hold any revenue from sale of the land for future strategic land acquisitions.**
4. **To maintain the report and attachments as confidential in accordance with any legal and statutory obligation, subject to maintaining confidentiality of legally privileged, private and commercial in confidence information until such time as the disposal is finalised.**

CARRIED 9/1

Crs Karen Williams, Wendy Boglary, Peter Mitchell, Paul Gollè, Julie Talty, Rowanne McKenzie, Tracey Huges, Adelia Berridge and Paul Bishop voted FOR the motion.

Cr Lance Hewlett voted AGAINST the motion.

Cr Mark Edwards was not present when the motion was put.

20 MEETING CLOSURE

The Meeting closed at 12.48pm.

The minutes of this meeting were confirmed at the General Meeting held on 2 December 2020.

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CHAIRPERSON