Redland
CITY COUNCIL

AGENDA

GENERAL MEETING

Wednesday, 22 August 2018
commencing at 9.30am

The Council Chambers
91 - 93 Bloomfield Street
CLEVELAND QLD

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1 DECLARATION OF OPENING

On establishing there is a quorum, the Mayor will declare the meeting open.

Recognition of the Traditional Owners

Council acknowledges the Quandamooka people who are the traditional custodians of the land on which we meet. Council also pays respect to their elders, past and present, and extend that respect to other indigenous Australians who are present.

2 RECORD OF ATTENDANCE AND LEAVE OF ABSENCE

Motion is required to approve leave of absence for any Councillor absent from today's meeting.

3 DEVOTIONAL SEGMENT

Member of the Ministers' Fellowship will lead Council in a brief devotional segment.

4 DECLARATION OF MATERIAL PERSONAL INTEREST OR CONFLICT OF INTEREST ON ANY ITEMS OF BUSINESS

Councillors are reminded of their responsibilities in relation to a councillor's material personal interest and conflict of interest at a meeting (for full details see Division 5A of the *Local Government Act 2009*).

In summary:

If a councillor has a material personal interest, in a matter before the meeting:

Under s.175C *Local Government Act 2009, the councillor must inform the meeting of the councillor's material personal interest in the matter, including the following particulars:*

- *The name of the person or other entity who stands to gain benefit or suffer a loss from the outcome of the consideration of the matter at the meeting;*
- *How the person or other entity stands to gain the benefit or suffer the loss;*
- *If the person or other entity who stands to gain the benefit or suffer the loss is not the councillor, the nature of the councillor's relationship to the person or entity.*

If the councillor has a material personal interest they must leave the meeting, including any area set aside for the public while the matter is discussed and voted on, unless the councillor has approval from the Minister to be present while the matter is discussed and voted on pursuant to section 175F.

Record of material personal interest

Under s.175J of the Local Government Act 2009, if a councillor has a material personal interest under section 175C of the Local Government Act 2009, the following information must ***be recorded in the minutes of the meeting, and published on the local government's website—***

(a) the name of the councillor who has the material personal interest in the matter;

(b) the material personal interest including the particulars mentioned in section 175C(2)(a) as described by the councillor;

(c) whether the councillor participated in the meeting, or was present during the meeting, under an approval given by the Minister under section 175F.

If a councillor has a conflict of interest (a real conflict of interest), or could reasonably be taken to have a conflict of interest (a perceived conflict of interest) in a matter before the meeting:

The councillor must, under s.175E of the Local Government Act 2009, inform the meeting about the councillor's personal interests in the matter, including the following particulars:

- *The nature of the interest;*
- *If the personal interest arises because of the councillor's relationship with, receipt of a gift from, another person-*
  - *The name of the other person;*
  - *The nature of the relationship or the value and date of the receipt of gift; and*
  - *The nature of the other person's interest in the matter.*

If the other councillors in the meeting are informed about a councillor's personal interests in a matter and the councillor has not voluntarily left the meeting while the matter is discussed and voted on, the other councillors must decide:

- *Whether there is a real or perceived conflict; and*
- *If the councillors decide that there is a real or perceived conflict, whether the councillor-*
  - *Must leave the meeting including any area set aside for the public, while the matter is voted on and discussed; or*
  - *May participate in the meeting in relation to the matter, including voting on the matter.*

Record of conflict of interest

Under s.175J of the *Local Government Act 2009*, if a councillor has a conflict of interest under section 175E, *the following information must be* ***recorded in the minutes of the meeting, and published on the local government's website—***

(a) *the name of the councillor who has a real conflict of interest or perceived conflict of interest in the matter;*

(b) the councillor's personal interests in the matter, including the particulars mentioned in section 175E(2) as described by the councillor;

(c) the decisions made by the other councillors in relation to the existence and nature of the conflict and whether the councillor was permitted to participate in the meeting in relation to the matter, and the reasons for the decisions;

(d) whether the councillor participated in the meeting, or was present during the meeting, under an approval under section 175F;

(e) if the councillor voted on the matter—how the councillor voted on the matter;

(f) how the majority of councillors who were entitled to vote at the meeting voted on the matter.

Duty to report another councillor's material personal interest or conflict of interest

Section 175G of the *Local Government Act 2009* imposes an obligation on councillors to report undisclosed material personal interests and conflicts of interest at a meeting relating to other councillors.

If a councillor at a meeting reasonably believes, or reasonably suspects:

- *That another councillor at a meeting has a material personal interest or a real or perceived conflict in a matter; and*
- *The other councillor has not informed the meeting about the interest under section 175C(2) or 175E(2);*

The councillor who has the belief or suspicion, must as soon as practicable, inform the person who is presiding at the meeting about the facts and circumstances that form the basis of the belief or suspicion.

Note: *Section 175H makes it an offence for a person to prejudice, intimidate or harass a councillor or another person take action that is likely to be detrimental to a councillor because a councillor has complied with their disclosure obligation under s.175G.*

5 RECOGNITION OF ACHIEVEMENT

Mayor to present any recognition of achievement items.

6 RECEIPT AND CONFIRMATION OF MINUTES

General Meeting - 8 August 2018

7 MATTERS OUTSTANDING FROM PREVIOUS COUNCIL MEETING MINUTES

7.1 REQUEST FOR REPORT – PETITION REQUESTING THAT A COMMUNITY REFERENCE GROUP BE FORMED TO ASSIST COUNCIL TO PLAN FOR FUTURE USE OF COMMONWEALTH LAND AT BIRKDALE

At the General Meeting of 6 June 2018 (Item 8.2 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

This matter is listed as Item 13.3 in this agenda.

7.2 KOALA CONSERVATION ACTION PLAN 2016-2021 DELIVER PROGRAM 2018-19 FINANCIAL YEAR

At the General Meeting of 25 July 2018 (Item 13.4 refers) Council resolved as follows:

That the item lie on the table.

The report will be removed from the table at a future meeting of Council.

8 PUBLIC PARTICIPATION

In accordance with s.31 of POL-3127 Council Meeting Standing Orders:

1. In each meeting (other than special meetings), a period of 15 minutes may be made available by resolution to permit members of the public to address the local government on matters of public interest relating to the local government. This period may be extended by resolution.
2. Priority will be given to members of the public who make written application to the CEO no later than 4.30pm two days before the meeting. A request may also be made to the chairperson, when invited to do so, at the commencement of the public participation period of the meeting.

3. The time allocated to each speaker shall be a maximum of five minutes. The chairperson, at his/her discretion, has authority to withdraw the approval to address Council before the time period has elapsed.
4. The chairperson will consider each application on its merits and may consider any relevant matter in his/her decision to allow or disallow a person to address the local government, e.g.
    a) Whether the matter is of public interest;
    b) The number of people who wish to address the meeting about the same subject
    c) The number of times that a person, or anyone else, has addressed the local government previously about the matter;
    d) The person's behaviour at that or a previous meeting' and
    e) If the person has made a written application to address the meeting.
5. Any person invited to address the meeting must:
    a) State their name and suburb, or organisation they represent and the subject they wish to speak about;
    b) Stand (unless unable to do so);
    c) Act and speak with decorum;
    d) Be respectful and courteous; and
    e) Make no comments directed at any individual Council employee, Councillor or member of the public, ensuring that all comments relate to Council as a whole.

9 PETITIONS AND PRESENTATIONS

Councillors may present petitions or make presentations under this section.

10 MOTION TO ALTER THE ORDER OF BUSINESS

The order of business may be altered for a particular meeting where the Councillors at that meeting pass a motion to that effect. Any motion to alter the order of business may be moved without notice.

11 REPORTS FROM THE OFFICE OF THE CEO

Nil

12 REPORTS FROM ORGANISATIONAL SERVICES

12.1 JULY 2018 MONTHLY FINANCIAL REPORT

Objective Reference:

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. July 2018 Monthly Financial Report**

PURPOSE

The purpose of this report is to note the year to date financial results as at 31 July 2018.

BACKGROUND

Council adopts an annual budget and then reports on performance against the budget on a monthly basis. This is not only a legal 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.

From July 2018, the monthly financial report is presented in a slightly different format to previous months. This is in response to key information requests from stakeholders and to highlight financial information that will commence action to improve Council's financial position.

ISSUES

Opening balances for 2018-19 financial year

The opening balances for the current financial year are still to be finalised and audited. As such, the financial position for the month of July may adjust over the coming months until Council receives Queensland Audit Office certification in October 2018.

STRATEGIC IMPLICATIONS

Council has either achieved or favourably exceeded the following key financial stability and sustainability ratios as at the end of July 2018. As this is only the first month of the year, trends will start to emerge as the first quarter progresses.

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

The following ratios did not meet the target at the end of July 2018:

- Asset sustainability ratio
- Level of dependence on general rate revenue
- Ability to repay our debt – debt servicing ratio

- Operating performance

The asset sustainability ratio did not meet the target at the end of July 2018 and continues to be a stretch target for Council with renewal spend of $302K and depreciation expense of $4.60M 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 increase the asset base and therefore increases depreciation expense, resulting in a lower asset sustainability ratio. The upward revaluation of infrastructure assets increases the asset base correspondingly increasing the depreciation expense that results in a lower ratio.

Council's Capital Works Prioritisation Policy (POL-3131) 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 first quarter rates run for the 2018-19 financial year occurred in July 2018, resulting in an increase in Council's level of dependence on general rate revenue to 60.15% which is outside the target range of less than 40%. As the financial year progresses, receipt of grant revenue is expected to reduce this ratio to standard levels.

The percentage of operating income used to meet Council's current debt instalments amounted to 21.28% does not meet the target of less than or equal to 15%. The increase in this ratio is due to the debt service payment for Council's long term borrowings during July. It is expected this ratio will decrease in coming months with an increase of operating income.

The operating performance ratio is below target for the month of July but is expected to improve with the collection of rates in August.

Legislative Requirements

The July 2018 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 July 2018 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 July 2018.

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.

Alignment with Council's Policy and Plans

This report has a relationship with the following items of the 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

Council departmental officers, Financial Services Group officers and the Executive Leadership Team are consulted on financial results and outcomes throughout the period.

OPTIONS

Option One

That Council resolves to note the financial position, results and ratios for July 2018 as presented in the attached Monthly Financial Report.

Option Two

That Council requests additional information.

OFFICER'S RECOMMENDATION

That Council resolves to note the financial position, results and ratios for July 2018 as presented in the attached Monthly Financial Report.

Monthly Financial Report

July 2018









MAKE A DIFFERENCE MAKE IT COUNT

Redland CITY COUNCIL

Redland CITY COUNCIL

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Redland CITY COUNCIL

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 July 2018. The year to date annual budget referred to in this report reflects the 2018/2019 annual budget as adopted by Council on 25 June 2018.

The opening balances for the current year are still to be finalised and audited. As such, the financial position for the month of July may adjust over the coming months until Council receives Queensland Audit Office (QAO) certification in October 2018.

Key Financial Highlights and Overview

Key Financial Results ($000)	Annual Original Budget	YTD Budget	YTD Actual	YTD Variance	YTD Variance %	Status Favourable ✓ Unfavourable ✗
Operating Surplus / (Deficit)	(2,351)	17,267	**16,821**	(446)	-3%	✗
Recurrent Revenue	279,136	37,931	**36,853**	(1,078)	-3%	✗
Recurrent Expenditure	281,487	20,664	**20,032**	(632)	-3%	✓
Capital Works Expenditure	66,881	3,259	**2,020**	(1,239)	-38%	✓
Closing Cash & Cash Equivalents	167,263	118,328	**125,558**	7,230	6%	✓

Council reported an operating surplus for the month of $16.82M. The first quarter rate notices were issued in July 2018. Bulk water consumption is lower than expected, resulting in lower than expected revenue. The favourable variance in bulk water purchase costs attributable to lower than anticipated bulk water purchases costs (linked to bulk water consumption being lower than expected) contributed to the favourable variance in recurrent expenditure.

As this is only the first month of the year, trends will start to emerge as the first quarter progresses.

During the month, debt repayment of $7.84M, being $5.03M principal and $2.81M interest has been made.

Capital grants, subsidies and contributions are above budget due to recognition of grant income.

Council's financial position is based on unaudited opening balances which are subject to change until Queensland Audit Office certification is obtained.

Council's capital works expenditure is below budget by $1.24M due to timing of works for a number of infrastructure and organisational services projects which are delayed or are still in the early stages of being progressed. Capital works identified that were not finalised during 2017/2018 have been carried forward to 2018/2019. The carryover budget review is expected to be finalised in August 2018.

Constrained cash reserves represent 77% of the cash balance.

2. KEY PERFORMANCE INDICATORS

Key Performance Indicators

Financial Stability Ratios and Measures of Sustainability	Status Achieved ✓ Not achieved ✗	Annual Original Budget	YTD July 2018	Target
Operating Surplus Ratio (%)	✓	-0.84%	**45.64%**	Between 0% and 10% (on average over the long-term)
Asset Sustainability Ratio (%)	✗	47.12%	**6.58%**	Greater than 90% (on average over the long-term)
Net Financial Liabilities (%)*	✓	-32.82%	**-304.20%**	Less than 60% (on average over the long-term)
Level of Dependence on General Rate Revenue (%)	✗	34.93%	**60.15%**	Less than 40%
Ability to Pay Our Bills - Current Ratio	✓	3.08	**3.53**	Between 1.1 & 4.1
Ability to Repay Our Debt - Debt Servicing Ratio (%)	✗	2.81%	**21.28%**	Less than or equal to 15%
Cash Balance $M	✓	$167.263M	**$125.558M**	Greater than or equal to $50M
Cash Balances - Cash Capacity in Months	✓	9.27	**4.25**	Greater than 3 months
Longer Term Financial Stability - Debt to Asset Ratio (%)	✓	1.32%	**1.18%**	Less than or equal to 10%
Operating Performance (%)	✗	22.12%	**-33.98%**	Greater than or equal to 10%
Interest Coverage Ratio (%)**	✓	-0.67%	**-0.41%**	Less than 5%

* 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)

Redland CITY COUNCIL

3. STATEMENT OF COMPREHENSIVE INCOME

STATEMENT OF COMPREHENSIVE INCOME
For the period ending 31 July 2018

	Annual	YTD	YTD	YTD
	Original Budget $000	Budget $000	**Actual $000**	Variance $000
Recurrent revenue				
Rates charges	100,486	23,236	**22,864**	(372)
Levies and utility charges	146,618	13,701	**12,913**	(788)
Less: Pensioner remissions and rebates	(3,493)	(824)	**(741)**	83
Fees	13,673	1,038	**842**	(196)
Rental income	912	42	**116**	74
Interest received	4,289	332	**358**	26
Dividend received	1,000	-	**-**	-
Sales revenue	3,735	332	**387**	55
Other income	694	19	**12**	(7)
Grants, subsidies and contributions	11,223	55	**102**	47
Total recurrent revenue	279,136	37,931	**36,853**	(1,078)
Recurrent expenses				
Employee benefits	86,248	7,025	**7,028**	3
Materials and services	129,100	8,161	**7,794**	(367)
Finance costs	2,840	229	**195**	(34)
Depreciation and amortisation	63,505	5,292	**5,023**	(269)
Other expenditure	507	20	**42**	22
Net internal costs	(713)	(63)	**(50)**	13
Total recurrent expenses	281,487	20,664	**20,032**	(632)
OPERATING SURPLUS / (DEFICIT)	(2,351)	17,267	**16,821**	(446)
Capital revenue				
Grants, subsidies and contributions	32,501	-	**410**	410
Non-cash contributions	6,868	-	**-**	-
Total capital revenue	39,369	-	**410**	410
Capital expenses				
(Gain) / loss on disposal of non-current assets	289	14	**(18)**	(32)
Total capital expenses	289	14	**(18)**	(32)
TOTAL INCOME	318,505	37,931	**37,263**	(668)
TOTAL EXPENSES	281,776	20,678	**20,014**	(664)
NET RESULT	36,729	17,253	**17,249**	(4)
Other comprehensive income / (loss)				
Items that will not be reclassified to a net result				
Revaluation of property, plant and equipment	-	-	**-**	-
TOTAL COMPREHENSIVE INCOME	36,729	17,253	**17,249**	(4)

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3. STATEMENT OF COMPREHENSIVE INCOME - CONTINUED

LEVIES AND UTILITY CHARGES ANALYSIS
For the period ending 31 July 2018

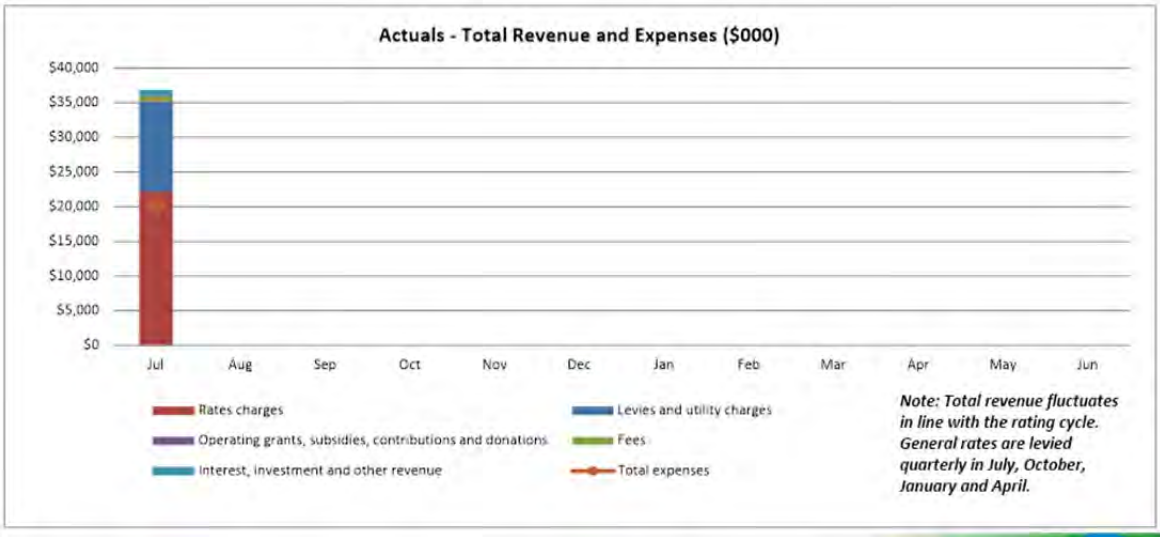
	Annual Original Budget $000	YTD Budget $000	YTD **Actual $000**	YTD Variance $000
Levies and utility charges				
Refuse collection rate charge	24,307	2,026	**1,985**	(41)
Special charges	723	100	**302**	202
SES separate charge	478	120	**120**	-
Environment separate charge	8,180	2,045	**2,031**	(14)
Separate charge landfill remediation	3,106	259	**257**	(2)
Wastewater charges	44,951	3,746	**3,660**	(86)
Water access charges	18,665	1,555	**1,538**	(17)
Water consumption charges	46,207	3,850	**3,020**	(830)
Total levies and utility charges	**146,618**	**13,701**	**12,913**	**(788)**

MATERIALS AND SERVICES ANALYSIS
For the period ending 31 July 2018

	Annual Original Budget $000	YTD Budget $000	YTD **Actual $000**	YTD Variance $000
Materials and services				
Contractors	33,755	1,353	**1,656**	303
Consultants	4,500	130	**39**	(91)
Other Council outsourcing costs*	16,902	1,290	**1,194**	(96)
Purchase of materials	48,229	3,604	**3,119**	(485)
Office administration costs	8,649	549	**623**	74
Electricity charges	5,786	477	**468**	(9)
Plant operations	4,190	284	**230**	(54)
Information technology resources	2,820	214	**186**	(28)
General insurance	1,423	117	**170**	53
Community assistance**	1,583	32	**25**	(7)
Other material and service expenses	1,263	111	**84**	(27)
Total materials and services	**129,100**	**8,161**	**7,794**	**(367)**

** 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 & awards, donations and sponsorships.*



Redland CITY COUNCIL

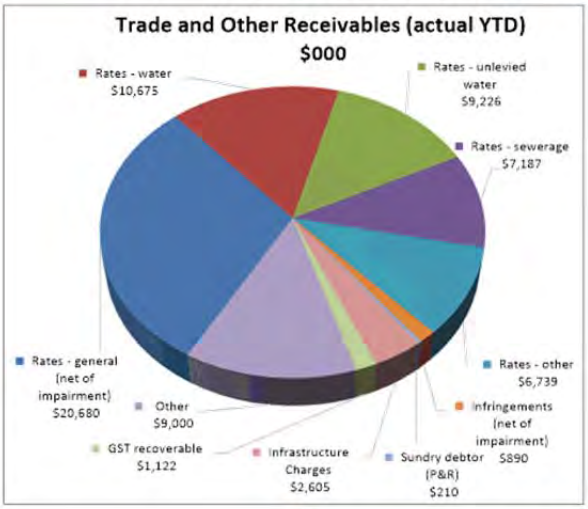
4. STATEMENT OF FINANCIAL POSITION

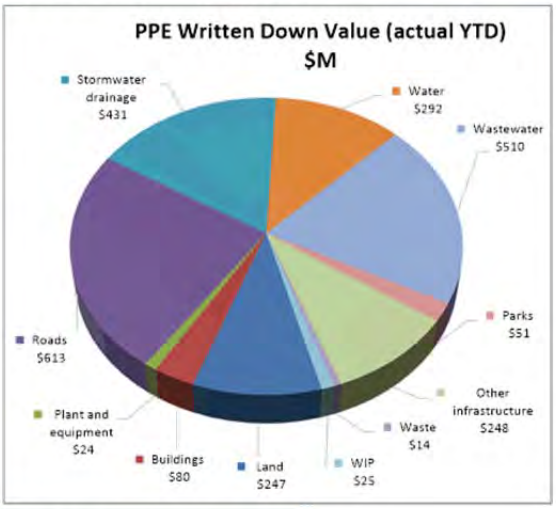
STATEMENT OF FINANCIAL POSITION
As at 31 July 2018

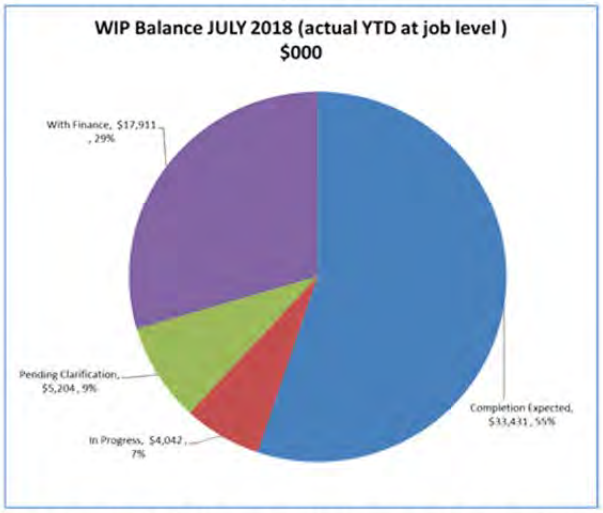
	Annual	YTD	YTD
	Original Budget $000	Budget $000	**Actual $000**
CURRENT ASSETS			
Cash and cash equivalents	167,263	118,328	**125,558**
Trade and other receivables	27,273	77,393	**68,334**
Inventories	556	1,108	**1,068**
Non-current assets held for sale	262	11,113	**11,113**
Other current assets	2,073	2,007	**3,122**
Total current assets	**197,428**	**209,949**	**209,195**
NON-CURRENT ASSETS			
Investment property	1,091	1,091	**1,091**
Property, plant and equipment	2,608,476	2,535,866	**2,534,889**
Intangible assets	826	1,906	**1,927**
Other financial assets	73	73	**73**
Investment in other entities	14,712	14,791	**14,791**
Total non-current assets	**2,625,178**	**2,553,727**	**2,552,771**
TOTAL ASSETS	**2,822,606**	**2,763,676**	**2,761,966**
CURRENT LIABILITIES			
Trade and other payables	40,840	21,066	**19,505**
Borrowings - current	7,713	7,728	**7,728**
Provisions - current	13,742	13,616	**13,206**
Other current liabilities	1,747	18,670	**18,776**
Total current liabilities	**64,041**	**61,080**	**59,215**
NON-CURRENT LIABILITIES			
Borrowings - non current	29,651	24,809	**24,814**
Provisions - non current	12,115	12,905	**13,060**
Total non-current liabilities	**41,766**	**37,714**	**37,874**
TOTAL LIABILITIES	**105,807**	**98,794**	**97,089**
NET COMMUNITY ASSETS	**2,716,799**	**2,664,882**	**2,664,877**
COMMUNITY EQUITY			
Asset revaluation surplus	1,070,838	1,002,268	**1,002,268**
Retained surplus	1,517,043	1,567,511	**1,566,296**
Constrained cash reserves	128,918	95,103	**96,313**
TOTAL COMMUNITY EQUITY	**2,716,799**	**2,664,882**	**2,664,877**

Redland CITY COUNCIL

4. STATEMENT OF FINANCIAL POSITION - CONTINUED







PROPERTY, PLANT AND EQUIPMENT (PPE) MOVEMENT*
For the period ending 31 July 2018

	Annual Original Budget $000	YTD Budget $000	YTD Actual Balance $000
PPE movement			
Opening balance (includes WIP from previous years)	2,598,959	2,537,833	**2,537,833**
Acquisitions and WIP in year movement	73,748	3,263	**2,004**
Depreciation in year	(62,532)	(5,211)	**(4,948)**
Disposals	(1,699)	(14)	**-**
Other adjustments**	-	-	**-**
Closing balance	**2,608,476**	**2,535,871**	**2,534,889**

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

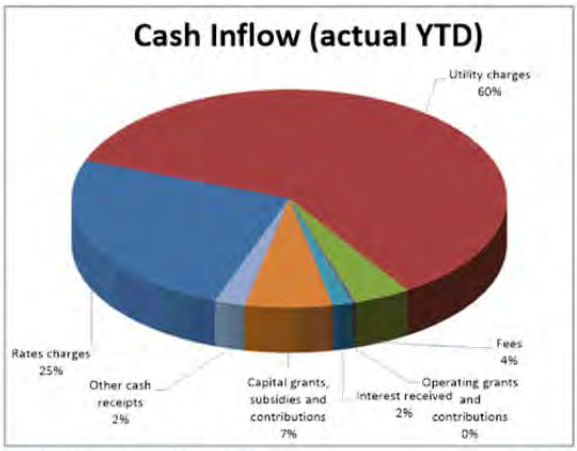
*** Other adjustments include transfers between asset classes, revaluation adjustments, prior period adjustments and depreciation thereon.*

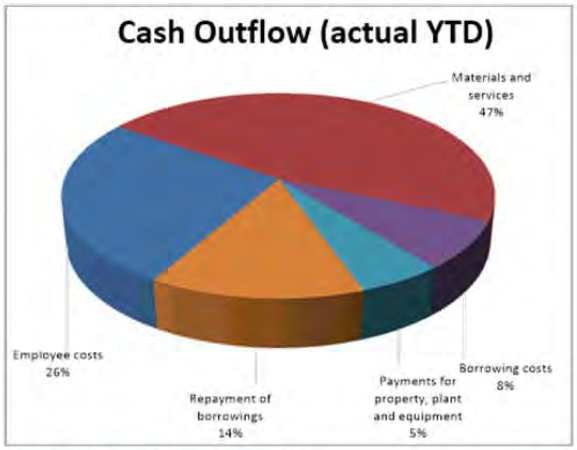
Redland CITY COUNCIL

5. STATEMENT OF CASH FLOWS

STATEMENT OF CASH FLOWS
For the period ending 31 July 2018

	Annual Original Budget $000	YTD Budget $000	YTD Actual $000
CASH FLOWS FROM OPERATING ACTIVITIES			
Receipts from customers	261,712	14,868	**21,542**
Payments to suppliers and employees	(213,794)	(24,429)	**(26,753)**
	47,919	**(9,561)**	**(5,211)**
Interest received	4,289	333	**358**
Rental income	912	42	**116**
Non-capital grants and contributions	11,223	55	**49**
Borrowing costs	(2,809)	(2,809)	**(2,809)**
Net cash inflow / (outflow) from operating activities	**61,533**	**(11,940)**	**(7,497)**
CASH FLOWS FROM INVESTING ACTIVITIES			
Payments for property, plant and equipment	(66,880)	(3,259)	**(2,004)**
Payments for intangible assets	-	-	**(16)**
Proceeds from sale of property, plant and equipment	1,410	-	**18**
Capital grants, subsidies and contributions	32,501	-	**1,530**
Other cash flows from investing activities	1,000	-	**-**
Net cash inflow / (outflow) from investing activities	**(31,969)**	**(3,259)**	**(472)**
CASH FLOWS FROM FINANCING ACTIVITIES			
Proceeds of borrowings	2,500	-	**-**
Repayment of borrowings	(5,035)	(5,035)	**(5,035)**
Net cash inflow / (outflow) from financing activities	**(2,535)**	**(5,035)**	**(5,035)**
Net increase / (decrease) in cash held	**27,030**	**(20,234)**	**(13,004)**
Cash and cash equivalents at the beginning of the year	140,234	138,562	**138,562**
Cash and cash equivalents at the end of the financial year / period	**167,263**	**118,328**	**125,558**





Total Cash Funding (Actual YTD)	**23,613**
Total Cash Funding (Annual Original Budget)	315,547
% of Budget Achieved YTD	7%

Total Cash Expenditure (Actual YTD)	**36,617**
Total Cash Expenditure (Annual Original Budget)	288,517
% of Budget Achieved YTD	13%

Redland CITY COUNCIL

6. CAPITAL EXPENDITURE



	Annual Original Budget $000	YTD Budget $000	**YTD Actual $000**	YTD Variance $000
Capitalised goods and services	60,420	2,889	**1,420**	(1,469)
Capitalised employee costs	6,461	370	**600**	230
Total	**66,881**	**3,259**	**2,020**	**(1,239)**

7. PROGRAM AND PROJECT UPDATE

Favourable (budget under / schedule on track) | Meeting expectations (budget and schedule on track) | Within tolerance (one of budget or schedule not on track) | Unfavourable (budget and schedule not on track) | Others (schedule to be tracked)



Projects and Programs 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 127 programs and projects.

Total Programs and Projects in Progress $000	Annual Original Budget $000	**YTD Actual $000**	Commitments $000
Capital*	57,304	1,998	14,062
Operational	4,463	113	151

*The capital spend on programs and projects is a subset of Council's total capital budget which includes business as usual capital spend such as replacement of computers, fleet etc.

Notable Projects

Financially significant projects with an annual budget of more than $1M constitute 12 projects out of 127 and accounts for 68% of the total programs and project budget. The status of two notable projects are as follows:

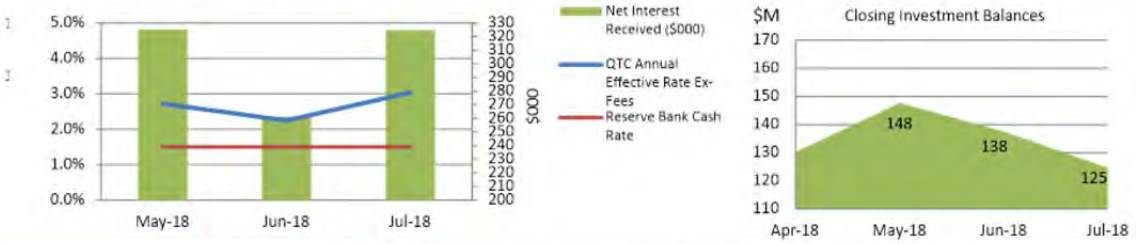
Project description	Progress
IndigiScapes - design and construct extension to current Centre including relocation of existing nursery, staff accommodation, new interpretive display centre, expansion to existing café & kitchen, new skywalk, amenities and landscape improvements to the east gardens.	This project is on track.
SMBI Green Seal - sealing gravel roads on the Southern Moreton Bay Islands for dust suppression, safety and improved amenity.	This project is on track.

Redland CITY COUNCIL

8. INVESTMENT & BORROWINGS REPORT

For the period ending 31 July 2018

INVESTMENT RETURNS - QUEENSLAND TREASURY CORPORATION (QTC)



Total Investment at End of Month was $124.59M

All Council investments are currently held in the Capital Guaranteed Cash Fund, which is a fund operated by the Queensland Treasury Corporation (QTC).

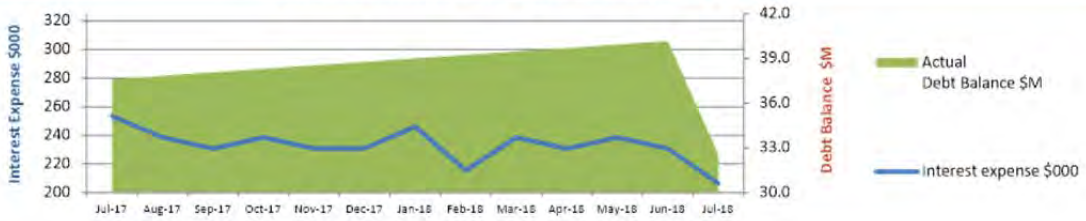
The movement in interest earned is indicative of both the interest rate and the surplus cash balances held, the latter of which is affected by business cash flow requirements on a monthly basis as well as the rating cycle.

Note: the Reserve Bank reduced the cash rate down to 1.5% in the August 2016 sitting - this has not changed in subsequent months.

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 of 3.04% exceeds the Bloomberg AusBond Bank Bill Index (previously the UBS Bank Bill Index) of 1.83% as at the end of July 2018 in accordance with Corporate POL-3013. Term deposit rates are being monitored to identify investment opportunities to ensure Council maximises its interest earnings.

Council adopted its revised Investment Policy (POL-3013) in June 2018 for the 2018/2019 financial year

BORROWINGS AND BORROWING COSTS



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 $7.84M, being $5.03M principal and $2.81M interest has been made *annually* in advance for 2018/2019 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 2018. Interest will accrue monthly on a daily balance until next ADSP in July 19 which is reflected in the increasing debt balance.

Total Borrowings at End of Month were $32.54M

General pool allocated to capital works is 99.43% and 0.57% is attributable to RedWaste.

Council adopted its revised Debt Policy (POL-1838) in June 2018 for the 2018/2019 financial year

Redland CITY COUNCIL

9. CONSTRAINED CASH RESERVES

Reserves as at 31 July 2018	Purpose of reserve	Opening Balance $000	To Reserve $000	From Reserve $000	Closing Balance $000
Special Projects Reserve:					
Weinam Creek Reserve	Maintenance and improvements associated with Weinam Creek projects	3,625	-	-	3,625
Red Art Gallery Commissions & Donations Reserve	Purchases of art work for the RCC art collection	7	-	-	7
Raby Bay Revetment Wall Reserve	To fund Raby Bay revetment wall works program	-	744	(7)	737
		3,632	**744**	**(7)**	**4,369**
Constrained Works Reserve:					
Public Parks Trunk Infrastructure Reserve	Capital projects for public parks trunk infrastructure	7,324	6	-	7,330
Land for Community Facilities Trunk Infrastructure Reserve	Land for community facilities trunk infrastructure	2,192	1	-	2,193
Water Supply Trunk Infrastructure Reserve	Upgrade, expansion or new projects for water supply trunk infrastructure	10,107	1	-	10,108
Sewerage Trunk Infrastructure Reserve	Upgrade, expansion or new projects for sewerage trunk infrastructure	9,223	7	-	9,230
Constrained Works Reserve-Capital Grants & Contributions	Unexpended capital grants and contributions received for specific projects	651	-	-	651
Local Roads Trunk Infrastructure Reserve	Capital projects for local roads trunk infrastructure	35,922	18	-	35,940
Cycleways Trunk Infrastructure Reserve	Capital projects for cycleways trunk infrastructure	10,783	4	-	10,787
Stormwater Trunk Infrastructure Reserve	Capital projects for stormwater trunk infrastructure	8,884	3	-	8,887
Constrained Works Reserve-Operating Grants & Contributions	Unexpended operating grants and contributions received for specific projects	919	-	(10)	909
Tree Planting Reserve	Acquisition and planting of trees on footpaths	88	6	-	94
		86,093	**46**	**(10)**	**86,129**
Separate Charge Reserve - Environment:					
Environment Charge Acquisition Reserve	Acquisitions in land and facilities to support or enhance environmental outcomes	234	305	-	539
Environment Charge Maintenance Reserve	Ongoing conservation and maintenance operations	1,708	1,726	(161)	3,273
SES Separate Charge Reserve	On-going costs of maintaining the Redlands SES	-	120	(20)	100
		1,942	**2,151**	**(181)**	**3,912**
Special Charge Reserve - Other:					
Bay Island Rural Fire Levy Reserve	Pass on revenue collected from levy to the Bay Island Rural Fire Brigade	-	20	-	20
SMBI Translink Reserve	Offset payment made to the State Govt. to assist with transport service to the Bay Islands	(8)	242	-	234
		(8)	**262**	**-**	**254**
Special Charge Reserve - Canals:					
Aquatic Paradise Canal Reserve	Maintenance and repairs of Aquatic Paradise canals	742	1	-	743
Sovereign Waters Lake Reserve	Maintenance and repairs of Sovereign Lake	421	-	-	421
1718 Raby Bay Canal Reserve	Service, facility or activity of works in respect of the canals of the Raby Bay canal estate	1,036	-	-	1,036
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)
		1,648	**1**	**-**	**1,649**
TOTALS		**93,307**	**3,204**	**(198)**	**96,313**
		Closing cash and cash equivalents			**125,558**
		Reserves as percentage of cash balance			**77%**

Redland CITY COUNCIL

10. REDLAND WATER STATEMENTS

REDLAND WATER SUMMARY OPERATING STATEMENT
For the period ending 31 July 2018

	Annual Original Budget $000	YTD Budget $000	YTD Actual $000	YTD Variance $000
Total revenue	112,745	9,342	**8,555**	(787)
Total expenses	66,297	4,484	**4,457**	(27)
Earnings before interest, tax and depreciation (EBITD)	46,448	4,858	**4,098**	(760)
Interest expense	15,352	1,279	**1,279**	-
Depreciation	23,228	1,936	**1,941**	5
Operating surplus / (deficit)	**7,868**	**1,643**	**878**	**(765)**

REDLAND WATER CAPITAL FUNDING STATEMENT
For the period ending 31 July 2018

	Annual Original Budget $000	YTD Revised Budget $000	YTD Actual $000	YTD Variance $000
Capital contributions, donations, grants and subsidies	6,798	-	**8**	8
Net transfer (to) / from constrained capital reserves	(6,608)	-	**(8)**	(8)
Non-cash contributions	6,648	-	**-**	-
Funding from utility revenue	5,614	17	**4**	(13)
Total sources of capital funding	**12,452**	**17**	**4**	**(13)**
Contributed assets	6,648	-	**-**	-
Capitalised expenditure	5,804	17	**4**	(13)
Total application of capital funds	**12,452**	**17**	**4**	**(13)**

11. REDWASTE STATEMENTS

REDWASTE OPERATING STATEMENT
For the period ending 31 July 2018

	Annual Original Budget $000	YTD Revised Budget $000	YTD Actual $000	YTD Variance $000
Total revenue	25,901	2,172	**2,150**	(22)
Total expenses	19,155	1,572	**1,624**	52
Earnings before interest, tax and depreciation (EBITD)	6,746	600	**526**	(74)
Interest expense	30	3	**2**	(1)
Depreciation	216	18	**14**	(4)
Operating surplus / (deficit)	**6,500**	**579**	**510**	**(69)**

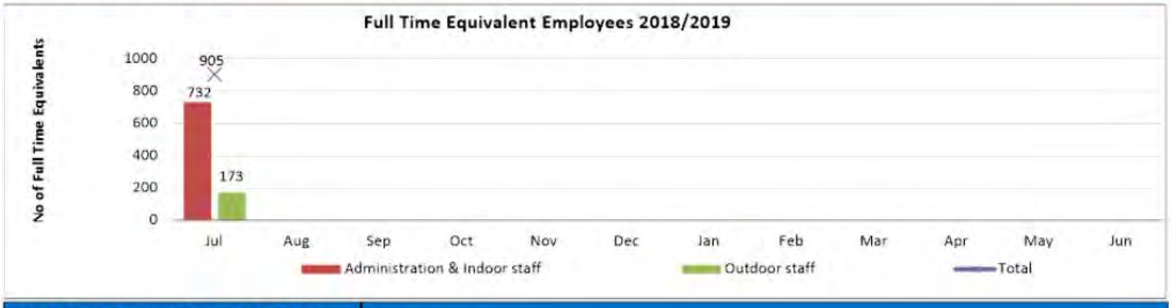
REDWASTE CAPITAL FUNDING STATEMENT
For the period ending 31 July 2018

	Annual Original Budget $000	YTD Revised Budget $000	YTD Actual $000	YTD Variance $000
Non-cash contributions	-	-	**-**	-
Funding from utility revenue	547	93	**116**	23
Total sources of capital funding	**547**	**93**	**116**	**23**
Capitalised expenditure	456	2	**2**	-
Loan redemption	91	91	**114**	23
Total application of capital funds	**547**	**93**	**116**	**23**

Redland CITY COUNCIL

12. APPENDIX: ADDITIONAL AND NON-FINANCIAL INFORMATION

Workforce Reporting



Workforce reporting - July 2018: Headcount	Employee Type						
Department Level	Casual	Contract of Service	Perm Full	Perm Part	Temp Full	Temp Part	Total
Office of CEO	6	2	31	4	6	1	50
Organisational Services	6	5	162	18	26	5	222
Community and Customer Service	30	5	229	62	27	10	363
Infrastructure and Operations	8	7	308	15	20	2	360
Total	50	19	730	99	79	18	995

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 (excluding agency staff) and does not include a workload weighting. It includes casual staff in their non-substantive roles as at the end of the period where relevant.

Redland CITY COUNCIL

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 include 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 loans / Total Assets
Operating Performance: *This ratio provides an indication of Redland City 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 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.

12.2 2017-18 TO 2018-19 CARRYOVER BUDGET REVIEW

Objective Reference:

Authorising Officer: **Deborah Corbett-Hall, Chief Financial Officer**

Responsible Officer: **Deborah Corbett-Hall, Chief Financial Officer**

Report Author: **Katharine Bremner, Acting Finance Manager Financial Planning**

Attachments: **1. 2017-18 to 2018-19 Carryover Budget Review**

PURPOSE

This report outlines the items requested to be carried over from the 2017-18 to the 2018-19 financial year and presents the proposed revised budget position for Council. In addition to the proposed revised financial statements, the key financial ratios have been updated to demonstrate the inclusion of the carryover submissions to the originally adopted 2018-19 budget.

Attached to this report are the following:

- revised 2018-19 Statement of Financial Position;
- revised 2018-19 Statement of Cash Flows;
- revised 2018-19 Statement of Comprehensive Income;
- revised 2018-19 Operating and Capital Funding Statements;
- revised Key Performance Indicators (KPIs) for 2018-19; and
- carryover submissions – summary report and detail listing.

It is proposed that Council resolves to adopt the revised budget for 2018-19 at the Redland City Council (RCC) level. In addition to this and in accordance with the *Local Government Regulation 2012*, it is proposed that Council resolves to adopt the RedWaste and Redland Water commercial businesses financial statements that are presented in the attached documentation.

The relevant pages are outlined within the Officer's Recommendation in the report. Of note, the Redland Investment Corporation (RIC), a wholly owned subsidiary of RCC has not been consolidated into the attached documents as it has been determined RIC will follow a separate budget development and review process.

BACKGROUND

Council adopted its 2018-19 budget at the Special Budget Meeting on 25 June 2018. The Portfolio Management Office (PMO) and the Financial Services Group have worked with the business to identify projects in train but not due for completion prior to the end of the financial year thus requiring to be carried over to the new financial year to enable their completion.

ISSUES

The scope of this carryover budget review is prior approved capital projects straddling the 2017-18 and 2018-19 financial years. In addition, non-recurrent operating expenditure of $600k for the implementation of the new Human Resources Information System along with an adjustment to the landfill remediation provision for the Judy Hold Northern Landfill Batters work and Birkdale Landfill Remediation Capping have been included in order to allow for the finalisation of these works.

The attached statements present unaudited opening balances, which may subsequently change, as audited financial statements for 2017-18 are not yet finalised.

Other budget adjustments may be made during the financial year. The attached report does not include budget adjustments outside the carryover process and these other budget changes will be captured and reconciled as part of the monthly financial reports presented to Council.

STRATEGIC IMPLICATIONS

Legislative Requirements

This proposed carryover budget review is in alignment with the *Local Government Act 2009* and the *Local Government Regulation 2012*. Section 170 of the *Local Government Regulation 2012* permits a local government to amend the budget for a financial year at any time before the end of the financial year.

Risk Management

Council officers monitor budget to actual expenditure on a regular basis and Council's financial performance and position is reported on a monthly basis. Council has already prioritised the carryover works as they commenced in the 2017-18 financial year and the deliverability of both operational and capital programmes is under constant review by the Executive Leadership Team (ELT).

Financial

This recommendation required a change to the current year's adopted budget and the accompanying attachments outline the major movements surrounding this review. The projected financial statements forecast to 30 June 2019 illustrate Council's capital expenditure program increasing by $17.1m to $84.0m and is inclusive of significant projects such as the Point Lookout backlog sewer, the Marine Landing Facility Upgrade on Macleay Island and Council's Asset Management Advancement Project.

All key performance indicators meet or exceed the targets except for the Operating Surplus Ratio and the Asset Sustainability Ratio. The carrying over of the Human Resources Information System project unfavourable impacts Council's operating deficit whereas the Asset Sustainability Ratio, a stretch target, is influenced by the renewal components of the capital works program.

People

The attached report updates the budget at an organisational level for 2018-19 following submissions from the business areas. Specific impacts to people that may result from the budget adjustments will be worked through at a team, unit and group level in accordance with Council's policies and people strategy (when and if they arise).

Environmental

The attached report updates the budget at an organisational level for 2018-19 following submissions from the business areas. Specific impacts to the environment that may result from the budget adjustments will be worked through at a team, unit and group level in accordance with Council's policies and guidelines (when and if they arise).

Social

The attached report updates the budget at an organisational level for 2018-19 following submissions from the business areas. Specific impacts to the community that may result from the

budget adjustments will be worked through at a team, unit and group level in accordance with Council's policies and guidelines (when and if they arise).

Alignment with Council's Policy and Plans

This report has a relationship with the following items in the 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

Group managers in consultation with the Executive Leadership Team (ELT) undertook the development of this carryover budget review. Councillors reviewed the budget amendments in a workshop held with ELT on 7 August 2018.

OPTIONS

Option One

That Council resolves as follows:

1. To adopt the Revised Budget for 2018-19 at Redland City Council (RCC) level, which refers to the following (refer attachment for detail):
   a) RCC Statement of Financial Position – page 1.
   b) RCC Statement of Cash Flows – page 2.
   c) RCC Statement of Comprehensive Income – page 3.
   d) RCC Operating and Capital Funding Statements – page 4.
2. To meet the requirements of the *Local Government Regulation 2012*, adopt the RedWaste and Redland Water Operating and Capital Funding Statements (pages 9 and 10 respectively).

Option Two

That Council resolves to not adopt the revised budget for 2018-19 as presented in the Officer's Recommendation.

OFFICER'S RECOMMENDATION

That Council resolves as follows:

1. **To adopt the Revised Budget for 2018-19 at Redland City Council (RCC) level, which refers to the following (refer attachment for detail):**
   a) **RCC Statement of Financial Position – page 1.**
   b) **RCC Statement of Cash Flows – page 2.**
   c) **RCC Statement of Comprehensive Income – page 3.**
   d) **RCC Operating and Capital Funding Statements – page 4.**
2. **To meet the requirements of the *Local Government Regulation 2012*, adopt the RedWaste and Redland Water Operating and Capital Funding Statements (pages 9 and 10 respectively).**

Carryover Budget Review

2017-18 to 2018-19









MAKE A
DIFFERENCE
MAKE IT
COUNT

General Meeting

22 August 2018

The statements enclosed are for the parent entity Redland City Council (investment in RIC is included). Group consolidated financials will be presented as part of Council's Annual Financial Statements each year.

Redland
CITY COUNCIL

Redland City Council

Statement of Financial Position
Forecast as at 30 June 2019

	Original Budget 2018-19 $000	Unaudited Opening Balance* 2018-19 $000	Budgeted Movement 2018-19 $000	Carryover Budget Review Proposed Movements $000	Proposed Revised Budget 2018-19 $000
CURRENT ASSETS					
Cash and cash equivalents	167,263	138,562	27,030	(17,287)	148,305
Trade and other receivables	27,273	57,348	-	-	57,348
Inventories	556	1,108	-	-	1,108
Non-current assets held for sale	262	11,113	-	-	11,113
Other current assets	2,073	2,029	-	-	2,029
Total current assets	**197,428**	**210,159**	**27,030**	**(17,287)**	**219,902**
NON-CURRENT ASSETS					
Investment property	1,091	1,091	-	-	1,091
Property, plant and equipment	2,608,476	2,537,833	9,517	17,100	2,564,450
Intangible assets	826	1,987	(973)	-	1,014
Other financial assets	73	73	-	-	73
Investment in other entities	14,712	14,791	-	-	14,791
Total non-current assets	**2,625,178**	**2,555,775**	**8,544**	**17,100**	**2,581,419**
TOTAL ASSETS	**2,822,606**	**2,765,934**	**35,574**	**(187)**	**2,801,321**
CURRENT LIABILITIES					
Trade and other payables	40,840	39,895	1,048	-	40,943
Borrowings	7,713	7,728	-	-	7,728
Provisions	13,742	20,650	728	-	21,378
Other current liabilities	1,747	4,654	-	-	4,654
Total current liabilities	**64,041**	**72,927**	**1,776**	**-**	**74,703**
NON-CURRENT LIABILITIES					
Borrowings	29,651	32,451	(2,931)	-	29,520
Provisions	12,115	12,905	-	-	12,905
Total non-current liabilities	**41,766**	**45,356**	**(2,931)**	**-**	**42,425**
TOTAL LIABILITIES	**105,807**	**118,283**	**(1,155)**	**-**	**117,128**
NET COMMUNITY ASSETS	**2,716,799**	**2,647,651**	**36,729**	**(187)**	**2,684,193**
COMMUNITY EQUITY					
Asset revaluation surplus	1,070,838	1,002,268	-	-	1,002,268
Retained surplus	1,517,043	1,548,310	12,650	3,490	1,564,449
Constrained cash reserves	128,918	97,073	24,079	(3,676)	117,475
TOTAL COMMUNITY EQUITY	**2,716,799**	**2,647,651**	**36,729**	**(187)**	**2,684,193**

* Please note - this is a forecast based upon the unaudited closing balance of 2017-18 - opening balance for 2018-19

Redland City Council

Statement of Cash Flows

Forecast for the year ending June 2019

	Original Budgeted Cash Flow 2018-19 $000	Revised Budget Adj. Cash Opening Bal from 2017-18 $000	Proposed Movement Carryover Budget Review $000	Proposed Revised Budget 2018-19 $000
CASH FLOWS FROM OPERATING ACTIVITIES				
Receipts from customers	261,712	261,712	-	261,712
Payments to suppliers and employees	(213,794)	(213,794)	(600)	(214,394)
	47,919	**47,919**	**(600)**	**47,319**
Interest received	4,289	4,289	-	4,289
Rental income	912	912	-	912
Non-capital grants and contributions	11,223	11,223	-	11,223
Borrowing costs	(2,809)	(2,809)	-	(2,809)
Net cash inflow from operating activities	**61,533**	**61,533**	**(600)**	**60,933**
CASH FLOWS FROM INVESTING ACTIVITIES				
Payments for property, plant and equipment	(66,880)	(66,880)	(17,100)	(83,981)
Payments for intangible assets	-	-	-	-
Proceeds from sale of property, plant and equipment	1,410	1,410	188	1,598
Capital grants, subsidies and contributions	32,501	32,501	225	32,727
Other cash flows from investing activities	1,000	1,000	-	1,000
Net cash outflow from investing activities	**(31,969)**	**(31,969)**	**(16,687)**	**(48,656)**
CASH FLOWS FROM FINANCING ACTIVITIES				
Proceeds of borrowings	2,500	2,500	-	2,500
Repayment of borrowings	(5,035)	(5,035)	-	(5,035)
Net cash inflow / (outflow) from financing activities	**(2,535)**	**(2,535)**	**-**	**(2,535)**
Net Increase / (Decrease) in cash held and cash equivalents	**27,030**	**27,030**	**(17,287)**	**9,743**
Cash and cash equivalents at the beginning of the year	140,234	138,562		138,562
Cash and cash equivalents at the end of the financial year	**167,263**	**165,592**	**(17,287)**	**148,305**

Redland City Council

Statement of Comprehensive Income

Forecast for the year ending 30 June 2019

	Original Budget $000	Revised Budget as Adopted $000	Proposed Changes Carryover Budget Review $000	Proposed Revised Budget $000
Recurrent revenue				
Rates, levies and charges	243,611	243,611	-	243,611
Fees	13,673	13,673	-	13,673
Rental income	912	912	-	912
Interest received	4,289	4,289	-	4,289
Investment returns	1,000	1,000	-	1,000
Sales revenue	3,735	3,735	-	3,735
Other income	694	694	-	694
Grants, subsidies and contributions	11,223	11,223	-	11,223
Total recurrent revenue	**279,136**	**279,136**	**-**	**279,136**
Capital revenue				
Grants, subsidies and contributions	32,501	32,501	225	32,727
Non-cash contributions	6,868	6,868	-	6,868
Total capital revenue	**39,369**	**39,369**	**225**	**39,594**
TOTAL INCOME	318,505	318,505	225	318,730
Recurrent expenses				
Employee benefits	86,248	86,248	510	86,758
Materials and services	128,894	128,894	90	128,984
Finance costs	2,840	2,840	-	2,840
Depreciation and amortisation	63,505	63,505	-	63,505
Total recurrent expenses	**281,487**	**281,487**	**600**	**282,087**
Capital expenses				
(Gain)/Loss on disposal of non-current assets	289	289	(188)	101
Total capital expenses	**289**	**289**	**(188)**	**101**
TOTAL EXPENSES	281,776	281,776	412	282,188
NET RESULT	**36,729**	**36,729**	**(187)**	**36,542**
Other comprehensive income/(loss)				
Items that will not be reclassified to a net result				
Revaluation of property, plant and equipment	-	-	-	-
TOTAL COMPREHENSIVE INCOME	**36,729**	**36,729**	**(187)**	**36,542**

Redland City Council

Operating Statement

Forecast for the year ending 30 June 2019

	Original Budget $000	Revised Budget as Adopted $000	Proposed Changes Carryover Budget Review $000	Proposed Revised Budget $000
Revenue				
Rates charges	100,486	100,486	-	100,486
Levies and utility charges	146,618	146,618	-	146,618
Less: Pensioner remissions and rebates	(3,493)	(3,493)	-	(3,493)
Fees	13,673	13,673	-	13,673
Operating grants and subsidies	10,744	10,744	-	10,744
Operating contributions and donations	479	479	-	479
Interest external	4,289	4,289	-	4,289
Investment returns	1,000	1,000	-	1,000
Other Revenue	5,340	5,340	-	5,340
Total revenue	**279,136**	**279,136**	**-**	**279,136**
Expenses				
Employee benefits	86,248	86,248	510	86,758
Materials and services	129,100	129,100	90	129,190
Finance costs other	427	427	-	427
Other expenditure	507	507	-	507
Net Internal Costs	(713)	(713)	-	(713)
Total expenses	**215,570**	**215,570**	**600**	**216,170**
Earnings before interest, tax and depreciation (EBITD)	**63,566**	**63,566**	**(600)**	**62,966**
Interest expense	2,413	2,413	-	2,413
Depreciation and amortisation	63,505	63,505	-	63,505
OPERATING SURPLUS/(DEFICIT)	**(2,351)**	**(2,351)**	**(600)**	**(2,951)**

Capital Funding Statement

Forecast for the year ending 30 June 2019

	Original Budget $000	Revised Budget as Adopted $000	Proposed Changes Carryover Budget Review $000	Proposed Revised Budget $000
Proposed sources of capital funding				
Capital contributions and donations	30,949	30,949	-	30,949
Capital grants and subsidies	1,552	1,552	225	1,778
Proceeds on disposal of non-current assets	1,410	1,410	188	1,598
Capital transfers (to) / from reserves	(20,277)	(20,277)	10,775	(9,502)
Non-cash contributions	6,868	6,868	-	6,868
New loans	2,500	2,500	-	2,500
Funding from general revenue	56,177	56,177	5,913	62,089
Total sources of capital funding	**79,179**	**79,179**	**17,100**	**96,279**
Proposed application of capital funds				
Contributed assets	6,868	6,868	-	6,868
Capitalised goods and services	60,420	60,420	16,464	76,884
Capitalised employee costs	6,461	6,461	636	7,097
Loan redemption	5,431	5,431	-	5,431
Total application of capital funds	**79,179**	**79,179**	**17,100**	**96,279**
Other budgeted items				
Transfers to constrained operating reserves	(12,548)	(12,548)	(7,098)	(19,646)
Transfers from constrained operating reserves	8,747	8,747	-	8,747
WDV of assets disposed	1,699	1,699	-	1,699
Tax and Dividends	-	-	-	-
Internal Capital Structure Financing	-	-	-	-

Redland CITY COUNCIL

CEO Group

Operating Statement

Forecast for the year ending 30 June 2019

	Original Budget $000	Revised Budget as Adopted $000	Proposed Changes Carryover Budget Review $000	Proposed Revised Budget $000
Revenue				
Rates charges	-	-	-	-
Levies and utility charges	-	-	-	-
Less: Pensioner remissions and rebates	-	-	-	-
Fees	-	-	-	-
Operating grants and subsidies	-	-	-	-
Operating contributions and donations	-	-	-	-
Interest external	-	-	-	-
Investment returns	-	-	-	-
Other Revenue	-	-	-	-
Total revenue	-	-	-	-
Expenses				
Employee benefits	4,463	4,463	510	4,973
Materials and services	2,502	2,502	90	2,592
Finance costs other	-	-	-	-
Other expenditure	-	-	-	-
Net Internal Costs	(385)	(385)	-	(385)
Total expenses	**6,580**	**6,580**	**600**	**7,180**
Earnings before interest, tax and depreciation (EBITD)	**(6,580)**	**(6,580)**	**(600)**	**(7,180)**
Interest expense	-	-	-	-
Depreciation and amortisation	9	9	-	9
OPERATING SURPLUS/(DEFICIT)	**(6,589)**	**(6,589)**	**(600)**	**(7,189)**

Capital Funding Statement

Forecast for the year ending 30 June 2019

	Original Budget $000	Revised Budget as Adopted $000	Proposed Changes Carryover Budget Review $000	Proposed Revised Budget $000
Proposed sources of capital funding				
Capital contributions and donations	-	-	-	-
Capital grants and subsidies	-	-	-	-
Proceeds on disposal of non-current assets	-	-	-	-
Capital transfers (to) / from reserves	-	-	-	-
Non-cash contributions	-	-	-	-
New loans	-	-	-	-
Funding from general revenue	-	-	-	-
Total sources of capital funding	-	-	-	-
Proposed application of capital funds				
Contributed assets	-	-	-	-
Capitalised goods and services	-	-	-	-
Capitalised employee costs	-	-	-	-
Loan redemption	-	-	-	-
Total application of capital funds	-	-	-	-
Other budgeted items				
Transfers to constrained operating reserves	-	-	-	-
Transfers from constrained operating reserves	-	-	-	-
WDV of assets disposed	-	-	-	-
Tax and Dividends	-	-	-	-
Internal Capital Structure Financing	-	-	-	-

Redland CITY COUNCIL

Organisational Services

Operating Statement

Forecast for the year ending 30 June 2019

	Original Budget $000	Revised Budget as Adopted $000	Proposed Changes Carryover Budget Review $000	Proposed Revised Budget $000
Revenue				
Rates charges	100,486	100,486	-	100,486
Levies and utility charges	719	719	-	719
Less: Pensioner remissions and rebates	(2,989)	(2,989)	-	(2,989)
Fees	781	781	-	781
Operating grants and subsidies	5,396	5,396	-	5,396
Operating contributions and donations	-	-	-	-
Interest external	3,615	3,615	-	3,615
Investment returns	1,000	1,000	-	1,000
Other Revenue	541	541	-	541
Total revenue	**109,550**	**109,550**	**-**	**109,550**
Expenses				
Employee benefits	23,575	23,575	-	23,575
Materials and services	13,564	13,564	-	13,564
Finance costs other	423	423	-	423
Other expenditure	272	272	-	272
Net Internal Costs	(20,546)	(20,546)	-	(20,546)
Total expenses	**17,288**	**17,288**	**-**	**17,288**
Earnings before interest, tax and depreciation (EBITD)	**92,262**	**92,262**	**-**	**92,262**
Interest expense	2,383	2,383	-	2,383
Depreciation and amortisation	4,725	4,725	-	4,725
OPERATING SURPLUS/(DEFICIT)	**85,154**	**85,154**	**-**	**85,154**

Capital Funding Statement

Forecast for the year ending 30 June 2019

	Original Budget $000	Revised Budget as Adopted $000	Proposed Changes Carryover Budget Review $000	Proposed Revised Budget $000
Proposed sources of capital funding				
Capital contributions and donations	-	-	-	-
Capital grants and subsidies	-	-	-	-
Proceeds on disposal of non-current assets	1,410	1,410	188	1,598
Capital transfers (to) / from reserves	600	600	5,000	5,600
Non-cash contributions	-	-	-	-
New loans	2,500	2,500	-	2,500
Funding from general revenue	16,282	16,282	(2,391)	13,891
Total sources of capital funding	**20,792**	**20,792**	**2,797**	**23,589**
Proposed application of capital funds				
Contributed assets	-	-	-	-
Capitalised goods and services	15,452	15,452	2,554	18,005
Capitalised employee costs	-	-	244	244
Loan redemption	5,340	5,340	-	5,340
Total application of capital funds	**20,792**	**20,792**	**2,797**	**23,589**
Other budgeted items				
Transfers to constrained operating reserves	(240)	(240)	(7,098)	(7,339)
Transfers from constrained operating reserves	240	240	-	240
WDV of assets disposed	1,410	1,410	-	1,410
Tax and Dividends	(21,809)	(21,809)	-	(21,809)
Internal Capital Structure Financing	(15,352)	(15,352)	-	(15,352)

Redland CITY COUNCIL

Customer & Community Services

Operating Statement

Forecast for the year ending 30 June 2019

	Original Budget $000	Revised Budget as Adopted $000	Proposed Changes Carryover Budget Review $000	Proposed Revised Budget $000
Revenue				
Rates charges	-	-	-	-
Levies and utility charges	-	-	-	-
Less: Pensioner remissions and rebates	-	-	-	-
Fees	9,952	9,952	-	9,952
Operating grants and subsidies	919	919	-	919
Operating contributions and donations	-	-	-	-
Interest external	-	-	-	-
Investment returns	-	-	-	-
Other Revenue	1,120	1,120	-	1,120
Total revenue	**11,991**	**11,991**	**-**	**11,991**
Expenses				
Employee benefits	29,480	29,480	-	29,480
Materials and services	8,479	8,479	-	8,479
Finance costs other	3	3	-	3
Other expenditure	235	235	-	235
Net Internal Costs	7,673	7,673	-	7,673
Total expenses	**45,870**	**45,870**	**-**	**45,870**
Earnings before interest, tax and depreciation (EBITD)	**(33,879)**	**(33,879)**	**-**	**(33,879)**
Interest expense	-	-	-	-
Depreciation and amortisation	1,820	1,820	-	1,820
OPERATING SURPLUS/(DEFICIT)	**(35,699)**	**(35,699)**	**-**	**(35,699)**

Capital Funding Statement

Forecast for the year ending 30 June 2019

	Original Budget $000	Revised Budget as Adopted $000	Proposed Changes Carryover Budget Review $000	Proposed Revised Budget $000
Proposed sources of capital funding				
Capital contributions and donations	18,268	18,268	-	18,268
Capital grants and subsidies	641	641	-	641
Proceeds on disposal of non-current assets	-	-	-	-
Capital transfers (to) / from reserves	(17,993)	(17,993)	-	(17,993)
Non-cash contributions	-	-	-	-
New loans	-	-	-	-
Funding from general revenue	1,037	1,425	1,481	2,906
Total sources of capital funding	**1,953**	**2,341**	**1,481**	**3,822**
Proposed application of capital funds				
Contributed assets	-	-	-	-
Capitalised goods and services	1,953	2,341	1,388	3,729
Capitalised employee costs	-	-	93	93
Loan redemption	-	-	-	-
Total application of capital funds	**1,953**	**2,341**	**1,481**	**3,822**
Other budgeted items				
Transfers to constrained operating reserves	-	-	-	-
Transfers from constrained operating reserves	1,110	1,110	-	1,110
WDV of assets disposed	-	-	-	-
Tax and Dividends	-	-	-	-
Internal Capital Structure Financing	-	-	-	-

Redland CITY COUNCIL

Infrastructure & Operations
(excl Redland Water & RedWaste)

Operating Statement
Forecast for the year ending 30 June 2019

	Original Budget $000	Revised Budget as Adopted $000	Proposed Changes Carryover Budget Review $000	Proposed Revised Budget $000
Revenue				
Rates charges	-	-	-	-
Levies and utility charges	11,769	11,769	-	11,769
Less: Pensioner remissions and rebates	-	-	-	-
Fees	2,465	2,465	-	2,465
Operating grants and subsidies	4,429	4,429	-	4,429
Operating contributions and donations	479	479	-	479
Interest external	50	50	-	50
Investment returns	-	-	-	-
Other Revenue	603	603	-	603
Total revenue	**19,794**	**19,794**	**-**	**19,794**
Expenses				
Employee benefits	19,688	19,688	-	19,688
Materials and services	36,779	36,779	-	36,779
Finance costs other	-	-	-	-
Other expenditure	-	-	-	-
Net Internal Costs	6,405	6,405	-	6,405
Total expenses	**62,872**	**62,872**	**-**	**62,872**
Earnings before interest, tax and depreciation (EBITD)	**(43,078)**	**(43,078)**	**-**	**(43,078)**
Interest expense	-	-	-	-
Depreciation and amortisation	33,507	33,507	-	33,507
OPERATING SURPLUS/(DEFICIT)	**(76,585)**	**(76,585)**	**-**	**(76,585)**

Capital Funding Statement
Forecast for the year ending 30 June 2019

	Original Budget $000	Revised Budget as Adopted $000	Proposed Changes Carryover Budget Review $000	Proposed Revised Budget $000
Proposed sources of capital funding				
Capital contributions and donations	5,884	5,884	-	5,884
Capital grants and subsidies	911	911	225	1,136
Proceeds on disposal of non-current assets	-	-	-	-
Capital transfers (to) / from reserves	3,914	3,914	5,775	9,688
Non-cash contributions	220	220	-	220
New loans	-	-	-	-
Funding from general revenue	36,945	36,557	6,822	43,379
Total sources of capital funding	**47,873**	**47,485**	**12,822**	**60,306**
Proposed application of capital funds				
Contributed assets	220	220	-	220
Capitalised goods and services	41,192	40,804	12,522	53,326
Capitalised employee costs	6,461	6,461	300	6,760
Loan redemption	-	-	-	-
Total application of capital funds	**47,873**	**47,485**	**12,822**	**60,306**
Other budgeted items				
Transfers to constrained operating reserves	(12,308)	(12,308)	-	(12,308)
Transfers from constrained operating reserves	7,396	7,396	-	7,396
WDV of assets disposed	289	289	-	289
Tax and Dividends	-	-	-	-
Internal Capital Structure Financing	-	-	-	-

Redland CITY COUNCIL

RedWaste

Operating Statement

Forecast for the year ending 30 June 2019

	Original Budget $000	Revised Budget as Adopted $000	Proposed Changes Carryover Budget Review $000	Proposed Revised Budget $000
Revenue				
Rates charges	-	-	-	-
Levies and utility charges	24,307	24,307	-	24,307
Less: Pensioner remissions and rebates	-	-	-	-
Fees	371	371	-	371
Operating grants and subsidies	-	-	-	-
Operating contributions and donations	-	-	-	-
Interest external	71	71	-	71
Investment returns	-	-	-	-
Other Revenue	1,014	1,014	-	1,014
Total revenue	**25,763**	**25,763**	**-**	**25,763**
Expenses				
Employee benefits	1,535	1,535	-	1,535
Materials and services	16,385	16,385	-	16,385
Finance costs other	1	1	-	1
Other expenditure	-	-	-	-
Net Internal Costs	1,096	1,096	-	1,096
Total expenses	**19,017**	**19,017**	**-**	**19,017**
Earnings before interest, tax and depreciation (EBITD)	**6,746**	**6,746**	**-**	**6,746**
Interest expense	30	30	-	30
Depreciation and amortisation	216	216	-	216
OPERATING SURPLUS/(DEFICIT)	**6,500**	**6,500**	**-**	**6,500**

Capital Funding Statement

Forecast for the year ending 30 June 2019

	Original Budget $000	Revised Budget as Adopted $000	Proposed Changes Carryover Budget Review $000	Proposed Revised Budget $000
Proposed sources of capital funding				
Capital contributions and donations	-	-	-	-
Capital grants and subsidies	-	-	-	-
Proceeds on disposal of non-current assets	-	-	-	-
Capital transfers (to) / from reserves	-	-	-	-
Non-cash contributions	-	-	-	-
New loans	-	-	-	-
Funding from general revenue	547	547	-	547
Total sources of capital funding	**547**	**547**	**-**	**547**
Proposed application of capital funds				
Contributed assets	-	-	-	-
Capitalised goods and services	427	427	-	427
Capitalised employee costs	29	29	-	29
Loan redemption	91	91	-	91
Total application of capital funds	**547**	**547**	**-**	**547**
Other budgeted items				
Transfers to constrained operating reserves	-	-	-	-
Transfers from constrained operating reserves	-	-	-	-
WDV of assets disposed	-	-	-	-
Tax and Dividends	4,225	4,225	-	4,225
Internal Capital Structure Financing	-	-	-	-

Redland CITY COUNCIL

Redland Water

Operating Statement

Forecast for the year ending 30 June 2019

	Original Budget $000	Revised Budget as Adopted $000	Proposed Changes Carryover Budget Review $000	Proposed Revised Budget $000
Revenue				
Rates charges	-	-	-	-
Levies and utility charges	109,823	109,823	-	109,823
Less: Pensioner remissions and rebates	(505)	(505)	-	(505)
Fees	307	307	-	307
Operating grants and subsidies	-	-	-	-
Operating contributions and donations	-	-	-	-
Interest external	553	553	-	553
Investment returns	-	-	-	-
Other Revenue	2,062	2,062	-	2,062
Total revenue	**112,240**	**112,240**	**-**	**112,240**
Expenses				
Employee benefits	8,821	8,821	-	8,821
Materials and services	52,182	52,182	-	52,182
Finance costs other	-	-	-	-
Other expenditure	-	-	-	-
Net Internal Costs	4,790	4,790	-	4,790
Total expenses	**65,793**	**65,793**	**-**	**65,793**
Earnings before interest, tax and depreciation (EBITD)	**46,448**	**46,448**	**-**	**46,448**
Interest expense	-	-	-	-
Depreciation and amortisation	23,228	23,228	-	23,228
OPERATING SURPLUS/(DEFICIT)	**23,219**	**23,219**	**-**	**23,219**

Capital Funding Statement

Forecast for the year ending 30 June 2019

	Original Budget $000	Revised Budget as Adopted $000	Proposed Changes Carryover Budget Review $000	Proposed Revised Budget $000
Proposed sources of capital funding				
Capital contributions and donations	6,798	6,798	-	6,798
Capital grants and subsidies	-	-	-	-
Proceeds on disposal of non-current assets	-	-	-	-
Capital transfers (to) / from reserves	(6,608)	(6,608)	2,210	(4,398)
Non-cash contributions	6,648	6,648	-	6,648
New loans	-	-	-	-
Funding from general revenue	5,614	5,614	647	6,261
Total sources of capital funding	**12,452**	**12,452**	**2,857**	**15,309**
Proposed application of capital funds				
Contributed assets	6,648	6,648	-	6,648
Capitalised goods and services	5,595	5,595	2,857	8,452
Capitalised employee costs	209	209	-	209
Loan redemption	-	-	-	-
Total application of capital funds	**12,452**	**12,452**	**2,857**	**15,309**
Other budgeted items				
Transfers to constrained operating reserves	-	-	-	-
Transfers from constrained operating reserves	-	-	-	-
WDV of assets disposed	-	-	-	-
Tax and Dividends	17,584	17,584	-	17,584
Internal Capital Structure Financing	15,352	15,352	-	15,352

Redland CITY COUNCIL

Infrastructure & Operations
(incl Redland Water & RedWaste)

Operating Statement
Forecast for the year ending 30 June 2019

	Original Budget $000	Revised Budget as Adopted $000	Proposed Changes Carryover Budget Review $000	Proposed Revised Budget $000
Revenue				
Rates charges	-	-	-	-
Levies and utility charges	145,899	145,899	-	145,899
Less: Pensioner remissions and rebates	(505)	(505)	-	(505)
Fees	2,940	2,940	-	2,940
Operating grants and subsidies	4,429	4,429	-	4,429
Operating contributions and donations	479	479	-	479
Interest external	674	674	-	674
Investment returns	-	-	-	-
Other Revenue	3,679	3,679	-	3,679
Total revenue	**157,595**	**157,595**	**-**	**157,595**
Expenses				
Employee benefits	28,730	28,730	-	28,730
Materials and services	104,555	104,555	-	104,555
Finance costs other	1	1	-	1
Other expenditure	-	-	-	-
Net Internal Costs	12,545	12,545	-	12,545
Total expenses	**145,831**	**145,831**	**-**	**145,831**
Earnings before interest, tax and depreciation (EBITD)	**11,764**	**11,764**	**-**	**11,764**
Interest expense	30	30	-	30
Depreciation and amortisation	56,951	56,951	-	56,951
OPERATING SURPLUS/(DEFICIT)	**(45,218)**	**(45,218)**	**-**	**(45,218)**

Capital Funding Statement
Forecast for the year ending 30 June 2019

	Original Budget $000	Revised Budget as Adopted $000	Proposed Changes Carryover Budget Review $000	Proposed Revised Budget $000
Proposed sources of capital funding				
Capital contributions and donations	12,682	12,682	-	12,682
Capital grants and subsidies	911	911	225	1,136
Proceeds on disposal of non-current assets	-	-	-	-
Capital transfers (to) / from reserves	(2,884)	(2,884)	5,775	2,890
Non-cash contributions	6,868	6,868	-	6,868
New loans	-	-	-	-
Funding from general revenue	38,858	38,470	6,822	45,292
Total sources of capital funding	**56,434**	**56,046**	**12,822**	**68,868**
Proposed application of capital funds				
Contributed assets	6,868	6,868	-	6,868
Capitalised goods and services	43,015	42,627	12,522	55,149
Capitalised employee costs	6,461	6,461	300	6,760
Loan redemption	91	91	-	91
Total application of capital funds	**56,434**	**56,046**	**12,822**	**68,868**
Other budgeted items				
Transfers to constrained operating reserves	(12,308)	(12,308)	-	(12,308)
Transfers from constrained operating reserves	7,396	7,396	-	7,396
WDV of assets disposed	289	289	-	289
Tax and Dividends	21,809	21,809	-	21,809
Internal Capital Structure Financing	15,352	15,352	-	15,352

Redland CITY COUNCIL

2018-19 Carryover Budget Review

Key Performance Indicators

Financial Stability and Sustainability Ratios	Original Budget 2018-19	Revised Budget as per Carryover Budget 2018-19
Level of dependence on General Rate Revenue (Excludes utility revenues and discounts) - Threshold set < 37.5%	34.93%	34.93%
Ability to pay our bills - Current Ratio Target between 1.1 and 4.1	3.08	2.94
Ability to repay our debt - Debt Servicing Ratio (%) Target less than or equal to 10%	2.81%	2.81%
Cash Balance $M Target greater than or equal to $50m	167.263	148.305
Cash Balances - cash capacity in months Target greater than 3 months	9.27	8.19
Longer term financial stability - debt to asset ratio (%) Target less than or equal to 10%	1.32%	1.33%
Operating Performance Target greater than or equal to 15%	22.12%	21.91%
Operating Surplus Ratio Target between 0% and 10%	-0.84%	-1.06%
Net Financial Liabilities Target less than 60%*	-32.82%	-36.82%
Interest Coverage Ratio Target less than 5%**	-0.67%	-0.67%
Asset Sustainability Ratio Target greater than 90%	47.12%	71.78%

*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)

REDLAND CITY COUNCIL

2017-18 to 2018-19 Carryover Budget Review

Submission Number	Number of Submissions	Revenue	Expenditure	Cash Impact	Reserves
Carryover Budget Review Submissions					
CEO Groups	1	0	600,000	600,000	0
Organisational Services	12	-188,000	2,797,343	2,609,343	2,098,102
Community and Customer Services	7	0	1,481,181	1,481,181	0
Infrastructure and Operations	70	-225,179	12,821,759	12,596,580	-5,774,571
	90	**-413,179**	**17,700,283**	**17,287,104**	**-3,676,469**

REDLAND CITY COUNCIL

2017-18 to 2018-19 Carryover Budget Review

Submission Number	Job Description	Description	Job Identity	Revenue	Expenditure	Cash Impact	Reserves	Expected Completion	Has the Project Started?	Has the Contract been Awarded?	Has the Order been Raised?
Capital Budget Review Submissions											
3300-505	64172 - Pt Lookout backlog sewer	Design of extension works completed and tenders currently being assessed. Delivery timeframes to be negotiated to avoid holiday periods to ensure minimal disruptions.	Project PMO	0	2,317,152	2,317,152	-2,199,546	Third Quarter	Yes	No	No
3600-552	40371 - Marine Landing Facility Upgrade-Macleay Island	Contractor progressing on-site with construction forecast for completion Nov 18. New carpark open, with existing carpark renewal underway.	Project PMO	0	1,339,262	1,339,262	0	Second Quarter	Yes	Yes	Yes
1800-500	20285 - Asset Management Advancement Project	Following a comprehensive procurement process, contract negotiations with preferred supplier are currently in progress. Contract is likely to be awarded in Aug 18, followed by systems implementation, training and data migration.	Project PMO	0	1,221,909	1,221,909	0	Fourth Quarter	Yes	No	No
1600-509	41005 - Fleet Replacement Program	Bitumen truck, quarry loader and passenger vehicles delivery due in first quarter.	Activity	-188,000	885,000	697,000	0	Second Quarter	Yes	Yes	Yes
2500-500	41060 - Indigiscapes Project2 – Visitor Centre Extension	Re-design of centre, roads, carparks, landscape along with associated procurement processes and Elder engagements have been finalised. Scheduled to be completed in 2018-19.	Program PMO	0	851,373	851,373	0	Fourth Quarter	Yes	Yes	Yes
3600-559	42782 - Revetment Wall Upgrade – Piermont Pl 37	Contractor progressing on-site with construction forecast for completion Sep 18.	Project PMO	0	687,469	687,469	-687,469	First Quarter	Yes	Yes	Yes
3600-551	40028 - Canoe Launching Pontoon – Raby Bay Esplanade, Ormiston	Contract issued with contractor commencing off-site construction works. Contractor on-site Aug 18 with construction forecast for completion Sep 18.	Project PMO	0	657,962	657,962	0	First Quarter	Yes	Yes	Yes
3600-564	44746 - Thornlands Community Park	Stage 1 construction (carpark, public amenities) forecast for completion Sep 18.	Project PMO	0	619,582	619,582	-619,582	First Quarter	Yes	Yes	Yes
3600-558	42781 - Revetment Wall Upgrade – Seacrest Ct 19	Contractor progressing on-site, with construction forecast for completion Sep 18.	Project PMO	0	581,794	581,794	-581,794	First Quarter	Yes	Yes	Yes
3600-568	44801 - Renewal - Ron Stark Oval, Dunwich, NSI	Procurement activity completed. Contractor now on-site with forecast completion Oct 18.	Program PMO	0	566,531	566,531	-297,938	Second Quarter	Yes	Yes	Yes

Submission Number	Job Description	Description	Job Identity	Revenue	Expenditure	Cash Impact	Reserves	Expected Completion	Has the Project Started?	Has the Contract been Awarded?	Has the Order been Raised?
3200-529	43007 - Netball Renewal – Keith Surridge Park, Alexandra Hills	Contract now awarded with works deferred to post-netball season. Contractor to start on-site Aug 18 with construction forecast for completion Oct 18.	Program PMO	0	494,851	494,851	-123,713	Second Quarter	Yes	Yes	Yes
3200-522	42354 - Park Upgrade Three Paddocks Park, Wellington Point	Contractor progressing on-site with construction forecast for completion Aug 18.	Project PMO	0	388,733	388,733	-388,733	First Quarter	Yes	Yes	Yes
3200-521	42349 - Pontoon Upgrade Russell Island	Consultants engaged with report to be delivered Oct 18.	Project PMO	0	385,187	385,187	0	Second Quarter	Yes	Yes	Yes
3200-514	40610 - Renewal Laurie Burns Rec Reserve – Coochiemudlo Is	Specialist nature of skilled contractor required extensive procurement process. Forecast for completion Nov 18 pending BA approval.	Program PMO	0	340,064	340,064	0	Second Quarter	Yes	Yes	Yes
3600-572	46967 - Boat Ramp Upgrade (Toe Planks) Banana St, Redland Bay	On-site constraints triggered alternate design from in-situ construction. Contractor commenced off-site fabrication works in 2017-18, and will be on-site Aug 18 with construction forecast for completion Oct 18.	Project PMO	0	314,055	314,055	0	Second Quarter	Yes	Yes	Yes
2300-503	20275 - RPAC Audio System Upgrade - Concert Hall	Orders placed for equipment and systems in Jun 18 with expected delivery Oct 18 and installation Dec 18.	Project	0	286,920	286,920	0	Second Quarter	Yes	Yes	Yes
3600-554	40676 - Public Amenities - Judy Holt Sportsfields, Randall Rd,	Contractor progressing on-site with construction forecast for completion Sep 18. Delayed due to site constraints with being a reclaimed landfill site.	Program PMO	0	280,270	280,270	-260,270	First Quarter	Yes	Yes	Yes
3300-502	62189 - East Coast Road 150mm diameter watermain replacement	Design process completed and tenders currently being assessed as part of the Backlog Sewer Tender.	Program PMO	0	247,584	247,584	0	Third Quarter	Yes	No	No
3200-541	46285 - William Street Breakwater Upgrade	External design progressing and due for completion Dec 18. Construction due to commence Feb 19.	Project PMO	-225,179	225,179	0	-225,179	Third Quarter	Yes	Yes	Yes
1600-511	43563 - New Fleet Management Software	Fleet Management Software to be delivered in line with Asset Management Advancement Project.	Project PMO	0	200,000	200,000	0	First Quarter	Yes	N/A	N/A
3600-569	46281 - Coochiemudlo Island Berthing Piles	Constructed in conjunction with Barge Ramp (40686) with construction completed Jun 18. Final claim and as-constructed documentation to be received. Forecast for completion Aug 18.	Project PMO	0	192,629	192,629	0	First Quarter	Yes	Yes	Yes
3600-560	42947 - Main Rd Wellington Pt Road and Drainage Works	Construction team progressing on-site with construction forecast for completion Aug 18.	Program PMO	0	190,080	190,080	-190,080	First Quarter	Yes	Yes	Yes
2300-505	20062 - Wellington Pt Village - Bollarding, Public Art,	Procurement and design completed. Construction and installation Sep 18.	Project PMO	0	188,500	188,500	0	First Quarter	Yes	Yes	Yes

Submission Number	Job Description	Description	Job Identity	Revenue	Expenditure	Cash Impact	Reserves	Expected Completion	Has the Project Started?	Has the Contract been Awarded?	Has the Order been Raised?
3300-504	64092 - Sewerage PS #92 (7 Donald Rd, Redland Bay)	Design stage will be completed by end of Aug 18. Switchboard modification completed. Project delivery documentation currently being developed internally focusing on safest method to deliver project.	Project PMO	0	176,590	176,590	0	First Quarter	Yes	Yes	Yes
3500-502	42701 - Coochie Is Foreshore East (Jetty) – Public Toilet Renewal	Re-design of the plans undertaken and procurement completed in conjunction with Beth Boyd project (42702) for efficiency. Refurbishment to commence in Sep 18.	CIP - PMO	0	167,150	167,150	0	Second Quarter	Yes	Yes	No
3200-537	44779 - Water Feature Renewal - Cascade Gardens, Vic Pt	External design progressing with forecast completion Sep 18.	Program PMO	0	151,883	151,883	0	First Quarter	Yes	Yes	Yes
1700-500	20159 - Enterprise Cash Receipting	This is a joint project between IM and FSG and is reliant on resources from an external supplier. The project go-live date was moved to accommodate the supplier's resources, ensure sufficient time for user acceptance testing and support our people through the process improvement.	Project PMO	0	150,626	150,626	0	Fourth Quarter	Yes	Yes	Yes
3200-511	40293 - Sycamore Pde, Victoria Pt – Traffic Control Treatment	Construction team progressing on-site with construction forecast for completion Aug 18.	Program PMO	0	136,000	136,000	0	First Quarter	Yes	Yes	Yes
3600-556	41190 - Albert Street Pipe Extension, Victoria Point	Developer unable to complete as originally programmed. External design progressing. Forecast for completion Sep 18.	Program PMO	0	133,581	133,581	0	First Quarter	Yes	Yes	Yes
3600-566	44791 - Park Renewal - O'Gorman St Park, Alex Hills	Construction completed Jul 18. Final claim and as-constructed documentation to be received. Expect to be acquitted Aug 18.	CIP - PMO	0	130,040	130,040	0	First Quarter	Yes	Yes	Yes
3600-555	40686 - Barge Ramp Upgrade – Coochiemudlo Is	Constructed in conjunction with Berthing Piles (46281) with construction completed Jul 18. Final claim and as-constructed documentation to be received. Forecast for completion Aug 18.	Project PMO	0	127,280	127,280	0	First Quarter	Yes	Yes	Yes
3500-503	42702 - Beth Boyd - Public Toilet Renewal	Re-design of the plans undertaken and procurement completed in conjunction with Coochie Is. project (42701) for efficiency. Refurbishment to commence in Sep 18.	Program PMO	0	119,950	119,950	0	Second Quarter	Yes	Yes	No
3600-567	44800 - Park Renew - Capalaba Regional Park	Contractor progressing on-site with construction forecast for completion Aug 18.	Program PMO	0	111,527	111,527	0	First Quarter	Yes	Yes	Yes
3600-571	46937 - Esplanade Boat Ramp Renewal - Karragarra Island	Construction completed Jun 18. Final payment and as-constructed documentation processed Jul 18. Rectification works required to relocate one Berthing Pile to be completed Oct 18.	Project PMO	0	110,752	110,752	0	Second Quarter	Yes	Yes	Yes

2017-18 to 2018-19 Carryover Budget Review

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Submission Number	Job Description	Description	Job Identity	Revenue	Expenditure	Cash Impact	Reserves	Expected Completion	Has the Project Started?	Has the Contract been Awarded?	Has the Order been Raised?
3200-508	20413 - Redland Aquatic & Emergency Precinct	Land transfer to be completed.	Program PMO	0	110,000	110,000	0	Second Quarter	Yes	Yes	No
3600-570	46316 - Hamilton Street Footpath, Redland Bay	Design completed. Stage 1 construction due to commence Oct 18.	Program PMO	0	109,507	109,507	0	Second Quarter	Yes	Yes	No
3200-520	41551 - Playground Equipment - Headland Park, Pt Lookout, NSI	Design progressing to be completed following final QYAC consultation.	Project PMO	0	105,000	105,000	-105,000	Third Quarter	Yes	Yes	Yes
3600-563	43024 - Kyling Lane Cleveland - Design & construct Power & Lighting	Construction team progressing on-site with construction forecast for completion Sep 18.	Program PMO	0	104,000	104,000	0	First Quarter	Yes	Yes	Yes
1600-501	20304 - Unified Communications IM	Implementation progressing, with hardware being configured. Forecast for completion Jul 18.	Activity	0	102,107	102,107	0	First Quarter	Yes	Yes	Yes
3600-557	41403 - Div 6 CIP Lighting & Electrical Mt Cotton Community Pk	Stage 1 construction completed 2017-18. Stage 2 to be completed Oct 18.	CIP - PMO	0	101,695	101,695	0	Second Quarter	Yes	Yes	No
3200-518	41193 - Pedestrian Bridge Renewal	Bridges purchased and pre-fabrication commenced. Delivery due first quarter, with installation to be completed second quarter of 2018.	Program PMO	0	100,000	100,000	0	Second Quarter	Yes	Yes	Yes
2300-501	40457 - Public Art & Acquisitions	The fabrication of the Redland Art Gallery Collection Storage Art Rack has been completed and delivery scheduled Aug 18.	Activity	0	95,148	95,148	0	First Quarter	Yes	Yes	Yes
1600-508	20620 - Telecommunications Tower	Telecommunications tower to replace the Alex Hills Water Tower.	Project PMO	0	86,356	86,356	0	Second Quarter	N/A	N/A	N/A
1600-504	20350 - Replacement Activity - Server	Final stages of the Enterprise Server/Storage upgrade. Equipment delivered and being configured.	Activity	0	74,930	74,930	0	Second Quarter	Yes	Yes	Yes
3200-506	20294 - Station Masters Cottage	Design progressing, and due for completion in Sep 18.	Project PMO	0	74,857	74,857	0	First Quarter	Yes	Yes	Yes
3200-535	44754 - Asset Renewal - Boardwalks and Stairs at NSI	Condition report received. Follow-up programming to be completed Oct 18.	Program PMO	0	70,000	70,000	0	Second Quarter	Yes	Yes	No

Submission Number	Job Description	Description	Job Identity	Revenue	Expenditure	Cash Impact	Reserves	Expected Completion	Has the Project Started?	Has the Contract been Awarded?	Has the Order been Raised?
3200-507	20319 - Div 1 CIP BMX Track EGW Woods Park, Wellington Pt	Site constraints and community consultation being incorporated into design. Design to be finalised Sep 18.	CIP - PMO	0	66,251	66,251	0	First Quarter	Yes	Yes	Yes
3200-500	40032 - Coochiemudlo Island Jetty (DDA Compliance)	Rectification works to meet DDA compliance (modify deck and gates) and requires additional Translink funding to complete. Completion forecast Feb 19.	Project	0	65,410	65,410	0	Third Quarter	Yes	Yes	No
3200-523	42387 - Public Amenities - Three Paddocks Park - Well Pt	Design completed with building purchased. Contractor in progress and forecast for completion Oct 18.	Program PMO	0	60,000	60,000	-60,000	Second Quarter	Yes	Yes	Yes
3500-500	40471 - Cleveland Aquatic Centre	Carryover savings to enable delivery of Bus Station Digital Program in 2018-19.	Activity	0	50,000	50,000	0	First Quarter	N/A	N/A	N/A
3500-505	42845 - Victoria Point Hall - Community Hall Renewal	Carryover savings to enable delivery of the Public Amenities Program in 2018-19.	Program PMO	0	49,637	49,637	0	Second Quarter	Yes	Yes	Yes
3600-553	40547 - Road and Footpath Upgrade – Bunker Road, Victoria Point	Land acquisition finalised, with legal processes to be completed Sep 18.	Project PMO	0	49,028	49,028	0	First Quarter	Yes	Yes	No
3200-532	43552 - Pathway Connection – War Memorial Path – Coochie Island	Design completed Jul 18 with construction forecast for completion Dec 18.	Program PMO	0	45,000	45,000	0	Second Quarter	Yes	Yes	No
3600-500	43546 - Nursery -Road and Car park Design and Construct	Transfer between Contractors to PDG Salaries.		0	43,683	43,683	0	Fourth Quarter	Yes	N/A	N/A
		Corresponding entry.	Project PMO	0	-43,683	-43,683	0	Fourth Quarter	Yes	N/A	N/A
3300-504	64005- Sewerage PS #5 (2-16 Middle St, Cleveland)	Monitoring of first pump installation completed and structural integrity of the wet well secured. Installation of second pump and associated pipe work proceeding.	Program PMO	0	42,684	42,684	0	First Quarter	Yes	Yes	Yes
3200-533	43562 - Fence Renewal - South Gorge, NSI	Construction by QYAC in progress. Forecast for completion Oct 18.	Program PMO	0	41,000	41,000	0	Second Quarter	Yes	Yes	Yes
3600-562	43013 - Kinross Road Upgrade, Thornlands – Design	Design progressing and due for completion Oct 18.	Program PMO	0	39,906	39,906	0	Second Quarter	Yes	Yes	Yes
3300-501	62179 - Jones Road, Capalaba - Redland Mainland WSS Network	Augmentation completed and tested with connection due Jul 18. Remaining costs for pressure and microbiological testing expected before completion by Sep 18.	Program PMO	0	39,320	39,320	0	First Quarter	Yes	Yes	No
3200-525	42403 - H310063 Bus Shelter 256 257 Cleveland Rail Bus Station CBD	Design progressing and due for completion Oct 18. Associated with Grant Funding.	Program PMO	0	39,000	39,000	0	Second Quarter	Yes	Yes	No

Submission Number	Job Description	Description	Job Identity	Revenue	Expenditure	Cash Impact	Reserves	Expected Completion	Has the Project Started?	Has the Contract been Awarded?	Has the Order been Raised?
3500-506	42846 - Alexandra Hills Hall - Community Hall Renewal	Carryover savings to enable delivery of the Public Amenities Program in 2018-19.	Program PMO	0	33,651	33,651	0	Second Quarter	Yes	Yes	Yes
2300-504	20276 - RPAC Gallery Foyer Refurb	Project plan outline in progress. Contractor to be engaged Aug 18, forecast for completion Dec 18.	Program PMO	0	33,020	33,020	0	Second Quarter	Yes	No	No
1600-500	20041 - Electronic Document and Records Management (EDRMS)	Upgrade progressing. Implementation due, following ECR project and City Plan, in conjunction with supplier.	Project	0	29,000	29,000	0	Second Quarter	Yes	Yes	Yes
1600-506	20529 - GIS	Completion of Red-e-map upgrade to follow City Plan prioritisation.	Project	0	28,947	28,947	0	Second Quarter	Yes	Yes	Yes
3200-524	42390 - LGIP Road Program	Design of Panorama Dr in progress. Design forecast for completion Sep 18.	Program PMO	0	25,000	25,000	-25,000	First Quarter	Yes	Yes	No
3500-504	42817 - RPAC Chiller Renewal	Carryover is to complete software installation in Aug 18.	Project PMO	0	23,690	23,690	0	First Quarter	Yes	Yes	Yes
3500-511	42850 - Edgar Harley Pavilion - Community Hall Renewal	Carryover savings to enable delivery of the Public Amenities Program in 2018-19.	Program PMO	0	21,000	21,000	0	Second Quarter	Yes	Yes	Yes
3200-536	44758 - Park Asset Renewal, Aquatic Paradise Park West, Birkdale	Construction completed Jul 18. Final claim and as-constructed documentation to be received. Expect to be acquitted Aug 18.	CIP - PMO	0	20,000	20,000	0	First Quarter	Yes	Yes	Yes
3300-506	64910 - PS 35 - Switchboard upgrade	Remaining bollards to be installed. Practical completion expected in Aug 18.	Project PMO	0	19,420	19,420	0	First Quarter	Yes	Yes	Yes
2300-502	41086 - RAG Collection Storage – Climate Control System	Engineering scope and design complete. Awaiting storage space to become available in Sep 18. Stage 1 $16K will be completed in 2018-19. Stage 2 to proceed in 2019-20 budget cycle.	Project	0	16,047	16,047	0	Second Quarter	Yes	No	No
1600-502	20541 - P&R Core Upgrade and Regulatory Module	Scheduled to progress following implementation of ECR and City Plan.	Project	0	16,019	16,019	0	Second Quarter	Yes	Yes	No
3600-573	80059 - King Island Drive and Birkdale Road entrance lighting	Contract awarded with construction scheduled upon completion of other works in-progress (Sovereign Waters Wetland Rehabilitation). Access to site forecast Sep 18.	Program PMO	0	15,587	15,587	0	First Quarter	Yes	Yes	Yes
3500-509	42852 - Thorneside Hall - Community Hall Renewal	Progressed following delivery of lighting supplies and other parts and consideration of hall booking schedule. Completed in Jul 18.	Program PMO	0	13,637	13,637	0	First Quarter	Yes	Yes	Yes

Submission Number	Job Description	Description	Job Identity	Revenue	Expenditure	Cash Impact	Reserves	Expected Completion	Has the Project Started?	Has the Contract been Awarded?	Has the Order been Raised?
3500-507	42848 - Redland Bay Hall - Community Hall Renewal	Progressed following delivery of lighting supplies and other parts and consideration of hall booking schedule. Completed in Jul 18.	Program PMO	0	13,539	13,539	0	First Quarter	Yes	Yes	Yes
3200-509	20627 - Div 4 CIP Welcome Signage, Victoria Pt Jetty	Construction now progressing following community and QYAC consultation.	CIP - PMO	0	12,000	12,000	0	First Quarter	Yes	Yes	No
3300-503	63006 - Pt Lookout WWTP	Final close out of defects and performance reporting for upgraded existing sewage treatment plant to meet new licence. Contractor continuing to reduce defects with current remaining 12 defects.	Project PMO	0	10,267	10,267	-10,267	First Quarter	Yes	Yes	Yes
2500-501	42884 - Energy Solar Program	Installation of solar systems completed Jul 18 (Animal Shelter and IndigiScapes new nursery).	Program PMO	0	10,173	10,173	0	First Quarter	Yes	Yes	Yes
3500-501	20440 - Drive and Group Controllers Library Lift	Carryover savings to enable delivery of the Public Amenities Program in 2018-19.	Project PMO	0	7,989	7,989	0	Second Quarter	Yes	Yes	Yes
3500-510	42854 - Wellington Point Hall - Community Hall Renewal	Progressed following delivery of lighting supplies and other parts and consideration of hall booking schedule. Completed in Jul 18.	Program PMO	0	6,295	6,295	0	First Quarter	Yes	Yes	Yes
3200-501	20155 - Div 5 CIP Art Platform Cnr Southsea Terrace & H/Central Rd	Final installation progressing following acquisition of public art items and resolution of construction constraints.	CIP - PMO	0	5,825	5,825	0	First Quarter	Yes	Yes	No
3200-502	20172 - Div 5 CIP Art Platform The Esplanade, Karragarra Is	Final installation progressing following acquisition of public art items and resolution of construction constraints.	CIP - PMO	0	5,825	5,825	0	First Quarter	Yes	Yes	No
3200-503	20174 - Div 5 CIP Art Platform Lucas Dr, Lamb Is	Final installation progressing following acquisition of public art items and resolution of construction constraints.	CIP - PMO	0	5,825	5,825	0	First Quarter	Yes	Yes	No
3200-504	20180 - Div 5 CIP Art Platform High St (Community Hall), Russell Is	Final installation progressing following acquisition of public art items and resolution of construction constraints.	CIP - PMO	0	5,825	5,825	0	First Quarter	Yes	Yes	No
3200-505	20182 - Div 5 CIP Art Platform High St (Council Library), Russell Is	Final installation progressing following acquisition of public art items and resolution of construction constraints.	CIP - PMO	0	5,825	5,825	0	First Quarter	Yes	Yes	No
3500-508	42851 - Thornlands Dance Palais - Community Hall Renewal	Progressed following delivery of lighting supplies and other parts and consideration of hall booking schedule. Completed in Jul 18.	Program PMO	0	5,637	5,637	0	First Quarter	Yes	Yes	Yes

Submission Number	Job Description	Description	Job Identity	Revenue	Expenditure	Cash Impact	Reserves	Expected Completion	Has the Project Started?	Has the Contract been Awarded?	Has the Order been Raised?
3600-574	80067 - Pistachio Crt, Birkdale Lighting	Construction completed Jul 18. Final claim and as-constructed documentation to be received. Expect to be acquitted Aug 18.	Program PMO	0	5,628	5,628	0	First Quarter	Yes	Yes	Yes
3300-500	62171 - Remart Street, Russell Island - Redland Mainland WSS Network	Augmentation completed, tested and connected. Remaining costs for pressure and microbiological testing expected before completion in first quarter.	Program PMO	0	3,860	3,860	0	First Quarter	Yes	Yes	No
1600-503	20306 - Digitisation, Retention and Disposal IM	Scheduled to progress following implementation of ECR and City Plan.	Project	0	2,450	2,450	0	Second Quarter	Yes	Yes	No
1600-512	41005 - Fleet Replacement Program	Budgeted accounting entries for funding from new Fleet Replacement Reserve.	Activity	0	0	0	2,098,102	Ongoing	N/A	N/A	N/A
				-413,179	**17,100,283**	**16,687,104**	**-3,676,469**				
Operational Budget Review Submissions											
0300-100	10548 - Human Resources Information System (HRIS) – Phase 3	Procurement process in progress with software purchase to occur Aug 18. Implementation to progress through Sep 18.	Project PMO	0	600,000	600,000	0	Third Quarter	Yes	Yes	No
		Judy Holt Northern Landfill Batters Design - Design/specification completed Apr 18. A professional estimator was engaged in May. Carryover required for shortfall of budget for construction of the full project. Birkdale Landfill Remediation Capping - carryover is required to complete the construction of the repair over the gas main.		0	718,570	718,570	0				
3300-100	Closed Landfill Remediation	Adj. landfill remediation provision relating to 55092 - Judy Holt Nth Landfill, 55073 - Birkdale Landfill Capping	Project PMO	0	-718,570	-718,570	0	First Quarter	Yes	N/A	N/A
				0	**600,000**	**600,000**	**0**				
				-413,179	**17,700,283**	**17,287,104**	**-3,676,469**				

12.3 2018-2019 REGISTER OF FEES MINOR AMENDMENTS

Objective Reference:

Authorising Officer: **Deborah Corbett-Hall, Chief Financial Officer**

Responsible Officer: **Deborah Corbett-Hall, Chief Financial Officer**

Report Author: **Helen Griffith, Management Accountant Commercial Business**

Attachments: **1. 2018-2019 Register of Fees Minor Amendments**

PURPOSE

The purpose of this report is to make some minor amendments to the 2018-2019 Register of Fees.

BACKGROUND

The 2018-2019 Register of Fees was adopted at the General Meeting on 23 May 2018. Following a review of the adopted schedules some minor administrative amendments are required and combined in one report for efficiency.

ISSUES

There are five minor amendments that have been requested which will have NIL or very minor impact on revenue.

1. Please refer to page 1 of the attachment. A3 black & white as well as colour copying charges are required in addition to the A4 charges. Please refer to Page 1 of the schedule.

Black & White Copying		Colour Copying	
Size	**Cost**	**Size**	**Cost**
A4	$1.20	A4	$2.50
A3	$1.75	A3	$3.60

2. Please refer to page 34 of the attachment. Temporary food business applications have some wording that is no longer applicable:

   Temporary Food Business *Application for the approval and licence of a business:*
   Limited operation (less than 12 days per financial year) ~~includes temporary activities such as hamburgers, spit roasts, curries and rice, pizza.~~

3. Please refer to page 29 of the attachment. Domestic plumbing and drainage fees to include 'Plus $80 per extra fixture' and slight wording change to better reflect the cost to Council to process the amendment:

Amended architectural plans after approval	$160.00 plus $80 per extra fixture
Amended plans including on site design – Non Sewered Properties	$190.00 plus $80 per extra fixture

4. Please refer to page 8 of the attachment. Changes required to the schedule of supporting information item 1.2. The current refund schedule is to exclude plumbing and an additional refund schedule required for plumbing only:

   1.2 Refund of Fees for Withdrawn Applications

   - If the application is withdrawn before it is decided by Council a percentage of the application fee will be refunded depending on the assessment stage reached at the time of the withdrawal:

Refund of fees for withdrawn applications excluding plumbing applications.	
Stage of Application	**Refund Percentage**
Application Part	80
Information and Referral Part	50
Notification Part	20
Decision Part	Nil

Refund of fees for plumbing withdrawn applications.	
Stage of Application	**Refund Percentage**
Application Part	80
Information Request Issued	65
Decision Issued	50
An inspection has been carried	Nil

STRATEGIC IMPLICATIONS

Legislative Requirements

Section 98 of the *Local Government Act 2009* requires a local government to keep a register of cost recovery fees. For transparency, Redland City Council publishes all its annual fees and not just cost recovery fees.

Legislation also allows Council to adjust its fees at any time by resolution of Council.

Risk Management

Council benchmarks with other local governments and similar service providers on a periodic basis. Council monitors its budget variances on a monthly basis. Additionally, Council reviews its long term financial strategy on an annual basis and considers the weighted indices, growth and price factors.

Financial

Nil impact expected as the changes are of an administrative nature and should not significantly alter expected revenue.

People

Nil impact expected as the purpose of this report is to make some minor amendments to the 2018-2019 Register of Fees.

Environmental

Nil impact expected as the purpose of this report is to make some minor amendments to the 2018-2019 Register of Fees.

Social

Nil impact expected as the purpose of this report is to make some minor amendments to the 2018-2019 Register of Fees.

Alignment with Council's Policy and Plans

This report has a relationship with the following items of the 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

The Group Manager Environment and Regulation has requested these changes except for the photocopying fee changes which were identified by Financial Services.

OPTIONS

Option One

That Council resolves to adopt the changes to the 2018-2019 Register of Fees for Redland City Council as attached.

Option Two

That Council resolves to amend the attachment prior to adoption or request further information.

OFFICER'S RECOMMENDATION

That Council resolves to adopt the changes to the 2018-2019 Register of Fees for Redland City Council as attached.

Redland
CITY COUNCIL

2018-2019 Register of Fees

(Includes Redland Water and RedWaste Commercial Businesses)

As at 1 July 2018

AMENDED

Appendix - Charge Type

B – Bond, C – Commercial, R – Regulatory, O – Other

REDLAND CITY COUNCIL
FEE SCHEDULE SUPPORTING INFORMATION

1. PHOTOCOPY FEE (Officer Assisted)

Photocopying fees are used consistently across Redland City Council and the cost per page is outlined below:

Black & White Copying		Colour Copying	
Size	**Cost**	**Size**	**Cost**
A4	$1.20	A4	$2.50
A3	$1.75	A3	$3.60
Copies of Council Minutes (A4)		**Cost**	
6 pages or less		as per the above	
7 pages or more		$7.00	

2. PHOTOCOPY FEE (no assistance provided)

Council Libraries have photocopy machines which take a coin in the slot where you can make copies yourself.

Libraries Photocopying (A4 only) coin in slot		
	Size	**Cost**
Black and White	A4	$0.20
Colour	A4	$2.00

3. GLOSSARY OF TERMS

3.1 Fee Charge Type and Acronyms

B Bond
C Commercial
R Regulatory (Cost Recovery)
O Other
FOA Fee on Application
POA Price on Application

3.2 Not for Profit and bona-fide charities

Bona-fide charities and not for profit organisations are classified by means of the following criteria:

1. Endorsed as a charity by the Australian Taxation Office; or
2. An incorporated association under the *Associations Incorporation Act 1981* which is not a club licensed under the *Liquor Act 1992*; or
3. An incorporated association under the *Associations Incorporation Act 1981* which is a club licensed under the *Liquor Act 1992*, if the applicant:
   - 3.1 Does not have an existing management agreement with another licensed club; and
   - 3.2 Has no more than 20 gaming machines licensed in accordance with the *Gaming Machine Act 1991*; and
   - 3.3 The applicant is the owner of the premises the subject of the development application.

Supporting documentation confirming the status as an eligible charity or not for profit organisation must be supplied with the application to receive any applicable discounts.

4. REGISTER OF COST RECOVERY FEES

As per section 98(1) of the *Local Government Act 2009* Redland City Council maintains a register of Cost Recovery Fees. These Cost Recovery Fees are included in this Register of Fees and a copy can be obtained through Council's website or from the Corporate Meetings & Registers Team, standard black and white photocopy charges apply.

AMENDED

REDLAND CITY COUNCIL

FEES REGISTER REPORT

Description	Unit	Base Charge $	GST $	Final Charge $	Type
LEGAL SERVICES					
Notices of Non-Party Disclosure and Third Party Discovery					
Inspection and provision of documents	per hour	37.80		37.80	R
Party Disclosure and Discovery					
Inspection and provision of documents	per hour	37.80		37.80	R
RIGHT TO INFORMATION					
Application fees are set by the Queensland State Government contact Council's Corporate Governance Unit for current fees.					
Application fee for applications not concerning applicant's personal affairs (Statutory Fee)	per application			POA Statutory Fee	R
Application processing charges if processing (including inspection of documents) takes longer than 5 hours (Statutory Charge)	per 15 mins			POA Statutory Fee	R
Photocopies – A4 Black & white (statutory charge)	per page			POA Statutory Fee	R
MAPPING SERVICES					
Postage	per map	10.91	1.09	12.00	C
Computer Generated Mapping Products					
A0 Predefined Map Content	per map	76.36	7.64	84.00	C
A1 Predefined Map Content	per map	63.64	6.36	70.00	C
A2 Predefined Map Content	per map	50.91	5.09	56.00	C
A3 Predefined Map Content	per map	38.18	3.82	42.00	C
A4 Predefined Map Content	per map	25.45	2.55	28.00	C
Customised Map	per map	90.00	9.00	99.00 Hourly rate, plus extra based on map size	C
Development Control Plan (A0 Colour)					
Mainland	per map	44.00		44.00	R
Islands	per map	44.00		44.00	R
Mainland & Islands Sheet	per map	44.00		44.00	R
Digital Mapping Data					
CD Production and Digital Data Agreement		255.45	25.55	281.00	C

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Digital Data Layer (Shapefile format)	per layer	63.64	6.36	70.00	C
Redlands Planning Scheme					
A0 Overlay Map	per map	44.00		44.00	R
A0 Zoning Map	per map	44.00		44.00	R
Statutory Maps					
1998 Strategic Plan					
Preferred Dominant Land Use Map	per map	44.00		44.00	R
Greenspace Map	per map	44.00		44.00	R
1998 Strategic Plan	per map	44.00		44.00	R
Zoning Map 1998 Planning Scheme (A0 Colour)					
Mainland	per map	44.00		44.00	R
Islands	per map	44.00		44.00	R
FINANCIAL MANAGEMENT					
Rate Searches					
Telephone searches to be confined to two per enquirer per day, provided funds are held. For each enquiry requiring a search of records:					
Full Property/Rate Search	per enquiry	54.15		54.15	R
Revenue Services					
Property Transfer Fee (Change of Ownership)	per transfer	45.40		45.40	R
Copy of Rate Notice for period prior 1 July 2005	per rate notice	78.50		78.50	R
Dishonour Administration Fee	per dishonour	28.55		28.55 + bank fee charged to RCC	R
Inspect Rate Book (not suitable for Property Conveyance)	per property	16.85		16.85	R
LIBRARY FEES					
Library Enviro Bags	per bag	1.45	0.15	1.60	C
Inter-Library Loans (if applicable)	per loan	15.73	1.57	17.30	C
Sale of second hand books	per book			POA	C
Sale of second hand magazines	per magazine			POA	C
Replacement fee for lost & damaged library books & other items	at cost			at cost	C
Workshops	per participant			POA	C
Booklets	per book			POA	C
Meeting Rooms - Commercial Use Only	first 2 hours	17.55	1.75	19.30	C

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Universal Serial Bus (USB)	per item	9.09	0.91	10.00	C
Printing from ITC in the libraries					
Black and white printing from ITC in Libraries	per page	0.18	0.02	0.20	C
Colour Printing from ITC in Libraries	per page	1.82	0.18	2.00	C
REDLAND ART GALLERY					
Commission on Sale of Artworks and Merchandise					
Commission on Sale of Artworks and Merchandise; Commercial/ Individual Artist - ie: Profit charged at 20%; Community / Not for Profit - ie: Local community groups, community arts organisations, community development initiatives and charities. Charged at 10%	per item			POA	C
Public Program Workshops	per person			POA	C
Redland Art Awards	per entry			POA	C
Ticketed Events in Art Gallery	per person			POA	C
REDLAND PERFORMING ARTS CENTRE - RPAC					
CONCERT HALL					
Per Performance Day/Night - 10% gross box office, with a minimum guaranteed rental, plus all costs	minimum - per day/night	1,267.27	126.73	1,394.00	C
Rehearsal Hire: (Not on day of a performance) Working lights only - minimum 3 hour call	per hour + costs	63.64	6.36	70.00	C
Bump in / set up / full rehearsal	per hour + costs	76.36	7.64	84.00	C
Bump in / set up / full rehearsal	per day + costs	534.55	53.45	588.00	C
Concert Hall - Green Room Only					
Business hours - Monday to Friday - full day	per day + costs	69.09	6.91	76.00	C
Business hours - Monday to Friday - half day	half day + costs	38.18	3.82	42.00	C
Evenings, weekends & public holidays - full day	per day + costs	132.73	13.27	146.00	C
Evenings, weekends & public holidays - half day	half day + costs	63.64	6.36	70.00	C
Concert Hall - Part Hall Foyer and Mezzanine					
Business hours - Monday to Friday - full day	per day + costs	280.00	28.00	308.00	C
Business hours - Monday to Friday - half day	half day + costs	138.18	13.82	152.00	C
Evenings, weekends & public holidays - full day	per day + costs	342.73	34.27	377.00	C

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Evenings, weekends & public holidays - half day	half day + costs	190.00	19.00	209.00	C
Concert Hall - Part Hall Foyer, Mezzanine & Green Room					
Business hours - Monday to Friday - full day	per day + costs	342.73	34.27	377.00	C
Business hours - Monday to Friday - half day	half day + costs	178.18	17.82	196.00	C
Evenings, weekends & public holidays - full day	per day + costs	404.55	40.45	445.00	C
Evenings, weekends & public holidays - half day	half day + costs	228.18	22.82	251.00	C
CULTURAL CENTRE VENUES					
Facilities & Equipment					
Kitchen	per day	41.82	4.18	46.00	C
Technical staff/Duty supervisor	per hour	52.73	5.27	58.00	C
Post performance clean	per hour	40.91	4.09	45.00	C
Cultural Centre Venues - Event Use					
Gallery Foyer (Hourly Use up to 3 hours)	per hour	70.00	7.00	77.00	C
Gallery (including kitchen) (Event Use) 10% gross box office, with a minimum guaranteed rental, plus all costs	per day	684.55	68.45	753.00	C
Auditorium (Hourly Use up to 3 hours)	per hour	56.36	5.64	62.00	C
Auditorium (including kitchen) (Event use) 10% gross box office, with a minimum guaranteed rental, plus all costs	per day	430.91	43.09	474.00	C
Whole of Venue (including kitchen) (Event Use) 10% gross box office, with a minimum guaranteed rental, plus all costs	per day	1,065.45	106.55	1,172.00	C
Cultural Centre Venues - Green Room Only					
Business hours - Monday to Friday	per day + costs	61.82	6.18	68.00	C
Evenings, weekends & public holidays	per day + costs	95.45	9.55	105.00	C
EQUIPMENT HIRE - External					
Consumable items - technical	per item			at cost + 10%	C
Hire of special lighting equipment	per item			at cost + 10%	C
Hire of special sound equipment	per item			at cost + 10%	C
Hire of special staging equipment	per item			at cost + 10%	C

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Equipment Hire - RPAC Owned	per item			POA Depending on piece of equipment	C
MARKETING SERVICES					
Target marketing - direct mail (incl postage)	per envelope	2.09	0.21	2.30	C
Display ad placement (artwork supplied)	per display			at cost + 10%	C
Poster distribution - venue details supplied	per poster	1.68	0.17	1.85	C
Poster distribution - when doubled with another run	no charge				C
Poster distribution - venue details to be attached	per poster	2.23	0.22	2.45	C
OTHER FEES					
Post performance clean	per hour	40.91	4.09	45.00	C
Merchandising - 10% Commission on gross merchandise sales (incl GST)	per item			% of sale price	C
Local phone/fax call	per call	0.55	0.05	0.60	C
Linen Hire - Trestle Table	per item			at cost + 10%	C
Linen Hire - Round Table	per item(s)			at cost + 10%	C
Other Linen Hire (seat covers, napkins, dry bar covers)	per item			at cost +10%	C
PERFORMANCE LAWN					
Casual Rate	per day	901.82	90.18	992.00	C
Bulk Use (12 months or more)	per day	600.00	60.00	660.00	C
Electricity Access Fee	per day	100.00	10.00	110.00	C
Bond/ Make Good Fee	per day	1,000.91	100.09	1,101.00	C
Technical staff/Duty supervisor	per hour	52.73	5.27	58.00	C
SECURITY BONDS:					
(refundable if venue/s is/are left undamaged and in a tidy condition as agreed to in signed contract). Bonds are at the discretion of the Creative Arts Manager (or nominee designated by the Creative Arts Manager).					
Small Events - up to 100 people - Parties / weddings / promotions / fund raisers etc	bond per event	525.00		525.00	B
Medium Events - 101-250 people - Parties / weddings / promotions / fund raisers etc	bond per event	787.50		787.50	B
Large Events - Over 250 people - Parties / weddings / promotions / fund raisers etc	bond per event	1,050.00		1,050.00	B

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
STAFF COSTS *(Labour charge penalty rates apply for overtime, Sundays & Public Holidays)*					
Front of House Staff Performance Package (over 200 patrons)	max 2.5 hours	463.64	46.36	510.00	C
Front of House/Functions Coordinator	per hour	43.64	4.36	48.00	C
Usher (min 4.5hr call)	per hour	39.09	3.91	43.00	C
Program/Merchandise sellers (min 3hr call)	per hour	48.18	4.82	53.00	C
Bar Attendant at private functions (min 3hr call)	per hour	48.18	4.82	53.00	C
FOH Duty Supervisor (required with non performance events)	per hour	43.64	4.36	48.00	C
Security staff	per hour	54.55	5.45	60.00	C
Duty Technical (required with access to stage & equipment)	per hour	52.73	5.27	58.00	C
Technicians (min 3hr call)	per hour	50.91	5.09	56.00	C
Marketing Coordinator	per hour	48.18	4.82	53.00	C
TICKETING FEES					
Telephone Transaction Fee	per transaction	3.91	0.39	4.30	C
Box Office / Ticketing Services - Event creation - set up fee	per event	90.91	9.09	100.00	C
Performance alterations to original set up of event	per hour	90.91	9.09	100.00	C
Credit Card Charge - A fee of 3.3% of the sale price of each ticket sold using the Electronic Funds Transfer (EFT) facilities.	per ticket			% of sale price	C
Ticket Fee	per ticket	3.82	0.38	4.20	C
Complimentary Ticket Fee	per ticket	3.18	0.32	3.50	C
Ticket Cancellation Fee	per ticket	3.82	0.38	4.20	C
Complimentary Tickets Cancellation Fee	per ticket	3.18	0.32	3.50	C
Online Ticket Booking Fee (maximum 10 tickets per transaction)	per transaction	4.55	0.45	5.00	C
Ticket Exchange Fee	per ticket	3.36	0.34	3.70	C
Postage & handling fee for all tickets mailed to patrons	per envelope	2.09	0.21	2.30	C

AMENDED

SCHEDULE SUPPORTING INFORMATION

1. REFUNDS

1.1 Refund Processing Fee

In those instances where Council is refunding part or all of a fee, a refund processing fee is payable as detailed in the table below (except in the case of Council error or for Dog or Cat Registration refunds as per item 1.3 below):

Refund Amount	Refund Processing Fee
$0 - $24.99	*Not applicable
$25 - $199.99	50% of refund amount
$200 or greater	$100

*Note: No refunds will be issued for amounts under $25 except in the case of Council error.

1.2 Refund of Fees for Withdrawn Applications

If the application is withdrawn before it is decided by Council a percentage of the application fee will be refunded depending on the assessment stage reached at the time of the withdrawal:

Refund of fees for withdrawn applications excluding plumbing applications	
Stage of Application	**Refund Percentage**
Application Part	80%
Information and Referral Part	50%
Notification Part	20%
Decision Part	Nil

Refund of fees for plumbing withdrawn applications	
Stage of Application	**Refund Percentage**
Application Part	80%
Information Request Issued	65%
Decision Issued	50%
An inspection has been carried out	Nil

Note: All requests to withdraw applications must be made in writing.

Prior to payment the total amount of the refund to be paid will be reduced by the amount of the refund processing fee as set in item 1.1 above.

1.3 Refund of Fees for Dog or Cat Registration

A pro rata refund is available for dog or cat registrations under the following circumstances:

- Death of an Animal
- Relocation from City Area
- Animal is given away

Documented evidence to support the refund request is required.

Note: Dog or Cat Registration refunds are exempt from the Refund Processing Fee.

AMENDED

2. PHOTOCOPY FEE (for Local Laws and Policy Documents only)

Photocopying fees are used consistently across Redland City Council and the cost per page is outlined on page 1, Redland City Council Fee Schedule Supporting Information.

Copies of a Local Law (including Certified) and Policy Documents	Cost
6 pages or less	Cost per page as per Redland City Council Fee Schedule Supporting information, page 1
7 pages or more	$7.00

3. DISCRETIONARY FEE CALCULATIONS AND DISCOUNTS

3.1 Discretionary Fee Reduction

Requests to determine an appropriate fee or reduce the application fee when a strict application of the scheduled fee is considered unreasonable or inappropriate considering the work required to carry out the assessment of the application, or where an appropriate fee has not been set, may be approved upon application.

Requests are required to be made in writing and accompanied by relevant supporting documentation. Should the delegated officer be unable or unwilling to determine a reduced fee at the time of lodgement (for example, in the case of impact assessable applications where the potential for submissions is a factor in consideration of any discount), the applicant is to pay the scheduled fee and any discount will be determined when the application is decided, at which time any part-refund will be paid. In determining requests for fee discounts, the delegated officers are to consider and document the following factors:

1. Level of assessment – including applicable zones and overlays;
2. Likelihood of submissions objecting to the proposal;
3. Intensity, scope and scale of proposed development;
4. Number of referral agencies and complexity of referral triggers;
5. Complexity of the technical requirements in support of the applications;
6. Anticipated workload;
7. Political and community interest sensitivity; and
8. Total calculated fee according to schedule and compared with fees for similar applications in Redland City Council's supporting schedule as well as other Councils.

A required fee may be refunded or waived under Council's POL-3120 Discounts and Waivers of Fees, Charges and Infringements Policy or the *Planning Act 2016*, section 109.

1. Circumstances for waiving all or part of a required fee apply to –
   a) A development application; or
   b) A change application; or
   c) An extension application; or
   d) The referral, under section 54 of the *Planning Act 2016*, of a development application or change application to a referral agency.
2. For section 109(b) of the *Planning Act 2016*, all or part of the required fee for the application or referral may be waived if the application or referral is made by a registered non-profit organisation.

Note that all discounts and fee waivers and discounts are to be recorded in the Fee Discount Register maintained by the administering group.

3.2 Missing Fee Calculation

The General Manager Community and Customer Services or the Group Manager City Planning & Assessment may determine an appropriate fee for a use or service not specified in the fee schedule.

AMENDED

3.3 Bona-fide Charities and Not for Profit Organisations

A discount/rebate of 25% will be applied for bona-fide charities and not for profit organisations which meet the following criteria:

1. Endorsed as a charity by the Australian Taxation Office; or
2. An incorporated association under the *Associations Incorporation Act 1981* which is not a club licensed under the *Liquor Act 1992*; or
3. An incorporated association under the *Associations Incorporation Act 1981* which is a club licensed under the *Liquor Act 1992*, if the applicant:
   - 3.1 Does not have an existing management agreement with another licensed club; and
   - 3.2 Has no more than 20 gaming machines licensed in accordance with the *Gaming Machine Act 1991*; and
   - 3.3 The applicant is the owner of the premises the subject of the development application.

Supporting documentation confirming the status as an eligible charity or not for profit organisation must be supplied with the application to receive the discount at lodgement.

Note: This discount does not apply to infrastructure charges.

3.4 Multiple Discounts

Where applicants meet the criteria for multiple discounts/rebates, discounts will be applied in the following order:

- Charity/not for profit organization; then
- Other discounts.

Discounts will be applied to the balance of the fee following the application of the previous discount.

4. RESUBMISSION OF A LAPSED APPLICATION

City Planning & Assessment Group

Where a development application for building work, operational work, reconfiguring a lot, or material change of use has lapsed and a new development application is submitted, a 25% discount of the current scheduled application fee will apply. This is subject to the following requirements being satisfied:

1. A new application is resubmitted within 6 months of a previous application lapsing; and
2. The new application is generally consistent with the lapsed application; and
3. There have been no changes to the following:
   a. Planning Scheme provisions applicable to the proposal;
   b. Building Act provisions applicable to the proposal; and
4. The reduced fee is only applicable on first resubmission of a lapsed application.

Note – This discount does not apply to building document lodgement and inspection fees.

5. CONTRIBUTIONS AND SECURITY BONDS

5.1 Security Bonds

These bonds will be determined as per the Redland City Council policy. The security bonds that can be included are:

Uncompleted Works Bond: based on 120% of the value of the uncompleted works
Performance Bonds:

- Road Cleaning
- Road Opening
- Landscaping
- Internal Works
- External Works
- Environmental Park
- General Purpose
- Development Works – General

AMENDED

Significant Vegetation Bonds
As Constructed Information Bonds
Maintenance Bonds (Security)

5.2 Contributions

- Tree Planting Contribution (street trees)
- Koala Tree off-set Contribution
- SEQ Koala Conservation SPRP off-set Contribution

6. INFRASTRUCTURE CHARGES

Adopted infrastructure charges for development applications lodged from 1 July 2011 are not listed in this document. The infrastructure charges are subject to a Council resolution pursuant to section 113 of the *Planning Act 2016*. The resolution may be amended from time to time and in accordance with section 112 of the *Planning Act 2016*, whereby the Minister may, by regulation, change the amount of the maximum adopted infrastructure charges. Refer to Council's website for the resolution.

Superseded planning scheme policy infrastructure charges for approvals given prior to 1 July 2011 are also available on Council's website.

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
CITY PLANNING & ASSESSMENT - GENERAL FEES					
Notes: **All fee calculations are part thereof** (charged in whole increments). For example: Rural Use applications have an increment of 100m2 therefore an application with a GFA of 510m2 would be rounded up to 600m2. **Fee Multipliers** apply to fee calculations, based on the following: * Code Assessment 1 * Impact Assessment 1.5 * Impact Assessment - Inconsistent 2 Note: multipliers do not apply to the reconfiguration overlays. **The following multipliers** apply to an application for bulk assessment of dwelling houses (including concurrence agency response): * 2-10 houses 0.75 * 11-50 houses 0.50 * 51 or more houses 0.25					
Early build deed of agreement	per application	1,108.00		1,108.00	R
Request for Compliance Certificate for document (excludes plan sealing, compliance assessment for Reconfiguration of Lots, and compliance assessment associated with a Material Change of Use)	per document	643.00		643.00	R
For all standard prelodgement meetings Note: Where the site is located within the Cleveland CBD Incentives Area, or is a declared Priority Development Area no charge will apply.	per application	259.00		259.00	R
Changing a development approval OTHER THAN A MINOR change as per *Planning Act 2016* s82.					
Single Dwelling Units, Ancillary uses and Home based business	per application			20% of current application fee or $1,312 whichever is greater	R
Other Uses	per application			20% of current application fee or $1,522 whichever is greater	R

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Change of an approval or change to a permit or certificate where Council is not the Assessment Manager.	per application	875.00		875.00	R
Exemption Certificate	per application			25% of applicable application fee or $441 whichever is greater	R
Changing of an approval, or referral agency response, where the change of approval is MINOR. (*Planning Act 2016 s81*)					
Single Dwelling Units, Ancillary uses and Home based business	per application	349.00		349.00	R
Other uses	per application	875.00		875.00	R
Miscellaneous					
Copy of Decision Notice Search (includes copy of approved plan where applicable)	per application	66.00		66.00	R
Building Envelope Search (includes a copy of the approved building envelope where applicable)	per application	66.00		66.00	R
Negotiated Decision Request					
Negotiated Decision Requests - Dwelling House and ancillary uses - Minor	per application	349.00		349.00	R
Negotiated Decision Requests - Other Uses - Minor	per application	852.00		852.00	R
Negotiated Decision Requests - Other Uses (where the negotiated request is not minor)	two tier			20% of current application fee or $852 whichever is greater	R
Representations received in regard to an Action Notice (as per s412 of the repealed Sustainable Planning Act 2009)	per request	852.00		852.00	R
Preliminary Approval, Variation Request and Subsequent Development Permit					
The application fee for a Preliminary Approval, under section 49 of the *Planning Act 2016*, will be 100% of the relevant fee for a development permit listed in the fee schedule.	per application			100% of application fee	R
The application fee for a Variation Approval under section 43 of the *Planning Act 2016* (Approval to override a Local Planning Instrument) will be charged based on price on application	per application			POA	R

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
When a subsequent application is submitted for a development permit and the proposal is in accordance with the Preliminary Approval (under section 49), the fee will be 75% of the relevant fee listed in the fee schedule.	per application			75% of application fee	R
Priority Development Area (as per the *Economic Development Act 2012 s34*)					
The application fee for a development application in a Priority Development Area will be 100% of the relevant fee listed in the fee schedule.	per application			100% of application fee	R
Request to extend currency period					
Request to Extend Currency Period - Minor (including dwelling houses and ancillary uses, operational works and prescribed tidal works)	per application	341.00		341.00	R
Request to Extend Currency Period - Major (other)	per application			20% of current application fee or $835 whichever is greater (capped at $2,500)	R
PLANNING ASSESSMENT					
Miscellaneous					
Licensing Investigation (for example; liquor, firearms, motor dealers etc.)	per application	349.00		349.00	R
Information in writing request (Dwelling House and ancillary uses)	per application	349.00		349.00	R
Information in writing (other)	per application	723.00		723.00	R
Superseded Planning Scheme Assessment (in addition to any applicable assessment fee if not subsequently accepted development)	per application	1,317.00		1,317.00	R
Generally in accordance / information in writing request (Dwelling House and ancillary uses)	per application	343.00		343.00	R
Generally in accordance / information in writing (other) and Pre request responses where seeking a change through the court.	per application	710.00		710.00	R
Pre request responses where seeking a change through the court	per application	710.00		710.00	R
Planning and Development Certificates					
Limited Search	per lot	289.00		289.00	R
Urgent Limited Search	per lot	458.00		458.00	R
Standard Search	per lot	779.00		779.00	R
Urgent Standard Search	per lot	950.00		950.00	R
Full Search (Vacant Site)	per lot	1,968.00		1,968.00	R

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Full Search (Built Site)	per lot	5,120.00		5,120.00	R
INFRASTRUCTURE PLANNING & CHARGES					
Preparation of Infrastructure Agreement - where associated with an application for a permissible change or extension to relevant period	per application	564.00		564.00	R
Preparation of Infrastructure Agreement - where NOT associated with an application for a permissible change or extension to relevant period	per application	1,130.00		1,130.00	R
Discount calculation request (including prescribed financial contribution)	per application	387.00		387.00	R
Dispute of a recalculation of an establishment cost	per application	1,106.00		1,106.00 plus costs of certified professional	R
Trunk Infrastructure offset claim request	per application	835.00		835.00	R
Recalculation of the Establishment Cost for Trunk Infrastructure (Land or Works)	per application	1,130.00		1,130.00 plus costs of certified professional	R
Adjustment of the Establishment Cost for Trunk Infrastructure (Land or Works)	per application	1,130.00		1,130.00 plus costs of certified professional	R
Acceptance of Trunk Infrastructure (Land or Works)	per application	561.00		561.00 plus costs of certified professional	R
Conversion applications for Trunk Infrastructure	per application	1,130.00		1,130.00 plus costs of certified professional	R
Estimate of Infrastructure Charges	per application	396.00		396.00	R
Recalculation of a credit for a pervious or existing lawful use, including a prescribed financial contribution (PFC)	per application	396.00		396.00	R
Deed of Novation to an Infrastructure Agreement					
Preparation of Deed to transfer agreement obligations and entitlements to a new owner of the affected land.	per application	219.00		219.00	R

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Deed of Variation to an Infrastructure Agreement					
Preparation of Deed to amend the provisions of an agreement, negotiated by the parties.	per application	396.00		396.00	R
Miscellaneous					
Amended Infrastructure Charges Notice for a change application or extension	per application	859.00		859.00	R
Negotiated Infrastructure Charges Notice (ICN)	per request	835.00		835.00	R
CONCURRENCE REFERRAL					
Concurrence agency referral for building work as per Schedule 9 of the Planning Regulation.	per application	576.00		576.00	R
MATERIAL CHANGE OF USE					
COMMERCIAL - Material Change of Use - Category 2					
Commercial office, display and sale activity, garden centre, bulky goods showroom, hotel, nightclub, refreshment establishment, retail warehouse, shop, veterinary surgery, drive through restaurant, funeral parlour, car wash facility.	base fee + per unit	5,482.00		5,482.00 plus $649 per 100m² of GFA above 500m²	R
COMMERCIAL - Material Change of Use - Category 3					
Brothel	base fee + per unit	13,363.00		13,363.00 plus $649 per 100m² of GFA above 500m²	R
Service station	base fee + per unit	8,081.00		8,081.00 plus $632 per 100m² of GFA above 500m²	R
COMMUNITY - Material Change of Use - Category 1					
Place of worship, community facility, emergency services.	payable for each use	1,530.00		1,530.00	R
COMMUNITY - Material Change of Use - Category 2					

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Child care centre, cemetery, educational facility, hospital, institution, health care centre.	base fee + per unit	5,482.00		5,482.00 plus $649 per 100m² of GFA above 500m²	R
INDUSTRIAL - Material Change Use - Category 1					
Vehicle parking station	base fee + per unit	2,859.00		2,859.00 plus $130 per car space	R
INDUSTRIAL - Material Change Use - Category 2					
Landscape supply depot, marine services.	payable for each use	5,487.00		5,487.00	R
INDUSTRIAL - Material Change Use - Category 3					
General industry, heavy industry, service industry, vehicle depot, vehicle repair premises, low impact industry, warehouse, high impact industry.	base fee + per unit	5,482.00		5,482.00 plus $649 per 500m² of GFA above 500m²	R
INDUSTRIAL - Material Change Use - Category 4					
Extractive industry	base fee + per unit	39,675.00		39,675.00 plus $266 per ha (> 1 ha)	R
INFRASTRUCTURE - Material Change of Use - Category 1					
Minor utility	per application	876.00		876.00	R
INFRASTRUCTURE - Material Change of Use - Category 2					
Airport air Services (includes helipad), passenger terminal, utility installation.	base fee + per unit	5,482.00		5,482.00 plus $649per 100m² of GFA above 500m². If non GFA associated with use, then $649 per ha (> 1 ha)	R

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Telecommunications facility	per application	5,486.00		5,486.00	R
OTHER					
Advertising device (operational	base fee + per unit	531.00		531.00 plus $204 per sign where more than 1	R
Temporary Use	per application	1,480.00		1,480.00	R
RESIDENTIAL - Building Works - Category 1					
Communications structure, retaining wall, private tennis court, private swimming pool.	per application	520.00		520.00	R
RESIDENTIAL - Material Change of Use - Category 3					
Caretakers dwelling, display dwelling, community residence.	payable for each use	1,973.00		1,973.00	R
RESIDENTIAL - Material Change of Use - Category 4					
Dual occupancy.	per application	3,175.00		3,175.00	R
Aged persons and special needs housing (comprising units), mobile home park, apartment building, tourist accommodation, tourist park.	base fee + per unit	5,249.00		5,249.00 plus $310 per unit over 5 units	R
Aged persons and special needs housing (comprising beds).	base fee + per bed	5,249.00		5,249.00 plus $155 per bed over 5 beds	R
RESIDENTIAL - Material Change of Use and Building Works - Category 2					
Building Works - domestic outbuilding, Building Works - on-site raising and re-location, Building Works - community residence, Home based business, Estate Sales office, Bed and breakfast, Domestic Additions.	payable for each use	1,317.00		1,317.00	R
RURAL - Material Change of Use - Category 1					
Agriculture, Roadside stall, Forestry.	payable for each use	1,531.00		1,531.00	R
RURAL - Material Change of Use - Category 2					
Animal keeping, Intensive agriculture, Rural enterprise, Produce store.	base fee + per unit	5,482.00		5,482.00 plus $649 per 100m² of GFA above 500m²	R

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
SPORT & RECREATION - Material Change of Use - Category 1					
Indoor recreation facility,	base fee + per unit	5,482.00		5,482.00 plus $649 per 100m² of GFA above 500m²	R
SPORT & RECREATION - Material Change of Use - Category 2					
Outdoor recreation facility.	base fee + per unit	5,482.00		5,482.00 plus $649 per ha (> 1ha)	R
RECONFIGURATION					
CATEGORY A - RECONFIGURATION STANDARD FORMAT, BUILDING FORMAT & VOLUMETRIC					
Notes: Includes Subdivision incorporating a Community Titles Scheme. No fee is applied to lots proposed to be dedicated as park.					
Into 2 lots	per application	1,932.00		1,932.00	R
Per additional lot thereafter	per additional lot	661.00		661.00	R
CATEGORY B - RECONFIGURATION BY LEASE EASEMENT CREATION, BOUNDARY REALIGNMENT					
Easement Creation	per application	1,046.00		1,046.00	R
Boundary realignment	per application	1,046.00		1,046.00	R
Reconfiguration by lease (per leased entity)	per application	1,046.00		1,046.00	R
OVERLAY ASSESSMENT where 2 to 49 additional lots applied for.					
Acid Sulfate Soils	per overlay	539.00		539.00	R
Bushfire hazard, Electricity infrastructure, Heritage place and character precinct, protection of the poultry industry, canal and lakeside structures.	per overlay	1,077.00		1,077.00	R
Road and rail noise, Water supply catchments, Waterways, wetlands and Moreton.	per overlay	2,153.00		2,153.00	R
Extractive resources, Flood prone, storm tide & drainage constrained land, Habitat protection, Landslide hazard.	per overlay	3,768.00		3,768.00	R
OVERLAY ASSESSMENT where 50 or more additional lots applied for.					
Acid Sulfate Soils	per overlay	1,077.00		1,077.00	R

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Bushfire hazard, Electricity infrastructure, Heritage place and character precinct, protection of the poultry industry, canal and lakeside structures.	per overlay	2,153.00		2,153.00	R
Road and rail noise, Water supply catchments, Waterways, wetlands and Moreton.	per overlay	4,307.00		4,307.00	R
Extractive resources, Flood prone, storm tide & drainage constrained land, Habitat protection, Landslide hazard.	per overlay	5,922.00		5,922.00	R
PLAN SEALING					
Survey Plan Sealing (excl. park & balance lots) - 1 into 2 lots	per application	791.00		791.00	R
Per additional lot thereafter (Survey Plan Sealing)	per additional lot	383.00		383.00	R
Application to re-seal amended survey plan	per document	395.00		395.00	R
Document sealing	per application	191.00		191.00	R
Deed of agreement for Uncompleted Works Bond	per bond	655.00		655.00	R
Survey Plans for covenants, dedications & easements (no additional lots created)	per survey plan	395.00		395.00	R
Covenant Assessment	per covenant	655.00		655.00	R
Community / Building Management Statement	per statement	910.00		910.00	R
100% of fee charged by Dept Natural Resources & Mines					
Split valuation Contribution	per application			100% of fee charged by Department of Natural Resources and Mines	R
OPERATIONAL WORKS GENERAL FEES					
Re-checking of Operational Assessment Drawings (per submission)	per application	576.00		576.00	R
Street lighting / electrical plan endorsement (where there is no operational works application associated with reconfiguration of lot/s)	per application	428.00		428.00	R
External Infrastructure where not associated with reconfiguration of lots	per 100m	1,023.00		1,023.00	R
External Infrastructure (including sewer, water supply, stormwater and roads)	per lot	283.00		283.00	R

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
ADDITIONAL INSPECTIONS					
Standard Inspection or Reinspection for Works on Site	per visit	407.00		407.00	R
BULK EARTHWORKS					
Bulk Earthworks (where Reconfiguration Approval granted)	base fee + per unit			$3,943 plus $661 per ha (> 1 ha)	R
Change of an approval or referral agency response where the change of approval is minor (Planning Act 2016 s81)					
Domestic	per application	350.00		350.00	R
Other Uses	per application	876.00		876.00	R
Changing a Development Approval other than a minor change as per Planning Act 2016 s82					
Domestic	per application			20% of current application fee or $1,312 whichever is greater	R
Other Uses	per application			20% of current application fee or $1,522 whichever is greater	R
Change of an approval or change to a permit or certificate where Council is not the Assessment Manager	per application	875.00		875.00	R
Exemption Certificate	per application			25% of current application fee or $441 whichever is greater	R
EXCAVATION, FILL and/or RETAINING WALLS					
Minor - Operational works involving either of the following: Filling and/or excavation up to 100 cubic metres; or Retaining structure between 1-1.5 metres	per application	854.00		854.00	R

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Major - Operational works involving either of the following; Filling and/or excavation greater than 100 cubic metres; or Retaining structure greater than1.5 metres	per application	1,644.00		1,644.00	R
Negotiated Decision Request					
Negotiated Decision Request - Dwelling House and ancillary uses - Minor	per application	343.00		343.00	R
Negotiated Decision Request - Other Uses - Minor	per application	836.00		836.00	R
Negotiated Decision Request - Other Uses (where the negotiated request is not minor)	two tier			20% of current application fee or $836 whichever is greater	R
Representations received in regard to an Action Notice (as per s412 of the repealed *Sustainable Planning Act 2009*)	per application	836.00		836.00	R
PRESCRIBED TIDAL WORKS					
Pontoon	per application	988.00		988.00	R
Other	per application	1,968.00		1,968.00	R
Processing Bond Fees					
Co-ordination of uncompleted works or As Constructed bonds for works $10,000 or less	per bond	394.00		394.00	R
Co-ordination of uncompleted works or As Constructed bonds for works more than $10,000	per bond	919.00		919.00	R
Exchange, reduction and/or transfer of existing bonds with a bond of equal or lesser amount	per bond	604.00		604.00	R
RESIDENTIAL CROSSOVER					
Domestic Driveway Crossover (Assessable against the Redland Planning Scheme). (Includes one inspection)	per application	328.00		328.00	R
ROAD OPENING PERMITS					
Application fee for Road Opening Permit or Renewal of Road Opening Permit	per permit	394.00		394.00	R
OP WORKS ASSESSMENT ASSOCIATED WITH RECONFIGURING A LOT					
EXTERNAL AND OTHER WORKS					
Landscaping Assessment for Open Space associated with RAL application - area of open space up to 5,000m^2	per application	480.00		480.00	R

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Landscaping Assessment for Open Space associated with RAL application - area of open space 5,001m2 - 20,000m2	per application	842.00		842.00	R
Landscaping Assessment for Open Space associated with RAL application - area of open space greater than 20,000m2	per application	1,204.00		1,204.00	R
Operational Works - Reconfiguration of a lot (includes 2 inspections)					
Into 2 Lots	per application	2,197.00		2,197.00	R
Per additional lot thereafter	per additional lot	938.00		938.00	R
OP WORKS ASSESSMENT ASSOCIATED WITH MATERIAL CHANGE OF USE					
COMMERCIAL, COMMUNITY AND OTHER USES *As defined in the Redlands Planning Scheme.*					
Commercial, Community and Other Uses (incl. 2 inspections)	base fee + per unit			$2,112 (base fee) plus $90 per 100m² of GFA above 100m² plus $115 per 1,000m² of non GFA associated with the use above 1,000m²	R
INDUSTRIAL AND INFRASTRUCTURE USES *As defined in the Redlands Planning Scheme.*					
Industrial and Infrastructure Uses (incl. 2 inspections)	base fee + per unit			$2,519 (base fee) plus $90 per 100m² of GFA above 100m² plus $115 per 1,000m² of non GFA associated with the use above 1,000m²	R
RESIDENTIAL (including dual occupancy) & TOURIST ACCOMMODATION *As defined in the Redlands Planning Scheme.*					

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Up to 5 units (incl. 2 inspections)	per application	3,864.00		3,864.00	R
6 to 10 units (incl. 2 inspections)	per application	6,203.00		6,203.00	R
11 to 40 units (incl. 2 inspections)	per application	10,295.00		10,295.00	R
More than 40 units (incl. 2 inspections)	per application	11,640.00		11,640.00	R
SPORT AND RECREATION and RURAL USES *As defined in the Redlands Planning Scheme.*					
Site area <1ha (incl. 2 inspections)	per application	1,402.00		1,402.00	R
Site area >1ha (incl. 2 inspections)	per application	1,592.00		1,592.00	R
LANDSCAPING ASSESSMENT					
COMMERCIAL, COMMUNITY AND OTHER USES *As defined in the Redlands Planning Scheme.*					
Commercial, Community and Other Uses (incl. 2 inspections)	base fee + per unit			$1,038 (base fee) plus $24 per 100m² of GFA above 500m² plus $24 per 500m² of non GFA associated with the use above 500m² or part thereof.	R
INDUSTRIAL AND INFRASTRUCTURE USES *As defined in the Redlands Planning Scheme.*					

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Industrial and Infrastructure Uses (incl. 2 inspections)	base fee + per unit			$1,038 (base fee) plus $24 per 100m² of GFA above 500m² plus $24 per 500m² of non GFA associated with the use above 500m².	R
RESIDENTIAL (including dual occupancy) & TOURIST ACCOMMODATION *As defined in the Redlands Planning Scheme.*					
1 to 50 units (incl. 2 inspections)	base fee + per unit			$1,157 plus $24 per unit above 5 units	R
More than 50 Units (incl. 2 inspections)	base fee + per unit			$1,829 plus $11 per unit above 50 units	R
SPORT & RECREATION & RURAL USES *As defined in the Redlands Planning Scheme.*					
Site area <1ha (incl. 3 inspections)	per application	1,809.00		1,809.00	R
Site area >1ha (incl. 3 inspections)	per application	2,361.00		2,361.00	R
ENVIRONMENTAL ASSESSMENT					
Request for Certificate for document	per document	644.00		644.00	R
Contributions *Note: For applications lodged from 1 July 2014, the fees are determined in accordance with the Environmental Offsets Act 2014 and the Department of Environment and Heritage Protection offsets calculator.*					
Tree planting contributions (street trees)	per tree	177.00		177.00	R
Koala Tree off-set contribution - for applications lodged prior to 1 July 2014	per tree	968.00		968.00	R
Koala Tree off-set contribution - for applications lodged from 1 July 2014	per tree			POA	R

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
PROPERTY SEARCHES					
For the following search request options you will be provided with building and plumbing historical information only. For future developments on a property it is suggested you refer to the Development Assessment Group.					
Vacant Land Search - includes one copy of "As Constructed" Sewer Main connection details	per application	59.00		59.00	R
Domestic Building and Plumbing Search- includes details of approval, date of inspection/s and outstanding compliance issues	per application	205.00		205.00	R
Domestic Conveyance Property Search - includes details of property, valuation, rates and water plus domestic building & plumbing report	per application	313.00		313.00	R
Commercial Building and Plumbing Search - includes details of approval and inspection results for building and plumbing applications plus copies of relevant certificates.	per application	407.00		407.00	R
Certificate of Classification or Occupancy Search	per application	79.00		79.00	R
COPIES OF PLANS, REPORTS & CERTIFICATES					
Approved Domestic "As Constructed" plumbing plan - details of house drainage design	per application	50.00		50.00	R
Domestic building plans - includes floor, site, and elevation plans	per file	63.00		63.00	R
Domestic plumbing and drainage records - includes available compliance certificates, compliance permits and soil percolation tests	per file	63.00		63.00	R
Approved Commercial "As Constructed" plumbing plan - details of commercial hydraulic design	per application	50.00		50.00 plus photocopy fee	R
Commercial building plans - includes floor, site and elevation plans.	per file	112.00		112.00	R
Commercial plumbing and drainage records - includes available compliance certificates, compliance permits and soil percolation tests	per file	112.00		112.00	R
BUILDING SERVICES					
Building Certification - Building Application Assessment and Inspection - Commercial					
Preparation of fee quote plus "Price on Application" (POA) for class 1A - multiple dwellings on single lot including attached and detached; class 1B and class2-class9 buildings/structures.	per application	440.91	44.09	485.00 plus POA	C
Building Certification - Building Application Assessment and Inspection - Domestic					

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Preparation of fee quote plus 'Price on Application" (POA) for class 1A - one detached and/or secondary dwelling on single lot; class 10 structure/buildings	per application	409.09	40.91	450.00 plus POA	C
Building Certification - Other					
Building Certification - other plus 'Price on Application' (POA)	per application	440.91	44.09	485.00 plus POA	C
Concurrence Agency Bonds/Security					
Removal &/or rebuilding (removal dwelling)	per application			POA	B
CONCURRENCE AGENCY FEES					
Concurrence Assessment					
Amenity & aesthetics (Class 10, shipping containers and railway carriages)	per referral	576.00		576.00	R
Amenity & aesthetics (building work for removal or rebuilding)	per referral	576.00		576.00 plus inspection fee	R
Amenity & aesthetics (dwelling house < 60m² on Southern Moreton Bay Islands)	per referral	576.00		576.00	R
Fire safety in budget accommodation	per referral	576.00		576.00	R
Building used for residential purposes	per referral	576.00		576.00	R
Preliminary building approval under Waterfront Structure Policy	per referral	576.00		576.00	R
Inspections for Council Building Approvals that have passed condition time or lapsed - Commercial					
Preparation of fee quote plus "Price on Application" (POA)	per application	482.73	48.27	531.00 plus POA	C
Inspections for Council Building Approvals that have passed condition time or lapsed - Domestic					
Preparation of fee quote plus "Price on Application" (POA)	per application	440.91	44.09	485.00 plus POA	C
LODGEMENT FEES *Additional fee information: * All inspections are an additional charge, unless noted in description. * A mandatory document lodgement fee is payable. * All standard fees apply when Council is engaged as a Replacement Certifier.*					
Domestic building lodgement - council application	per application	137.00		137.00	R
Domestic Building Lodgement - External certifier application	per application	137.00		137.00	R
Commercial building lodgement - council application	per application	196.00		196.00	R
Commercial Building Lodgement - External certifier application	per application	196.00		196.00	R

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
REGULATORY FEES					
2nd and subsequent extension of currency period for building approval (IDAS application form 2)	per application	277.00		277.00	R
Temporary Building/Structure					
Temporary building/ structure assessment	per application	374.00		374.00	R
BUILDING CERTIFICATION - DOMESTIC BUILDING					
Swimming pool / spa. State Government legislated charge.					
State Government legislated charge + one inspection fee					
Pool safety certificate only (Includes lodgement with the State Government Pool Safety Register).	per application			State Govt charge plus one inspection fee	R
COMMERICAL & DOMESTIC - PLUMBING & DRAINAGE (ALL CLASSES)					
Capping of Sewer/Removal of Septic and Sullage Trench/Composting Toilet	per inspection	173.00		173.00	R
Installation and registration of backflow prevention device or removal	per device	123.00		123.00	R
Existing backflow prevention device annual registration for first device on site	each	82.00		82.00	R
Existing backflow prevention device annual registration of additional devices on site	each	42.00		42.00	R
DOMESTIC PLUMBING AND DRAINAGE (Single Detached CLASS 1a)					
Compliance Permit - Drainage Scrutiny					
Note: all fees listed below are for a single dwelling per lot.					
New or Secondary Domestic Dwelling - Application Fee (Base Fee $450.00 + $80.00 per Fixture) Includes Inspection Fees - Sewered Properties	per application	450.00		450.00 Plus $80 per fixture	R
New or secondary domestic dwelling-application fee includes inspections/assessment of on site sewerage treatment application and annual registration fee - Non Sewered Properties	per application	640.00		640.00 Plus $80 per fixture	R
Additions/Alterations - existing dwelling - includes inspection - Sewered Properties	per application	380.00		380.00 Plus $80 per fixture	R
Additions/Alterations-existing dwelling-includes inspection - Non Sewered Area	per application	590.00		590.00 Plus $80 per fixture	R

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Amended architectural plans after approval	per application	160.00		160.00 Plus $80 per extra fixture	R
Amended plans including on site design - Non Sewered Properties	per application	190.00		190.00 Plus $80 per extra fixture	R
Conversion from septic to household sewerage treatment plant and the replacement of septic trenches, treatment plants or disposal areas and alteration to existing on-site sewerage facility (includes annual registration fee) Non Sewered Properties.	per application	518.00		518.00	R
Concurrence Assessment Agency Fee					
Note: all fees listed below are for a single dwelling per lot. Referral (Concurrence application for Building Additions to Class 1 - On Site Treatment Properties	per referral	572.00		572.00	R
Inspection fee for after approval period has expired.	per inspection	238.00		238.00	R
Inspection for Compliance Certificate					
Note: all fees listed below are for a single dwelling per lot.					
Inspection fee for notifiable work	per inspection	204.00		204.00	R
After hours inspection-inspection outside Council's operational hours (if inspector available)	per inspection	385.00		385.00	R
Requested and Re-Inspection fee for Domestic - Re Inspections for Notififavle Works Form 4/Noncompliant Work/Non cancelled inspection and work that was not ready at the time of Inspection	per inspection	173.00		173.00	R
ADDITIONAL DOMESTIC SERVICES (CLASS 1a)					
Drainage Design or As-Constructed Redraw					
New design or alteration of existing approved design	per application	172.73	17.27	190.00	R
COMMERICAL HYDRAULICS (Attached Class 1a, 1b and Class 2-9)					
Compliance Certificate					
Hydraulic Inspections - base fee	per application	254.00		254.00	R
Inspection per fixture or Capped Point	per fixture	43.00		43.00	R

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Inspection of manholes - sewer or inspection chamber house drain or Inspection chamber/manhole	each	137.00		137.00	R
Inspection of house drainage	per metre	7.00		7.00	R
Inspection of water & fire mains greater than 25mm diameter (below ground)	per metre	7.00		7.00	R
Reinspection fee for commercial hydraulic inspections	per inspection	173.00		173.00	R
Compliance Permit - Scrutiny *Industrial, duplexes and additional dwellings on a lot, are assessed as commercial applications.*					
Scrutiny of plans - base fee	per application	243.00		243.00	R
Scrutiny per fixture or capped	per fixture	49.00		49.00	R
Re-assessment of amended plans	per hour	90.00		90.00	R
DEVELOPMENT CONTROL					
Administration fee for works associated with remedial notices and/or court orders	per contractor Invoice	210.00		210.00 or 15% of cost of works, whichever is the greater	O
Erosion and sediment control advice audit (house building sites)	per audit	378.00		378.00	O
Advanced technology sign (e.g LED, Digital, Television display) *High impact 4m² and over*					
Single display period up to 7 days	per sign	735.00		735.00	R
Multiple display periods	per sign	1,029.00		1,029.00	R
Advanced technology sign (e.g. LED, Digital, Television display) *Low impact less than 4m²*					
Single display period up to 7 days	per sign	417.90		417.90	R
Multiple display periods	per sign	670.95		670.95	R
Advertising Signage *(Some signs such as garage sale signs and standard Real Estate signs are exempt signage not requiring an application providing they meet the exempt or self-assessable criteria in the Local Law)*					
Application for signage: advertising sign under Local Law - except advanced technology sign.	per sign	514.50		514.50	R

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Application for signage: standard signage package - 2nd & subsequent sign	per 2nd and subsequent signs in same application	214.20		214.20	R
Annual Licence Fee for permanent signs					
All Signs	per sign	304.50		304.50	R
Late payment fee – applies where an invoice for a sign licence is not paid within 2 months of the due date	per sign	180.60		180.60	R
Application for a transfer of a sign licence	per sign	43.05		43.05	R
Impounded Signs Release Fee					
Less than 2 metres high (Admin Fee)	per sign	147.00		147.00	R
Over 2 metres high	per sign plus plant hire and/or contractor cost	270.90		270.90	R
HEALTH & ENVIRONMENT					
Additional Inspection Fee					
Additional inspection of a food business, environmentally relevant activity, personal appearance service (non higher risk, higher risk and remedial notice inspections included),	per application	163.00		163.00	R
Amendment Fee					
Application for a major amendment of a food business licence, personal appearance service licence or environmental authority.	per application	474.00		474.00	R
Environmental Health Search					
Environmental health search of licensed or proposed licensed business	per request	492.73	49.27	542.00	C
Late and Restoration Fee					
Where a payment for a renewal of a food business licence, personal appearance service licence or environmentally relevant activity has not been received by the date of expiry of the licence; or environmental authority, a fee is payable.	per application	180.00		180.00	R
Pro-rata Fees					
Where a fee is applicable for the application or the renewal of a licence, environmental activity or health related local law, that amount may be calculated at a pro-rata rate	per request			Pro rata rate of the applicable fee	O
Transfer Fee					
Application for a transfer of a licence for a food business, environmental authority, environmentally relevant activity, or personal appearance service.	per application + prorata fee	348.00		348.00	R

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Application fee for the assessment of a new food business's premises design *to ensure compliance with the Food Act 2006.*					
Application for approval of a food business.	per application	581.00		581.00	R
Application for Renewal of Food Business Licence					
HIGH RISK food business - high risk businesses include, (but are not limited to): Catering companies; Childcare centres preparing more than just low risk foods; Nursing homes; Hospitals; Supermarkets; Organisations delivering meals	per application	689.00		689.00	R
MEDIUM RISK food business - medium risk businesses include, (but are not limited to): Bakeries; Café's; Delicatessen's; Take Away establishments; Restaurants; School Canteens; Food Manufacturers; Home-based business; Cannery; Mobile Food Vehicle; Motel / Hotel; Seafood (including raw and cooked) retailer	per application	621.00		621.00	R
LOW RISK food business - low risk businesses include, (but are not limited to): Childcare centres where low risk food is supplied by parents and served by staff; Food store (unpackaged food with minimal preparation); Bed and Breakfast; Dry Bakery; Fruit Stall (with preparation)	per application	519.00		519.00	R
***Environmental Protection Act 1994* - Environmentally Relevant Activities**					
Application for environmental authority for 1 or more environmentally relevant activities under chapter 5 of the *Environmental Protection Act 1994* (s125(i)(e))	per application			As per Schedule 10 of the Environmental Protection Regulation 2008	R
Annual environmental authority fee under the *Environmental Protection Regulation 2008* Note: this fee includes multiple activities operating under an amalgamated environmental authority	annual fee	711.00		711.00	R
Application to change environmentally relevant activity anniversary day under section 138 of the *Environmental Protection Regulation 2008*	per application + prorata fee			As per Section 138 of the Environmental Protection Regulation 2008	R

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Amalgamation application under section 246(d) of the *Environmental Protection Act 1994*.	per application			As per Schedule 10 of the Environmental Protection Regulation 2008	R
Application / annual return of a transitional environmental program under section 334 of the *Environmental Protection Act 1994*	annual fee	1,677.00		1,677.00	R
Food Businesses covered by the *Food Act 2006*					
Compliance audit and non conformance audit of a food safety program	per audit	379.00		379.00	R
Application to amend or accredit a food safety program	per application	214.00		214.00	R
Notice of written advice for a food safety program	per assessment	754.55	75.45	830.00	C
Health Related Local Laws					
Application for assessment of an accommodation park (Subordinate Local Law 1.8), public swimming pool (Subordinate Local Law 1.10), or temporary entertainment event (market) (Subordinate Local Law 1.12)	per application + prorata fee	773.00		773.00	R
Initial certificate of approval or renewal of an approval for an accommodation park (subordinate Local Law 1.8).	per application	898.00		898.00	R
Initial certificate of approval or renewal of an approval for a public swimming pool (subordinate Local Law 1.10).	per application	519.00		519.00	R
Initial certificate of approval or renewal of an approval for a temporary entertainment event (market) (subordinate Local Law 1.12).	per application	536.00		536.00	R
Public Health (Infection Control for Personal Appearance Services) Act 2003					
Application for approval of a higher risk personal appearance service	per application + prorata fee	678.00		678.00	R
Application for renewal of an existing licence for a higher risk personal appearance service	per application	401.00		401.00	R
Residential Services (Accreditation) Act 2002					
Residential Services (Accreditation) Act 2002 - Application for notice of compliance with prescribed building requirements	per application	1,107.00		1,107.00	R

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Temporary Entertainment Event					
Application for approval and a permit for a temporary entertainment event:					
Minor event with an expected capacity of fewer than 3000 people per day	per application	1,017.00		1,017.00	R
Major event with an expected capacity equal to or greater than 3000 people per day	per application	1,893.00		1,893.00	R
Temporary Food Business					
Application for the approval and licence of a business:					
Limited operation (less than 12 days per financial year)	per application	182.00		182.00	R
Regular operation (greater than or equal to 12 days per financial year; expires 30 June each year)	per application	519.00		519.00	R
ANIMAL MANAGEMENT					
Fines and penalties	per animal			POA	R
Boarding Fee					
Dog / puppy	per day	15.00		15.00	R
Cat / kitten	per day	10.00		10.00	R
Surrender fee - dog / cat/ litter	per animal	75.90		75.90	R
Cat Registration					
Note: The following concessions will apply for cat registrations: 50% discount applies for pensioners receiving the full pensioner benefit; 50% discount applies for holders of current membership of Feline Control Council of Queensland, Queensland Independent Cat Council, Queensland Feline Association, Australian National Cats Incorporated, Council of Federated Cat Clubs of Queensland and Australian National Cats Inc - Financial Members Only					
Each male / female cat 3-6mths	per cat	44.40		44.40	R
Each male / female cat 3-6mths - microchipped	per cat	33.20		33.20	R
Desexed cat	per cat	61.00		61.00	R
Desexed cat - microchipped	per cat	33.20		33.20	R
Entire male / female cat over 6mths	per cat	101.00		101.00	R
Entire male / female cat over 6mths - microchipped	per cat	73.70		73.70	R
Dog / Cat Impounding Release Fees (includes Kittens & Puppies)					
Note: The issuing of infringement notices commences at 2nd release unregistered					
1st release registered	per animal	72.80		72.80	R
1st release unregistered	per animal	200.70		200.70	R

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
2nd release registered	per animal	205.70		205.70	R
2nd release unregistered and subsequent release	per animal	318.55		318.55	R
Dog Registration					
Note: The following concessions will apply for dog registrations (excludes Regulated Dogs): 50% discount applies for pensioners receiving the full pension benefit. 50% discount applies for holders of current membership for Dogs Queensland. 50% discount applies for current members of the Greyhound Racing Board.					
Each male / female dog 3-6mths	per dog	62.90		62.90	R
Each male / female dog 3-6mths - microchipped	per dog	51.70		51.70	R
Desexed dog	per dog	79.40		79.40	R
Desexed dog - microchipped	per dog	51.70		51.70	R
Entire male / female dog over 6mths	per dog	141.80		141.80	R
Entire male / female dog over 6mths - microchipped	per dog	114.00		114.00	R
Guide dogs as defined in the Guide, Hearing and Assistance Dog Act 2009	per dog			No Charge	O
Assistance dogs / cats	per dog			No Charge	O
Kennel / Cattery Licences					
Kennel / cattery licence (Initial inspection)	per inspection	315.80		315.80	R
Kennel / cattery licence (bi-annual) (Renewal)	per inspection	194.35		194.35	R
Animal registration-each entire dog/cat kept for breeding purposes.	per dog/cat			POA	R
Pet shop (Initial Inspection)	per inspection	315.80		315.80	R
Pet shop (Renewal)	per inspection	194.35		194.35	R
Microchipping					
Microchipping fee per dog / cat	per animal	37.00		37.00	O
Other Fees					
Release of livestock - cow, horse or similar sized animal	per head	178.60		178.60	R
Release of livestock - goat, sheep or similar sized animal	per head	72.80		72.80	R
Boarding fee for livestock	per head	21.30		21.30	R
Plant / float hire	per hire			at cost	R
Plant / float transportation	per km	11.65		11.65	R
All veterinary costs	at cost			at cost	R
Vet transportation / administration costs	per visit	105.65		105.65	R
Barge fees for North Stradbroke Island and the Southern Moreton Bay Islands	per head			at cost	R

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Release of poultry and other birds	per bird	15.00		15.00	R
Surrender of poultry and other birds	per bird	15.00		15.00	R
Surrender of livestock - cow, horse or similar sized animal	per head	330.00		330.00	R
Surrender of livestock - goat, sheep or similar sized animal	per head	75.90		75.90	R
Animal rehoming	per animal			POA	R
Rehoming retail	per item			POA	R
6 Months Free Registration (All animals adopted from RCC Animal Shelter and all dogs who have completed RCC Koala / Dog Behaviour Change Program)	per head			POA	R
Permits					
Third dog / cat permit	per application	195.00		195.00	R
Regulated Dog					
Regulated dog - annual registration (entire)	per dog	356.75		356.75	R
Regulated dog - annual registration (desexed)	per dog	294.45		294.45	R
Regulated dog - sign	per dog	7.70		7.70	R
LOCAL LAWS					
Abandoned Vehicle Release Fees					
Administration fee	per release	214.25		214.25	R
Towing fee	at cost			At Cost	C
Barge transfer fees	at cost			At Cost	C
Storage fee	at cost			At Cost	C
REVS check fee	at cost			At Cost	C
Impounded goods release fee	per item(s)	85.75		85.75	O
Overgrown Property Fees					
Enter and clear fee	per property plus contractor cost	211.00		211.00	O
Regulated Parking Fees					
Fines and penalties	each			POA	R
Vehicle registration search fee	at cost			At Cost	C
SPERS (Registration Fee)	fees set by SPER (external agency)			Fee set by SPER	C
REDLANDS INDIGISCAPES CENTRE					
Equipment hire					
TV and video	per booking	20.95	2.10	23.05	C

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
PA system	per booking	20.95	2.10	23.05	C
Slide projector	per booking	20.95	2.10	23.05	C
Data projector and lap top	per booking	95.23	9.52	104.75	C
Set up and break down	per booking	86.36	8.64	95.00	C
Storage	monthly per shelf	50.50	5.05	55.55	C
Electronic whiteboard	per booking	41.82	4.18	46.00	C
Facility Hire - Kingfisher or Tallowwood room					
Half hall area	per hour	36.23	3.62	39.85	C
Both rooms (full hall area)	per hour	55.45	5.55	61.00	C
Native Gardens - Weddings/Formal Private Functions					
Small events (0-50 people) = per hour + bond	per hour	32.59	3.26	35.85	C
Medium event (51 - 100 people) = per hour + bond	per hour	49.73	4.97	54.70	C
Large events (101-150 people) = per hour + bond	per hour	65.14	6.51	71.65	C
Vacation workshops for children	per head			POA	C
Security Bond					
Centre Manager has discretion to not apply the security bond when events and or functions are held Monday to Friday between the hours of 8.30am to 4.30pm or to low risk community organisations and regular users. A $250.00 security bond applies for all hires and is refundable if facilities and native gardens are left undamaged.	per event	250.00		250.00	B
ROADS & DRAINAGE					
Application for Structure on Road Reserve					
Includes but is not limited to: Shipping Containers, Rubbish, Skips.	per 7 days	188.60		188.60	R
Includes but is not limited to: Shipping Containers, Rubbish, Skips.	per 30 days	613.05		613.05	R
Bitumen Invert Driveway Crossover (Installed by Council)					
Bitumen Invert Driveway Crossover (Installed by Council)	per driveway	991.18	99.12	1,090.30	C
Extension to maximum of 6.0m per 0.5m length	per driveway	92.23	9.22	101.45	C
Concrete Invert Driveway Crossover - (Installed by Council)					
3.6m Kerb and channel invert crossing	per driveway	1,625.18	162.52	1,787.70	C
Extension to maximum of 6.0m per 0.5m length	per driveway	148.50	14.85	163.35	C
DOMESTIC DRIVEWAY CROSSOVER					

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Application & Inspection fee	per driveway	183.09	18.31	201.40	C
Glare Complaints					
Investigation Fee for Glare Complaint	per investigation	64.82	6.48	71.30	C
Options as per Energex recommendation					
Supply and fit standard internal baffle to Sylvania B2223 and B2224 series	per investigation			50% of Current Energex Cost	C
Install Internal Shield (Glare Foil)	per investigation			50% of Current Energex Cost	C
Supply and fit adhesive shield to Sylvania Minor (Urban) or Major (Roadster) luminaire	per installation			50% of Current Energex Cost	C
Supply and fit a unique shield to a standard or aeroscreen unit	per installation			50% of Current Energex Cost	C
Change Light Fitting - Major Road	per installation			50% of Current Energex Cost	C
Change Light Fitting - Minor Road	per installation			50% of Current Energex Cost	C
Pipe Driveway Crossover (Installed by Council) *Standard pipe crossing (375mm-450mm diameter):*					
4.0m long	per driveway	1,919.05	191.90	2,110.95	C
4.8m long	per driveway	2,218.64	221.86	2,440.50	C
6.0m long	per driveway	2,420.45	242.05	2,662.50	C
Traffic Control Permits					
Application fee for Traffic Control Permit or Renewal of Traffic Control Permit (permit period 1Oct to 30Sept)	per permit	254.55	25.45	280.00	C
Extension to Traffic Control Permits	per request	63.18	6.32	69.50	C

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
PARKS & RESERVES					
COMMERCIAL BASED ACTIVITIES					
Canoe/Boat Tours, Fitness Training, Sports Clinics, Bicycle Hire, Food Vendors, Yoga, Swim/Surf Schools, Tour Groups, Hang Gliding, Scuba Diving etc	Annual Permit per site	327.27	32.73	360.00	C
EVENTS					
Fairs / Concerts / Promotions / Shows / Sporting Events / Markets / Fund Raisers / Wedding / Naming Ceremony	per day	162.27	16.23	178.50	C
Wedding Receptions	per event	353.18	35.32	388.50	C
SERVICE & ANCILLARY FEES (no discounts apply)					
Out of schedule additional special site mowing and maintenance - event use	per day	167.05	16.70	183.75	C
Keys - issue of replacement or 2nd key	per key	57.27	5.73	63.00	C
Electricity Charges - for sportfield and event use $5.50/hr	up to 10hrs	52.50	5.25	57.75	C
Late payment administration fee	per invoice	9.09	0.91	10.00	C
Waste Services - Refer to Waste Management	per item			POA	C
POOL FEES					
Russell Island Pool					
Note: during peak season under Council operation					
General admission	each	3.18	0.32	3.50	C
Spectator	each	0.91	0.09	1.00	C
Family pass (4 persons)	each	11.82	1.18	13.00	C
10 visit entry pass	each	30.91	3.09	34.00	C
20 visit entry pass	each	59.09	5.91	65.00	C
Lane hire (learn to swim/fitness activities)	per hour	22.73	2.27	25.00	C
MAJOR VENUES - SHOWGROUNDS					
Service & Ancillary Fees - Cleveland Showgrounds (no discounts apply)					
Storage Bay Rental - per bay	per year	404.55	40.45	445.00	C
Keys - issue of replacement or 2nd key	per key	54.55	5.45	60.00	C
Venue Cleaning (Mon to Fri)- minimum 2 hours	first 2 hours	145.45	14.55	160.00	C
Venue Cleaning (Mon to Fri) - hourly after first 2 hours	per hour after first two	51.82	5.18	57.00	C
Venue Cleaning (Weekends and Pub Hols)- minimum 2 hours	first 2 hours	200.45	20.05	220.50	C
Venue Cleaning (Weekends and Pub Hols) - hourly after first 2 hours	per hour after first two	68.18	6.82	75.00	C
Waste services refer to Waste Management	per unit			POA	C
Out of schedule additional special site mowing and maintenance - event use	per day	163.64	16.36	180.00	C

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Late payment administration fee / booking cancellation / amendment fee	per invoice	9.09	0.91	10.00	C
Amenities / change rooms (includes pre/post cleaning & initial stocking)	per event	240.91	24.09	265.00	C
Showgrounds Event Use					
Albert Morris Main Pavilion (INCLUDES 3 Food booths if req.)	per day	545.45	54.55	600.00	C
Albert Morris Food Stalls	each per day	34.09	3.41	37.50	C
Edgar Harley Main Pavilion	per day	454.55	45.45	500.00	C
Joe Howell Main Pavilion	per day	363.64	36.36	400.00	C
Field - Multi Purpose Field	per day	272.73	27.27	300.00	C
Field - Western Side	per day	272.73	27.27	300.00	C
Plaza - (INCLUDES 3 Food booths if req.) - large covered sealed area, includes lights, power, water & benches.	per day	454.55	45.45	500.00	C
Showgrounds Regular Use					
Albert Morris Main Pavilion	per hour	36.36	3.64	40.00	C
Edgar Harley Main Pavilion	per hour	28.18	2.82	31.00	C
Joe Howell Main Pavilion	per hour	19.55	1.95	21.50	C
Plaza - large covered sealed area, includes lights, power, water & benches	per hour	19.55	1.95	21.50	C
Tennis Courts					
Tennis Court Hire - Day Use	per hour	9.55	0.95	10.50	C
Tennis Court Hire - Night Use	per hour	14.55	1.45	16.00	C
COMMUNITY HALLS					
Service & Ancillary Fees - Both Islands and Mainland (no discounts apply)					
Late payment administration fee / Booking Cancellation / amendment Fee	per unit	9.09	0.91	10.00	C
Waste Services - Refer to Waste Management Fees	item			POA	C
Mowing - Event Use - Out of schedule special site mowing	per unit	167.27	16.73	184.00	C
Keys - Issue of replacement or 2nd key	per key	54.55	5.45	60.00	C
Service & Ancillary Fees - Cleveland Showgrounds (no discounts apply)					
Venue Cleaning (Mon - Fri) minimum 2 hours	first 2 hours	147.95	14.80	162.75	C
Venue Cleaning (Mon - Fri) hourly after first 2 hours	per hour	52.50	5.25	57.75	C
Venue Cleaning (weekends & Public Holidays) minimum 2 hours	first 2 hours	205.23	20.52	225.75	C
Venue Cleaning (weekends & Public Holidays) hourly after first 2 hours	per hour	71.59	7.16	78.75	C
COMMUNITY HALLS - Mainland					

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Other Mainland Halls Hourly Use	per hour	37.27	3.73	41.00	C
Other Mainland Halls Hourly Use off peak (M-F 7.00am to 3.00pm)	per hour	18.64	1.86	20.50	C
Other Mainland Halls - Functions and events Friday/Saturday/Sunday use 4.00pm to midnight (no other discounts apply, includes cleaning fee)	per hour	439.09	43.91	483.00	C
Other Mainland Halls - Functions and events consecutive use, Friday/Saturday/Sunday use 4.00pm to midnight (no other discounts apply)	per day/night	243.41	24.34	267.75	C
Capalaba Place - Hourly Use - Whole of facility	per hour	57.27	5.73	63.00	C
Capalaba Place - Hourly Use - off peak (M-F 8.30am to 3.00pm)	per hour	26.73	2.67	29.40	C
Capalaba Place - Functions and events Friday/Saturday/Sunday use 4.00pm to midnight (no other discounts apply, includes cleaning fee)	per day/night	568.18	56.82	625.00	C
Capalaba Place - Functions and events consecutive use, Friday/Saturday/Sunday use 4.00pm to midnight (no other discounts apply)	per day/night	372.73	37.27	410.00	C
Capalaba Place - Kitchen – full catering (commercial) Note: no discounts apply to this hire	per day	48.64	4.86	53.50	C
Birkdale School of Arts (Activity Room only)	per hour	18.64	1.86	20.50	C
Redland Bay (Meeting room only)	per hour	18.64	1.86	20.50	C
COMMUNITY HALLS - Islands					
Note: *Licence to occupy agreements with resident sporting clubs excluded from Hub fees*					
Coochie, Macleay & Russell Isl - Hourly Use - Main Hall	per hour	23.82	2.38	26.20	C
Coochie, Macleay & Russell Isl - Hourly Use - Main Hall - off peak (M-F 7.00am to 3.00pm)	per hour	13.27	1.33	14.60	C
Coochie, Macleay & Russell Isl - Hourly Use - Meeting Room	per hour	13.27	1.33	14.60	C
Coochie, Macleay & Russell Isl - Functions & events Friday/Saturday/Sunday use 4.00pm to midnight (no other discounts apply includes cleaning fee)	per day/night	243.64	24.36	268.00	C
Coochie, Macleay & Russell Isl - Functions and events consecutive use, Friday/Saturday/Sunday use 4.00pm to midnight (no other discounts apply)	per day/night	47.73	4.77	52.50	C
Lamb Island - Hourly Use - Whole of facility	per hour	7.64	0.76	8.40	C
Lamb Island - Functions & events Friday/Saturday/Sunday use 4.00pm to midnight (no other discounts apply includes cleaning fee)	per event	243.64	24.36	268.00	C
Lamb Island - Functions & events consecutive use Friday/Saturday/Sunday use 4.00pm to midnight (no other discounts apply)	per day/night	47.73	4.77	52.50	C
Amity & Dunwich - Hourly Use - Whole of facility	per hour	23.27	2.33	25.60	C
Amity & Dunwich - Off peak (M-F 7.00am to 3.00pm)	per hour	11.82	1.18	13.00	C

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Amity & Dunwich - Functions & events Friday/Saturday/Sunday use 4.00pm to midnight (no other discounts apply includes cleaning fee)	per day/night	267.27	26.73	294.00	C
Amity & Dunwich - Functions & events consecutive use Friday/Saturday/Sunday use 4.00pm to midnight (no other discounts apply)	per day/night	71.36	7.14	78.50	C
Pt Lookout - Hourly Use - Whole of facility	per hour	37.27	3.73	41.00	C
Pt Lookout - Hourly Use off peak (Tue-Thu 7am to 2.00pm)	per hour	19.09	1.91	21.00	C
Pt Lookout - Functions & Events Friday/Saturday/Sunday use 2.00pm to 11.00am - Parties/Weddings/Social Occasions - (no other discounts apply, includes cleaning fee)	per day/night	631.82	63.18	695.00	C
Pt Lookout - Functions & events consecutive use Friday/Saturday/Sunday use 2.00pm to 11.00am - parties/weddings/social occasions (no other discounts apply)	per day/night	436.36	43.64	480.00	C
Sport & Resilience Hub Hourly Use	per hour	23.18	2.32	25.50	C
Sport & Resilience Hub Hourly Use off peak (M-F 8.30 am to 3.00pm)	per hour	12.73	1.27	14.00	C
Sport & Resilience Hub Functions & events Friday/Saturday/Sunday use 4.00pm to midnight (no other discounts apply includes cleaning fee)	per day/night	267.27	26.73	294.00	C
Sport & Resilience Hub Functions & events consecutive use Friday/Saturday/Sunday use 4.00pm to midnight (no other discounts apply)	per day/night	71.36	7.14	78.50	C
CLUB LEASING					
Category A (no liquor licence)	per annum	0.91	0.09	1.00	C
Category B (restricted liquor licence)	per annum	0.91	0.09	1.00	C
Category C (full liquor licence)	per annum	652.91	65.29	718.20	C
Category D (30 or less gaming machines)	per annum	1,204.18	120.42	1,324.60	C
Category E (more than 30 gaming machines)	per annum	6,023.18	602.32	6,625.50	C
CEMETERIES - Cleveland / Dunwich					
Coffin allotment					
Grave Site - Lawn coffin (Prices from)	per site	2,529.55	252.95	2,782.50	C
Grave Site - monumental (Prices from)	per site	2,959.09	295.91	3,255.00	C
Cremation allotment					
Cremation Allotment - purchase of ground niche (Prices from)	per site	1,431.82	143.18	1,575.00	C
Cremation Allotment - Purchase of shrub position (Prices from)	per site	1,718.18	171.82	1,890.00	C
Cremation Allotment - Niche Wall (Prices from)	per niche	1,336.36	133.64	1,470.00	C
Cremation Allotment - Purchase of Garden edge (Prices from)	per site	630.00	63.00	693.00	C

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Cremation Allotment - Purchase of Rock Position / memorial stone	per rock position	1,431.82	143.18	1,575.00	C
CEMETERIES (ALL) Ancillary and Service Fees					
Service & Ancillary Fees					
Exhumation Fee	per exhumation			POA	C
Burial to the third depth (additional cost)	per site	496.36	49.64	546.00	C
Surcharge for Burials and Ashes Outside of Hours 9am-4pm Monday-Friday	per hour or part thereof (min 1 hour)	343.64	34.36	378.00	C
Monumental Cleaning/minor renovations fee (as determined by Council Interment Officer)	per site	152.73	15.27	168.00	C
Lawn Burial interment - including entry level plaque (Prices from)	per interment	3,436.36	343.64	3,780.00	C
Burial interment monumental	per interment	2,720.45	272.05	2,992.50	C
Interment of ashes Bush Rock /Memorial Stone - including entry level plaque (Prices from)	per interment	1,718.18	171.82	1,890.00	C
Interment of ashes Niche - including entry level plaque (Prices from)	per interment	1,050.00	105.00	1,155.00	C
Interment of ashes Garden Edge - including entry level plaque (Prices from)	per interment	782.73	78.27	861.00	C
Interment of ashes Scrub - including entry level plaque (Prices from)	per interment	1,622.73	162.27	1,785.00	C
Niche Plaque (130mm x 140mm - one inscription 6 lines x 25 characters)	per item	525.00	52.50	577.50	C
Garden Edge/Shrub Plaque (70mm x 120mm - one inscription - 6 lines 20 characters)	per item	286.36	28.64	315.00	C
Rock/Garden Plaque (130mm x 140mm one inscription - 6 lines x 25 characters)	per item	525.00	52.50	577.50	C
Memorial Marker Block (where permitted)	per item	315.00	31.50	346.50	C
Lawn Burial Plaque (380mm x 230mm two inscriptions 15 lines 45 characters)	per item	954.55	95.45	1,050.00	C
Emblem / graphic / boarder changes etc to standard lawn plaque	per item	210.00	21.00	231.00	C
Bronze Bud Holder - (cremation allotments)	per item	114.55	11.45	126.00	C
Bronze Flower vase - Lawn & Monumental Allotments	per item	315.00	31.50	346.50	C
Review and install 3rd party Plaque (where permitted)	per item	525.00	52.50	577.50	C
Cremation interment in coffin allotment	per interment	1,384.09	138.41	1,522.50	C
Slab removal	per interment			POA	C
Monumental ground cover planting	per site	152.73	15.27	168.00	C
Renovations, repairs to existing monument	per site			POA	C
Permission to Install Monument (headstone & base + inscription)	per application	343.64	34.36	378.00	C

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Permission to install kerbing (monumental allotments only)	per application	343.64	34.36	378.00	C
Permission to Install Sloper (sloper stone <600mm with inscription)	per application	343.64	34.36	378.00	C
Permission to Install/construct Mausoleum, Family Vault etc (where available)	per application			POA	C
Permission to Inscribe, Repaint, Regild, Reinscribe	per application	143.18	14.32	157.50	C
Office of Australian War Graves Application	per application	143.18	14.32	157.50	C
Transfer of licence/grantee (per allotment/licence)	per application	477.27	47.73	525.00	C
Copy of allotment / burial licence / application / permit	per application	14.32	1.43	15.75	C
Other request or service not listed	per application			POA	C
CEMETERIES - Redland Bay					
Burial					
Grave Site - Monumental Coffin (Prices from)	per site	2,290.91	229.09	2,520.00	C
Grave Site - Lawn Coffin (Prices from)	per site	2,000.00	200.00	2,200.00	C
Cremation allotment					
Cremation Allotment - Niche wall (Prices from)	per site	1,240.91	124.09	1,365.00	C
Cremation Allotment - Purchase of rock position / memorial stone (Prices from)	per rock position	1,336.36	133.64	1,470.00	C
Cremation Allotment - Purchase of shrub position (Prices from)	per site	1,622.73	162.27	1,785.00	C
Cremation Allotment - Purchase of Garden edge (Prices from)	per site	627.27	62.73	690.00	C
Cremation Allotment - Purchase of Ground Niche (Prices from)	per site	1,431.82	143.18	1,575.00	C
Scatter in unmarked section (per cremation)	per site	496.36	49.64	546.00	C
CEMETERIES - Bay Islands Memorial Garden					
Cremation Allotment	per site	600.00	60.00	660.00	C
Cremation Internment and plaque	per site	300.00	30.00	330.00	C
ADVERTISING ON BUS SHELTERS					
Advertising Panel Fabrication					
Panel Printing	per item			POA	C
Installation/Removal/Relocation of Panels					
Panel Maintenance, 1 to 2 Panels Booked	per application	109.09	10.91	120.00	C
Panel Maintenance, 3 to 5 Panels Booked	per application	218.18	21.82	240.00	C

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Panel Maintenance, 6 or more Panels Booked	per application	327.27	32.73	360.00	C
Mainland Bus Shelters and Terminals Adspace					
Lead OR Trail Panels, 1740mm x 1200mm	Quarterly per panel	450.00	45.00	495.00	C
Bus Seat	Quarterly per panel	300.00	30.00	330.00	C
Not-for-profit Lead OR Trail Panels, 1740mm x 1200mm	Quarterly per panel			POA	C
SMBI and NSI Bus Shelters and Terminals Adspace					
Lead OR Trail Panels, 1740mm x 1200mm	Quarterly per panel	231.82	23.18	255.00	C
Lead OR Trail Panels, 900mm x 1200mm	Quarterly per panel	109.09	10.91	120.00	C
Lead OR Trail Panels, < 700mm x 1100mm	Quarterly per panel	81.82	8.18	90.00	C
Not-for-profit Lead OR Trail Panels, All Sizes	Quarterly per panel			POA	C
MARINE					
Landing Permit Licence Applications					
Application Fee - New Permit Licence	per application	422.68	42.27	464.95	C
Application Fee - Renewal Permit Licence	per application	259.55	25.95	285.50	C
Passenger Ferry Service (Vessel Licence)					
Calculations per annum for Passenger Ferry Service (Vessel Licence) are charged using the following method (incl GST): {Passenger Ferry Service (Vessel Licence) by the number of different RCC sites the vessel visits}+{number of landings the vessel makes per annum by the Passenger Ferry Service (Activity Licence)}+{ Application Fee}. For example, a 9.0 tonne Ferry Service Vessel which lands at 5 sites approx 18,850 times per year, is calculated as: ($2,107.20 x 5) + (18,850 X 2.35) + $442 80 (new Application) = $55,276.30 p.a.					
Passenger Ferry Service (Activity Licence) Charter operators to provide an estimate otherwise 104 landings p.a. Will be applied)	multiplied by the number of landings	2.23	0.22	2.45	C
Gross Tonnage Range of 4 - 9	per annum - per vessel for all RCC facilities	2,011.41	201.14	2,212.55	C

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Gross Tonnage Range of 10 - 19	per annum - per vessel for all RCC facilities	4,022.27	402.23	4,424.50	C
Gross Tonnage Range of 20 - 29	per annum - per vessel for all RCC facilities	6,034.77	603.48	6,638.25	C
Gross Tonnage Range of 30 or above	per annum - per vessel for all RCC facilities	8,647.59	864.76	9,512.35	C
Jetty (Activity Licence)	per activity per facility per annum	4,147.73	414.77	4,562.50	C
Gross Tonnage Range of 3 or less	per annum - per vessel for all RCC facilities				C
Vehicular Ferry Service (Vessel Licence)					
Calculations for Vehicular Ferry Service fees are charged using the following method (inc GST): {Vehicular Ferry Service Licence multiplied by the number of different RCC sites the vessel visits}+{number of landings the vessel makes per annum multiplied by the Vehicular Ferry Service (Activity Licence)}+{ Application Fee}. For example, a 8-100 Gross tonnage vessel that lands at 2 sites approx 4,680 times per year, is calculated as ($1485.60 x 2)+(4,680 x 4.00)+$442.80=$22,134 p.a.					
Gross Tonnage Range of 100 or less	per annum - per vessel for all RCC facilities	1,418.09	141.81	1,559.90	C
Gross Tonnage Range of 101 - 200	per annum - per vessel for all RCC facilities	2,720.50	272.05	2,992.55	C
Gross Tonnage Range of 201 - 400	per annum - per vessel for all RCC facilities	3,452.64	345.26	3,797.90	C
Gross Tonnage Range of 401 - 600	per annum - per vessel for all RCC facilities	5,103.32	510.33	5,613.65	C

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Gross Tonnage Range of 601 or above	per annum - per vessel for all RCC facilities			POA	C
Vehicular Ferry Service (Activity Licence) Charter operators to provide an estimate otherwise 104 landings p.a. Will be applied	multiplied by the number of landings	3.82	0.38	4.20	C
Weinam Creek Marina Berthing Rates					
Note 1: Maximum of 39 customers to be allocated 13 berths for Shared Single Categories (excl. 48 hour), subject to operational review. Note 2: Maximum of 24 customers to be allocated to 4 berths for Shared 48 hour Mooring categories, subject to operational review.					
Exclusive Single Berth	per quarter	852.23	85.22	937.45	C
Exclusive Double Berth	per quarter	1,705.05	170.50	1,875.55	C
Shared Single Berth (Mon - Fri)	per quarter	241.68	24.17	265.85	C
Shared Single Berth (Mon - Sun)	per quarter	339.14	33.91	373.05	C
Shared Single Berth (Week End)	per quarter	96.32	9.63	105.95	C
Shared 48 hour Mooring	per quarter	52.27	5.23	57.50	C
Weinam Creek Marina Security Bond					
Note: the bonds are equal to 1 quarter of the applicable Marina Berthing Rate					
Exclusive Single Berth	per compound per licence	213.15		213.15	B
Exclusive Double Berth	per compound per licence	426.25		426.25	B
Shared Single Berth (Mon - Fri)	per compound per licence	241.45		241.45	B
Shared Single Berth (Mon - Sun)	per compound per licence	338.80		338.80	B
Shared Single Berth (Week End)	per compound per licence	96.30		96.30	B
Shared 48 hour Moorings	per compound per licence	52.50		52.50	B
Marina Security Key (Bond)	per key	57.05		57.05	B
Marina Security Key (Lost / Stolen / Damaged or 2nd Key)	per key	57.05		57.05	B
PARKS & RESERVES					

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
SERVICE & ANCILLARY FEES (no discounts apply)					
Tribute Park Seat Charge	per seat	1,918.64	191.86	2,110.50	C
Tribute Plaque Charge	per plaque	154.68	15.47	170.15	C
Tribute Tree Charge	per tree	117.45	11.75	129.20	C
TRAFFIC AND TRANSPORT					
Roadside Vendors Permit					
Application fee	per application	875.70		875.70	R
Annual Permit Fee (Weekdays Only)	per permit	3,777.25		3,777.25	R
Annual Permit Fee (Weekends Only)	per permit	3,777.25		3,777.25	R
Annual Permit Fee (7 Days a week)	per permit	6,612.55		6,612.55	R
Secure Off Street Parking Compounds					
Car bays in main compound - secured	per quarter	277.50	27.75	305.25	C
Car bays in marina compound	per quarter	277.50	27.75	305.25	C
Motor cycle bay in main compound	per quarter	69.09	6.91	76.00	C
Compound - Security Bond for car	per compound			equal to 1 quarter excl. GST	B
Compound - Security Bond for Motor cycle	per compound			equal to 1 quarter excl. GST	B
Compound - Proximity Card Bond	per card	57.05		57.05	B
Compound - Security Key Bond	per key	57.05		57.05	B
Lost / Stolen / Damaged or 2nd Proximity card	per card	57.05		57.05	O
Lost / Stolen / Damaged or 2nd Security Key	per key	57.05		57.05	O
REDLAND WATER					
ALTERATIONS WATER					
Alter height of meter	per alteration			POA	C
Relocate meter or stopcock	per relocation			POA	C
Isolation of fire supply - During office hours (2hrs minimum)	per hour			POA	C
Isolation of fire supply - Out of office hours (4hrs minimum)	per hour			POA	C
HYDRANTS					
Water Tanker Filling Permit - Water additional at non-residential rates as per Utilities charges	per application	37.27	3.73	41.00	C
Metered Standpipes per month - Water additional at non-residential rates as per Utilities charges	per application	121.00	12.10	133.10	C
Bond for Metered Standpipes - Refundable upon satisfactory return of standpipe	per application	2,153.55			B

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
RECYCLED WATER					
Recycled Water Class B volume Change	per kL	2.45		2.45	C
TRADE WASTE					
Disposal of a Commercial Chemical Toilet at a suitable location	per kL	140.85		140.85	C
WASTEWATER					
New Wastewater connection quotation	per connection	90.00		90.00	C
Raising / Lowering Sewer Manholes	per raise / lower			POA	C
Hydraulic Modelling Wastewater system	per assessment			POA	C
WATER SUPPLY					
New Water Service quotation	per connection	90.00		90.00	C
Water Service 20mm Connection to water main - short side, costs for road crossing additional	per connection			POA	C
Water Service 25mm Connection to water main - short side, costs for road crossing additional	per connection			POA	C
Water disconnection	per application			POA	C
Hydraulic Modelling Water Supply	per assessment			POA	C
REDWASTE					
BIN ESTABLISHMENT CHARGES					
Standard administration charge for a single waste & recycling, & green waste services on all types of new properties, bin exchanges other than 340L or additional recycling bins or green waste bin, additional waste bin requirements or any cancellations.	per establishment	60.00		60.00	O
Standard administration charge for 340L recycling bin exchanges or additional recycling bins.	per establishment	30.00		30.00	O
Standard administration charge for new or additional green waste services.	per establishment	30.00		30.00	O

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
ISLAND WASTE TRANSFER STATIONS					
Commercial Waste - ISLANDS *(including domestic vehicles that do not provide proof of residency)*					
Greenwaste – Clean segregated vegetation	per m3	45.45	4.55	50.00	C
Greenwaste - Minimum Charge (loads 0.25m^3 or less)	min charge	10.91	1.09	12.00	C
Mixed Waste - Cars (sedans, station wagons)	per vehicle	13.64	1.36	15.00	C
Mixed Waste - Trucks with an RGVM of less than four and a half (4.5) tonne pulling trailers	per vehicle	63.64	6.36	70.00	C
Mixed Waste - Cars with trailers	per vehicle	29.09	2.91	32.00	C
Mixed Waste - Utilities or vans	per vehicle	29.09	2.91	32.00	C
Mixed Waste - Utility or van and trailer	per vehicle	43.64	4.36	48.00	C
MAINLAND WASTE TRANSFER STATIONS					
Commercial Waste - BIRKDALE *(including domestic vehicles that do not provide proof of residency)*					
Commercial Mixed Waste	per tonne	143.64	14.36	158.00	C
Minimum charge - Commercial Mixed Waste (loads 200 kg or less)	min charge	28.18	2.82	31.00	C
Bricks & Concrete	per tonne	116.36	11.64	128.00	C
Minimum charge – Bricks & Concrete Waste (loads 200 kg or less)	min charge	22.73	2.27	25.00	C
Greenwaste – Clean segregated vegetation	per tonne	136.36	13.64	150.00	C
Minimum Charge - Greenwaste (loads 100 kg or less)	min charge	13.64	1.36	15.00	C
Expanded materials (polystyrene, plastic piping)	per tonne	982.73	98.27	1,081.00	C
Surcharge for loads with >25% expanded materials (polystyrene, plastic pipe)	surcharge	104.55	10.45	115.00	C
Uncontaminated Clean Soil	per tonne	70.91	7.09	78.00	C
Mattresses	item	21.82	2.18	24.00	C
Asbestos & Asbestos Containing Material (ACM) Disposal (loads less than 10m^2)	per tonne	236.09	23.61	259.70	C
Minimum charge - Asbestos & Asbestos Containing Material (ACM) - loads 150 kg or less	min charge	59.09	5.91	65.00	C
Emergency disposal or after hours disposal rate / recovery of site damage due to incorrectly disposed loads	by negotiation			POA	C
Commercial Waste - REDLAND BAY *(including domestic vehicles that do not provide proof of residency)*					
Greenwaste – Clean segregated vegetation	per m3	45.45	4.55	50.00	C
Minimum Charge - Greenwaste (loads 0.25m^3 or less)	min charge	10.91	1.09	12.00	C
Expanded materials (polystyrene, plastic piping)	per m3	19.55	1.95	21.50	C

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Uncontaminated Clean Soil	per m3	70.91	7.09	78.00	C
Mattresses	item	21.82	2.18	24.00	C
Mixed Waste - Cars (sedans, station wagons)	per vehicle	9.09	0.91	10.00	C
Mixed Waste - Cars with trailers	per vehicle	29.09	2.91	32.00	C
Mixed Waste - Utilities or vans	per vehicle	29.09	2.91	32.00	C
Mixed Waste - Utility or van and trailer	per vehicle	43.64	4.36	48.00	C
Mixed Waste - Trucks with an RGVM of less than four and a half (4.5) tonne pulling trailers	per vehicle	63.64	6.36	70.00	C
Commercial Waste - Tyres					
Car tyres	per tyre	12.73	1.27	14.00	C
Car tyres on rims	per tyre	17.27	1.73	19.00	C
Light truck tyres	per tyre	22.27	2.23	24.50	C
Light truck tyres on rims	per tyre	27.27	2.73	30.00	C
Truck tyres	per tyre	32.73	3.27	36.00	C
Truck tyres on rims	per tyre	51.82	5.18	57.00	C
Super Singles	per tyre	54.55	5.45	60.00	C
Super Singles on rims	per tyre	86.36	8.64	95.00	C
Earthmoving tyres up to 1.50m	per tyre	263.64	26.36	290.00	C
Earthmoving tyres up to 1.50m on rims	per tyre	295.45	29.55	325.00	C
Domestic vehicles - Tyres					
The relevant commercial fee will be applied per tyre to residential transactions where more than 4 Motorcycle/Car/Passenger or 4x4/SUV tyres are disposed in any one transaction, and for all tyres larger than 4x4/SUV tyres.	per tyre			POA	C
Public Weighbridge - BIRKDALE					
Public weighings for registered gross vehicle weight up to 50 tonnes	per transaction	31.82	3.18	35.00	C
SPECIAL EVENT WASTE AND RECYCLING SERVICES					
Special event waste bin supply and collection (Mainland) - 240L	each	17.73	1.77	19.50	C
Special event waste bin supply and collection (Mainland) - 3m^3	each	191.82	19.18	211.00	C
Special event recycling bin supply and collection (Mainland) - 240L	each	17.73	1.77	19.50	C
Special event recycling bin supply and collection (Mainland) - 3m^3	each	210.00	21.00	231.00	C
Special event waste bin supply and collection (Island) - 240L	each			POA	C
Special event waste bin supply and collection (Island) - 3m^3	each			POA	C
Special event recycling bin supply and collection (Island) - 240L	each			POA	C

AMENDED

Description	Unit	Base Charge $	GST $	Final Charge $	Type
Special event recycling bin supply and collection (Island) - $3m^3$	each			POA	C

AMENDED

12.4 AUDIT COMMITTEE OF 19 JULY 2018

Objective Reference:

Authorising Officer: **John Oberhardt, General Manager Organisational Services**

Responsible Officer: **Claire Lovejoy, Acting Group Manager Corporate Governance**

Report Author: **Kailesh Naidu, Principal Adviser Internal Audit**

Attachments: **1. Minutes of Audit Committee Meeting of 19 July 2018**

PURPOSE

The purpose of this report is to present the minutes of the Audit Committee meeting on 19 July 2018 to Council for adoption in accordance with Section 211 of the *Local Government Regulation 2012*.

BACKGROUND

The primary objective of the Audit Committee is to assist Council in fulfilling its corporate governance role and oversight of financial measurement and reporting responsibilities imposed under the *Local Government Act 2009* and other relevant legislation. To fulfil this objective and in order to enhance the ability of Councillors to discharge their legal responsibility, it is necessary that a written report is presented to Council as soon as practicable after a meeting of the Audit Committee about the matters reviewed at the meeting and the Committee's recommendations about these matters.

ISSUES

Please refer to the attached Minutes of the Audit Committee meeting held on 19 July 2018.

STRATEGIC IMPLICATIONS

Legislative Requirements

This report has been prepared in accordance with the requirements of the *Local Government Act 2009* and the *Local Government Regulation 2012.*

Risk Management

There are no opportunities or risks for Council resulting from this report.

Financial

There are no financial implications impacting Council as a result of this report.

People

There are no implications on people as a result of this report.

Environmental

There are no environmental impacts resulting from this report.

Social

There are no social implications as a result of this report.

Alignment with Council's Policy and Plans

This report aligns with Council's Corporate Plan 2018-2023 *Outcome 8 Inclusive and ethical governance*.

CONSULTATION

The Audit Committee minutes are presented for confirmation as a true and accurate record of proceedings at its next meeting.

OPTIONS

Option One

That Council resolves to accept this report, which summarises the issues discussed at the Audit Committee meeting of 19 July 2018.

Option Two

That Council resolves to accept this report and requests additional information.

OFFICER'S RECOMMENDATION

That Council resolves to accept this report, which summarises the issues discussed at the Audit Committee meeting of 19 July 2018.

Redland
CITY COUNCIL

MINUTES

AUDIT COMMITTEE MEETING

Thursday, 19 July 2018

The Council Chambers
91 - 93 Bloomfield Street
CLEVELAND QLD

Order Of Business

1 Declaration of Opening 2

2 Record of Attendance and Apologies 2

3 Conflict of Interest declaration 3

4 Receipt and Confirmation of Minutes 3

5 Business Arising from Previous Minutes 3

6 Update from the Chief Executive Officer 4

7 Council Financial Reports 4

7.1 End of Month Financial Reports May 2018 4

7.2 Budget 2018-2019 4

7.3 Asset Valuations 2017-2018 5

8 Quarterly Compliance Surveys 5

8.1 Quarterly Compliance Survey - March 2018 5

9 Internal Audit Plan 5

9.1 Audit Plan 2017/2018 Status 5

9.2 Annual Audit Plan 2018/2019 5

10 Internal Audit Reports 5

10.1 Internal Audit Reports Issued 5

11 Audit Recommendations Due for Implementation 6

11.1 Audit Recommendations Update 6

12 Update from External Auditors 6

12.1 Update from External Auditors 6

13 Other Business 6

13.1 Risk Management Update 6

14 Meeting Closure 6

AUDIT COMMITTEE MEETING
HELD AT THE COUNCIL CHAMBERS, 91 - 93 BLOOMFIELD STREET, CLEVELAND QLD
ON THURSDAY, 19 JULY 2018 AT 9.30AM

1 DECLARATION OF OPENING

The Chair declared the meeting open at 9.33am.

2 RECORD OF ATTENDANCE AND APOLOGIES

MEMBERSHIP

CR PAUL GLEESON	COUNCILLOR MEMBER AND CHAIRPERSON
CR KAREN WILLIAMS	COUNCILLOR MEMBER (MAYOR)
MR VIRENDRA DUA	EXTERNAL MEMBER
MR PETER DOWLING	EXTERNAL MEMBER

SECRETARY

MR KAILESH NAIDU	PRINCIPAL ADVISER INTERNAL AUDIT

INVITEES

MR ANDREW CHESTERMAN	CHIEF EXECUTIVE OFFICER
MR JOHN OBERHARDT	GENERAL MANAGER ORGANISATIONAL SERVICES
MS LOUISE RUSAN	GENERAL MANAGER COMMUNITY AND CUSTOMER SERVICES
MR ANDREW ROSS	ACTING GENERAL MANAGER INFRASTRUCTURE AND OPERATIONS
MS DEBORAH CORBETT-HALL	CHIEF FINANCIAL OFFICER
MS HEATHER MILLER	ACTING GENERAL COUNSEL
MS CLAIRE LOVEJOY	ACTING GROUP MANAGER CORPORATE GOVERNANCE
MR MARK DAVIS	SERVICE MANAGER RISK AND LIABILITY SERVICES
MS JOY MANALO	FINANCE MANAGER CORPORATE FINANCE
MS MELISSA READ	QUEENSLAND AUDIT OFFICE (QAO)
MS ASHLEY CARLE	BENTLEYS – QAO AUDIT REPRESENTATIVE
MR PETER PATERSON	BENTLEYS – QAO AUDIT REPRESENTATIVE
MR SEAN ROONEY	PRICEWATERHOUSECOOPERS
MS ANITA KUBLER	PRICEWATERHOUSECOOPERS
MS SAMANTHA COX	PRICEWATERHOUSECOOPERS

OBSERVERS

CR PAUL BISHOP	COUNCILLOR
CR MARK EDWARDS	COUNCILLOR
CR PETER MITCHELL	COUNCILLOR

APOLOGIES

MS LIZ CONNOLLY	PORTFOLIO DIRECTOR

MINUTES

MS LIZZI STRIPLIN	CORPORATE MEETINGS & REGISTERS SUPERVISOR

3 CONFLICT OF INTEREST DECLARATION

No conflicts of interest were declared.

4 RECEIPT AND CONFIRMATION OF MINUTES

The minutes of the Audit Committee of 15 March 2018 were confirmed.

5 BUSINESS ARISING FROM PREVIOUS MINUTES

Business arising from the minutes of the previous meeting of the Audit Committee was presented:

5.1.1 As per Item 4.1 (Business Arising from Previous Minutes) the Committee requested that a framework be prepared to manage and monitor compliance and to show accountability and controls.

- *Update provided by Acting Group Manager Corporate Governance in Item 8.1 carried forward to the next Audit Committee*

5.1.2 As per Item 4.1 (Business Arising from Previous Minutes) the Committee requested that a clear process needs to be established for handling exceptions related to continuous monitoring once that project has been undertaken.

- *Update provided by Principal Adviser Internal Audit. Item carried forward to the next Audit Committee.*

5.1.3 As per Item 4.1 (Business Arising from Previous Minutes) the Committee requested that a risk map be provided as an overview of significant audit activity to inform where risks and issues lie.

- *Update provided by Principal Adviser Internal Audit. The risk mapping will form part of the Audit Universe project in Item 5.1.9. Item completed.*

5.1.4 As per Item 6.3 (Asset Valuations) the Committee requested that a report on capital and operational projects be presented.

- *Item carried forward to the next Audit Committee.*

5.1.5 As per Item 7 (Quarterly Compliance Surveys) the Committee requested that the Acting Group Manager Corporate Governance considers including questions in the quarterly compliance survey relating to contract management; e.g. Have all new contracts been entered into the Contract Management System? Have insurance certifications been updated? Have contract management plans been approved?

- *Update provided by Acting Group Manager Corporate Governance in Item 8.1. Item carried forward to the next Audit Committee.*

5.1.6 As per Item 9.1 (Internal Audit Reports) the Committee has requested that a report be presented which includes the following information: an overview of the total number of open contracts in the Contract Management System and some key associated attributes, e.g. how many in dispute, how many without current certifications, etc.; how many contracts and by value have been provided through the local supplier arrangements, etc.

- *Update provided by Acting General Manager Infrastructure and Operations. Item carried forward to the next Audit Committee.*

5.1.7 As per Item 12.1 (Risk Management) the Committee requested that an issues register is presented.

- *Update provided by Service Manager Risk and Liability Services in Item 13.1. Item carried forward to the next Audit Committee.*

5.1.8 As per Item 12.3 (Draft Audit Committee Charter and Internal Audit Charter) the Committee requested the General Manager Organisational Services to investigate the involvement of Internal Audit in the operations of any Council-controlled entities.

- *Update provided by General Manager Organisational Services. Council cannot direct or control the audit activities of Redland Investment Corporation because it is a separate legal entity. Redland Investment Corporation is subject to Queensland Audit Office review. Item completed.*

5.1.9 As per Item 12.4 (Audit Universe) the Committee requested that the Audit Universe is updated to demonstrate alignment between assurance activities and the Corporate Plan outcomes.

- *UPDATE PROVIDED BY PRINCIPAL ADVISER INTERNAL AUDIT. ITEM CARRIED FORWARD TO THE NEXT AUDIT COMMITTEE.*

6 UPDATE FROM THE CHIEF EXECUTIVE OFFICER

A comprehensive verbal update on general organisational and Council matters was provided by the Chief Executive Officer.

COMMITTEE DECISION

The Audit Committee noted the verbal update presented by the Chief Executive Officer

7 COUNCIL FINANCIAL REPORTS

7.1 END OF MONTH FINANCIAL REPORTS MAY 2018

Council's end of month financial report for May 2018 was presented to the Audit Committee and an update was provided by the Chief Financial Officer.

COMMITTEE DECISION

The Audit Committee noted the end of month financial report for May 2018 and update presented by the Chief Financial Officer.

7.2 BUDGET 2018-2019

Council's Budget 2018-2019 and Financial Strategy 2018-2028 were presented to the Audit Committee by the Chief Financial Officer.

COMMITTEE DECISION

The Audit Committee noted Council's Budget 2018-2019 and Financial Strategy 2018-2028 presented by the Chief Financial Officer.

7.3 ASSET VALUATIONS 2017-2018

An update on the 2017-2018 Asset Valuations was presented to the Audit Committee by the Chief Financial Officer.

COMMITTEE DECISION

The Audit Committee noted the update on the 2017-2018 Asset Valuations presented by the Chief Financial Officer.

8 QUARTERLY COMPLIANCE SURVEYS

8.1 QUARTERLY COMPLIANCE SURVEY - MARCH 2018

The Quarterly Compliance Survey for March 2018 was presented to the Audit Committee by the Acting Group Manager Corporate Governance.

COMMITTEE DECISION

The Audit Committee noted the Quarterly Compliance Survey presented by Acting Group Manager Corporate Governance.

9 INTERNAL AUDIT PLAN

9.1 AUDIT PLAN 2017/2018 STATUS

The Status of Council's Audit Plan for 2017-2018 was presented to the Audit Committee by the Principal Adviser Internal Audit.

COMMITTEE DECISION

The Audit Committee noted the status of the Audit Plan for 2017-2018 presented by the Principal Adviser Internal Audit.

9.2 ANNUAL AUDIT PLAN 2018/2019

Council's Annual Audit Plan 2018-2019 was presented to the Audit Committee by the Principal Adviser Internal Audit for endorsement. The appointment of PwC as Council's co-sourcing partner for internal audit services was acknowledged.

COMMITTEE DECISION

The Audit Committee endorsed the Annual Audit Plan for 2018-2019.

10 INTERNAL AUDIT REPORTS

10.1 INTERNAL AUDIT REPORTS ISSUED

Internal Audit reports issued since the last Audit Committee meeting were presented by the Principal Adviser Internal Audit.

COMMITTEE DECISION

The Audit Committee noted the Internal Audit reports presented by the Principal Adviser Internal Audit and the inclusion of the outstanding matters in the audit recommendations register.

11 AUDIT RECOMMENDATIONS DUE FOR IMPLEMENTATION

11.1 AUDIT RECOMMENDATIONS UPDATE

An update on the status of audit recommendations was presented to the Audit Committee by the Principal Adviser Internal Audit.

COMMITTEE DECISION

The Audit Committee noted the update on audit recommendations presented by the Principal Adviser Internal Audit.

12 UPDATE FROM EXTERNAL AUDITORS

12.1 UPDATE FROM EXTERNAL AUDITORS

An update was presented to the Audit Committee by Bentleys and Queensland Audit Office.

COMMITTEE DECISION

The Audit Committee noted the update presented by Bentleys and Queensland Audit Office.

13 OTHER BUSINESS

13.1 RISK MANAGEMENT UPDATE

An update on Council's risk management activities was presented to the Audit Committee by the Service Manager Risk and Liability Services.

COMMITTEE DECISION

The Audit Committee noted the update presented by the Service Manager Risk and Liability Services.

14 MEETING CLOSURE

The Chair closed the Audit Committee meeting at 11.10am.

12.5 2018 LGAQ CONFERENCE AND REDLAND CITY COUNCIL MOTIONS

Objective Reference:

Authorising Officer: **John Oberhardt, General Manager Organisational Services**

Responsible Officer: **Claire Lovejoy, Acting Group Manager Corporate Governance**

Report Author: **Marita West, Governance Service Manager**

Attachments:
1. **LGAQ Motion - Community Residences**
2. **LGAQ Motion - Funding for National Landcare Programmes**
3. **LGAQ Motion - Park n Ride Strategy**

PURPOSE

The purpose of this report is to:

1. advise Council of the 2018 Local Government Association of Queensland (LGAQ) Annual Conference to be held in Brisbane 29 – 31 October 2018;
2. seek approval for the Mayor and one other Councillor delegate to represent Council at the conference;
3. allocate Council's voting rights for the conference; and
4. endorse the motions that Council intends to put forward at the conference.

BACKGROUND

The LGAQ's 122nd Conference is to be held in Brisbane from 29 - 31 October 2018. It is the principal conference in Queensland relating to local government. The conference brings together delegates from all tiers of government, external stakeholders and the media to consider the challenges facing local government and their communities.

The conference theme for this year is Onwards and Upwards. A broad array of speakers will be presenting at the conference on a range of topics.

ISSUES

Council can send two official delegates to the LGAQ Annual Conference, as a full member of the LGAQ. Other attendees are also welcome to attend.

Council is entitled to vote on any motions put forward by members. Council has six votes at the LGAQ Annual Conference, which can be wholly exercised by one delegate or may be split in any proportion Council determines between two delegates.

Local governments are also invited to put forward motions for discussion on any subject pertaining to matters of common concern to members (local governments). Council proposes to put forward three motions as follows:

1. community residence provisions in Schedule 6 of the *Planning Regulation 2017*;
2. funding for National Landcare Programmes; and
3. Park n Ride Strategy.

For details relating to the proposed motions, please refer to Attachment 1, 2 and 3 respectively.

STRATEGIC IMPLICATIONS

Legislative Requirements

There are no legislative requirements associated with this report.

Risk Management

Non-attendance by Council at the conference results in a lost opportunity for Redland City Council to voice its views in matters being considered (voted on) at the conference and sharing current issues and proposals relevant to local government.

Financial

This recommendation does not require any change to the current year's budget as funds have already been allocated. There are no conference fees for Council's official delegates, as the cost of attendance for two representatives is included in Council's annual membership to the LGAQ. Accommodation and travel costs for the conference are included in the 2018/2019 operational budget.

People

Council's representation at the LGAQ Annual Conference provides the opportunity for Councillors to keep abreast of contemporary and emerging issues in local government and network with leaders in this field and other elected representatives from across Queensland.

Environmental

There are no environmental issues associated with this report.

Social

Attendance at the LGAQ Annual Conference supports Councillors to provide the highest level of leadership to the organisation and the Redland's community.

Alignment with Council's Policy and Plans

The recommendation primarily supports Council's Corporate Plan 2018-2023 Outcome 8 Inclusive and ethical governance.

CONSULTATION

Councillors, the Executive Leadership Team and senior officers were requested to put forward motions for the LGAQ Conference.

OPTIONS

Option One

That Council resolves as follows:

1. that Council be represented by the Mayor and one other Councillor as official delegates at the 2018 LGAQ Annual Conference;
2. that Council's voting rights at the conference are split equally between the two official delegates; and
3. that the attached motions be endorsed for submission to the 2018 LGAQ Annual Conference.

Option Two

That Council resolves as follows:

1. that Council be represented by the Mayor as the official delegate at the 2018 LGAQ Annual Conference with full voting rights; and
2. that the attached motions be endorsed for submission to the 2018 LGAQ Annual Conference.

Option Three

That Council is not represented at the 2018 LGAQ Annual Conference.

OFFICER'S RECOMMENDATION

That Council resolves as follows:

1. **that Council be represented by the Mayor and one other Councillor as official delegates at the 2018 LGAQ Annual Conference;**
2. **that Council's voting rights at the conference are split equally between the two official delegates; and**
3. **that the attached motions be endorsed for submission to the 2018 LGAQ Annual Conference.**

LGAQ ANNUAL CONFERENCE MOTION – 2018

Submitting council / organisation - Redland City Council	
Date of council / organisation resolution **26 August 2015**	**LGAQ Policy Executive district**
Number and title of motion	Planning Regulation 2017 - Community Residences Provisions
Motion	That the Local Government Association of Queensland makes representations to the State Government to review the current provisions for "Community residence" in the *Planning Regulation 2017* and include additional requirements to ensure community residences are: • located in close proximity to public transport, services and possible employment areas; • address impacts on existing residential amenity; and • not established without consultation with the relevant local government to ensure conformity with local government planning policies.
Background	On 7 August and 12 September 2013 respectively, Councillor Boglary and the Mayor of Redland City Council wrote to the Minister for State Development, Infrastructure and Planning, the honourable Jeff Seeney MP requesting further consideration of the Community Residence Code in the Queensland Planning Provisions (version 3) as part of the State planning review. At the time, the prescribed level of assessment for a "Community Residence" was self-assessable in all residential and rural residential zones. The Mayor expressed concerns that the Community Residence state code was insufficient to adequately accommodate this activity within all residential and rural residential areas. Redland City Council implemented the code on a trial basis leading up to the preparation of its new planning scheme. The trial allowed a Community residence to establish as a self-assessable use in the city. Unfortunately a facility, which housed past offenders reintegrating into the community, led to considerable community anxiety and concerns from the Queensland Police. As well as issues with the behaviour of the facility's residents, the location of the facility within an established residential area also raised a number of concerns both from the community and elected representatives. The Mayor subsequently wrote to the State requesting: • additional locational requirements be incorporated within the state code for Community residences to ensure the types of uses are located within close proximity to public transport, services and possible employment areas; and • additional criteria be considered to address impacts on existing residential amenity. The honorable Jeff Seeney MP wrote to Mayor Karen Williams on 25 October 2013 indicating that a review of the statewide code may be included as part of the next version (version 4.0) of the Queensland Planning Provisions. When the Department of Infrastructure, Local Government and Planning released a full version of the draft QPP version 4.0 with tracked changes for public view on its website, Council's suggested changes had not been incorporated. Subsequently, Council advocated through the Local Government Association of Queensland to have the provisions in the State Code changed. Motions have been put forward and carried at the LGAQ annual conferences in 2015 (see item 25 – meeting minutes), 2016 (see item 70 – meeting minutes) and 2017 (see item 83 – meeting minutes). In the lead up to the implementation of Queensland's new planning legislation, Council was advised that the QPP would not be carried forward and that the relevant provisions addressing community residences would be incorporated within the new *Planning Regulation 2017*. When the new legislative material was released for public consultation, Council again made representations to the State Government reiterating its previous comments and seeking the provisions in the Regulation to be expanded. Again, Council was unsuccessful in having the requisite changes undertaken. The relevant provisions now exist within Schedule 6, Part 2, Item 6 of the *Planning Regulation 2017*, which took effect on 3 July 2017. In October 2017, the State Government amended the *Planning Regulation 2017* to increase the range of zones in which a community residence could be undertaken and expanded the

LGAQ ANNUAL CONFERENCE MOTION – 2018

	definition of community residence to account for youth requiring supervision under the *Youth Justice Act 1992*. In January 2018, Council again wrote to the State Government to: • Reiterate its concerns with regard to provisions relating to community residences; • Seek advice on how previous submissions in relation to community residences have been considered by the State Government; and • Seek details on any facilities proposed to be located within the Redlands. In response, the State Government advised the recent amendments to the *Planning Regulation 2017* were necessary to deliver on the government's commitment to reform the youth justice system by facilitating the establishment of safe and secure accommodation and support services for young people on bail. The State Government also advised Council's suggested changes were considered in the review, however, were not incorporated as they were not consistent with the State Government policy intent to facilitate the delivery of community residences within the community.
What is the desired outcome sought?	As stated above, Council is continuing to seek a review of the provisions contained within Schedule 6, Part 2, Item 6 of the *Planning Regulation 2017*. More specifically, Council would like to see the following assessment benchmarks incorporated within the abovementioned section: • additional locational requirements for Community residences to ensure that these types of uses are located within close proximity to public transport, services and possible employment areas, • additional criteria to address impacts on existing residential amenity.
What are the impacts (positive or negative) on local government?	Council is of the view that community residences are not established without prior consultation with the relevant local government to ensure conformity with local government planning policies. Whilst Council remains supportive of the program of reintegrating people back into the community, its experience to date indicates that the current provisions, which mandate the level of assessment, and simply rely on managing impacts primarily through controlling resident numbers, are insufficient. Concern has been expressed by the public and Redland City Council that the mandatory Community Residence provisions need further review and improvement. Due to the nature of the use and its social aspects, the introduction of Community Residences into established residential areas requires more planning consideration than simple limitations on resident numbers, car-parking and support worker requirements. It is Council's suggestion that the Community residence provisions be reviewed to address matters such as the social and service needs of the residents, proximity to public transport and employment opportunities and likely impacts on amenity.
LGAQ comment	

LGAQ ANNUAL CONFERENCE MOTION – 2018

Submitting council / organisation **Redland City Council**	
Date of council / organisation resolution	**LGAQ Policy Executive district**
Number and title of motion	Funding for National Landcare Programmes
Motion	That the Local Government Association of Queensland (LGAQ) through the Australian Local Government Association (ALGA) lobby the Federal Government to provide increased funding for National Landcare Programmes.
Background	National Landcare Programmes such as Land for Wildlife provide invaluable support in creating community-based landcare projects that not only deliver on the ground ecological benefits, but just as importantly an opportunity to educate the community about the important role they play in caring for the environment.
What is the desired outcome sought?	Increased funding for National Landcare Programmes.
What are the impacts (positive or negative) on local government?	- Increased community input into local landcare and vegetation management programmes. - Increased awareness of the role community can play in caring for the environment. - Opportunity for partnerships with other levels of government to deliver on the ground environmental programmes.
LGAQ comment	

LGAQ ANNUAL CONFERENCE MOTION – 2018

Submitting council / organisation **Redland City Council**		
Date of council / organisation resolution		**LGAQ Policy Executive district**
Number and title of motion	Park and Ride Strategy	
Motion	The Department of Transport and Main Roads develop a Park and Ride Strategy that outlines the process for planning and upgrading of Park and Ride facilities.	
Background	Park and ride facilities allow passengers to park their vehicle and use public transport to complete their journey. Park and Ride facilities in Redland City as well as across South East Queensland are experiencing high demand and are generally over capacity during the working week. A consequence of the high demand for park and ride facilities is that commuters will then park their cars in the surrounding neighbourhoods resulting in excessive demand for on-street car parks. Park and Ride facilities are managed by number of entities including Translink, Queensland Rail and local government authorities depending on the location of the facility. Due to multiple stakeholders involved in managing these assets an overarching policy is required to provide guidance and ensure a consistent methodology regarding thresholds and criteria for upgrades.	
What is the desired outcome sought?	A clear and consistent policy is required that outlines the intention of managing these assets into the future addressing how over capacity facilities will be managed and timing for upgrades to Park and Ride facilities.	
What are the impacts (positive or negative) on local government?	An adopted Park and Ride Strategy will provide greater clarity to the planning, delivery of park and ride facilities across South East Queensland. It is also expected that a Park and Ride Strategy will also provide clear methodology for the upgrading of Park and Ride facilities.	
LGAQ comment		

12.6 MANAGING UNREASONABLE COMPLAINANT/CUSTOMER CONDUCT POLICY AND GUIDELINE

Objective Reference:

Authorising Officer: **John Oberhardt, General Manager Organisational Services**

Responsible Officer: **Claire Lovejoy, Acting Group Manager Corporate Governance**

Report Author: **Marita West, Governance Service Manager**

Attachments:
1. **Managing Unreasonable Complainant/Customer Conduct Policy**
2. **Managing Unreasonable Complainant/Customer Conduct Guideline**

PURPOSE

The purpose of this report is to seek Council endorsement to implement an Unreasonable Complainant/Customer Conduct Policy and Guideline to assist Council to manage complainants and customers who display unreasonable conduct when dealing with Council.

BACKGROUND

The Queensland Ombudsman encourages organisations to develop policies and guidelines that assist to manage unreasonable complainant/customer conduct (UCC).

UCC is defined as behaviour by a current or former complainant/customer which, because of the frequency, raises substantial health, safety or equity issues for Councillors and employees.

Council currently has no formal process of managing UCC.

ISSUES

Without a formal process to manage UCC, Council has no power to protect Councillors and employees from aggressive, vexatious, frivolous and persistent behaviours that have an adverse effect on people and resources.

The proposed policy and guideline has been developed in consultation with the Queensland Ombudsman and in conjunction with the National Ombudsman – Managing Unreasonable Complainant Conduct Practice Manual 2nd Addition.

STRATEGIC IMPLICATIONS

Legislative Requirements

There are no legislative requirements associated with this report.

Risk Management

It is important to effectively identify and manage UCC to:

- protect the health and safety of officers, complainants and others
- ensure fairness in the complaints process
- improve efficiency and commitment to appropriate resource allocation in the complaints process.

The core process includes:

- Identifying the signs
- Assessing if the conduct is reasonable
- Categorising the conduct
- Consider and select management strategies
- Implement and monitor strategies

Financial

There are no financial implications associated with this report.

People

The Policy and Guideline will assist to protect Councillors and employees from aggressive, vexatious, frivolous and persistent behaviours that have an adverse effect on people and resources.

Environmental

There are no environmental issues associated with this report.

Social

There are no social issues associated with this report.

Alignment with Council's Policy and Plans

The recommendation primarily supports Council's Corporate Plan 2018-2023 Outcome 8 Inclusive and ethical governance.

CONSULTATION

Chief Executive Officer
General Manager Organisational Services
General Counsel

OPTIONS

Option One

That Council resolves to adopt the Policy and Guideline for Unreasonable Complainant/Customer Conduct.

Option Two

That Council resolves to not adopt the Policy and Guideline for Unreasonable Complainant/Customer Conduct.

OFFICER'S RECOMMENDATION

That Council resolves to adopt the Policy and Guideline for Managing Unreasonable Complainant/Customer Conduct.

policy document

Redland CITY COUNCIL

POL-3038

Managing Unreasonable Complainant/Customer Conduct

Head of Power

Local Government Act 2009 (sections 13, 268 and 176B)
Local Government Regulation 2012

Policy Objective

The objective of this policy is for Council to appropriately manage unreasonable complainant/customer conduct.

Policy Statement

The intent of this policy is to:

- Deal with unreasonable communications to Councillors and staff
- Provide a process for the disengagement of unreasonable complainants/customers

Unreasonable complainant/customer conduct (UCC) is any behaviour by a current or former complainant/customer which, because of its nature or frequency raises substantial health, safety, resource or equity issues for our organisation, our staff, other service users and complainants/customers, or the complainant/customer himself/herself.

UCC is divided into five categories of conduct:

- Unreasonable persistence
- Unreasonable demands
- Unreasonable lack of cooperation
- Unreasonable arguments
- Unreasonable behaviours

Council is committed to:

- Providing quality customer service and being responsive to all queries and complaints.
- Being proactive and taking decisive action to manage any unreasonable complainant conduct.
- Performing our functions in the most effective and efficient ways possible.
- Allocating resources fairly across all complaints.
- Providing a healthy and safe work environment for Councillors and staff.

Related Documents

GL-3038-001 – Managing Unreasonable Complainant/Customer Conduct Guideline
POL-3125 – Customer Contact Policy
POL-3037 – Complaints Management Process Policy
Ombudsman's Managing Unreasonable Complainant Conduct Practice Manual (2nd edition)

Version Information

Version number	Date	Key Changes
1		New Guideline

CMR Team use only

Department:
Group:
Approved by:
Date of Approval:

Effective date:
Version:
Review date:
Page: 1 of 1

guideline document

Redland CITY COUNCIL

GL-3038-001

Managing Unreasonable Complainant/Customer Conduct

Scope

These guidelines support:

- Council's Managing Unreasonable Complainant/Customer Conduct Policy (POL-3038) and applies to all Councillors and employees.
- Council in being proactive and taking decisive action when a complainant's or customer's conduct is deemed unreasonable.

Purpose

This guideline has been developed for Councillors and employees to manage unreasonable complainant/customer conduct ('UCC'). Its aim is to ensure that all Councillors and employees:

- Feel confident and supported in taking action to manage UCC.
- Act fairly, consistently, honestly and appropriately when responding to UCC.
- Are aware of their roles and responsibilities in relation to the management of UCC and how this guideline will be used.
- Understand the types of circumstances when it may be appropriate to manage UCC using one or more of the following mechanisms:
  - The strategies provided in the Ombudsman's Managing Unreasonable Complainant Conduct Practice Manual (2nd edition) ('practice manual') including the strategies to change or restrict a complainant/customer's access to our services.
  - Alternative dispute resolution strategies to deal with conflicts involving complainants/customers and members of our organisation.
  - Legal instruments such as trespass laws/legislation to prevent a complainant/customer from coming onto our premises and orders to protect Councillors and employees from any actual or apprehended personal violence, intimidation or stalking.
- Have a clear understanding of the criteria that will be considered before we decide to change or restrict a complainant/customer's access to our services.
- Are aware of the processes that will be followed to record and report UCC incidents as well as the procedures for consulting and notifying complainants/customers about any proposed actions or decisions to change or restrict their access to our services.
- Are familiar with the procedures for reviewing decisions made under this guideline, including specific timeframes for review.

Definitions

"Unreasonable complainant/customer conduct (UCC)" - is any conduct by a complainant/customer which, because of its nature raises health, safety or equity issues for the Council or has a disproportionate and unreasonable impact on Councillors, Council officers, services, time and/or resources.

Unreasonable complainant/customer conduct is divided into five categories:

1. Unreasonable persistence

   Continued, incessant or unrelenting conduct by a complainant/customer.

2. Unreasonable demands

   Demands (expressed or implied) that are made by a complainant/customer that have a disproportionate and unreasonable impact on Councillors, employees, services, time and/or resources.

3. Unreasonable lack of cooperation

   An unwillingness and/or inability by a complainant/customer to cooperate with Councillors, employees and/or Council's customer service processes.

4. Unreasonable complaints

   Any complaints that are not based on reason or logic; incomprehensible; false or inflammatory; or trivial or vexatious.

5. Unreasonable behaviours

   Conduct that compromises the health, safety and security of Councillors and/or employees including abuse, threats or harm directed towards them.

Actions and Responsibilities

The Chief Executive Officer has the responsibility and authority to change or restrict a complainant/customer's access to our services in the circumstances of:

1. Unreasonable persistence
2. Unreasonable demands
3. Unreasonable lack of cooperation
4. Unreasonable complaints
5. Unreasonable behaviours

UCC will be managed by limiting or changing the way that the complainant/customer can interact with Councillors and employees and/or access Council services including:

- Limiting contact persons – appointing a point of contact in Council for the complainant.
- Limiting subject matter – limiting the subject matter of communications that will be responded to under the complaint.
- Limiting contact times – limiting a complainant/customer's contact to a particular time, day length of time and/or frequency.
- Limiting contact channels – limiting or modifying the forms of contact that the complainant/customer can have with Council including face to face interviews, telephone and written communications, prohibiting access to Council premises, and making contact through a designated point of contact.

Decisions may be made to:

- Take no further action on the complaint
- Terminate Council services altogether
- Decline to acknowledge or take action on any future complaints

guideline document

Redland CITY COUNCIL

GL-3038-001

Each case will be assessed by considering all relevant factors associated with a complainant/customer's interactions, including their prior conduct and history with Council.

The Office of the Chief Executive will maintain a register of complainants/customers that have been assessed and managed under this process. A review of this register will be undertaken as required or following a request from Councillors or employees arising from further incidents involving the complainant.

The CEO has the authorisation to:

- Remove the restrictions on complainants/customers
- Modify the restriction on complainants/customers
- Restrict or terminate the complainant/customer's access to Council services altogether.

The CEO can delegate his power and authority under this policy and guideline to a General Manager position.

Right of appeal

A complainant/customer is entitled to appeal a decision to change/restrict access to Council Services by lodging an Administrative Action Complaint with Council.

Reference Documents

POL – 3038 Managing Unreasonable Complainant/Customer Conduct
GL-3125-001 – Customer Contact Guidelines
GL-3037-001 – Complaints Management Process

Ombudsman Managing Unreasonable Complainant Conduct Practice Manual (2nd addition)
Ombudsman NSW Unreasonable Complainant Conduct Model Guidelines

Document Control

- Only the General Manager Organisational Services can approve amendments to this guideline. Please forward any requests to change the content of this document to the Governance Services Manager
- Approved documents must be submitted to the Corporate Meetings & Registers Team for registration on the Policies, Guidelines and the Procedures Register.

Version Information

Version No.	Date	Key Changes
1.0		

12.7 MAKING AMENDING SUBORDINATE LOCAL LAW NO. 2 (MISCELLANEOUS SUBORDINATE LOCAL LAWS) 2018

Objective Reference:

Authorising Officer: **John Oberhardt, General Manager Organisational Services**

Responsible Officer: **Marita West, Acting Group Manager Corporate Governance**

Report Author: **Kristene Viller, Policy and Local Laws Coordinator**

Attachments:

1. **Appendix 1 - General Meeting Resolution 23 May 2018**
2. **Appendix 2 - General Meeting Resolution Fees and Charges 2018/19**
3. **Appendix 3 - Amending Subordinate Local Law No. 2 (Miscellaneous Subordinate Local Laws) 2018**
4. **Appendix 4 - Subordinate Local Law 4 (Local Government Controlled Areas, Facilities and Roads) 2015**
5. **Appendix 5 - Subordinate Local Law 5 (Parking) 2015**

The purpose of this report is to propose, consider, approve and make *Amending Subordinate Local Law No. 2 (Miscellaneous Subordinate Local Laws) 2018* (the Amending Instrument) that amends *Subordinate Local Law 4 (Local Governm*ent *Controlled Areas, Facilities and Roads) 2015* and *Subordinate Local Law 5 (Parking) 2015*.

BACKGROUND

Council by resolution dated 23 May 2018 (Appendix 1), repealed Schedule 1 Item 2 (g) of *Subordinate Local Law 4 (Local Government Controlled Areas, Facilities and Roads) 2015* and amended *Subordinate Local Law 5 (Parking) 2015* to increase the infringement notice penalty amount for several offences listed in schedule 4 from 0.7 penalty units to 1 penalty unit from 1 July 2018 (Appendix 2).

The Department of Local Government, Racing and Multicultural Affairs (the Department) has since advised that Council needs to adopt amending instruments to make changes to the Subordinate Local Laws. This report is finalising the local law making process in line with the Department's feedback, Parliamentary Counsel Guidelines and Council's adopted local law making process.

ISSUES

The Department will not update the local laws database without Council making the Amending Instrument.

STRATEGIC IMPLICATIONS

Legislative Requirements

The *Local Government Act 2009* chapter 3, part 1, provides power for local governments to make and enforce local laws and sets the framework that the local governments must adhere to. Council has adopted a Local Law Making Process that is consistent with the *Local Government Act 2009* provisions.

Part D of Council's adopted Local Law Making Process sets out the required steps for making the Amending Instrument. The first 5 steps in the Local Law Making Process involve making the

Amending Instrument and steps 6 to 9 relate to notifying the public and Minister about the Amending Instrument.

Insubstantial changes

Under the Local Law Making Process, the making of the Amending Instrument must follow steps 1 through 9 if they involve substantial amendments or affect anti-competitive provisions. If Council decides by resolution that the Amending Instrument only amends an existing subordinate local law to make an insubstantial change and the amendment does not affect anti-competitive provisions, Council may skip steps 2 to 4 inclusive (public consultation and anti-competitive procedures) and proceed directly to step 5 (deciding whether to make the Amending Instrument).

The repeal of item 2(g) in schedule 1 of *Subordinate Local Law No. 4 (Local Government Controlled Areas, Facilities and Roads) 2015 (SLL4)* is considered an insubstantial change because:

a. Under s81ZH(2)(b)(i) of the *Environmental Protection Regulation 2008* (EP Regulation) a local government is permitted to set a period under a local law that a waste container can be placed outside the premises;

b. When there was no local law replacing chapter 5A of the EP Regulation item 2(g) of schedule 1 of SLL4 had a purpose (ie. to define how long a waste container could be placed outside premises);

c. With the introduction of *Interim Local Law No. 1 (Waste Management) 2018* (ILL1) there is no further purpose for item 2(g) to serve, it is redundant and superfluous to s10(2)(c)(ii) in ILL1 that fully replaces the subject matter of item 2(g); and

d. ILL1 replaces chapter 5A and so it no longer has effect in Redland City, meaning s81ZH(2)(b)(i) no longer has effect.

The change to penalty unit amount in schedule 4 of *Subordinate Local Law No. 5 (Parking) 2015* (SLL5) is considered an insubstantial change because:

a. Redland City Council's parking local law and subordinate local law is a model local law;

b. The model subordinate local law permits Councils to set an infringement notice penalty amount up to 5 penalty units;

c. Council initially chose to impose an infringement notice penalty amount of 0.7 penalty units but has now decided to increase that amount to 1 penalty unit; and

d. The increase in penalty is still well below the model subordinate local law rate of up to 5 penalty units.

Given the above, Council must first propose to make the Amending Instrument (step 1 under the Local Law Making Process) and then make the Amending Instrument (step 5) before conducting public and Minister notification (steps 6 to 9).

Pursuant to section 29A(1)(a) of the *Local Government Act 2009*, as the Amending Instrument is a subordinate local law there is no need to conduct a State interest check before making the Amending Instrument.

Risk Management

If Council does not resolve to make the Amending Instrument, it is possible the amendment would be considered invalid and Council would not be able to administer or enforce the amendments.

Financial

Not applicable

People

Not applicable

Environmental

Not applicable

Social

Not applicable

Alignment with Council's Policy and Plans

The process for making the proposed laws and the associated recommendations of this report are in accordance with Council's adopted practice for making local laws.

This process is in keeping with Council's Corporate Plan Vision Outcome 8 Inclusive and Ethical Governance for deep engagement, quality leadership at all levels, transparent and accountable democratic processes and a spirit of partnership between the community and Council.

CONSULTATION

In reviewing the proposed amending instrument consultation occurred with:

External Drafting Solicitors
Group Manager Corporate Governance
General Counsel

State Interest Checks
In accordance with section 29A of the *Local Government Act 2009* a state interest check was not required as both of the proposed local laws are subordinate local laws.

Community Consultation
No community consultation was undertaken on the amendments on the basis that the changes were minor or administrative in nature.

OPTIONS

Option One

In accordance with Council's "Local Law Making Process" adopted on 19 April 2017; pursuant to section 29 of the *Local Government Act 2009*, Council resolves as follows:

1. To propose to make *Amending Subordinate Local Law No. 2 (Miscellaneous Subordinate Local Laws) 2018* (Appendix 3);
2. That the *Amending Subordinate Local Law No. 2 (Miscellaneous Subordinate Local Laws) 2018* makes insubstantial changes to *Subordinate Local Law 4 (Local Government Controlled Areas, Facilities and Roads) 2015* and *Subordinate Local Law 5 (Parking) 2015* and it does not affect anti-competitive provisions;
3. To make the *Amending Subordinate Local Law No. 2 (Miscellaneous Subordinate Local Laws) 2018* (Appendix 3);

4. In accordance with section 32 of the *Local Government Act 2009*, to adopt the consolidated versions of *Subordinate Local Law 4 (Local Government Controlled Areas, Facilities and Roads) 2015* and *Subordinate Local Law 5 (Parking) 2015* (Appendices 4 and 5), incorporating the amendments made by *Amending Subordinate Local Law No. 2 (Miscellaneous Subordinate Local Laws) 2018*;
5. To give notice of the commencement of *Subordinate Local Law 4 (Local Government Controlled Areas, Facilities and Roads) 2015* and *Subordinate Local Law 5 (Parking) 2015* (Appendices 4 and 5) by publication of notice in the gazette; and
6. To authorise the Chief Executive Officer to make any necessary administrative and formatting amendments prior to Gazettal.

Option Two

That Council resolves not to adopt *Amending Subordinate Local Law No. 2 (Miscellaneous Subordinate Local Laws) 2018* (Appendix 3).

OFFICER'S RECOMMENDATION:

In accordance with Council's "Local Law Making Process" adopted on 19 April 2017; pursuant to section 29 of the *Local Government Act 2009*, Council resolves as follows:

1. **To propose to make *Amending Subordinate Local Law No. 2 (Miscellaneous Subordinate Local Laws) 2018* (Appendix 3).**
2. **That the *Amending Subordinate Local Law No. 2 (Miscellaneous Subordinate Local Laws) 2018* makes insubstantial changes to *Subordinate Local Law 4 (Local Government Controlled Areas, Facilities and Roads) 2015* and *Subordinate Local Law 5 (Parking) 2015* and it does not affect anti-competitive provisions;**
3. **To make *the Amending Subordinate Local Law No. 2 (Miscellaneous Subordinate Local Laws) 2018* (Appendix 3);**
4. **In accordance with section 32 of the *Local Government Act 2009*, to adopt the consolidated versions of *Subordinate Local Law 4 (Local Government Controlled Areas, Facilities and Roads) 2015* and *Subordinate Local Law 5 (Parking) 2015* (Appendices 4 and 5), incorporating the amendments made by *Amending Subordinate Local Law No. 2 (Miscellaneous Subordinate Local Laws) 2018*;**
5. **To give notice of the commencement of *Subordinate Local Law 4 (Local Government Controlled Areas, Facilities and Roads) 2015* and *Subordinate Local Law 5 (Parking) 2015* (Appendices 4 and 5) by publication of notice in the gazette; and**
6. **To authorise the Chief Executive Officer to make any necessary administrative and formatting amendments prior to Gazettal.**

GENERAL MEETING MINUTES 23 MAY 2018

COUNCIL RESOLUTION 2018/3

Moved by: Cr Murray Elliott
Seconded by: Cr Mark Edwards

That Council resolves to:

1. receive and note the State Interest Check Report on Interim Local Law No. 1 (Waste Management) 2018 (Attachment 2) and to implement the recommended local government actions in this report;
2. make Interim Local Law No. 1 (Waste Management) 2018 (Attachment 1);
3. give notice of the commencement of Interim Local Law No. 1 (Waste Management) 2018 on 1 July 2018 by publication of notice in the Government Gazette;
4. give notice of the commencement of Interim Local Law No. 1 (Waste Management) 2018 on 1 July 2018 by publication of a notice on Council's website;
5. repeal Schedule 1 Item 2 (g) of Subordinate Local Law No.4 (Local Government Controlled areas, Facilities and Roads) 2015;
6. designate the Redland City Council local government area a Waste Collection Area for the collection of general waste from all domestic premises;
7. authorise the Chief Executive Officer to make any necessary administrative and formatting amendments to Interim Local Law No. 1 (Waste Management) 2018 prior to Gazettal; and
8. delegate the following powers under Interim Local Law No. 1 (Waste Management) 2018 to the Chief Executive Officer, and to record the information in the table below in Council's delegations register:

No	Delegate	Description of Power Delegated	Provision	Resolution	Conditions to which the Delegation is subject
1.	Chief Executive Officer	Power to designate areas within the local government area in which the local government may conduct general waste or green waste collection	6(a) of Interim Local Law No. 1 (Waste Management) 2018	23 May 2018	None
2.	Chief Executive Officer	Power to decide the frequency of general waste or green waste collection in the designated areas.	6(b) of Interim Local Law No. 1 (Waste Management) 2018	23 May 2018	None
3.	Chief Executive Officer	Power to require owner or occupiers of premises to supply waste containers other than standard general waste containers necessary to contain the general waste produced at the premises	8(b)(i) of Interim Local Law No. 1 (Waste Management) 2018	23 May 2018	None
4.	Chief Executive Officer	Power to require the occupier of a serviced premises to keep a waste container in a particular place at the serviced premises.	10(1)(a) of Interim Local Law No. 1 (Waste Management) 2018	23 May 2018	None
5.	Chief Executive Officer	Power to impose requirements for a waste container storage place at a serviced premises.	11(2)(a) of Interim Local Law No. 1 (Waste Management) 2018	23 May 2018	None
6.	Chief Executive Officer	Power to give the occupier of a serviced premises a waste collection notice.	12(1) of Interim Local Law No. 1 (Waste Management) 2018	23 May 2018	None

7.	Chief Executive Officer	Power to impose requirements on a written approval to the owner or occupier of a premises other than a serviced premises for depositing or disposing of waste.	13(2) of Interim Local Law No. 1 (Waste Management) 2018	23 May 2018	None
8.	Chief Executive Officer	Power to require the occupier of a premises where there is industrial waste to: (d) Supply industrial waste containers safely, efficiently and without causing nuisance; (e) Keep the industrial waste containers at a particular place at the premises; and (f) Keep each industrial waste container clean and in good repair.	14(1) of Interim Local Law No. 1 (Waste Management) 2018	23 May 2018	None
9.	Chief Executive Officer	Power to appoint authorised persons for the interim local law.	20(2) of Interim Local Law No. 1 (Waste Management) 2018	23 May 2018	None
10.	Chief Executive Officer	Power to decide whether a person is eligible to be an authorised person for the interim local law, including the power to decide whether a person has the necessary expertise or experience or has satisfactorily finished training approved by the local government for the appointment.	20(4) of Interim Local Law No. 1 (Waste Management) 2018	23 May 2018	None
11.	Chief	Power to issue identity	23(1) of Interim Local	23 May	None

	Executive Officer	**cards to authorised persons.**	**Law No. 1 (Waste Management) 2018**	**2018**	

CARRIED 11/0

Crs Karen Williams, Wendy Boglary, Peter Mitchell, Paul Gollè, Lance Hewlett, Mark Edwards, Julie Talty, Murray Elliott, Tracey Huges, Paul Gleeson and Paul Bishop voted FOR the motion.

19.2 FEES REGISTER 2018-19

COUNCIL RESOLUTION 2018/17

Moved by: **Cr Murray Elliott**
Seconded by: **Cr Mark Edwards**

That Council resolves:

1. **to adopt the Fees Register for 2018-19 for Redland City Council;**
2. **that the report and attachment remain confidential until the Budget 2018-19 is adopted at the Special Budget Meeting; and**
3. **that the penalty value of 0.7 reflected in SLL5 be increased to 1 penalty unit.**

CARRIED 11/0

Crs Karen Williams, Wendy Boglary, Peter Mitchell, Paul Gollè, Lance Hewlett, Mark Edwards, Julie Talty, Murray Elliott, Tracey Huges, Paul Gleeson and Paul Bishop voted FOR the motion.

Amending Subordinate Local Law No. 2 (Miscellaneous Subordinate Local Laws) 2018

It is hereby certified that this a true and correct copy of *Amending Subordinate Local Law No. 2 (Miscellaneous Subordinate Local Laws) 2018* made, in accordance with the *Local Government Act 2009*, by the Council of the City of Redland, by resolution dated [insert date]

A. Chesterman
Chief Executive Officer

Redland City Council

Amending Subordinate Local Law No. 2 (Miscellaneous Subordinate Local Laws) 2018

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Redland City Council
Amending Subordinate Local Law No. 2
(Miscellaneous Subordinate Local Laws) 2018

Part 1 Preliminary

1 Short title

This amending subordinate local law may be cited as *Amending Subordinate Local Law No. 2*

(Miscellaneous Subordinate Local Laws) 2018.

2 Object

The object of this amending subordinate local law is to amend—

(a) *Subordinate Local Law No. 4 (Local Government Controlled Areas, Facilities and Roads) 2015* to remove storing a waste container on a road as a prohibited activity; and

(b) *Subordinate Local Law No. 5 (Parking) 2015* to increase 0.7 penalty units to 1 penalty unit.

3 Commencement

This amending subordinate local law commences on the date of publication of the notice of the making of *Amending Subordinate Local Law No. 2 (Miscellaneous Subordinate Local Laws) 2018* in the gazette.

Part 2 Amendment of Subordinate Local Law No. 4 (Local Government Controlled Areas, Facilities and Roads) 2015

4 Amendment of Sch 1 (Prohibited activities for local government controlled areas or roads)

(1) Schedule 1, table item 2(g)—

omit.

(2) Schedule 1, table item 2(h)—

renumber as table item 2(g).

Part 3 Amendment of Subordinate Local Law No. 5 (Parking) 2015

5 Amendment of Sch 4 (Infringement notice penalty amounts for certain minor traffic offences)

(1) Entire schedule, '0.7 penalty units'

omit, insert—

1 penalty unit

Redland City Council

Subordinate Local Law No. 4 (Local Government Controlled Areas, Facilities and Roads) 2015

Redland City Council

Subordinate Local Law No. 4 (Local Government Controlled Areas, Facilities and Roads) 2015

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Part 1 Preliminary

1 Short title

This subordinate local law may be cited as *Subordinate Local Law No. 4 (Local Government Controlled Areas, Facilities and Roads) 2015.*

2 Purpose and how it is to be achieved

(1) The purpose of this subordinate local law is to supplement *Local Law No.4 (Local Government Controlled Areas, Facilities and Roads) 2015* in order to protect the health and safety of persons using local government controlled land, facilities, infrastructure and roads and preserve features of the natural and built environment and other aspects of the amenity of local government controlled land, facilities, infrastructure and roads.

(2) The purpose is to be achieved by providing for—

(a) the regulation of access to local government controlled areas; and

(b) the prohibition or restriction of particular activities in local government controlled areas or roads.

3 Authorising local law

The making of the provisions in this subordinate local law is authorised by *Local Law No.4 (Local Government Controlled Areas, Facilities and Roads) 2015* (the ***authorising local law***).

4 Definitions

(1) Particular words used in this subordinate local law have the same meaning as provided for in the authorising local law.

(2) The dictionary in schedule 7 defines particular words used in this subordinate local law.

Part 2 Use of local government controlled areas, facilities and roads

5 Prohibited and restricted activities—Authorising local law, s 5(1)

(1) For section 5(1)(a) of the authorising local law, the activities prescribed in

column 2 of schedule 1 are declared to be prohibited in the corresponding local government controlled area or road (or part thereof) mentioned in column 1 of schedule 1.

(2) For section 5(1)(b) of the authorising local law, the activities prescribed in column 2 of schedule 2 are declared to be restricted in the corresponding local government controlled area or road (or part thereof) mentioned in column 1 of schedule 2, to the extent described in column 3 of schedule 2.

6 Motor vehicle access in local government controlled areas—Authorising local law, s 6(1)(b)

For section 6(1)(b) of the authorising local law, the areas prescribed in column 1 of schedule 3 are declared to be motor vehicle access areas.

7 Prohibited vehicles—Authorising local law, s 6(3)

For section 6(3) of the authorising local law, the specific types of motor vehicle prescribed in column 2 of schedule 3 are declared to be prohibited vehicles in the corresponding specified motor vehicle access area in column 1 of schedule 3.

8 Opening hours for local government controlled areas—Authorising local law, s 7(1)

(1) For section 7(1) of the authorising local law, the times prescribed in column 2 of schedule 4 are declared to be the opening hours for the local government controlled areas mentioned in column 1 of schedule 4.

(2) However, the local government may, from time to time, by resolution, declare other times when a local government controlled area is open to the public.

9 Permanent closure of local government controlled area—Authorising local law, s 8(3)

For section 8(3) of the authorising local law, the local government controlled areas described in schedule 5 are permanently closed to public access.

Part 3 Matters affecting roads

10 Notice requiring owner of land adjoining road to fence land—Authorising local law, s 9(3)

For section 9(3) of the authorising local law, the minimum standards for a fence that is the subject of a compliance notice under section 9(2) of the authorising local law are as follows—

(a) the fence must be constructed of materials which are of sufficient strength to—

(i) restrain the types of animals to be contained in the area adjacent

to the fence; and

(ii) stop the animals from escaping over, under or through the fence; and

(b) the height of the fence must be sufficient to restrain the types of animals to be contained in the area adjacent to the fence from jumping or climbing over the fence; and

(c) if an animal to be contained in the area adjacent to the fence has the ability to dig — the fence must include a barrier installed directly below the fence to prevent the animal digging its way underneath the fence; and

(d) if the fence includes a gate — the gate must be kept closed and latched except when in immediate use by a person entering or leaving the area adjacent to the fence.

Schedule 1 Prohibited activities for local government controlled areas or roads

Section 5(1)

	Column 1 Local government controlled area or road	Column 2 Prohibited activity
1	All local government controlled areas within the local government area	(a) Riotous, disorderly, indecent, offensive, threatening or insulting behaviour; (b) Carrying or displaying a placard or other sign bearing an offensive or threatening message or image; (c) Injuring, misusing, defacing, marking or otherwise damaging a building or structure; (d) Entering or interfering with a building or structure associated with the water supply system, stormwater drain system or sewerage system of the local government unless the person entering or interfering with the building or structure is an emergency services officer entering or interfering with the building or structure in the course of his or her duties as an emergency services officer; (e) Camping, sleeping, occupying or remaining overnight unless the local government controlled area is a park or reserve; (f) Parking or standing a vehicle bearing a sign or advertisement that the vehicle is offered for sale or hire; (g) Parking or leave standing, an unregistered vehicle.

	Column 1 Local government controlled area or road	Column 2 Prohibited activity
2	All roads within the local government area	(a) Painting an object other than a vehicle in, on or over a road; (b) Repairing, altering or carrying out maintenance on an object other than a vehicle in, on or over a road; (c) Intentionally or negligently damaging a road or a structure associated with a road; (d) Creating a nuisance on a road; (e) Camping, sleeping, occupying or remaining overnight in a vehicle stopped on a footpath, shared path, water-channel or gutter; (f) Parking or standing a vehicle bearing a sign or advertisement that the vehicle is offered for sale or hire; (g) Parking or leave standing, an unregistered vehicle.
3	All off-street regulated parking areas within the local government area as declared in section 6 of *Local Law No. 5 (Parking) 2015*	Parking or leave standing, an unregistered vehicle.
4	All local government cemeteries within the local government area	(a) Interfering with a funeral or commemorative service lawfully conducted in a local government cemetery; (b) Distributing or putting up any handbill, card, circular or advertisement; (c) Interfering with any tree, shrub or plant; (d) Discharging a firearm, except at a military or police funeral or other recognised type of funeral service ordinarily involving

	Column 1 Local government controlled area or road	Column 2 Prohibited activity
		such discharge; (e) Damaging or disturbing or interfering with any memorial, inscription plaque, epitaph or inscription, or any flowers or tokens placed on or adjacent to a grave or niche; (f) Riding or driving or permitting to be ridden or driven, any vehicle of any description or any horse otherwise than on a paved roadway or path; (g) Engaging in conduct which is dangerous or creates a risk to the safety of members of the public; (h) Deliberately or recklessly damaging or destroying any building, fence, structure, improvement or other property; (i) Bringing an animal into or allowing an animal to be within a local government cemetery other than— (i) for the purposes of a funeral or commemorative service; or (ii) a dog which is under effective control as defined in section 11 of *Local Law No. 2 (Animal Management) 2015*; (j) Entering or being within a local government cemetery except for the purpose of— (i) visiting a grave, memorial or interment site; or (ii) attending a funeral; or (iii) maintaining or repairing

	Column 1 Local government controlled area or road	Column 2 Prohibited activity
		a grave, memorial or interment site in accordance with a written authorisation of the chief executive officer; (k) Taking part in any meeting other than a meeting of a religious or commemorative nature.
5	All parks and reserves within the local government area	(a) Damaging or interfering with vegetation; (b) Discharging or carrying a firearm or other weapon or any kind of explosive device; (c) Throwing a stone, projectile or other missile; (d) Using or carrying a trap, snare or net; (e) Hitting a golf ball; (f) Behaving in a riotous disorderly, indecent, offensive, threatening or insulting manner; (g) Carrying out an activity or behaving in a manner reasonably likely to injure, endanger, obstruct, inconvenience or cause fear or excessive annoyance to another person; (h) Interfering with a plant or any turf, sand, clay, soil or other material; (i) Interfering with any facility or equipment located at the park or reserve; (j) Disposing of any waste of any kind other than in a waste container provided for that purpose;

	Column 1 Local government controlled area or road	Column 2 Prohibited activity
		(k) Depositing, storing or abandoning any goods; (l) Bathing in any ornamental pond or lake; (m) Using a boat, canoe, craft, surf ski, surf board or other recreational floating device in an ornamental pond or lake; (n) Any activity which fouls, litters, pollutes or interferes with a park or reserve or a facility in a park or reserve; (o) Permitting or allowing a water tap in a park or reserve to run water to waste; (p) Removing any timber or wood provided by the local government for use as firewood; (q) Propagating or cultivating any plant, vegetation or vegetative matter.
6	All local government accommodation parks within the local government area	(a) Disposing of liquid waste other than at a drainage point provided for that purpose; (b) Disposing of waste other than in a waste container provided for that purpose; (c) Using facilities in a way that makes them unclean or insanitary; (d) Behaving in a riotous disorderly, indecent, offensive, threatening or insulting manner; (e) Carrying out an activity or behaving in a manner reasonably likely to injure, endanger, obstruct, inconvenience or cause fear or excessive annoyance to another person;

	Column 1 Local government controlled area or road	Column 2 Prohibited activity
		(f) Interfering with a plant or any turf, sand, clay, soil or other material; (g) Interfering with any facility or equipment located at the local government caravan park.
7	The boat ramps and landings within the local government area identified in schedule 6	(a) Carrying out maintenance or repairs to a ship on a boat ramp; (b) Carrying out maintenance or repairs to a ship in the water around a boat ramp or landing unless the person has a reasonable excuse; (c) Wilfully breaking, destroying, damaging, defacing, disfiguring or writing upon a boat ramp, landing or a notice erected or displayed by the local government at a boat ramp or landing; (d) Wilfully damaging any lighting upon a boat ramp or a landing; (e) Riding an animal on a boat ramp or a landing; (f) Carrying a loaded or cocked spear gun on a boat ramp or a landing; (g) Lighting a fire on a boat ramp or a landing, whether in a container or otherwise; (h) Diving off a boat ramp or a landing; (i) A person causing themselves or any other person or object to fall or be projected into waters surrounding a boat ramp or a landing; (j) Obstructing another person's use of a boat ramp or landing; (k) Using a boat ramp or landing in a manner which is inconsistent

	Column 1 Local government controlled area or road	Column 2 Prohibited activity
		with — (i) the safe, secure and efficient operation of the boat ramp or landing; or (ii) the protection of the environment at the boat ramp or landing; or (iii) the maintenance or improvement of the convenience of users of the boat ramp or landing; (l) Cleaning or gutting fish or other marine life; (m) Casting or discharging, or causing to be cast or discharged, any material, object or substance from a boat ramp or landing; (n) Occupying a ship or mooring a ship at a boat ramp or landing for the purpose of habitation; (o) While involved in the use of a ship at a boat ramp or landing, casting or discharging, or causing to be cast or discharged, from the ship, any material, object or substance into the waters surrounding the ship; (p) Mooring a ship at a boat ramp or landing except to a bollard or other fastening appliance that is provided for that purpose at the boat ramp or landing; (q) Mooring a ship to any steps or landing place for passengers or cargo at a boat ramp or landing; (r) Permitting a ship to lie alongside a boat ramp or landing, unless it is properly moored;

	Column 1 Local government controlled area or road	Column 2 Prohibited activity
		(s) Placing or mooring a ship in the approach fairway to a boat ramp or landing; (t) If a ship is moored at a boat ramp or landing—allowing the ship to lie alongside, or remain attached to, the boat ramp or landing, except for the purpose of embarking or disembarking passengers or crew, or loading or unloading cargo, stores or goods from the boat ramp or landing; (u) Operating a ship in a manner that obstructs or interferes with the use of a boat ramp or landing by another ship; (v) If the boat ramp or landing is used by a ship (a ***ferry service ship***) for the purposes of a ferry service—mooring, or allowing a ship to lie alongside the boat ramp or landing in a manner that obstructs or interferes with the use of the boat ramp or landing by a ferry service ship used in the operation of the ferry service.
8	All local government swimming pools within the local government area, including each local government swimming pool identified in schedule 6	(a) Bringing any glass or any item made from glass onto the pool deck surrounding the swimming pool or into the swimming pool; (b) Engaging in conduct which is dangerous or which creates a risk to the safety of other users of the swimming pool; (c) Causing wilful damage to the swimming pool or any facilities at the swimming pool; (d) Behaving in a way that endangers the safety of, or causes a nuisance to, other

	Column 1 Local government controlled area or road	Column 2 Prohibited activity
		users of the swimming pool; (e) If a person is more than 5 years of age — entering any part of the swimming pool which is set apart for the exclusive use of the opposite sex, other than for the purpose of rendering emergency assistance; (f) Entering the land on which the swimming pool is located whilst intoxicated or under the influence of a stupefying drug; (g) Entering the swimming pool whilst carrying or having possession of any alcohol or a stupefying drug; (h) Disposing of waste other than in a waste container provided by the local government for the purpose of the collection of waste; (i) Entering the water in the swimming pool if the person has an infectious or contagious disease or illness or a skin complaint; (j) Interfering with the property of another person on the land on which the swimming pool is located other than with the consent of the other person; (k) Entering the land on which the swimming pool is located unless the person has paid the entrance fee prescribed by the local government from time to time for entry to the swimming pool; (l) Using a season ticket for the swimming pool otherwise than in accordance with the rules of the local government for the use of a season ticket for the

	Column 1 Local government controlled area or road	Column 2 Prohibited activity
		swimming pool; (m) Behaving in a threatening, abusive or insulting manner to another person at the swimming pool; (n) Leaving a child or children under the age of 10 at the land on which the swimming pool is located otherwise than under the direct supervision of a person who is a parent or guardian of the child or children and at least 16.
9	All local government offices, libraries and depots within the local government area	(a) Obstructing or interfering with a person who is a local government employee or a contractor of the local government in the performance of the duties to be performed by the person at the local government controlled area; (b) Disposing of waste other than in a waste container provided for that purpose; (c) Using facilities in a way that makes them unclean or insanitary; (d) Behaving in a riotous, disorderly, indecent, offensive, threatening or insulting manner; (e) Carrying out an activity or behaving in a manner reasonably likely to injure, endanger, obstruct, inconvenience or cause fear or excessive annoyance to another person; (f) Interfering with any facility or equipment located at the local government controlled area; (g) Depositing, storing or

	Column 1 Local government controlled area or road	Column 2 Prohibited activity
		abandoning any goods; (h) Any activity which fouls, litters, pollutes or interferes with the local government controlled area or a facility in the local government controlled area; (i) Wilfully breaking, destroying, damaging, defacing, disfiguring or writing upon any part of the local government controlled area or a notice erected or displayed by the local government at the local government controlled area; (j) Using any part of the local government controlled area in a manner which is inconsistent with— (i) the safe, secure and efficient operation of the local government controlled area; or (ii) the maintenance or improvement of the convenience of users of the local government controlled area.
10	Footpaths on roads as follows— (a) the footpath on either side of each road within the Cleveland Central Business District bounded by, and including, each of Wynyard, Shore, Waterloo and Queen Streets; (b) the footpath commonly known as Capalaba Place between Noeleen Street and Capalaba Central Shopping Centre;	Riding a bicycle, wheeled recreational device or wheeled toy, as defined in the *Transport Operations (Road Use Management) Act 1995*.

	Column 1 Local government controlled area or road	Column 2 Prohibited activity
	(c) the footpath on either side of Main Road, Wellington Point, from the intersection with Apsley Street to the intersection with Douro Road.	
11	The public transport waiting points at each boat ramp and landing within the local government area identified in schedule 6	(a) Smoking; (b) Fishing; (c) Using a cast net or other bait collecting device; (d) Using a crab pot or other device for catching a crustacean.
12	The Swan Bay region of Main Beach, North Stradbroke Island	(a) Camping; (b) Bringing onto, or driving a vehicle, including a motor vehicle, on the local government controlled area.
13	Brown Lake, North Stradbroke Island	(a) Using a motorised ship on the local government controlled area; (b) Bringing onto, or driving a vehicle, including a motor vehicle, on the foreshore of the local government controlled area; (c) Washing or cleansing a vehicle on the foreshore, or in the near vicinity of, the local government controlled area.
14	Weinam Creek Commuter Terminal	(a) Obstructing or impeding another person's use of the Terminal; (b) Mooring or fastening a ship to any part of the Terminal, except to a fastening that is provided for that purpose; (c) Carrying out repairs on a jetty at the Terminal whilst moored at the jetty;

	Column 1 Local government controlled area or road	Column 2 Prohibited activity
		(d) Anchoring or mooring a ship in the approach fairway to a jetty at the Terminal; (e) Swimming or diving into, or allowing any animal under the person's control to swim in, or dive into— (i) any waters at the Terminal; or (ii) any navigational channel at the Terminal; or (iii) any waters within 100m of the edge of a navigational channel at the Terminal.
15	Each area of bathing reserve and foreshore identified in schedule 6	Bringing or driving a motor vehicle on the area of bathing reserve or foreshore.

Schedule 2 Restricted activities for local government controlled areas or roads

Section 5(2)

	Column 1 Local government controlled area or road	Column 2 Restricted activity	Column 3 Extent of restriction
1	All local government controlled areas within the local government area	(a) Busking	(a) Permitted only if authorised under the conditions of an approval for a prescribed activity.
		(b) Depositing, storing, dumping or leaving unattended a shopping trolley.	(b) Permitted only in the area of a shopping centre car park that is open to or used by the public and is developed for, or has as 1 of its main uses, the driving or riding of motor vehicles.
2	All roads within the local government area	(a) The painting, repairing, alteration or maintenance of vehicles on a road' (see s.66(3)(b) of the *Transport Operations (Road Use Management) Act 1995*, which permits local laws to regulate these activities on roads).	(a) Permitted only if the vehicle is temporarily disabled with a minor fault and the driver of the vehicle stops for no longer than is necessary for the performance of maintenance work limited to the minimum necessary to allow the vehicle to be moved from the road.
		(b) Temporarily closing a road to all traffic, or traffic of a particular class.	(b) Permitted only with the written authorisation of the chief executive officer of the local government.
		(c) Depositing, storing, dumping or leaving unattended a	(c) Permitted only in the area of a shopping centre car park that is

	Column 1 Local government controlled area or road	Column 2 Restricted activity	Column 3 Extent of restriction
		shopping trolley.	open to or used by the public and is developed for, or has as 1 of its main uses, the driving or riding of motor vehicles.
3	All local government cemeteries within the local government area	(a) Carrying out a burial outside the hours during which burials may be performed as fixed by the local government.	(a) Permitted only— (i) between the hours of 9am and 4pm; or (ii) with the written authorisation of the chief executive officer of the local government.
		(b) Disposing of human remains in a local government cemetery.	(b) Permitted only with the written authorisation of the chief executive officer of the local government.
		(c) Digging or preparing a grave in a local government cemetery.	(c) Permitted only if the grave is dug or prepared by a person employed by the local government or with the written authorisation of the sexton.
		(d) After a burial — reopening a grave for a further burial.	(d) Permitted only with the written authorisation of the sexton.
		(e) Bringing human remains into a local government cemetery.	(e) Permitted only— (i) with the written authorisation of the chief executive officer of the local

	Column 1 Local government controlled area or road	Column 2 Restricted activity	Column 3 Extent of restriction
			government; and (ii) if the remains are enclosed in a coffin or other form of container appropriate to the proposed form of disposal.
		(f) Erecting or installing a memorial to a deceased person in a local government cemetery.	(f) Permitted only with the written authorisation of the chief executive officer of the local government.
		(g) Reserving a niche or site in a local government cemetery.	(g) Permitted only under the conditions of a written authorisation of the chief executive officer of the local government.

	Column 1 Local government controlled area or road	Column 2 Restricted activity	Column 3 Extent of restriction
		(h) Carrying out maintenance or repair work on a memorial to a deceased person in a local government cemetery.	(h) Permitted only— (i) by a member of the family of the deceased person, or another person who has a proper interest in the maintenance of the memorial to the deceased person; and (ii) with the written approval of the sexton; and (iii) subject to conditions about how the work is to be carried out as are included in the written authorisation of the sexton.
4	All parks and reserves within the local government area	(a) Lighting or maintaining a fire.	(a) Permitted only if the fire is— (i) lit and maintained in a fireplace established by the local government for the purpose; or (ii) lit and maintained in accordance with the written authorisation of the chief executive officer of the local government.

	Column 1 Local government controlled area or road	Column 2 Restricted activity	Column 3 Extent of restriction
		(b) Sleeping, occupying or remaining overnight in a park or reserve.	(b) Permitted only with the written authorisation of the chief executive officer of the local government.
		(c) Erecting or installing a building, structure or facility in, on, across or over a park or reserve.	(c) Permitted only if authorised under the conditions of an approval for a prescribed activity.
		(d) Conducting or taking part in an organised sporting activity of regional, State or national significance.	(d) Permitted only if authorised under the conditions of an approval for a prescribed activity.
		(e) Operating a model vehicle or aircraft propelled by a motor.	(e) Permitted only with the written authorisation of the chief executive officer of the local government.
		(f) Using, storing or possessing fireworks.	(f) Permitted only with the written authorisation of the chief executive officer of the local government.
		(g) Displaying a sign or advertisement.	(g) Permitted only if authorised under the conditions of an approval for a prescribed activity.
		(h) Playing golf.	(h) Permitted only with the written authorisation of the chief executive officer of the local

	Column 1 Local government controlled area or road	Column 2 Restricted activity	Column 3 Extent of restriction
			government.
		(i) Undertaking the sport of archery.	(i) Permitted only with the written authorisation of the chief executive officer of the local government.
		(j) Using a megaphone, loud speaker, or other similar amplification device.	(j) Permitted only— (i) with the written authorisation of the chief executive officer of the local government; or (ii) if authorised under the conditions of an approval for a prescribed activity.

	Column 1 Local government controlled area or road	Column 2 Restricted activity	Column 3 Extent of restriction
		(k) Public entertainment.	(k) Permitted only— (i) with the written authorisation of the chief executive officer of the local government; or (ii) if authorised under the conditions of an approval for a prescribed activity.

	Column 1 Local government controlled area or road	Column 2 Restricted activity	Column 3 Extent of restriction
		(l) Research. *Examples of activities which are research for this section—* • *The collection of entire fauna or flora specimens.* • *The collection of portions of fauna or flora specimens (such as cuttings or DNA samples).* • *The installation of monitoring equipment.*	(l) Permitted only with the written authorisation of the chief executive officer of the local government.
5	All local government accommodation parks within the local government area	(a) Lighting or maintaining a fire in the open.	(a) Permitted only — (i) if the fire is in a fireplace or incinerator approved for the purpose by the local government; or (ii) with the written authorisation of an authorised person.
		(b) Camping, sleeping, occupying or remaining overnight in a caravan or complementary accommodation at an accommodation site at a local government accommodation park.	(b) Permitted only if— (i) the person undertaking the activity maintains the accommodation site and any caravan or complementary accommodation on the accommodation site in a clean and

	Column 1 Local government controlled area or road	Column 2 Restricted activity	Column 3 Extent of restriction
			sanitary condition; and (ii) the person deposits all waste in a waste container, or a waste disposal system, provided by the local government for the purpose; and (iii) the person does not use facilities at the local government accommodation park in a way that makes them unclean or unsanitary; and (iv) the person who occupies the accommodation site allows onto the site no more persons than the limit fixed under a relevant approval or as notified by notice displayed by the local government at the local government accommodation park; and (v) the person pays all fees for use of the accommodation site in advance to the local government; and (vi) if required by the local government

	Column 1 Local government controlled area or road	Column 2 Restricted activity	Column 3 Extent of restriction
			or an Act—the person enters into a written agreement with the local government about undertaking the activity at the local government accommodation park; and (vii) at the end of the period of occupation of the accommodation site — the person vacates and leaves the accommodation site in a clean and tidy condition; and (viii) the person ensures that the caravan or complementary accommodation is not let or hired to another person; and (ix) the person ensures that the accommodation site is kept and maintained in good repair and clean, tidy and sanitary condition; and (x) the person ensures that the accommodation site is not left unoccupied for more than 2 days;

	Column 1 Local government controlled area or road	Column 2 Restricted activity	Column 3 Extent of restriction
			and (xi) the person ensures that the activity does not cause a nuisance, annoyance, disturbance or inconvenience to other persons using the local government accommodation park.
		(c) Use or operation of a generator in a part of a local government accommodation park that is made available for camping overnight or for a period longer than overnight.	(c) Permitted only— (i) with the written authorisation of an authorised person ; and (ii) in any event (even where written authorisation is granted) not between the hours of 9:30pm and 7:00am.
6	The boat ramps and landings within the local government area identified in schedule 6	(a) Driving or standing a vehicle on a boat ramp.	(a) Permitted only to launch or retrieve a ship from the boat ramp.
		(b) Launching or retrieving a ship at a boat ramp.	(b) Permitted only if the person launching or retrieving the ship does so as quickly as is reasonably possible.
		(c) Anchoring, mooring or placing a ship in the water around a boat ramp or a landing.	(c) Permitted only if the anchoring, mooring or placing of the ship is not likely to obstruct another person's use

	Column 1 Local government controlled area or road	Column 2 Restricted activity	Column 3 Extent of restriction
			of the boat ramp or landing.
		(d) Carrying out the rigging of a sailing ship on a boat ramp or landing.	(d) Permitted only if the carrying out of the rigging does not, or is not likely to, impede access to the boat ramp or landing.
		(e) Taking or driving a vehicle onto a boat ramp.	(e) Permitted only if the mass of the vehicle and its load (if any), together with any trailer that the vehicle is towing and its load (if any), is not more than— (i) 5 tonnes; or (ii) if the local government erects on or near the boat ramp a notice approved by the local government and displaying a greater mass—the greater mass.
		(f) Taking or driving a vehicle onto a landing.	(f) Permitted only with the authorisation of an authorised person.
		(g) Taking or driving a vehicle onto a boat ramp or landing.	(g) Permitted only if the vehicle moves on wheels fitted with pneumatic or rubber tyres.
		(h) Fishing on a boat ramp or landing, or a part of a boat	(h) Permitted only if the activity does not obstruct or interfere

	Column 1 Local government controlled area or road	Column 2 Restricted activity	Column 3 Extent of restriction
		ramp or landing, that is not a public transport waiting point.	with the use of the boat ramp or landing by a ship, vehicle or another person.
		(i) Using a cast net or other bait collecting device on a boat ramp or landing, or a part of a boat ramp or landing, that is not a public transport waiting point.	(i) Permitted only if the activity does not obstruct or interfere with the use of the boat ramp or landing by a ship, vehicle or another person.
		(j) Using a crab pot or other device for catching a crustacean on a boat ramp or landing, or a part of a boat ramp or landing, that is not a public transport waiting point.	(j) Permitted only if the activity does not obstruct or interfere with the use of the boat ramp or landing by a ship, vehicle or another person.
		(k) Using a boat ramp or landing for the purposes of a ferry service, including operating a ferry service from a boat ramp or landing.	(k) Permitted only if authorised under the conditions of an approval for a prescribed activity.
		(l) Using a boat ramp or landing for the purposes of a ship charter service, including operating a ship charter service from a boat ramp or landing.	(l) Permitted only if authorised under the conditions of an approval for a prescribed activity.
		(m) Using a boat ramp or landing for a ship	(m) Permitted only if authorised under the

	Column 1 Local government controlled area or road	Column 2 Restricted activity	Column 3 Extent of restriction
		hire service, including operating a ship hire service from a boat ramp or landing.	conditions of an approval for a prescribed activity.
		(n) Packing or unpacking any goods into or from any case or container on a boat ramp or landing.	(n) Permitted only with the written authorisation of an authorised person.
		(o) Erecting, installing or maintaining any sign board, notice board or other fixture or erection for the exhibition of bills or notices on a boat ramp or landing.	(o) Permitted with the written authorisation of the chief executive officer of the local government.
		(p) Refuelling a ship on a boat ramp or landing.	(p) Permitted only with the written authorisation of an authorised person.
		(q) Exhibiting, affixing or maintaining a bill or notice on a boat ramp or landing.	(q) Permitted with the written authorisation of the chief executive officer of the local government.
		(r) Operating a system of public address or sound amplification on— (i) a boat ramp or landing; or (ii) a ship moored at a boat ramp or landing.	(r) Permitted only with the written authorisation of an authorised person.
		(s) Playing music or a musical instrument	(s) Permitted only with the written

	Column 1 Local government controlled area or road	Column 2 Restricted activity	Column 3 Extent of restriction
		at a volume, or in a manner, which interferes with another person's reasonable enjoyment or use of a boat ramp or landing on— (i) the boat ramp or landing; or (ii) any ship moored at the boat ramp or landing.	authorisation of an authorised person.
		(t) Carrying out maintenance or repairs to a ship moored at a boat ramp or landing, or on a boat ramp or landing, except in an emergency situation— (i) to permit the ship to leave the boat ramp or landing; or (ii) where to move the ship from its position would involve danger to the ship or a person.	(t) Permitted with the written authorisation of the chief executive officer of the local government.
		(u) Mooring a ship at a boat ramp or landing for longer than 20 minutes.	(u) Permitted only— (i) if authorised under the conditions of an approval for a prescribed activity; or

	Column 1 Local government controlled area or road	Column 2 Restricted activity	Column 3 Extent of restriction
			(ii) with the written authorisation of an authorised person; or (iii) if authorised by a notice displayed by the local government at the boat ramp or landing; or (iv) in an emergency situation as prescribed in item 6(t).
7	All local government swimming pools within the local government area, including each local government swimming pool identified in schedule 6	(a) Conducting— (i) a swimming club competition or carnival; or (ii) an inter-school or intra-school swimming competition or carnival; or (iii) learn to swim training, lifesaving training or competitive swimming training by a swimming club or school; or (iv) a private function.	(a) Permitted only if authorised under the conditions of an approval for a prescribed activity.

	Column 1 Local government controlled area or road	Column 2 Restricted activity	Column 3 Extent of restriction
		(b) Bringing an object (including water sports equipment) into a swimming pool if the object is dangerous or may be used in a dangerous way.	(b) Permitted only with the written authorisation of an authorised person.
		(c) Bringing a animal onto the land on which the swimming pool is situated.	(c) Permitted only if— (i) the animal is an assistance dog, a guide dog or a hearing dog; and (ii) the person is the handler of the dog.
8	All local government offices, libraries and depots within the local government area.	(a) Bringing an animal onto, or permitting or allowing an animal to remain on, the local government controlled area.	(a) Permitted only if— (i) the animal is an assistance dog, a guide dog or a hearing dog; and (ii) the person is the handler of the dog.
		(b) Entering or remaining at the local government controlled area or a part of a local government controlled area.	(b) Permitted if— (i) the local government controlled area or relevant part of the local government controlled area is a public place; and (ii) if the local government erects on or near the local government controlled area or the relevant part of the local government controlled area, a

	Column 1 Local government controlled area or road	Column 2 Restricted activity	Column 3 Extent of restriction
			notice that is approved by the local government which authorises entry to the local government controlled area or the relevant part of the local government controlled area—the person complies with the requirements of the notice.
9	Point Halloran Conservation Area Reserve, Orana Street, Victoria Point	Public access	Permitted only on the constructed boardwalk and paths throughout the Conservation Area.

Schedule 3 Motor vehicle access areas in local government controlled areas

Sections 6 and 7

	Column 1 Motor vehicle access areas	Column 2 Prohibited vehicles
	No motor vehicle access area prescribed.	

Schedule 4 Opening hours for local government controlled areas

Section 8

	Column 1 Local government controlled area	Column 2 Opening hours[1]
1	All parks and reserves within the local government area.	4.00a.m. to 10.00p.m. daily.
2	All boat ramps and landings within the local government area identified in schedule 6.	All times.

[1]Public holidays excepted.

Schedule 5 Permanent closure of local government controlled areas

Section 9

No local government controlled area described.

Schedule 6 Identification of local government controlled areas

Section 5

Boat ramps and landings

Description	Location Description
Jetty, Fixed Platform - Banana St Harbour	Mainland Areas - Redland Bay
Jetty, Fixed Platform - Elizabeth St Harbour	Coochiemudlo Island - Elizabeth Street
Jetty, Fixed Platform - Ron Field	Moreton Bay - Macleay Island
Jetty, Fixed Platform - High St Harbour	Moreton Bay - Russell Island
Jetty, Fixed Platform - Brighton Rd Harbour	Macleay Island - Brighton Road
Jetty, Fixed Platform - Masters Ave Harbour	Victoria Point - Masters Avenue
Jetty, Fixed Platform - Yabby Street	Dunwich - Yabby Street
Jetty, Fixed Platform - Junner St Harbour	Dunwich - Junner Street
Jetty, Fixed Platform - Clayton Rd Harbour	Amity - Claytons Road
Jetty, Fixed Platform - Main Rd Boat Haven	Wellington Point - Main Road Foreshore
Jetty, Fixed Platform - Banana St Harbour	Mainland Areas - Redland Bay
Jetty, Pontoon - High St Harbour	Russell Island - High Street
Jetty, Pontoon - Lucas Drive Harbour	Lamb Island - Lucas Drive
Jetty, Pontoon - The Esplanade Harbour	Karragarra Island - The Esplanade
Jetty, Pontoon - Brighton Rd Harbour	Macleay Island - Brighton Road
Jetty, Pontoon - Weinam Creek Marine Facility	Mainland Areas - Redland Bay
Jetty, Pontoon - Raby Bay Canals	Cleveland - Raby Bay Harbour Park
Jetty, Pontoon - Banana St Harbour	Mainland Areas - Redland Bay
Weinam Creek Pontoon Landing Upgrade	

Description	Location Description
Ramp - Main Road, Wellington Point	Wellington Point - Main Road
Ramp - Vmr Cleveland	Cleveland - William Street
Ramp, Barge - Brighton Rd Harbour	Macleay Island - Brighton Road
Ramp, Barge - Junner St Harbour	Dunwich - Junner Street
Ramp, Barge - Weinam Street	Redland Bay - Weinam Street
Ramp, Barge - Weinam Street	Redland Bay - Weinam Street
Ramp, Boat - Banana Street	Redland Bay - Weinam Creek Marine Commuter Facility
Ramp, Boat - Boulevard Esplanade	Redland Bay - The Boulevard
Ramp, Boat - Brighton Rd Harbour	Moreton Bay - Macleay Island
Ramp, Boat - Clayton Rd Harbour	Amity - Claytons Road
Ramp, Boat - Colburn Avenue	Victoria Point - Colburn Avenue
Ramp, Boat - Dalpura Street Road Reserve	Macleay Island - Dalpura Street Road Reserve
Ramp, Boat - Emmett Drive	Cleveland Emmett Drive - Toondah Harbour Carpark
Ramp, Boat - Helen Street	Thorneside - Helen Street
Ramp, Boat - Main Road	Mainland Areas - Wellington Point
Ramp, Boat - Main Road - North Of Jetty	Wellington Point - Main Road Foreshore
Ramp, Boat - Main Road 4 Lane Ramp	Wellington Point - Main Road Foreshore
Ramp, Boat - Toondah Harbour	Cleveland Emmett Drive - Toondah Harbour Carpark
Ramp, Boat - Wahine Drive	Moreton Bay - Russell Island
Boat Ramp – William Street	Cleveland - William Street
Ramp, Boat - Yabby Street	Dunwich - Yabby Street
Ramp, Combined - Elizabeth St Harbour	Coochiemudlo Island - Elizabeth Street
Ramp, Combined - High St Harbour	Russell Island - High Street

Ramp, Combined - Lucas Drive Harbour	Lamb Island - Lucas Drive
Ramp, Combined - Masters Ave Harbour	Victoria Point - Masters Avenue
Ramp, Combined - The Esplanade Harbour	Karragarra Island - The Esplanade
Ramp, Boat - Jock Kennedy Park	Russell Island – Jock Kennedy Park
Ramp, Recreational - Ferry Road	Thorneside - Ferry Road

Local government swimming pools

1. Cleveland Aquatic Centre
2. Russel Island Aquatic Centre

Bathing reserves

Description	Location Description
Main Beach	Coochiemudlo Island
Thompsons Beach	Victoria Point
Cylinder Beach	Point Lookout, North Stradbroke Island
Main Beach	Point Lookout, North Stradbroke island
Amity	Amity, North Stradbroke Island

Foreshore Swimming Enclosures

Description	Location Description
Foreshore Swimming Enclosure	Amity Point - Cabarita Park
Foreshore Swimming Enclosure	Dunwich - Ron Stark Oval
Foreshore Swimming Enclosure	Karragarra Island - Karragarra Island Foreshore (North)
Foreshore Swimming Enclosure	Lamb Island - Pioneer Park
Foreshore Swimming Enclosure	Macleay Island - Pat's Park
Foreshore Swimming Enclosure	Moreton Bay - Russell Island
Foreshore Swimming Enclosure	Redland Bay - Rusters Reserve

Schedule 7 Dictionary

Section 4

accommodation, at a local government accommodation park, means—

(a) a caravan; or

(b) a complementary accommodation.

accommodation park means a place for parking and residing in caravans, including a place that provides also for complementary accommodation.

accommodation site, at a local government accommodation park, means a part of the local government accommodation park which is designated for a single accommodation of a particular type.

animal has the meaning given in *Local Law No. 2 (Animal Management) 2015*.

assistance dog has the meaning given in the *Guide, Hearing and Assistance Dogs Act 2009.*

authorised person has the meaning given in *Local Law No. 1 (Administration) 2015.*

barge loading ramp means a ramp or other device or structure which is—

(a) owned, held in trust or otherwise controlled by the local government; and

(b) used or capable of use, or designed or intended for use, for the purpose of—

(i) loading or unloading goods; or

(ii) loading or unloading vehicles between a ship and the barge loading ramp; and

(c) includes part of a barge loading ramp.

bathing reserve has the meaning given in the *Local Government Regulation 2012*.

boat ramp —

(a) means a ramp or other device or structure which is**—**

(i) owned, held in trust or otherwise controlled by the local government; and

(ii) used or capable of use, or designed or intended for use, for the purpose of launching and retrieving trailerable ships; and

(iii) includes a part of a boat ramp; and

(b) includes a barge loading ramp.

building has the meaning given in the *Building Act 1975*.

busking means a musical or theatrical performance undertaken by a person—

(a) to entertain the public; and

(b) seeking voluntary reward for the performance.

camping, at a place, includes sleeping, occupying or remaining overnight at the place.

caravan has the meaning given in *Local Law No. 1 (Administration) 2015*.

collection day, for a waste container, means, if the local government has arranged for the collection of waste from a waste container at premises—each day on which the local government has arranged for the collection of waste from the waste container at the premises.

complementary accommodation has the meaning given in *Subordinate Local Law No. 1.8 (Operation of Accommodation Parks) 2015*.

driver has the meaning given in the *Transport Operations (Road Use Management) Act 1995*.

emergency services officer means—

(a) an officer of the Queensland Ambulance Service or an Ambulance Service of another State; or

(b) an officer of the Queensland Fire and Rescue Service or a Fire and Rescue Service of another State; or

(c) an officer or employee of another entity with the written permission of the Commissioner of the Police Service; or

(d) an officer of the State Emergency Service or a State Emergency Service of another State; or

(e) an officer or employee of an authority permitted by law to conduct utility installation or utility maintenance; or

(f) an officer of Emergency Management Queensland.

ferry has the meaning given in the *Transport Operations (Passenger Transport) Act 1994*.

ferry service has the meaning given in the *Transport Operations (Passenger Transport) Act 1994*.

footpath has the meaning given in the *Transport Operations (Road Use Management) Act 1995*.

foreshore has the meaning given in the *Local Government Regulation 2012*.

goods includes wares, merchandise, chattels, money, stone, timber, metal, fluid and any other article, substance or material whatsoever.

guide dog has the meaning given in the *Guide, Hearing and Assistance Dogs Act 2009*.

handler has the meaning given in the *Guide, Hearing and Assistance Dogs Act 2009*.

hearing dog has the meaning given in the *Guide, Hearing and Assistance Dogs Act 2009*.

interfere means prevent from continuing or being carried out properly, get in the way of, or handle or adjust without permission, and ***interference*** has a corresponding meaning.

jetty includes—

(a) any jetty, landing place, launching ramp, pier, platform, quay, stage, or like premises which is—

(i) owned, held in trust or otherwise controlled by the local government; and

(ii) used or capable of use, or designed or intended for use, for the purpose of taking goods or persons to, or removal of goods or persons from, a ship; and

(b) where necessary, all buildings, railways, tramways and other works on the jetty and the appurtenances of the jetty, and the approaches to the jetty; and

(c) a part of a jetty.

landing includes jetty, pontoon and wharf.

local government accommodation park means an accommodation park under the control of the local government, including an accommodation park located on land owned by the local government or on land for which the local government is the trustee.

local government cemetery has the meaning given in *Local Law No. 1 (Administration) 2015*.

local government employee has the meaning given in the *Local Government Act 2009*.

local government office includes—

(a) the public office of the local government; and

(b) each place used by the local government for local government administration or management purposes.

local government swimming pool means a swimming pool under the control of the local government, including a swimming pool located on land owned by the local government or on land for which the local government is the trustee.

memorial includes—

(a) a headstone; and

(b) an inscribed plaque or commemorative plate; and

(c) monumental, ornamental or other structures erected on a grave site; and

(d) anything else erected or placed to mark the site where human remains have been buried or placed, or to commemorate a deceased person.

motor vehicle has the meaning given in the *Transport Operations (Road Use Management) Act 1995*.

non-public place means—

(a) the whole or any part of a local government office that is not a public place; and

(b) the whole or any part of a local government office, including a public place, that is designated as a non-public place by—

(i) an authorised person; or

(ii) a notice displayed at a prominent place at—

(A) if the whole of the local government office is a non-public place—the local government office; or

(B) if a part of the local government office is a non-public place—the part of the local government office.

park means a public place which the local government has, by resolution, set apart for park, recreational or environmental purposes, and includes land designated as a park in the planning scheme of the local government.

plant has the meaning given in the *Land Protection (Pest and Stock Route Management) Act 2002*.

public office has the meaning given in the *Local Government Act 2009*.

public place —

(a) has the meaning given in the *Local Government Act 2009*; but

(b) does not include a non-public place.

public transport waiting point has the meaning given in section 26ZPA of the *Tobacco and Other Smoking Products Act 1998*.

reserve means land dedicated as a reserve, or granted in trust, under the *Land Act 1994* and for which the local government is a trustee under that Act and other land held in trust by the local government which the local government has, by resolution, set apart for recreational or environmental purposes, and includes land designated as a reserve in the planning scheme of the local government.

road has the meaning given in the *Local Law No. 1 (Administration) 2015*.

sewerage system has the meaning given in the *Plumbing and Drainage Act 2002*.

sexton means a person appointed by the local government to act as the sexton of a local government cemetery

ship has the meaning given in the *Transport Operations (Marine Safety) Act 1994.*

shopping trolley means a wheeled basket or frame used for transporting purchases from a supermarket or shop.

stormwater drain has the meaning given in the *Local Government Act 2009.*

structure has the meaning given in the *Local Government Act 2009.*

swimming pool has the meaning given in the *Building Act 1975.*

unregistered, for a vehicle that is required to be registered under the *Transport Operations (Road Use Management – Vehicle Registration) Regulation 2010*, means that a current registration certificate has not been issued by the chief executive for the vehicle.

utility installation means—

(a) the supply of water, hydraulic power, electricity or gas; or

(b) the provision of sewerage or drainage services; or

(c) the provision of telecommunications services.

utility maintenance means the maintenance of—

(a) water, hydraulic power, electricity or gas services; or

(b) sewerage or drainage services; or

(c) telecommunications services.

vegetation means trees, plants and all other organisms of vegetable origin (whether living or dead).

vehicle has the meaning given in the *Transport Operations (Road Use Management) Act 1995.*

waste has the meaning given in the *Environmental Protection Act 1994*.

***waste container*—**

(a) means a container of a type approved by the local government for storing domestic waste, commercial waste or recyclable waste at premises in the local government's area; but

(b) does not include a bin placed by the local government in a public place for the purpose of the collection of waste.

water supply system has the meaning given in the *Standard Plumbing and Drainage Regulation 2003*.

Certification

This and the preceding 39 pages bearing my initials is a certified copy of *Subordinate Local Law No. 4 (Local Government Controlled Areas Facilities and Roads) 2015* made in accordance with the provisions of the *Local Government Act 2009* by Redland City Council by resolution dated the day of , 2018.

……
Chief Executive Officer

Redland City Council

Subordinate Local Law No. 5 (Parking) 2015

Redland City Council

Subordinate Local Law No. 5 (Parking) 2015

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Part 1 Preliminary

1 Short title

This subordinate local law may be cited as *Subordinate Local Law No. 5 (Parking) 2015.*

2 Purpose and how it is to be achieved

(1) The purpose of this subordinate local law is to supplement *Local Law No. 5 (Parking) 2015*, which provides for the exercise of local government powers authorised under the TORUM Act.

(2) The purpose is to be achieved by providing for—

(a) the establishment of traffic areas and off-street regulated parking areas; and

(b) the persons that may be issued with a parking permit; and

(c) the vehicles that may be issued with a commercial vehicle identification label; and

(d) the infringement notice penalty amounts for minor traffic offences.

3 Authorising local law

The making of the provisions in this subordinate local law is authorised by *Local Law No. 5 (Parking) 2015* (the ***authorising local law***).

4 Definitions

(1) Particular words used in this subordinate local law have the same meaning as provided for in the authorising local law.

(2) The dictionary in schedule 5 defines particular words used in this subordinate local law.

Part 2 Declaration of parking areas for the TORUM Act

5 Declaration of traffic areas—Authorising local law, s 5

(1) For section 5(1) of the authorising local law, each part of the local government area indicated by hatching on a map in schedule 1 is declared to be a traffic area.

(2) For section 5(2) of the authorising local law, the boundaries of each traffic area are indicated by bold lines circumscribing the hatched area on a map in schedule 1.

6 Declaration of off-street regulated parking areas—Authorising local law, s 6

(1) For section 6(1) of the authorising local law, the areas of land which are declared

to be an off-street regulated parking area are—

(a) described in schedule 2 part 1; and

(b) indicated by hatching on a map in schedule 2 part 2.

(2) For section 6(2) of the authorising local law, the boundaries of each off-street regulated parking area are indicated by a bold line circumscribing a hatched area on a map in schedule 2 part 2.

Part 3 Parking contrary to parking restriction

7 Parking permits issued by local government—Authorising local law, s 7(2)

(1) This section prescribes—

(a) the persons that may be issued with a parking permit mentioned in section 7(1) of the authorising local law; and

(b) the circumstances in which a parking permit may be issued.

(2) A parking permit (a ***resident parking permit)***—

(a) may be issued to a person whose circumstances are as follows—

(i) the person resides in a residence[2] situated on a section of road and parking immediately adjacent to the residence is regulated by time; and

(ii) the issue of the parking permit would not unduly impede the flow of traffic either on the road or in the area; and

(iii) the residence does not have, and cannot reasonably be provided with, adequate off–street parking; and

(iv) if the parking permit is granted — there would not be in force more than 3 resident parking permits for the same residence; but

(b) must not be issued to permit a vehicle to be parked contrary to an indication on an official traffic sign installed on a road in a no parking permit area.

(3) A parking permit (a ***community service organisation parking permit***) may be issued to a person whose circumstances are as follows—

(a) the person is a community service organisation[3]; and

(b) the person will use the parking permit for an activity which is consistent with the objects of the community service organisation; and

(c) the activity is undertaken on a section of road where —

(i) parking is regulated by time; and

(ii) the issue of the parking permit would not unduly impede the flow of traffic either on the road or in the area.

(4) A parking permit (a ***temporary parking permit***) may be issued to allow the holder

[2] See definition of ***residence*** in the dictionary.

[3] See definition of ***community service organisation*** in the dictionary.

of the parking permit to park 1 or more vehicles in a designated parking space or spaces for a period specified in the parking permit despite an indication on an official traffic sign to the contrary and despite the fact that paid parking would otherwise apply to the space or spaces.

(5) A temporary parking permit may only be granted if the local government is satisfied that—

(a) the applicant is engaged in some temporary activity affecting premises immediately adjacent to the designated parking space or spaces to which the application relates; and

(b) it is not reasonably practical for the applicant to carry out the activity unless the designated parking space or spaces to which the application relates are allocated to the applicant's exclusive use for the duration of the activity.

(6) A parking permit (a ***works zone parking permit***) may be issued to a person if the local government is satisfied that—

(a) the part of the road to which the application relates is adjacent to a site at which the person is proposing to undertake building or construction work; and

(b) the carrying out of the building or construction work is lawful; and

(c) having regard to the nature of the building or construction work and the characteristics of the site, it is not reasonably practical for all work activity involving vehicle loading and unloading and associated vehicle movements to be confined within the site.

(7) A parking permit (a ***local government works parking permit***) may be issued to allow a person to park 1 or more vehicles in a designated parking space or spaces, and for a period specified in the parking permit despite an indication on an official traffic sign to the contrary and despite the fact that paid parking would otherwise apply to the space or spaces if the person is—

(a) an employee, contractor or agent of the local government; and

(b) parking the vehicle or vehicles in the space or spaces—

(i) for the purpose of carrying out work for or on behalf of the local government; and

(ii) in the course of carrying out his or her duties for or on behalf of the local government.

(8) A parking permit (a ***visitor parking permit***)—

(a) may be issued to a person whose circumstances are as follows—

(i) the person (the ***resident***) resides in a residence situated on a section of road and parking immediately adjacent to the residence is regulated by time; and

(ii) the parking permit is to be made available by the resident for use by another person who —

(A) is visiting or attending at the residence identified in the parking permit; and

(B) intends parking on the section of road immediately adjacent to the residence; and

(iii) the issue of the parking permit would not unduly impede the flow of traffic either on the road or in the area; and

(iv) the residence does not have and cannot reasonably be provided with adequate off–street parking; and

(v) if the parking permit is granted — there would not be in force more than 2 visitor parking permits for the same residence; but

(b) must not be issued to permit a vehicle to be parked contrary to an indication on an official traffic sign installed on a road in a no parking permit area.

8 Commercial vehicle identification labels—Authorising local law, s 8(2)

(1) For section 8(2) of the authorising local law, this section prescribes the vehicles that may be issued with a commercial vehicle identification label.

(2) A vehicle may be issued with a commercial vehicle identification label if the vehicle—

(a) is used for carrying on a business that requires the regular use of loading zones; and

(b) is—

(i) a horse drawn vehicle constructed, fitted or equipped for the carriage of goods; or

(ii) a motor vehicle (excluding any car or motorbike) constructed, fitted or equipped for the carriage of goods; or

(iii) a motor vehicle constructed, fitted or equipped for the carriage of persons.

(3) Also, a vehicle may be issued with a commercial vehicle identification label if a commercial vehicle identification label is displayed on the vehicle and—

(a) the vehicle on which the label is displayed is the vehicle specified on the label; and

(b) the date specified on the label has not passed.

Part 4 Minor traffic offence infringement notice penalties

9 Infringement notice penalty amounts—Authorising local law, s 9

For section 9 of the authorising local law, the infringement notice penalty amount[4] for an offence mentioned in column 1 of schedule 4 is the corresponding amount stated in column 2 of schedule 4.

[4] Under section 108 of the *Transport Operations (Road Use Management) Act 1995* —

(a) a local government may, under a local law, prescribe an amount as an infringement notice penalty for a minor traffic offence; and

(b) for the *State Penalties Enforcement Act 1999*, the minor traffic offence is an infringement notice offence and the penalty is the infringement notice penalty for the offence.

See sections 5 (Meaning of penalty unit) and 5A (Prescribed value of particular penalty unit) of the *Penalties and Sentences Act 1992* and section 2B of the *Penalties and Sentences Regulation 2005.*

Schedule 1 Declaration of traffic area

Section 5

No traffic area declared.

Schedule 2 Declaration of off-street regulated parking areas

Section 6

Part 1 Areas declared to be an off-street regulated parking area.

1. Capalaba

Description of car park or area	Map ref.	Location or address of car park or area
Dollery Road off-street car park as identified in schedule 2, part 2.	1A	Between Faccio Lane and Noeleen Street, Capalaba.
School Road off-street car park as identified in schedule 2, part 2.	1B	Between Mount Cotton Road, Capalaba and Burns Street, Capalaba.

2. Cleveland

Description of car park or area	Map ref.	Location or address of car park or area
Doig Street off-street car park (E) as identified in schedule 2, part 2.	2B(iv)	Between Middle Street and Queen Street, Cleveland.
Doig Street off-street car park (W) as identified in schedule 2, part 2.	2B(ii)	Between Queen Street and Middle Street, Cleveland.
Emmett Drive off-street car park as identified in schedule 2, part 2.	2F(ii)	Between Emmett Drive, Cleveland and Wharf Street, Cleveland.
Iluka Arcade off-street car park as identified in schedule 2, part 2.	2B(iii)	Doig Street, Cleveland.
John Street off-street car park as identified in schedule 2, part 2.	2C	Between Queen Street and Russell Street, Cleveland.
Middle Street (East) off-street car park as identified in schedule 2, part 2.	2F(i)	Middle Street, Cleveland, Cleveland.
Middle Street (West) off-street car park as identified in schedule 2, part 2.	2D	Corner Wynyard Street, Cleveland and Middle Street, Cleveland.
Queen Street off-street car park (N) as identified in schedule 2, part 2.	2E(ii)	Between Wynyard Street and Waters Street, Cleveland.
Queen Street off-street car park (S) as identified in schedule 2, part 2.	2E(iii)	Between Queen Street and Waters Street, Cleveland.
Shore Street West off-street car park as identified in schedule 2, part 2.	2A	Between Shore Street West and Kyling Lane, Cleveland.
Toondah Harbour off-street car park as identified in schedule 2, part 2.	2F(iii)	Emmett Drive, Cleveland.
Waterloo Street off-street car park as identified in schedule 2, part 2.	2B(i)	Between Middle Street and Queen Street, Cleveland.
Wynyard Street off-street car park as identified in schedule 2, part 2.	2E(i)	Between Middle Street and Queen Street, Cleveland.

3. Macleay Island

Description of car park or area	Map ref.	Location or address of car park or area
Macleay Island Ferry Terminal car and boat trailer park as identified in schedule 2, part 2.	3A	Brighton Road and Russell Terrace, Macleay Island.

4. North Stradbroke Island

Description of car park or area	Map ref.	Location or address of car park or area
One Mile Ferry Terminal car park as identified in schedule 2, part 2.	4A	Yabby Street, One Mile, Dunwich, North Stradbroke Island.

5. Redland Bay

Description of car park or area	Map ref.	Location or address of car park or area
Weinam Creek Cenotaph off-street car park as identified in schedule 2, part 2.	5A(ii)	Banana Street, Redland Bay.
Weinam Creek off-street car and boat trailer park as identified in schedule 2, part 2.	5A(iii)	Banana Street, Redland Bay.
Weinam Creek Overflow car park as identified in schedule 2, part 2.	5B	Meissner Street, Redland Bay.
Weinam Creek vehicle barge off-street car park as identified in schedule 2, part 2.	5A(i)	Weinam Street and Esplanade, Redland Bay.

6. Russell Island

Description of car park or area	Map ref.	Location or address of car park or area
Russell Island Ferry Terminal car and boat trailer park as identified in schedule 2, part 2.	6A(ii)	Alison Crescent, Hawthornden Drive and High Street, Russell Island.
Russell Island off-street car park as identified in schedule 2, part 2.	6A(i)	Bayview Road, Russell Island.

7. Victoria Point

Description of car park or area	Map ref.	Location or address of car park or area
Victoria Point off-street car and boat trailer park as identified in schedule 2, part 2.	7A	Masters Avenue, Victoria Point.
Victoria Point shops off-street car park as identified in schedule 2, part 2.	7B	Bunker Road and Cleveland – Redland Bay Road, Victoria Point.

8. Wellington Point

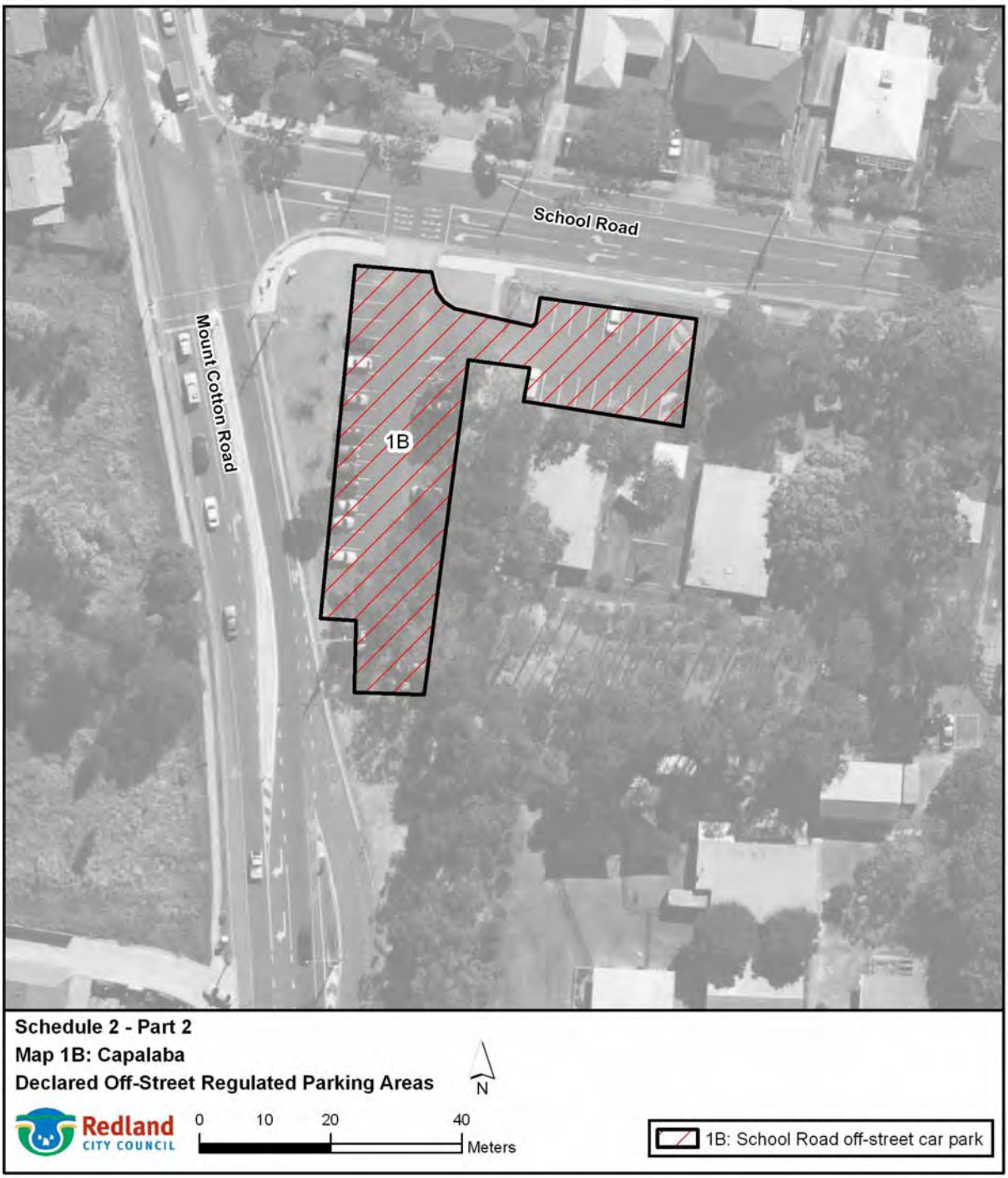
Description of car park or area	Map ref.	Location or address of car park or area
Wellington Point off-street car and boat trailer park as identified in schedule 2, part 2.	8A	Main Road, Wellington Point.

Part 2 Maps of off-street regulated parking areas

Map 1A



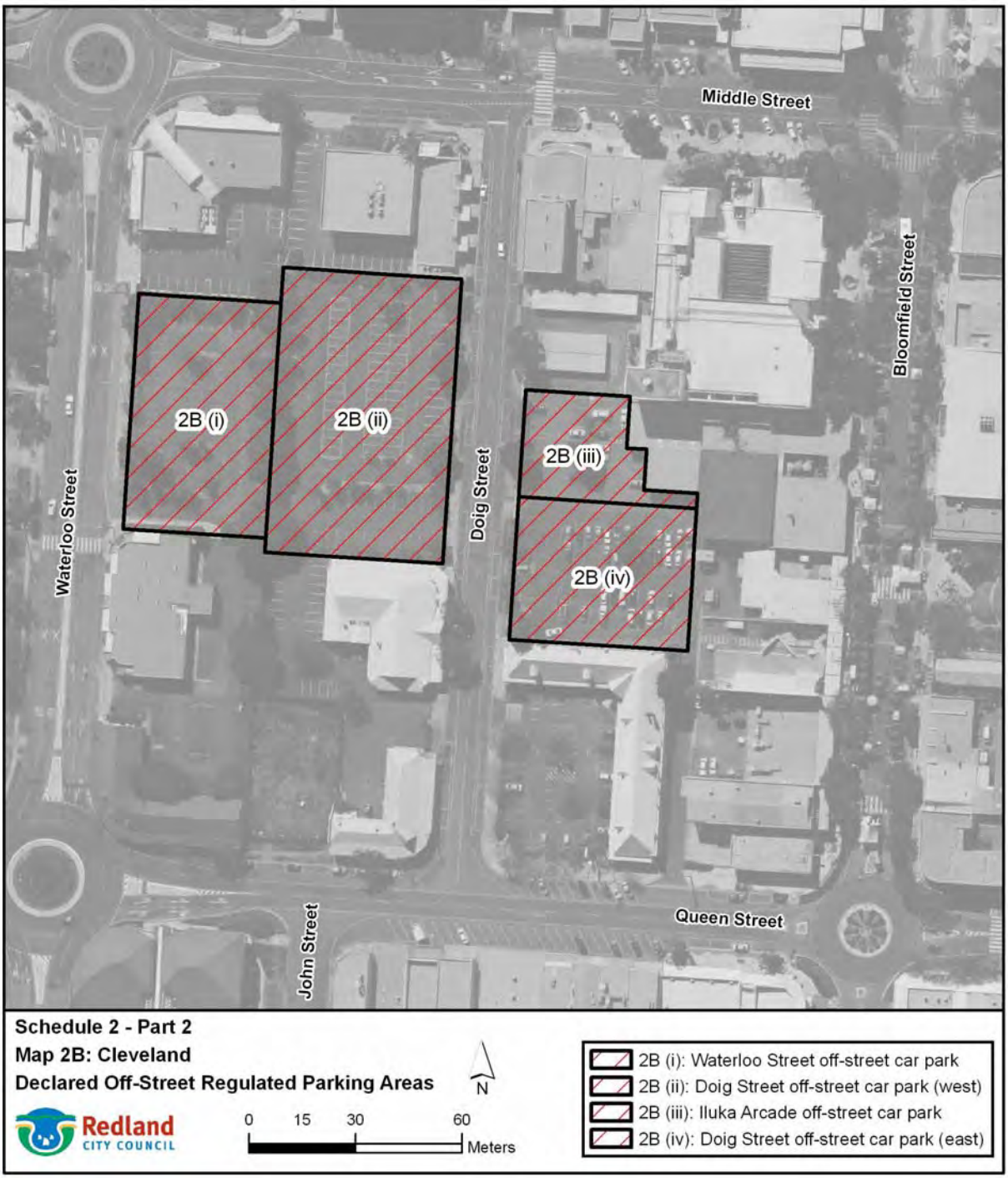
Map 1B


School Road
Mount Cotton Road
1B
Schedule 2 - Part 2
Map 1B: Capalaba
Declared Off-Street Regulated Parking Areas
N
Redland CITY COUNCIL
0 10 20 40
Meters
1B: School Road off-street car park

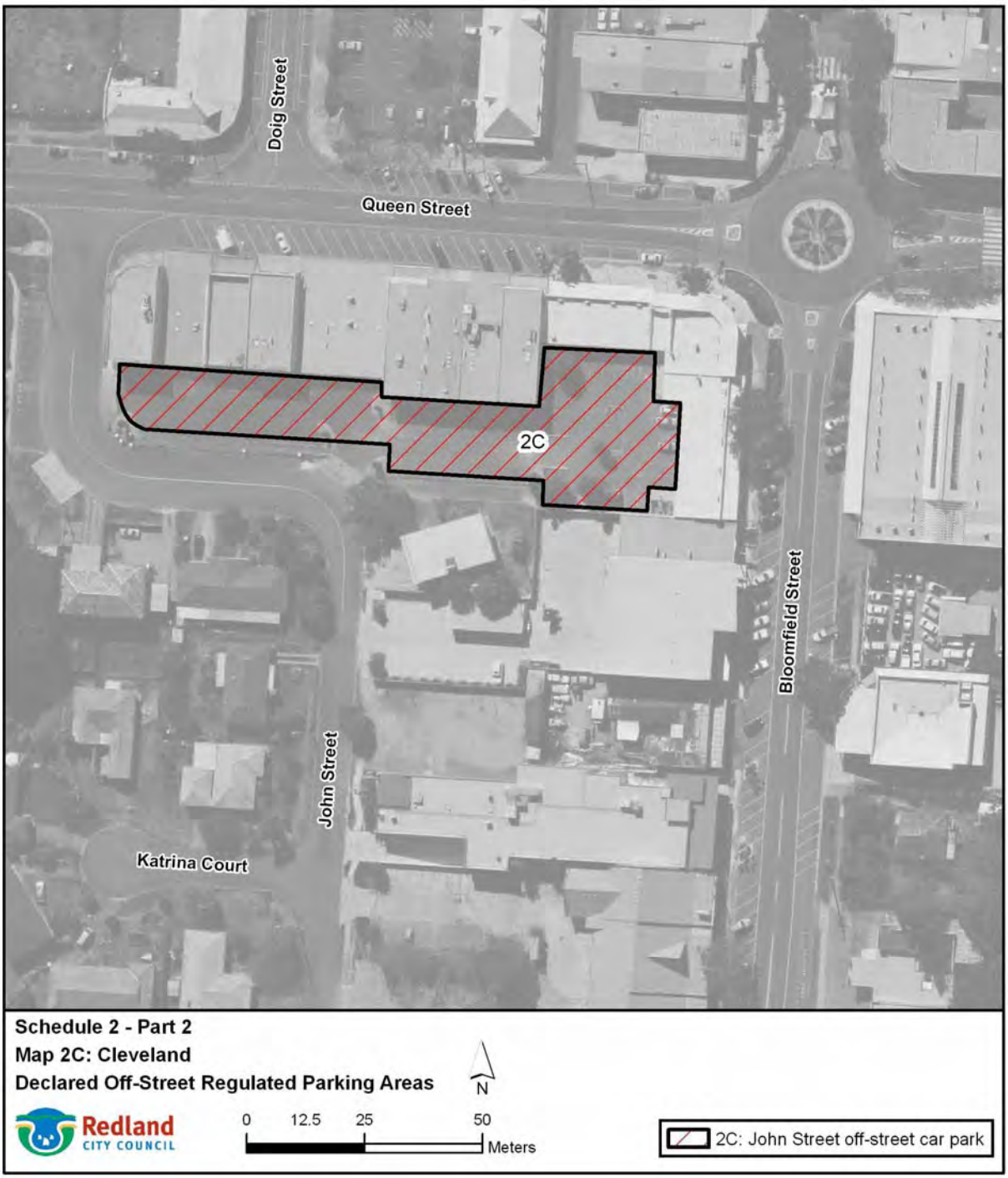
Map 2A


Harbourview Court
Shore Street West
2A
Kyling Lane
Bloomfield Street
Middle Street
Schedule 2 - Part 2
Map 2D: Cleveland
Declared Off-Street Regulated Parking Areas
N
Redland CITY COUNCIL
0 12.5 25 50
Meters
2A: Shore Street West off-street car park

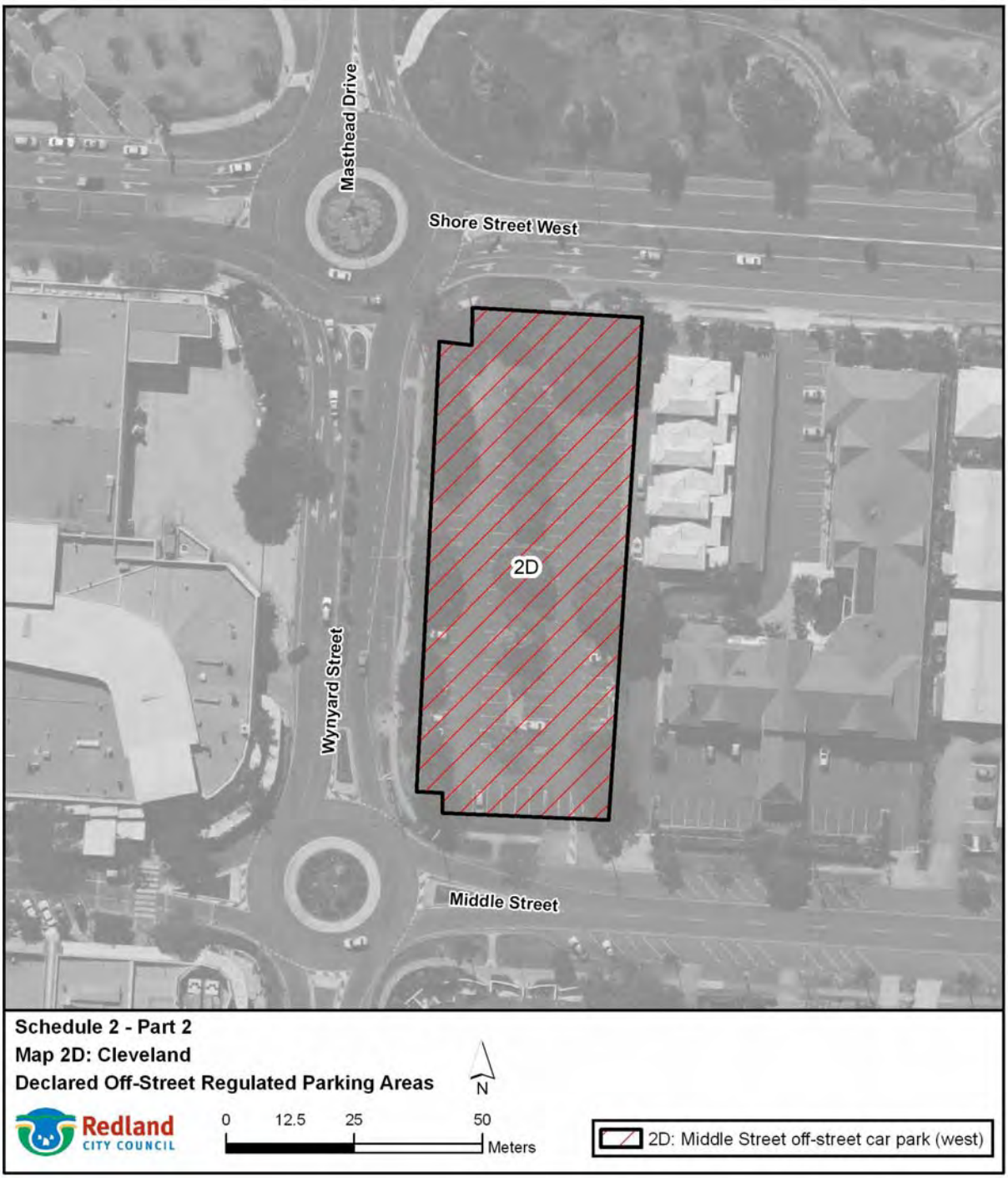
Map 2B


Middle Street
Bloomfield Street
Waterloo Street
Doig Street
John Street
Queen Street
2B (i)
2B (ii)
2B (iii)
2B (iv)
Schedule 2 - Part 2
Map 2B: Cleveland
Declared Off-Street Regulated Parking Areas
N
Redland CITY COUNCIL
0 15 30 60
Meters
2B (i): Waterloo Street off-street car park
2B (ii): Doig Street off-street car park (west)
2B (iii): Iluka Arcade off-street car park
2B (iv): Doig Street off-street car park (east)

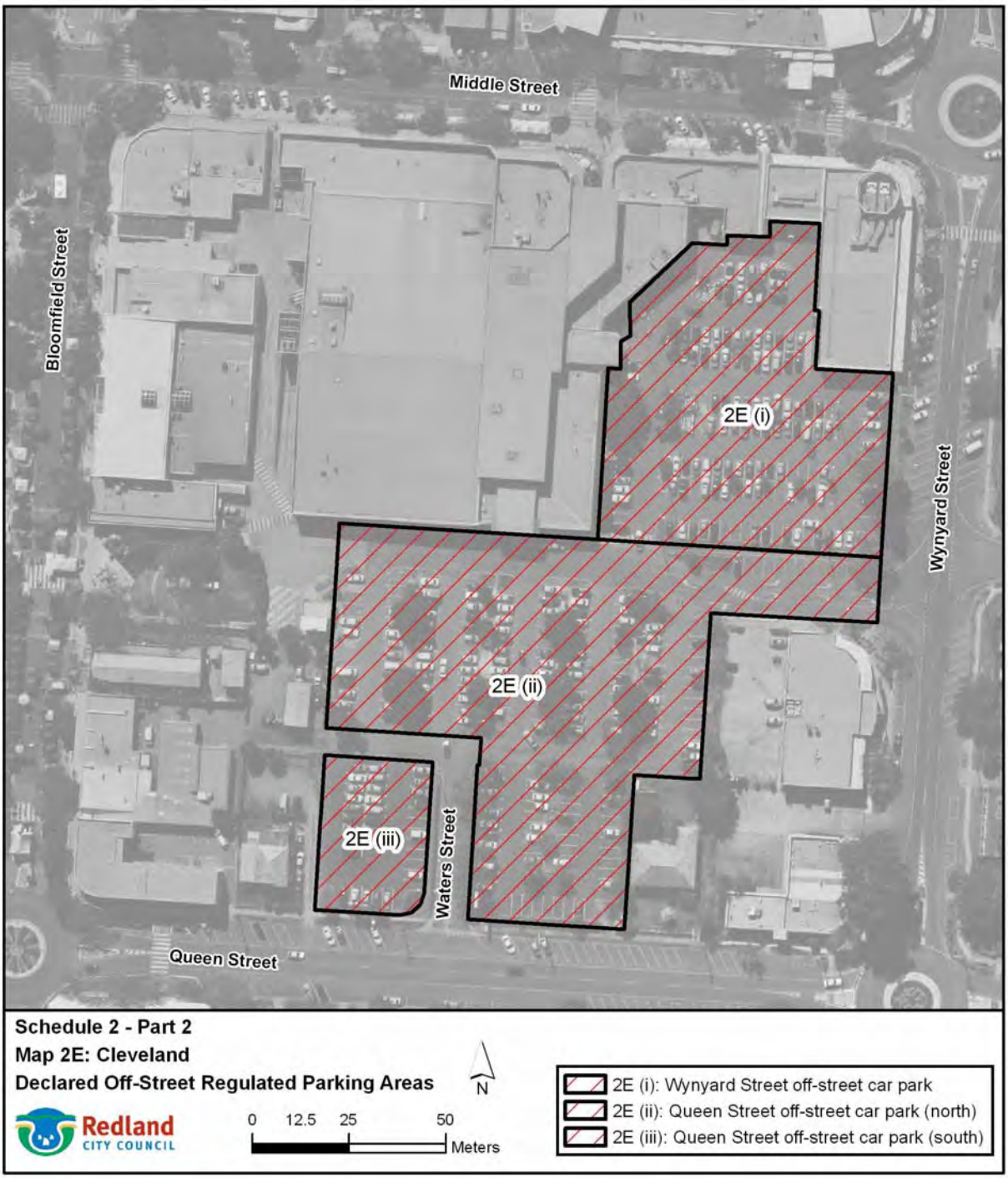
Map 2C


Doig Street
Queen Street
2C
Bloomfield Street
John Street
Katrina Court
Schedule 2 - Part 2
Map 2C: Cleveland
Declared Off-Street Regulated Parking Areas
N
Redland
CITY COUNCIL
0 12.5 25 50
Meters
2C: John Street off-street car park

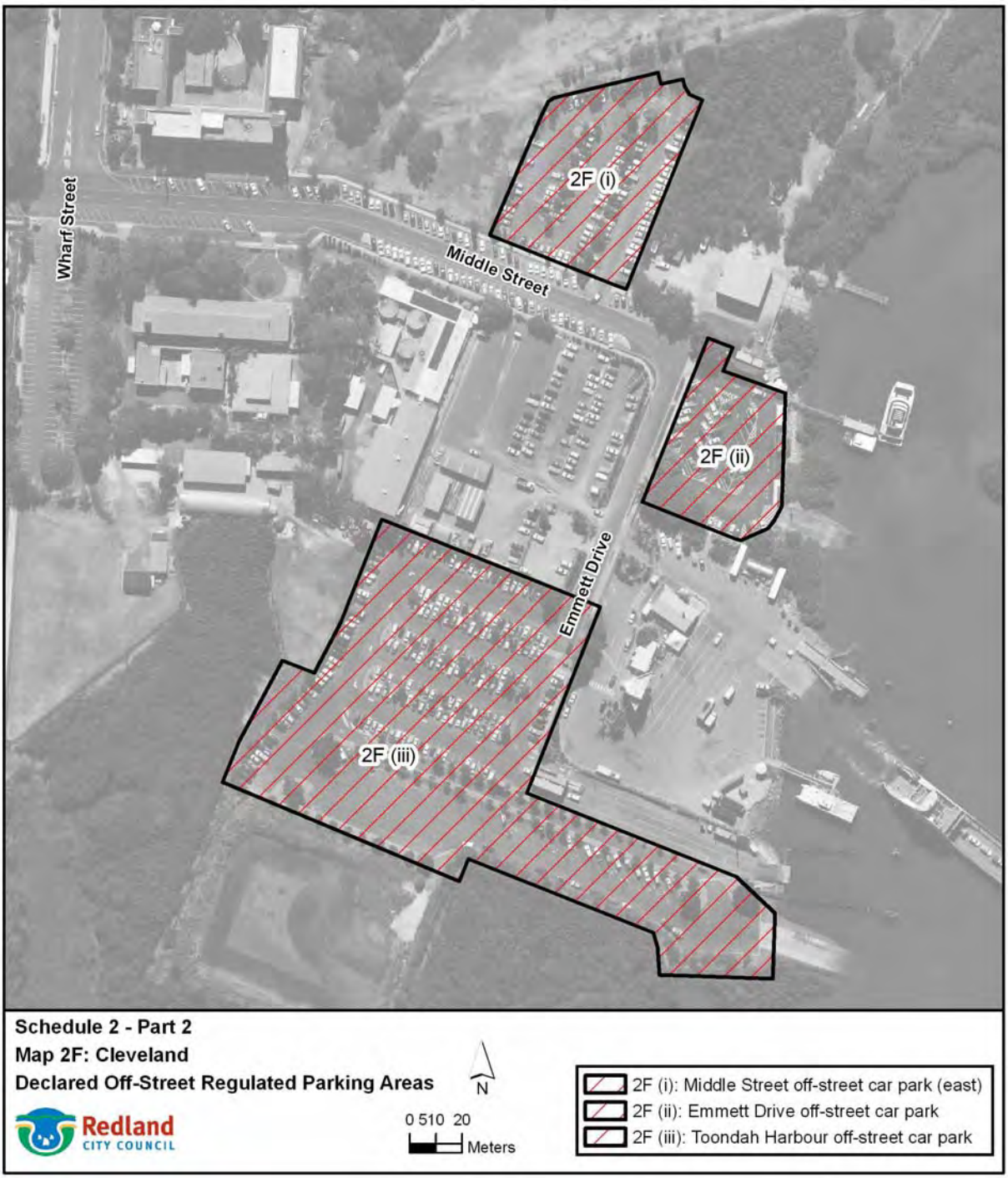
Map 2D


Masthead Drive
Shore Street West
2D
Wynyard Street
Middle Street
Schedule 2 - Part 2
Map 2D: Cleveland
Declared Off-Street Regulated Parking Areas
N
Redland CITY COUNCIL
0 12.5 25 50
Meters
2D: Middle Street off-street car park (west)

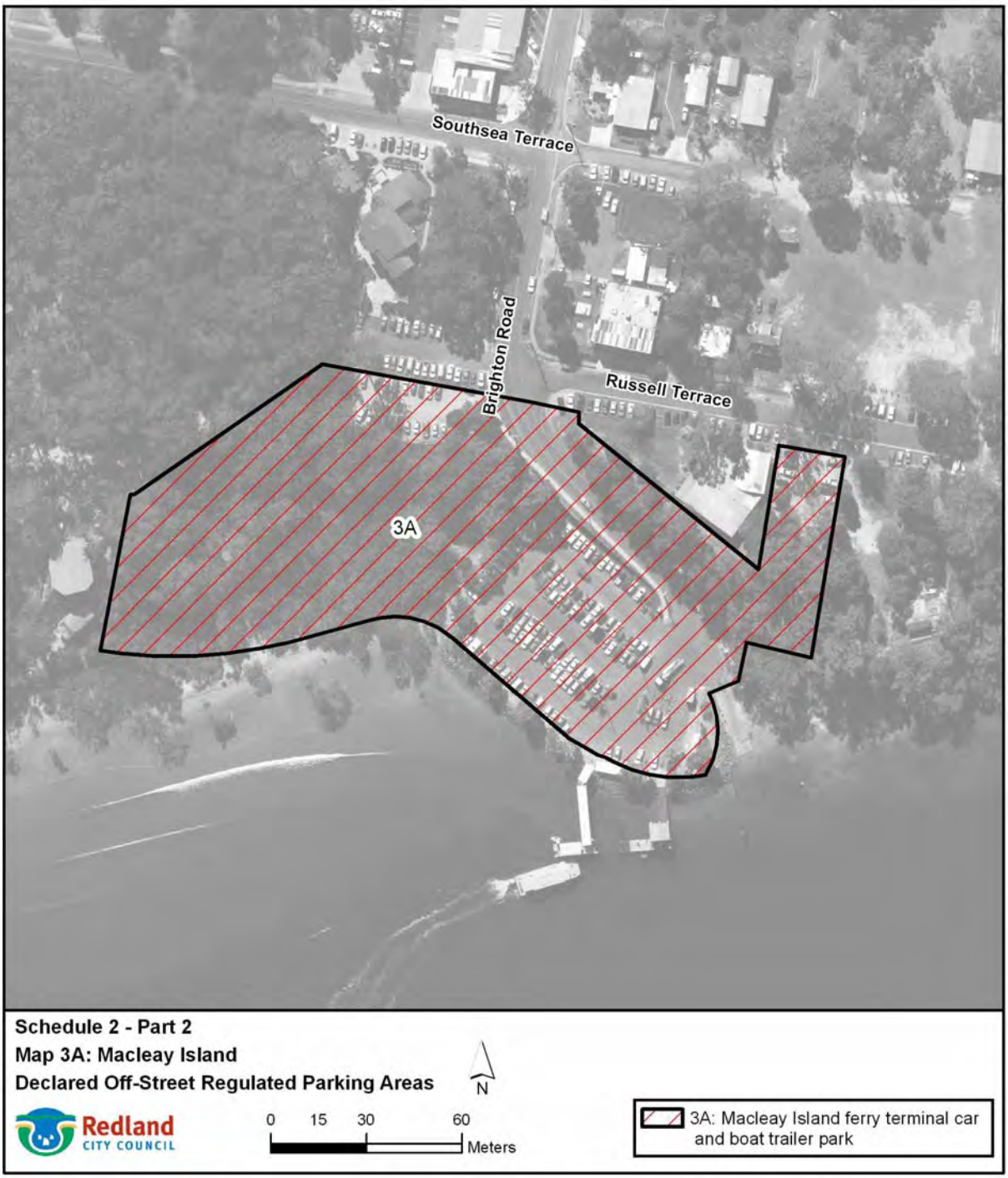
Map 2E


Middle Street
Bloomfield Street
Wynyard Street
2E (i)
2E (ii)
2E (iii)
Waters Street
Queen Street
Schedule 2 - Part 2
Map 2E: Cleveland
Declared Off-Street Regulated Parking Areas
N
Redland CITY COUNCIL
0 12.5 25 50
Meters
2E (i): Wynyard Street off-street car park
2E (ii): Queen Street off-street car park (north)
2E (iii): Queen Street off-street car park (south)

Map 2F


Wharf Street
Middle Street
Emmett Drive
2F (i)
2F (ii)
2F (iii)
Schedule 2 - Part 2
Map 2F: Cleveland
Declared Off-Street Regulated Parking Areas
N
Redland CITY COUNCIL
0 510 20
Meters
2F (i): Middle Street off-street car park (east)
2F (ii): Emmett Drive off-street car park
2F (iii): Toondah Harbour off-street car park

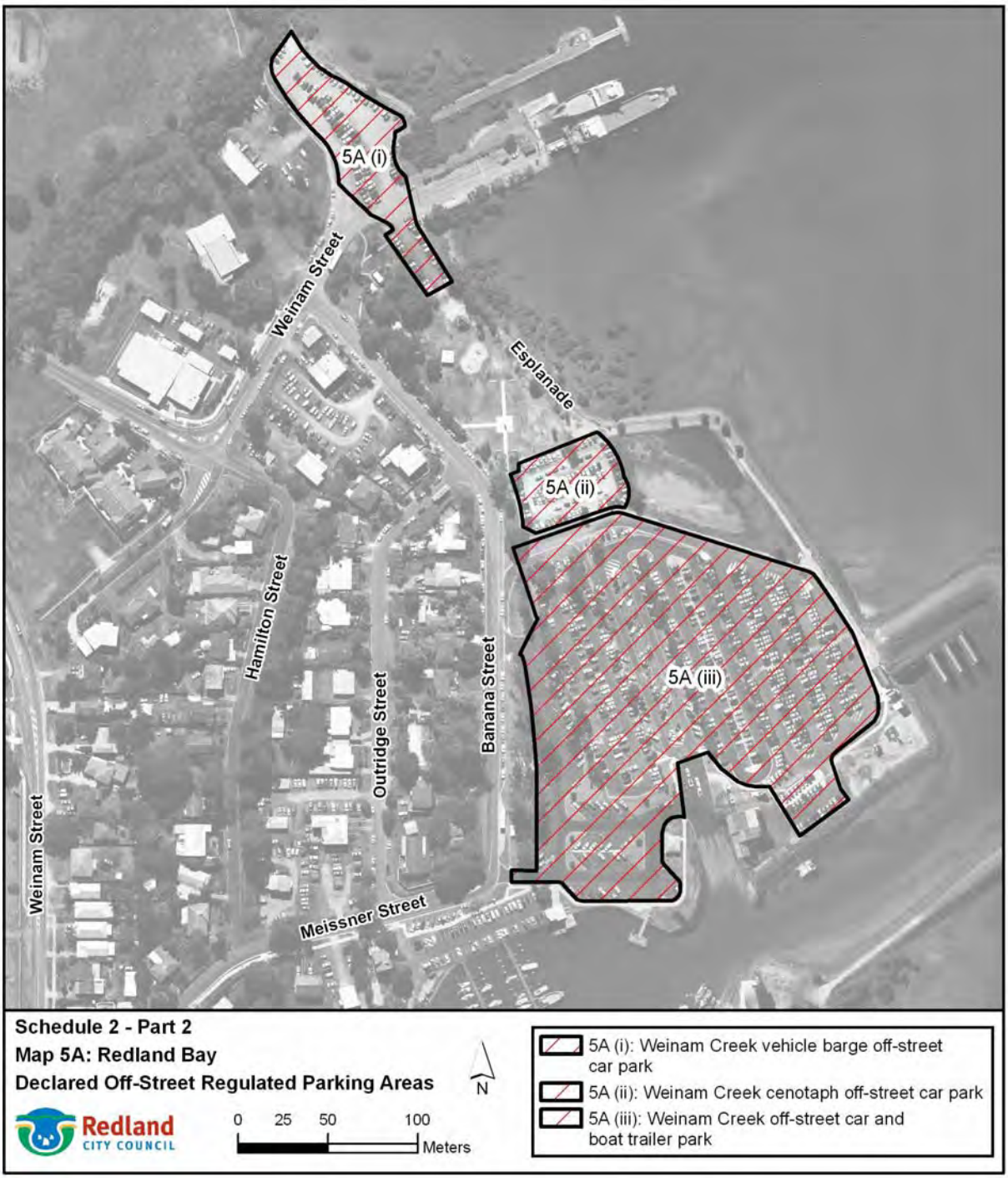
Map 3A


Southsea Terrace
Brighton Road
Russell Terrace
3A
Schedule 2 - Part 2
Map 3A: Macleay Island
Declared Off-Street Regulated Parking Areas
N
Redland
CITY COUNCIL
0 15 30 60
Meters
3A: Macleay Island ferry terminal car and boat trailer park

Map 4A


4A
Yabby Street
East Coast Road
Schedule 2 - Part 2
Map 4A: North Stradbroke Island
Declared Off-Street Regulated Parking Areas
N
Redland
CITY COUNCIL
0 15 30 60
Meters
4A: One Mile ferry terminal off-street car park

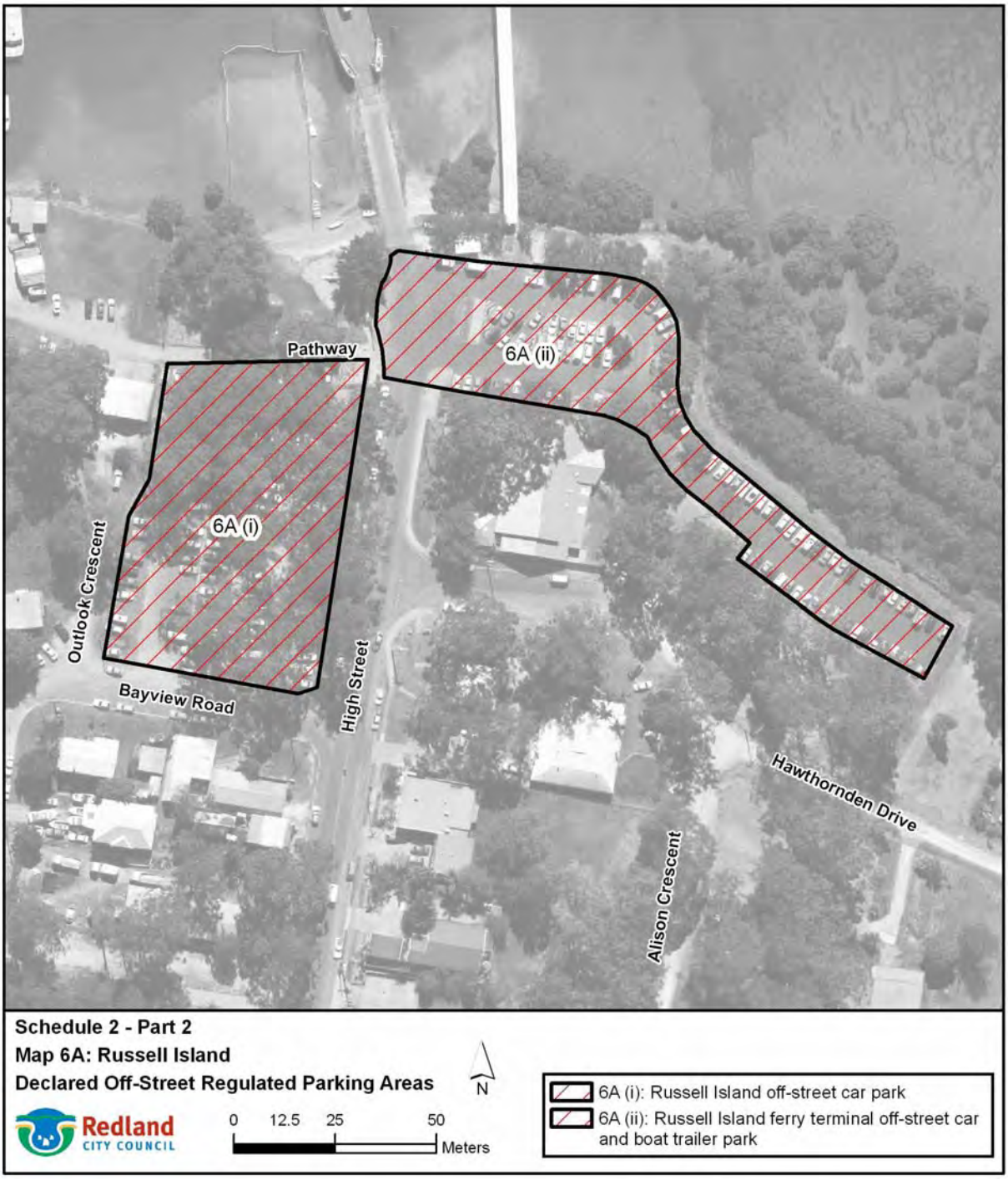
Map 5A


5A (i)
5A (ii)
5A (iii)
Weinam Street
Esplanade
Hamilton Street
Outridge Street
Banana Street
Weinam Street
Meissner Street
Schedule 2 - Part 2
Map 5A: Redland Bay
Declared Off-Street Regulated Parking Areas
N
Redland CITY COUNCIL
0 25 50 100
Meters
5A (i): Weinam Creek vehicle barge off-street car park
5A (ii): Weinam Creek cenotaph off-street car park
5A (iii): Weinam Creek off-street car and boat trailer park

Map 5B


Weinam Street
Hamilton Street
Meissner Street
5B
Schedule 2 - Part 2
Map 5B: Redland Bay
Declared Off-Street Regulated Parking Areas
N
Redland
CITY COUNCIL
0 12.5 25 50
Meters
5B: Weinam Creek overflow off-street car park

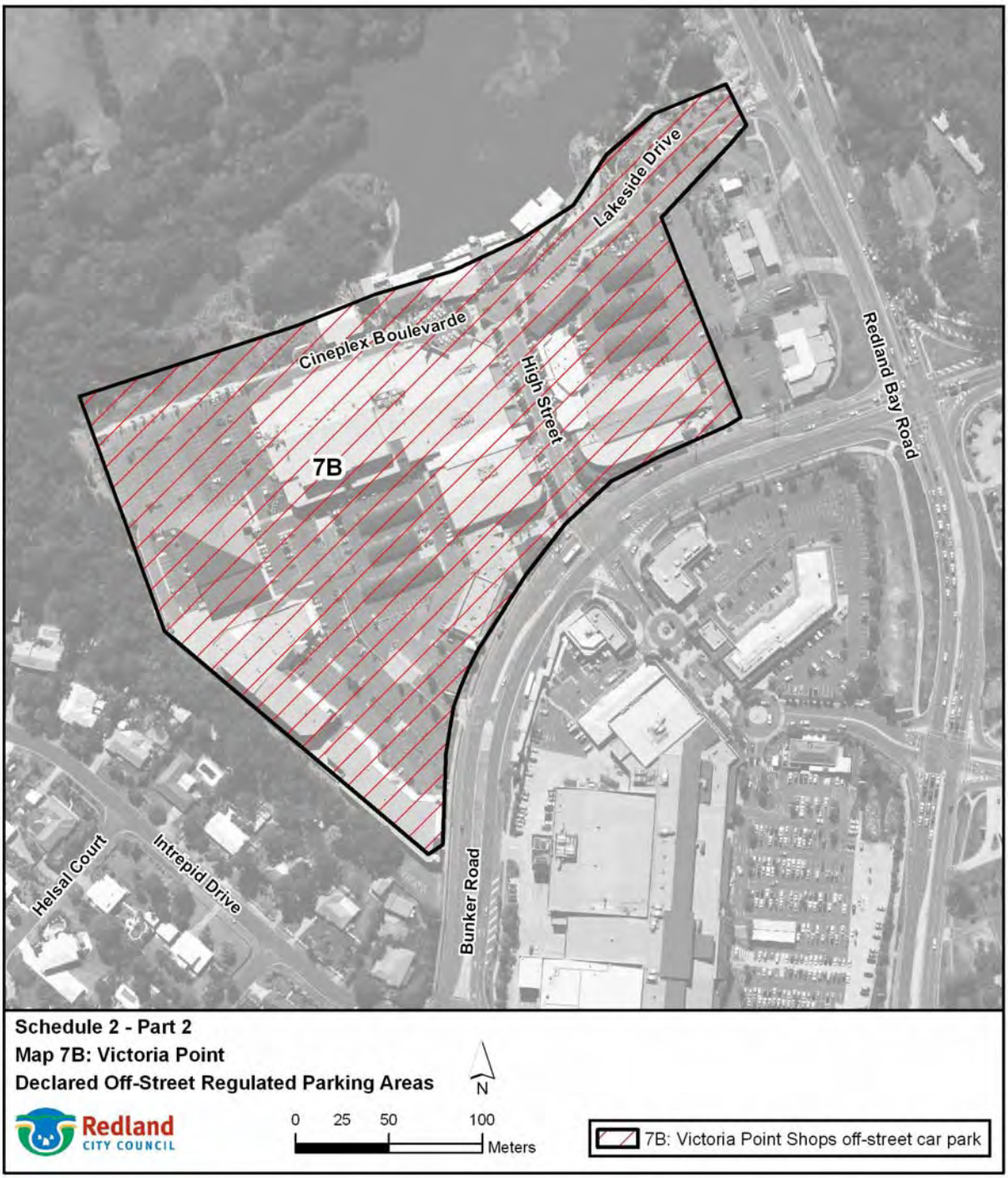
Map 6A


Pathway
6A (ii)
6A (i)
Outlook Crescent
Bayview Road
High Street
Hawthornden Drive
Alison Crescent
Schedule 2 - Part 2
Map 6A: Russell Island
Declared Off-Street Regulated Parking Areas
N
Redland
CITY COUNCIL
0 12.5 25 50
Meters
6A (i): Russell Island off-street car park
6A (ii): Russell Island ferry terminal off-street car and boat trailer park

Map 7A


7A
White Street
Masters Avenue
Colburn Avenue
Wilson Lane
Esplanade
Schedule 2 - Part 2
Map 7A: Victoria Point
Declared Off-Street Regulated Parking Areas
N
Redland
CITY COUNCIL
0 25 50 100
Meters
7A: Victoria Point off-street car and boat trailer park

Map 7B


Lakeside Drive
Cineplex Boulevarde
High Street
Redland Bay Road
7B
Helsal Court
Intrepid Drive
Bunker Road
Schedule 2 - Part 2
Map 7B: Victoria Point
Declared Off-Street Regulated Parking Areas
N
Redland
CITY COUNCIL
0 25 50 100
Meters
7B: Victoria Point Shops off-street car park

Map 8A


8A
Champion Lane
Main Road
Marshall Lane
Schedule 2 - Part 2
Map 8A: Wellington Point
Declared Off-Street Regulated Parking Areas
N
Redland CITY COUNCIL
0 25 50 100
Meters
8A: Wellington Point off-street car and boat trailer park

Schedule 3 Definition — no parking permit area

Section 4

Part 1 Description of no parking permit areas

(1) The Capalaba no parking permit area being the area indicated by hatching on part 2 map 1.

(2) The Cleveland no parking permit area being the area indicated by hatching on part 2 map 2.

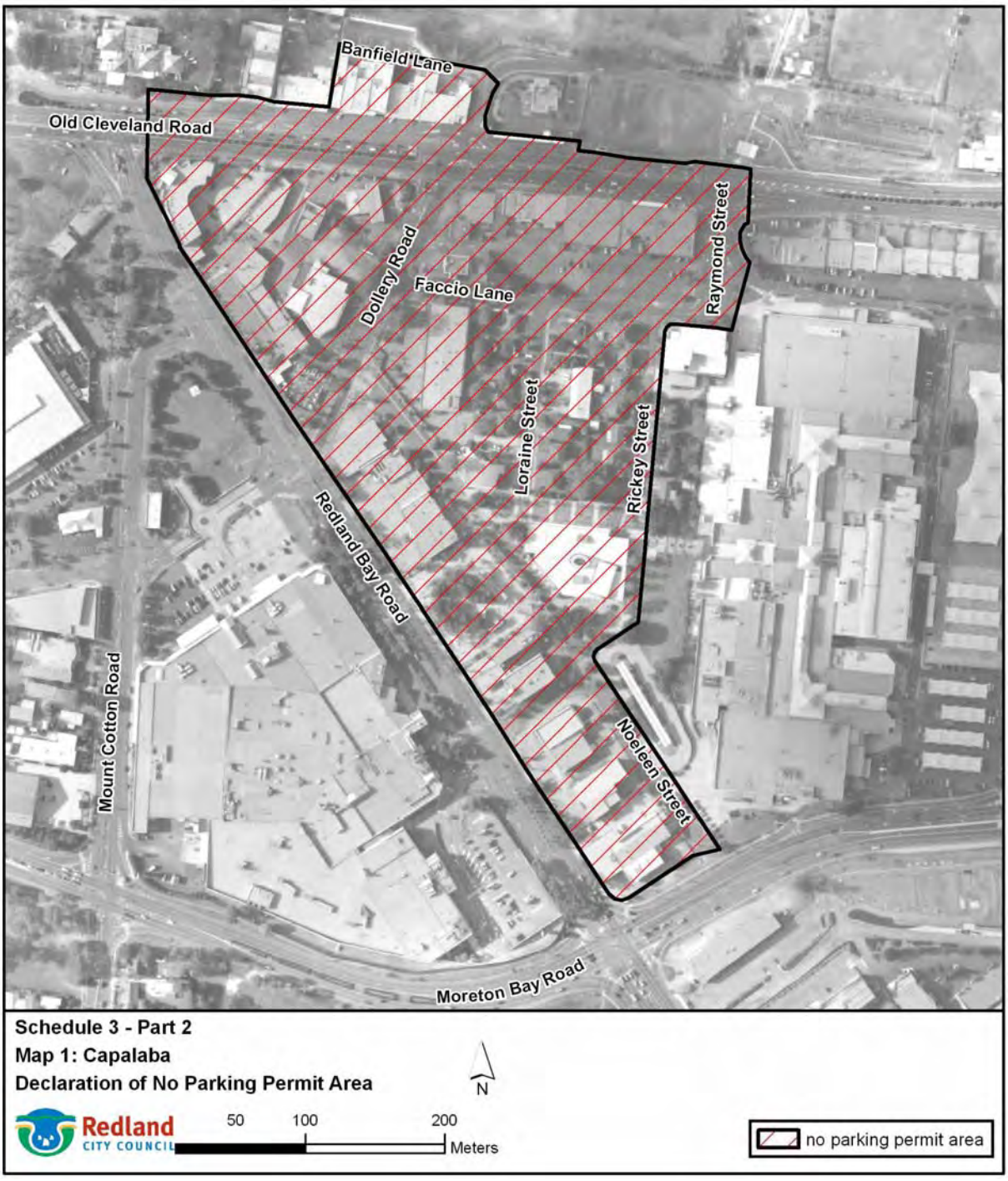
(3) The Redland Bay no parking permit area being the area indicated by hatching on part 2 map 3.

(4) The Victoria Point no parking permit area being the area indicated by hatching on part 2 map 4.

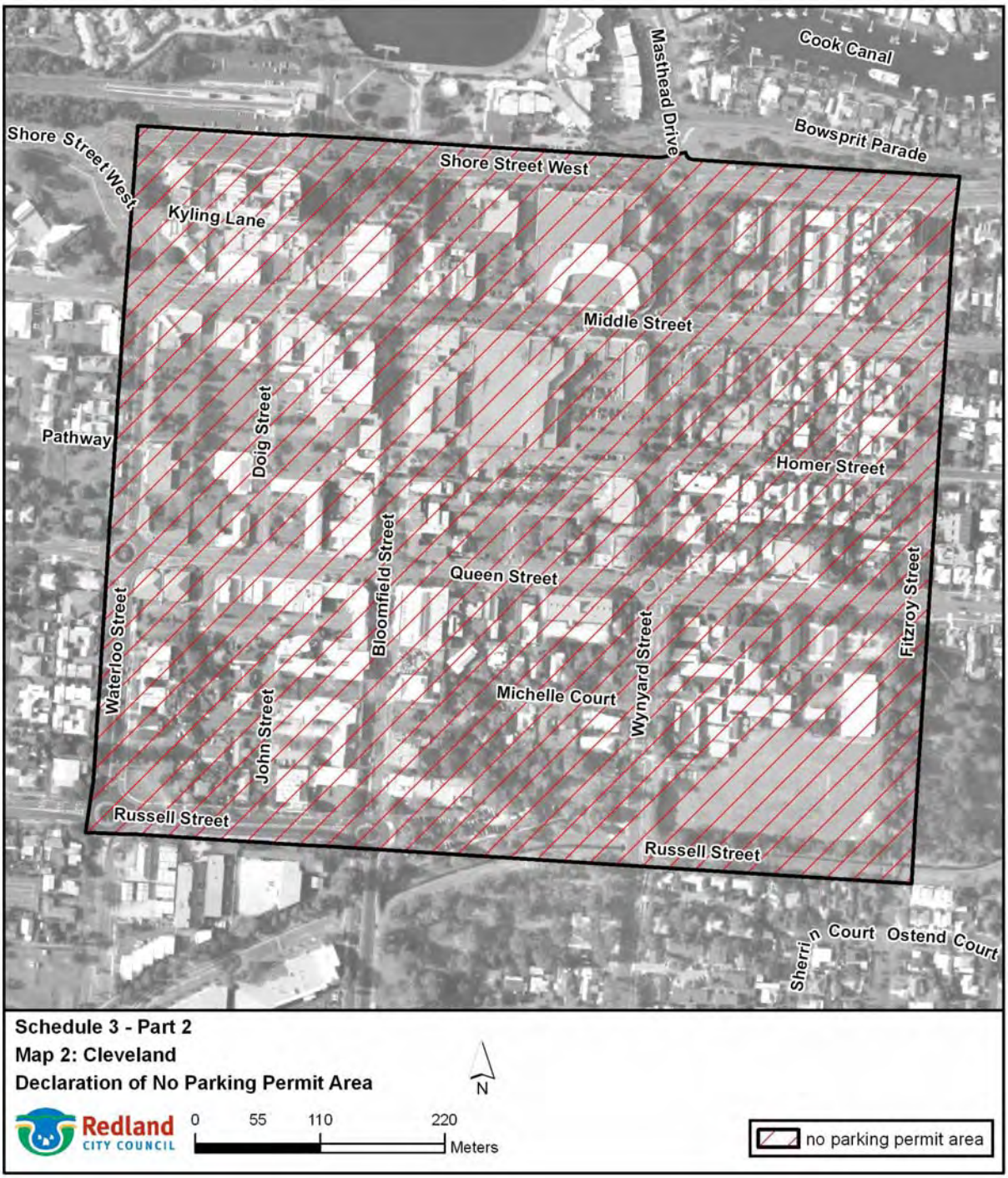
(5) The Wellington Point no parking permit area being the area indicated by hatching on part 2 map 5.

Part 2 Maps of no parking permit areas

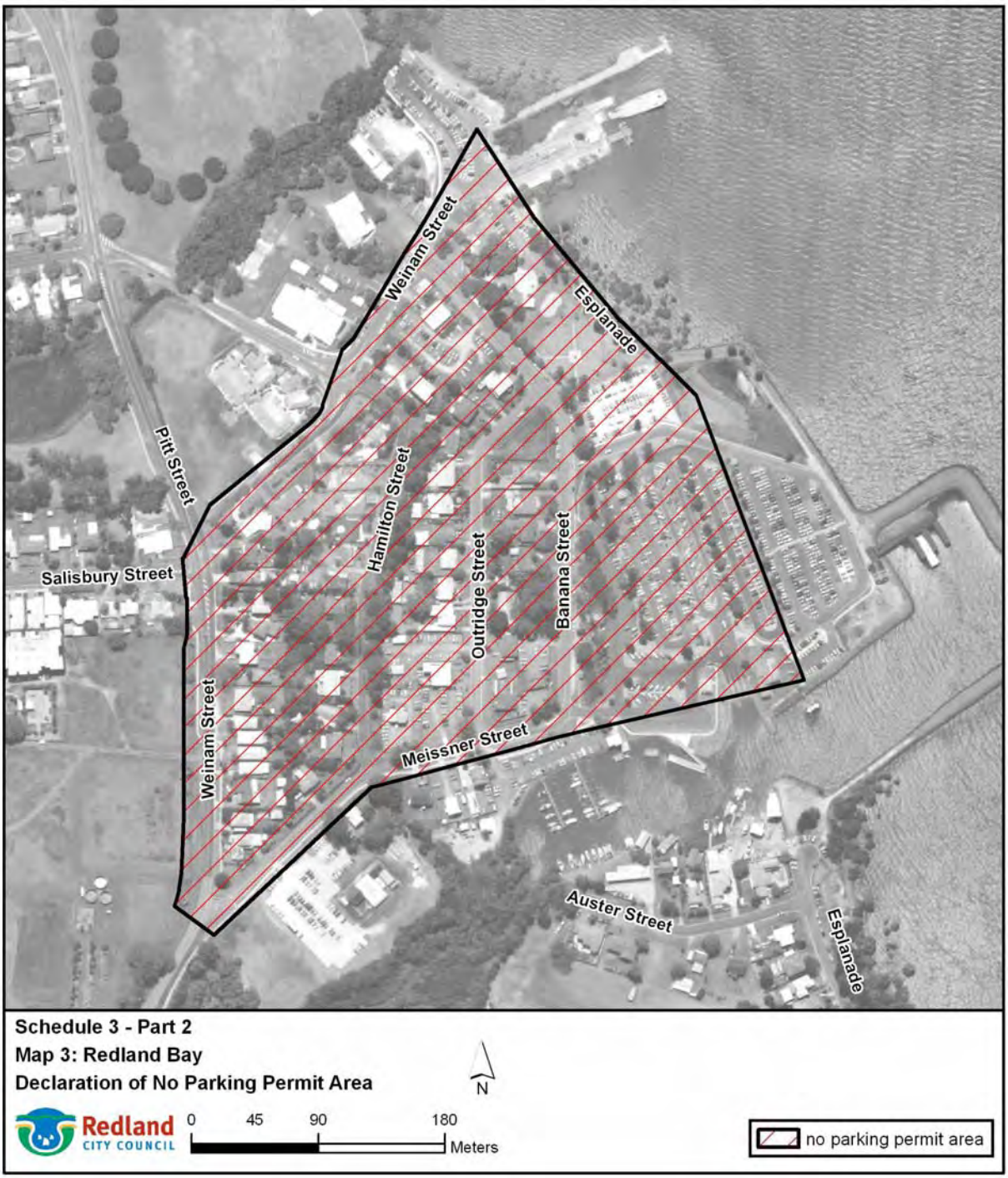
Map 1 - Capalaba



Map 2 - Cleveland



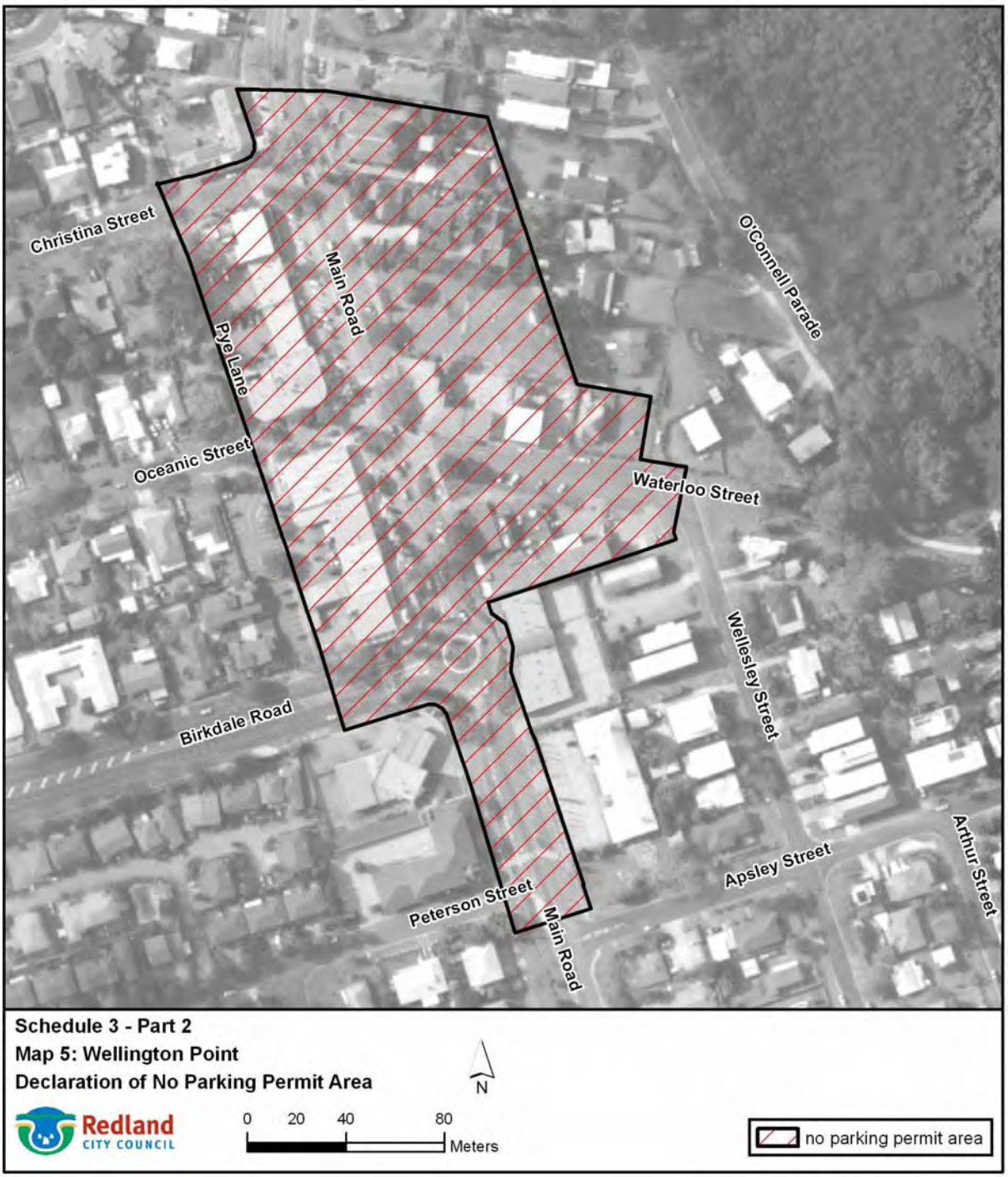
Map 3 – Redland Bay



Map 4 – Victoria Point



Map 5 – Wellington Point



Schedule 4 Infringement notice penalty amounts for certain minor traffic offences

Section 9

Column 1		Column 2
***Transport Operations (Road Use Management) Act 1995* provision**	**Minor Traffic Offence**	**Infringement notice penalty amount**
106(1)(a)(i)	Parking a vehicle in a designated parking space unless a parking meter or parkatarea installed for the space indicates that the parking fee has been paid	1 penalty units
106(1)(a)(ii)	Parking a vehicle in a designated parking space unless the person has done what is required by an authorised system that applies in relation to the space	1 penalty units
106(1)(b)	Parking a vehicle in a designated parking space for a time longer than the maximum time indicated on the official traffic sign installed for the space	1 penalty units
106(1)(c)	Parking a vehicle in a designated parking space if another vehicle is parked in the space	1 penalty units
106(1)(d)	Parking a vehicle in a designated parking space so that the vehicle is not wholly within the space	1 penalty units

Column 1		Column 2
***Transport Operations (Road Use Management – Road Rules) Regulation 2009* provision**	**Minor Traffic Offence**	**Infringement notice penalty amount**
167	Stopping on a length of road or in an area to which a no stopping sign applies	1 penalty units
168	Unauthorised driver stopping on a length of road or in an area to which a no parking sign applies	1 penalty units

Column 1		Column 2
***Transport Operations (Road Use Management – Road Rules) Regulation 2009* provision**	**Minor Traffic Offence**	**Infringement notice penalty amount**
169	Stopping at the side of a road marked with a continuous yellow edge line	1 penalty units
170(1)	Stopping in an intersection	1 penalty units
171	Stopping on a children's crossing or on the road within 20m before the crossing or 10m after the crossing	1 penalty units
172(1)	Stopping on a pedestrian crossing that is not at an intersection or on a road within 20m before a crossing and 10m after the crossing otherwise than as permitted by a sign	1 penalty units
173	Stopping on a marked foot crossing that is not at an intersection, or on a road within 10m before the traffic lights pole nearest to the driver at the crossing and 3m after the crossing unless permitted by a sign	1 penalty units
175	Stopping on a level crossing, or on a road within 20m before the nearest rail or track to the driver approaching the crossing and 20m after the nearest rail or track to the driver leaving the crossing unless permitted by a sign	1 penalty units
176(1)	Stopping on a road contrary to a clearway sign	1 penalty units
179(1)	Stopping an unauthorised vehicle in a loading zone	1 penalty units
181	Unauthorised driver stopping in a works zone	1 penalty units
182(1)	Stopping an unauthorised vehicle in a taxi zone	1 penalty units
183(1)	Stopping an unauthorised vehicle in a bus	1 penalty units

Column 1		Column 2
***Transport Operations (Road Use Management – Road Rules) Regulation 2009* provision**	**Minor Traffic Offence**	**Infringement notice penalty amount**
	zone	
183(1)	Stopping a bus in a bus zone contrary to a bus zone sign	1 penalty units
185(1)	Stopping an unauthorised vehicle in a permit zone	1.4 penalty units
186(1)	Stopping in a mail zone	1 penalty units
189(1)(a)	Stopping on a two way road between the centre of the road and another vehicle parked at the side of the road	1 penalty units
191	Stopping on a road so as to obstruct traffic	1 penalty units
195(1)	Stopping within 20m before a bus stop unless permitted by a sign	1 penalty units
195(1)	Stopping within 10m after a bus stop unless permitted by a sign	1 penalty units
197(1)	Stopping on a bicycle path, footpath, shared path or dividing strip or a nature strip adjacent to a length of road in a built-up area unless permitted by a sign	1 penalty units
198(2)	Stopping on or across a driveway unless dropping off or picking up, passengers	1 penalty units
199	Stopping near a postbox	1 penalty units
200(1)	Stopping a heavy vehicle or a long vehicle on a length of road that is not in a built-up area otherwise than on the shoulder of the road	1.4 penalty units
200(2)	Stopping a heavy vehicle or a long vehicle on a length of road in a built-up area for	1.4 penalty units

Column 1		Column 2
***Transport Operations (Road Use Management – Road Rules) Regulation 2009* provision**	**Minor Traffic Offence**	**Infringement notice penalty amount**
	longer than 1 hour unless permitted to stop on the length of road for longer than 1 hour by information on or with a traffic controlled device	
202	Stopping contrary to a motorbike parking sign	1 penalty units
203(1)	Stopping contrary to a people with disabilities parking sign	1.4 penalty units
Part 12	Other parking offences provided for in Part 12 (Restrictions on stopping and parking)	1 penalty units

Schedule 5 Dictionary

Section 4

community service organisation means an association incorporated under the *Associations Incorporation Act 1981* which has as the main purpose of its objects, making financial gain for community service, charitable or similar purposes.

community service organisation parking permit see section 7(3).

local government works parking permit see section 7(7).

no parking permit area means an area—

(a) described in schedule 3 part 1; and

(b) indicated by hatching on a map in schedule 3 part 2; and

(c) the boundaries of which are indicated by a bold line circumscribing a hatched area on a map in schedule 3 part 2.

residence means a building, or part of a building, that is —

(a) fixed to land; and

(b) designed, or approved by a local government, for human habitation by a single family unit; and

(c) used for residential purposes.

resident see section 7(8)(a)(i).

resident parking permit see section 7(2).

temporary parking permit see section 7(4).

visitor parking permit see section 7(8).

works zone parking permit see section 7(6).

Certification

This and the preceding 38 pages bearing my initials is a certified copy of *Subordinate Local Law No. 5 (Parking) 2015* made in accordance with the provisions of the *Local Government Act 2009* by Redland City Council by resolution dated the day of , 2018.

……
Chief Executive Officer

13 REPORTS FROM COMMUNITY & CUSTOMER SERVICES

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

Objective Reference:

Authorising Officer: **Louise Rusan, General Manager Community & Customer Services**

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

Report Author: **Hayley Saharin, Senior Business Support Officer**

Attachments: **1. Decisions Made under Delegated Authority 15.07.2018 to 28.07.2018**

PURPOSE

The purpose of this report is for Council to note that the decisions listed below were made under delegated authority for Category 1, 2 and 3 development applications only.

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; and
- Category 4 – major assessments (not included in this report)

The applications detailed in this report have been assessed under:-

- **Category 1** - Minor code assessable applications, concurrence agency referral, minor operational works and minor compliance works; minor change requests and extension to currency period where the original application was Category 1 procedural delegations for limited and standard planning certificates.

- Delegation Level: Chief Executive Officer, General Manager, Group Managers, Service Managers, 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 requests where the original application was Category 1, 2, 3 or 4*. Procedural delegations including approval of works on and off maintenance, release of bonds and full planning certificates.

* *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 provisions 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.

OFFICER'S RECOMMENDATION

That Council resolves to note this report.

Decisions Made under Delegated Authority 15.07.2018 to 21.07.2018

CATEGORY1

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
CAR18/0269	Design & Siting - Shed	James SPITERI	1 Elderberry Street Thornlands QLD 4164	Referral Agency Response - Planning	19/07/2018	NA	Approved	3
CAR18/0278	Design and Siting	Strickland Certification Pty Ltd	10 Wilson Lane Victoria Point QLD 4165	Referral Agency Response - Planning	19/07/2018	NA	Approved	4
CAR18/0255	Design and Siting - Shipping Container	Colin CLARK	42-44 Tahlin Drive Russell Island QLD 4184	Referral Agency Response - Planning	16/07/2018	NA	Approved	5
CAR18/0258	Design and Siting - Patio	The Certifier Pty Ltd	88-90 Main Street Redland Bay QLD 4165	Referral Agency Response - Planning	18/07/2018	NA	Approved	5
OPW18/0081	Excavation and Fill Works - Haul Route for Subdivision 1 into 40 plus Drainage Reserve & Park	Urban Engineering Solutions Pty Ltd	847-897 German Church Road Redland Bay QLD 4165	Code Assessment	19/07/2018	NA	Development Permit	6
CAR18/0263	Design and Siting	Fastrack Building Certification	4 Lois Place Redland Bay QLD 4165	Referral Agency Response - Planning	19/07/2018	NA	Approved	6
CAR18/0265	Design and Siting	Trueline Brisbane	8 Weldon Street Birkdale QLD 4159	Referral Agency Response - Planning	18/07/2018	NA	Approved	8
CAR18/0272	Dwelling - Build over or near relevant infrastructure	Newnham Constructions Pty Ltd	140A Allenby Road Wellington Point QLD 4160	Referral Agency Response - Engineering	19/07/2018	NA	Approved	8

Decisions Made under Delegated Authority 15.07.2018 to 21.07.2018

CATEGORY2

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
RAL18/0053	Reconfiguring a Lot - Standard Format - 1 into 2 lots	Ms Helen M Sloan Mr Richard J Sloan	26 Empire Vista Ormiston QLD 4160	Code Assessment	19/07/2018	NA	Development Permit	1
RAL18/0066	Change to Development Approval - 10 Avoca Street Redland Bay - Combined Staged Format Subdivision with Dwelling Houses and Small lot houses	Bask Homes	18 Salisbury Street Redland Bay QLD 4165	Minor Change to Approval	16/07/2018	NA	Approved	5
MCU17/0072	Health Care Centre	Abbicon Projects C/- Dts Group Qld	CAPALABA SHOPPING 7/189-201 Old Cleveland Road Capalaba QLD 4157	Impact Assessment	19/07/2018	NA	Development Permit	9
RAL18/0055	Reconfiguration of 1 into 31 lots Standard Format plus 1 drainage lot, new public road, pedestrian footpath and associated easement for access.	Avon Capital Estates (Australia) Pty Ltd	23A Galley Way Birkdale QLD 4159	Code Assessment	20/07/2018	NA	Development Permit	10

Decisions Made under Delegated Authority 15.07.2018 to 21.07.2018

CATEGORY3

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
MCU014016	Aged Persons and Special Needs Housing (39 Units) in 2 Stages	RSL Care Limited	87-113 King Street Thornlands QLD 4164	Impact Assessment	26/04/2018	16/07/18	Development Permit	3

Decisions Made under Delegated Authority 22.07.2018 to 28.07.2018

CATEGORY1

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
CAR18/0267	Design and Siting	Cert 1 Private Building Certification	648B Main Road Wellington Point QLD 4160	Referral Agency Response - Planning	23/07/2018	NA	Approved	1
CAR18/0145.01	Request to Change approval - Design and Siting - Garage	Pronto Building Approvals The Shed Company (Brisbane South)	4 Bond Street Cleveland QLD 4163	Minor Change to Approval	27/07/2018	NA	Approved	2
OPW18/0066	Standard Format 1 into 2	Raymond WASSENBERG	16 Carinya Street Cleveland QLD 4163	Code Assessment	26/07/2018	NA	Development Permit	2
CAR18/0280	Design and Siting - Shed	Bartley Burns Certifiers & Planners	10-22 Shelduck Street Cleveland QLD 4163	Referral Agency Response - Planning	27/07/2018	NA	Approved	3
RAL18/0050	Reconfiguration of a lot 1 into 4 - Stage 1	Jennifer Ann PHILLIPS Peter Ronald PHILLIPS	84-86 Thornlands Road Thornlands QLD 4164	Code Assessment	25/07/2018	NA	Development Permit	3
OPW18/0082	Operational works - domestic driveway crossover	Alastair Jarvis BARRON Snezana BARRON	241 Point O'Halloran Road Victoria Point QLD 4165	Code Assessment	25/07/2018	NA	Development Permit	4

Decisions Made under Delegated Authority 22.07.2018 to 28.07.2018

CATEGORY1

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
CAR18/0275	Design & Siting - domestic outbuilding	John David ADAMS	5 Penrose Avenue Redland Bay QLD 4165	Referral Agency Response - Planning	26/07/2018	NA	Approved	4
CAR18/0264	Design and Siting	A1 Certifier	37 Denham Boulevard Redland Bay QLD 4165	Referral Agency Response - Planning	27/07/2018	NA	Approved	6

Decisions Made under Delegated Authority 22.07.2018 to 28.07.2018

CATEGORY2

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
OPW18/0069	Operational Works - Stormwater Drain 1 into 2 Lots	Andrew Robert MORSE	211 Colburn Avenue Victoria Point QLD 4165	Code Assessment	23/07/2018	NA	Development Permit	4
MCU18/0135	Extension to Currency Period - MCU013248	Building Code Approval Group Pty Ltd Philip Murray IMPEY	876-880 German Church Road Redland Bay QLD 4165	Minor Change to Approval	25/07/2018	NA	Approved	6
CAR18/0257	Build Over or Near Sewer - Dwelling House	Bartley Burns Certifiers & Planners	6 Berkingham Street Thornlands QLD 4164	Referral Agency Response - Engineering	23/07/2018	NA	Approved	7

13.2 LIST OF DEVELOPMENT AND PLANNING RELATED COURT MATTERS AS AT 3 AUGUST 2018

Objective Reference:

Authorising Officer: **Louise Rusan, General Manager Community & Customer Services**

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

Report Author: **Emma Martin, Senior Appeals Planner**

Attachments: **Nil**

PURPOSE

The purpose of this report is for Council to note the current development and planning related Court matters/proceedings.

BACKGROUND

Information on appeals may be found as follows:

1. **Planning and Environment Court**

   a) Information on current appeals and declarations with the Planning and Environment Court involving Redland City Council can be found at the District Court web site 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 web site 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:
   http://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 declarations 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 declarations lodged in the Planning and Environment Courts across Queensland of which the Chief Executive has been notified.

   b) Information about the appeal or declaration, including the appeal 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 web site:

Http://www.hpw.qld.gov.au/construction/BuildingPlumbing/DisputeResolution/Pages/default.aspx

PLANNING & ENVIRONMENT COURT APPEALS

1.	**File Number:**	4940 of 2018, 2 of 2016 and 44 of 2016 (MCU013926) / (Court of Appeal 11075 of 2017)
Appellants		**Lipoma Pty Ltd**
		Lanrex Pty Ltd
		Victoria Point Lakeside Pty Ltd
Co-respondent (Applicant)		**Nerinda Pty Ltd**
Proposed Development:		Preliminary Approval for Material Change of Use for Mixed Use Development and Development Permit for Reconfiguring a Lot (1 into 2 lots) 128-144 Boundary Road, Thornlands (Lot 3 on SP117065)
Appeal Details:		Submitter appeal against Council approval
Current Status:		A directions hearing was held on 1 August 2018. A further directions hearing is scheduled for 5 October 2018 to confirm the matters to be determined by the Court. The matter has been set down for a two day hearing in November 2018.

2.	**File Number:**	Appeal 4515 of 2017 (ROL006084)
Appellant:		**Australian Innovation Centre Pty Ltd**
Proposed Development:		Reconfiguring a Lot (1 into 22 lots and park) 289-301 Redland Bay Road, Thornlands (Lot 5 on RP14839)
Appeal Details:		Deemed refusal appeal
Current Status:		Appeal filed on 23 November 2017. On 31 January 2018 Council solicitors notified the parties that it opposed the proposed development. A mediation was held on 6 March 2018. The next Court review is 22 August 2018.

3.	**File Number:**	Appeal 339 of 2018 (MCU013949)
Appellant:		**Hosgood Company 3 Pty Ltd & DPK Injection Pty Ltd**
Proposed Development:		Material Change of Use for a Dual Occupancy 2 Starkey Street, Wellington Point (Lot 11 on SP284567)
Appeal Details:		Appeal against Council refusal
Current Status:		Appeal filed on 30 January 2018. Mediation held on 10 April 2018. The next Court review is 9 August 2018.

4.	**File Number:**	Appeal 461 of 2018 (MCU013977)
Appellant:		**Robyn Edwards & Ronald Edwards**
Proposed Development:		Material Change of Use for an Undefined Use (Rooming Accommodation) 41 Ziegenfusz Road, Thornlands (Lot 291 on RP801793)
Appeal Details:		Appeal against Council refusal
Current Status:		Appeal filed on 8 February 2018. A Directions Order was set down on 27 April 2018 detailing a timetable for the proceedings. Mediation held 31 May 2018. The next Court review is 31 August 2018.

5.	**File Number:**	Appeal 894 of 2018 (MCU013921)
Appellant:		**Palacio Property Group Pty Ltd**
Proposed Development:		Infrastructure Conversion Application (relating to the Development Permit for a Material Change of Use for Multiple Dwellings (22 units)) 4-8 Rachow Street, Thornlands (Lot 5 on SP149013)
Appeal Details:		Appeal against Council refusal
Current Status:		Appeal filed on 9 March 2018. A without prejudice meeting was held on 17 May 2018.

6.	**File Number:**	Appeal 1506 of 2018 (MCU17/0149)
Appellant:		**Barro Group Pty Ltd**
Proposed Development:		Request to Extend the Currency Period (relating to the Development Permit for a Material Change of Use for Extractive Industry and Environmentally Relevant Activities 8 (Chemical Storage), 16 (Extractive and Screening Activities) and 21 (Motor Vehicle Workshop Operation)) 1513 and 1515-1521 Mount Cotton Road, Mount Cotton 163-177 and 195 Gramzow Road, Mount Cotton (Lot 162 on S31962, Lot 238 on SP218968, Lot 370 on S311071, Lot 1 on RP108970, Lot 17 on RP108970, Lot 1 on SP272090, Lot 2 on SP272091, Lot 3 on SP272092 and the land comprising part of Greenhide (California) Creek located between Lot 162 on S31962 and Lot 238 on SP218968, which is the property of the State)
Appeal Details:		Appeal against Council refusal
Current Status:		Appeal filed on 24 April 2018. The next Court review is scheduled for 19 September 2018.

7.	**File Number:**	Appeal 1774 of 2018 (OPW002206)
Appellant:		**Jexville Pty Ltd**
Proposed Development:		Operational Works for an Advertising Device 39 Old Cleveland Road, Capalaba (Lot 1 on RP137310)
Appeal Details:		Appeal against a condition of the Development Permit
Current Status:		Appeal filed on 15 May 2018. Mediation was held on 27 June 2018. A second mediation is required on or before 31 August 2018.

8.	**File Number:**	Appeal 1834 of 2018 (RCC reference CAR17/058 and Development Tribunal reference 58 of 2017)
Appellant:		**Redland City Council**
Respondents:		**Michael Van Dyck** **Sean Carroll** **Jane Carroll**
Proposed Development:		Building Works for a Domestic Outbuilding (Carport) 22 Sommersea Court, Cleveland (Lot 666 on CP853643)
Appeal Details:		Appeal against the decision of the Development Tribunal (58-17)
Current Status:		Appeal filed on 18 May 2018. Review scheduled for 23 August 2018.

9.	**File Number:**	Appeal 2142 of 2018 (MCU013782)
Appellant:		**Binnaton Holdings Ltd**
Proposed Development:		Material Change of Use for an Apartment Building (39 units) 7, 9 & 11 Fernbourne Road, Wellington Point (Lots 1 & 2 on RP14166 and Lot 2 on RP14166)
Appeal Details:		Appeal against Council decision to issue a Preliminary Approval
Current Status:		Appeal filed on 11 June 2018. Without prejudice meeting held on 19 July 2018.

10.	**File Number:**	Appeal 2171 of 2018 (ROL006209)
Appellant:		**Lorette Margaret Wigan**
Proposed Development:		Reconfiguring a Lot for 1 into 29 lots and road 84-122 Taylor Road, Thornlands (Lot 1 on RP123222)
Appeal Details:		Appeal against Council decision to issue a Preliminary Approval
Current Status:		Appeal filed on 13 June 2018. Mediation held on 29 June 2018.

11.	**File Number:**	Appeal 2519/18 (MCU17/0123)
Appellant:		**Wellington Property Management Pty Ltd**
Proposed Development:		Material Change of Use for a Child Care Centre 100-102 Collins Street, Redland Bay (Lot 1 on RP190688)
Appeal Details:		Appeal against Council refusal
Current Status:		Appeal filed on 9 July 2018.

APPEALS TO THE QUEENSLAND COURT OF APPEAL

12.	**File Number:**	Appeal 8114/18 (MCU012812) / (QPEC Appeal 3641 of 2015)
Appellant:		**Redland City Council**
Respondent (applicant):		**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
Appeal Details:		Appeal against the decision of the Planning and Environment Court to allow the appeal and approve the development.
Current Status:		Appeal filed on 30 July 2018. The outline of Council's grounds of appeal is due by 27 August 2018. A Court review is scheduled for 19 September 2018.

DEVELOPMENT TRIBUNAL AND OTHER MATTERS

13.	**File Number:**	1568 of 2018
Applicant:		**Redland City Council**
Respondents:		**Paul Michael McManus** **Approved Realty Pty Ltd** **IApproved Pty Ltd**
Development:		Undefined Use (Rooming Accommodation) 1/139 Mount Cotton Road, Capalaba (Lot 1 on SP258938)
Application Details:		Unlawful Use
Current Status:		Application filed on 30 April 2018. Mediation held 14 June 2018. A second mediation is scheduled for 21 August 2018.

OFFICER'S RECOMMENDATION

That Council resolves to note this report.

13.3 KOALA CONSERVATION ACTION PLAN 2016-2021 DELIVERY PROGRAM 2018-19 FINANCIAL YEAR

Objective Reference:

Authorising Officer: **Louise Rusan, General Manager Community & Customer Services**

Responsible Officer: **Graham Simpson, Group Manager Environment & Regulation**

Report Author: **Cathryn Dexter, Project Officer Koala Conservation Program**

Attachments: **Nil**

This report was first tabled at the General Meeting 25 July 2018 and it was resolved the item lie on the table. Amendments have subsequently been made to the report to further highlight Council's partnerships with external stakeholders such as universities, and for clarity on some aspects of the 2018-19 planned actions outlined for the Koala Conservation Action Plan. All amendments have been highlighted, redundant copy has been treated with a strike-through.

PURPOSE

This report provides an update for noting on the planned delivery of initiatives during the 2018-19 financial year, associated with the four key objectives outlined in the Koala Conservation Action Plan 2016-2021 (KCAP).

BACKGROUND

The KCAP articulates actions for koala conservation within Redland City, on both the mainland and North Stradbroke Island, which Council can undertake in partnership with the community, State Government, businesses, neighbouring local governments and research bodies. The actions are formulated around the four key objectives:

- Decisions based on science
- Protect and improve koala habitat
- Reduce koala deaths; and
- Community making a difference

Fundamental to the KCAP's 37 nominated actions is to address the five key threats to koalas that include:

- Habitat loss and fragmentation
- Road mortality
- Dog attacks
- Disease; and
- Climate change

Progress of Implemented Actions (2017-2018)

First year actions (financial year 2017-2018), have centred on undertaking a comprehensive koala population and habitat assessment and a broad-reaching community intercept survey on koala awareness. This work represents the critical first-steps to inform strategic planning for longer-term koala management and community engagement over the next four years.

Preliminary findings for the three independent research projects pertaining to the koala population and habitat assessments are:

1. The genetics for koalas in the northern section of the City (predominately the urban areas of Birkdale, Cleveland, Ormiston and Wellington Point), show sufficient gene flow between the discreet local populations. Genetics on koalas from the southern areas (or more bushland areas) within the City are yet to be finalised.
2. Mainland areas contain substantive areas where koalas have existed for at least three recent generations (a koala generation is approximately 6 years), the majority of which is located in the north of the City. The data suggests that while there is an acknowledged decline in koala numbers, there has been no significant change in the areas that koalas have occupied across the City historically. Comparisons were made using a subset of 7,344 records before and after 2000. It is estimated that koalas are utilising 68% of available habitat in the City. This is considerably higher than other Local Government Areas (LGAs) that have been surveyed using the same method. A population estimate on density and abundance for Redland mainland koalas has not been fully analysed at the time of this report.
3. Habitat Conservation Prioritisation analysis has been completed and has identified areas of habitat across the City that should be prioritised for koala conservation. This data will now be used to select and layer habitat conservation and restoration efforts across the City during 2018-19 and over the life period of the current KCAP.

The koala population and habitat assessment planned for North Stradbroke Island ~~is to be conducted and~~ was completed during July 2018. The delivery of final reports for all koala surveys is due in October 2018. This will include an assessment on the general health in relation to Chlamydia disease.

Results from face-to-face community intercept surveys conducted by Griffith University's Social Marketing research team, indicate that nearly half of the respondents had thought about koalas within the last week, but koala sightings are not common. Attitudes towards koala conservation are generally positive, but residents' knowledge about the causes of koala deaths and the means that can be implemented to protect koalas are modest at best. Attitudes towards koala conservation differ by age groups, with younger generations showing more negativity towards koalas. Most of the respondents believe both the Council and the community need to work together to protect koalas.

ISSUES

These initial research findings can be viewed overall as highly positive. Despite the pressures of urbanisation, the Redlands Coast has above average area of occupied koala habitat and has maintained at least three generations of koalas across the City. Redland's koala population appears to still be ecologically functional, even in the predominately urbanised areas.

These findings are important as it provides Redlands Coast a window of opportunity to maintain current koala population levels. As such, it is imperative that the remaining population remains ecologically functional and not be allowed to dip below a critical threshold.

- **KCAP– Planned delivery 2018-19**

Planning for 2018-19 takes into consideration all four key objectives of the KCAP and will focus on delivering a multi-layered approach to koala conservation. It will include both broad and targeted community engagement activities, delivery of koala threat mitigation initiatives and habitat conservation planning.

The summary of Planned Delivery Programs to date is listed in Table 1 below.

Table 1: Planned Delivery of Key Initiatives 2018-19 Financial Year

Action	Planned Delivery	2018-19 Budget
Decisions Based on Science		Estimated Budget per KCAP core objective
Koala Population and Habitat Assessment	• Finalisation of Mainland and North Stradbroke Island koala population and habitat surveys. • Consultation with QYAC.	• $153,000 • ~~KCAP~~ KCP officer/s time
Koala Threat Mapping	• Analysis of threat mapping priorities based on koala population and habitat assessment final reports. • Select sites for threat mitigation treatments over the following years of the current KCAP.	
Koala safe neighbourhood ~~zones~~/precincts	• Using the results of the Kola Population and Habitat Assessment (mentioned above) selection of a candidate area to create a pilot koala safe ~~zone~~ neighbourhood and/or precinct is planned to be underway by September 2018. • The koala safe ~~zone~~ neighbourhood will be developed to align with key objectives within KCAP and will focus on specifically targeted campaigns directed at the local residents to drive awareness around threats to koalas such as road strike and dog attack (see Community Making A Difference section below for more details on planned community engagement activities). • The koala safe ~~zone~~ neighbourhood will also become a management hub that focuses on monitoring resident koalas to track incidence of mortality and disease. • The Ormiston area encompassing Fellmonger and Hillards Creek Parks is the current preferred option for the ~~case~~ study, based on criteria set for a candidate area at this time.	

Research Partnerships - Koala Monitoring	• Partnering with a research team to monitor a small number of koalas (derived from results of the Koala Population and Habitat Assessment), in a candidate area on mainland (part of koala safe ~~zone~~ neighbourhood ~~case study~~). • Partnering with a research team and Quandamooka Yoolooburrabee Aboriginal Corporation (QYAC) to monitor a small number of koalas (derived from results of the Koala Population and Habitat Assessment), on North Stradbroke Island. • Development of a citizen science and QYAC ranger involvement program to support research based monitoring is in progress with relevant stakeholders. • Investigating partnering a research project on Koala Drone Survey Methods that will specifically include North Stradbroke Island.	
Protect and Improve Koala Habitat		**Estimated Budget per KCAP core objective**
Linking Koala Habitat on Council Land and Improving Koala Movement	• Add the newly developed conservation habitat prioritisation mapping layer to Arc Reader GIS system and promote within relevant Council teams. • Utilise the One Million Native Plants Program, Bushcare and the Environmental Partnerships teams, to identify additional koala tree planting opportunities outside and within wildlife corridors and road and drainage reserves. *Note: Funding for koala habitat improvement work exists through current business as usual activities carried out by the Parks and Conservation Unit and Environment and Education Unit.* • New KCAP Extension Officer to provide extra support to expand extension programs with an emphasis on creating additional koala habitat. The focus will be centred on areas that have been identified as priority conservation areas; derived from results of the Koala Population and Habitat Assessment Surveys. • BAU support for operation and ongoing maintenance of the Link Road Fodder Farm.	• $87,000 • New KCAP extension officer • ~~KCAP~~ KCP officer/s time
Reduce Koala Deaths		**Estimated Budget per KCAP core objective**
Reduce Koala Deaths on Roads	• Partner with Griffith University Applied Road Ecology Research Group to facilitate a research project on smart signage design and messaging to understand driver awareness, habituation and response. Objective is to better inform Council of how to respond to and manage koala road mortality longer term. • Link smart sign project to broader community engagement communications and local targeted area strategy on driver and sign awareness. Objective is greater awareness and behaviour change. • Install road mitigation treatments at candidate pilot koala safe ~~zone~~ neighbourhood site.	• $176,000 • ~~KCAP~~ KCP officer/s time

Controlling Dogs	• Securing Dog Off Leash Areas (DOLA) through ~~the provision of wildlife exclusion fencing and~~ community awareness signs on koalas across the City. • Integrated community engagement messaging via the broader koala awareness campaigns which will additionally support Council's current 'Leave It' dog owner behavioural change program. *Note: Leave It dog behaviour change program is a separately funded program of work.*	
Community Making a Difference		**Estimated Budget per KCAP core objective**

Koalas and the community	• Facilitate delivery of a concept design for an overarching social marketing and advertising campaign that will aim to strengthen koala awareness across the Redland's community. The campaigns will be designed to enchant, engage and inform residents to create a feeling of ownership and custodianship over the span of the current KCAP.
	• Implement the KCAP Communication Plan (Attachment 1) developed in partnership between the Environment and Regulation Group and Communication Engagement and Tourism Group.
	• Deliver a subset of targeted campaigns based on the KCAP Communications Plan, to drive behaviours around koala awareness including:
	  • Koala Custodian Community Engagement Campaign
	  • Koala & Dispersal Breeding Season Campaigns
	  • Smart Signage Campaign
	  • Driver Awareness Campaign
	  • Target Area Campaigns/Citizen Science / Habitat programs
	• Partner with Griffith University Social Marketing research team to facilitate follow up integrated community attitude survey to measure change behaviour from campaigns undertaken in 2017-2018.
	• Delivery of a high school art challenge ~~community engagement~~ project that will invite all 10 high schools and colleges in Redlands to creatively engage students from years 8–12 in a conversation about koala conservation. The art challenge will ask students to consider the social, cultural and economic value of koalas to the Redlands community. ~~to create a koala sculpture~~. ~~The sculpture~~ The winning design will become part of the Redland Public Art Asset Portfolio. The art challenge is planned to begin in March 2019.
		• $105,500
		• ~~KCAP~~ KCP officer/s time

- **Business as Usual**

- Council teams continue to facilitate koala conservation programs such as koala habitat plantings, community education, Redlands After-hours Wildlife Ambulance, One Million Native Plants and the annual North Stradbroke Island koala survey, which complement the broader aims

of the KCAP. The planned delivery program and budget details outlined in Table 1 above are in addition to business as usual actions.

STRATEGIC IMPLICATIONS

Legislative Requirements

Koala protection and conservation involves management action at all levels of government. Contained within the suite of State and Commonwealth legislation relating to planning and the environment, Council has numerous statutory obligations regarding the conservation of koalas. The implementation of the KCAP assists in addressing Council's obligations.

Risk Management

The risk of not implementing initiatives and actions set for the KCAP is not delivering against Council's Operational Plan 2018-19, and will note achieve the commitments set out in the longer term Corporate and Community plans for the Healthy Natural Environment outcome.

This includes not delivering on the specific commitments to implement the Koala conservation strategies as part of the adoption of the Natural Environment Policy POL-3128 on 3 June 2015, and the Koala Conservation Strategy and Action Plan 2016-2021 adopted on 14 December 2016.

Financial

The KCAP is a multi-year program currently scheduled until the 2021-22 financial year subject to annual budget funding.

People

Priority outcomes and actions listed in the KCAP are managed by the individual area in Council responsible for the activity.

Environmental

The implementation of the KCAP seeks to conserve and manage suitable koala habitat, which has significant benefits for a wide range of other native species and ecological communities that also share the koala's habitat.

State Government Koala Expert Panel (KEP)

The Queensland State Government adopted of all six core recommendations outlined in the Koala Expert Panel's final report in May 2018.

The proposed delivery of new State-wide Koala Conservation Strategy within 12 months is anticipated to provide the necessary path forward for all relevant stakeholders to work in collaboration to address koala decline across Queensland, and within South East Queensland in particular.

Key recommendations from the KEP report were the identification of prioritised koala conservation areas, ongoing monitoring of koala populations, a more coordinated approach to koala conservation to mitigate threats and partnering with the community and other relevant stakeholders.

These recommendations firmly align with a number of key Council 2018-2019 KCAP initiatives. This includes the development of Koala Safe Precincts (or Zones) within the Redlands Coast progressing research partnerships to manage koala populations, including ongoing threats, and developing community engagement programs to increase koala awareness and custodianship.

Social

The roll-out of the KCAP has significant social benefits associated with the community participating in programs and actions that achieve Koala conservation outcomes.

Alignment with Council's Policy and Plans

Redland City Council's current policy and plans directed to meet statutory obligations and guide protections related specifically to the KCAP includes the following:

- Redlands 2030 Community Plan
- Redland City Council Corporate Plan 2018–2023
- Redland City Council Operational Plan 2018-2019
- Natural Environment Policy POL-3128
- Local Law No.2 (Animal Management) 2015
- Redlands Planning Scheme V7 2006
- Adopted Draft Redland City Plan

CONSULTATION

- Service Manager Environment and Education
- Senior Adviser Environment
- Group Manager Communications Engagement and Tourism
- Senior Adviser Media Services
- Education Officer Koala Conservation Strategy

OPTIONS

Option One

That Council resolves to note the Koala Conservation Action Plan 2016-2021 Delivery Program for the 2018-19 financial year.

Option Two

That Council resolves to request additional information.

OFFICER'S RECOMMENDATION

That Council resolves to note the Koala Conservation Action Plan 2016-2021 Delivery Program for the 2018-19 financial year.

13.4 STATE GOVERNMENT'S KOALA EXPERT PANEL RECOMMENDATIONS

Objective Reference:

Authorising Officer: **Louise Rusan, General Manager Community & Customer Services**

Responsible Officer: **Graham Simpson, Group Manager Environment & Regulation**

Report Author: **Cathryn Dexter, Project Officer Koala Conservation Program**

Attachments:
1. **Queensland Koala Expert Panel: A new direction for the conservation of koalas in Queensland**
2. **Queensland Government response to the Queensland Koala Expert Panel final report**

PURPOSE

This report outlines the key recommendations from the Koala Expert Panel (KEP) report and the corresponding response from the Queensland Government. It also seeks to clarify the implications for Redland City Council with regards to the implementation of recommendations and associated actions adopted by the State.

BACKGROUND

In July 2016 the Queensland Government established a KEP to provide recommendations on the most appropriate and realistic actions to address the decline in koala populations in South East Queensland. In September 2017, the KEP delivered their final report of six core recommendations, each with associated actions.

The State adopted all six core recommendations and undertook to detail a way forward in implementing the recommended actions outlined in the KEP's final report in May 2018 (refer Attachment 1 – Queensland Koala Expert Panel: A new direction for the conservation of koalas in Queensland).

The proposed delivery of a new State-wide Koala Conservation Strategy within 12 months is anticipated to provide the necessary path forward for all relevant stakeholders to work in collaboration to address koala decline across Queensland, and within South East Queensland in particular.

Key recommendations from the KEP report were the identification of prioritised koala conservation areas; ongoing monitoring of koala populations; a more coordinated approach to koala conservation to mitigate threats; and, partnering with the community and other relevant stakeholders.

These recommendations align with a number of Council's *Koala Conservation Action Plan 2016-2021* (KCAP) initiatives for 2018-2019. This includes the development of koala safe precincts within the Redlands Coast, progressing research partnerships to manage koala populations, mitigating ongoing threats and developing community engagement programs to increase koala awareness and stewardship.

ISSUES

Council will need to seek further clarification and guidance from the State on some aspects of the recommended actions contained within the KEP report and the corresponding State responses

(refer Attachment 2 – Queensland Government response to the Queensland Koala Expert Panel final report).

Guidance from the State as to what role local government will play in relation to a State Koala Conservation Strategy remains unclear.

The government's response outlines that the State will play a central role in koala conservation with the introduction of conservation prioritisation areas and a more coordinated approach to koala conservation that will include partnerships with a variety of stakeholders, including relevant local governments. Though what those partnerships entail, including whether there will be funding available for local koala conservation programs, are undefined.

The designation of the koala conservation prioritisation areas have not yet been specified by the State, but the Redlands Coast is among candidate areas to be considered.

The State's response strongly suggests the management of the critical steps required to retain and sustain a viable koala population at a local level, will largely remain the responsibility of relevant local governments on-going.

The State has committed to appoint a Koala Advisory Panel within six months of the release of the KEP report. The advisory panel will consist of representatives from state and local government, and community and non-government organisations to coordinate and evaluate outcomes of koala conservation measures. The creation of a Koala Advisory Council is of critical importance and interest to Council - with Redland koalas being a noted urban population.

Council's local laws and koala conservation planning actions may need to uphold and support the recommendations outlined in the KEP report and State's response, particularly with regard to threat mitigation and habitat protection. How Council will work in partnership with the State to mitigate the decline of koala on the Redlands Coast requires further clarification from the State.

Council's policy position in regards koala conservation is contained within Council's adopted *Koala Conservation Strategy 2016-2021* and the KCAP.

STRATEGIC IMPLICATIONS

Legislative Requirements

Koala protection and conservation involves management action at all levels of government. Contained within the suite of State and Commonwealth legislation relating to planning and the environment, Council has a number of statutory obligations regarding the conservation of koalas.

The implementation of the KCAP assists in addressing Council's obligations.

Risk Management

Council will need to assess the outcomes of the Koala Advisory Council process to determine its impacts on Council's existing KCAP program.

Financial

There is no anticipated financial implication from advocating Council's position in regards to the actions which may stem from KEP report. Future funding opportunities may exist through the State dependent on the finalised koala conservation measures that may be adopted.

People

There are considered to be no impacts on people in regards to this report.

Environmental

The KEP report and subsequent actions identified and/or adopted by the State are expected to enhance koala conservation measures.

Social

There are considered to be no social implications in regards to this report.

Alignment with Council's Policy and Plans

The KEP report and subsequent actions may align with Council's current policy and plans directed to enhance koala conservation measures, in particularly Council's *Natural Environment Policy POL-3128* and *Koala Conservation Strategy 2016-2021*.

CONSULTATION

- Service Manager Environment and Education
- Senior Adviser Environment
- Education Officer Koala Conservation Strategy

OPTIONS

Option One

That Council resolves to note this report on the Queensland Government's Koala Expert Panel Report recommendations.

Option Two
That Council resolves to request additional information.

OFFICER'S RECOMMENDATION
That Council resolves to note this report on the Queensland Government's Koala Expert Panel Report recommendations.



Queensland Koala Expert Panel

A new direction for the conservation of koalas in Queensland

2017

Preliminary Information

Title	Queensland Koala Expert Panel – A new direction for the conservation of koalas in Queensland
Date	2017
Authors	Associate Professor Jonathan Rhodes, Ms Antra Hood, Dr Alistair Melzer, and Mr Al Mucci
Citation	Rhodes, J.R., A.Hood, A.Melzer, and A.Mucci.(2017) *Queensland Koala Expert Panel: A new direction for the conservation of koalas in Queensland. A report to the Minister for Environment and Heritage Protection*. Queensland Government, Brisbane.

The Koala Expert Panel acknowledge the cultural and spiritual significance of the koala to First Australians.

Acknowledgements

The Panel would like to extend a big thank you to the wide range of people who contributed their time to inform and assist in making the recommendations in this report possible. The Panel consulted widely with individuals from the general public, government departments, local governments, NGOs, industry, community groups, and researchers and we thank them for their time. Community Elders who hold the koala to be culturally significant also provided meaningful consultation to formulate some of these recommendations. We thank them for their time and contribution. Finally we thank Catherine George, Beth Clouston, Grant Mogridge, Audrey Pershouse and EHP for secretariat support. It is our hope that our recommendation in this report make a major contribution to successfully turning around the declines in koala populations in SEQ and the rest of Queensland so that future generations can enjoy them in the way that we do today.

September 2017

#31318

Summary and Key Recommendations

The koala is one of the world's most iconic and well known species. Yet, koalas are increasingly threatened in Queensland primarily due to the loss of habitat and associated threats such as disease and climate change.

In South East Queensland, there is clear evidence of catastrophic declines in some koala populations. This indicates a need for urgent policy change if these declines are to be reversed and the long-term persistence of the koala is to be secured.

Over the past 12 months, the Koala Expert Panel (the Panel) has reviewed the effectiveness of the State Government's approach to koala conservation in South East Queensland and consulted with a large number of people from the community, governments, NGOs, and industry to gain an understanding of the issues and identify solutions. Based on this work, the Panel has formed a view of the most effective and realistic ways forward to ensure a reversal of the decline in koalas in South East Queensland and ensure their long-term persistence.

In this report, we detail the outcomes of this work in terms of six broad recommendations to the State Government on changes in policy to address the ongoing decline in koalas in South East Queensland (Table 1). Consistent with the Panel's Terms of Reference these recommendations are made specifically to the State Government, rather than more broadly to all stakeholders involved in koala conservation in South East Queensland. However, we recognise that there are many stakeholders involved in koala conservation in South East Queensland and that the State Government activities are only part of the solution.

At the core of our recommendations is the urgent need for a more coordinated and strategic approach to koala conservation in South East Queensland. This requires mechanisms to coordinate different measures to reduce threats so that, combined, they are effective at reversing declines in koala populations. It also requires coordination among different stakeholders, including the State Government, local governments, NGOs, community groups, researchers and industry. To achieve this the Panel has recommended that the State identify broad-scale priority areas for koalas across rural and urban landscapes in South East Queensland that will focus coordinated threat reduction measures and the creation of a Koala Advisory Council that will play an important coordination role among different stakeholders (Recommendation 1). This recommendation forms the overarching framework within which the Panel's other recommendations sit.

Given the rate of koala habitat loss in South East Queensland in the face of ongoing urban development and increasing numbers of people living in the region, it is clear that urgent interventions are required to more effectively limit impacts of development and land clearing on koala habitat.

The Panel therefore provides specific recommendations about mechanisms by which koala habitat can be better protected, primarily through the planning framework (Recommendation 2). These recommendations focus on broadening the scope for development assessment related to koala impacts and tightening development assessment requirements.

The Panel also recommends that habitat protection is coordinated with targeted investment in habitat restoration and threat reduction measures (Recommendations 3 and 4). Coordination and the recognition of the different conservation requirements of koalas in different parts of South East Queensland are critical considerations for these strategies to be effective.

The Panel has also recommended that the State Government place a much greater focus on engagement and development of partnerships with other stakeholders (Recommendation 5). This is crucial for ensuring long lasting and meaningful progress toward the protection of koalas in South East Queensland.

Finally, the Panel identified a number of limitations in the existing mapping of koala habitat, monitoring and evaluation, and research. Therefore, this report also contains key recommendations for the implementation of effective mapping, monitoring and research, with a specific pathway through the Koala Advisory Council, for re-evaluating policy and planning as new information becomes available (Recommendation 6).

Table 1.
Key recommendations

No.	Objective	Recommendation
1	A Strategic and Coordinated Approach to Koala Conservation	Develop a mechanism for implementing a strategic action plan for koalas that ensures coordination across multiple levels of government, community, NGOs and industry to achieve the long-term recovery and persistence of koalas in SEQ.
2	Koala Habitat is Protected	Simplify and strengthen the planning framework to ensure the effective and consistent long-term protection of koala habitat across SEQ and resource incentive and partnership mechanisms to protect koala habitat on private land.
3	Strategic and Landscape-scale Koala Habitat Restoration	Develop and adequately resource regulatory, incentive and partnership mechanisms to achieve strategic koala habitat restoration at landscape scales in SEQ, particularly in identified priority areas.
4	Coordinated Threat Reduction and Koala Population Management	Resource and implement a new coordinated threat reduction and koala population management strategy that complements habitat protection and restoration activities, particularly in identified priority areas.
5	Strong Community Partnerships and Engagement	Develop and implement a strategy for partnership development and engagement with the broader community, utilising an approach that is sensitive to the nature and views of local communities.
6	Targeted Mapping, Monitoring, Research, and Reporting	Develop targeted and high quality koala habitat mapping, threat mapping, monitoring and research programs that aim to: (1) identify key koala ecological values and threats, (2) measure changes in koala ecological values and threats over time, as well as understand the drivers of those changes, (3) inform policy and management decision-making, and (4) communicate trends and outcomes transparently and publically to enhance engagement.



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Abbreviations

Item	Definition
DAF	Department of Agriculture and Fisheries
DILGP	Department of Infrastructure, Local Government and Planning
DTMR	Department of Transport and Main Roads
EHP	Department of Environment and Heritage Protection
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Cth)
KAC	Koala Advisory Council
LGA	Local Government Area
MEDQ	Minister for Economic Development Queensland
NC Act	Nature Conservation Act 1992 (Qld)
NGO	Non-Government Organisations
NPSR	Department of National Parks, Sport and Racing
Offsets Act	Environmental Offsets Act 2014 (Qld)
Offsets Policy	Queensland Environmental Offsets Policy Version 1.4
Planning Act	Planning Act 2016 (Qld)
Planning Regulation	Planning Regulation 2017 (Qld)
SDAP	State Development Assessment Provisions
SEQ	The area of South East Queensland to which the SEQ RP applies
SEQRP	South East Queensland Regional Plan—ShapingSEQ (August 2017)
SPP	State Planning Policy
SPRP	South East Queensland Koala Conservation State Planning Regulatory Provisions (now repealed and replaced by Schedule 11 of the Planning Regulation)
State Koala Conservation Plan	The Koala Conservation Plan prepared under the NC Act
The Panel	Queensland Koala Expert Panel
ToR	Terms of Reference (for the Panel)
VMA	Vegetation Management Act 1999 (Qld)



Introduction

Context to the Panel's Work

The Panel (see Appendix 1 for a list of Panel members) was established in July 2016 (with the Terms of Reference approved on 29th August 2016) to provide the Queensland Government with recommendations on the most appropriate and realistic actions to address the decline in koala populations in South East Queensland.

In accordance with their ToR (see Appendix 2), the Panel released an interim report after 6 months (Koala Expert Panel 2017). This is now followed by this final report that contains:

- specific recommendations for koala policy and management
- evaluation of the potential options and risk assessment
- future direction for research, monitoring and evaluation
- broader koala policy direction to be applied across Queensland.

Terms of Reference for the Panel

The ToR (see Appendix 2) were developed in consultation between EHP and the Panel to outline the work and purpose of the Panel, respective roles, and timeframes. The ToR were approved by the Minister for Environment and Heritage Protection and Minister for National Parks and the Great Barrier Reef on 29th August 2016.

The ToR specifically defined the expectations of the Panel and timeframes for the interim and final reports.

An addendum to the ToR was approved in January 2017 requiring the Panel to provide advice on recommendations on planning instruments, including the consultation drafts of the State Planning Policy (SPP) and *ShapingSEQ* (SEQRP) which were not available when the original ToR was approved.

Current Status of the Koala in SEQ

The koala was listed as vulnerable to extinction across its full range in Queensland under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) in 2012 and under the Queensland *Nature Conservation Act 1992* (NC Act) in 2015.

From 2005 to 2015, the koala was listed under the NC Act as vulnerable in southern areas of the State only. The reclassification of the koala to vulnerable across its entire range was a result of improved knowledge of the species' status in Queensland, and to align with its listing under the EPBC Act. This, and State monitoring data providing evidence of continued declines in key peri-urban populations around Brisbane, led to conservation effort being heavily focused on eight coastal local government areas from Noosa to the Gold Coast.

An independent review of that data, and more recent knowledge (Rhodes et al. 2015) revealed that, despite protection measures to date, the decline in peri-urban koala populations in the Koala Coast and Pine Rivers areas showed no evidence of slowing, and that the rate may even be increasing. This continuing decline is related to ongoing habitat loss in SEQ resulting from increasing urbanisation, other threats, such as dog attacks, and road mortality associated with development, as well as disease.

Although koalas may be able to withstand some level of low density urban development, Rhodes et al. (2015) suggest that ongoing urban development, and densification, are incompatible with viable koala populations and that current strategies to mitigate these effects have not been successful. Further, despite these insights for peri-urban areas of SEQ, little is currently known about the status of koalas in western and more rural areas of SEQ.

Expert Panel Activities Post Interim Report

Since the release of the Panel's interim report in March 2017, the Panel has: (1) finalised the community consultation program, (2) engaged in an expert elicitation process to evaluate the likely outcomes and risks of a range of alternative koala management responses, (3) provided recommendations on the SPP and SEQRP and (4) conducted fortnightly meetings to ensure continued liaison with State departments (EHP, DILGP, NPSR, DTMR, DAF).

Consultation

Over the life of the Panel, community engagement involved open written public submissions, invited face-to-face consultation, and finally, engaging with selected experts to test strategy options in an expert elicitation process (see Appendix 3 for overview of consultation participants).

An analysis of the public submissions and face-to-face discussions can be found in the Interim Report (Koala Expert Panel 2017).

Expert elicitation process

Expert elicitation involves engaging experts to provide their view on the value of specific quantities (Burgman 2015). In the context of this expert elicitation the aim was to elicit views of koala population trends under different management interventions and the likelihood that these different interventions could be implemented. The Panel commissioned the elicitation process to assist with the evaluation and risk analysis of potential conservation strategies. The specific objectives of the process were to:

- gather estimates of the expected changes in densities over the next 20 years (approximately three koala generations) under each strategy
- gather estimates of the likelihood that each strategy could be implemented within five years
- obtain input into potential policy or management actions capable of meeting each strategy's objectives and the barriers to achieving them.

The elicitation focussed on estimates for three different landscape types: (1) urban, (2) peri-urban, and (3) rural landscapes within SEQ.

Twenty-five experts covering a range of backgrounds, including ecology, planning and policy were invited to the expert elicitation process. Each participant was required to complete a pre-elicitation questionnaire and attend a workshop conducted on 4 April 2017 where they were given the chance to explain their responses and, following discussion, the opportunity to modify their responses. This process is based on the IDEA framework for expert elicitation that aims to minimise bias (Burgman 2015).

The management strategies considered for the elicitation included:

- Protect all existing koala habitat
- Protect all existing high quality koala habitat
- Compensate for all losses of koala habitat with habitat restoration
- Reduce vehicle-related koala mortalities by 50%
- Reduce domestic and wild dog-related koala mortalities by 50%
- Reduce disease-related koala mortalities by 50%.

Advice on SPP and SEQRP

The Panel provided advice to EHP and DILGP on the SPP and SEQRP prior to their finalisation. These recommendations can be found in Appendix 4.

Meetings

Fortnightly meetings with EHP and the Panel continued after the release of the interim report. These meetings were used to discuss the Panel's work and to seek clarification and further information from EHP. Other stakeholders and consultation participants attended these meetings from time to time to discuss koala conservation in relation to their areas of expertise.



Principles and Conceptual Model Underpinning the Panel's Recommendations

Principles

In developing their recommendations the Panel identified a number of core principles from which their final recommendations arise. These principles are founded on the outcomes of the extensive consultation, expert elicitation, and review undertaken by the Panel. These key principles include:

a. Koalas are culturally important for First Australians and are also an iconic species of national and international importance. This status should be explicitly acknowledged.

b. Both protection of koala habitat and reduction of threats that directly, or indirectly, impact koala populations are crucial for ensuring the long-term persistence of koalas in SEQ.

c. Effective solutions to koala recovery in SEQ must be holistic and multi-faceted as there is unlikely to be a single action that is capable, on its own, of conserving koala populations in SEQ. For example, although protecting habitat is crucial, it is unlikely to be a sufficient solution on its own.

d. Ensuring long-term koala persistence will require a strategic, coordinated and collaborative approach across multiple levels of government, industry, NGOs, and the community.

e. Direct conflicts between koala conservation goals and other societal goals (e.g., urban development) are real and should be explicitly considered. In particular, the expected rapid increase in the number of people living in SEQ over the next 20 years is a critical factor.

f. Koala populations in rural and urban areas are both important. Rural koala populations are central to the conservation of koalas in SEQ because they occur across broad areas, and there is a good chance of achieving long-term reductions in threats with effective management. Recovering koala populations in many existing urban and peri-urban landscapes is more challenging. However, the Panel's consultation provides clear evidence of strong community support for ensuring the conservation of koala populations in urban and peri-urban landscapes, as well as in rural landscapes.

g. Community partnerships and engagement need to be important components of any strategy to conserve koalas in SEQ if it is to be successful.

h. Monitoring and evaluation needs to be a core component of an effective koala conservation strategy and should aim to evaluate progress towards conservation targets, evaluate the performance of management/policy, and transparently communicate progress towards objectives.

i. Based on the ToR (Appendix 2), the Panel's recommendations should be specific recommendations to the Queensland Government, rather than stakeholders in general.

Conceptual Model

The Panel's recommendations are also underpinned by a conceptual model that captures the key drivers of koala decline, and existing policy and management activities designed to reduce impacts on koalas (Figure 1).

Our conceptual model focusses primarily on Queensland Government initiatives, but also identifies some key local government and community initiatives, where appropriate. This conceptual model recognises that koala habitat and koala population dynamics interact to determine the persistence of koalas, but that koala populations ultimately depend on there being sufficient koala habitat of high enough quality for their persistence.

There are a range of threats that impact on koala habitat, causing habitat loss and degradation, but also a range of threats that impact on koala populations directly, such as through direct mortality. Hence, threats to habitat and threats impacting koala populations directly are both important, and in many areas of SEQ (particularly urban areas) the long-term persistence of koalas depends on reducing both types of threat.

Existing State initiatives to reduce threats are dominated by mechanisms to limit habitat loss and habitat degradation through the planning framework. However, the Panel's review indicated that far fewer initiatives are focussed on reducing threats that directly impact on koala populations, such as vehicle collisions and dog attacks. This is despite these being recognised as key factors driving koala declines in SEQ.

The work of koala carers, and the koala hospitals, helps to mitigate the impact of some of these threats, but ultimately tends to address the symptoms, rather than the underlying drivers of the threat.

Our conceptual model, although not meant to be exhaustive, aims to highlight the complex nature of the koala conservation challenge in SEQ, both in terms of the interactions among threats and the interactions among policy and management initiatives.

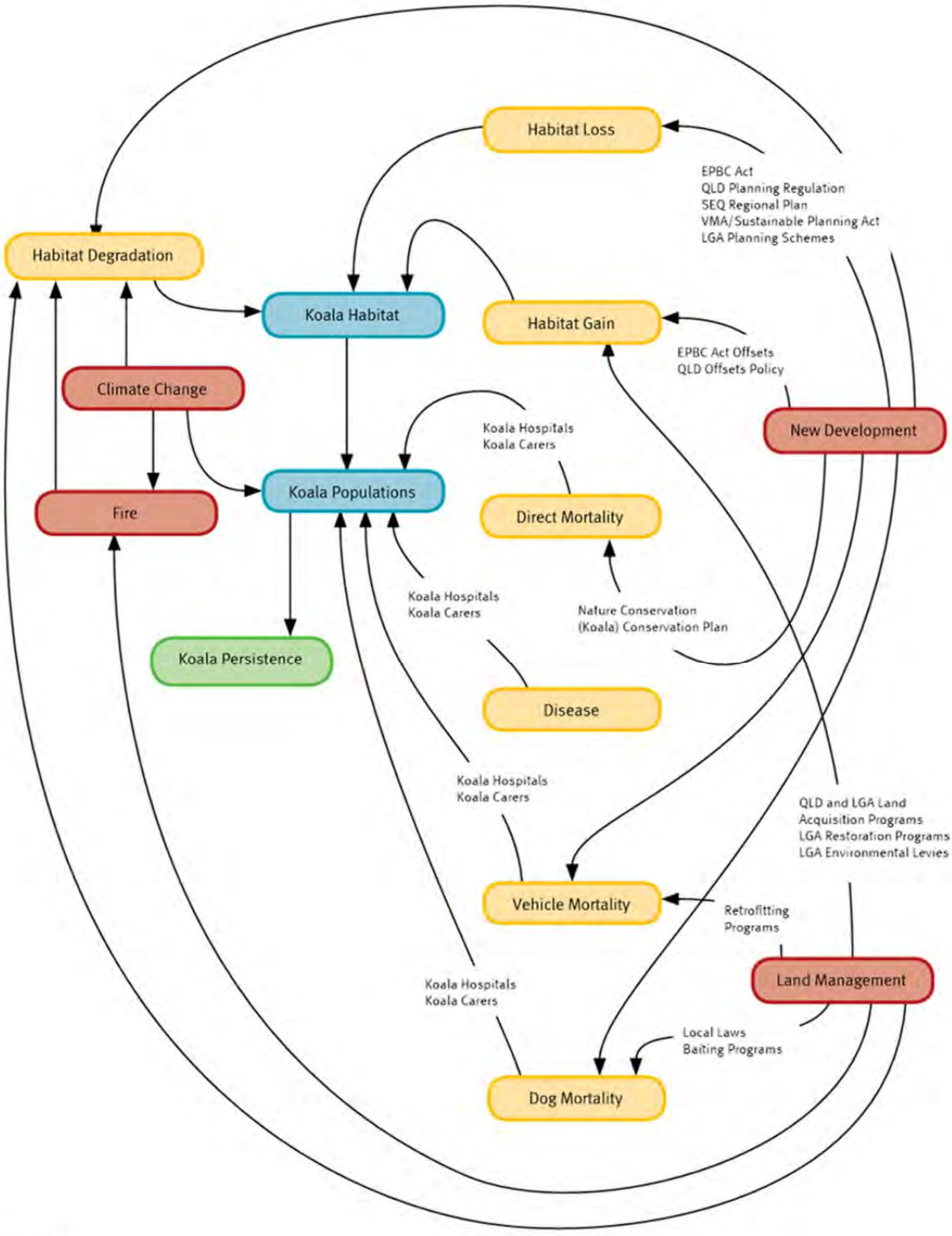


Figure 1.

Conceptualisation of the links between threats (yellow), koala populations and koala habitat (blue), and koala persistence (green). Drivers of threats (red) and key regulation and conservation initiatives in SEQ, which influence the effect of threats on koala habitat and populations, are also shown. Here 'New Development' refers to impacts that arise from new urban and infrastructure development as well as land clearing for other purposes.

Recommendations for SEQ

1. A Strategic and Coordinated Approach to Koala Conservation

1.1 Recommendation

Develop a mechanism for implementing a strategic action plan for koalas that ensures coordination across multiple levels of government, community, NGOs and industry to achieve the long-term recovery and persistence of koalas in SEQ.

1.2 Recommended actions

a. Develop an implementation strategy for koala conservation in SEQ that adopts the recommendations made in this report and that will:
   i) identify clear, realistic, measurable and time-based targets for koala habitat and population trajectories that will ensure the long-term persistence of koalas in SEQ
   ii) identify a network of connected priority areas for koalas that strategically focusses State Government initiatives for habitat protection and restoration, threat reduction programs, community partnerships, and recovery actions for koalas across SEQ. These areas should be sufficiently large and well enough connected to ensure the long-term persistence of koala populations across their range in SEQ (priority areas of 100,000s of hectares in size are likely to be necessary to achieve this). In particular, these regions should be focal points for the effective preservation and restoration of koala habitat, coordinated investment in reducing cumulative threats to koalas, and strategies for community partnerships. The activities in these priority areas should complement koala conservation activities in adjacent areas and encompass both rural and urban koala populations
   iii) identify the activities that will be undertaken where, when and by whom, as well as identify a clear implementation and resourcing strategy that will ensure these activities are undertaken
   iv) identify a monitoring and evaluation strategy that measures progress towards targets and that incorporates a mechanism for amending the strategy based on new information
   v) ensure the 'SEQ revised Koala Conservation Strategy' discussed in the SEQRP 2017 (p 159) is updated to address the recommendations in this report.

b. Establish a Koala Advisory Council (KAC) to coordinate the implementation of the koala conservation strategy. The KAC should consist of representatives from relevant State government departments, local governments, community, NGOs and industry. The purpose of the KAC would be to:
   i) provide advice to government on the implementation of the koala conservation strategy, including resourcing requirements
   ii) fulfil a coordination role by providing communication and collaboration pathways among state government departments, local governments, community, NGOs and industry
   iii) ensure transparency and accountability in decision-making with respect to koala conservation
   iv) evaluate the outcomes of the monitoring and evaluation program and recommend appropriate changes in policy that arise from this.



1.3 Justification and Explanation

The Panel's review and consultation identified three important overarching issues that are characteristic of the current koala conservation problem in SEQ. These are: (1) the presence of strong conflicts between koala conservation and some other societal objectives, (2) the complex interaction between multiple threats that impact cumulatively on koalas, and (3) the importance of coordination across governments, other organisations, and the community (Koala Expert Panel 2017). These have important implications for how ensuring koala conservation in SEQ should be approached. The Panel's view is that these imply that the best overall approach will be one that is strategic and coordinated across efforts to reduce different threats and among different stakeholders.

Conflicts and a strategic approach

In SEQ there are strong conflicts between the requirements of koalas and their habitat, and the achievement of some other social objectives that threaten koalas and their habitat as an unintended consequence (this includes urban development and habitat clearing for agriculture). This has manifested itself in the ongoing loss of koala habitat, which is particularly prevalent in the urban footprint (over 10% of bushland koala habitat in the urban footprint was lost between 2008 and 2015 (Koala Expert Panel 2017)).

The conflict between urban development and koalas was also raised as one of the most prevalent issues during the Panel's consultation, but the Panel found that habitat loss in agricultural landscapes is also significant (Koala Expert Panel 2017).

These pressures are unlikely to disappear in the foreseeable future given the expected rapid rate of human population increase in the region; there are likely to be an additional 2 million residents in SEQ by 2041 (Queensland Government 2017).

Planning strategies that aim for compact and high density urban development, with a focus on in-fill, and biodiversity friendly development must be employed to reduce impacts on koalas. However, the Panel acknowledge that entirely halting all impacts of future urban development and land use change on koalas, although this would clearly be the best outcome for koalas, is unrealistic given the development goals for the region.

Against this background, the Panel believes that a targeted and strategic approach that aims to maximise the likelihood of the long-term persistence of the species in SEQ is critical. One way to achieve this is through the strategic prioritisation of areas for additional investment in habitat protection, restoration, management (including threat reduction), and coordination. This approach would also allow for cumulative impacts (e.g., from urban development or land clearing) to be explicitly addressed. The alternative, which is spreading additional resources thinly across SEQ, risks achieving limited impact on the long-term persistence of koalas in SEQ if this results in few koala populations being invested in sufficiently to reverse declines.

Priority areas for focused additional koala conservation effort should be identified based on:

a. the ability of the areas to support koala populations in the long-term with appropriate management
b. the feasibility of implementing appropriate management that will ensure koala recovery and long-term recovery
c. the ability of the areas to represent koala populations across different land uses (e.g., within and outside the urban footprint) and across different areas of SEQ
d. the societal importance placed on koalas in the area.

The koala habitat and threats mapping currently being developed by EHP (Koala Expert Panel 2017) should be used to inform the process of identifying these areas.

To ensure the long-term persistence of koalas in SEQ, these focus regions will need to be substantial in size (i.e., 100,000s of ha in size) and, given the clear view expressed by participants in the consultation that both rural and urban koalas are important, should incorporate both urban and rural landscapes.

The Panel has not made specific recommendation on where these priority areas should be as that is a significant piece of work that the Panel was not resourced to undertake. However, areas of known important rural and urban koala populations in Redland City Council, Logan City Council, Moreton Bay Regional Council, Lockyer Regional Council, Somerset Regional Council, Noosa Shire Council, Gold Coast City Council, Ipswich City Council, Sunshine Coast Regional Council, and North Stradbroke Island should be considered within the set of candidate areas when this prioritisation is undertaken.

Although this approach would form a vehicle for targeting conservation effort at a regional scale, one risk is that it could lead to a decline in effort outside of priority areas. The State should therefore coordinate the parallel implementation of a strategy (potentially in partnership with local governments) to also identify and protect locally important koala populations. Minimising impacts in these key areas will be critical to ensure the maintenance of connectivity across SEQ and the broader viability of koala populations and habitat.

Multiple threats and a holistic response

There is strong evidence that koala populations in SEQ are declining due to multiple threatening processes and that these act cumulatively on koala populations to drive declines, both through impacts on habitat, and direct impacts on koalas (Figiure. 1, Dique et al. 2003, McAlpine et al. 2006, Rhodes et al. 2011, Craig et al. 2014, de Oliveira et al. 2014). Further, the expert-elicited evaluation of threat management options that the Panel commissioned also highlighted that addressing individual threats alone is unlikely to recover koala populations across urban, peri-urban and rural landscapes (Figure 2). This is also supported by other studies (Rhodes et al. 2011). Therefore, the need for a more holistic strategy that simultaneously manages multiple threats, including habitat loss, vehicle collisions, dog attacks, and disease, is critical.

Participants in the consultation process identified issues with planning regulations as the most import factor driving declines in koalas through loss of habitat. The Panel agree that better protection of habitat through the planning regulation is crucial. However, fixing the planning regulation only addresses a single threat, i.e. the impact of future development on habitat loss and degradation (Koala Expert Panel 2017). It is therefore unlikely, on its own, to be a successful strategy, as it does not deal with the impact of other threats such as dog attacks, vehicle collisions, disease, and fire management, that are cumulatively driving declines in many populations, nor does it deal with recovery of populations through activities such as habitat restoration (except potentially, although only partially, through the Offsets Policy).

The Panel believes that the only way to address this is to have a more holistic strategy that focusses on planning regulation, reduction in threats, and koala/habitat recovery, and that these activities need to be coordinated to ensure that multiple threats are addressed simultaneously where necessary. This should be integrated into the overall strategic approach.

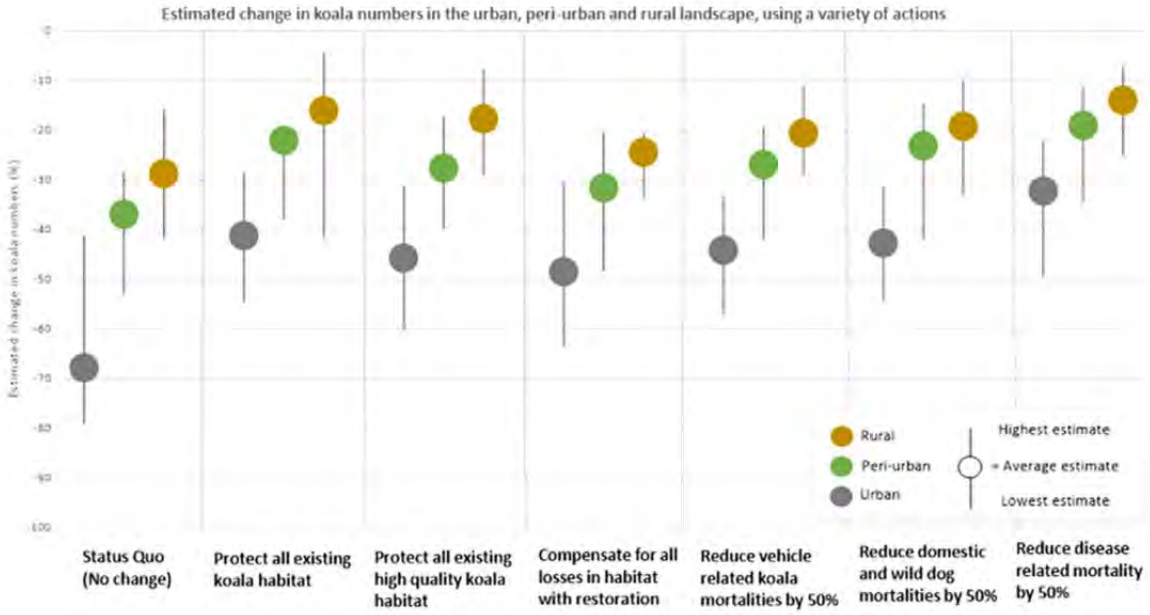


Figure 2.

Expert-elicited estimates of declines in koala density (% change) over the next 20 years under different threat reduction strategies applied individually in typical urban, peri-urban and rural landscapes.

A mechanism to achieve coordination

The Panel's consultation provided many important insights into the problem of the coordination of koala conservation activities across State departments, local governments, NGOs, industry and the community.

Typical examples included the lack of coordination in the selection of sites for offsets and other management activities that would maximise outcomes for koalas, and the lack of coordination of data collection, but a lack of coordination generally seems to be pervasive (Koala Expert Panel 2017).

The Panel believe that better coordination of activities is critical for the implementation of a successful koala conservation strategy, and requires a governance structure to achieve this. As such, the Panel recommend the formation of a Koala Advisory Council (KAC) to coordinate implementation of a new koala strategy, with the aim of facilitating coordination among State Government departments, local governments, NGOs, industry, and community organisations engaged in its implementation.

There are precedents for this type of council for other matters of state significance, such as the Queensland Ministerial Freight Council and the Biosecurity Queensland Ministerial Advisory Council.

The Panel envisions that the KAC would provide advice to the State Government on the implementation of a coordinated koala conservation strategy for SEQ, provide a vehicle for collaboration and communication among key stakeholders, and provide a mechanism for updating advice based on the outcomes of monitoring and new research.

The Panel acknowledges that it may be unusual to have an advisory council for a single species, but believes that the special status of the koala warrants such an approach. Ultimately this could form a model for a broader advisory council for the management of priority threatened species in Queensland in the long term.

2. Koala Habitat is Protected

2.1 Recommendation

Simplify and strengthen the planning framework to ensure the effective and consistent long-term protection of koala habitat across SEQ and resource incentive and partnership mechanisms to protect koala habitat on private land.

2.2 Recommended actions

a. The State Government to assume responsibility for the assessment of koala-related planning and development issues to ensure consistency of approach across SEQ. State responsibility in the context of the planning framework should ensure:
   i) clear policy direction in the SPP and the SEQRP, about the importance of the koala as an iconic species for SEQ. The Panel's comments on this aspect have already been implemented in the 2017 versions of these instruments, but some further fine-tuning may be required, depending on the final approach taken by the State
   ii) that the Planning Regulation identifies the State as either the assessment manager or referral agency for all koala-related assessable development, as it is for certain other environmental issues. The State's policy framework should then reflect this position. Ensuring sufficient resourcing to fulfil this role will be crucial
   iii) the development of standard conditions for development impacting on koalas, in the same way that EHP has developed standard conditions for certain types of development impacting on other environmental values. Depending on the scope of the standard conditions, the State should consider whether it is necessary to amend the Planning Act to ensure that koala-related conditions cannot be challenged on reasonableness/relevance grounds, as it has done in the past for offsets and certain infrastructure conditions
   iv) that SDAPs contain a specific koala-related assessment code, so as to ensure uniformity. This code could address both matters relating to the construction of works and, where appropriate, the ongoing use of land after works are complete
   v) that when undertaking development, the State should, even if it is otherwise exempt from development assessment, ensure that the standards placed on State development are not less onerous than those placed on private sector proponents.

b. Reduce the number and complexity of exemptions from development assessment and put in place a transparent system of conditional approval across different habitat classes and land uses. Two prominent examples of important exemptions that impact on koala habitat are:
   i) Schedule 21 Part 2 item 2 of the Planning Regulation, exempts large amounts of development by providing that clearing of certain vegetation for urban purposes in urban areas is not assessable development under the Planning Act and cannot be made assessable development by a planning scheme
   ii) Schedule 21 Part 1 item 1 of the Planning Regulation has the effect of exempting vegetation clearing from assessment for a material change of use or reconfiguring a lot if, among other things, the approval relates to premises of less than 5 ha.

   Removing these exemptions, or substantially reducing their scope as they apply to koala habitat, is vital for effectively protecting koala habitat.

c. Broaden triggers for koala-related development assessment in SEQ based on the new EHP koala habitat mapping. This should ensure, at least, that self-assessment is not permitted and that development assessment is triggered when there are potential development impacts on koala habitat, or koalas, in the following cases:
   i) in identified priority areas for koalas (see Recommendation 1), regardless of whether inside or outside the Urban Footprint
   ii) outside the Urban Footprint and within areas mapped as core and non-core koala habitat (remnant and regrowth)
   iii) inside the Urban Footprint, but outside identified priority areas for koalas, and within areas mapped as core koala habitat (remnant and regrowth).

d. Develop new development assessment requirements for SEQ that:
   i) do not permit clearing of core and non-core habitat (remnant, regrowth and scattered trees) inside identified priority areas for koalas (see Recommendation 1), regardless of whether inside or outside the Urban Footprint
   ii) do not permit clearing of core and non-core habitat (remnant and regrowth) outside of the Urban Footprint and outside of identified priority areas for koalas
   iii) avoid clearing of core habitat (remnant and regrowth) inside the Urban Footprint, and outside identified priority areas for koalas, with any residual impacts offset as a last resort.

e. Biodiversity offsets for koala habitat should continue to be imposed as conditions on development approvals only as a 'last resort', and not as an automatic 'licence to clear habitat'. Offsetting of residual impacts should only be an available option for impacts occurring inside the Urban Footprint that are not in identified priority areas for koalas. Elsewhere, clearing of koala habitat should not be permitted.

f. Any future expansion of the Urban Footprint, undertaken by the State as part of revisions to the SEQRP, should not occur over areas where core koala habitat (remnant and regrowth) has been identified through the EHP mapping, or where koala populations are known to occur.

g. Ensure that locally significant koala habitat, not captured by the EHP mapping, or not in identified priority areas for koalas, can still be protected through local government planning schemes.

h. Reduce the complexity of the current planning framework by:
   i) aligning the various different regimes which apply, including priority development areas, State development areas and infrastructure designations under the Planning Act, to ensure a consistent approach to koala development and offsetting across all development
   ii) standardising terminology so that the same term (and only one term) is used under both environmental and planning State legislation and instruments, especially in relation to koala habitat.

i. Review coordination between State departments in relation to different legislative instruments. In particular, the interrelationship between the SDAP and the State nature conservation system needs to be explicit and consistent.

j. The State's commitment to a SEQ strategic assessment with the Commonwealth under the EPBC Act should be undertaken as soon as possible to give certainty to all stakeholders and permit strategic planning for koalas with respect to the protection of habitat. The State will need to ensure that any strategic assessment is adequately resourced (the Panel notes the $10M funding provided for two years in the 2017 State Budget) and, that any strategic assessment is undertaken as quickly as possible using the large amounts of data already available, including the new EHP koala mapping product. Any new legislative assessment scheme that arises from this process should address the recommendations in this report. Given the length of time that strategic assessments have taken in other jurisdictions, the Panel recommends that the State should proceed to implement the Panel's recommendations before the strategic assessment is completed.

k. Develop a communication, education and extension strategy to ensure community and business awareness and understanding of new and revised koala habitat protection measures.

l. Develop and resource effective models of habitat protection incentives and partnerships that have the potential for broad uptake amongst industry and rural enterprise sectors.

2.3 Justification and Explanation

The lack of protection of koala habitat was one of the most prominent issues raised during the consultation process and almost always this was associated with issues identified in planning framework (Koala Expert Panel 2017).

It was therefore made very clear to the Panel that the planning framework needs to be a core contributor to which the protection of koala habitat in SEQ is realised. However, the Panel also recognise that the planning framework only deals with future development impacts and has limited ability to deal with existing threats and actions required for koala recovery. This means that it is critical that the planning framework works in a coordinated fashion with other activities for threat mitigation and recovery.

Strategies for achieving this coordination are outlined in Recommendation 1 and should be reflected in the planning framework.

Habitat loss and the planning framework

Analysis conducted for the Panel's interim report (Koala Expert Panel 2017) demonstrated clear evidence for continuing loss of habitat, especially in the Urban Footprint and within Rural Living Areas (over 10% of koala bushland habitat in the Urban Footprint was cleared between 2008 and 2015).

Clearing rates outside of the Urban Footprint over the same time period were lower, but not insignificant (0.7% of koala bushland habitat was cleared in the Regional Landscape and Rural Production Area between 2008 and 2015). There is also no evidence for a reduction in clearing rates over time in SEQ (Koala Expert Panel 2017).

Given that the planning framework has been used as the primary way to protect koala habitat, this provides strong evidence that it has generally been ineffective at sufficiently reducing the loss of habitat, especially in the Urban Footprint.

The Panel's view is that the solution to koala conservation in SEQ must be more holistic than a sole focus on the planning framework, but it is an important part of the solution. As such, our consultation and analysis of habitat loss revealed that it requires some fundamental changes if it is to be sufficiently effective at protecting koala habitat in SEQ, although the Panel is supportive of the overall structure of the planning framework.

Mapping to underpin the protection of koala habitat

One of the most frequently raised issues by participants of the consultation was the mapping. Based on this feedback, the Panel identified a number of issues with the existing State Government habitat mapping that currently underpins the Planning Regulation (previously the SPRP). These include:

- lack of comprehensiveness
- coarse resolution
- the simplicity of the model that fails to fully account for vegetation communities
- no updating of the mapping over time.

Although mapping is also conducted by local governments, inconsistencies among local government methodologies, and with the State Government mapping, also make a consistent approach to koala habitat protection across SEQ difficult. At the time of writing this report the State Government were finalising koala habitat mapping for SEQ that splits habitat into three categories (core habitat, non-core habitat, and non-habitat) across remnant vegetation, regrowth vegetation, and scattered trees. Core habitat represents those habitats in which koalas are most likely to occur and therefore maps the most important koala habitat values. Non-core habitat represents areas where koalas may occur and these areas are important because of their role in providing important supplementary habitat and connectivity. The Panel is supportive of this ecological mapping, and believe it is an improvement over existing mapping, and that it reflects important koala habitat values across the region. The Panel therefore recommends that this forms the basis of a consistent approach to the protection of koala habitat across SEQ.

The panel acknowledges that mapping and assessment framework decisions made by government which have the effects of reducing, or restricting development may give rise to complex social and political questions for government, involving potential compensation issues.

A simplified and consistent approach to koala habitat protection

Some of the criticisms levelled at the planning framework during the consultation process focussed on the complexity of the framework that limits effectiveness and consistency in approach for the protection of koala habitat. Different mapping used for different regulatory instruments, different assessment managers (e.g., local governments, MEDQ, DILGP, the Coordinator-General, and the Federal Government) under the different regulatory mechanisms contribute to the complexity and lack of consistency (Koala Expert Panel 2017). Further, different terminology used in each regulating instrument makes it difficult for both public and private sector entities to determine whether and how, in any given case, koala habitat may be impacted by development, and how any impact should be conditioned. The complexity of wording also leads to potentially unintended consequences (i.e., exceptions or unintentionally caught development). The Panel therefore believe that a more consistent and simplified approach to dealing with development related impacts on koalas would be more effective. This could be achieved by making the State Government the assessment manager or referral agency in all koala-related development issues. The State has already achieved this under the Planning Regulation in relation to a number of key State interests, such as marine plants, State-listed heritage places and fish habitat. This would also enable a simplification of the approach to the assessment of koala-related development issues.



Strategic and effective habitat protection

Many criticisms of the planning framework identified during the consultation highlighted the lack of comprehensiveness in the Planning Regulation (formally the SPRP) in protecting koala habitat and the large number of exemptions available that limit the extent to which the planning framework protects koala habitat. The Panel recommends that both these issues need to be addressed if the planning framework is to be effective at protecting sufficient koala habitat to ensure the long-term persistence of koalas in SEQ.

The existing Planning Regulation essentially identifies priority areas for koala habitat protection (Priority Koala Assessable Development Areas and Koala Assessable Development Areas) but these are highly constrained in spatial extent (largely focussing on the Koala Coast and Pine Rivers areas). Many participants in the consultation process indicated that this does not cover many important populations in the Gold Coast, for instance, limiting powers to protect habitat in these areas. The Panel also note that these areas only cover a small component of the identified koala habitat values in the new EHP mapping. The Panel therefore recommends that priority areas for koalas, identified as part of a regional strategic approach to koala conservation (see Recommendation 1), should be much broader then the existing Priority Koala Assessable Development Areas and Koala Assessable Development Areas in the Planning Regulation and be informed by the EHP habitat mapping. Within these priority areas, habitat should be protected, regardless of whether it occurs inside or outside the Urban Footprint.

Consequently, the identification of priority areas for koalas should be used as a strategic approach to the protection of koala habitat that coordinates with other activities. However, given the critical importance of rural koala populations to the long-term persistence of koalas in SEQ, habitat outside of the Urban Footprint, more broadly, should also be protected. Finally, the Panel recognise the difficulty of protecting all koala habitat inside the Urban Footprint, given the overall development trajectory for SEQ. But the Panel recommends that the clearing of koala habitat must still be avoided in the Urban Footprint wherever possible, with any residual impact offset. Overall, these recommendations would expand the areas where State regulation of koala habitat applies and strengthen protection of habitat values across SEQ, but particularly in identified priority areas.

A broad range of exemptions, often based around vegetation clearing triggers, were also identified as an issue for the effective protection of koala habitat. In many of these cases, the policy justification for the exemptions are not always clear. Reducing the number exemptions is therefore likely to be critical for improving the protection of koala habitat. In particular, the scientific, or policy, justification for the 5 ha exemption is unclear and should be revisited if the State wishes to preserve koala habitat; the cumulative adverse impact of multiple 5 ha lots being exempt from assessment, regardless of their ecological attributes or their location, is likely to have a significant impact on koala habitat and the long-term persistence of koalas in SEQ. Substantially reducing the size of this threshold, or adoption of a graded approach that depends on the location of a particular parcel of land and on the type of koala habitat located there, would improve the protection of koala habitat across SEQ and is recommended by the Panel. The Panel further recommends that self-assessment is not permitted, given the potential for clearing to increase rapidly if this were the case.

Significant issues related to biodiversity offsets for koala habitat were also raised with the Panel during the consultation. Offsets are only required under Queensland State legislation where there is a requirement for a relevant approval, and there is a significant residual impact on the relevant environment matter. Because there are many exemptions related to vegetation clearing, in many cases no development approval is required and hence no offsets are required. Therefore, expanding the cases when development assessments are required will increase the provision of offsets for residual impacts. However, given the Panel's recommendation that habitat should not be cleared outside the Urban Footprint, or in identified priority areas, offsets should only apply for development impacts in areas inside the Urban Footprint that are outside priority areas for koalas.

Strategies beyond the planning framework

Regulatory protection of habitat plays a significant role, but the Panel also believe that communication, engagement and incentive mechanisms also play an important role in enhancing the protection of habitat (see also Recommendation 3 for recommendations on incentives for habitat restoration and Recommendation 5 for recommendations more broadly on engagement and partnerships). This is consistent with the Panel's overarching view that engagement and partnerships need to be enhanced, and are critical to ensure the long-term protection of koalas in SEQ. The panel therefore also recommends the consideration and resourcing of models for the protection of habitat through incentives and partnerships.

3. Strategic and Landscape-scale Koala Habitat Restoration

3.1 Recommendation

Develop and adequately resource regulatory, incentive and partnership mechanisms to achieve strategic koala habitat restoration at landscape scales in SEQ, particularly in identified priority areas.

3.2 Recommended actions

a. Resource greater investment in koala habitat restoration, focused primarily in identified priority areas for koalas (see Recommendation 1) through:
   i) investigating, implementing and resourcing targeted incentive mechanisms for koala habitat restoration on private land
   ii) enhancing partnerships between State Government, local governments, natural resource managers (e.g., Healthy Land and Water), NGOs, and the community to support koala habitat restoration
   iii) dedicated extension officers within local government with primary roles to identify koala habitat restoration opportunities and to facilitate engagement with landholders (see also Recommendation 5)
   iv) development of partnerships with NGOs to implement targeted acquisitions (including using financial offsets) and covenanting programs that also facilitates koala habitat restoration programs
   v) identification of priorities for koala habitat restoration on state lands and implementation of restoration directly on these lands, with a mechanism for long-term protection.

b. Review and modify the Offsets Policy and associated regulation to achieve the following:
   i) strategic prioritisation of sites for koala offsets that will provide the greatest long-term benefits to koalas, consistent with the overall strategic approach to koala conservation (Recommendation 1). This would include identifying priority locations for offsets consistent with Recommendation 1 and the possibility of offsetting outside of the LGA where the impact occurred when essential to address regional priorities. This could be implemented using the strategic offset investment corridor mechanism which exists under the Offsets Act and could also occur as part of the proposed strategic assessment for SEQ under the EPBC Act (Queensland Government 2017), if this is undertaken in a timely fashion
   ii) permit and facilitate advanced offsets to be established in strategic priority areas and provide landowners and developers certainty that these offsets will be able to be used in the designated situations
   iii) the process of developing offsets should be transparent and cost-effective, with as few administrative steps, and as much certainty for all stakeholders as possible. Feedback from consultation indicated that the current process, involving a series of plans and agreements, after a condition is imposed, generally without set timeframes, is not well understood
   iv) identify how the provision of financial offsets could be improved to provide the State Government with a mechanism to achieve more strategic offset outcomes for koalas, given limited uptake of financial offsets for koalas to date. For example, the State should re-examine the current financial calculator to ensure that perverse outcomes in SEQ due to high financial contributions do not occur. The State should also reconsider the process considered in 2016 of being able to accept Commonwealth financial contributions, and being able to apply these to the delivery of State-arranged offsets to allow a more strategic outcome
   v) resource a mechanism for improved transparency, enforcement and monitoring of offsets, including meeting timeframes for offset benefits. The State should consider whether working with NGOs should be investigated further in order to relieve pressure on scarce State resources, and to encourage the development of creative alternative offset delivery solutions. Acquisition of land by the State alone is unlikely to be a long-term cost-effective mechanism for delivery of offsets
   vi) Ensure that the State Government and local governments communicate clearly in regards to koala offset delivery and each contribute to a regional database and linked mapping to record priority areas for koala offset delivery, approved offset delivery sites, progress of offset delivery, and offset monitoring outcomes.

3.3 Justification and Explanation

Much of the feedback the Panel received through the consultation process focussed on the issue of habitat loss, but the Panel believes that habitat restoration is a critical management activity for the recovery of koala populations. Given the rapid declines in koala populations in SEQ in over the past 20 years there must be a focus on koala population recovery, as well as protection. The restoration of habitat will need to be a key component of any successful koala recovery strategy and will be most effective at landscape scales.

The case for habitat restoration

Koalas are unique in many ways for a threatened species because the success rate for the restoration of habitat is relatively high. There is also evidence that koalas can use planted habitat trees as young as six years old (Kavanagh and Stanton 2012, Rhind et al. 2014) which limits the time lag between restoration activities and benefits to koalas. There is also evidence that, when habitat restoration occurs at scale across broad landscapes this can successfully lead to increases in koala populations over time, e.g., in Gunnedah, NSW (Lunney et al. 2012). This suggests that there are excellent opportunities for successful habitat restoration. But, to be successful, restoration has to occur at a scale that results in restoration of habitat across broad landscapes. It also relies on restoration being conducted in association with other activities such as habitat protection, threat reduction, and community partnerships. Failing to coordinate restoration with these other activities, especially threat reduction, risks costly restoration activities having little benefits for koalas. The participants in the Panel's consultation emphasised the importance of incentivising restoration (Koala Expert Panel 2017), but the expert elicitation suggested a view that it was unlikely that the extent of restoration could compensate entirely for ongoing losses of habitat. Nonetheless, the Panel's view is that habitat restoration must form a central pillar for achieving recovery of koala populations in SEQ, in combination with improved protection of habitat. The Panel has identified two main mechanisms by which restoration at landscape scales could be achieved. One is direct investment in restoration programs and the other is through the Offsets Policy.

A holistic approach to achieving restoration outcomes

Central to the State Government's koala habitat restoration activities has been their Koala Habitat Program that focussed around acquisitions of properties. One of the issues with this approach that the Panel identified is that it has been relatively expensive ($18.1 million) and has only resulted in 270 ha being in the process of being restored (Koala Expert Panel 2017). Although the Koala Refuges Program was also supposed to contribute to the restoration of habitat and 67 Koala Refuges were declared, with a total area of 11,000 ha, it is not clear to what extent this has contributed to the restoration of habitat. Given the size of SEQ and that the known areas restored under these programs is dwarfed by the rate of habitat loss, it is unlikely that this has had a major impact on the regional persistence of koalas. Although the Panel sees the benefits of acquisition programs, they believe that a broader, more holistic approach that also incorporates incentive mechanisms and partners with organisations (and individuals) who can deliver habitat restoration solutions is likely to be much more cost effective at achieving effective restoration at landscape scales (Tisdell et al. 2017). A critical aspect of this will need to be engagement with local governments and the community in developing restoration activities and the Panel identified that dedicated extension officers to achieve this would be of substantial benefit. Another solution that was raised repeatedly during our consultation was the use of state-owned lands to target restoration activities. The Panel agree that this could be a cost effective way of achieving broad-scale restoration outcomes provided restored habitat has long-term protection on those lands. The Panel recognise that these activities will require substantial State Government investment to be successful, but there are well established and cost effective methods and technologies to restore tree species across broad areas.

Solutions through offsets

In general, offsets have been widely criticised for failing to adequately compensate for development impacts through a number of pathways (Maron et al. 2010, Bull et al. 2013, Maron et al. 2015). During the Panel's consultation, the Offsets Policy was similarly heavily criticised. Many of the issues raised related to the Planning Regulation in determining when an offset is required (such as issues with the large number of exemptions that limit the requirement for offsets and the limited number of areas where State offsets apply for koalas – See Recommendation 2 for a consideration of this), but many also focussed on the delivery of offsets. These issues included: (1) the lack of strategic delivery of offsets, leading to offsets in locations that have limited benefit for koalas, (2) problems with financial offsets, such as the high cost of financial offsets, potentially leading to perverse behaviour where developers use other exemptions or strategies to avoid the requirement for offsetting, and (3) the lack of enforcement and monitoring of offsets (Koala Expert Panel 2017). Despite these limitations, the Panel believe the Offsets Policy does have an important role to play in achieving habitat restoration targets, particularly since the Offsets Policy specifically requires offsets based on restoration of habitat.

In general, the Panel recommends that a more strategic region-wide approach to offsets is required with priority offset sites focussed around identified priority areas for koalas (Recommendation 1) and integrated into the proposed Strategic Assessment when that occurs (Queensland Government 2017). This could involve allowing offsets outside of the LGA where the impact has occurred when this is strategically advantageous to maximise benefits to koalas. Advanced offsets and improving some of the issues with financial offsets would also provide a mechanism for more strategic application of the Offsets Policy. Implementation of a mechanism and resourcing for better monitoring and enforcing offsets also appears crucial, recognising that resourcing requirements may be different in different LGAs.

4. Coordinated Threat Reduction and Koala Population Management

4.1 Recommendation

Resource and implement a new coordinated threat reduction and koala population management strategy that complements habitat protection and restoration activities, particularly in identified priority areas.

4.2 Recommended actions

a. Undertake a threat assessment across SEQ to quantify and map threats to koalas from habitat loss, vehicle collisions, dog attacks (domestic and wild dogs), disease, fire, and climate change.

b. Identify priority locations for investment in reducing existing and future threats from vehicle collisions, dog attacks (domestic and wild dogs), disease, and fire that consider:
   i) whether reductions in each threat are necessary and feasible to recover declining koala populations in each location
   ii) that threat reduction measures must complement other measures to protect and restore koala habitat and to minimise opportunities for threats to increase in the future.

c. Resource a targeted and transparent threat reduction program across SEQ, in partnership with local governments, particularly in identified priority areas for koalas, NGOs, industry, and the community using a range of initiatives, including the following:
   i) retrofitting of existing roads and railroads and education programs to reduce koala mortalities
   ii) predator control programs for wild dogs where they are identified to pose a significant threat to koalas
   iii) local laws and incentive programs for reducing threats from domestic dogs
   iv) koala-specific fire management planning and liaison with rural fire authorities, and State land managers
   v) direct disease management, where it is feasible to do so, and where strategic conservation goals are met
   vi) identify priorities for threat reduction and population management in koala habitat populations on State lands, and the establishment of koala habitat and populations as key values with mechanisms for long-term protection
   vii) coordination with koala hospitals and carers to help standardise record keeping and reporting, share advances in treatment protocols and provide support as required
   viii) investment in research and innovation into potential technological solutions (e.g., virtual fencing)
   ix) communication and engagement strategies.

d. Review and develop a new koala translocation policy (currently in the State Koala Conservation Plan), so that it:
   i) is consistent with best-practice international IUCN guidelines
   ii) enables regulated translocation to be used as a component of the management of at-risk koalas where this is considered to be beneficial for koalas both on animal welfare and conservation grounds
   iii) ensures translocation cannot be considered during the development assessment process as an 'alternative' to in-situ habitat and population protection
   iv) enables regulated translocation to be considered as a strategic tool for koala population management, re-introductions, and genetic management
   v) ensures a thorough risk assessment pre-translocation (including consideration of relevant genetic, phenotypic, habitat quality, configuration and security, ethical, threat mitigation, and potential disease transmission issues) and comprehensive post-translocation monitoring.

e. Review policy on release of rehabilitated koalas (currently in the State Koala Conservation Plan) to consider allowing release more than 5km from the capture site when ongoing threats to the individual in the vicinity of the capture site remain high.

f. Identify where there is empty habitat in SEQ and consider the reintroduction of koalas to these areas, provided:
   i) there is good evidence that koalas occurred in the area historically
   ii) threats that may have led to the disappearance of koalas from the area have been mitigated
   iii) these areas complement other measures to protect and restore koala habitat, particularly in locations identified as priority areas for koalas.

g. Integrate zoo-based koala populations more explicitly into the management of wild koala populations in SEQ, particularly in urban areas, through:
   i) recognition that some zoo populations may provide a valuable reservoir for future potential re-introductions
   ii) supporting the on-going maintenance of studbook records for all koalas held in zoos and wildlife parks in Queensland
   iii) engaging zoos, where appropriate, in the management of wild koala populations, drawing on their knowledge and expertise in captive breeding and reintroduction.

4.3 Justification and Explanation

The need to better protect koala habitat is critical and was widely acknowledged during the consultation process. However, threats that directly affect koalas such as dog attacks, vehicle collisions, and disease that drive down koala populations are equally critical, particularly in urban areas. The Panel's review of existing policy measures suggests that there has been a focus almost exclusively by the State Government on habitat protection potentially at the expense of a clear and well-resources strategy to tackle direct threats. The Panel therefore recommends that a greater emphasis needs to be placed on tackling direct threats and that this should be complemented by population management strategies that consider regulated reintroductions, translocation and captive breeding programs as components of an integrated strategy.

Tackling complex threatening processes

The Panel's review, consultation, and expert elicitation revealed three important challenges for reducing the threats impacting directly on koala populations. These are: (1) that most koala populations are affected by multiple threatening processes thus require multiple threatening process to be tackled, (2) that there is considerable spatial variation in threatening process across SEQ, and (3) the difficulty of effectively implementing strategies to reduce threats. There is compelling evidence that koalas in SEQ are simultaneously affected by multiple threats that include dog attack mortality, vehicle collision mortality, disease, fire and climate change. This is especially true in urban areas where the number of threats are higher than in rural areas and tacking single threats is unlikely to be successful in recovering koala populations. This is supported by research evidence (Rhodes et al. 2011) and the results of the expert elicitation (Figure 2). Consequently threat mitigation strategies must be coordinated so that multiple threatening processes are tackled in areas where they are needed. However, since the presence of individual threats vary substantially across SEQ, this needs to be underpinned by a comprehensive threat mapping process. Finally, the expert elicitation revealed a view that the chance of implementing successful strategies to reduce dog attack mortality, vehicle collision mortality or disease threats within 5 years was well below 50%. This reflects key social limitations for implementing some strategies such as domestic dog control (Ng et al. 2014), the high cost of successfully managing multiple threats in urban landscapes (e.g., the Moreton Bay Rail Link Project successfully reversed the decline in the local koala population, but was economically very costly), and logistical or technological constraints, such as those related to developing and deploying a chlamydia vaccine for koalas in the wild (Khan et al. 2014). The Panel believe that addressing these issues requires a targeted approach for threat management that is underpinned by high quality threat mapping, but also recognises the logistical, social and economic constraints on threat mitigation. These constraints could be minimised by developing effective partnership with local governments, industry, NGOs and the community and investing in the exploration of technological solutions where feasible.

Population management for koala recovery

Broadly speaking, the NC Act, through the State Koala Conservation Plan, regulates the direct management of individual koalas, including translocation and rehabilitation of koalas. The regulation of translocation and, to some extent the release of koalas after rehabilitation, have been widely criticised (e.g., http://www.koalahealthhub.org.au/position-statements) and were also raised during the consultation. Some of the major issues include concerns around the inability to use translocation to minimise the risk to koalas from processes such as habitat clearing and the risk to koalas after rehabilitation when released near their capture sites only to be subjected to the same high threat levels. Given these issues, the Panel recommend that the policy on translocations and release be reviewed with the aim of following best practice and modifying the policy to permit population management that aims to minimise threats to koalas from habitat loss and other threats. Translocation could also be used as a tool to reintroduce koalas to currently empty habitat where feasible and where threats have been removed. The Panel recommends that this be explored as a strategy. Finally, zoos have a long history of developing expertise in the management and maintenance of captive bred populations that can contribute to the management of wild populations. In particular, the zoo-based koala populations could support the management of fragmented urban and peri-urban koala populations and reintroductions of koalas and are largely an untapped resource. The Panel therefore recommend integration of zoo-based populations into the population management of koalas, especially in urban and peri-urban areas.

5. Strong Community Partnerships and Engagement

5.1 Recommendation

Develop and implement a strategy for partnership development and engagement with the broader community, utilising an approach that is sensitive to the nature and views of local communities.

5.2 Recommended actions

a. Recognise and properly engage with Traditional Owner communities in recognition that Indigenous rangers could play a major part in data collection and management and to achieve:
   i) mobilisation of the support and knowledge that Traditional Owners within communities can offer for the conservation of the koala
   ii) removal of the current obstacles, increased efficiencies, and maximisation of the chances of success within Indigenous Protected Areas (IPAs), Indigenous Ranger programs and Working on Country programs
   iii) the formal acknowledgement of the cultural and spiritual significance of the koala to Traditional Owners and their engagement as partners in koala conservation programs.

b. Engage regional extension officers, drawn from local communities, to work within local governments or catchment groups. The role of the extension officers would be to keep open communication channels between the State Government and local communities as well as identify opportunities and facilitate partnerships.

c. Enhance partnerships to deliver state-wide community engagement campaigns that provide consistent clear messaging, community action, and the potential for citizen science.

d. Enable knowledge exchange through a multi-faceted communication/extension strategy that includes workshops, conferences, local media (radio and newspapers), and rural community contacts.

e. Encourage active community participation through citizen science and field activities.

5.3 Justification and Explanation

The Panel received overwhelming interest from the broader community to contribute to the conservation of koalas in SEQ by providing their views and advice to the Panel during the consultation. What was very clear is that there is strong support for finding a solution to the conservation of koalas in SEQ. There is therefore a considerable imperative for the State Government to work to develop partnerships with the broader community to achieve koala conservation goals jointly. The Panel believes this is both necessary for achieving long-term koala conservation success and for enhancing the coordination of koala conservation initiatives. Although the State has previously developed some engagement and partnership programs (e.g., the Koala Nature Refuges program) the Panel recommends that it should be enhanced and form a central component of their koala conservation strategy to include much greater recognition of the role of First Australians, improved engagement through extension officers, and greater opportunities for two-way communication and citizen science. Communication, engagement and partnerships at the institutional level (e.g., local governments, NGOs, and industry) is equally important and the Panel's recommendation for a Koala Advisory Council (see Recommendation 1) is designed to facilitate this.

Recognition of First Australians' role

First Australians have had no formal acknowledgement of the cultural and spiritual significance of the koala to Traditional Owners, nor have they been fully engaged as partners in the conservation of the species. The Panel therefore recommends that the cultural significance of the koala is acknowledged and, where possible, koalas be managed jointly with Traditional Owners. The Panel envisage a future in which the koala and its cultural significance are valued and embraced by all Australians. In partnership with Traditional Owners, enhanced frameworks to support and secure viable and self-sustaining wild populations will be possible.

A model for effective community engagement and partnerships

Queensland's population is highly urbanised and that trend is increasing. This has resulted in well recognised cultural differences between the urban public and rural and regional landholders. It is the experience of some Panel members that rural producers and private land managers are resistant to messages delivered by city-based government officers, and that misunderstandings are common. In contrast, the use of officers derived from the local community, or the industry sector, provides a basis for the establishment of relationships, the acceptance of messages and development of partnerships. The old Department of Primary Industries extension officers were a good model for this. The Panel therefore recommend that extension officers be engaged to fulfil this role and be allowed to develop new mechanisms for the State Government to partner with local communities.

Enhanced two-way communication

It was clear to the Panel from the consultation process that the community desired to be engaged, and that elements of the current engagement were based on limited knowledge of strategic goals or realistic outcomes. This suggests that one element of improved communication needs to be more effective and accurate education and knowledge dissemination of the goals of koala conservation initiatives and pathways for community engagement. This will greatly improve transparency and contribute to long-term conservation outcomes and could be achieved through working with communication experts (including zoos that have a wide range of communication expertise) to develop a coherent communication strategy. However, communication the other way (from communities to State Government) is equally important and the Panel recommend the development of two-way knowledge exchange strategies.

6. Targeted Mapping, Monitoring, Research, and Reporting

6.1 Recommendation

Develop targeted and high quality koala habitat mapping, threat mapping, monitoring and research programs that aim to: (1) identify key koala ecological values and threats, (2) measure changes in koala ecological values and threats over time, as well as understand the drivers of those changes, (3) inform policy and management decision-making, and (4) communicates trends and outcomes transparently and publically to enhance engagement.

6.2 Recommended actions

a. Develop consistent mapping of koala habitat across SEQ at a fine resolution that addresses the problems of the previous mapping and implements a systematic mechanism for updating this mapping to improve accuracy and track changes in koala habitat over time. This should consist of:
   i) finalising the new EHP mapping that the Panel fully supports, and has provided advice on. This will map core and non-core koala habitat across remnant vegetation, regrowth vegetation and scattered trees that reflect the key ecological koala habitat values across SEQ
   ii) applying the habitat map to develop trigger mapping for development applications and identify priority areas for koalas across SEQ based on the recommendations in this report (see Recommendations 1 and 2)
   iii) implementing a mechanism for updating this mapping over time to improve accuracy and track changes in koala habitat over time (both losses and gains)
   iv) every two years, publically reporting on changes in koala habitat over time, relative to conservation targets, in an easily accessible format.

b. Develop: (a) broad-scale assessment tools to measure the extent and condition of koala habitat, and (b) ground-based rapid habitat assessment tools that can be integrated to provide statistics on trends and metrics on condition of koala habitat across SEQ.

c. Develop a consistent approach to mapping threats to koalas across SEQ and implement a systematic mechanism for updating this mapping to track changes in threats over time. This should:
   i) use existing spatial data sets that represent proxies, or direct measures, of threats such as urban development, land clearing, dog attacks, vehicle collisions, fire management, climate change, disease, and reductions in genetic diversity
   ii) where necessary, collect additional spatial data on the distribution of threats for which limited data currently exist, such as wild dog attacks, disease and genetic diversity
   iii) Apply the threat mapping to guide the selection of priority actions for threat reduction and koala recovery actions across SEQ (see Recommendation 4).
   iv) Implement a mechanism for updating this mapping over time to track changes in the level and composition of threats.

d. Develop a comprehensive koala monitoring program that explicitly evaluates and communicates progress towards koala conservation targets and evaluates policy and management success. This should include:
   i) every two years, monitoring koala densities at 10-20 sentinel sites located across SEQ that are representative of koala populations in rural and urban landscapes and publically reporting trends in these densities, relative to conservation targets, in an easy to interpret report card every two years
   ii) in identified priority areas for koalas (see Recommendation 1), developing monitoring programs that are specifically designed to evaluate, in terms of outcomes for koalas, the effectiveness of management interventions to reduce threats to koalas. Report publically on the outcome of this evaluation every five years
   iii) implementing a citizen science program that uses modern technology (e.g., data recording apps) to improve the recording of koala sightings by the public and engagement in koala issues (also see Recommendation 5)
   iv) developing a single repository to integrate monitoring data with data from other sources, such as local government monitoring programs, and make this publically available
   v) working in partnership with local governments to develop standard approaches to koala monitoring that would facilitate the integration of monitoring data collected by the State and local governments.

e. Implement a mechanism (e.g., workshops, synthesis and evaluation) for review of the outcomes of the mapping, monitoring and evaluation by the Koala Advisory Council every five years and for the Koala Advisory Council to make recommendations on the revision of policy and management that arise from this review. This should follow the principles of adaptive management.

f. Incentivise multi-disciplinary research that explicitly addresses key management and policy priorities and the development of partnerships between researchers, the State Government and other end-users.

g. Explore mechanisms to enhance the cost effectiveness of koala research through targeted leveraging of funding (e.g., through Australian Research Centre Linkage Projects and other Commonwealth funding opportunities such as Cooperative Research Centre).

h. Run a koala conference every five years that brings together researchers (across a broad range of disciplines), policy makers and planners from across different levels of government, NGOs, industry, and the community from across Queensland. The aim of this conference would be to:
   i) open communication channels among different stakeholders and provide a forum for discussing the latest issues for conserving koalas and latest research that has practical relevance for informing policy, management and planning
   ii) provide a synthesis on the outcomes of the conference to the Koala Advisory Council
   iii) enhance engagement between governments and the community in the broadest sense and enhance the profile of koalas in Queensland.

6.3 Justification and Explanation

Appropriate and reliable information to support policy and management decisions and implementation, and to underpin planning regulation for koalas is essential. Three areas that form the basis of primary information requirements are habitat and threat mapping, monitoring and evaluation, and research. The Panel undertook a review of existing Queensland Government mapping and monitoring programs for koalas and considered the views expressed through the consultation process on mapping and monitoring. The Panel also made recommendations to the State Government on the mapping being undertaken by EHP for SEQ, the design of a revised koala monitoring program, and key research priorities. Initial recommendations on each of these were presented in the Interim Report (Koala Expert Panel 2017). Excellent progress has been made by EHP in improving the mapping of habitat, but improvements and greater resourcing of monitoring is still needed. A critical additional element is ensuring that there is a mechanism in place for updating policy based on the outcomes of monitoring and research.

Progress on mapping koala habitat

Problems with habitat mapping was one of the most prominent issues raised during the consultation process (Koala Expert Panel 2017). Under Recommendation 2 we outline the issues raised with the current mapping.

At the time of writing this report the State Government was finalising koala habitat mapping for SEQ, to address the key issues with the current mapping (see Recommendation 2 for details). The Panel are supportive of this ecological mapping and believe it is an improvement over existing mapping, subject to satisfactory validation. However, it is essential that this mapping is updated over time to improve accuracy and to track trends in koala habitat (both losses and gains).

Threat mapping to inform threat management

Although consultation comments rarely mentioned the lack of information on threats, the Panel believe that information on threats is critical to being able to identify the most appropriate responses to recover koala populations. One way to do this is to map threats spatially (Evans et al. 2011), but information such as this is entirely absent for koalas in SEQ at present. Therefore, the Panel believes that the spatial mapping of threats that can then be used to identify recovery actions is a priority.

Comprehensive monitoring

The Queensland Government has had in place a koala monitoring program for SEQ since 1996 (Rhodes et al. 2015). This is probably one of the best long-term monitoring programs for koalas anywhere in Australia, and has been instrumental in identifying the rapid declines in koalas in SEQ. However, the monitoring program was originally designed to track changes on koala abundance in only one or two locations (primarily in the Koala Coast and Pine Rivers areas) and was not designed to understand the drivers of trends, or to evaluate policy impacts. This has severely limited the ability to use the monitoring data to understand why declines are happening (although that is clear from other ancillary information), to evaluate the effectiveness of specific management and policy interventions, and to assess progress towards policy objectives. There has also been no monitoring of changes in habitat to evaluate progress towards habitat retention targets. There is therefore a clear need for a revised monitoring and evaluation program that: (1) explicitly tracks progress towards habitat and koala population targets, (2) evaluates the effectiveness of policy and management, (3) communicates outcomes to the community and stakeholders and engages the community in koala issues, and (4) has an explicit mechanism for the monitoring results to feed back into management and policy decision-making processes. A significant further issue that was identified during the consultation was that there is a lack of integration of monitoring data from different sources, such as from the State Government, local governments, community groups, etc., and this was leading to ineffective use of data. An effective mechanism to ensure integration of monitoring data would therefore be highly beneficial.

Policy relevant research outcomes

The Queensland Government has implemented a number of research funding schemes for koalas in the past 10 years and, in fact, has invested over $4 million in koala research over this time through three grant funding schemes. Although these have funded many interesting research projects, the benefits and links to improved management have often been unclear based on the Panel's review. The Panel believes that koala research funded by the Queensland Government should target research that has a more direct benefit to policy and management decision-making, although recognising these priorities will change through time. There is therefore a need to encourage research that is directly linked to policy decisions and to incentivise multi-disciplinary partnerships between researchers and end users. The Panel also believes that there are opportunities to leverage funding from sources such as the Australian Research Council and other Commonwealth funding schemes that could be utilised to increase the cost-efficiency of State Government funded research. The Panel's consultation also revealed that often koala research was not well coordinated and therefore there is a need to incentivise greater strategic coordination of research activities and data to address key policy questions.



Recommendations for the Rest of Queensland

In addition to making recommendations for SEQ, the Panel were asked to provide recommendations on the directions that policy should consider more broadly for Queensland.

In general the Panel believes that the models underpinning the recommendations for SEQ should be capable of being extended to other parts of Queensland, as required. In the first instance, it is recommended that the SEQ koala mapping, planning and regulations be expanded to encompass the LGAs of Gladstone, Bundaberg, Fraser Coast, Gympie, North Burnett, and South Burnett, given that these LGAs are experiencing similar development pressures to those within the SEQ Planning Region and the need for protection of existing koala populations that are under threat. For example, communities in the northern part of the SEQ bioregion report significant koala/habitat impacts already taking place and conservation opportunities will be significantly reduced if conservation measures are not initiated in the near future. LGAs in this region are experiencing the same threatening processes found within the SEQ Planning Region and concern is rising within local community groups.

More broadly, for the remaining extent of the koala's distribution in Queensland, it is recommended that the State should focus investment on consolidation of existing koala populations and recovery at a landscape scale. A key approach should be based around the Panel's recommendations for SEQ that apply to rural koala populations. However, there are some significant hurdles that need to be addressed, and it is further recommended that:

a. regional studies are undertaken to fill knowledge gaps around koala distribution, abundance, habitat utilisation and environmental drivers of population dynamics, especially in the far north
b. state-wide planning and habitat mapping are undertaken to identify ecological values and land use conflicts and to guide sustainable investment in koala/habitat conservation
c. a strategy for community engagement and extension is developed and implemented at a regional level to address local cultural needs.

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Appendix 1—Koala Expert Panel Membership

The Koala Expert Panel consists of:

Associate Professor Jonathan Rhodes, School of Earth and Environmental Sciences, Centre for Biodiversity and Conservation Science, and ARC Centre of Excellence for Environmental Decisions, The University of Queensland

Jonathan is a conservation scientist with a broad range of interests in biodiversity conservation and environmental decision-making. He leads a diverse research group that aims to inform better decision-making to conserve biodiversity and achieve environmental sustainability. His work integrates ideas from ecology, economics and social science to address these challenges. Over the past 15 years Jonathan's work has particularly provided important insights into the conservation requirements of the koala.

Ms Antra Hood, Partner, MinterEllison

Antra specialises in planning and environment law with a focus on strategic infrastructure development projects, greenfield property development projects and large scale asset acquisitions and disposals. Antra has worked on many of Queensland's landmark property developments and strategic transactions, from the development of large residential estates and infrastructure to urban renewal projects and the sale of significant State assets. Antra has a particular interest in biodiversity offsets and has worked with many different stakeholders in this space, ranging from government, to charitable offset providers, aggregators and property developers in the development of both policy and practical solutions, giving her broad ranging practical experience and perspective. Prior to joining MinterEllison's team, Antra was the General Counsel and Company Secretary for Springfield Land Corporation, the developer of Australia's largest master planned community.

Dr Alistair Melzer, Koala Research Centre of Central Queensland, Central Queensland University

Dr Alistair Melzer is an ecologist who has studied koalas, primarily in Queensland, since 1988. His work on the ecology of koalas (ranging behaviour, habitat selection, morphological variation, effects of climate) and their conservation, especially in remote and regional Queensland, has resulted in requests from Commonwealth, State and local governments, for expert advice on koala management and conservation. Dr Melzer also works with local communities and industry. His work in Central Queensland has been made possible through strong local and international community support. In conjunction with colleagues, Dr Melzer has maintained long term programs that are continuing after 20 years of monitoring.

Mr Al Mucci, General Manager/Director, Dreamworld Wildlife Foundation

Al is a professional wildlife manager with expert knowledge in the husbandry of koalas and has been in the zoological industry for 18 years. Al has broad based experience with a wide variety of animals which has included senior positions in non-government organisations, private and public institutions. Al is President of the Zoo and Aquarium Association, Queensland Branch and Director of the Dreamworld Wildlife Foundation. He is an invited member of the Biosecurity Queensland Ministerial Advisory Council. He has a professional interest in the conservation of koala populations and in the presentation of the species as an iconic ambassador for the conservation of Australian native wildlife and habitats.



Appendix 2—Terms of Reference

Terms of Reference - Koala Expert Panel

Intent

To provide recommendations to the Queensland Government that will inform a strategy for the protection of the vulnerable koala in south east Queensland.

Purpose of the Koala Expert Panel

To provide expert advice on the most appropriate and realistic actions to reverse the decline in koala population sizes and ensure the long-term persistence of koala populations in the wild within South East Queensland[1]. This will include consideration of:

- Existing approaches to understand where policy and management has failed to deliver on koala protection.
- Regulation and planning instruments, and other protection measures.
- Management actions required to reduce threats.
- Monitoring and research actions such as population surveying, mapping and modelling of habitat, and research into preventable causes of death, and rescue and rehabilitation services.
- Policies, such as translocation policies.

The panel will also provide advice on the design and desirability of the immediate actions proposed by the Department of Environment and Heritage Protection (EHP).

Expected commitment from the panel

It is expected that the panel will:

- Review the success, or otherwise, of existing approaches to koala management.
- Provide feedback on the immediate actions proposed by EHP such as surveying and monitoring and the establishment of two supported koala precincts in coastal South East Queensland. Details are included in attachment 1.
- Provide direction to EHP on the collation of existing research to inform recommendations.
- Liaise with other experts to inform the recommendations.
- Oversee, and undertake as appropriate, consultation with key stakeholders including local governments, conservation groups and industry to inform recommendations.
- Report back to the participants of the 4 July workshop for input.
- Meet fortnightly and provide updates to EHP at these meetings. The purpose of these meetings will be to ensure regular communication among panel members and that deliverables align with EHP requirements.
- Oversee the preparation of and approval of the draft and final reports.

Timeframes

Deliverable	Timeframe (from date of finalising ToR)*
Provide feedback on immediate actions	1 month
Conduct consultation	3 months
Overview of consultation results (prepared by EHP and endorsed by the panel)	4 months
Reconvene the 4 July workshop (if necessary)	4 months
Interim report	4 months
Final report	12 months

* The ToR was finalised on 29 August 2016.

Deliverables

- Fortnightly updates on progress, including the ability for EHP to provide feedback to ensure the final deliverables meet requirements.
- Interim report.
- Final report.

The interim report should contain:

Identification of where current policy and management have failed, outcomes from the consultation, and direction/areas of work for the following 6 months.

The final report should contain:

Recommendations on the most appropriate and realistic actions to reverse the decline in koala population sizes and ensure the long-term persistence of koala populations in the wild within south east Queensland, including:

- Specific recommendations for koala policy and management in south east Queensland.
- Evaluation of the potential options and risk assessment.
- How the recommendations and expected outcomes can be evaluated over time.
- Analysis of data compilation and consultation.
- Future direction for research, monitoring and evaluation needed to support an adaptive management framework for koala conservation in south east Queensland.
- Outline of direction koala policy should consider more broadly across Queensland.

1 Here "South East Queensland" refers to the region represented by the SEQRP and includes the following local government areas: Brisbane City Council, City of Gold Coast Council, Ipswich City Council, Lockyer Valley Regional Council, Logan City Council, Moreton Bay Regional Council, Noosa Shire Council, Redland City Council, Scenic Rim Council, Somerset Regional Council Sunshine Coast Council and Toowoomba Regional Council (part only).

Membership

The membership of the group is:

Chair:

- Dr Jonathan Rhodes, Associate Professor, Centre for Biodiversity and Conservation Science and the School of Geography, Planning and Environmental Management, The University of Queensland

Panel Members:

- Dr Alistair Melzer, Koala Research Centre of Central Queensland, Central Queensland University
- Mr Al Mucci, General Manager/Director, Dreamworld Wildlife Foundation
- Ms Antra Hood, Lawyer, Minter Ellison

Role of the Chair

- Primary contact and liaison between the Panel and EHP;
- Primary contact for media enquiries, with support from EHP;
- Convenor, facilitator and spokesperson for the panel;
- Organise the distribution of work to the panel, including utilising appropriate expertise and experience for particular components and consultation; and
- Resolve any conflicts of opinion.

Roles and responsibilities

The panel will commit to:

- Providing evidence-based and unbiased advice;
- Making timely decisions and provision of advice; and
- Notifying the Secretariat, as soon as practical, if any matter arises which may be deemed to affect membership.

The Department of Environment and Heritage Protection will:

- Provide secretariat support;
- Provide supporting information, such as access to data;
- Provide contact details and support for consultation, including liaison and organising meetings as required and assisting in the preparation of questions that will inform the consultation process;
- Provide a summary of consultation results that can be used by the panel for analysis;
- Reconvene participants from the 4 July workshop, if necessary;
- Collate and summarise existing research, to address specific components as identified by the panel;
- Provide support for drafting reports; and
- Collate discussions and prepare recommendations for approval by Government.

Other matters

Amendment, modification or variation

This Terms of Reference may be amended, varied or modified in writing after consultation and agreement by the panel members.

Communication Protocols

Responses to media and other information requests will be the responsibility of the chair.

Confidentiality

Members are to maintain confidentiality on the content of discussions for the duration of the term.

Conflicts of interest

Committee members will be required to declare conflicts of interest. It is recognised that members are involved in various projects on koala conservation, conflicts of interest would only need to be declared in the member is likely to gain financial advantage from their membership.

Remuneration

The Queensland Government will pay for all out of pocket expenses, including travel and accommodation.

Term

The group will initially be convened for 12 months.

Attachment 1

Immediate Actions

Survey program overview

Under the oversight of the Koala Expert Panel, Dr Julia Playford (EHP) will develop a methodology for the on-going survey and monitoring of koala populations using expert knowledge. This will include a clear articulation of what the monitoring and survey is expected to achieve to allow for the on-going assessment of koala population trends.

Issues to be considered include new technology, capacity for spatial and temporal replication across south east Queensland and across the range of koalas in Queensland, capacity for data analysis and the use of incidental data records and citizen science.

Create two supported refuges within the SEQ urban footprint

It is proposed to develop two supported urban refuges; one in Daisy Hill and a second north of Brisbane; to invest focused effort on the survival of the koalas and their habitat within these refuges.

The focused effort would include management activities for the resident koalas and habitat consisting of:

- implementing threat mitigation measures, such as strategic exclusion fencing, wild dog baiting, vaccination against disease and habitat restoration and enhancement.
- actively managing the koala populations in each refuge by enabling translocation of mature and juvenile koalas, annual surveys and monitoring and associated data capture, and conducting regular health checks and population management and genetic diversity.

The establishment of the refuges will provide secure populations of koalas in a near natural setting within the SEQ Coastal zone, and maintain the opportunity for tourists coming to Brisbane and the Gold and Sunshine Coasts and locals to see koalas in the wild.

The Moggill Koala Hospital will continue to play a key role in the establishment and ongoing management of the supported urban refuges. Vets at the Hospital will oversee regular health checks and administer vaccinations. The Hospital will also receive koalas that have been, or are in need of, rehabilitation where their release to the site of capture would put the koala at further risk. A vaccine against Chlamydia would be administered to all new and existing koalas within the urban refuge and on an annual basis.

Spatial planning including modelling and mapping koala habitat and corridors in western SEQ

As part of the previous responses to koala protection, detailed mapping of koala habitat has been undertaken in the eastern local government areas of SEQ. The western Local Government areas of Scenic Rim, Somerset and Lockyer have koala habitat mapping showing suitable habitat. This mapping and modelling work will be undertaken at the scale of 1:25,000 identifying potentially suitable habitat and areas to five hectares.

As part of this work, strategic corridors and blocks of land that require protection and areas suitable for rehabilitation will be identified. This work will require a small team comprising a fauna ecologist, a GIS analyst and a project coordinator. In-kind support will be provided by the Department, including a fauna ecologist, a project manager, and additional GIS support. The cost for the spatial planning is $0.337M over 12 months, and will be completed by June 2017.

Addendum

December 2016

The previously stated purpose of the Koala Expert Panel is to provide expert advice on the most appropriate and realistic actions to reverse the decline in koala population sizes and ensure the long-term persistence of koala populations in the wild within south east Queensland. This includes consideration of regulation and planning instruments.

This addendum details the role of the panel and timeframes in relation to planning instruments.

Consultation drafts were released in late 2016 for the State Planning Policy (SPP) and *ShapingSEQ* (a revised regional plan for SEQ) These draft documents state that an expert panel has been established and will provide recommendations that will inform the final versions. The role of the panel is described below:

Role of the panel

Item number	Deliverable	Due Date
SPP State interest - biodiversity	• Recommendation on what the policy should achieve, in relation to koala conservation • Discussion and justification on the recommendation(s)	20 February 2017
ShapingSEQ Goal 4 - sustain	• Recommendation on what the regional plan should achieve, in relation to koala conservation • Discussion and justification on the recommendation(s)	20 February 2017
Habitat mapping	• Advice regarding the adequacy of the new koala habitat mapping for land use planning and development assessment at the SEQ regional and local scale. • Discussion and justification	31 March 2017
Offsets framework	• Recommendations on improvements to the Queensland offsets framework to ensure that local councils and state decision makers can apply the offsets framework in their development approvals. • Discussion and justification on the recommendation(s)	24 February 2017

Role of EHP

EHP will:

- Review the panel's recommendations and request clarification (if required)
- Obtain Ministerial decisions on the panel's recommendations
- Negotiate with the Department of Infrastructure, Local Government and Planning to ensure the panel's recommendations are correctly reflected, where appropriate, in the SPP and *ShapingSEQ* (items 1-2)
- Facilitate targeted consultation in April 2017, in relation to the panel's recommendations and EHP's new koala habitat mapping.

Out of scope

Recommendations are not required on specific elements of the consultation drafts listed below:

- State Development Assessment Provisions
- Planning Regulation 2017

Image courtesy of DTMR Moreton Bay Rail Project



Appendix 3—Overview of Consultation and Expert Elicitation Participants

Online survey

The online survey was designed to identify the key issues relevant to each respondent's local community and requested a description of their local area. Respondents provided a range of responses including specific locations such as the postcode or local government area, or less-specific locations such as SEQ, another State or Territory, or overseas country.

The majority of respondents were identified as living in SEQ generally, and represented each local government area. Notably, the Redland City, Moreton Bay, Brisbane City and Gold Coast City local government areas provided the most respondents.

A small number of respondents were also identified from other parts of the State including Townsville, Central Queensland, Isaac, Cairns and Gladstone, as well as a number of broader responses from Western Australia, Australian Capital Territory, New South Wales, and one international respondent from Ireland.

The vast majority of respondents (92.9%) who completed the survey provided their views on behalf of themselves (as an individual), in contrast to a smaller number of respondents (7.1%) who's views represented a particular community or conservation group, care and rescue organisations, the government sector, the academic sector, the business sector, a peak body or a political party.

Formal submission and face-to-face consultation

Selected groups identified by EHP and the Panel were sent an invitation asking for written submissions, with the option to make their submission public. Participants were requested to provide a response in any written format and, as a guide, were provided questions based on their area of expertise.

Where the Panel required further clarification or information regarding a submission, that party was invited to a face-to-face session.

All LGAs in SEQ were invited to the face-to-face sessions, even if a written submission was not received.

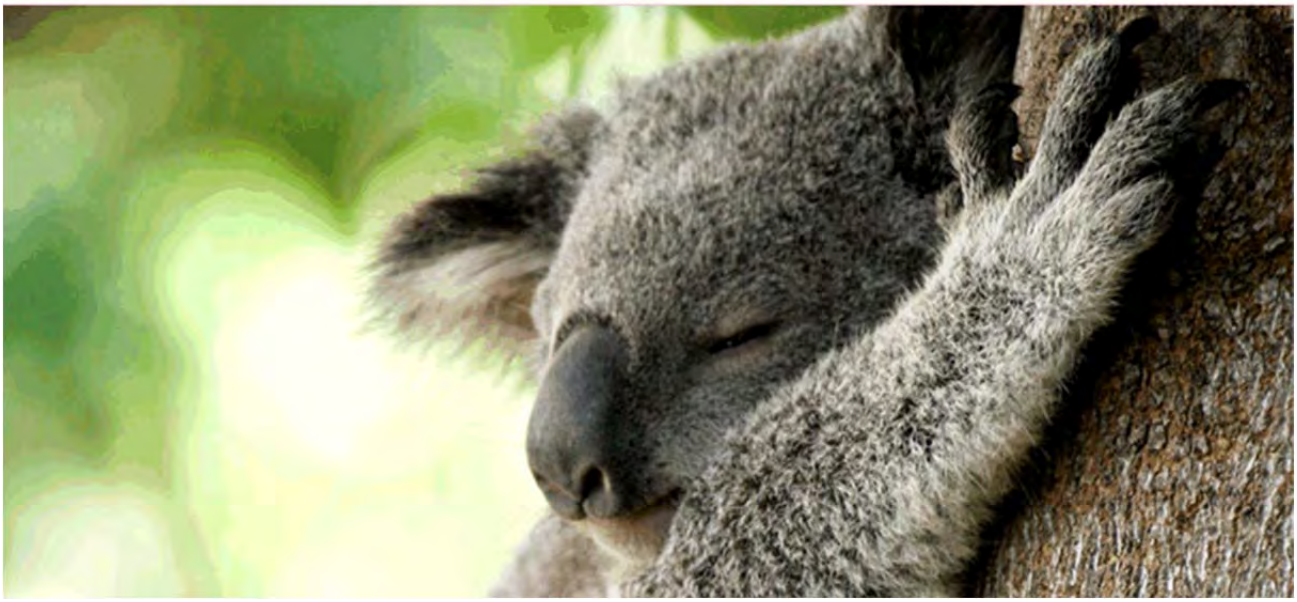
Submitters were categorised as follows:

- 16 conservation groups
- 5 professional groups (2 property development groups, 2 law firms, 1 ecological consultancy)
- 11 local governments
- 5 academic professionals

Expert elicitation

25 experts were invited to participate in the expert elicitation process. These experts came from the following stakeholder groups:

- Local government
- Community wildlife groups
- Non-government organisations
- Natural resource management
- Infrastructure development
- Environmental consultants



Appendix 4—Expert Panel Recommendations on SPP and SEQRP

Shaping SEQ: Koala Expert Panel recommendations on the draft SEQ Regional Plan and the draft State Planning Policy

28 April 2017

1. Background and approach for the Panel's review and recommendations

1.1 Background

a. In late 2015 a Uniquest report entitled 'South East Queensland Koala Population Modelling Study' showed clear statistical evidence for dramatic declines in koala populations in South East Queensland (SEQ). The report showed a decline in densities of around 80% in the Koala Coast and 54% in Pine Rivers between 1996 and 2014, despite current protection measures. In fact, rather than a slowing of the rate of decline there was some evidence to suggest the rate of decline had actually accelerated. This prompted a review of koala conservation policies by the Queensland Government and the establishment of the Koala Expert Panel (the Panel) to review existing measures and make recommendations about the 'most appropriate and realistic actions to reverse the decline in koala population densities and ensure the long-term persistence of koala populations in the wild within SEQ'. A proposed addendum to the Panel's Terms of Reference (ToR) specifically requires the Panel to comment on the draft regional plan, Shaping SEQ (Draft Plan) and the draft State Planning Policy (Draft SPP).

b. As part of the Panel's process, consultation has been undertaken with a wide variety of stakeholders, including State Government stakeholders, koala conservation groups, local governments, and professional and industry organisations. In its interim report, the Panel has (as required by its ToR) identified a number of reasons why existing koala conservation measures have failed. These include:

   i) the design of existing planning and vegetation management legislation can only, at best, slow the rate of loss of koala habitat and population declines and does not deal with cumulative impacts well;

   ii) the legislation is highly complex and coordination across SEQ is limited;

   iii) there is an over-reliance on the statutory planning framework as the sole solution and hence resources for management of existing threats and recovery is inadequate;

   iv) the approach to koala conservation has not been sufficiently strategic;

   v) the mapping and monitoring of koala habitat and populations has been inadequate; and

   vi) there is a lack of information about rural koala populations.

c. The purpose of this review is to provide recommendations about the treatment of koalas in the Draft Plan and the Draft SPP to address, where possible, existing limitations in the way koalas are protected in SEQ.

1.2 Timing issues

Unfortunately, the overall Panel process does not align perfectly with this review process of the Draft Plan and Draft SPP. So that these recommendations can be considered as part of this consultation process for the Draft Plan and Draft SPP, the proposed addendum to the Panel's ToR requires the provision of advice on the Draft Plan and the Draft SPP well before the Panel's final report. As such, the Panel is commenting on a planning framework that is already in place, or is in the process of being implemented, rather than being asked to comment more broadly on the suitability of the general structure of this planning framework. The Panel anticipates that broader comments about the suitability of the framework will therefore form part of the Panel's final report, rather than being contained within the specific recommendations here on the Draft Plan and the Draft SPP. **The Panel has therefore assumed that, for the purposes of these recommendations that the current structure of the planning framework will remain in place for the time being and will make recommendations more broadly on the structure of the planning legislation in its final report.**

1.3 Approach to the Review

a. The Panel approached the review of the Draft Plan from the perspective that the Draft Plan provides the State Government with an opportunity to demonstrate that koalas are an important policy priority for Queensland and sets the intent for a strategy that needs to strengthen the protection of koalas and their habitat over the long term. However, it is necessary to be realistic as to what the Draft Plan and Draft SPP can achieve given that they are only one component of a broader regulatory, policy and management response to the decline in SEQ koala populations and the timing issues described above. The Panel's approach to this review is therefore to identify where protection of koalas can be improved in the Draft Plan and Draft SPP within the existing planning framework. That is, we do not make any recommendations here on structure or function of the Draft Plan and Draft SPP, reserving recommendations on these aspects for our final report.

b. In addition, an SEQ koala habitat mapping project (koala mapping project) is currently being undertaken by the Department of Environment and Heritage Protection (EHP). The Panel expects that the mapping developed by the koala mapping project will inform the identification of koala habitat and potential koala habitat. **The Panel has assumed for the purposes of these recommendations that the mapping project will produce habitat maps that identify 'priority koala habitat', which will form part of the Draft Plan's mapping, although the role that the mapping will play in the regulatory framework is still unclear.** In this review we do not comment on the mapping, or its intended application in the Draft Plan and Draft SPP, as the Panel is undertaking a separate consultation process with EHP and the Department of Infrastructure, Local Government and Planning (DILGP).

2. Panel comments on the Draft SPP

2.1 Role of the SPP

The SPP applies to the whole of Queensland (not just South East Queensland), and is used by the State to identify and assess all State interests against which local government planning schemes, the regional plan, and some State assessment decisions, are made. The current form of the SPP deals with State interests relatively briefly because in 2013, this combined form of State Planning Policy replaced a number of subject-specific State planning policies. Biodiversity is identified in the Draft SPP as a State interest, and koala/koala habitat preservation is a component of this broader whole-of-State interest. Importantly, the role of the SPP is not to resolve conflicts between the various State interests. This is a task for the relevant subordinate instruments and assessment decisions, which should be made by reference to particular geographic and other factual circumstances.

The Draft SPP identifies the following policies with respect to biodiversity state interests:

State interest – biodiversity

Matters of environmental significance are valued and protected, and the health and resilience of biodiversity is maintained or enhanced to support ecological processes.

All of the following policies must be considered and appropriately integrated in policy and development assessment outcomes in a local planning instrument.

(1) Development is located in areas to avoid significant adverse impacts on matters of national environmental significance and considers the requirements of the *Environment Protection and Biodiversity Conservation Act 1999*.

(2) Matters of state environmental significance are identified and protected.

(3) Development:

(a) is located in areas that avoid adverse impacts on matters of state environmental significance; or

(b) minimises and mitigates impacts, where they cannot be reasonably avoided.

(4) Identified matters of local environmental significance are protected.

(5) Ecological processes and connectivity are maintained by avoiding fragmentation of matters of environmental significance.

(6) A net gain in koala bushland habitat in the South East Queensland region is facilitated.

2.2 Proposed text for the Draft SPP

The Panel recommends that the following changes be made to the proposed text, given that the text has considerable influence over the content of a number of key planning instruments and subordinate policy instruments.

a. Dark green box: Change this to read: 'matters of environmental significance are **valued, protected and enhanced, and the composition, health and resilience of biodiversity ...'. The panel believes that there is a need to place more emphasis on signalling the importance of enhancing and recovering biodiversity (including koalas) rather than simply protecting. For koalas, strategies for species recovery rather than just protection are key to their long-term survival, especially in SEQ.**

b. Light green box:

i) Generally, the 6 principles do not appear to reflect the 'avoid, minimise, mitigate, then offset for residual impact' framework which is critical to the operation of the Environmental Offsets Act 2014 (Qld), and the treatment of the different levels of matters of environmental significance (MNES, MSES and MLES) – is inconsistent. For example, while policy (2) requires MSES to be identified, principle (4) only requires 'identified' MLES to be protected – perhaps implying that MLES that are not identified by local governments do not have to be protected. The wording should be consistent. These differing treatments make it difficult to assess how koalas and their habitat – which can be matters of at least two and sometimes three levels of environmental significance – should be treated. Also, rather than focussing on 'development' (as the first word of each principle), the Panel recommends that the principles should focus on the matters of environmental significance (compare to the wording used for coastal matters). This would strengthen the emphasis on the biodiversity values rather than development, which is appropriate for this State interest.

ii) The Panel recommends that the State should consider wording the principles so as to give greater direction to local government and other plan makers about the formation of their planning instruments, which will then be used to assess development and ultimately strengthen protection for koalas. For example:

1. The treatment of 'State interest – development and construction' requires plan makers to identify suitable land for certain purposes in their instruments. We recommend that local governments be required to identify koala habitat to be preserved in their plans (for SEQ, this would be based on and consistent with the State's trigger mapping).
2. Local governments should be required to establish koala conservation codes, used to regulate koala-friendly development, as part of their planning schemes. This is consistent with the State's approach to (for example) the protection of coastal areas or major hazard facilities under the SPP. Ideally, a consistent approach would be adopted across the whole of Queensland and local governments would be assisted in this process, possibly by having a standard code developed by the State with necessary changes for local conditions. It is therefore recommended that the State develop a model koala conservation code, and that local governments are required, as part of their planning schemes, to develop local koala conservation codes to regulate and encourage koala-friendly development. It is further recommended that these codes provide a consistent approach throughout Qld local governments areas wherever koala/habitat occurs.
3. In relation to matters of national environmental significance, remove significant to read simply 'avoid adverse impacts'. Even though the Commonwealth legislation refers to a 'significant impact', there is no reason why the Queensland protection goal should not be higher for these important environmental matters.

The State will need to consider whether the Draft SPP is the correct place for specific directions to local government, or whether this is more appropriate in the respective regional plans. The Draft SPP's approach is arguably inconsistent in this regard across the various State interests.

iv) Principle (6) should be amended to refer to the State's aim of preserving a viable wild population of koalas in South East Queensland, and referring to the identification, preservation and enhancement of habitat suitability for koala populations in order to achieve that aim. Protection of existing habitat is critical (rather than reliance on replacement/restoration of habitat). Existing koala populations can only be sustained where their habitat is protected.

Alternative wording suggested is: *Koala populations and koala habitat are conserved and enhanced and the amount and quality of koala habitat does not decline over time* (i.e., there is no net loss of koala habitat) in South East Queensland and in Queensland more broadly.

This would place greater emphasis on koala populations and their viability as well as their habitat and clarify what is meant by 'no net loss' of koala habitat which is an ambiguous term. We have also removed the word 'bushland' from the reference to koala habitat in our above wording recommendation because the panel believes that this is too narrow; important koala habitat exists that would not be typically defined as 'bushland'. We also believe that there is no reason why this policy should apply only in SEQ if the State is committed to koala protection across Queensland – hence our recommendation is to not restrict this policy only to SEQ.

v) The Panel appreciates that 'development' is broad enough to cover all types of development, including the construction of public infrastructure and clearing generally. However, given that transport infrastructure has a very significant impact on koalas, the State should consider specifically requiring that public infrastructure be located so as to avoid/minimise/mitigate impacts, and that any residual impacts must be offset in a way which protects and enhances ecological processes. This could be an additional policy in the SPP with respect to biodiversity.

3. Panel comments on the Draft Plan

3.1 Reflecting the importance of the koala to South East Queensland in the Draft Plan

a. The Panel supports the inclusion of biodiversity as one of the five key themes of the Draft Plan and acknowledges that the State has not specifically included many koala references at this stage, pending the Panel's review.

b. The Panel recommends that, given government commitment to the preservation of the koala in SEQ, more emphasis on the preservation of the koala with respect to the balancing of development and koala persistence needs to be reflected in the Draft Plan, including a commitment to ensure no reduction in the amount and quality of koala habitat over time and to preferably achieve a net gain in koala habitat.

c. Some suggestions about changes to achieve this shift in emphasis are set out in sections 5 and 5 below. Initially, in broad terms this should involve the insertion of a vision for the preservation of koalas. The details of the vision will depend on the final policy position adopted by government in this regard. However, the Panel suggests that a suitable vision (Chapter 2) could be:

The State and local governments should plan for the long-term persistence of koalas in South East Queensland by protecting koala habitat, minimising threats to koalas, ensuring habitat restoration and increasing habitat connectivity that makes a meaningful contribution to improving koala long-term persistence.

d. There should be a clear statement up front in the 'vision' section to explain why koalas warrant separate treatment and recognition as a significant species that needs special consideration and attention in the regional plan to provide for their future and meet public expectations. The koala is a state, national and international iconic species requiring separate and particular treatment to meet the intense public interest and concern.

e. To the extent that these types of issues can be addressed in the Draft Plan (and not in some other koala management tool/ instrument), there should be greater recognition that koalas and other fauna species do occur in many urban areas and that we need to improve planning and management actions to provide for their safety and security. In other cases we need to protect and enhance bushland patches within the urban landscape and actively manage to make these areas safe for koalas and other fauna, prevent access by domestic dogs, and protect from future attrition. Koalas within the urban landscape need monitoring, active management and planning measures to identify and protect their habitat and reduce threats.

3.2 Implementation and monitoring

The Panel notes that previous State planning instruments have contained statements or requirements about koala conservation, but there has been very little on reporting or measurement about the achievement of outcomes under the previous plan. This monitoring is critical to assessing the performance of the plan. The Panel therefore strongly recommends that the State monitor the performance of planning instruments against the Draft Plan, when it comes into force. Chapter 4 of the Draft Plan will be helpful in this regard.



4. Specific Recommendations on Chapter 3

4.1 Part A—Sustain Theme: goals, elements and strategies

Given the Panel's view that there should be greater emphasis on the koala in the Draft Plan, we recommend that an additional element with specific strategies for the koala should be added to 'Sustain'.

Element 2A: Koalas	Strategies
A network of interconnected populations of koalas persists in the long-term in SEQ	Identify and protect koala habitat and minimise threats to koalas so that viable populations, and sub-populations, of koalas are maintained in SEQ in rural, semi-urban and urban settings in the long-term and to achieve a gain in koala habitat amount and quality over time across SEQ. Future development activities (including construction and operation) in SEQ should avoid, minimise, and offset impacts on koala habitat and koala populations. In particular: • Koala habitat and connectivity should be protected, enhanced and expanded. • In the Regional Landscape and Rural Production Area impacts on koalas and koala habitat should be avoided. • Within the Urban Footprint and Rural Living Areas impacts on koalas and koala habitat should be avoided and minimised, with any residual impacts offset to ensure a net gain in koala habitat and no increase in threats to koala populations over time in SEQ. Offsets against residual impacts must be designed, implemented and monitored to achieve a net gain in interconnected koala habitat over time, including being strategically located to increase koala persistence, connectivity and habitat function. • The landscape context and proximity to koala habitat and potential increases in threats to koalas must be considered when assessing potential impacts associated with proposed future development activities, including construction and operation. • All major new linear development and all State-sponsored development should be designed and constructed so as to avoid koala habitat, maintain ecological connectivity and protect against road/rail strikes during construction and during operation.

4.2 Part A—Sustain Theme: mapping, Map 4a

The Panel is currently providing advice to EHP on the koala habitat mapping that they are developing. At this stage, it is our understanding that this mapping will produce a product that will map the location of remnant vegetation that is important (core) koala habitat and regrowth/non-remnant vegetation that is important (core) koala habitat. It is crucial that this mapping is validated to test the accuracy of the mapping, which has not yet been undertaken, but conditional on satisfactory validation, we make the following recommendations with respect to the use of the new koala habitat mapping in Map 4a:

a. In principle, areas of remnant vegetation mapped as core koala habitat should be matters of state environmental significance and shown as such in Map 4a (the Panel acknowledges that the current legal process to determine what is a matter of state environmental significance is established under the SPP/offsets legislation and involves definitions and methodology from various statutory sources); and

b. Areas of regrowth/non-remnant vegetation mapped as core koala habitat should be mapped at least as Regional Biodiversity Values in Map 4a. This recommendation recognises the importance of regrowth and non-remnant vegetation for koala persistence. The Panel believes the protection of this vegetation is essential to the long-term persistence of koalas in SEQ.

The Panel considers that consistency between mapping and terminology under the various legislation and other statutory instruments is essential for koala preservation.

Note, however, that these recommendation are made within the existing planning framework, and the Panel reserves the right to make further or different recommendations about the use of the koala mapping in relation to recommendations about the structure of the planning framework that it makes in its final report.

4.3 Part B—Regional growth pattern

Our comments for this section re-iterate the recommendation to incorporate a greater emphasis on the protection of koalas and their habitat in each land use category and to ensure that future regional growth areas and future expansion of the urban footprint should exclude areas of core koala habitat and koala conservation regions.

4.4 Part C—Subregional directions

Currently, the Panel have on general recommendations with respect to the priority areas for the Sustain theme for each of the subregions because a number of current initiatives need to be completed and analysed prior to identifying priority areas for the koala. These include:

- The SEQ koala mapping need to be completed before precise statements can be made about the priority areas in each subregion for the long term conservation of koalas. Once this is complete a prioritisation process should be conducted to identify and map priority areas to include in Part C.
- The direction of various EHP policy initiatives are also critical, including the possible development of 'koala precincts' or 'koala conservation landscapes' (as discussed by the Panel in its interim report). When these are identified and mapped they should be identified in Part C.

5. Specific comments on consultation text of Draft Plan

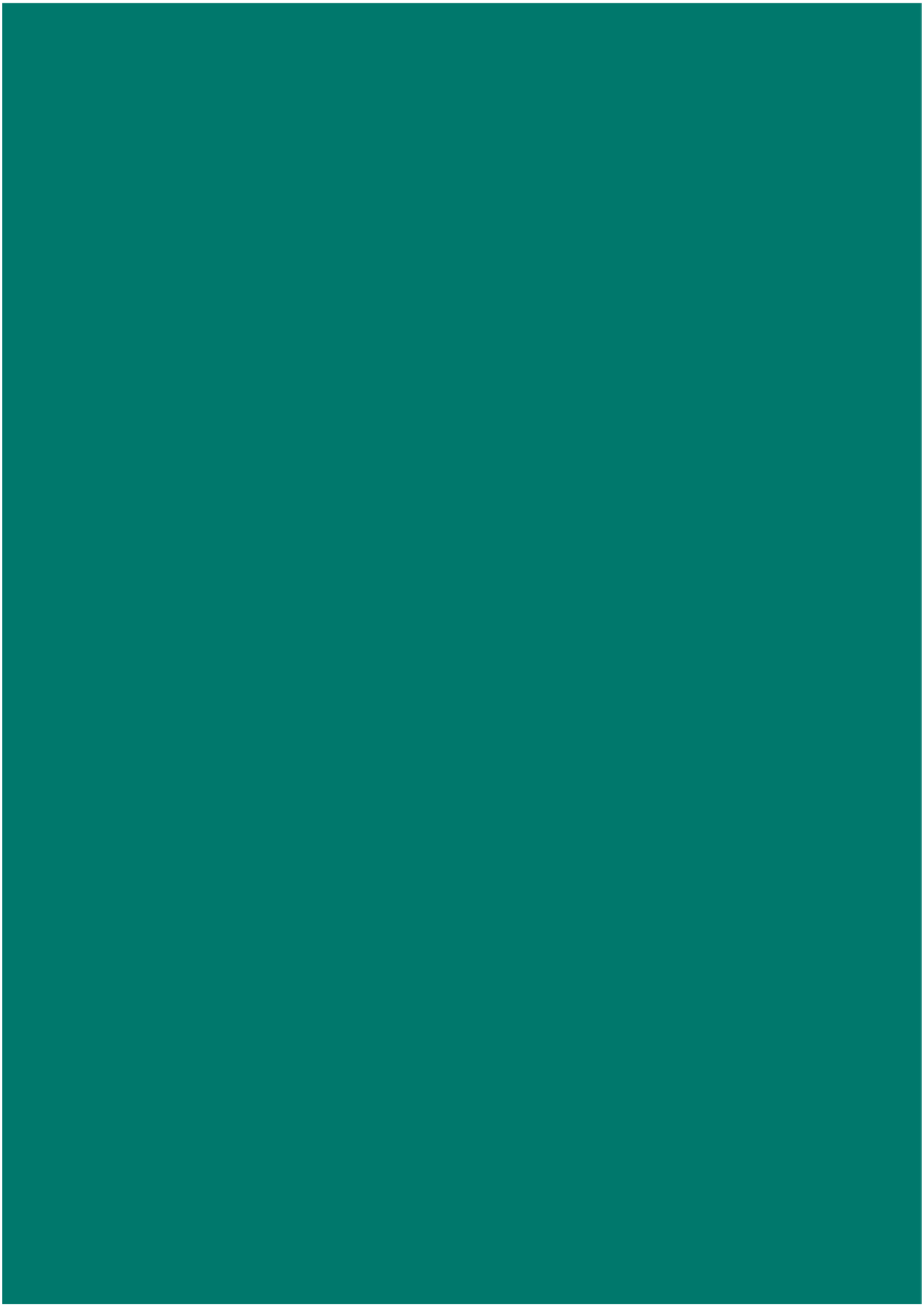
The principles and recommendations outlined above are also reflected in a number of specific recommendations and comments that we outline in the table below and we recommend that these are also considered in developing the Draft Plan. Note that our comments in relation to themes other than Sustain assume that the State wishes to provide some guidance about how the balancing of themes should be achieved. Here we have aimed to provide some recommendation that aim to achieve that balance by suggesting an emphasis on koalas in some of the themes other than Sustain.

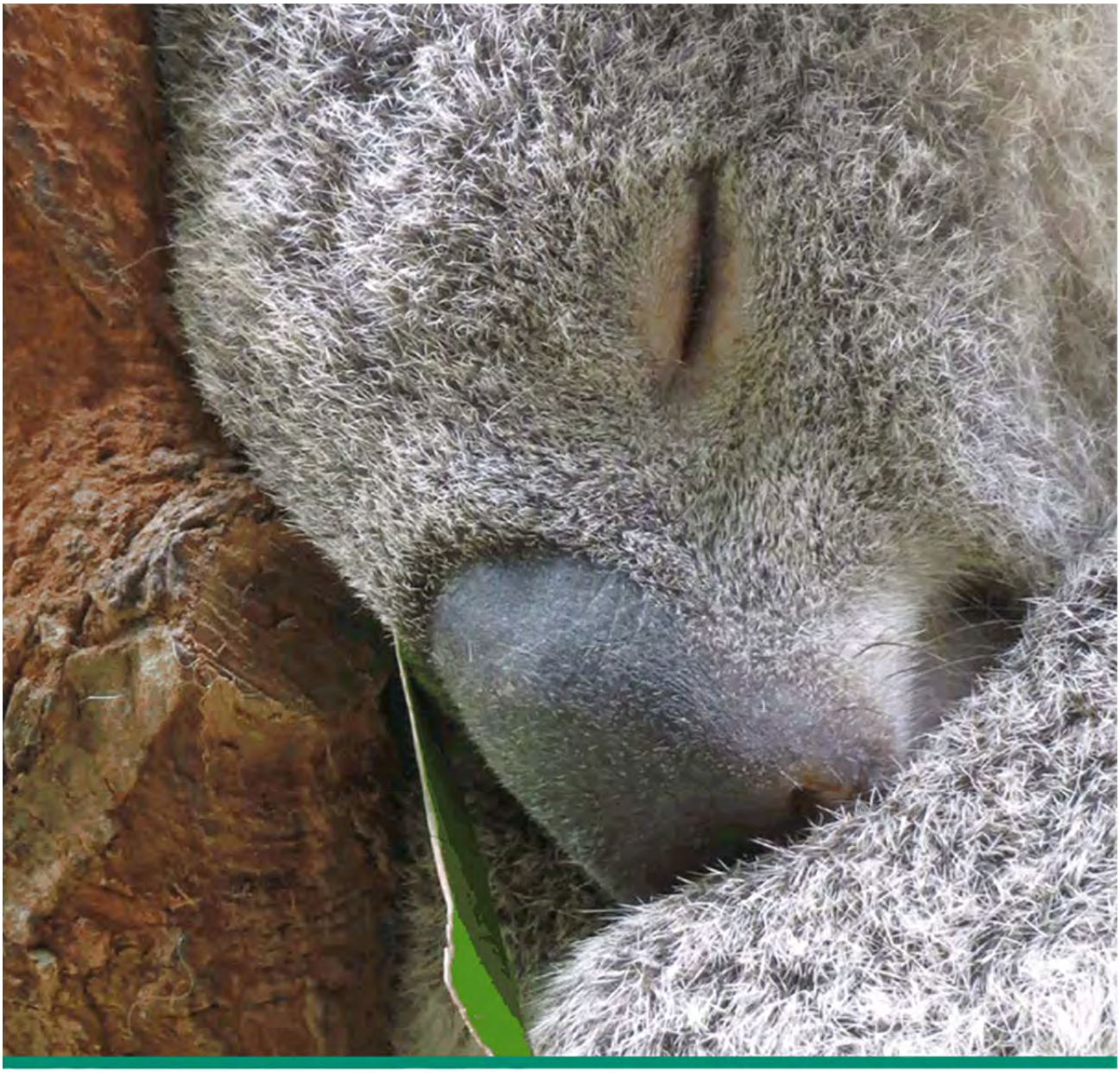
Section/page reference	Topic	Comment
Page 8	Our progress to date	The decline of koala populations, as well as the long-term destruction of habitat more generally, should be noted in item 9 (as part of the justification for taking a different approach in this plan). This information can be found in the Uniquest report on koala population declines and in the Panel's Interim Report.
Page 9	What's new	A new approach to koala conservation should be described here in item 7. Emphasise that planning can only influence future development patterns and that significant management intervention will also be required in many areas to support viable koala populations in the long-term.
Page 11	Sustain	The reference to wildlife 'corridors' (here and in other places in the Draft Plan) implies that wildlife pass through SEQ on their way to somewhere else. This isn't accurate – we need to establish areas where wildlife can stay and persist as well as transit. The term 'corridor' is not accurate (here and elsewhere) and could be replaced with the term 'habitat links' or 'linkages'. The Panel's consultation indicated that people are also concerned about their 'urban' koalas due to the lack of koala friendly development. The members of the public we consulted with were not interested in merely pushing koalas to the fringes of SEQ. Rather, they were interested in ensuring that we live more sustainably with the koalas that are left in urban areas, including changing our rules about koala-friendly development for private developers, public sector builders of infrastructure, and local governments. This view could be reflected here. Also, the interaction with nature could be considered as part of the 'Live' theme as it provides many psychological and physical health benefits.
Pages 13-19	SEQ today	This section should be written in a positive style with future opportunities identified. Is it appropriate to balance this with some of the challenges facing SEQ – of which the conservation of the koala is one?
Page 22-23	A 50 year vision for SEQ	• Pressure on biodiversity section could be improved by referring to koalas as an example. • This section should recognise the importance of biodiversity in urban areas (both from an ecological perspective, as well as from a public interest perspective) as well as within the Regional Landscape and Rural Production Area both from the perspective of bolstering population sizes and gene pools and providing green spaces and wildlife encounters from human residents. Page 23 Future opportunities and challenges, para 2: Add a new dot point: 'Regional environmental values, especially the iconic koala, are under pressure as the extent and intensity of development increases, driving the development of strategic conservation planning.'
Page 23	A 50 year vision for SEQ	The State's vision for the koalas could form an important component of this vision. We suggest adding a new sentence to para 5: 'All available and suitable landscapes support koala habitat and residents and visitors will enjoy the sight of koalas across the region.'
Page 25	Sustain	Insert the following statement into the first two paras: 'We will actively maintain and enhance the amount and quality of koala habitat and the viability and abundance of koalas across the region'.
Page 26	Background papers on key themes	Most local government with whom the Panel has consulted have asked for the State Government to show more central leadership about koala 'rules' (for example, for koala-friendly development requirements). The background paper and guidelines could be utilised to provide some of this requested direction, or the rules could be incorporated into codes or other legally binding instruments. The Panel expects to comment further on these issues as part of its final report.

Section/page reference	Topic	Comment
Pages 33-35	Grow	It is unclear to the Panel whether the Draft Plan should give more guidance about how the various themes should interact with and be balanced against each other. Consideration should be given to assisting local governments, State decision-makers and developers about what the relationship between the themes is. For example, if the State considered that it was appropriate to give more direction about how 'Sustain' was to be reconciled with 'Grow', some changes could be: • Include an element focused on environmentally sensitive urban development that avoids, minimises and offsets remaining/residual significant impacts on biodiversity and threatened species including iconic species such as koalas. • Emphasise here that any future adjustments to the Urban Footprint should not include areas supporting native vegetation and/or biodiversity conservation values (future housing in greenfield areas should avoid locations that conflict with high conservation values for native vegetation, habitats, biodiversity – this could also be incorporated into the Draft SPP). When the SEQ koala mapping project is finalised, the future urban areas identified in the Draft Plan should be checked against this mapping (the Panel appreciates that this is one of the problematic timing issues for the Draft Plan).
Page 33, Chapter 3, Element 1, Strategy 6	Grow - elements	Incorporate koala habitat and koala friendly infrastructure within Rural Living Areas and avoid future development activities in areas supporting koalas and koala habitat.
Page 33, Chapter 3, Element 2	Grow - elements	Propose a new Strategy 4: Plan to incorporate protective (koala exclusion) fences, over/under passes to protect koala movement and provide for connectivity.
Page 33, Chapter 3, Element 3 Strategy 4	Grow - elements	This planning needs to relate to critical koala habitat needs, as identified by the new koala mapping.
Page 33, Chapter 3, Element 5	Grow - elements	Insert a new strategy: Plan for local koalas, habitat plantings/restoration, strategic planning for road and rail that protects koalas through placement and/or incorporation of protection/ mitigation/connectivity structures.
Page 35 'Ensuring Sufficient Land to Accommodate Growth', Para 4, last sentence	Ensuring Sufficient Land to Accommodate Growth	Take account of strategic koala conservation / habitat conservation goals here and avoid impacts on established koala habitat and koala populations.
Page 38	Potential future growth areas	A number of 'potential future growth areas' are identified. Key strategic koala conservation goals need to be balanced against the adoption/development of these, but the revised koala mapping is required before this can occur.
Pages 42-46	Prosper	• 'Context' section should include a statement that biodiversity and threatened species conservation issues should be addressed in the planning phases for new economic activities and areas where significant impacts are likely on koala habitat and populations should be avoided. • Suggest stipulation of the 'Avoid, Minimise, Mitigate, Offset' principle in relation to any disturbance to natural ecosystems, biodiversity and threatened species such as the koala. • Rural Prosperity – rural precinct planning should take into account biodiversity conservation requirements. • Areas of regional economic significance could include biodiversity values and conservation areas as these also provide economic benefits to communities. • Prosper Map should also indicate known high biodiversity conservation value areas.
Page 44, Element 7, Strategy 3	Prosper - elements	Should incorporate sustainable koala populations relevant to each land use type at a sub-catchment scale.
Page 45	Prosper - elements	Rural precinct planning should incorporate key koala values, habitat densities and appropriate infrastructure protective measures.

Section/page reference	Topic	Comment
Page 54	Regional activity centres	Principal Rural Activity Centre and Major Rural Activity Centres should both take account of surrounding regional and local koala plans.
Page 65	SIP principles, 'Better Integration...'	This principle should consider the strategic koala conservation goals and impacts on local populations. • SIP principles should include detailed assessment of potential impacts on biodiversity including koalas and should stipulate avoidance of impacts wherever possible and mitigation/offsetting where unavoidable. • Mitigation measure should involve innovative designs for connectivity structures based on advances in scientific research and monitoring.
Pages 66-72	Sustain	• Should place greater emphasis on identification and protection of biodiversity/threatened species and key koala habitat areas as a high priority. • Consider splitting up or renaming this goal to place the clear focus on protection of natural values, biodiversity, threatened species and landscape values. • Should place greater emphasis on the identification and protection of key habitat areas for biodiversity and threatened species such as koalas as highest priority. • Biodiversity (Element 2) should emphasise 'habitat areas' as well as 'regional biodiversity corridor areas'. • Biodiversity (Element 2) Strategies 2 and 3: add 'and priority koala habitat' to the end of the sentences in each Strategy. • Biodiversity (Element 2) Strategy 4: rewrite as, 'Maintain and enhance the value of biodiversity corridors, as well as maintain, enhance and expand, through strategic offsetting, priority koala habitat'. • Regional landscapes (Element 2) should include a strategy to protect and enhance 'wild space' networks to provide for urban biodiversity and connectivity. • Natural resources (Element 4) should recognise that in some cases strategies 1 and 2 may require additional consideration of future impacts on biodiversity. • Health and wellbeing (Element 5) should recognise the importance of bushland and wildlife for community well-being in urban and semi-urban areas. Suggested text: 'Ensure communities have adequate opportunity to experience wildlife in both a rural and urban bushland setting'.
Page 73 Table 13	Sustain	Insert a new Landscape area or natural asset row on page 74 under 'Regional Biodiversity Values' Asset Name: Areas of koala habitat. Definition: Areas of remnant vegetation and regrowth supporting regional ecosystems known to contain koala habitat values. Benefits: Potential habitat and dispersal environment for koalas.
	Sustain – additional text about road infrastructure	Major road infrastructure is one of the key threats facing SEQ's koala population – both existing roads with 'hot spots' for koala deaths (with records often maintained by local governments), and new roads through greenfield sites. Consultation undertaken by the Panel indicates that more consideration needs to be given to both retrofitting existing roads and to ensure appropriate avoidance, minimisation and (as a last resort) mitigation measures are undertaken for other major road infrastructure. The Draft Plan could address these issues by requiring that planning for this infrastructure should account for koala population/habitat sustainability by: • avoiding key areas; • incorporating protective barriers and over/underpasses; • ensuring that there is no residual impact from the project; • minimising incremental fragmentation; and • budgeting to adequately resource strategic koala/habitat initiatives, including monitoring.
Page 77 Goal 5	Live, Elements and strategies:	• 'Elements and strategies' – Working with natural systems. Suggest it should be made clear that in the protection, management and integration of urban living with high biodiversity, threatened species, such as koalas, should take precedence over other considerations.

Section/page reference	Topic	Comment
Pages 80-84	'Sustain'	• Page 82, Regional Landscapes and Rural Production Areas: • Consider Regional Landscapes separately from Rural Production Areas for environmental purposes. The dominant environmental issues applying in each differ. Regional Landscapes will be driven predominantly by natural processes. Rural Production Lands will be driven predominantly by anthropogenic factors. It is further recommended that these codes provide a consistent approach throughout Qld LGAs wherever koala/habitat occurs. » For Rural Production Areas (1) Incorporate the protection and enhancement of koala habitat within project, local and regional planning, (2) Strategically place and construct linear infrastructure to avoid important koala habitat, to maintain ecological connectivity, and to protect against infrastructure related mortality. » For Regional Landscapes (1) Protect and enhance koala habitat, (2) Strategically place and construct linear infrastructure to avoid important koala habitat, to maintain ecological connectivity, and to protect against infrastructure related mortality. • Page 83, Urban footprint: (1) Protect and enhance koala habitat, (2) Plan to maintain ecological connectivity among habitat isolates, (3) Strategically plan linear infrastructure to (a) slow traffic flow, and (b) to maintain ecological connectivity, and to protect against infrastructure related mortality. • Page 85, Rural Living Area: (1) Protect, enhance and expand koala habitat, (2) Incorporate the protection and enhancement of koala habitat within new projects, as well as local and regional planning,(3) Strategically place and construct linear infrastructure to avoid important koala habitat, to maintain ecological connectivity, and to protect against infrastructure related mortality, (4) Plan to maintain ecological connectivity among habitat isolates.
Page 87	Sub-regional directions	• Note that the results of the SEQ koala mapping project should be considered, to properly inform the desired priority outcomes for each sub-region in terms of priority regions. For example, the mapping could reveal areas within each sub-region that need protection and the Draft Plan could then specify these area. • Increasing focus on increasing future in-fill growth is supported. • Generally, greenfield developments should be required to avoid significant impacts upon koala habitat and/or koala populations. • Koala conservation networks and prominent koala populations should be included in the relevant descriptions of sub-regional character (when the mapping permits this to occur).
Table 22 Implementation actions		• 'Koala in SEQ' – The intention for DILGP to work with EHP and SEQ Councils to coordinate implementation of the koala expert panel recommendations and inform the final Shaping SEQ is supported. • Local Governments will have a vital ongoing role in koala conservation and it is suggested that a koala conservation forum be established with SEQ Local Government representation to meet regularly (perhaps quarterly) to discuss and review koala conservation planning programs. • An overarching SEQ Koala Queensland Conservation Plan should be prepared to guide local governments' koala conservation plan and initiatives (both LGA-wide and Precinct-Neighbourhood based). • 'Local Government and State Infrastructure Draft Planning' actions – add reference point stipulating the need to assess potential impacts of infrastructure on koala conservation and reaffirm principles of avoidance (wherever possible), minimisation and mitigation, which would include maximising connectivity based on up-to-date research outcomes and incorporating monitoring programs for future refinement. • 'Measuring progress' (page 128) and Table 23: measures that matter (page 132) – should include specific measures and provisions for ensuring ongoing koala monitoring programs across SEQ in conjunction with Local Governments. • Map 7 – Areas of regional interest (page 142) – should add protected areas managed by Local Government. The extent of protected lands in SEQ is small and should ideally be increased throughout the life of Shaping SEQ.
Draft SPRP		• The draft SPRP needs an improved statement to clarify its precise intentions • See other comments about the possible function of the SPRP – could or should it be used as a component of koala regulation, just as the urban footprint is enforced, through this SPRP? • If yes, then Division 4 – Assessment Criteria – 4.1, 4.2 and 4.3 should include an assessment criterion requiring that activity does not involve or adversely affect any areas of koala habitat as defined by the State Government or using approved assessment criteria under Shaping SEQ.





Koala Conservation Response

The Queensland Government Response to the Queensland Koala Expert Panel's Report

A new direction for the conservation of koalas in Queensland



Minister's foreword

The koala is an iconic species of state, national and international importance. When data was released in 2016 that showed a declining koala population, despite dedicated policy and planning responses, the Queensland Government commissioned a Koala Expert Panel to provide advice on actions to ensure the long-term persistence of koala populations in the wild within South East Queensland.

The Koala Expert Panel has conducted an extensive review of Queensland's koala policies and provided their findings to the Queensland Government in a report titled *Queensland Koala Expert Panel: A new direction for the conservation of koalas in Queensland*.

The Panel's report sets the agenda for a comprehensive and cohesive approach to the management of this threatened species. The integrated set of recommendations addresses the decline of koalas in South East Queensland due to the many pressures the population faces, including development, car strike, dog attack and diseases. The recommendations provide a thorough and innovative template to balance development and koala persistence; a complex and challenging task, particularly in urban landscapes.

The Panel's recommendations are supported by a number of detailed actions. In consultation with stakeholders, the Queensland Government will deliver a long term strategy to implement these actions.

Koala conservation requires a strongly collaborative effort across many stakeholders. This strategy will deliver a multifaceted approach that combines the protection of koala habitat through the planning framework, together with actions to address the impact of other threats that are cumulatively driving declines in many populations.

Fundamental to the Panel's recommendations is the development of a strategic and coordinated approach to koala conservation. Koala conservation is not just the responsibility of the Queensland Government, nor does the Queensland Government have all the means to respond. We will work closely with stakeholders to implement the Panel's recommendations. Enhancing partnerships with local governments, in particular, will be a key component to achieving koala conservation.

The Panel has provided specific recommendations about how the Queensland Government can better protect koala habitat through amendments to the planning framework, targeted investment in rehabilitation of habitat and the development of threat reduction measures.

This response accepts, and supports, the Panel's six recommendations and details a way forward to start implementing the recommended actions.

The Panel's report, and the Queensland Government's response, heralds a new approach to conservation measures for koalas in South East Queensland for our future generations.

Leeanne Enoch MP
Minister for Environment and the Great Barrier Reef
Minister for Science and Minister for the Arts

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Executive summary

The Koala Expert Panel's (the Panel) recommendations are designed to drive a new, integrated approach to koala conservation that will deliver increased habitat conservation, threat reduction and, ultimately, population sustainability.

The Queensland Government recognises the scope of this challenge and is committed to working with stakeholders to deliver solutions to the critical task of protecting Queensland's koalas.

The Panel was formed in 2016 in response to the Uniquest report titled "South East Queensland Koala Population Modelling Study". The landmark study concluded that, between 1996 and 2014, there was clear statistical evidence of a decline in koala population densities of around 80% in the Koala Coast and 54% in the Pine Rivers area, despite current protection measures.

The Panel was established to provide the Queensland Government with realistic and achievable recommendations to reverse the decline in koala population densities and ensure the long-term persistence of koala populations in the wild in South East Queensland (SEQ).

The Panel's year-long review included extensive consultation with both public and industry sectors. It also included an in-depth analysis of existing measures, an expert elicitation process, and utilised the best available research.

The Panel's final report details six recommendations on changes to policy to address the ongoing decline in koalas in SEQ.

At the core of the Panel's recommendations is a call for a more strategic and coordinated approach to koala conservation. Decades of koala conservation measures have, in the absence of coordinated effort, failed to address population decline. A much greater focus on engagement and development of partnerships with other stakeholders, particularly local government, is critical to reversing the decline in koala populations.

The Panel also proposed specific actions to achieve the recommendations that the Queensland Government will work with stakeholders to implement.

The creation of a Koala Advisory Council, consisting of members from state and local governments, the community, non-government organisations and industry will play an important coordination role. The Koala Advisory Council will also ensure transparency and accountability in decision-making by evaluating the outcomes of koala conservation measures.

A key mechanism to deliver a more coordinated approach to land use planning is the proposed SEQ strategic assessment. The strategic assessment will address the cumulative, landscape scale impacts of development on matters of national environmental significance in SEQ, including koalas, which result from project-by-project development approvals. This approach will give certainty to all stakeholders and improve strategic planning with respect to the protection of habitat.



1. Implementing the recommendations

Implementation of the recommendations of the Panel will be progressed in three phases:

1. Immediate initiatives:
   - The Queensland Government will commence a review of the components of the planning framework that relate to koala habitat protection.
   - The Queensland Government will continue existing conservation programs, such as koala rehabilitation programs, finalise revised koala threats mapping in SEQ; and identify priority areas for koala conservation efforts.
2. Within three to six months of release of the Panel's final report:
   - The Queensland Government will appoint a Koala Advisory Council that will include representatives from relevant Queensland Government departments, local governments, community, non-government organisations (NGOs) and industry. The Koala Advisory Council will:
     - provide advice to Government on the implementation of the Koala Conservation Strategy;
     - fulfil a coordination role by providing communication and collaboration pathways among government, the community, NGOs and industry;
     - improve transparency and accountability in decision making; and
     - assist in evaluating the outcomes of the monitoring and evaluation programs.
3. Within 12 months of release of the Panel's final report:
   - The Queensland Government will develop and commence implementing a Koala Conservation Strategy (the Strategy). The Strategy will detail how the Panel's recommended actions will be resourced and delivered. In particular the Strategy will:
     - identify clear, realistic and measurable time-based targets for koala habitat and populations;
     - identify a network of connected priority areas that will be the primary focus of conservation efforts;
     - identify the activities that will be undertaken, where, when and by whom;
     - describe a monitoring and evaluation strategy that measures progress against targets; and
     - review and clarify the planning regulatory provisions related to koala habitat.

2. Queensland drivers

A 2015 Uniquest report titled "South East Queensland Koala Population Modelling Study" (the report) presented findings of an independent assessment of the conservation status of the koala in the seven local government areas that make up the Koala Coast (Moreton Bay, Noosa, Ipswich, Brisbane, Redland, Logan, Gold Coast and parts of Toowoomba).

Using survey data between 1996 and 2014, the report concluded there was strong evidence of a rapid decline with an estimated 80% decline in the Koala Coast and 54% in Pine Rivers. The report also indicated that there was evidence that the rate of decline had increased over time.

Over the past 20 years, a number of strategies for the protection of koalas and their habitat have been in place. However, the panel identified that these strategies have lacked coordination across the SEQ region and across key partners, such as state and local governments, interest groups and the science community.

In SEQ, the decline in the koala population is the result of a number of factors, none of which should be considered in isolation. While habitat loss is clearly the most significant problem affecting koalas, it needs to be addressed in conjunction with other factors such as disease management, traffic impacts, dog attacks and effective rescue and rehabilitation programs.

It is imperative that future policies and management approaches learn from the existing strategies to deliver effective, coordinated and better informed koala conservation strategies.

3. Progress to date



4. What we are already doing

While the Panel conducted its review, the Queensland Government continued existing koala conservation measures. These were activities which would not pre-empt future changes in direction. They allowed the Queensland Government to continue gathering important data through surveying and modelling habitat and funding research that will inform more effective koala conservation policy and management activities.

4.1 Survey program

In SEQ, repeated population surveys of koalas have been conducted by the Queensland Government, over an extended period, to build a picture of population trends and understand where critical populations occur. In 2016-17, koala distribution surveys were conducted in parts of the Somerset, Lockyer, Gold Coast and Scenic Rim Local Government Areas.

A koala monitoring plan, incorporating recommendations from the Panel, is currently being drafted.

4.2 Moggill Koala Rehabilitation Centre

The Moggill Koala Rehabilitation Centre, formerly the Moggill Koala Hospital, has been operating for 25 years and, as part of the development of a SEQ Wildlife Hospital Network, refocused its operations onto rehabilitation. This is part of a coordinated pathway whereby sick and injured koalas receive focused care at each stage of their treatment, rehabilitation and release. The Moggill Koala Rehabilitation Centre will also continue to contribute towards research into koala treatment and rehabilitation techniques.

4.3 Spatial modelling and planning for koalas in SEQ

New koala habitat modelling and mapping has been developed that identifies conservation values and management options to enhance the long-term viability of koalas within the southern portion of the SEQ bioregion. Following endorsement by the Panel, this mapping will be considered for inclusion in essential habitat mapping for the purposes of the *Vegetation Management Act 1999*.

4.4 Koala Conservation Landscapes

The Queensland Government proposed the establishment of two supported koala conservation precincts in 2016. The intent of the precincts was to provide secure populations of koalas in a near natural setting within the SEQ coastal zone, and maintain the opportunity for both the local community and tourists to see koalas in a wild setting.

The Panel was asked to review this proposal and raised a number of concerns including how they would complement other strategic initiatives and whether long-term funding would be provided for ongoing management. Nonetheless, the Panel considers that there is a place for well-defined koala management areas and recommended that a network of connected priority areas for koalas be identified. These areas should provide a focus for government initiatives for habitat protection and restoration, threat reduction programs, community partnerships, and recovery actions for koalas across SEQ. Planning to establish priority areas that meet the Panel's recommendations has commenced.

4.5 Community Sustainability Action Grant Program—Koala Research

In 2016, the Queensland Government introduced a grant program to fund research that would inform more effective koala conservation policy and management activities. Ten recipients were successful in applying for almost $600,000 in grant funding to deliver projects that include assessment of the effectiveness of koala offsets and the appropriateness of current translocation policies.

4.6 State planning instruments

In July 2017, the commencement of the new *Planning Act 2016* saw the continuation of the Queensland Government's development assessment requirements for the protection of koala habitat, by incorporating the former SEQ Koala Conservation State Planning Regulatory Provisions into the new Planning Regulation 2017. These provisions continue to be administered by local governments in their assessment of development within defined koala habitat areas.

The Panel's initial comments on the draft State Planning Policy and South East Queensland Regional Plan 2017 (*ShapingSEQ*) were considered in finalising both state planning instruments and resulted in a number of key changes relating to the better protection of koala habitat. The Panel advised that the protection of existing habitat was critical to sustaining existing koala populations, not just the replacement or restoration of habitat.

4.6.1 State Planning Policy (SPP)

Regarding the SPP State interest—biodiversity, the Panel recommended that koala policy in SEQ better reflect the state's aim of maintaining a viable wild koala population, supported through the identification, preservation and enhancement of koala habitat.

To reflect the Panel's advice, the finalised SPP, dated July 2017, includes an updated policy requiring SEQ local governments to protect viable koala populations through the conservation and enhancement of koala habitat. This replaced the previous policy requiring SEQ local governments to achieve a net gain in koala habitat. The SPP State interest - biodiversity was also amended to recognise the koala as an iconic and highly valued species for many communities across Queensland.

4.6.2 *ShapingSEQ*

ShapingSEQ is the statutory regional plan for SEQ and sets the planning direction for sustainability, global competitiveness and high-quality living. *ShapingSEQ* divides all land in SEQ into land use categories, which are in turn used to define SEQ's desired, long-term settlement pattern and to help plan and manage growth across the region.

The Panel's comments on the draft *ShapingSEQ* suggested greater emphasis be placed on the preservation of the koala, and reaching an appropriate balance between development and koala preservation. In response, *ShapingSEQ* places a high priority on the delivery of a SEQ Koala Conservation Strategy, to be led by the Department of Environment and Science (DES), which is intended to deliver on the Queensland Government's response to the Panel.

Other key changes, based on the Panel's feedback, made in finalising *ShapingSEQ* include:

- specific reference in the 50 year vision for the 'Sustain' theme to maintain the SEQ koala population through innovative protection of their habitat and management of threats across the region's landscapes;
- a new koala element and strategy in the 'Sustain' theme to ensure a network of interconnected koala habitat is maintained to sustain the SEQ's koala population over the long-term; and
- an amendment to the urban footprint principles to ensure that areas containing significant koala habitat outside of the urban footprint are not included in the urban footprint through future reviews or growth monitoring programs.

4.7 Strategic assessment for SEQ

A key implementation action for *ShapingSEQ* is the preparation of a strategic assessment for the SEQ region. Strategic assessment enables up-front and streamlined assessment under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) to ensure all relevant matters of national environmental significance have been properly addressed when development projects proceed. A strategic assessment aims to establish a basis on which applications, which would have otherwise been referred to the Commonwealth Government, may be appropriately dealt with by the state planning system. This will have the effect of simplifying and streamlining assessment of matters of national environmental significance, including the SEQ koala population and their habitat.

The strategic assessment has recently been commenced by the Department of State Development, Manufacturing, Infrastructure and Planning.

Throughout the preparation of the strategic assessment, the Queensland Government will work closely with the Commonwealth, SEQ local governments and other key stakeholders. This will ensure all relevant environmental issues are fully considered from the outset.

5. Piloting a new approach

The Noosa Koala Corridor Pilot is a collaborative project that will rehabilitate core koala habitat within the Noosa hinterland—enhancing and linking fragmented habitat. Exotic pine plantations within Yurol and Ringtail State Forests will be cleared and re-established as native forest providing important koala habitat and connecting existing koala habitat in the region. Production native forests, including hardwood plantations in this area, will also be rehabilitated and ultimately converted to protected area.

The project involves local government (Noosa Shire Council), a community group (Noosa Parks Association), industry (HQPlantations Queensland) and the Department of Agriculture and Fisheries to transition a 2400 hectare forestry site to a koala corridor.

The Yurol and Ringtail State Forests connect core koala habitat between the Tewantin section of Noosa National Park to the south and Cooloola to the north east. Through a $3.5 million investment, jointly funded by the Department of Environment and Science, Noosa Shire Council and Noosa Parks Association, the land will be progressively rehabilitated and transitioned to the protected area estate. Continuous rehabilitation and monitoring will be undertaken by the Noosa Shire Council, Noosa Parks Association and government partners.

In line with the Panel's key recommendations, koala threats will be actively managed and monitored, and the social and economic benefits of public access maintained. Achieving conservation outcomes of this scale and in this region would not have been possible without such a partnership approach.

The Panel's recommendations will inform a new strategy for koala conservation in Queensland. The Noosa Koala Corridor Pilot is a way for the Queensland Government to commence koala conservation measures in line with the Panel's recommendations and the lessons learned will be used to refine the implementation of a number of the Panel's recommendations.

6. Principles underpinning the recommendations

The Panel have detailed core principles that underpin their recommendations:

- Acknowledge that koalas are an iconic species, and are culturally important for Traditional Owners.
- Both habitat protection and threat reduction are critical. Effective solutions must be holistic and multi-faceted.
- A strategic coordinated and collaborative approach is required.
- There are direct conflicts between koala conservation and societal goals which should be explicitly considered.
- Koala populations in both rural and urban areas are important.
- Community partnerships and engagement are important components.
- Monitoring and evaluation are necessary, particularly to evaluate progress towards goals.

The Queensland Government acknowledges these principles and will use them to guide the development and delivery of recommended actions.



7. Summary of Panel recommendations

The Panel provided six overarching recommendations linked to six key objectives, and over 60 recommended actions. The six objectives and their corresponding recommendations are summarised in the graphic below.

1. A strategic and coordinated approach to koala conservation	Develop a mechanism for implementing a strategic action plan for koalas that ensures coordination across multiple levels of government, community, NGOs and industry to achieve the long-term recovery and persistence of koalas in SEQ.
2. Koala habitat is protected	Simplify and strengthen the planning framework to ensure the effective and consistent long-term protection of koala habitat across SEQ and resource incentive and partnership mechanisms to protect koala habitat on private land.
3. Strategic and landscape-scale koala habitat restoration	Develop and adequately resource regulatory, incentive and partnership mechanisms to achieve strategic koala habitat restoration at landscape scales in SEQ, particularly in identified priority areas.
4. Coordinate threat reduction and koala population management	Resource and implement a new coordinated threat reduction and koala population management strategy that complements habitat protection and restoration activities, particularly in identified priority areas.
5. Strong community engagement and partnerships	Develop and implement a strategy for partnership development and engagement with the broader community, utilising an approach that is sensitive to the nature and views of local communities.
6. Targeted mapping, monitoring, research and reporting	Develop targeted and high quality koala habitat and threat mapping, monitoring and research programs that aim to: (1) identify key koala ecological values and threats; (2) measure changes in koala ecological values and threats over time, as well as understand the drivers of those changes; (3) support policy and management decision-making; and (4) communicates trends and outcomes transparently and publicly to enhance engagement.

8. Identifying priority areas

At the core of the Panel's recommendations is the need for a more strategic and coordinated approach. This will require mechanisms to coordinate different measures to reduce threats. One of the key ways a strategic approach will be achieved is through the identification of priority areas in the landscape for koala conservation.

Priority areas will be identified by Queensland Government mapping and will be used to focus effort to deliver better outcomes. Appropriate koala conservation and habitat protection will be applied across the priority areas and will include a mix of threat reduction measures, habitat protection and restoration, and community partnerships.

The mapping will not only inform where priority areas should be, but will also identify threats, opportunities and constraints. Just as the approach to koala conservation recognises that there is no single action that is capable of conserving koala populations in SEQ, a single action will not be applied to the priority areas. Actions will be targeted across the whole, or parts, of the priority areas. Priority areas will be across rural and urban landscapes.

Implications of these priority areas for the planning framework may include the potential to broaden triggers for koala related development assessment in SEQ to ensure that development assessment is triggered when there are potential development impacts on koalas or their habitat. This will also provide certainty in the development industry. The Panel advised that the solution must be more holistic than simply focusing on the planning framework. The way we think about future development in relation to koala conservation requires fundamental changes.

9. The Panel's recommended actions and the Queensland Government response

9.1 Objective 1: A strategic and coordinated approach to koala conservation

9.1.1 Context

There are three overarching issues for koala conservation in SEQ: the strong conflict with some societal objectives such as access to housing; the complex interaction of threats and cumulative impacts; and the importance of coordination across government, the private sector and the community. A strategic and coordinated approach to koala conservation, through the strategic prioritisation of areas for investment in habitat protection, restoration and management, is needed.

9.1.2 Panel recommendation

Develop a mechanism for implementing a strategic action plan for koalas that ensures coordination across multiple levels of government, community, NGOs and industry to achieve the long-term recovery and persistence of koalas in SEQ.

Table 1. Summary of the Panel's recommended actions and the Queensland Government's response

Summary of the Panel's recommended actions	Support/ Support in Principle	Queensland Government response
Prepare a koala conservation strategy for SEQ that is informed by the recommendations in the Panel's final report. This action relates to recommendation/s: 1.2(a)	Support	The Queensland Government will prepare a new SEQ koala conservation strategy that details how the Panel's recommended actions are to be achieved, and the timeframes for achieving these actions.
Identify a network of connected priority areas for koala habitat protection, restoration and management. This action relates to recommendation/s: 1.2(a) and 6.2(a)	Support	The Queensland Government will establish priority areas for koala conservation measures.
Identify targets for koala habitat and population trajectories and associated activities for areas identified. This action relates to recommendation/s: 1.2(a)	Support	The Queensland Government will establish targets for koala habitat and population trajectories, as part of the SEQ Koala Conservation Strategy.
Identify a long-term implementation and investment strategy that identifies the activities that will be undertaken and a resourcing strategy that will ensure their implementation. This action relates to recommendation/s: 1.2(a)	Support	The Queensland Government will develop an implementation and investment strategy, as part of the SEQ Koala Conservation Strategy.
Monitor and evaluate the progress towards targets and implement a mechanism to adaptively amend the Koala Conservation Strategy. This action relates to recommendation/s: 1.2(a) and 6.2(d)	Support	The Queensland Government will develop and execute a monitoring and evaluation strategy, as part of the SEQ Koala Conservation Strategy.
Appoint a Koala Advisory Council to coordinate the implementation of the Koala Conservation Strategy. This action relates to recommendation/s: 1.2(b) and 6.2(e)	Support	The Queensland Government will appoint a Koala Advisory Council to coordinate the implementation of the SEQ Koala Conservation Strategy.

9.2 Objective 2: Koala habitat is protected

9.2.1 Context

The planning framework was identified as being the primary way to protect koala habitat. Whilst the Panel was supportive of the general structure of the planning framework, it identified that it had generally been ineffective at sufficiently reducing the loss of habitat. The Panel also identified that the solution to effective koala conservation was not to be found in the planning framework alone, but had to be developed through coordinating a range of other measures to reduce threats and aid population recovery.

9.2.2 Panel recommendation

Simplify and strengthen the planning framework to ensure the effective and consistent long-term protection of koala habitat across SEQ and resource incentive and partnership mechanisms to protect koala habitat on private land.

Table 2. Summary of the Panel's recommended actions and the Queensland Government's response

Summary of the Panel's recommended actions	Support/ Support in Principle	Queensland Government response
The Queensland Government will assume responsibility of koala related planning and development issues in SEQ. This includes scope for the Queensland Government to act as the assessment manager or a referral agency, development of standard conditions, and creation of a code in the State Development Assessment Provisions (SDAP). Koala related policy amendments already made to the State Planning Policy 2017 and *ShapingSEQ* will be reviewed to identify required further work or improvements. This action relates to recommendation/s: 2.2(a) and 1.2 (a)	Support in principle	The Queensland Government will strengthen state development assessment requirements to improve consistency in approach to koala habitat protection across SEQ. The Queensland Government will incorporate koala related policy in future reviews of the SPP and *ShapingSEQ*.
Reduce the number, scope and/or complexity of exemptions from development assessment and put in place a transparent system of conditional approval. This action relates to recommendation/s: 2.2(b)	Support in principle	The Queensland Government will address development assessment exemptions that have an adverse impact on koala habitat.
Require the standards placed on Queensland Government developments to be consistent to those placed on private sector development. This action relates to recommendation/s: 2.2 (a)	Support in principle	The Queensland Government will identify and manage inconsistencies in development standards between state and private sector development requirements for koala habitat protection.
Develop new development assessment provisions for SEQ that address clearing requirements inside and outside the urban footprint for various habitat types and broaden triggers for koala related development assessment in SEQ based on new habitat mapping. This action relates to recommendation/s: 2.2(c) and (d)	Support in principle	The Queensland Government will work with stakeholders to tighten clearing requirements, inside and outside of the urban footprint, and establish appropriate assessment provisions based on new habitat mapping.
Impose biodiversity offsets for koala habitat as a condition on development approvals as a last resort only. Ensure that offsetting of residual impacts only be available for impacts that occur in the urban footprint of *ShapingSEQ* (except where a priority koala area is identified). This action relates to recommendation/s: 2.2(e)	Support in principle	The Queensland Government will review the offsets framework regarding koala habitat, including how the framework is to relate to the identified koala priority areas and subject to the outcomes of the strategic assessment process. The Queensland Government will encourage the delivery of koala offsets within koala priority areas once identified through the SEQ Koala Conservation Strategy.

Summary of the Panel's recommended actions	Support/ Support in Principle	Queensland Government response
Any future expansion of the urban footprint should not occur over areas of core koala habitat (remnant and regrowth). This action relates to recommendation/s: 2.2 (f)	Support	*ShapingSEQ* includes principles to govern the future expansion of the urban footprint including preventing the expansion of the footprint into areas containing predominately matters of national or state environmental significance and the regional biodiversity network, including koala habitat. This will include consideration of any impacts on the region's ability to accommodate future growth.
Allow locally significant koala habitat, not captured by the Queensland Government mapping or within identified priority areas for koalas, to be able to be protected through local government planning schemes. This action relates to recommendation/s: 2.2 (g)	Support	The Queensland Government will work with local governments to ensure habitat not mapped by the state can be protected.
Reduce the complexity of the current planning framework by aligning the various regimes and standardising terminology. This action relates to recommendation/s: 2.2 (h)	Support in principle	The Queensland Government will improve the planning framework for koala-related development to improve consistency and simplicity.
Review coordination between state departments in relation to different legislative instruments, in particular the state development assessment process and the state nature conservation system. This action relates to recommendation/s: 2.2 (i)	Support in principle	The Queensland Government will review coordination between legislative instruments and processes for koala-related development.
The state's commitment to a strategic assessment with the Commonwealth EPBC Act be undertaken as soon as possible. This action relates to recommendation/s: 2.2 (j)	Support	The Queensland Government has commenced the strategic assessment process via a $5 million funding commitment.
Develop a communication, education and extension strategy for community and business awareness and understanding of any measures. This action relates to recommendation/s: 2.2 (k)	Support	The Queensland Government will deliver a communication and education strategy to support any changes to the koala regulatory framework.
Develop and resource effective models of habitat protection, incentives and partnerships for use amongst industry and rural enterprise sectors. This action relates to recommendation/s: 2.2 (l)	Support	The Queensland Government will develop, and identify resource requirements for, effective models of habitat protection for use by industry and other stakeholders.

9.3 Objective 3: Strategic and landscape-scale koala habitat restoration

9.3.1 Context

Meaningful habitat restoration is a critical management activity for the recovery of koala populations. Koala habitat can be successfully restored, with evidence that koalas can use planted habitat trees as young as six years. However, habitat restoration has to occur at a scale that results in restoration across broad landscapes and must consider other activities such as habitat protection and threat reduction.

Offsets have an important role to play in achieving habitat restoration targets, however a more strategic, region-wide approach is required to maximise the benefits to koalas.

9.3.2 Panel recommendation

Develop and adequately resource regulatory, incentive and partnership mechanisms to achieve strategic koala habitat restoration at landscape scale in SEQ, particularly in identified priority areas.

Table 3. Summary of the Panel's recommended actions and the Queensland Government's response

Summary of the Panel's recommended actions	Support/ Support in principle	Queensland Government response
Resource greater investment in habitat restoration, including targeted incentive mechanisms for habitat restoration on private land. This action relates to recommendation/s: 3.2(a)	Support in principle	The Queensland Government will invest in koala habitat restoration and provide incentives to private landholders to restore koala habitat, including through the recently announced Land Restoration Fund.
Collaborate with government, NGOs and community groups to restore koala habitat in important koala conservation areas, and appoint dedicated extension officers in partnership with NGOs. This action relates to recommendation/s: 3.2(a)	Support in principle	The Queensland Government will work with NGOs and community groups to restore koala habitat in important koala conservation areas. In partnership with local government, NGOs and community groups, explore opportunities to appoint dedicated extension officers.
Identify and map priority sites for koala offsets that will have the greatest long-term benefits for koalas, and amend the offset policies to deliver koala offsets in these areas. This action relates to recommendation/s: 3.2(b)	Support Support in principle	The Queensland Government will identify priority areas for the strategic placement of environmental offsets for koala habitat. The Queensland Government will investigate appropriate mechanisms, including the environmental offsets framework, to deliver koala related offsets in priority areas.
Conduct koala habitat restoration on identified State land. This action relates to recommendation/s: 3.2(a)	Support in principle	The Queensland Government will restore koala habitat on state-owned land including the protected area estate.
Provide landowners and developers with greater certainty by facilitating delivery of advanced offsets and providing for the delivery of Direct Benefit Management Plans in priority areas. This action relates to recommendation/s: 3.2(b)	Support	The Queensland Government will allow Direct Benefit Management Plans to be delivered for koala habitat offsets, including within priority areas. The Queensland Government will facilitate advanced offsets for koala habitat.

Summary of the Panel's recommended actions	Support/ Support in principle	Queensland Government response
Improved transparency and cost-effectiveness for developing offsets, including the reduction of unnecessary red tape, and improved transparency for enforcement and monitoring of offsets. This action relates to recommendation/s: 3.2(b)	Support in principle	The Queensland Government will consider barriers to the delivery of offsets, cost effectiveness, enforcement, monitoring and transparent delivery as part of its review of the offsets framework and strategic assessment. The Queensland Government will identify unnecessary barriers to the delivery, enforcement and monitoring of offsets, and increase transparency and cost effectiveness in offset delivery.
Encourage financial settlement offsets to remove complexity and increase offset delivery in strategic locations. This action relates to recommendation/s: 3.2(b)	Support	The Queensland Government will improve financial settlement offsets for koala habitat and remove unnecessary complexities associated with offset delivery as part of its review of the offsets framework and strategic assessment.
Work with local and state landholders and offset providers for cost effective offset delivery priority areas. This action relates to recommendation/s: 3.2(b)	Support in principle	The Queensland Government will work with local, landholders, state landholders and offset providers to deliver cost effective koala related offsets.
Improved communication between state and local governments regarding koala offset delivery. This action relates to recommendation/s 3.2(b) (vi)	Support in principle	The Queensland Government will work with partners to design and implement a new system to improve coordination, reporting and monitoring.

9.4 Objective 4: Coordinated threat reduction and koala population management

9.4.1 Context

To increase population densities, it is critical to protect and actively manage koala populations and not to allow koalas to be lost where there are prospects for protecting and securing their future. Effective conservation measures must be holistic and multi-faceted as there is no single action that will conserve koala populations on its own. Koalas in SEQ are simultaneously affected by multiple threats, particularly in urban areas, therefore only addressing a single threat is unlikely to be successful in recovering koala populations.

9.4.2 Panel recommendation

Resource and implement a new coordinated threat reduction and population management strategy that complements habitat protection and restoration activities, particularly in identified priority areas.

Table 4. Summary of the Panel's recommended actions and the Queensland Government's response

Summary of the Panel's recommended actions	Support/ Support in principle	Queensland Government response
Identify threats to koalas in the next phase of the 'Spatial modelling and planning for koalas in SEQ' project, and identify priority areas for investment in threat reduction. This action relates to recommendation/s: 4.2 (a) and (b)	Support	The Queensland Government will use spatial modelling to identify threats to koalas and priority areas for threat reduction.
Resource a targeted and transparent threat reduction program, in partnership with key stakeholders, based on the priority areas for a range of threat reductions mechanisms, such as retrofitting existing roads. This action relates to recommendation/s: 4.2(c)	Support	The Queensland Government will deliver a targeted and transparent threat reduction program and evaluate initiatives including the retrofitting of existing roads.
Identify suitable areas of empty habitat for koala reintroductions. This action relates to recommendation/s: 4.2(f)	Support	The Queensland Government will identify areas of empty koala habitat and reintroduce koalas where appropriate.
Amend the Koala Conservation Plan to adopt best practice techniques for translocation, and the release of rehabilitated koalas under redefined criteria, and amend restrictions for the release of captive bred koalas into the wild. This action relates to recommendation/s: 4.2(d) and (e)	Support in principle	The Queensland Government will prepare a new Koala Conservation Strategy consistent with best practice management for translocation, release of rehabilitation koalas, and the release of captive bred koalas.
Integrate zoo-based koala populations into the management of wild populations through supporting stud books and engaging zoos in the management of wild populations. This action relates to recommendation/s: 4.2(g)	Support in principle	The Queensland Government will prepare a new Koala Conservation Strategy consistent with best practice management, including the recognition of both wild and captive koala populations.

9.5 Objective 5: Strong community engagement and partnerships

9.5.1 Context

Community and private sector engagement is important for koala conservation, including engagement with rural and regional landholders and zoos. Partnerships between the Queensland Government and stakeholder groups are needed to jointly achieve koala conservations goals.

9.5.2 Panel recommendation

Develop and implement a strategy for partnership development and engagement with the broader community, utilising an approach that is sensitive to the nature and views of local communities.

Table 5. Summary of the Panel's recommended actions and the Queensland Government's response

Summary of the Panel's recommended actions	Support/ Support in principle	Queensland Government response
Designate extension officers for and/or within different stakeholder groups to coordinate communication between stakeholders. This action relates to recommendation/s: 5.2 (b)	Support in principle	The Queensland Government will develop a communication, education and extension strategy. This strategy will give consideration to an extension officer program.
Deliver state-wide engagement campaigns and enable knowledge exchange though a multi-faceted communications strategy. This action relates to recommendation/s: 5.2 (c) and (d)	Support	The Queensland Government will develop a communication, education and extension strategy.
Recognise the importance of koalas to Traditional Owner communities and engage with Traditional Owners to utilise their support and knowledge. This action relates to recommendation/s: 5.2(a)	Support	The Queensland Government will develop a communication, education and extension strategy in consultation with Traditional Owners. The strategy will recognise the importance of koalas to Traditional Owner communities and outline a strategy for engagement with Traditional Owner communities.
Encourage active community participation through citizen science and field activities. This action relates to recommendation/s: 5.2(e)	Support	The Queensland Government will develop a communication, education and extension strategy. The strategy will include citizen science and field activity programs.

9.6 Objective 6: Targeted mapping, monitoring, research, and reporting

9.6.1 Context

Successful conservation policy is supported by appropriate and reliable information. There are three areas that form the basis of good koala information management: habitat and threat mapping, ongoing monitoring and evaluation, and research.

9.6.2 Panel recommendation

Develop targeted and high quality koala habitat and threat mapping, monitoring, and research programs that aim to: 1) identify key koala ecological values and threats; 2) measure changes in koala ecological values and threats over time, as well as understand the drivers of those changes; 3) support policy and management decision-making; and 4) communicate trends and outcomes transparently and publicly to enhance engagement.

Table 6. Summary of the Panel's recommended actions and the Queensland Government's response

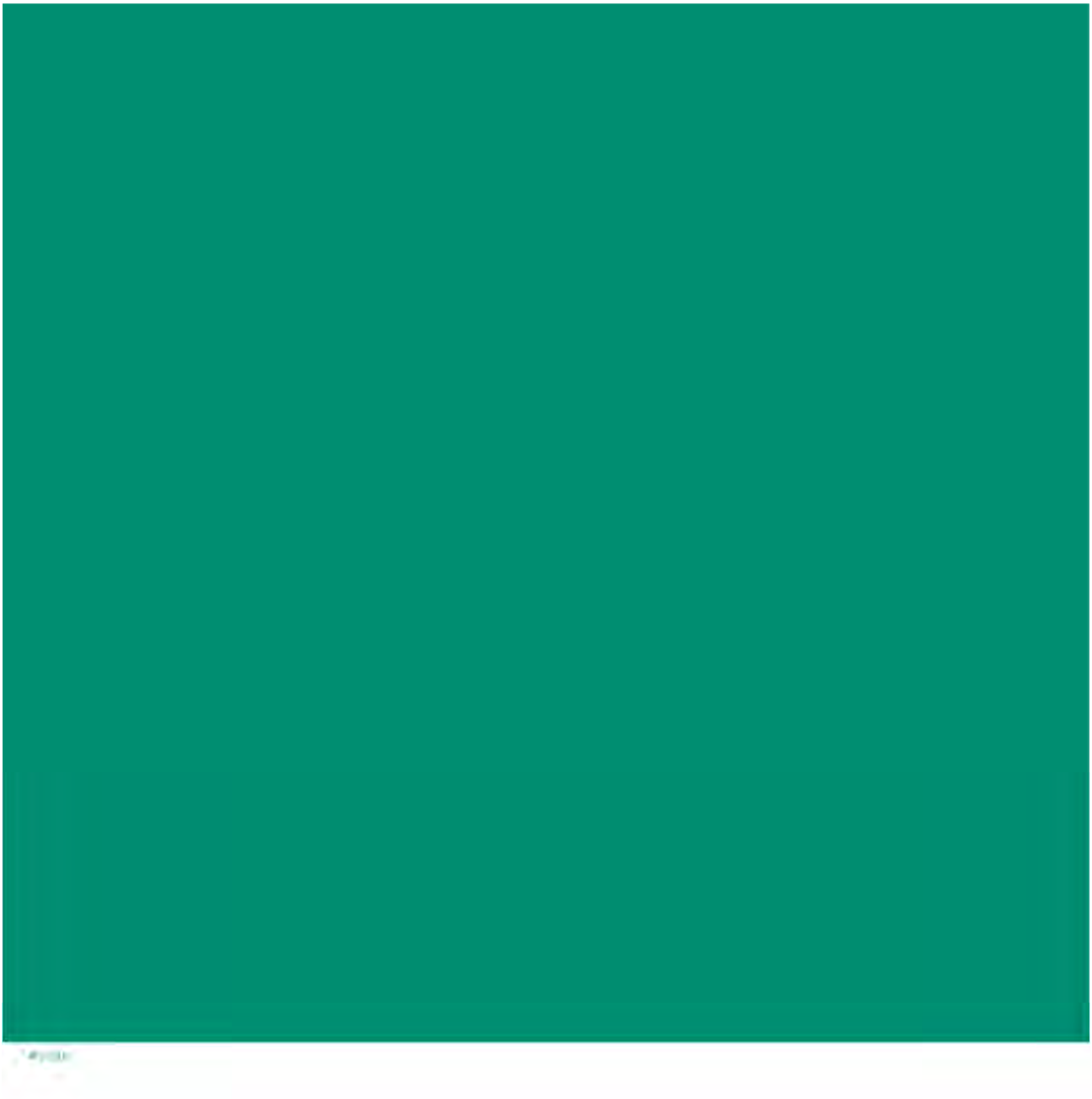
Summary of the Panel's recommended actions	Support/ Support in principle	Queensland Government response
Develop consistent mapping of koala habitat across SEQ and implement a mechanism for updating the mapping over time. This action relates to recommendation/s: 6.2(a)	Support	The Queensland Government will continue to develop and update koala habitat mapping.
Use new Queensland Government koala habitat mapping as the basis for identifying priority areas and broaden triggers for development assessment This action relates to recommendation/s: 6.2 (a), 1.2(ii) and 2.2(c)	Support in principle	The Queensland Government will apply the habitat mapping to the development of priority areas and development assessment provisions.
Develop: (1) broad-scale assessment tools to measure the extent and condition of koala habitat; and (2) ground-based rapid habitat assessment tools that can be integrated to provide statistics on trends and metrics on condition of koala habitat across SEQ. This action relates to recommendation/s: 6.2(b)	Support in principle	The Queensland Government will develop tools to assess koala habitat condition.
Develop a consistent approach to mapping threats to koalas across SEQ and implement a systematic mechanism for updating this mapping to track changes in threats over time that will guide the selection of priority areas. This action relates to recommendation/s: 6.2(c) and 4.2 (a)	Support	The Queensland Government will develop a consistent approach to mapping threats to koalas.
Develop a comprehensive koala monitoring program that explicitly evaluates and communicates progress towards koala conservation targets and evaluates policy and management success. This action relates to recommendation/s: 6.2(d) and 1.2(a)	Support in principle	The Queensland Government will develop a monitoring and evaluation strategy, as part of the SEQ Koala Conservation Strategy.
Encourage multi-disciplinary research that explicitly addresses key management and policy questions and the development of partnerships between researchers, the Queensland Government and other end-users. Explore mechanisms to enhance the effectiveness of research through leveraging funding. This action relates to recommendation/s: 6.2(f) and (g)	Support in principle	The Queensland Government will develop a fully costed implementation plan, as part of the SEQ Koala Conservation Strategy. The strategy will include directions for multi-disciplinary research and mechanisms for funding.
Run a koala conference every 5 years that brings together researchers, policy makers and planners. This action relates to recommendation/s: 6.2 (h)	Support in principle	The Queensland Government will develop a communication, education and extension strategy. The strategy will include a koala conference.

10. Recommendations for the rest of Queensland

The Queensland Government acknowledges that the model underpinning the Panel's recommendations for SEQ is capable of extension to other regions of Queensland. State-wide approaches to koala conservation will vary between, and within, regions depending on local circumstances. Following development of a regulatory response to koala conservation in SEQ, further consideration will be given to extending this approach to other parts of the state with koala populations.







13.5 REDLAND CITY PLAN PLANNING SCHEME POLICIES

Objective Reference:

Authorising Officer: **Louise Rusan, General Manager Community & Customer Services**

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

Report Author: **Lachlan Mcclure, Planning Officer**

Attachments:

1. **Minor and Administrative Amendments**
2. **PSP1 Environmental Significance**
3. **PSP1 Appendix 2 Terms and Definitions**
4. **PSP2 Infrastructure Works**
5. **PSP2 Appendix A Sediment and Erosion Control Forms and Certification**
6. **PSP2 Appendix B Tree Species List**
7. **PSP2 Appendix C On Maintenance Checklist and Certification**
8. **PSP2 Appendix D ADAC Data Capture Guideline**
9. **PSP2 Standard Drawings**
10. **PSP3 Flood and Storm Tide Hazard**
11. **PSP4 Landslide Hazard**
12. **PSP5 Structure Plans**
13. **PSP6 Environmental Emissions**

PURPOSE

The purpose of this report is to seek Council adoption of the amended draft planning scheme policies (PSPs) and to set a commencement date to align with commencement of the Redland City Plan on 8 October 2018.

The draft planning scheme policies include the following:

PSP1 – Environmental Significance
PSP2 – Infrastructure Works
PSP3 – Flood and Storm Tide Hazard
PSP4 – Landslide Hazard
PSP5 – Structure Plans
PSP6 – Environmental Emissions

BACKGROUND

Council began preparing the new planning scheme policies alongside and in conjunction with the preparation of the draft Redland City Plan. The process that Council has to follow to make and adopt new planning scheme policies was outlined by *Statutory Guideline 01/16 Making and amending local planning instruments*. It is noted that with the change of planning legislation this statutory guideline was replaced by a new document called the *Minister's Guidelines and Rules Under the Planning Act 2016*. However the formal process for adopting and commencing the proposed planning scheme policies is to be undertaken in accordance with *Statutory Guideline 01/2016: Making and amending local planning instruments*. This is to ensure that the adoption process follows that provided for under the *Sustainable Planning Act* which is the planning legislation under which the new Redland City Plan was approved. This process is outlined in Figure 1 below.

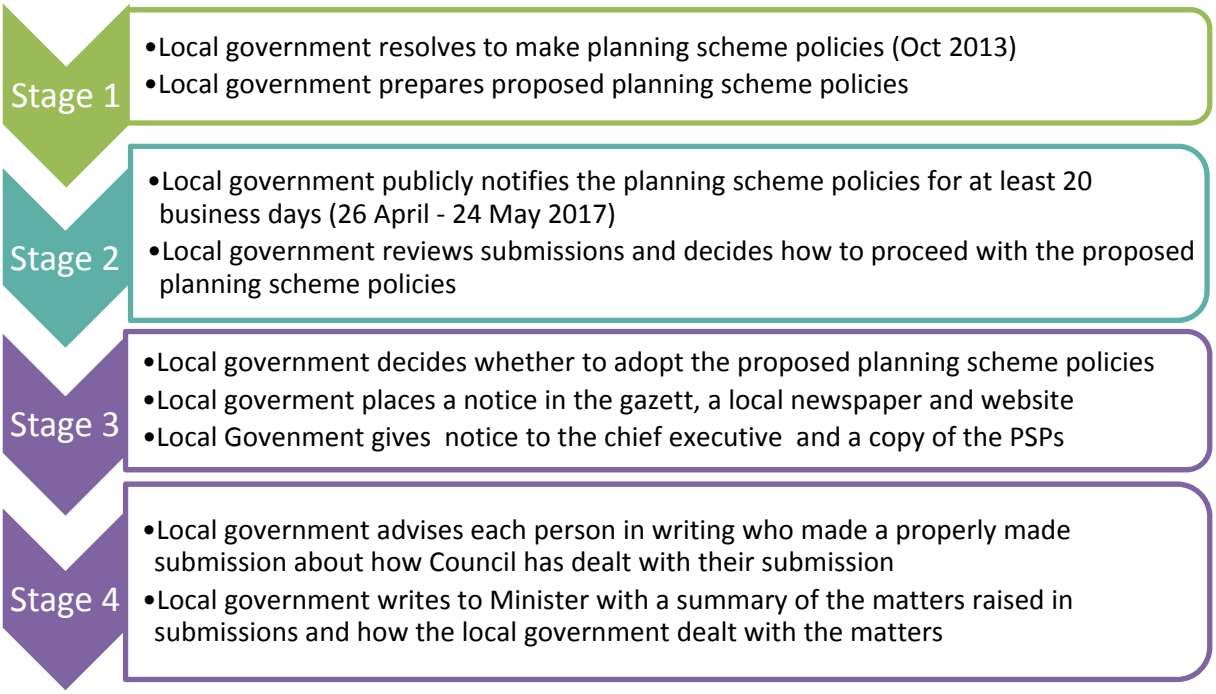


Figure 1: Process for making and amending a planning scheme policy

ISSUES

Public Consultation

At a General Meeting on Wednesday 19 April 2017, Council resolved to carry out public consultation on the six draft planning scheme policies for 20 business days in accordance with the requirements of Statutory Guideline 01/16 Making and amending local planning instruments. Consultation took place from Wednesday 26 April to Wednesday 24 May 2017.

In accordance with the requirements of the statutory guideline, the public were notified that the proposed planning scheme policies were available for public consultation by:

- Placing a notice in a local newspaper (Redland City Bulletin);
- Displaying a copy of the notice and having the proposed planning scheme policies available for inspection and purchase in a public office (customer services centres and libraries); and
- Making the notice and the proposed planning scheme policies available for download on the Council website. A webpage was created specifically for the draft planning scheme policies, with links from Council's main webpage and the associated City Plan webpage. The webpage received 212 website visits and 129 document downloads.

Submission Review

At the close of public notification, two properly made submissions were received by Council. Both submissions related to Planning Scheme Policy 1 – Environmental Significance. A summary of the grounds of the submissions and the analysis undertaken by Council officers is provided below.

1. **Absence of clear guidelines and language/wording not strong or prescriptive enough**

   The purpose of a planning scheme policy (PSP) is to identify standards called up in a code, state information Council may request and provide guidance on how to achieve compliance with the assessment criteria in the codes (Sustainable Planning Act, Section 114. Planning scheme policies are not assessment benchmarks called up in the Redland City Plan.

   The purpose of the Environmental Significance PSP is set out in part 1.1 of the PSP, and makes it clear that the PSP sets out standards called up as acceptable outcomes, information Council may request and additional guidance for applicants. The language that is used in the PSP reflects this stated purpose.

   The comments provided on the operation of the existing scheme are considered to be outside the scope of this PSP.

2. **Potential overuse of offsets as a solution, when offsets should be a last resort**.

   The components of the Environmental Significance PSP that relate to environmental offsets have been included in order to set out the acceptable outcome in the Environmental Significance Overlay Code AO17.1, which states *Offsets are provided in accordance with offset arrangements set out in Planning Scheme Policy 1 – Environmental Significance.*

   The PSP does contain a lot of information related to environmental offsets. This is not because environmental offsets are seen as the preferred solution, but because they are an option and it is necessary that the PSP outlines how this is intended to operate. Whether offsets are appropriate to a particular development is determined by assessment against the relevant parts of the City Plan and not by the PSP.

   The draft City Plan's Environmental Significance Overlay Code has been prepared in accordance with the State's environmental offsets framework. In accordance with this framework, offsets are only an option once an applicant has avoided, minimised and/or mitigated environmental impacts. This approach is taken in recognition of the limited ability for offset planting to entirely and immediately compensate for the environmental impacts of development.

3. **Table 1: Replanting species- species used in this table are insufficient and will not provide for a positive outcome for biodiversity**

   This table is only used to provide advice to applicants undertaking vegetation clearing that is "accepted development". That is, clearing of vegetation mapped within the Environmental Significance Overlay that is between 500m2 and 2500m2 on a 'Rural' zoned block where there is an existing dwelling. The PSP recognises that the best outcome for biodiversity will be achieved where applicants replant species based on the Regional Ecosystem type for the property being cleared, at a density that ensures maximum survivability, inhibits weed growth and with a complex structure (incorporating groundcover, shrubs and trees). Guidance on this approach is provided in section 1.2.1.1 of the PSP. However, accepted development provisions must be able to be easily quantified and applied and therefore Table 1 has been included to provide a simple and straightforward solution.

   The species in this table are based on a review of the Regional Ecosystem types that exist across the rural parts of the City, excluding water based Regional Ecosystems. Water based Regional Ecosystems are mapped within the Waterway corridors and wetlands overlay,

which has does not allow for any native vegetation clearing to occur without Council approval. The tree and shrub species listed commonly occur in most Regional Ecosystem types and are readily available for purchase at local nurseries.

4. **Appendix A: locally significant species is inadequate as well as containing typographical issues and errors in the entries**

   The purpose of this appendix is to identify species that are of local significance, by the Regional Ecosystem. This is due to the operation of the Environmental Offsets framework set out by the State government which does not allow for local governments to require offsets on a matter that is the same or substantially the same as a Matter of State Environmental Significance. By identifying locally significant species that occur within these Regional Ecosystem types, there is the opportunity to require offsets where there is a significant residual impact on a locally significant species (refer to section 1.4.1.3 (5)).

   Koalas have not been included in the list of locally significant species, as they are already identified as a Matter of State Environmental Significance.

   The identified typographical issues and errors have been corrected.

5. **Non-Planning Scheme Policy concerns**

   The submissions also raised issues that did not relate to the Planning Scheme Policy, either because they related directly to City Plan (e.g. the decision to zone all privately owned property in the rural part of the city 'rural'), or a non-planning scheme issue, for example reiterating support for Brisbane City Council's Natural Asset Local Law and Brisbane City's community education program and website.

PSP Amendments

Statutory Guideline 01/16 Making or amending local planning instruments allows Council to make changes to the proposed PSP to:

- address issues raised in a properly made submission;
- amend a drafting error; or
- address new or changed planning circumstances or information.

During the post-consultation review of the planning scheme policies, administrative errors in PSP1 – Environmental Significance and PSP3 – Flood and Storm Tide Hazard were identified as set out in Attachment 1.

In addition, two minor omissions were identified, these being the list of administrative definitions in the appendix to PSP 1 – Environmental Significance, and the absence of a number of Koala food species from the list of street trees in PSP2 – Infrastructure Works.

Changes are proposed to amend these drafting errors and omissions. These changes do not result in the proposed planning scheme policies being significantly different to the version released for public consultation and therefore do not require further public notification. Planning scheme policies are not required to be submitted for state interest review or ministerial approval. The proposed minor amendments are outlined in Attachment 1.

STRATEGIC IMPLICATIONS

Legislative Requirements

Statutory Guideline 01/16 Making and amending local planning instruments requires Council to consider every properly made submission about the proposed planning scheme policies and determine whether changes are necessary in response to submissions. This report satisfies this statutory requirement.

Statutory Guideline 01/16 Making and amending local planning instruments outline the steps that Council is required to follow to adopt a planning scheme policy. The recommendations of this report are consistent with this statutory requirement.

Risk Management

The adoption of the PSP's will assist in ensuring the effective operation of the City Plan by identifying the type of information Council may require to assess a development application, identifying the standards identified in the City Plan codes and including guidelines or advice about how to satisfy assessment criteria in the City Plan.

Financial

The finalisation of the PSP's is within existing budget.

People

There are no known impacts associated with this report.

Environmental

There are no known impacts associated with this report.

Social

Alignment with Council's Policy and Plans

Commencing the Redland City Plan (including the planning scheme policies) forms part of Strategic Outcome #5.1.3 of Council's Operational Plan 2017-18.

CONSULTATION

During the drafting process, officers consulted widely with other sections of Council and undertook a Councillor Briefing Session.

OPTIONS

Option One

That Council resolves to:

1. adopt the Minor and Administrative Amendments to the planning scheme policies as outlined in Attachment 1;
2. adopt the amended planning scheme policies as outlined in Attachments 2-13 with a commencement date of the 8 October 2018 to align with the commencement of the Redland City Plan;
3. undertake the necessary actions to finalise the adoption of the planning scheme policies as outlined in the *Statutory Guideline 01/16 Making and amending local planning instruments*. Specifically to:

a. give the Minister a written notice containing a summary of the matters raised in the properly made submissions, and stating how the Council has dealt with the matters;

b. advise each person in writing who made a properly made submission about how Council has dealt with their submission;

c. place a notice in the gazette, a local newspaper and on Council's website about the planning scheme policies; and

d. give the chief executive officer a copy of the notice (above) and an electronic copy of the planning scheme policies including any associated mapping.

Option Two

That Council resolves to:

1. adopt the planning scheme policies as advertised with a commencement date of the 8 October 2018 to align with the commencement of the Redland City Plan; and
2. undertake the necessary actions to finalise the adoption of the planning scheme policies as outlined in the *Statutory Guideline 01/16 Making and amending local planning instruments*. Specifically to:

   a. give the Minister a written notice containing a summary of the matter raised in the properly made submissions, and stating how the Council has dealt with the matters;

   b. advise each person in writing who made a properly made submission about how Council has dealt with their submission;

   c. place a notice in the gazette, a local newspaper and on Council's website about the planning scheme policies; and

   d. give the chief executive officer a copy of the notice (above) and an electronic copy of the planning scheme policies including any associated mapping.

Option Three

That Council resolves to not proceed with the proposed planning scheme policies.

OFFICER'S RECOMMENDATION

That Council resolves to:

1. **adopt the Minor and Administrative Amendments to the planning scheme policies as outlined in Attachment 1;**
2. **adopt the amended planning scheme policies as outlined in Attachments 2-13 with a commencement date of the 8 October 2018 to align with the commencement of the Redland City Plan; and**
3. **undertake the necessary actions to finalise the adoption of the planning scheme policies as outlined in the *Statutory Guideline 01/16 Making and amending local planning instruments*. Specifically to:**
   a. **give the Minister a written notice containing a summary of the matters raised in the properly made submissions, and stating how the Council has dealt with the matters;**
   b. **advise each person in writing who made a properly made submission about how Council has dealt with their submission;**
   c. **place a notice in the gazette, a local newspaper and on Council's website about the planning scheme policies; and**
   d. **give the chief executive officer a copy of the notice (above) and an electronic copy of the planning scheme policies including any associated mapping.**

Attachment 1 – Administrative changes to the planning scheme policies

Page number (s)	Details of change
Planning Scheme Policy 1 – Environmental Significance	
APPENDIX 1	
Page 11	For species ID 12, in the Family column, change "Orchidaceae" to "Lycaenidae".
Page 11	For species ID 861, in the Common name column, change "Sunmerged" to "Submerged".
Page 12	For species ID 2085, in RE habitat description column, change "indundation" to "inundation".
Page 12	For species IS 1557, in RE habitat description column, change "partiularly" to "particularly".
Page 14	For species ID 2094, in RE habitat description column, change "parisitises" for "parasitises".
APPENDIX 2	
Page 15+	Insert Appendix 2 – Terms and Definitions
Planning Scheme Policy 2 – Infrastructure Works	
Appendix B	Identified three Koala food species as potential street trees 'subject to Council approval'.
Planning Scheme Policy 3 – Flood and Storm Tide Hazard	
Page 1	Change title from "Flood, Storm Tide and Drainage Constrained Land" to "Flood and Storm Tide Hazard" to align with the overlay code title.

1.0 PLANNING SCHEME POLICY 1 - ENVIRONMENTAL SIGNIFICANCE

1.1 RELATIONSHIP WITH THE PLANNING SCHEME

(1) This part sets out:

(i) particular standards called up as acceptable outcomes in 8.2.4 Environmental Significance Overlay Code. These are contained in the following subsections:
1.4 Environmental offsets

(ii) information council may request to demonstrate compliance with the performance outcomes of the code. These are contained in the following subsections:
1.3.1.1 Ecological report
1.4.2.1 Land based offsets management plan

(iii) guidance for applicants which is contained in the following subsections:
1.2.1 Compensatory planting
1.3.2 Minimising and mitigating impacts associated with development
1.4.3 Environmental offsets
1.5.1 Clearing thresholds
1.6.1 Mapping and data sources

1.2 COMPENSATORY PLANTING

(1) This section sets out guidance for applicants on how to achieve compliance with AO1.1 for self-assessable development in the Environmental Significance Overlay Code.

1.2.1 Guidance for applicants

(1) Where self-assessable clearing is undertaken in accordance with Table 5.10.1, compensatory planting should be provided for clearing between 500m^2 and 2500m^2 to the nearest equivalent square metre.

(2) Table 1 provides a list of tree and shrub species which are locally occurring in most regional ecosystems in the rural part of Redland City and can be utilised for replanting cleared areas.

Table 1: Replanting species

	Scientific name	Common name
Trees	*Corymbia intermedia*	Pink bloodwood
	Eucalyptus tereticornis	Queensland Blue Gum
	*Lophostemon confertus**	Brush Box
Shrubs	*Leptospermum polygalifolium*	Wild May
	*Jacksonia scoparia**	Dogwood

*Low flammability species (Table 8.2.2.3.2 of the planning scheme) recommended for use in areas identified in the bushfire hazard overlay, where planting within 10m of a building or structure.

(3) The above trees and shrubs should be planted at the following densities based on the area of compensatory planting required:
(a) 1 tree per 10m^2 of replanting area; and,
(b) 1 shrub per 2.5m^2 of replanting area.

(4) Applicants should refer to the Bushfire hazard overlay map to determine if there is a level of risk of bushfire hazard on the property. Replanting should be outside of any areas identified as being at risk of bushfire hazard, and be undertaken at least 10m from a building or structure. If bushfire hazard areas cannot be avoided, use low flammability species as indicated in the table above.

1.2.1.1 Additional information for replanting

(1) When undertaking compensatory planting, the species being removed should ideally be the species that is replaced. Species that will have the best chance of survival are locally occurring native species which are determined by Regional Ecosystem.

(2) In addition to the trees and shrubs listed in Table 1, locally occurring native species can be determined using Regional Ecosystem maps, available on Council's Red-E-Map, and Council's Regional Ecosystem Database.

(3) Compensatory planting should incorporate both tree and shrub species. Locally native groundcover (low-growing or spreading plants which might include grass or sedge species or herbaceous plants) could also be incorporated to enhance biodiversity value. Where locally native groundcover is included, it is suggested that the area be replanted using the proportions:
(a) 20% trees;
(b) 40% shrubs; and,
(c) 40% groundcovers.

(4) Plant spacing should be at a density that will result in rapid canopy closure as this is effective and minimising weed growth. The South East Queensland Ecological Restoration Framework advises allowing for planting of trees and shrubs placed at 1.5m centres.

1.3 MINIMISING AND MITIGATING IMPACTS ASSOCIATED WITH DEVELOPMENT

(1) This section identifies the preferred approach to undertaking assessments, which may be required to demonstrate compliance with the performance outcomes in the Environmental Significance Overlay Code.

1.3.1 Information that Council may request

1.3.1.1 Ecological Report

(1) An Ecological Assessment Report should be provided to address the provisions of the Environmental Significance Overlay Code. For consistency and context it should also include any assessment required under Federal or State legislation or another relevant code of the City Plan.

(2) The Ecological Assessment Report should identify and describe the site's natural environmental features, including:
(a) vegetation (including any weed infestations);
(b) fauna and habitat for fauna; and,
(c) any waterways or wetlands, including drainage lines (artificial or natural), where relevant.

(3) The level of detail in investigating these may vary, relative to the site and the development being proposed:
(a) For applications for vegetation clearing, it is necessary to provide details of the vegetation proposed to be cleared. It is recommended that this be provided in the form of an arborist report (refer to Planning Scheme Policy 2 – Section 4 for further information about Arborist reports).

(b) For applications for small-scale development or operational works with limited capacity to adversely impact on environmental values or processes (at the site and adjoining area), it is sufficient to provide a basic assessment to complete the ecological assessment report (site visit and desktop assessment).
(c) For more complex applications or applications for large-scale development with potential for significant adverse impacts on environmental values or where development is located in particularly significant or sensitive areas, a more detailed ecological assessment, including flora and fauna surveys, is required.

(4) This assessment should also consider the broader context of the proposal, including but not limited to:
(a) safe fauna movement for all native fauna (throughout the proposed development, and with adjacent or nearby habitat); and,
(b) upstream and downstream water quality.

(5) The Ecological Assessment Report should then provide an assessment and justification of the proposed development, including an assessment of how the development will avoid, minimise and mitigate impacts on the identified environmental values. Guidance on development design is provided in section 1.3.2. Incorporating these suggestions is one way that an applicant might demonstrate compliance with some of the performance outcomes in the overlay code.

(6) A vegetation management plan and wildlife habitat management plan may be required to support the ecological assessment along with any other relevant site surveys and management plans (e.g. traffic), as determined by the values identified in the report.

1.3.1.2 Vegetation Management Plan

(1) A vegetation management plan must clearly identify the vegetation to be retained on site and vegetation that is proposed to be cleared and should include:
(a) a tree management plan that demonstrates how retained trees are to be protected during construction (in accordance with Australian Standard 4970-2009 Protection of trees on development sites);
(b) details of the proposed landscaping and revegetation areas, including proposed species palettes and relevant ecosystem services that landscaping and revegetation is to provide (for example stormwater management or enhancing safe fauna movement); and,
(c) details of how weeds are to be managed on the site, by identifying any existing weed infestations and proposed actions to prevent weed incursion during construction.

1.3.1.3 Wildlife Habitat Management Plan

(1) A wildlife habitat management plan must be prepared by an ecologist with suitable experience and should address the survival and ongoing access to habitat during construction and operation of the development. This plan should indicate the broad range of fauna expected on the site, the proposed site preparation and construction methods (e.g. how the vegetation is to be cleared), as well as a summary of future on-site operations and any expected constraints. The plan must:
(a) identify habitat trees, including standing trees with hollows, ground logs and bush rocks, to be retained wherever possible;
(b) clearly identify vegetation to be removed to ensure minimal disturbance to the existing native vegetation, including any significant understorey species identified in the ecological assessment report, or otherwise identified, for translocation prior to clearing operations commencing; and,
(c) details on how fauna will be managed during construction (for example, engaging an accredited spotter and ensuring clearing is undertaken sequentially).

1.3.2 Guidance for applicants

(1) This section provides additional guidance for applicants, summarising development design considerations to assist in meeting the performance outcomes of the Environmental Significance Overlay Code. The additional guidance in this section can also be used to inform the ecological assessment report, as outlined in the previous section.

(2) **Values to be protected:** The site's existing values and constraints should be identified and considered during development design (refer to previous section). The development design should then demonstrate how this design achieves the performance outcomes of the Environmental significance code.

(3) These values and constraints should be taken into consideration in determining the 'development footprint'. The development footprint is the extent of the development and the location of works, including any proposed services and facilities that are incidental to the development. This development footprint should:
- (a) avoid the need to clear vegetation, in particular habitat for priority species, mature trees, vegetation that is part of a corridor, or that is part of a larger contiguous patch of vegetation;
- (b) avoid the need for excavation or fill works and,
- (c) provide an appropriately sized buffer between development and areas of environmental significance. Further guidance on buffers is below in part 4(h).

(4) **Minimising and mitigating impacts:** Depending on the development being proposed, and the values and constraints that have been identified for protection, consideration should then be given to minimising and mitigating any impacts that may result from the development. These include:
- (a) enhancement and landscaping planting should be directed to areas of environmental value or sensitivity, including riparian areas, to strengthen existing corridors or habitat (refer to section (5) below);
- (b) pests and weeds should be removed, and future incursions prevented;
- (c) stormwater quality and volume should be managed, in accordance with the Healthy Waters Code;
- (d) the location of new potential noise sources should be determined as part of the Ecological Assessment report, and noise abatement measures applied to ensure that noise is not directed into habitat areas or where fauna movement is provided for;
- (e) artificial light should not be directed into habitat areas. Particular consideration should be given to flying fox roost sites and turtle nesting areas:
  - (i) Within 50m of flying fox roost sites (identified through the Ecological Assessment Report) artificial light should be limited, and mitigation measures (e.g. shielding) should be implemented.
  - (ii) North Stradbroke Island - where development is in proximity to turtle nesting sites on beaches in and around Point Lookout:
    - within 1.5km - maintain a 'darkness zone' with no artificial light. This can be done by using 'low pressure sodium' (LPS) lights, using natural topography, vegetation and structures to shield the beach form light at turtle eye level, and by using directional lighting to directly light downwards and away from the beach;
    - between 1.5km and 5km - measures should be taken to limit the amount of artificial light used, by confining lighting to essential purposes only, and using LPS lighting, avoiding decorative or ultraviolet lights, and designing directed and shielded lights;

(f) safe fauna movement should be provided for. This might include road treatments, exclusion fencing, funnelling fences and structures, underpass structures, lighting, speed limits and street signage. Refer to 'Fauna Sensitive Road Design; volume 1 and 2' (DTMR) for more specific guidance. Where fauna underpasses are proposed, they must be designed, constructed and furnished to facilitate the movement of target species (identified through the Ecological Assessment Report);

(g) for Koalas, the Koala-sensitive Design Guideline (DEHP) provides guidance on appropriate measures to avoid and minimise impacts of development on koala movement;

(h) buffers may be used for a number of different reasons, for example to allow for fauna movement, to protect an existing habitat area, to protect a waterway or to protect adjacent land uses from impacts as a result of noise, light, vibration or other reason. The size of the buffer area will vary, depending on the type and scale of the development proposed, surrounding land uses and the existing natural features. The following should be used to guide the use of buffers:

  (i) buffers around waterways should provide an appropriate distance to allow for a diversity of flora species and provide for wildlife corridors, as well as accounting for any natural variation to the waterway over time (refer to Waterways and Wetlands Overlay Code);

  (ii) habitat areas being buffered should also include areas like grassland (e.g. coastal saltmarsh, claypans etc.) and foreshore areas;

  (iii) buffers should be sufficient to direct native animals away from those parts of development that potentially pose a threat and provide an effective separation between the source of the threat and habitat and movement networks;

  (iv) an effective width to minimise the edge effects[1] of weed infestation, pedestrian and vehicle access, fires, etc;

  (v) separate habitat areas from sensitive land uses. For example, sensitive land uses (e.g. childcare centres, vet clinics and retirement villages) should be located at least 300m from flying fox roost sites;

  (vi) measures should also be taken to protect identified areas of significance during the construction stage of any development, for example by ensuring safe fauna access to retained habitat in accordance with a wildlife habitat management plan (refer to section 1.3.1.3);

(5) **Corridors and enhancement planting:** Planting as part of a development could be undertaken as part of the site's landscaping, to enhance existing vegetation and habitat, or to replace habitat that was removed as part of the development. Applicants should consider at a minimum the following:

(a) ensure weed management is also undertaken;

(b) undertake regeneration, including active management to encourage regrowth of native plants from the seedbank and rootstock that exist in the soil. This can be done by stockpiling topsoil on site and later spreading it in cleared, degraded or bare areas in accordance with the ecological assessment report, or as determined through site assessment, to encourage regeneration of native plants. Topsoil contains important seed bank and plant regeneration material that may be used for regeneration at low cost following its removal from construction areas;

(c) undertake replanting, by planting seedlings or tubestock and undertaking active management to nurture them through the first twelve months (unless otherwise specified through a condition on the development approval) until they are well established;

[1] a commonly used term in ecology and related research and literature. In this context it is used to describe the impact of urban development adjoining habitat areas, and impacts that include things like physical disturbance to soil and vegetation, increased weed and exotic species, reduced fauna diversity and increased vulnerability of fauna to predation, and the impacts from things like light and noise.

(d) use native plants identified in the Redland City Council Regional Ecosystem (RE) Species Database as being suitable to the location of the planting, and,
(e) The South East Queensland Ecological Restoration Framework provides additional guidance for restoration planting and regeneration works in its 'Guideline' section.

1.4 ENVIRONMENTAL OFFSETS FOR MLES

(1) This section sets out the standards called up in AO17.1 in the Environmental Significance Overlay Code. These standards represent the acceptable outcome which meets the performance outcomes set out in the code.

1.4.1 Standards called up as acceptable outcomes

1.4.1.1 Relationship between MLES and MSES

(1) In accordance with the *Queensland Environmental Offsets Act 2014* (the Offsets Act), offsets may be required for identified matters of state environmental significance (MSES) and for matters of local environmental significance (MLES)[2]. Guidance on satisfying offset requirements for MSES can be found on the State government's offsets website.

(2) For the purposes of the Environmental Significance overlay, the matters mapped as MLES are outlined in section 1.6.

1.4.1.2 Types of offsets

(1) Offsets may be provided in accordance with the Offsets Act as either:
(a) financial settlement (calculator provided on the Queensland Government's offsets website), or
(b) land-based offsets (proponent driven).

(2) Offsets can be delivered as a combination of these, and offsets can also be provided as a 'staged offset' where the offset conditions specify this option. Staged offsets may be appropriate where a development that has a series of parts, or 'stages', and it is appropriate to deliver offsets at each stage of the development. The Queensland Environmental Offsets Policy (Version 1.2) provides more detail on delivering staged offsets.

(3) Offsets for MLES are to be calculated on the basis of 1:3 (1 tree removed: 3 trees planted). The Queensland Government's offsets website has information on how this metric is to be calculated.

(4) Land based offsets are to be provided as close as practicably possible to the development site, within the Redland City local government area.

(5) Offset restoration works are to establish a restored ecosystem which:
(a) incorporates assemblages of species replicating those in ecosystems being offset (as set out in Redland City Council's regional ecosystems species database and Appendix 1 of this policy), and taking into consideration local conditions to ensure survivability;
(b) has the potential to recruit further species by natural means;
(c) supports the same structure and function as ecosystems being offset; and
(d) do not include exotic and invasive species.

[2] s14(2)(b) of the *Environmental Offsets Act 2014* does not allow for an offset condition to be imposed on a prescribed environmental matter that is "the same, or substantially the same". Therefore, Redland City Council as the local authority cannot impose an offset where the MLES being impacted is the same prescribed environmental matter as the MSES listed in the *State Planning Policy 2014*.

1.4.1.3 Determining significant residual impact for MLES

(1) The State government's offsets policy (section 1.3) establishes a number of offsets principles and requires environmental impacts be avoided and then minimised before offsets can be considered for any remaining impact.

(2) Offsets are not always suitable. An application must comply with all of the performance outcomes in the environmental significance overlay code in order to comply. There may be instances where an offset is not sufficient to warrant approval.

(3) The ecological report (section 1.3.1.1 of this policy) should be used to demonstrate where environmental impacts have been avoided and minimised. It should also include details on the significant residual impact proposed to be offset.

(4) The following outlines the criteria to determine significant residual impact for MLES. This reflects the State guidelines used to assess significant residual impacts on MSES, adapted to apply to MLES.

(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; or
- (h) cause disruption to ecologically significant locations (breeding, feeding, nesting, migration or resting sites) of a locally significant species.

(6) On-site mitigation is not considered an offset under the Environmental Offsets Act 2014.

1.4.2 Information the Council may request

1.4.2.1 Land based offsets management plan

(1) Where land based proponent driven offsets are proposed (either on private land or public land), a management plan is to be prepared which includes details (including costing) specifying:
- (a) written agreement with the landowner (if relevant);
- (b) how weeds and pests will be removed and prevented from re-infestation
- (c) management actions to reduce risk from hazards (e.g. fire and flood);
- (d) proposed maintenance periods;
- (e) regular auditing and reporting to be undertaken by the proponent;
- (f) ongoing management arrangements once the offset is established and the site/land has been legally secured;
- (g) time frames within which the offset is to reach the desired ecosystem species diversity and community structure; and
- (h) the conservation outcome to be achieved and how the outcome will be determined or measured and by whom (should be an appropriately qualified restoration ecologist and botanist).

1.4.3 Guidance for applicants

1.4.3.1 General

(1) Details of proposed offsets must be included with a development application. The State government provides a series of forms that can also be used for MLES offsets to assist applicants to work through and enter into an agreement with Redland City Council, including how to deliver offsets.

1.4.3.2 How to find a receiving site

(1) Once it has been determined by the applicant that there is a need for an offset, Council can assist in determining if a suitable receiving site is available. If an offset is not suitable or an offset site is not available, the proposal will need to be revised to reduce the level and/or area of impact or an alternative offset type provided.

(2) A Notice of Election will need to be prepared by the applicant which outlines how the offset is to be delivered and includes supporting information such as:
- (i) financial settlement details, and/or
- (ii) offset delivery plan
- (iii) offset area details (including how the offsets area is proposed to be secured in perpetuity)
- (iv) habitat quality details; and,
- (v) staged offset details (if relevant).

(3) The South East Queensland Ecological Restoration Framework provides further guidance relevant to the establishment of offset areas.

1.4.3.3 More information

(1) The State government has already drafted a number of supporting documents to guide applicants in determining what offsets they might be required to provide, and how those offsets are to be provided. Below is a summary of this offset framework:

Document	Summary
Environmental Offsets Act	Provides the framework for what an offset is and how it is to be delivered. Identifies the legal security mechanisms that may be used for offsets including the new 'environmental offset protection area' designation Establishes a head of power for the supporting regulation and offset policy
Environmental Offsets Regulation	Lists prescribed activities and prescribed environmental matters that may be subject to offset assessment requirements Provides further detail on other Act provisions.
Queensland Environmental Offsets Policy	Provides requirements for impacts on prescribed environmental matters Impacts on protected areas Advanced offsets Strategic offset investment corridors Outlines the types of offset delivery Describes direct benefit management plans
Queensland Environmental Offsets Policy Significant Residual Impact Guideline	Provides criteria for determining 'significant impact' sorted by prescribed environmental matters.

Draft guide to determining terrestrial habitat quality	Provides a step-by-step methodology explaining how to measure habitat quality for land-based offsets.

1.5 CLEARING

The tables of assessment in Section 5.10 'Environmental Significance overlay' make clearing assessable in certain circumstances. In some circumstances, a threshold is provided, and clearing below that threshold is not assessable development.

1.5.1 Guidance for applicants

(1) To calculate whether or not the application will trigger assessment against the Environmental Significance Overlay code, an applicant will need to calculate the area of vegetation being cleared. The area of vegetation being cleared may be a contiguous patch of vegetation, or a number of scattered trees, or a combination of both.

(2) If the development is over two or more property boundaries, the clearing thresholds apply to the whole development site, rather than applying to each individual property.

(3) The method to be used to calculate the clearing thresholds is the canopy cover method.

(4) The canopy cover method is based on measuring the canopy cover on an aerial photo using an appropriately calibrated GIS measuring tool and marking the canopy cover accurately on the ground.

(5) For clearing areas which approach the assessable clearing thresholds a licensed surveyor is to be engaged to accurately plot the area to be cleared.

(6) The area to be cleared relates to the extent of native vegetation. The planning scheme is concerned with the full canopy cover of the native vegetation whether or not exotic vegetation may co-exist within that area.

1.6 OVERLAY MAPPING AND DATA SOURCES

1.6.1 Guidance for applicants

(1) The Environmental Significance Overlay in City Plan 2015 has been developed in accordance with the State Planning Policy July 2014 (SPP).

(2) Matters of State environmental significance (MSES) were mapped using the State government databases supporting the SPP, in accordance with the SPP definition of MSES. These include:
- (i) wildlife habitat;
- (ii) regulated vegetation;
- (iii) protected areas;
- (iv) regrowth and remnant koala habitat;
- (v) urban trees that provide koala habitat; and
- (vi) regional ecosystems (including remnant and regrowth vegetation).

(3) This data is available on Redland City Council's website.

(4) There were some matters that, while defined as MSES, maps were not provided by the State. In these instances Council data has been used.

(5) Redland City Council also used improved mapping of habitat and vegetation on the mainland. This included locally refined mapping of urban koala trees and remnant and

regrowth regional ecosystems[3] and particular species (both flora and fauna). The regional ecosystem mapping was created by specialist ecological experts engaged by Council, using LiDAR, aerial photo interpretation as well as field data from a tailored field investigation.

(6) In accordance with the State's SPP and offsets framework the koala habitat and regional ecosystems are MSES. The remaining mapped values are matters of local environmental significance (MLES). Generally, MLES can be described as habitat for particular species (refer to 'locally significant species' in Appendix 1).

(7) Both MLES and MSES are dealt with in the same way in the Environmental Significance Code. However, offsetting requirements may differ (refer to section 1.4 of this planning scheme policy).

(8) Some areas mapped as MLES in the overlay may be found to have the attributes of MSES following more detailed investigation. In this event, these values are treated as MSES.

(9) Within urban areas[4] vegetation on lots less than 1000m^2 have not been included in the overlay, other than where the land is zoned for recreation and open space, conservation or environmental management.

[3] Urban koala habitat was mapped where the RE type that is present includes koala food tree species, drawn from the Australian Koala Foundation's *National Koala Tree Protection List; Recommended Tree Species for Protection and Planting of Koala Habitat,*

[4] Refer to the, section 1.7.3 of the planning scheme for a definition of the urban area.

Appendix 1 - Locally significant species

Species ID	Species Number	Kingdom	Family	Scientific_ Name	Common_ Name	Type	Status				RE habitat description	Non-RE habitat description	Non RE	Regional Ecosystems
							EPBC Act	NC Act	Back On Track	Endemic				
484	SP001	Plant	Mimosaceae	*Acacia baueri* subsp. *baueri*	Tiny Wattle	flora		V	H		Low Dry to Moist Wallum Heath			12.2.5,12.2.9,12.2.12,12.2.13,12.3.13,12.5.9
8	SP002	Animal	Accipitridae	*Accipiter novaehollandiae*	Grey/White Goshawk	fauna		NT			Wooded habitats, sparse in region - concentrated on Mt Cotton - Sheldon			12.11.10,12.11.3,12.3.1,12.11.23,12.5.2,12.2.5,12.11.5k,12.11.5e,12.3.3d,12.2.6,12.9-10.19a,12.11.3,12.11.5j,12.9-10.17d,12.2.8,12.3.11,12.5.3,12.11.3a,12.11.5a,12.11.23,12.9-10.4,12.3.11a,12.5.6c,12.9-10.17c
12	SP003	Animal	LycaenidaeOrchidaceae	*Acrodipsas illidgei*	Illidge's ant-blue butterfly	fauna		V	C		*Casuarina glauca* and adjacent mangrove areas			12.1.1,12.2.5,12.2.6,12.2.7,12.2.8,12.2.9,12.2.10,12.3.1,12.2.3.5,12.3.6,12.3.11,12.5.2,12.5.3,12.9-10.4,12.11.3,12.11.23,12.12.14
13	SP004	Animal	Limnodynastidae	*Adelotus brevis*	Tusked Frog	fauna		V			Waterways and temporary and permanent pools		waterbody	12.1.1,12.2.1,12.2.2,12.2.5,12.2.6,12.2.7,12.2.8,12.2.9,12.2.10,12.2.12,12.2.13,12.3.1,12.3.5,12.3.6,12.3.11,12.3.13,12.5.2,12.5.3,12.9-10.4,12.11.3,12.11.10,12.11.23,12.12.14
611	SP005	Plant	Blandfordiaceae	*Blandfordia grandiflora*	Large Christmas Bell	flora		E	H		Moist to Wet Wallum Heath			12.2.12,12.3.13
66	SP006	Animal	Cacatuidae	*Calyptorhynchus lathami*	Glossy Black Cockatoo	fauna	E	V			*Allocasuarina* spp. and *C glauca*			12.1.1,12.2.5,12.2.6,12.2.7,12.2.8,12.2.10,12.3.1,12.3.5,12.3.6,12.3.11,12.5.2,12.5.3,12.9-10.4,12.11.3,12.11.23,12.12.14
2081	SP007	Animal	Charopidae	*Charopid* BR38	A Land Snail	fauna				X	Eucalypt forest to Woodland containing *Eucalyptus racemosa* on Coastal Sands			12.2.10,12.2.6,12.2.8,12.2.1
723	SP008	Plant	Sparrmanniaceae	*Corchorus cunninghamii*	Native jute or Cunninghams jute	flora	E	E			Margins of Rainforest and Tall Eucalypt Forest			12.11.10,12.11.3,12.11.5,12.11.2
120	SP009	Animal	Myobatrachidae	*Crinia tinnula*	Wallum Froglet	fauna		V	H		Acid swamps and depressions			12.2.5,12.2.7,12.2.9,12.2.10,12.2.12,12.2.15,12.3.5,12.3.6,12.5.10
846	SP010	Plant	Rubiaceae	*Durringtonia paludosa*	Durringtonia	flora		N	C		Wet Wallum Heath and on Margins of Swamp Sclerophyll Forest E. robusta			12.2.5,12.2.7,12.2.12,12.2.15,12.3.4
861	SP011	Plant	Cyperaceae	*Eleocharis difformis*	~~Submerged~~ Submerged Spikerush	flora		E		X	Submerged aquatic plant in Perched and Window Lakes restricted to Lacustrene wetlands 12.2.15a and 12.2.15f			12.2.15,12.2.15a,12.2.15f
470	SP012	Animal	Ciconiidae	*Ephippiorhynchus asiaticus*	Black-necked Stork	fauna		NT			Wetlands, rare visitor			12.1.1,12.1.2,12.1.3,12.2.12,12.2.15,12.2.15f,12.2.5,12.2.5a,12.2.7,12.3.11,12.3.13,12.3.5,12.3.6,12.3.8,12.5.9
51	SP013	Animal	Burhinidae	*Esacus magnirostris*	Beach Stone Curlew	fauna		V	H		Dunes, beaches		beach	12.2.14,12.2.16,12.2.9,12.2.10,12.2.13,12.2.7
955	SP014	Plant	Orchidaceae	*Genoplesium* sp. (Raby Bay J.Elsol AQ462423)	Raby Bay Midge Orchid	flora				X	Eucalypt forest to Woodland containing *Eucalyptus racemosa*			12.5.3,12.9-10.4,12.11.5j,12.12.14
2082	SP015	Animal	Charopidae	*Gyrocochlea myora*	Myora Springs Snail	fauna				X	Moist Coastal Forests including Littoral Rainforest			12.2.6

Species ID	Species Number	Kingdom	Family	Scientific_ Name	Common_ Name	Type	Status				RE habitat description	Non-RE habitat description	Non RE	Regional Ecosystems
							EPBC Act	NC Act	Back On Track	Endemic				
203	SP016	Animal	Haematopodidae	*Haematopus fuliginosus*	Sooty Oystercathcer	fauna		NT			Rocky coasts, coarse beaches		beach	12.2.14,12.12.19
393	SP017	Animal	Rallidae	*Lewinia pectoralis*	Lewin's Rail	fauna		NT			Riparian - with cover			12.1.1,12.1.2,12.1.3,12.2.12,12.2.15,12.2.15f,12.2.5,12.2.5a,12.2.7,12.3.11,12.3.13,12.3.5,12.3.6,12.3.8,12.5.9,12.3.1,12.3.11a
2083	SP018	Animal	Hylidae	*Litoria cooloolensis*	Cooloola Sedgefrog	fauna		NT			Sandy coastal freshwater lakes and stream - North Stradbroke Island			12.2.1,12.2.7,12.2.15
2084	SP019	Animal	Hylidae	*Litoria freycineti*	Freycinet's Frog	fauna		V			Open, vegetated coastal swamps and depressions			12.2.2,12.2.5,12.2.7,12.2.12,12.2.13,12.2.15,12.3.5,12.3.6,12.3.13,12.5.9,12.9-10.22
2085	SP020	Animal	Hylidae	*Litoria olongburensis*	Wallum Sedge Frog	fauna	V	V			Wallum sedgelands subject to indundationinundation			12.2.5,12.2.7,12.2.12,12.2.15
1861	SP021	Animal	Accipitridae	*Lophoictinia isura*	Square-tailed Kite	fauna		NT			Eucalypt woodland and open forest, rare and breeding in area			12.1.1,12.2.1,12.2.2,12.2.5,12.2.6,12.2.7,12.2.8,12.2.10,12.3.1,12.3.5,12.3.6,12.3.11,12.5.2,12.5.3,12.9-10.4,12.11.3,12.11.10,12.11.23,12.12.14
1135	SP022	Plant	Proteaceae	*Macadamia integrifolia*	Macadamia	flora	V	V			Dry Rainforests and Riparian Forests			12.3.1,12.11.3,12.11.10
1136	SP023	Plant	Proteaceae	*Macadamia tetraphylla*	Rough Shelled Macadamia	flora	V	V			Rainforests and Riparian Forests			12.11.10,12.3.1
2086	SP024	Plant	Apocynaceae	*Marsdenia coronata*	Slender Milk Vine	flora	V	V			Eucalypt Forests to Woodlands and Rainforest Margins Particularly associated with Lophostemon confertus in Whipstick Growth Habit (see BAAM point records at Mt Cotton Quarry)			12.3.11,12.11.3,12.11.10,12.11.5e
2087	SP025	Plant	Apocynaceae	*Marsdenia longiloba*	Clear Milk Vine	flora	V	V			Moist Tall Open Forest and rainforest margins (see BAAM point records at Mt Cotton Quarry)			12.11.10,12.11.3,12.11.23,12.3.8,12.3.2
2088	SP026	Plant	Juncaginaceae	*Maundia triglochinoides*	Maundia	flora		V			Wetlands including Paperbark Swamps Found At Karawatha and Woodforde	Wetland Mapping including Non Rem but only good quality so not used in waterbody designation		12.2.5a,12.2.7,12.3.5,12.3.5a,12.3.6
1557	SP027	Plant	Myrtaceae	*Melaleuca irbyana*	Swamp Tea-tree	flora		E	H		Woodland to Open forests on plains to riparian areas partiularly particularly on sedimentary soils LZ 10			12.3.3,12.3.6,12.9-10.19a,12.9-10.17c

Species ID	Species Number	Kingdom	Family	Scientific_ Name	Common_ Name	Type	Status				RE habitat description	Non-RE habitat description	Non RE	Regional Ecosystems
							EPBC Act	NC Act	Back On Track	Endemic				
2089	SP028	Animal	Meliphagidae	*Melithreptus gularis*	Black-chinned Honeyeater	fauna		NT			Eucalypt woodland and open forest, occasional visitor			12.2.5,12.2.6,12.2.8,12.3.3d,12.3.11,12.3.11a,12.5.2,12.5.3,12.5.6c,12.9-10.4,12.9-10.17c,12.9-10.17d,12.9-10.19,12.11.3,12.11.5a,12.11.5e,12.11.5h,12.11.5k,12.11.23,12.12.14
2090	SP029	Animal	Percichthyidae	*Nannoperca oxleyana*	Oxleyan Pygmy Perch	fauna	E	V	C		Pristine watercourses in wallum			12.1.1,12.1.2,12.1.3,12.2.12,12.2.15,12.2.15f,12.2.5,12.2.5a,12.2.7,12.3.11,12.3.13,12.3.5,12.3.6,12.3.8,12.5.9,12.3.1,12.3.11a
2091	SP030	Animal	Anatidae	*Nettapus coromandelianus*	Cotton Pigmy Goose	fauna		NT			Wetlands, occasional			12.1.1,12.1.2,12.1.3,12.2.12,12.2.15,12.2.15f,12.2.5,12.2.5a,12.2.7,12.3.11,12.3.13,12.3.5,12.3.6,12.3.8,12.5.9
1551	SP031	Animal	Strigidae	*Ninox strenua*	Powerful Owl	fauna		V			Larger bushland areas containing patches of moderately dense cover			12.1.1,12.2.1,12.2.2,12.2.5,12.2.7,12.2.8,12.3.1,12.3.5,12.3.11,12.5.3,12.9-10.4,12.11.3,12.11.10,12.11.23
300	SP032	Animal	Scolopacidae	*Numenius madagascariensis*	Eastern Curlew	fauna		NT			Mudflats		intertidal_ flat	12.1.2,12.1.3
1198	SP033	Plant	Asteraceae	*Olearia hygrophila*	Swamp Daisy	flora	E	E		X	Wet Wallum Heath and on Margins of Swamp Sclerophyll Forest E. robusta			12.2.7,12.3.4
2092	SP034	Animal	Papilionidae	*Ornithoptera richmondia*	Richmond Birdwing Butterfly	fauna		V	H		Rainforest associated with Pararistolochia praevenosa			12.11.10,12.3.1
2022	SP035	Plant	Polygonaceae	*Persicaria elatior*	Glandular Knotweed	flora	V	V			Wetlands and Swamp Forests	Wetland Mapping including Non Rem		12.2.15,12.3.4,12.3.5,12.3.6,12.3.8
1260	SP036	Plant	Orchidaceae	*Phaius australis*	Southern Swamp Orchid	flora	E	E	C		Swamp Forests especially those with rainforest elements in understorey where fires are less intense			12.2.5,12.2.7
1261	SP037	Plant	Orchidaceae	*Phaius bernaysii*	Yellow Swamp Orchid	flora	E	E	C	X	Swamp Forests especially those with rainforest elements in understorey where fires are less intense			12.2.7,12.3.4,12.3.5
2033	SP039	Plant	Orchidaceae	*Prasophyllum exilis*	Thin Leek Orchid	flora		NT			Wallum Heath			12.2.12,12.3.13,12.2.9,12.2.10,12.2.6
403	SP040	Animal	Rostratulidae	*Rostratula australis*	Australian Painted Snipe	fauna	V	V			Wetland edges, edge vegetation			12.1.1,12.1.2,12.1.3,12.2.12,12.2.15,12.2.15f,12.2.5,12.2.5a,12.2.7,12.3.11,12.3.13,12.3.5,12.3.6,12.3.8,12.5.9
1397	SP041	Plant	Cyperaceae	*Schoenus scabripes*	Rough Bog Sedge	flora		NT			Wallum Heath to Woodland and Wet Wallum			12.2.12,12.2.15,12.3.5,12.3.13
418	SP042	Animal	Laridae	*Sternula albifrons*	Little Tern	fauna		E	H		None	Sand banks	sandbank	
425	SP043	Animal	Anatidae	*Stictonetta naevosa*	Freckled Duck	fauna		NT			Wetlands, rare visitor			12.1.1,12.1.2,12.1.3,12.2.12,12.2.15,12.2.15f,12.2.5,12.2.5a,12.2.7,12.3.11,12.3.13,12.3.5,12.3.6,12.3.8,12.5.9

Species ID	Species Number	Kingdom	Family	Scientific_ Name	Common_ Name	Type	Status				RE habitat description	Non-RE habitat description	Non RE	Regional Ecosystems
							EPBC Act	NC Act	Back On Track	Endemic				
1465	SP044	Plant	Thelypteridaceae	*Thelypteris confluens*	Marsh Fern	flora		V			Swamps and Wetlands in Coastal Dunes			12.2.15
2094	SP045	Plant	Santalaceae	*Thesium australe*	Austral Toadflax	flora	V	V			Grasslands Woodlands and Forests associated with Themeda triandra as it parasitsesparasitises the roots of this grass			12.12.19,12.3.11,12.5.2
462	SP046	Animal	Tytonidae	*Tyto tenebricosa*	Greater Sooty Owl	fauna		NT			Closed forests [debateable whether this should be included]			12.2.1,12.2.2,12.3.1,12.11.10
471	SP047	Animal	Muridae	*Xeromys myoides*	False water rat	fauna	V	V	C		Tidal areas away from human habitation			12.1.1,12.1.2,12.1.3,12.2.5,12.2.6,12.2.7,12.2.8,12.2.9,12.2.10,12.2.12,12.2.13,12.2.15,12.3.1,12.3.5,12.3.6,12.3.8,12.3.11,12.3.13,12.5.2,12.5.3,12.5.9,12.9-10.4,12.11.3,12.11.23,12.12.14,12.12.19
2095	SP048	Plant	Orchidaceae	*Pterostylis chaetophora*	Bug Lipped Greenhood Orchid	flora		E			Grassy and shrubby areas in open forest and woodland known from Cedar Ck Falls Near Mt Tamborine and Coochiemudlo Is			12.5.3

APPENDIX 2

Planning Scheme Policy 1 Environmental Significance Terms and Definitions

1.1 TERMS AND DEFINITIONS

(1) This part provides a list of terms, including definitions and guidance on how to interpret and apply these terms, that relate to the natural environment and are used in the City Plan generally, and more specifically in the:

a. Environmental significance overlay code
b. Waterway corridors and wetlands overlay code, and
c. Healthy waters code

(2) The following hierarchy has been applied in providing definitions for terms (including scientific and technical terms) used in these codes:

a. Where a statutory definition exists, as set out by current State legislation, this is the definition that is applied. If no State statutory definition exists; then
b. Where a Commonwealth statutory definition exists (i.e. *Environmental Protection and Biodiversity Conservation Act 1999)*, that definition is applied; or
c. If there is no statutory definition, the definition is based on either the ordinary meaning of the term, or a definition supported by relevant academic research and application.

(3) In accordance with legal principle,[1] terms used in planning schemes are taken to have their natural and ordinary meaning, in the context of development occurring subject to the relevant zone and any applicable overlays.

Table 1. Terms and definitions

Term	Definition
Aquatic habitat	The biophysical medium or media within the waterway or wetland that: (a) is occupied (continuously, periodically or occasionally) by an organism or group of organisms; or (b) was once occupied (continuously, periodically or occasionally) by an organism, or group of organisms, and into which organisms of that kind have the potential to be reintroduced. This encompasses the banks, snags, rocks, channels, substrates, riffles, macrophytes and riparian vegetation.
Bank and bed stabilisation measures	*Bed and banks* of a waterway, means the land that is normally covered by the waterway, whether permanently or intermittently, regardless of frequency, but does not include adjoining land from time to time covered in flood events. *Stabilisation measures* encompass activities within and adjacent to a waterway for rehabilitation or the mitigation of impacts. Activities include such works as: • Excavation and filling • Removing debris • Revegetation • Removing or redistributing sediment.

[1] *Boral Resources (QLD) Pty Ltd v Gold Coast City Council* [2017] QPEC 023.

Term	Definition
Bank erosion	The accelerated wearing away of a stream bank, caused by factors such as the destruction of riparian vegetation, clearing within the catchment, extractive activities, stream straightening or redirection of streams around infrastructure, changes to drainage, and weather events. Note: waterways are dynamic systems and natural bank erosion will occur. The generally accepted standard for determining whether erosion is a natural process is if it occurs slowly and imperceptibly.
Bank slumping	The mass failure of the bank material because: • the waterway bed deepened at the toe of the bank, resulting in the bank becoming unstable and slumping into the waterway under its own weight (or under some surcharge weight on the top of the bank) • high pore water pressure in the bank material was not balanced by adjacent hydrostatic pressures, causing the structure of the bank material to weaken and slump into the waterway. Slumping is often caused by high velocity stream flows made worse by land and vegetation clearing within the catchment, rapid draw down, and the removal of riparian vegetation.
Biodiversity	Means 'biological diversity', which is the natural diversity of native wildlife, together with the environmental conditions necessary for their survival, and includes— (a) regional diversity, that is, the diversity of the landscape components of a region and the functional relationships that affect environmental conditions within ecosystems; and (b) ecosystem diversity, that is, the diversity of the different types of communities formed by living organisms and the relations between them; and (c) species diversity, that is, the diversity of species; and (d) genetic diversity, that is, the diversity of genes within each species.
Connections or Connectivity	The characteristic of, or suitability for, being connected.
Continuous ecological corridor	Unbroken and diversely structured habitat which facilitates wildlife movement.
Degradation	The state of being degraded; a state of degeneration.
Disturbance	The act of disturbing or state of being disturbed.
Drainage channels	A linear, generally sinuous open depression, comprising of a bed and banks which is in parts eroded, excavated, or built up by channelled stream flow, through which runoff drains to receiving waters.
Drainage patterns	System by which water moves across and through the land, influenced by topography and geology.
Ecological integrity	The ability of the natural ecosystem to support and maintain ecological structure and function.

Term	Definition
Ecological processes	Processes including, but not limited to, the following: • Hydrological processes • Soil development • Nutrient cycling • Decomposition and cycling of organic matter • Pollination and seed production • Seed dispersal • Predator-prey relationships • Germination and recruitment of species • The carbon cycle and stability of atmospheric carbon • Habitats for flora and fauna (such as particular regional ecosystems, logs, rocks, debris, leaf litter, nectar, hollow bearing trees, food and shelter).
Edge effects	The negative effects on wildlife and natural environments, caused by urbanisation and due to edge contrast, which is defined as being the compositional or structural difference between adjacent ecosystems at either side of the boundary. High contrast, and higher risk edges are often formed with urban development such as roads, residential areas, and commercial or industrial developments.
Endemic native species	Flora or fauna native to a locality.
Environmental values	A quality or physical characteristic of the environment that is conducive to ecological health or public amenity or safety; or another quality of the environment identified and declared to be an environmental value under an environmental protection policy or regulation, for example, under the *Environmental Protection (Water) Policy 2009*.
Erosion	The process of eroding or being eroded by wind, water or other natural agents.
Existing channel	A channel, including the bed and banks of a river, stream, creek or gully, occurring in a specified location and/or under specific conditions.
Flow regime	The natural variability in timing, frequency, duration, extent and depth of a waterway.
Geomorphological processes	Processes that influence and induce landforms including, for example, erosion, flooding, tides, wind.
Groundwater	Water that occurs naturally in, or is introduced artificially into, an aquifer.
Groundwater recharge	The vertical transfer of water from the water table to the groundwater table.
Habitat	The native environment or kind of place where a given animal or plant naturally lives or grows, including areas not presently occupied by a given animal or plant.
Habitat condition	The state of health of the habitat.
Habitat fragmentation	The act or process of fragmenting (a part broken off or detached) of habitat.
Habitat or wildlife resilience	The capacity of an organism, habitat and/or system (an ecological value) to recover from, or adapt to, natural and anthropogenic impacts.

Term	Definition
Healthy water temperature	This should be determined, for the subject waterway, in accordance with the Queensland Water Quality Guidelines and the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (Australian and New Zealand Environment and Conservation Council – ANZECC, 2000).
Hydrological processes	Hydrological processes include: • surface water flows off the catchment into wetland pools and estuaries • groundwater-surface water exchange • high tides, storm surge, floods, run-off events connecting wetland pools to estuaries • crab burrows altering water flows • evapotranspiration from vegetation • evaporation from waterbodies • precipitation • tides – including spring and neap • freshwater and marine water exchange in estuaries.
Key species	A species or essential habitat listed under the: • *Nature Conservation Act 1992* • *Vegetation Management Act 1999* • *Environment Protection and Biodiversity Conservation Act 1999* • International Union for the Conservation of Nature (IUCN) Red List of Threatened Species.
Large woody debris	Trees, branches, logs and sticks that fall into wetlands/waterways. Large woody debris provides habitat, inputs nutrients into waterways, provides cover and acts as a substrate for diatoms and algae.
Movement	The act or process or result of moving. For the purposes of City Plan, this does not include wildlife movement that is regulated to ensure appropriate protections and measures are implemented and enforced when native and exotic wildlife is required to be moved.
Native species	Means a species: (a) that is indigenous to Australia or an external Territory; or (b) that is indigenous to the seabed of the coastal sea of Australia or an external Territory; or (c) that is indigenous to the continental shelf; or (d) that is indigenous to the exclusive economic zone; or (e) members of which periodically or occasionally visit: i. Australia or an external Territory; or ii. the exclusive economic zone; or (f) that was present in Australia or an external Territory before 1400.
Natural filtration	The removal of sediments and other pollutants from water. Natural filtration of sediments in overland flow is performed by 'soft' surfaces (soil, grass) and various types of vegetation, for example, riparian vegetation, vegetation buffers, mangroves. 'Natural filtration' is achieved by retaining or reinstating natural sediment and erosion control measures, such as riparian vegetation, vegetation buffers, and natural ground surfaces (soil, grass).
Natural landform	A natural geographical feature or shape that appears on the Earth's surface, including plains, rises, low hills, plateaus, mountains, ranges, streams, lakes, swamps, wetlands, valleys and dunes.

Term	Definition
Natural lateral and longitudinal movement	The natural meanders of a waterway, including its side channels (longitudinal connectivity) and flood plains and wetlands (lateral connectivity). Natural movement includes changes to the stream, its channels, floodplains and wetlands through erosion and sedimentation. Changes in the natural meanders of waterways can be accelerated by practices such as dredging, vegetation clearing, snagging and straightening, and by development in the vicinity of the waterway, which increases hard surfaces.
Normal gene flow	The regular, usual, and natural transfer of genes from one population to another of the same species, as by migration, seed dispersal, seasonal interbreeding, etc.
Off-site	External to the site the subject of the development application.
On-site	Located or done at the site the subject of the development application.
Overland flow	Means water, including floodwater, that is urban stormwater or is other water flowing over land, otherwise than in a watercourse or lake— (a) after having fallen as rain or in any other way; or (b) after rising to the surface naturally from underground. Overland flow water does not include— (a) water that has naturally infiltrated the soil in normal farming operations, including infiltration that has occurred in farming activity such as clearing, replanting and broadacre ploughing; or (b) tailwater from irrigation if the tailwater recycling meets best practice requirements; or (c) water collected from roofs for rainwater tanks.
Recharge	The entry into the saturated zone of water made available at the water table surface, together with the associated flow away from the water table within the saturated zone.
Recreational function	Primary recreational function: activity using full body contact with the water, for example, swimming, diving, surfing, water skiing, windsurfing. Secondary recreational function: activity in which there is contact other than full body contact with the water, for example, boating, fishing. Visual recreational function: viewing the water without contact with it.
Refuges	Retained habitat that is a place of shelter, protection or safety.
Riparian	Relating to or situated on the banks of a waterway.
Riparian buffer	The area of riparian vegetation on each side of a waterway, which: • slows the velocity of overland flow • facilitates infiltration • filters overland flow • provides organic matter • provides shade • stabilises land and the banks of waterways • provides habitat.
Riparian vegetation	Vegetation that lines a waterway and is the interface between land and the body of water.
Risk	The chance of injury or loss
Runoff	That part of water which is not lost to infiltration, evaporation, transpiration or depression storage.
Sediment concentration	Also known as sediment load - the volume of a pollutant in water.
Sediment treatment train	A succession of devices/systems for the removal of mineral or organic matter in runoff.

Term	Definition
Sedimentation	The deposition or accumulation of sediment.
Stable geomorphological conditions	To reinstate stable geomorphological conditions means to reinstate the original landform.
Stable hydrological conditions	The maintenance or resistance to change of the distribution and dynamics of water and water quality.
Stepping stone patches	Corridors of isolated patches of habitat that, while not physically connected, are functionally connected, allowing movement between larger patches. Stepping stones of suitable habitat enhance connectivity in developed landscapes for species able to make short movements through disturbed environments. Stepping stones may be natural patches, such as wetlands or patches of rainforest within drier forests or they may be small remnant patches of vegetation in a developed landscape. Scattered trees or patches of habitat are the most recognised form of stepping stones and are important to native fauna for movement, shelter, foraging habitat and nesting resources, especially in urban areas.
Stormwater devices	Includes any device referred to in the Queensland Urban Drainage Manual (QUDM) and current Water by Design resources and Guidelines, and any device approved by Council for use in a proposed development.
Stream condition	The overall state of health of a waterway, based on an assessment of hydrology, water quality, its streamside zone, physical form and aquatic life.
Stream integrity	The ability of the natural ecosystem to support and maintain ecological structure and function.
Turbidity	The cloudiness of water caused by the presence of fine suspended matter.
Waterway	A waterway that is identified in the City Plan Waterway corridors and wetlands mapping (stream orders 3 or greater).
Waterway	Includes a river, creek, stream, watercourse or inlet of the sea
Wetland	Areas of permanent or periodic/intermittent inundation, whether natural or artificial, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres. To be a wetland the area must have one or more of the following attributes: • At least periodically the land supports plants or animals that are adapted to and dependent on living in wet conditions for at least part of their life cycle • The substratum is predominantly undrained soils that are saturated, flooded or ponded long enough to develop anaerobic conditions in the upper layers • The substratum is not soil and is saturated with water, or covered by water at some time. Examples of what constitutes a wetland may be found at: https://wetlandinfo.ehp.qld.gov.au/wetlands/what-are-wetlands/definitions-classification/wetland-definition.html
Wildlife	Any taxon or species of an animal, plant, protista, procaryote or virus.
Wildlife dispersal	The gradual spread of a species and subsequent adaptations to a new environment.

Table 2. Guidance on interpreting qualitative terms

Term	Expected interpretation
Adversely impact	*Adversely* - antagonistic in purpose or effect; against the interests of *Impact* - The influence or effect of an action. Impact is not confined to direct physical impacts; it includes effects for which it can be readily said that they are a consequence of the action.
Avoid	To keep away from; keep clear of; evade
Avoid worsening	*Worsening* - to make or become worse
Effectively stabilised	*Stabilise* - is to make something stable. *Effectively* - adds the condition that the stabilisation measure produces the intended or expected result.
Enhance	To raise to a higher degree; intensify; magnify
Functionality	The purpose designed to be fulfilled by a device, tool, machine, etc
Incorporates opportunities	*Incorporate* - to put into a body or mass as an integral part or parts *Opportunities* - an appropriate or favourable time or occasion
Maintain or maintained	To keep in existence; preserve; retain; to keep in a specified state
Maximises opportunities	*Maximise* - to increase to the greatest possible amount or degree *Opportunities* - an appropriate or favourable time or occasion
Minimise	To reduce to the smallest possible amount or degree
Minimise impact	To reduce an impact to the smallest possible amount or degree. Where a mitigation measure is proposed that does not reduce an impact to the greatest extent possible, that measure is unacceptable.
Not inhibited or made less safe	Development does not constrain the movement of flora and fauna, and provides for the safe and natural distribution of species between habitat areas and populations
Protect	To defend or guard, cover or shield from injury or danger
Reduce the utility	The state or character of being useful. For the purposes of PO 7 of the Healthy Waters Code, it means that stormwater devices must not displace recreational or ecological uses within that space.
Reduction	The state of being reduced; the amount by which something is reduced or diminished
Reinstate	To put back or establish again, in a former position or state
Replicate or complement the composition [of the habitat]	*Replicate* - to be or make a replica of; to repeat *Complement* - that which completes or makes perfect
Restore	Bring back to a former, original, normal or unimpaired condition
Significant	Important, notable or of consequence, having regard to its context and intensity
Substantial fragmentation	The act or process of fragmenting (a part broken off or detached) that is material, or of an ample or

Term	Expected interpretation
	considerable amount, quantity or size.
Support	To maintain by supplying with things necessary to existence; provide for
Undertaken in a manner	In the context of PO 17 of the Environmental Significance Overlay Code, where clearing occurs, it is sequenced and executed to enable fauna to vacate affected land.

PLANNING SCHEME POLICY 2 – INFRASTRUCTURE WORKS

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1.0 HEALTHY WATERS

1.1 RELATIONSHIP WITH THE PLANNING SCHEME

(1) This part sets out:

(i) particular standards called up as acceptable outcomes in 9.2.5 Healthy Waters Code. These are contained in the following subsections:
1.2.1 Stormwater drainage design

(ii) information council may request to demonstrate compliance with the performance outcomes of the code. These are contained in the following subsections:
1.2.2 Stormwater quantity management plans
1.3.1 Stormwater quality management plans
1.4.2 Artificial waterbody (AWB) assessment
1.5.2 Erosion and sediment control assessment

(iii) guidance for applicants on approaches to stormwater management and erosion and sediment control. These are contained in the following subsections:
1.2.3 Upstream connections
1.3.2 Water quality
1.4.2 Artificial waterbodies
1.5.2 Erosion and sediment control

1.2 STORMWATER DRAINAGE DESIGN

1.2.1 Standards called up as acceptable outcomes

This section sets out the standards called up in AO1.2, AO3.1 and AO6.1 in the Healthy Waters Code. These standards represent the "acceptable outcome" which meets the performance outcomes set out in the code.

1.2.1.1 General

(1) Stormwater drainage is designed using the following standards unless otherwise specified or modified by the requirements set out in this section:

- Queensland Urban Drainage Manual (current edition)
- Australian Rainfall and Runoff (current edition)

(2) Use of the standard drawings in section 8 of this policy will be deemed to satisfy the acceptable outcomes required by QUDM, unless otherwise specified or modified by the requirements set out in this section.

(3) The following standards can be used where the standards listed above do not provide adequate information to satisfy the requirements of stormwater drainage design unless otherwise specified or modified by the requirements set out in this section:

- Austroads Guide to Road Design Part 5: Drainage - General and Hydrology Considerations (current edition).

(4) The minimum pipe size for all stormwater infrastructure to be transferred into council ownership is 375mm diameter.

(5) Where scour protection around structures is required it must be in the form of grouted stone pitching.

(6) Private inter-allotment drainage is restricted to a maximum of 4 allotments after which it must discharge to a lawful point of discharge (refer section 1.2.1.2 of this policy).

1.2.1.2 Lawful point of discharge

(1) In addition to section 3.4 and 3.5 of QUDM, designs that require downstream properties to accommodate stormwater flows to allow stormwater to discharge at a particular location (the lawful point of discharge) must provide written consent from downstream property owner/s and private easements over the drainage system provided in accordance with section 1.2.1.5 of this policy.

1.2.1.3 Design standards

(1) The design storm event for the minor drainage system is in accordance with Section 7.3.1 of QUDM.

(2) The design storm event for the major drainage system is the 1% annual exceedance probability (AEP) (100 year ARI).

1.2.1.4 Hydrology and hydraulics

(1) Increased runoff from a development site must be mitigated on site unless it can be demonstrated that there is capacity within the existing stormwater network or at the lawful point of discharge to cater for the additional runoff in the major design storm event (1% AEP).

(2) Design calculations are undertaken in accordance with the requirements in Section 4 of QUDM unless otherwise specified below.

(3) Where determining the time of concentration in urban and rural catchment areas the following applies:
- (i) the kinematic wave equation is not to be used to estimate overland flow time;
- (ii) unless the actual velocity in the piped drainage system is determined, the adopted pipe velocity must not be less than 3m/s for the purpose of estimating pipe travel time; and,
- (iii) for small open creek catchments (<100 ha), minor channel or creek flow times may be initially determined by assuming an average stream velocity of 1.5 m/s.

1.2.1.5 Easements

(1) Easements over stormwater drainage are in accordance with section 3.8 of QUDM unless otherwise specified below.

1.2.1.5.1 Easements in favour of Council

(1) Stormwater drainage infrastructure to be transferred into council ownership is to be located on council managed land that has direct access from adjoining council managed land or a road reserve and should not rely on drainage easements.

(2) In circumstances where this is not possible and council stormwater infrastructure must be located on private property, the following easements in favour of Council are required:

- (i) for single pipes 375mm-900mm (inclusive) in diameter, a minimum 3m wide easement;

- (ii) for pipes larger than 900mm in diameter, multi-cell pipes or box culverts, an easement that allows 1m clearance from the outside edge of the pipe/culvert on both sides, or 3m total easement width, whichever is the greater;

(iii) for easements over open drains or channels, a width which can accommodate maintenance berms along the top of the channel in accordance with section 9.7.2 of QUDM;

(iv) for overland flow paths, a width which accommodates the full design flow width and takes into account freeboard.

(3) Where Council stormwater infrastructure is located within private property and access from a road reserve is not available, a 3.0m wide access easement is provided between the road reserve and the drainage easement to provide maintenance access to the infrastructure.

1.2.1.5.2 Private easements

(1) For inter-allotment drainage (where required in accordance with section 7.13.3 of QUDM), a private easement minimum 1.5m wide is required over the drainage in favour of upstream property owners.

1.2.1.6 Safety fencing

(1) Safety fencing is provided in accordance with sections 5.11 and 12.4 of QUDM unless otherwise specified below.

(2) Safety fencing in accordance with IPWEA standard drawing GS-044 is to be provided for hard drainage structures where a fall of 1m or more could be reasonably expected.

1.2.1.7 Alignment

(1) Where stormwater drainage infrastructure is located within the road reserve it is in accordance with standard drawings R-RCC-9 and R-RCC-10, in all other circumstances infrastructure should be located:
(a) generally within the properties they serve;
(b) 0.7 metres to 1.2 metres (measure from the centre of access chambers) from property boundaries, clear of fences and sewer maintenance holes;
(c) for connection points, located 0.5 metres to 1.0 metres from the lowest property boundary; and,
(d) for inter-allotment drainage, 0.5 metres from the side and rear property boundaries.

(2) Gully pits are located as required in accordance with QUDM and generally on the projection of the lot side boundaries.

1.2.1.8 Overland flow

(1) The width of overland flow paths located between lots or within park land is a minimum of 15 metres and should be determined by the calculation of the flows during the major storm event (1% AEP) for the contributing catchment.

1.2.2 Information that Council may request

This section sets out information that Council may request to demonstrate compliance with the performance outcomes for stormwater drainage design in the Healthy Waters Code.

1.2.2.1 Stormwater quantity management plan

(1) A stormwater quantity management plan may be required to demonstrate how stormwater will be managed within a catchment where development is likely to alter the stormwater runoff, volume, velocity, duration or frequency.

(2) Stormwater management plans should be prepared in accordance with Section 2 of QUDM unless otherwise specified below.

(3) All stormwater drainage investigations and designs must be undertaken by a suitably qualified Registered Professional Engineer Queensland (RPEQ).

(4) An electronic copy of all modelling files used to demonstrate compliance with the design objectives must be provided to the council with the development application.

1.2.2.2 Concept site-based stormwater quantity management plan

(1) A conceptual site based stormwater management plan must include:

(a) an assessment of the site which includes:

(i) a site plan showing:

- contours;
- development boundaries;
- catchment details (including sub-catchments where relevant);
- flow paths;
- existing and proposed drainage infrastructure;
- overland flow path areas;
- drainage invert levels;
- stormwater detention systems;
- easements;
- the lawful point of discharge;
- flood levels for the 10, 5, 2 and 1% AEP flood;
- details of the proposed impervious/pervious surfaces (%)

(ii) earthworks details including:

- conceptual earthworks;
- cross-sections at regular intervals showing the extend of cut and fill works to confirm earthworks and no loss of floodplain storage (where relevant);

(iii) development scale plan layout indicating:

- catchment details;
- conceptual drainage network with invert levels;
- location of stormwater treatment/detention measures;
- location of other existing and proposed services;

(iv) information on pre and post development flood volumes.

(b) the lawful point of discharge (including consent from downstream properties where required);

(a) proposed no-worsening measures;

(b) the pre-development and post-development stormwater quantity characteristics and any potential development impacts assessed;

(c) a description of the modelling method and methodology used in any hydraulic or hydrologic modelling, or in the sizing of infrastructure;

(d) a description of all stormwater and overland flow management measures and stormwater infrastructure; and,

(e) future ownership details of stormwater and drainage infrastructure.

1.2.2.3 Detailed site-based stormwater quantity management plan

(1) In addition to 1.2.2.2 above, a detailed site based stormwater management plan must include:

(a) a detailed design of all stormwater quantity management methods and infrastructure;

(b) the location and connection details;

(c) detailed engineering drawings showing:

(i) the areas of earthworks including cross-sections at regular intervals showing the extend of cut and fill works to confirm earthworks and no loss of floodplain storage (where relevant);
(ii) proposed site contours, road layout and lot arrangement;
(iii) location, size and type of proposed stormwater quantity management measures including all invert levels;
(iv) maintenance access; and,
(v) location of lawful points of discharge.

1.2.3 Guidance for applicants

This section sets out guidance for applicants to assist in achieving compliance with PO5 (6) of the Reconfiguring a Lot Code.

1.2.3.1 Upstream connections

(1) Where a neighbouring property capable of further development upstream of the subject site falls to the rear, an easement for stormwater drainage purposes in accordance with section 1.2.1.4.2 of this policy is provided in favour of upstream properties to facilitate access to a lawful point of discharge (refer section 3.4 of QUDM for further information).

1.3 WATER QUALITY

1.3.1 Information that Council may request

This section sets out information that Council may request to demonstrate compliance with the performance outcomes for water quality in the Healthy Waters Code.

1.3.1.1 Stormwater quality management plans

(1) A stormwater quality management plan may be required to demonstrate how the development can achieve the load reduction requirements in AO9.1 of the Healthy Waters Code.

(2) Stormwater treatment devices are to be designed in accordance with the following standards:
- Water by Design Water Sensitive Urban Design Technical Design Guidelines
- Water by Design Bioretention Technical Design Guidelines
- Water by Design MUSIC Modelling Guidelines
- Water by Design Maintaining Vegetated Stormwater Assets
- Water by Design Transferring Ownership of Vegetated Assets

(3) Use of the standard drawings in section 8 of the policy will be deemed to satisfy the acceptable outcomes.

(4) In lieu of modelling, the default bio-retention treatment area to comply with load reduction targets in AO9.1 of the Healthy Waters Code is 1.5% of the contributing catchment area.

(5) A stormwater quality management plan must include:
(a) where modelling had been undertaken, an electronic copy of the MUSIC model;
(b) a summary of the MUSIC analysis results including descriptions of each treatment train for each sub-catchment;
(c) details of each treatment device including the treatment area and design flows;
(d) a scale plan and section drawings showing:
(i) how stormwater is conveyed to the stormwater treatment devices;
(ii) the location of all stormwater treatment devices including filter areas and batters;

(iii) conceptual design levels for each treatment device and receiving drainage invert levels;
(iv) scour protection and coarse sediment management devices;
(v) batters and embankments;
(vi) maintenance access;
(vii) likely maintenance intervals;

(e) details of the required monitoring and maintenance of the device;
(f) proposed measures to protect water quality during the construction phase; and,
(g) details of whether the stormwater treatment system will be privately maintained or transferred into Council ownership.

1.3.2 Guidance for applicants

(1) Stormwater treatment devices are generally not to be constructed within the road reserve.

1.4 ARTIFICAL WATERBODY ASSESSMENT

1.4.1 Information that Council may request

This section sets out information that Council may request to demonstrate compliance with PO2 in the Healthy Waters Code.

(1) Where an artificial waterbody exists within a development site and it is proposed to be retained, an assessment of the value and risk of the waterbody along with any proposed changes to the configuration of the waterbody will be required. The assessment must include the following:

(a) Determine the value of the waterbody using the Table 1 – Determining the relative value of an artificial waterbody.

Council may request an ecological report to assist in supporting the flora and fauna associations score. This report must contain (at minimum):
(i) details of any ecological corridors and connections in the area;
(ii) types of flora and fauna;
(iii) habitat value of the dam and surrounding vegetation; and,
(iv) impacts on flora and fauna.

(b) Determine the risk of the waterbody based on its current function and proposed future use using Table 2 – Determining the relative risk of an artificial waterbody.

Council may require the following to be submitted:
(a) a geotechnical report signed by an RPEQ to assist in supporting the structural integrity score;
(b) water quality testing of the parameters listed in Table 3 from a NATA qualified laboratory to assist in supporting the water quality score.

(c) Where the score for value is 14 or more and the score for risk is 9 or less, the waterbody should be retained in its current configuration and any proposed remedial works undertaken as required. Details of the proposal must be submitted to Council as part of the development application.

In all other circumstances (i.e. where the value is less than 14 and/or the risk is more than 9) the waterbody should not be retained in its current configuration. In this instance an alternative solution must be provided (refer section 1.4.2 of this policy).

Table 1: Determining the relative value of an artificial waterbody

Type of Value	Score	Criteria
Connectivity	7	The waterbody provides an essential link for ecological connectivity and native wildlife movement.
	4	The waterbody provides a desirable/potential link for ecological connectivity and/or native wildlife movement.
	1	The waterbody provides no ecological connectivity and does not provide a functional corridor for native wildlife movement.
Flora and Fauna Associations	7	The waterbody provides essential flora and fauna associations which must be maintained.
	4	The waterbody provides flora and fauna associations which are desirable to be maintained.
	1	The waterbody provides low/no flora and fauna associations.
Amenity	5	The waterbody in its current configuration provides the community with an asset that can be used for passive recreation.
	3	The waterbody in its current configuration (or as a result of rectification works proposed) will provide the community with an asset that can be used for passive recreation.
	1	The waterbody provides a low level of amenity and would not be an asset to the community.

Note: Waterbodies to be retained in their current configuration must be high value and low risk.

Table 2: Determining the relative risk of an artificial waterbody

Type of Risk	Score	Criteria
Structural Integrity	5	The waterbody is not structurally sound.
	1	The waterbody is structurally sound or works proposed will ensure the waterbody is structurally sound and can be certified as such.
Water Quality	5	Water quality is within the acceptable range for all testing parameters.
	3	Water quality is within the acceptable range for the majority of the testing parameters or remedial works can be undertaken to ensure that the water quality is within the acceptable range for the majority of the testing parameters.
	1	Water quality is not within the acceptable range for most testing parameters.
Safety	5	When assessed against the method outlined in Appendix A of *Rectifiying Vegetated Stormwater Assets* (Water by Design), a score of 22 or more is achieved.
	4	When assessed against the method outlined in Appendix A of *Rectifiying Vegetated Stormwater Assets* (Water by Design), a score of 17-21 is achieved.
	3	When assessed against the method outlined in Appendix A of *Rectifiying Vegetated Stormwater Assets* (Water by Design), a score of 12-16 is achieved.
	2	When assessed against the method outlined in Appendix A of *Rectifiying Vegetated Stormwater Assets* (Water by Design), a score of 7-11 is achieved.
	1	When assessed against the method outlined in Appendix A of *Rectifiying Vegetated Stormwater Assets* (Water by Design), a score of less than 7 is achieved.
Maintenance Access	5	Appropriate maintenance access is not and cannot be provided.
	3	Appropriate maintenance access is (or will be) provided to three or fewer of the following: inlets, outlets, body of water and perimeter of the waterbody.
	1	Appropriate maintenance access is (or will be) provided to all of the inlets, outlets, body of water and perimeter of the waterbody.
Weeds and Pests	5	The waterbody contains declared weeds and/or pests.
	3	The waterbody contains weeds and/or pests and works are proposed to remove these weeds and/or pests.
	1	The waterbody contains no weeds or pests.

Note: Waterbodies to be retained in their current configuration must be high value and low risk.

Table 3: Water quality indicators for artificial waterbodies

Total N (ug/L)	Total P (ug/L)	Chl-a (ug/L)	Do % sat	Turb (ug/L)	pH	Cond (uS/com)
720	28	9	57-90	5-10	6.3-7.1	167

1.4.2 Guidance for applicants

(1) Where an artificial waterbody exists within the limits of a development, consideration should be given as to whether the waterbody can be reconfigured to form part of the stormwater drainage design and/or treatment using the criteria outlined in Table 2.7 of the *Water by Design Waterbody Management Guideline 2013 Module 2*.

(2) Where a waterbody is not retained in its current configuration, details of the proposed changes to the waterbody should be provided to Council including an assessment of:
- (a) any impacts to the surrounding environment as a result of the works associated with the proposal including during the construction phase as well as long term as a result of changes to the existing waterbody;
- (b) any downstream impacts associated with the removal/reconfiguration of the waterbody; and,
- (c) the expected whole-of-life maintenance requirements.

1.5 EROSION AND SEDIMENT CONTROL

1.5.1 Information that Council may request

This section sets out information that Council may request to demonstrate compliance with the performance outcomes for erosion and sediment control in the Healthy Waters Code.

(1) Erosion and sediment control is to be undertaken in accordance with the following standard:

- IECA (2008) - Best Practice Erosion and Sediment Control published by the International Erosion Control Association (Australasian Chapter).

1.5.1.1 Erosion Hazard Assessment (EHA)

(1) An erosion hazard assessment must be undertaken to determine the degree of risk and to identity the documents required to be submitted to Council.

(2) The erosion hazard assessment should be undertaken in accordance with Appendix A of this policy and must be undertaken by a person with suitable qualifications or experience in erosion and sediment control, which include:
- (i) completed training or qualifications in soil erosion and sediment control such as an advanced specialised training course in erosion and sediment control, provided under the auspices of a reputable body such as the International Erosion Control Association (IECA); or
- (ii) professional affiliation with engineering, soil science or scientific organisation (e.g. International Erosion Control Association, Engineers Australia, Australian Water Association, Stormwater Industry Association); or
- (iii) at least two years' experience in the management of erosion and sediment control that can be verified by an independent third party.

(3) Where low erosion risk is identified, best practice erosion and sediment control must be implemented in accordance with IECA (2008) (to assist refer to IECA – Book 5 – Field Guide).

(4) Where a medium or high degree of risk is identified, a concept erosion and sediment control plan should be submitted at the operational works application stage.

1.5.1.2 Erosion and Sediment Control Plan/Program

1.5.1.2.1 General

(1) The erosion and sediment control assessment process (in regard to submission of documentation to Council) is depicted in Table 3 below.

Table 3: The erosion and sediment control (ESC) assessment process

Prior to lodging an application		At application Stage	5 days prior to the pre-start meeting or works commencing, whichever is the sooner.	During construction
Determine erosion risk by conducting an EHA	Low Risk Site	Submit EHA forms	No further action	Follow IECA – BPESC document and refer to field guides
	Medium Risk Site	Submit EHA forms and concept ESC plan	Submit ESC program prepared by an RPEQ[1] or CPESC Provide contact details[2]	Provide inspection certificates at hold points as conditioned in development approval and/or at the request of Council. The inspection certificate must be certified by an RPEQ[1] or CPESC.
	High Risk Site	Submit EHA forms and concept ESC plan	Submit ESC program prepared by an RPEQ[1] or CPESC & certified by a CPESC Provide contact details[2]	Provide inspection certificates at hold points as conditioned in development approval and/or at the request of Council. The inspection certificate must be certified by an RPEQ[1] and a CPESC.

EHA - Erosion hazard assessment,
IECA - International erosion control association
CPESC - Certified professional in erosion and sediment control
BPESC - Best practice erosion and sediment control

1.5.1.2.2 Concept erosion and sediment control plan

(1) A concept erosion and sediment control plan must demonstrate the following:
- (a) the design, intensity, configuration and establishment of development is compatible with the physical constraints of the site and receiving environment;
- (b) the feasibility of effective erosion and sediment control measures being implemented is substantiated, throughout construction including consideration of the impacts of the overall development until permanent stabilisation of the site occurs;
- (c) overview strategy for the site outlining the sequence of development, and temporary and permanent management mechanisms, until commissioning of permanent design features (staging summary);
- (d) whether sediment control devices will be located within the future stormwater treatment systems (i.e. bioretention basins and wetlands); and

[1] Where engineering structures (either temporary or permanent) such as inlets, outlets, spillways and sediment basin embankments form part of an Erosion an Sediment Control Plan/Program, the design certification and inspection of such structures must be undertaken and certified by a Registered Professional Engineer of Queensland (RPEQ).
[2] The name and contact details of the landowner, superintendent and principal contractor must be provided including the registered business name and ABN/ACN for each party and after hours contact details of a representative of the site. Any changes to these parties during construction must be notified to Council in writing within 5 business days of the change occurring.

(e) a contoured site plan(s) showing a conceptual treatment train, the natural features of the site and proposed control structures, including the proposed location and preliminary size of:
  (i) area of disturbance;
  (ii) stockpiling locations;
  (iii) external catchment diversions;
  (iv) sediment basins;
  (v) channels which convey site runoff to sediment basins; and
  (vi) compensatory erosion and sediment controls for areas which cannot be drained to the sediment basin.

(2) Additional information requirements are listed in Table 4.

Table 4: Additional requirements of the concept erosion and sediment control plan

Where	Demonstrate
Located within a waterway corridor mapped within the relevant overlay maps of the planning scheme	• How impacts on the waterway have been minimised through appropriate route selection and type of crossing and how construction of the crossing will be managed in accordance with the IECA 2008, Best Practice Erosion and Sediment Control – Appendix I.
External contributing stormwater catchment area of 1 ha or greater.	• That clean stormwater from up-slope external catchment(s) can be diverted around or through the site without causing either an increase in sediment concentration of the flow, or erosion on site or off site. Alternatively, if it is not feasible to divert clean stormwater from up-slope external catchment(s) around or through the site, the Concept ESC Plan must demonstrate that there is sufficient land area available to install and operate a sediment basin which is sized to accommodate the stormwater run-off from the whole up-slope catchment.
Land disturbance of 1 ha or greater	• There is sufficient land area available to install and operate an appropriately sized sediment basin. • The run-off from all disturbed areas can be directed to a sediment basin throughout construction and until such time as the up-slope catchment is adequately stabilised against erosion.
Proposing works below 5 m AHD	• There is sufficient land area available to install and operate an appropriately sized sediment basin. • The run-off from all disturbed areas can be directed to a sediment basin throughout construction and until such time as the up-slope catchment is adequately stabilised against erosion. • It is feasible to install sediment basins which will have sufficient storage volume to contain the design storm event i.e. the sediment basin will not be inundated with groundwater.
Proposed works on land having a slope of greater than 15% or mapped within the landslide hazard overlay of the planning scheme	• There is sufficient land area available to install and operate an appropriately sized sediment basin. • The run-off from all disturbed areas can be directed to a sediment basin. • Preliminary engineering sections of proposed sediment basins showing that they may be practically implemented on the slopes proposed. • Preliminary earthworks plan showing proposed extent of land disturbance. • Geotechnical report which assesses the probability of landslip instability as a result of the construction phase ESC measures.

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1.5.1.2.3 Detailed erosion and sediment control plan/program

(1) A detailed erosion and sediment control program must contain information on what controls are required to be implemented throughout all stages of the development from site establishment to project completion. Typically a separate plan is required for each phase of the development including:
- (a) site clearing;
- (b) bulk earthworks;
- (c) civil construction;
- (d) services installation
- (e) final stabilisation including decommissioning of sediment basins.

(2) A detailed erosion and sediment control plans must:
- (a) be based on an assessment of the physical constraints and opportunities of the development site, including soil, landform type, gradient and hydrology;
- (b) be supported by analysis of on-site soils undertaken in accordance with IECA (as amended), Chapter 3.5 and Appendix C;
- (c) provide a set of contour drawings showing existing and design contours, the real property description, north point, roads, site layout, boundaries and features. Contours surrounding the site should also be shown so that catchment boundaries can be considered;
- (d) be at a suitable scale for the size of the project (as a guide around 1:1000 at A3 for a 2 hectare development and 1:500 at A3 for a 3000m^2 development);
- (e) provide background information including site boundaries, existing vegetation, location of site access and other impervious areas and existing and proposed drainage pathways including discharge points;
- (f) show the location of stormwater drainage systems;
- (g) include details on the nature and specific location of works and controls (revegetation, cut and fill, run-off diversions, stockpile management, access protection, site office location), timing of measures to be implemented and maintenance requirements (extent and frequency);
- (h) show all areas of land disturbance, the way that works will modify the landscape and surface and subsurface drainage patterns (adding new, or modifying existing constraints);
- (i) for each phase of the works (including clearing, earthworks, civil construction, services installation and landscaping) detail the type, location, sequence and timing of measures and actions to effectively minimise erosion, manage flows and capture sediment, including the stabilisation of up-slope catchments prior to sediment basin removal;
- (j) identify the riparian buffers and areas of vegetation which are to be protected and fenced off to prevent vehicle access;
- (k) indicate the location and provide engineering details with supporting design calculations for all necessary sediment basins and ESC-related drainage structures;
- (l) indicate the location and diagrammatic representations of all other necessary erosion and sediment control measures;
- (m) identify the clean and disturbed catchments, and flow paths, showing:
  - (i) diversion of clean run-off;
  - (ii) collection drains and banks, batter chutes and waterway crossings;
  - (iii) location of discharge outlet points; and
  - (iv) water quality monitoring locations;
- (n) show calculated flow velocities, flow rates and capacities, drain sizing and scour/lining protection, and velocity/energy checks required for all stormwater diversion and collection drains, banks, chutes, and outlets to waterways;
- (o) show waterways (perennial and non-perennial) and detail of stabilisation measures for all temporary waterway crossings;
- (p) locate topsoil and/or soil stockpiles;
- (q) prescribe non-structural controls where applicable, such as minimising the extent and duration of soil exposure, staging the works, identifying areas for protection, delaying clearing until construction works are imminent etc;

(r) include a maintenance schedule for ensuring ESC and stormwater infrastructure is maintained in effective working order at all times, particularly just prior to, during and after wet weather (refer IECA 2008, Chapter 6 and Chapter 7);
(s) include an adaptive management program to identify and rectify non-compliances and deficiencies in environmental performance (refer IECA 2008, Chapter 6 & Chapter 7), including notification to City of any non-compliance and the corrective actions taken by the applicant within 48 hours of the non-compliance;
(t) provide details of chemical flocculation proposed, including equipment, chemical, dosing rates and procedures, quantities to be stored and storage location, and method of decanting any sediment basin;
(u) demonstrate how post-construction bioretention devices will be adequately protected against sediment ingress during land-disturbing activities, including where applicable the transition from construction-phase sediment basins to post-construction phase bioretention basins.

1.5.1.2.4 Inspections/hold points

(1) For medium and high risk development sites, inspection certification must be provided to Council in the form provided (Appendix A) within 5 business days of the inspection.

(2) Inspection certificate must be produced at the nominated hold points below and at any other time in accordance with the conditions of the development approval (refer to IECA 2008 Chapter 7.8 for discussion on hold points and using inspection and test plans):
(a) immediately prior to the commencement of bulk earthworks;
(b) immediately prior to live connection of new stormwater drainage infrastructure works to the existing stormwater/waterway system;
(c) immediately prior to any instream works or disturbance within a waterway;
(d) immediately prior to decommissioning of any sediment basin or transitioning from a sediment basin to a water sensitive urban design bioretention device;
(e) immediately prior to any request for survey plan sealing, on defect or off defect inspection; and,
(f) at intervals not exceeding 1 month.

(3) The inspection certificate must be true and accurate assessments of the findings and a copy must be kept on site together with copies of all specific directions issued in relation to the certification.
(a) Where inspection indicates a non-conformance, a non-conformance report is to be provided to Council which includes: details of the nature and cause of non-conformance;
(b) details of the required corrective actions; and,
(c) corrective actions which must be carried out within 24 hours where practicable or as agreed with the construction superintendent.

1.5.2 Guidance for applicants

1.5.2.1 Erosion Control

(1) In addition to IECA 2008, design to avoid non-essential exposure of soil, development should:
(a) restrict the extent of clearing to that necessary for access to, and safe construction of the approved works;
(b) protect vegetative cover in all other areas of the site; and
(c) minimise the duration of soil exposure by:
(i) only clear vegetation immediately prior to an area being actively worked;
(ii) stage works to minimise the area of soil exposed at any one time;
(iii) effectively stabilise[3] cleared areas if works are delayed or works are not intended to occur immediately;

[3] An effectively stabilised surface is defined as one that does not:

(a) have visible evidence of soil loss caused by sheet, rill or gully erosion; or

(iv) effectively stabilise areas at finished level without delay and prior to rainfall;
(v) In areas being actively worked and effective stabilisation is not feasible, implement a full suite of erosion and sediment controls, to maximise sediment capture and minimise erosion; such that all forms of erosion, other than splash erosion (raindrop impact) and sheet erosion, do not occur. Where such controls would impede construction activities, ensure contingency measures are available on site and are implemented that are sufficient to achieve the same outcome, prior to rain;
Note: this does not apply to major erosion and sediment controls such as sediment basins. Major controls should be installed before other works commence; and,
(vi) effectively stabilise steep areas, such as stockpiles, batters and embankments, without delay and prior to rainfall. Staged stabilisation is expected on large batters and embankments. In areas being actively worked, where this is not feasible, ensure that sediment controls are installed and surface stormwater flows are managed such that erosion of stockpiles, batters or embankments is not caused.

(2) Erosion and sediment controls should not be constructed within the riparian zone, unless it is not feasible to locate them elsewhere. Work within waterways is only to be:
(a) undertaken in accordance with IECA 2008 Best Practice Erosion and Sediment Control, Appendix I – Instream works;
(b) undertaken during the lower rainfall months; and,
(c) disturbance is promptly rehabilitated, conforming to the natural channel form, substrates and riparian vegetation as far as possible.

(3) Prior to the sealing of the plan of survey for the development, all site surfaces are to be effectively stabilised[3] using methods that will continue to achieve effective stabilisation in the medium to long term. A site is determined to be effectively stabilised if at the time of the plan sealing inspection if stabilisation methods are:
(a) consistent with IECA 2008;
(b) appropriate for slopes and slope lengths;
(c) providing a minimum of 70% soil coverage (when viewed perpendicular to the soil surface) across any square metre of the site disturbance area and;
(d) have no evidence of erosion, sedimentation or water contamination

(4) If at the time of request for plan sealing, the method of stabilisation has not achieved a stability that has a high probability of enduring in the medium to long term (for example, inadequate grass cover or permanent landscape works are incomplete) the following will be taken into consideration in determining whether the site is capable of achieving medium- to long-term stability:
(a) evidence of soil amelioration having been adequately undertaken;
(b) evidence of an adequate seed mix of annual and perennial grass species being applied at an adequate rate;
(c) evidence that appropriate grass strike and growth has been achieved for the type of stabilisation method selected.

(5) Where hydromulch is used as the method of temporary stabilisation, it is important that perennial as well as annual grasses are well established at the time of plan sealing to reduce the risk of instability of the site in the medium to long term.

(b) lead to sedimentation; or

(c) lead to water contamination.

1.5.2.2 Drainage Control

(1) Ensure that all concentrated stormwater flows including drainage lines, diversion drains, channels, spillway and batter chutes are managed onto, through, and at release points from the site in all rain events up to and including the average recurrence interval defined within IECA 2008 Table 4.3.1 without causing:
   (a) water contamination;
   (b) sheet, rill or gully erosion; and,
   (c) sedimentation; or damage to structures or property.

(2) In addition to IECA 2008 design to:
   (a) ensure clean stormwater is diverted or managed around or through the site without increasing the concentration of total suspended solids or other contaminants in the flow and without causing erosion (on site or off site). Were this cannot occur ensure that sediment controls are to be designed with sufficient capacity to accommodate the additional volume (diverting clean stormwater runoff into a sediment basin is not acceptable because it will cause an increase in the volume and frequency of contaminated releases from the sediment basin); and,
   (b) ensure sheet flows of stormwater are managed such that sheet and rill erosion is prevented or minimised.

(3) Temporary vehicular crossings of waterways should be designed and constructed to convey pipe flows as defined within IECA 2008 Table 4.3.1, and remain structurally stable for all rainfall events up to the 10-year average recurrence interval event of critical duration.

1.5.2.3 Sediment Control

(1) Sediment control to be based on monthly rainfall erosivity ratings as defined within IECA 2008 Table 4.5.2.

(2) Ensure measures have been implemented such that the runoff from all disturbed areas flows to a sediment basin or basins. Where it is not feasible to divert runoff from small disturbed areas of the site to a sediment basin, implement compensatory[4] erosion, drainage and sediment controls prior to rainfall to ensure that erosion of those of areas does not occur.

(3) Ensure sediment does not leave the site on the tyres of vehicles.

(4) Sediment basins are to be designed in accordance with Appendix B – Sediment basin design and operation, IECA (2008), unless noted otherwise in this policy:
   (a) ensure each sediment basin has the capacity to treat flows to current best-practice standards[5] and as a minimum to contain all the stormwater run-off from the 85th percentile five day rainfall depth equal to 40 mm, unless a higher standard is prescribed in the development approval condition(s);
   (b) provide sediment storage volume in accordance with Table B8 (Appendix B, IECA 2008) or as a minimum store at least 2 months sediment from the receiving catchment, as determined using the Revised Universal Soil Loss Equation (RUSLE);
   (c) ensure sediment basins are maintained with sufficient storage capacity to capture and treat the run-off for the design rainfall depth. Where sediment basins are proposed to be oversized for storage of captured water for re-use, install survey markers in each such basin to clearly indicate the level that water within the basin must be lowered to, in order to meet the storage capacity specified in requirement above;

[4] Compensatory controls are erosion, drainage and sediment controls which compensate for the lack of sediment basin and are applied such that the type, timing, placement and management of controls minimise the potential for water contamination and environmental harm. This is primarily achieved by reducing the risk of erosion and subsequent sediment release, for example by turfing or mulching and managing concentrated flows in the area.

(d) ensure sediment basins are dewatered to the appropriate level as soon as practicable after each rainfall event and no longer than 5 days after a rainfall event (see also below);
(e) ensure stormwater captured in sediment basins is treated prior to discharge to minimise the concentration of contaminants released from the site, having due regard to forecast rainfall, and ensuring that releases are in accordance with the release limits specified below;
(f) ensure sediment basins and associated structures such as inlets, outlets and spillways are effectively stabilised and structurally sound for ARI rainfall events defined within Appendix B, IECA 2008; and,
(g) ensure accumulated sediment from basins and other controls is removed and disposed of appropriately without causing water contamination.

(5) All releases of stormwater captured in a sediment basin, unless otherwise noted in this policy, should not exceed the following limits:
(a) 50 mg/L of total suspended solids (TSS) as a maximum concentration;
(b) turbidity (nephelometric turbidity units or NTU) value less than 10% above background[6]; and,
(c) pH value must be in the range 6.5 to 8.5 except where, and to the extent that, the natural receiving waters lie outside this range.

(6) The concentration of TSS released by dewatering may only exceed 50 mg/L where it can be demonstrated and supported through documentation that:
(a) further significant rainfall is forecast to occur before the TSS concentration is likely to be reduced to 50 mg/L;
(b) releasing a higher concentration of total suspended solids will result in a better environmental outcome by providing storage for the capture and treatment of run-off from the imminent rainfall and run-off;
(c) all reasonable and practicable steps have been taken to treat the water within best-practice time frames;
(d) flocculent has been appropriately applied and the concentration of TSS in the captured water has already significantly decreased;
(e) the development is in full compliance with this policy;
(f) the water treatment and release is supervised by an appropriate experience person; and,
(g) written notice of the release is provided to Council within 24 hours of the release.

(7) It is recommended that a site-specific relationship between turbidity and suspended solids is determined for each sediment basin. Where an appropriately qualified person has demonstrated a significant relationship between NTU and TSS, testing for compliance with release limits, can be conducted on site with a calibrated turbidity meter. A report showing relationship results must be provided to Council prior to any water releases occurring based on turbidity. This has the advantage of providing immediate assessment to justify a release rather than waiting for laboratory results to confirm concentration levels and compliance. A sample of release water is to be kept on site and provided to Council on request. Note that post-release TSS validation is appropriate to demonstrate that the NTU/TSS correlation is being maintained.

[6] Background refers to receiving water quality immediately upstream of the site water entry point at the time of the release. Where there is no immediate upstream receiving water at the location and time of the release, then a point immediately upstream of the sites receiving water that is not influenced by the site. When water is not present at this point the turbidity release limit (NTU) will be equal to the release limit for 50 mg/L total suspended solids (TSS) based upon the onsite correlation between TSS and NTU or site based historical data obtained prior to the release.

2.0 INFRASTRUCTURE WORKS

2.1 RELATIONSHIP WITH THE PLANNING SCHEME

(1) This part sets out:

(i) particular standards called up as acceptable outcomes in 9.2.7 Infrastructure Works Code. These are contained in the following subsections:
2.2.1 Electrical reticulation and telecommunications infrastructure
2.3.1 Street and path lighting
2.4.1 Waste management

(ii) information council may request to demonstrate compliance with the performance outcomes of the code. These are contained in the following subsections:
2.4.2.1 Waste management plan
2.4.2.2 Construction management plan

2.2 ELECTRICAL RETICULATION AND TELECOMMUNICATIONS INFRASTRUCTURE

2.2.1 Standards called up as acceptable outcomes

This section sets out the standards called up in AO12.1 in the Infrastructure Works Code. These standards represent the "acceptable outcome" which meets the performance outcome set out in the code.

(1) In addition to the standards of the relevant authority and the Queensland Public Lighting Construction Manual, the following additional standards apply.

(2) Electricity reticulation is to be provided as an underground service in urban areas, with overhead supply being permitted only in rural areas or in the following circumstances:
(a) where an existing dwelling house is to remain within the limits of a development or reconfiguration, then any existing overhead electricity services to the building do not need to be converted to underground services; or,
(b) where a reconfiguration creates no more than 2 lots (1 into 2 lot reconfiguration or boundary realignment); or,
(c) where a reconfiguration in an area where overhead power is existing creates 3 or more lots (1 into 3 lot reconfiguration or more) and:
(i) overhead electricity reticulation is already established;
(ii) no new property poles or poles within the road reserve are required to service the sites;
(iii) there is no extension to the overhead mains or any "flying fox" overhead service connection;
(iv) the proposed overhead service connection does not cross a road; and,
(v) the proposed overhead service connection does not cross a premises, other than the premises being serviced.

(3) All existing conductors of 33kV and higher may remain overhead. However if the developer wishes to remove high voltage feeder lines, the necessary approvals are obtained direct from the relevant authority. New or relocated 33kV or higher systems may be overhead at the discretion of the relevant authority.

(4) Electricity and telecommunications services are located in accordance standard drawing R-RCC-6 and R-RCC-7.

(5) The quantity of conduits installed within a development must cater for future adjacent developments and/or mains upgrades. For infill development where underground electricity is required, conduits must be extended along the full frontage to cater for future extension of the underground network.

(6) For rear lots with access easements, conduits must be installed for the full length of the access easement.

(7) Water meters, where possible, are located on alternate boundaries to electrical pillar boxes. Where these services are located on the same boundary, the water meter must be located a minimum of 600mm from the electrical pillar box.

(8) Where underground electrical infrastructure is required to cross a road carriageway it is –
(i) at right angles where possible;
(ii) in no case less than 45 degrees to the road axis;
(iii) located on boundaries alternate to water reticulation crossings.

(9) Development involving the dedication of parks provides electrical infrastructure pillars on the verge of the road reserve adjoining the park to provide power supply for lighting or other services and facilities.

(10) New transformers are pad-mount transformers and are located within road reserves excised from properties.

2.3 STREET AND PATH LIGHTING

2.3.1 Standard called up as acceptable outcomes

This section sets out the standards called up in AO13.1 in the Infrastructure Works Code. These standards represent the "acceptable outcome" which meets the performance outcome set out in the code.

(1) Street and path lighting is designed in accordance with the following standard unless otherwise specified below:
- AS1158 – Lighting for Roads and Public Spaces (as amended)

(2) The location of new lighting within the road reserve and parks must take into account existing houses and light spillage must be minimised through street lighting layout and the use of shields.

(3) Street lights are to be located on alternate boundaries to fire hydrants.

(4) Lighting within parks is to be provided:
(a) at intervals along paths that traverse parkland;
(b) at points of conflict; and,
(c) at park entrances.

2.3.2 Guidance for applicants

(1) The required street lighting category may be required to minimise the effects on adjacent fauna and marine life.

2.4 WASTE MANAGEMENT

2.4.1 Standards called up as acceptable outcomes

This section sets out the standards called up in AO14.1 and AO15.1 in the Infrastructure Works Code. These standards represent the "acceptable outcome" which meets the performance outcomes set out in the code.

2.4.1.1 Waste Generation

(1) Waste generation is calculated in accordance with the generation rates for each use in Table 1 below.

(2) For other uses not contained within Table 1, a waste management plan (in accordance with section 2.4.2.1 of this policy) may be required to establish the expected waste generation for the particular use.

Table 1: Waste generation rates

Use	General waste[7] generation	Recycling waste[8] generation	Other requirements
Multiple dwelling **Retirement facility** **Residential care facility**	120L/dwelling/week	60L/dwelling/week	Green waste[9] bins are to be provided at the rate of 1 x 240L green waste bin per 100m^2 of communal open space and landscaping
Multiple dwellings (3 stories or more)	100L/dwelling/week	70L/dwelling/week	Green waste[9] bins are to be provided at the rate of 1 x 240L green waste bin per 100m^2 of communal open space and landscaping
Short term accommodation	60L/occupant/week	30L/occupant/week	
Office	30L/100m^2 GFA/ day	40L/100m^2 GFA/day	
Hotel/Club: • **residential portion** • **dining areas** • **licensed bar area**	• 5L/bed/day • 50L/100m^2 GFA/day • 50L/110m^2 GFA/day	• 5L/bed/day • 50L/100m^2 GFA/day • 25L/100m^2 GFA/day	Allow for waste oil storage Allow for baling of paper and cardboard
Food and drink outlet	660L/100m^2 GFA/day	330L/100m^2 GFA/day	Allow for waste oil storage Allow for baling of paper and cardboard
Shop and other business premises	50L/100m^2 GFA /day	25L/100m^2 GFA /day	Allow for baling of paper and cardboard
Industrial premises/ warehouse	60L/100m2/day	30L/100m^2 GFA /day	

[7] General waste – waste, other than domestic clean-up waste, greenwaste, recyclable waste, interceptor waste or waste discharged to a sewer, produced as a result of the ordinary use or occupation of domestic or commercial premises.

[8] Recyclable waste – means clean and inoffensive waste that is declared by the local government to be recyclable waste for the area. Examples of waste that may be declared to be recyclable waste— glass bottles, newspaper, cardboard, steel and aluminium cans

[9] Green waste – means grass cuttings, trees, bushes, shrubs, loppings of trees, bushes or shrubs, or similar matter produced as a result of the ordinary use or occupation of premises.

2.4.1.2 Waste Bins

(1) The required container sizes should be calculated based on the following collection frequencies:
- (a) maximum of one collection per week for non-residential developments;
- (b) one collection of waste per week for residential developments; and
- (c) one collection of recycling per fortnight for residential developments.

(2) The size of wheelie bins and bulk bins available is in accordance with Table 2 below.

Table 2: Waste bins sizes

Bin type	Bin capacity (L)	Truck type	Length (mm)	Width (mm)	Height (mm)
Wheelie bin[10]	140 (waste only)	Side lift	560	610	920
	240	Side lift	740	580	1100
	340 (recycling only)	Side lift	840	650	1080
Bulk bin[11]	660	Rear lift	1260	780	1400
	1100	Rear lift	1240	1070	1330
	1500	Front lift	2040	1041	1330
	2250	Front lift	2020	1441	1430
	3000	Front lift	2040	1441	1460
	4000	Front lift	2040	1631	1700

2.4.1.3 Bin Storage Areas

(1) The wheelie bin and bulk bin storage point is the area allocated to the permanent storage of waste bins and may or may not be where the bin is serviced. A storage point may be a common or an individual storage point however bin storage areas are to remain separate for residential and commercial components of a development.

(2) Storage areas are to be designed to accommodate the types of waste bins available from Council as set out in Table 2.

(3) Wheelie bin and bulk bin storage points must;
- (a) allow the bins to be serviced in-situ or easily transported to a separate servicing point;
- (b) be located a minimum of 5 metres from any window, door or fresh air intake within the development or any adjoining site;
- (c) be screened with outward opening doors or a roller door to ensure bins are not visible from a public place;
- (d) not be located in a structure unless it is in:
  - (i) a purpose built storage area, which is air locked, fly and vermin proofed and used solely for the storage of waste; or
  - (ii) a well-ventilated area of a basement and not within 30m of an opening to a food premises or food handling area; or
  - (iii) an open-air carport;
- (e) have safe access for residents and bin collection contractor;
- (f) be of a sufficient size to accommodate the required number of bins and allow for access and manoeuvring of the bins as follows:
  - (i) wheelie bins – allow $1m^2$ per bin;
  - (ii) bulk bins – allow a minimum of 0.5m clearance around each bin.

[10] These are two wheeled mobile garbage bins, made from high density polyethylene (HDPE).
[11] Bins open along length.

(4) Additionally, bulk bins storage areas must:
- (a) be constructed with a hardstand concrete base with a maximum surface gradient of 1:20;
- (b) be roofed and designed to prevent entry of rainwater;
- (c) for bins greater than 1.5m^3, be a servicing point (unless the bins are proposed to be mechanically towed to the servicing point by the property manager).

(5) Where a common storage point for wheelie bins for two or more dwellings is proposed, it must be constructed with a concrete base and store no more than 10 waste and 10 recycling bins.

2.4.1.4 Bin Servicing Points

(1) For multiple dwellings with 10 or fewer dwellings where wheelie bins are proposed, the bin servicing location is in accordance with Table 3 below.

Table 3: Multiple dwelling bin servicing location

Number of Multiple Dwellings	Road Frontage	Bin servicing point
1-10	Minor[12]	Kerbside
	Major[13]	Kerbside or On-site
11+	Minor12	On-site
	Major13	

(2) On-site wheelie bin and bulk bin servicing points must:
- (a) be constructed with a hardstand concrete base with a maximum surface gradient of 1:20 (excludes kerbside servicing points) ;
- (b) be constructed so that all internal roads/accessways can withstand the weight of the fully loaded waste collection vehicle;
- (c) allow for a 0.5m clearance from all obstructions;
- (d) not obstruct parking areas, loading zones and pedestrian areas while servicing the bins;
- (e) where a development site fronts more than one road, the waste collection vehicle must access the site from the lower order road;
- (f) be clearly separated from car parking bays, loading bays, footpaths and pedestrian areas;
- (g) be clear of speed control devices; and,
- (h) be located a minimum of 5 metres from any window, door or fresh air intake within the development or any adjoining site.

(3) On-site and kerbside wheelie bin servicing points must:
- (i) for kerbside collection, allow 1m of road frontage per wheelie bin directly in front of the development (if this cannot be provided the bins must be serviced internally);
- (j) enable all wheelie bins to be serviced by the waste collection vehicle without the need for the operator to leave the vehicle; and,
- (k) allow adequate unobstructed overhead space for the swinging arm action of the side-lift waste collection vehicle (refer Table 4 for servicing height).

(4) On-site and kerbside bulk bin servicing points must allow adequate unobstructed overhead space for the swinging arm action of the front-lift or rear-lift (depending on the size of the bulk bin) waste collection vehicle (refer Table 4 for servicing height).

(5) The waste collection vehicle operating dimensions and required clearances listed in Table 4 are used when designing and locating servicing points.

(6) Where roads temporarily terminate (eg. for staged development), a temporary turning solution which can accommodate the waste collection vehicle must be provided.

[12] Minor roads include rear laneways, access places, access streets and collector streets.
[13] Major roads include major collector streets, sub-arterial and arterial roads.

Table 4: Waste collecting vehicle clearances (not including obstructions)

Collection vehicle type	Travelling height (m)	Width (m)	Length (m)	Servicing height[14] (m)	Total tonnage (max)	Turning radius (m)
Side load (wheelie bins)	4.0	2.5	10.3	5.2	23	11.5 (wall–wall[15]) 10.5 (kerb-kerb[16])
Front lift (bulk bins)	4.3	2.5	10.5	6.4	27.5	13.2 (wall–wall[15]) 12.3 (kerb-kerb[16])
Rear lift (bulk bins)	4.0	2.5	9.9	4.0	22.5	11.2 (wall-wall[15]) 10.5 (kerb-kerb[16])

2.4.1.5 Waste Carting

(1) Waste carting for wheelie bins and bulk bins is required where bins are not serviced in-situ and must be transported from the bin storage area to the bin servicing point.

(2) Bulk bins up to and including 1.5m^3 in size can be manoeuvred to the servicing point for collection by the property manager.

(3) Bulk bins greater than 1.5m^3 in size requiring manoeuvring to the servicing point must be mechanically towed by the property manager.

(4) The waste carting route must:
- (a) not extend through any habitable portion of a building, a food premises, or any other place that the person carting the bin would not have authority to enter or through any visitor or resident designated car park;
- (b) be constructed with a hardstand surface that allows for easy and smooth bin movement and must not have any steps or lips; and,
- (c) be located no more than 20m from the storage area.

2.4.1.6 Bin Wash Down Facilities

(3) Spill and bin wash down facilities are provided as follows:
- (a) residential development – access to a grassed area for washing of bins; however, if it is necessary for a bin wash facility to be connected to sewer it must be constructed as for a commercial development;
- (b) commercial development – the storage area is graded to fall to a drainage point which is connected to sewer, is roofed and bunded to prevent stormwater ingress; and,
- (c) bin storage area is to be provided with a hose cock for the cleansing of bins.

(4) Waste removal systems within buildings meet the following requirements:
- (a) developments 3 storeys or more in height must utilise a waste chute to transport waste from each floor to a waste storage point;
- (b) developments 3 storeys or more in height must utilise either a recyclables chute or a recycling bin located on each floor adjacent to the waste chute to transport recyclables from each floor to the waste storage point; and,
- (c) where used, waste chutes must meet the requirements set out in Table 7:

[14] Servicing height – means the height required for vehicles to service the bins (including bin height).
[15] Wall to wall – means the minimum radius required for the body of the vehicle to turn (i.e. within an enclosed/walled area).
[16] Kerb to kerb – means the minimum radius required for the wheels of the vehicle to turn (i.e. body of vehicle will overhang roadway during turn).

Table 7: In-building waste removal systems

Design element	Requirement
Waste Chute[17]	Waste chutes (including the shaft) must: (a) be compliant with the National Construction Code (NCC); (b) have adequate strength for its purpose, including additional reinforcing where necessary at joins, bends and hopper intersections; (c) be insect and vermin proof; (d) be constructed and installed to prevent the following during use and operation of the system: (i) transmission of vibration to the structure of the premises; (ii) excessive odour – there must not be a noticeable odour beyond the waste disposal and storage points; (iii) excessive noise to the occupants of the building; (e) comply with the waste chute manufacturer's technical specifications and/or operational limitations, including installation design features and ancillary equipment required to prevent blockages and noise disturbances; (f) be fitted with a shutter at the base of the chute for closing off the chute manually during bin exchange and automatically in case of fire; (g) be fitted with fire sprinklers; and, (h) have chute pipes with access provided at appropriate levels and a nylon brush or similar appliance on a pulley system, for clearing obstructions and cleansing.
Waste disposal point[18] (at the chute)	The waste disposal point must: (a) be located on each residential floor in a position which is: (i) freely ventilated in the open-air (sheltered balconies), or in a dedicated room or compartment; (ii) easily accessible by the occupants of each apartment; (iii) separated from any habitable portion of a building or place used in connection with food preparation or storage; (iv) located to ensure the handle of the hopper is at least 1200 millimetres above finished floor level. (v) be fitted with a hopper door that automatically returns to the closed position after use; (vi) designed to permit free flow of waste into the chute; (vii) constructed so that the diameter or largest dimension of the service opening (the diagonal of a rectangular opening) does not exceed three-quarters (3/4) of the diameter of the chute with which the hopper is connected; (viii) the floor adjacent to the hopper is paved with a durable impervious material with a smooth finished surface; and, (ix) chute door is two hour fire rated.
Waste storage room[19]	The waste storage room must: (a) allow unobstructed access for removal of the containers to the service point and for positioning of the containers correctly in relation to the waste chute; (b) provide additional space for compactors (where required); (c) not be located adjacent to or within any habitable portion of a building or place used in connection with food preparation (including food storage); (d) be fitted with doors that are wide enough to allow for the easy removal of the largest container to be stored; (e) be designed and constructed of impervious material with a smooth

[17] Waste Chute - A duct in which waste descends from one point to another

[18] Waste disposal point - The point where waste is disposed of into the chute, also known as the waste hopper. It consists of a fixed frame and hood unit, covered with a hinged or pivoted door.

[19] Waste storage room - The room at the base of the chute used for the storage of waste bins.

Design element	Requirement
	finish (including the walls, ceiling, floor) to allow for easy cleaning; (f) be provided with a hose cock immediately outside the room for cleaning bins and the room; (g) be insect and vermin proof; (h) have a constructed hardstand floor area which is graded to fall to a drainage point/s and is connected to sewer in accordance with trade waste requirements; (i) have adequate artificial lighting; (j) where refrigerated rooms are fitted, provide an approved alarm device outside which is controllable only from within the room; and, (k) bins must have a reinforced bottom plate.

2.4.2 Information that Council may request

This section sets out information that Council may request to establish the waste requirements for a development.

2.4.2.1 Waste Management Plan

(1) A waste management plan may be requested by Council to support a development application and demonstrate that the proposed development can comply with the standards called up in AO14.1 and AO15.1 of the Infrastructure Works Code.

(2) A waste management plan must provide the following information:
- (a) a brief description of the development and site location;
- (b) identification of wastes generated during the construction and demolition (if applicable) phases including;
  - (i) a list of activities that may generate wastes;
  - (ii) types and estimated volumes of materials generated from each activity including hazardous characteristics;
  - (iii) how waste materials will be dealt with;
  - (iv) the disposal point or method for the disposal of each waste type;
  - (v) details of how waste materials will be separated on site.
- (c) a site plan (with dimensions) showing:
  - (i) the location of existing and proposed buildings;
  - (ii) landscaping areas;
  - (iii) site access points;
  - (iv) bin storage points;
  - (v) bin servicing point;
  - (vi) where bins are to be collected on site, the swept path of waste collection vehicle;
  - (vii) turning circle for each turn within the development required to be performed by waste collection vehicle showing clearance dimensions from buildings, fences, infrastructure and landscaping;
- (d) an estimate of weekly volumes of waste material generated in accordance with Table 1 – waste generation rates;
- (e) the proposed bin types and sizes at each storage point;
- (f) allocation of responsibility for waste management;
- (g) bin carting routes and distances (where applicable); and,
- (h) a chute diagram from top storey to waste storage room and location on each floor (where applicable).

2.5 CONSTRUCTION MANAGEMENT

2.5.1 Information that Council may request

This section sets out information that Council may request to demonstrate compliance with the performance outcomes for construction management in the Infrastructure Works Code.

2.5.1.1 Construction Management Plan

(1) A construction management plan may be required for developments involving construction and/or demolition activities which may impact the surrounding environment and residents. The plan must address the proposed measures to these impacts and must include the following:
- (a) public safety, amenity and site security;
- (b) construction hours;
- (c) noise and vibration management;
- (d) air and dust management;
- (e) stormwater and sediment control;
- (f) waste management;
- (g) traffic management; and,
- (h) schedule of works.

2.6 EXCAVATION AND FILLING

2.6.1 Guidance for applicants

This section provides guidance for applicants on how to achieve compliance with PO1 of the Infrastructure Works Code and PO4 of the Landscaping Code.

2.6.1.1 General

(1) Where located adjacent to Council managed land, all retaining walls (including any associated footings) must be wholly located with private property.

2.6.1.2 Retaining walls between lots

(2) Retaining walls located between lots within a development that are greater than 1.5m in height must be stepped/terraced to incorporate a minimum of 0.75m of landscaping between the two walls. The lower wall and landscaping area should be fully contained within the lower lot and should be of a height which allows maintenance of the landscaping area from the ground level of the property on the low side and the upper wall (including any associated footings) and fence should be fully contained within the upper lot.

3.0 TRANSPORT, SERVICING, ACCESS AND PARKING

3.1 RELATIONSHIP WITH THE PLANNING SCHEME

(2) This part sets out:

(iv) particular standards called up as acceptable outcomes in 9.4.5 Transport, Servicing, Access and Parking Code. These are contained in the following subsections:
3.2.1 Driveways
3.3.1 Road Design
3.4.1 Internal Accessways
3.5.1 Pedestrian and Cycle Path Design
3.6.1 Car Parking, Servicing and Site Access Design

(v) information council may request to demonstrate compliance with the performance outcomes of the code. These are contained in the following subsections:
3.3.2 Traffic Impact Assessment

(vi) further guidance for applicants is contained in the following subsections:
3.2.2 Driveways

3.2 DRIVEWAYS

3.2.1 Standards called up as acceptable outcomes

This section sets out the standards called up in AO1.1 in the Transport, Servicing, Access and Parking Code. These standards represent the "acceptable outcome" which meets the performance outcome set out in the code.

(1) Driveways are designed in accordance with standard drawings in section 8 of the policy and the following standards unless otherwise specified below.

- Australian Standard 2890: 2009 - Parking facilities
- Austroads: Guide to Road Design

(2) Driveway crossovers are located:
(a) a minimum of 1m from the kerb transition of a stormwater gully pit;
(b) a minimum of 1m from power poles and street lights;
(c) a minimum of 300mm from any utility infrastructure, access covers or other infrastructure;
(d) a minimum of 2m from existing street trees;
(e) to allow a minimum of 10m of uninterrupted kerb length approaching a bus stop; and,
(f) in accordance with Table 1.

Table 1: Driveway Access Locations

Type of Frontage Road	Adjacent Feature	Minimum Separation of Driveway from Adjacent Feature
Access Place and Access Street	Minor intersection	6 metres from kerb tangent point
	Major intersection	20 metres from kerb tangent point
	Median island Other driveways	10 metres from island nose 3 metres along kerb
Collector, Major Collector, Sub-Arterial and Arterial Roads	Minor intersection	10 metres from kerb tangent point
	Major intersection	30 metres from kerb tangent point
	Median break	15 metres from median nose
	Other driveway	15 metres along kerb
	Traffic signals	Clear of queue areas and turning lanes

(3) Driveway crossovers must be finished with a non-slip surface material which does not create an uneven or slippery hazard for pedestrians.

3.2.2 Guidance for applicants

(1) For reconfiguring a lot applications where the location of domestic driveways is considered to be constrained or requires more than one lot to share a driveway, driveways may be required to be constructed prior to the development being accepted on maintenance.

3.3 TRAFFIC IMPACT

3.3.1 Information that Council may request

3.3.1.1 Traffic impact assessment

This section sets out information that Council may request to demonstrate compliance with PO3 and PO4 of the Transport, Servicing, Access and Parking Code.

(1) Where applicable, a detailed traffic impact assessment and report may be required to assess the impact that traffic associated with the proposed development will have on the adjoining road network.

(2) All traffic impacts assessments and reports must be prepared by a suitably qualified Registered Professional Engineer of Queensland (RPEQ).

(3) A traffic impact assessment must include (at minimum):
- (a) details of the traffic impact on surrounding development and the adjacent transport network including:
  - (i) design year covering a 10 year planning horizon from the date of completion of the development;
  - (ii) clearly presented statistical details of the proposed development;
  - (iii) traffic generations of the proposed development, both daily and peak hours;
  - (iv) directional distribution of generated traffic, travel pattern and vehicle classification;
  - (v) current traffic volume/full turning movement volumes on affected existing roads and intersections. Vehicular volumes are classified into cars and commercial vehicles and are projected forward at appropriate growth rates;

(vi) impact of the development on pedestrian and bicycle movements, including access to existing linkages;
(vii) analysis of intersections using the computer software program SIDRA or similar. Details to include:
(viii) intersection treatment;
- method of control;
- delay;
- capacity;
- traffic volume;
- saturation levels;
- queue lengths; and,
- copies of input, output and graphical intersection layout from SIDRA or equivalent;

(b) conceptual plan of intersection configurations showing:
(i) lane layouts;
(ii) turning radii;
(iii) storage lengths;
(iv) auxiliary lanes;
(v) medians;
(vi) shoulders;
(vii) footpaths/bikeways and other relevant information;
(viii) for signalised intersections, the same analyses and conceptual plans as per item (a)(vii); together with signals phasing diagrams from SIDRA or similar output;
(ix) any adverse effects on safety issues, capacities and levels of service of intersections and the road network and appropriate ameliorative measures suggested;
(x) all assumptions and references made in the traffic analyses.
(c) proposed access to the development;
(d) maintenance of traffic flow efficiency and safety standards;
(e) maintenance of pedestrian and bicycle flow efficiency;
(f) parking impacts associated with the proposed development; and,
(g) any proposed upgrades/changes to the road network including the timing of these works.

3.4 ROAD DESIGN

3.4.1 Standards called up as acceptable outcomes

This section sets out the standards called up in AO4.1 in the Transport, Servicing, Access and Parking Code. These standards represent the "acceptable outcome" which meets the performance outcome set out in the code.

3.4.1.1 General

(1) Roads are design in accordance with standard drawings in section 8 of the policy and the following standards unless otherwise specified by the requirements set out in this section:
- IPWEAQ Complete Streets
- Austroads: Guide to Road Design
- Austroads: Guide to Traffic Management
- Austroads: Guide to Pavement Technology
- DTMR Manual of Uniform Traffic Control Devices (MUTCD)

3.4.1.2 Road Hierarchy

(2) The purpose and function of the road hierarchy is detailed in Tables 2 and 3.

Table 2: Functional characteristics of road types - residential

	Access Laneway	Access Place	Access Street	Collector Street	Major Collector Street	Sub-Arterial Road	Arterial Road
Network	Local				Strategic		
Function	Rear access to lots fronting road with restricted property access Refuse collection	Local access to properties Shared traffic, pedestrian and recreational uses	Access to properties and local neighbourhoods with shared traffic, pedestrian and recreational uses	Access to properties and other roads. Access to local neighbourhoods	Transport of people and goods within suburbs District movement	Transport of people and goods between suburb Connects suburbs to activity centres, local education community and health facilities	Transport of people and goods through and around the local government area

Table 3: Functional characteristics of road types - industrial

	Industrial Access Street	Industrial Collector Street
Function	Vehicular access to industrial properties.	Vehicular access to industrial properties and other roads.

(3) Council's adopted road design standards are shown in Table 4 and Table 5.

Note: All measurements are taken from lip of kerb and channel unless otherwise specified.

(4) Any required landscaping buffers do not form part of the road reserve and as such are in addition to the minimum required road reserve width.

Table 4: Road design standards – residential

Street Type	Access Laneway	Access Place	Access Street	Collector Street	Major Collector Street	Sub-Arterial	Arterial
Maximum traffic volume (vpd)	150	150	1,000	3,000	10,000	2 lanes – 15,000 4 lanes – 20,000	20,000 - 30,000
Design traffic volume	10 vpd detached 6 vpd attached	10 vpd detached 6 vpd attached	10 vpd detached 6 vpd attached	10 vpd detached 6 vpd attached	10 vpd detached 6 vpd attached	10 vpd detached 6 vpd attached	10 vpd detached 6 vpd attached
Traffic catchment	25 dwellings	15 lots	100 lots	300 lots	1,000 lots	2,000 lots	N/A
Direct property access	Yes	Yes	Yes	Yes	No	No	No
Posted speed	30km/h	40km/h	40km/h	50km/h	60km/h	60-80km/h	60-80km/h
Reserve width	8m	15m	15m (18m required in MDR zoned areas of Kinross Road and South East Thornlands)	18m	23m (plus cycle lanes if required)	2 lanes – 29m (plus cycle lanes if required) 4 lanes – 36m (plus cycle lanes if required)	Refer to DTMR design standard
Number of traffic lanes	N/A – total carriageway width min. 5.5m	2	2	2	2	2 or 4	
Traffic lane width	N/A	3m	3m	3.5m	3.5m	3.5m	
Number of auxiliary lanes	Nil (parking not permitted)	Nil	Nil	2	2	2	
Auxiliary lane width	N/A	N/A	N/A (2m auxiliary lane required in MDR zoned areas of Kinross Road and South East Thornlands)	1m	2.5m	2.5m	
Number of dedicated on road cycle lanes	Informal	Informal	Informal	Informal	As required by the LGIP	As required by the LGIP	As required by the LGIP
Cycle lane width	N/A	N/A	N/A	N/A	As required by the LGIP	As required by the LGIP	As required by the LGIP
Min verge width	Minimum 1.2m (dependant on services within the verge)	4m	4m	4.5m	5.5m	5.5m	Refer to DTMR design standard
Median width	N/A	N/A	N/A	N/A	N/A	6m central median	
Intersection spacing	N/A	75m	60m same side 40m opposite side	60m same side 40m opposite side	100m same side 60m opposite side	500m	700m
Min Footpath	Full concrete 1.2m verge	No	1.5m (one side) (1.5m path on both sides required in MDR zoned areas of Kinross Road and South East Thornlands)	1.5m (one side)	2.0m (both sides)[20]	2.0m (both sides)20	2.0m (both sides)20

[20] Unless otherwise required by the Local Government Infrastructure Plan

Table 5: Road design standards - industrial roads

	Industrial Access Street	Industrial Collector Street
Design Speed	60km/h	60km/h
Reserve width	20m	22m
Carriageway width	11m	13m
Number of traffic lanes	2	2
Width of traffic lanes	3.5m	3.5m
Number of parking lanes	2	2
Width of parking lanes	2m	3m
Verge width	4.5m	4.5m
Footpath	Both side 1.5m	Both sides 1.5m
Grade	Maximum 10% Minimum 2.5%	Maximum 8% Minimum 0.4%

3.4.1.3 Geometric Design

(1) The geometric design of all roads is in accordance with *Austroads Guide to Road Design: Part 3 – Geometric Design*. The design is to be in accordance with the 'desirable' ranges of minimum and maximum design limits, except where varied below.

3.4.1.3.1 Cross Falls

(1) All intersections and cul-de-sac heads are to be contoured to prevent ponding of water. Where minimum cross fall cannot be achieved the longitudinal grades must be used to shed water.

(2) A cross fall of 2% is permissible when joining to existing road construction with a flatter cross fall.

3.4.1.3.2 Truncations

(1) A corner truncation of the real property boundary for roads, streets and accessways is provided at each intersection to maintain sight distance. The size of the truncation must be in accordance with Table 6.

Note: where streets of a different hierarchy intersect, the truncation required is that of the higher order road.

Table 6: Truncation According to Street Type

Street Type	Truncation
Rear Laneway, Access Street, Access Place, Collector Street, Major Collector Street	6m x 6m 3 chord
Sub Arterial	10m x 10m 3 chord
Arterial	25m x 25m 5 chord
Industrial	8m x 8m 3 chord

3.4.1.3.3 Turning Areas

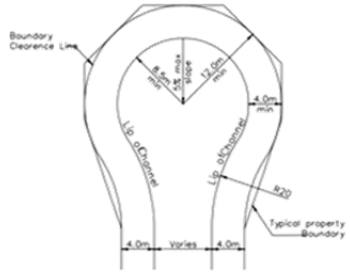
(1) Culs-de-sac are to be provided to facilitate turning movements at the end of a road.

(2) The road reserve width at cul-de-sac is to provide a minimum 4m verge from the lip of the channel to the property boundary.

(3) The provision of alternative cul-de-sac design to accommodate additional on street car parking (eg. using a centre island with parking spaces) must be considered where more than 4 properties adjoin the head of a cul-de-sac.

(4) The minimum radius at the head of a cul-de-sac in a residential area is 8.5m to the lip of the channel generally in accordance with the diagram below.

Diagram 1 – Residential Cul-de-sac Treatment



(5) For industrial areas, the cul-de-sac head must be designed to accommodate the design vehicle appropriate to the use.

(6) Where a temporary turning facility is required (generally for staged construction) the preference is for a cul-de-sac.

3.4.1.4 Kerb and Channel

(1) The types of kerb and channel to be used are listed in Table 7.

Table 7: Kerb and channel types

Road Type	Kerb and Channel Type (refer IPWEAQ standard drawing RS-080)
Access Place Access Street Collector Street	M1
Major Collector Street Sub-arterial Road Arterial Road	B1 (450mm channel)
Industrial Road	B1 (450mm channel)
Bridges and Culverts	B1 (450mm channel)

(2) In addition to the table above the following are to be applied:
- (a) type B1 barrier kerb and channel is to be used where a road adjoins open space;
- (b) type B1 barrier kerb and channel is to be used at bus stops;
- (c) edge restraints are to be used in residential areas where one way cross falls are used;
- (d) on medians and traffic islands, semi mountable type SM4 and SM5 are used with concrete median and landscaped median respectively;
- (e) semi mountable type SM5 is to be used for roundabout centre island (75mm high kerb may be adopted where the roundabout lies on a minor (local) road which is unlikely to be a bus route;
- (f) kerb ramps are provided adjacent to all kerb returns, at entrances to parks and where required to support pedestrian access.

3.4.1.5 Road edge guide posts

(1) Road edge guide posts are in accordance with DTMR standard drawings and are provided at all location where concrete kerb and channel is not constructed, such as half road construction, tapers and ends of roads.

3.4.1.6 Service conduits

(1) Service conduits for rear lots are extended along the full length of the accessway and a locator post provided.

3.4.1.7 Entry treatments, signage and barriers

(1) All entry treatments (where approved) are to be placed on private property and the land owner is to be responsible for their ownership and maintenance.

(2) For major traffic routes, safety barriers are to be identified and designed in accordance with the *DTMR Road Planning and Design Manual - Volume 3, Part 6: Roadside Design, Safety and Barriers*. Appropriate risk assessment is to be undertaken using the DTMR Road Side Impact Severity Calculator and a report provided to justify the design.

(3) Barriers and guardrails are to be in accordance with DTMR standard drawings. Covers must be provided to protect road users from sharp and protruding edges.

3.4.1.8 Threshold Treatments

(1) Threshold treatments are to be provided where major roads intersect local streets to highlight the change in the road environment. The typical treatment is coloured stamped AC and the depth of the AC in the location of the treatment must be increased by the depth of the stamp. Coloured pavement treatments are to be undertaken in accordance with Brisbane City Council – Reference Specifications for Civil Engineering Work – S155 Road Pavement Marking.

3.4.1.9 Pavement Design

(1) Pavements are designed in accordance with the following standards unless otherwise specified below:
- Austroads Guide to Pavement Technology
- DTMR Pavement Design Supplement
- BCC Reference Specifications for Civil Engineering Work

(2) The traffic design loadings are to be based on the ultimate traffic generation for the catchment area, originating from:
(a) ultimate development of current zoned land; and,
(b) staging of works and the resultant development and construction traffic.

3.4.1.9.1 Flexible pavements

(1) The minimum design traffic loadings in equivalent standard axles (ESA) for the various road classifications are defined in Table 8. Where appropriate, Council may nominate a higher ESA value based on a traffic impact assessment, predicted traffic or increased percentage of heavy vehicles.

Table 8: Design Equivalent Standard Axles

Road Type	Design ESA (20 years)
Access Street Access Place	1×10^5
Collector Street	5×10^5
Major Collector Street	1×10^6
Sub-Arterial Road	2×10^6
Arterial Road	Refer to DTMR design standards
Industrial Roads	2×10^6

(2) The assessment of the supporting subgrade strength is to be in accordance with *DTMR Pavement Design Supplement 'Supplement to Part 2: Pavement Structural Design' of the Austroads Guide to Pavement Technology* with the following considerations:

(a) in deep cuttings, fills or other instances where testing of the subgrade is not possible until the completion of bulk earthworks, the pavement design or re-evaluation of designs may be required upon achieving subgrade level;

(b) the subgrade must be tested at the following frequencies:

(i) road length ≤ 120m: 1 test for each subgrade type (minimum of 2 test locations)

(ii) road length > 120m: 1 test for each subgrade type and/or 1 test for every 60m or part thereof, but not less than 3 tests for each subgrade type;

(iii) spacing of test sites must be selected to suit subgrade, topographic and drainage characteristics;

(c) a maximum subgrade CBR of 10 is to be used for design purposes;

(d) if the CBR determined for the subgrade is less than CBR 3 for flexible (granular and full depth asphalt) pavement or CBR 5 for concrete pavement, the minimum depth of subgrade replacement is to be increased by 100mm for each 0.5% reduction in the CBR value. After subgrade improvement, the pavement design should be based on subgrade CBR 3 for flexible pavement and CBR 5 for concrete pavement. Other techniques such as rock spalls on geotextile and geogrids together with correctly sized gravel blanket course will be considered for CBR values less than 1.

(e) design gravel depths for flexible pavements with thin bitumen surfacing for light-traffic roads with loading of up to and including 2×10^6 ESAs is to be assessed from subgrade strength and in accordance with Table 9. The minimum total pavement gravel depth is 250mm.

Table 9: Minimum flexible pavement gravel depth (mm) with thin AC surfacing

CBR	1×10^5	5×10^5	1×10^6	2×10^6
3	380	480	520	560
4	330	410	440	480
5	290	360	390	420
6	260	330	350	380
7	250	300	320	350
8	250	270	300	320
9	250	260	280	300
10	250	250	260	280

(f) The minimum total pavement thickness is shown in the Table 10 below, in addition:

(a) all granular pavements must be sealed with a prime coat (C170) or a primer seal (C170 with 7mm chip – assumed ALD 5mm) prior to surfacing with asphalt;

(b) continue pavement at least 150mm past the back of the concrete kerb and channel to ensure stability of the pavement edge;

(c) pavement depths are increased by an additional 100mm for 10m on either side of slow points, traffic calming devices, traffic islands adjacent to intersections, cul-de-sac heads and all intersections;
(d) roundabouts have a minimum 40mm AC surfacing with a 7mm chip seal where a flexible pavement is used;

Table 10: Total Pavement Thickness

	Up to 5.0 x 10^5 ESAs	1.0 x 10^6 ESA and greater
Composition	**Minimum course thickness (mm)**	
Asphalt	30mm	45mm
Primer coat/seal	Yes	Yes
Base (CBR 80)	125	125
Sub-base (CBR 45)	125	125
Sub-base (CBR 15)	As required to obtain the minimum pavement depth	
Minimum total pavement (including AC)	280	295

(g) subsoil drainage is to be constructed in accordance with the standard drawings in section 8 of this policy and located:
(a) under all kerb and channel, and median kerbs;
(b) in areas where landscaping could affect the road pavement;
(c) at the end of a road at the end of a stage boundary; and,
(d) where the pavement is affected from springs or the ingress of water. These areas may require the use of mitre drains for a satisfactory solution.

3.4.1.9.2 Rigid pavements

(1) Rigid pavements for lower order roads (rear laneways, access places, access streets) are designed in accordance with the following standard:

- Cement and Concrete Association of Australia Guide to Residential Streets and Paths

3.4.1.10 Bridges and major culverts

(1) Bridges and culverts and associated elements are designed in accordance with the following standards unless otherwise specified below:
- Austroads: Guide to Bridge Technology
- Austroads: Guide to Road Design
- AS5100 Bridge Design
- AS3845 Road Safety Barrier Systems
- AS1428 Design for Access and Mobility

(2) Road bridges and major culverts (RCP≥1800mm, RCBC span≥1800mm and height≥1500mm) must also be design in accordance with the standards set out in section 1.2.1 of this policy.

(3) To minimise Council's future maintenance responsibilities the following must be adhered to:
(a) timber must not be used for structural components;
(b) steel pipe or arch culverts are not used for stormwater management purposes; and,
(c) masonry block structures are not permitted.

(4) Minimum vertical clearances for bridges must be in accordance with *Austroads: A Guide to Bridge Technology* and *Austroads: A Guide to Road Design* and must consider the requirements for:
(a) road clearance;
(b) power lines and other service authorities;
(c) waterways clearance:
(i) flood immunity clearance;

(ii) waterway navigation freeboard.

(5) Design life for the main components of the bridge and culvert structures is to achieve a minimum of 100 years.

(6) The design of bridge and culvert structures must take into account accessibility for inspection, maintenance and replacement as follows:
(a) structures are designed so that all corrosion protection systems including concrete covers can be easily inspected, maintained and replaced;
(b) bridges are designed to enable items such as bearings, expansion joint seals, railings and drains to be readily accessible for inspection, maintenance and replacement;
(c) culverts are designed to enable items such as tidal flaps debris grates, silt traps, railings and drainage connections to be readily accessible for inspection, maintenance and replacement.

(7) Bridge barriers designed in accordance with the *DTMR Road Planning and Design Manual* and must meet the regular performance level as in *AS5100 Bridge Design* as a minimum. Where a bridge structure is over permanent water deeper than 300mm or where the drop height exceeds 1.2 m, vertical balustrade pedestrian handrails with appropriate bicycle offset rail or equivalent must be provided on the structure's outer edge.

(8) Proposals must not include slip forming of concrete bridge barriers or use of timber bridge barriers.

(9) Bridges and culverts are designed to accommodate present and future requirements for services crossing the structure.

(10) If future widening of a bridge or culvert may be required, allowance must be made in the design for connection of the future widening.

(11) Applied loads are to be determined in accordance with *AS5100 Bridge Design*, unless otherwise specified below:
(i) For pedestrian loads:
(a) isolated pedestrian and bikeway bridges protected by 'deflection rails' with maximum 1.5 m clearance against vehicle access are designed to accommodate a minimum 1,800kg GVM mini tractor, ride-on mower or equivalent, assuming a 1.2 m track width and 2 m wheel base are situated anywhere on the deck;
(b) where full width access greater than 1.8 m is possible, the structure accommodates either a 6,100kg GVM full size tractor, 2,500kg utility vehicle or a mini tractor as described above.

(12) For road bridges, the deck wearing surface must:
(a) for asphaltic concrete, be constructed of dense graded asphalt with a minimum design life of 20 years;
(b) achieve a minimum thickness of 60 mm in any traffic lane;
(c) achieve a minimum thickness of 45mm in any other area.

(13) Notwithstanding the requirements set out by the standards listed above, Council requires the following in the design and construction of pedestrian bridges:
(a) that the minimum clear width must be 2.5 m, unless Council requires the use of maintenance vehicles, in which case the minimum clear width requirement must be 3.5m;
(b) designed for a 5.0kPa live load and a 20KN concentrated load;
(c) to increase and prolong the structural integrity and durability of the structure, Council does not recommend the use of timber in the construction of bridge structures. This will prolong the life of the structure and also assist in reducing future maintenance costs:
(i) however if timber is the chosen material for pedestrian bridge construction, the timber elements must be designed in accordance with:
- AS1720 – Timber Structures Design Code;

- AS3660 – Termite Management to incorporate Termite Management Systems and;
- must satisfy the durability requirements stated in the bridges and large culverts section of this document.

3.4.2 Guidance for applicants

3.4.2.1 Street naming

(1) Street names are to be submitted to Council for approval to comply with Council's Policy and Guidelines on street naming and numbering, in accordance with section 60 of the *Local Government Act 2009*. Sections of streets that have the same street name should not be isolated. Isolated sections should have different names to provide clarity to road users.

3.5 INTERNAL ACCESSWAYS FOR LARGE RESIDENTIAL DEVELOPMENTS

3.5.1 Standards called up as acceptable outcomes

This section sets out the standards called up in AO5.1 in the Transport, Servicing, Access and Parking Code. These standards represent the "acceptable outcome" which meets the performance outcome set out in the code.

(1) Internal accessways are designed in accordance with the following standard unless otherwise specified below:
- AS2890.1 – Off-street car parking

(2) Internal accessways are designed in accordance with Table 11 below.

Table 11: Internal Accessways for Development with a Community Management Statement (CMS)

	Type 1[21]	Type 2[22]	Type 3[23]
Maximum design speed	35km/h	25km/h	15km/h
Minimum carriageway width	6 metres	5.5m	5m at entrance to public road, otherwise 4.5m
Minimum shoulder width	1.5m	1m	1m
Minimum total accessway reserve	10m	8m	8m
Verge width	1.5m	N/A	N/A
Design for service vehicle	3 point turn	3 point turn	3 point turn

[21] Minor loop road not exceeding 200 metres in length and serving not more than 100 car parking spaces.
[22] Road for vehicular and pedestrian use not exceeding 100 metres in length and serving not more than 50 car parking spaces.
[23] Road for vehicular and pedestrian use not exceeding 50 metres in length and serving not more than 25 car parking spaces.

3.6 PEDESTRIAN AND CYCLIST FACILITIES

3.6.1 Standards called up as acceptable outcomes

This section sets out the standards called up in AO7.1 in the Transport, Servicing, Access and Parking Code. These standards represent the "acceptable outcome" which meets the performance outcome set out in the code.

(1) Pedestrian and cyclist facilities are designed in accordance with the standard drawings in section 8 of the policy and the following standards unless otherwise specified below:
- IPWEA Complete Streets: Guide for Urban Street Design
- Austroads Guide to Road Design Part 6A: Pedestrian and Cyclist Paths
- DTMR Manual of Uniform Traffic Control Devices
- AS1428 – Design for Access and Mobility
- AS2890.3 - Parking facilities – Bicycle parking

(2) Footpaths, shared paths and cycle paths within the road reserve are required as set out in Table 4 and Table 5.

(3) Footpaths and shared paths in the verge are to be located 1.5m from the property boundary.

(4) Pathways are to be supported by kerb ramps and fencing to assist pedestrian movements and safety.

(5) Special cycleway design consideration should be applied at the following locations:
(i) pinch points;
(ii) traffic calming devices;
(iii) roundabouts; and,
(iv) high speed / high volume traffic interfaces.

3.6.2 Guidance for applicants

(1) Consideration must be given to the effect of cycleway surface treatments at change of directions under wet conditions.

3.7 ON-SITE PARKING

3.7.1 Standards called up as acceptable outcomes

This section sets out the standards called up in AO9.1, AO9.2 and AO9.3 of the Transport, Servicing, Access and Parking Code. These standards represent the "acceptable outcomes" which meet the performance outcomes set out in the code.

(1) Car parking and internal circulation is designed in accordance with the following standard:
- AS2890 – Parking Facilities

3.8 SITE ACCESS

3.8.1 Standards called up as acceptable outcomes

This section sets out the standards called up in AO18.1 of the Transport, Servicing, Access and Parking Code which meet the performance outcome set out in the code.

(1) Queuing area is designed in accordance with the following standards unless specified below:
- AS2890 – Parking Facilities

(2) Where food and drink outlets have a drive-through facility, queuing space for a minimum of 10 vehicles is provided measured from the order point.

3.9 SERVICING AND MANOEUVRING AREAS

3.9.1 Standards called up as acceptable outcomes

This section sets out the standards called up in AO19.1, AO20.1 and AO20.2 of the Transport, Servicing, Access and Parking Code. These standards represent the "acceptable outcomes" which meet the performance outcomes set out in the code.

(1) Manoeuvring area is designed in accordance with the following standards unless specified below:

- AS2890 – Parking Facilities

(2) Manoeuvring areas for non-residential uses are designed to accommodate the service vehicle appropriate to the use nominated in Table 12 below.

Table 12: Service vehicle for non-residential uses

Use	Service Vehicle
Animal keeping	SRV
Bar	WCV
Bulk landscape supplies	AV
Car wash	MRV
Child care centre	SRV
Educational establishment	HRV
Emergency services	HRV
Food and drink outlet	HRV
Function facility	WCV
Funeral parlour	WCV
Garden centre	HRV
Educational establishment	HRV
Hardware and trade supplies	HRV
Healthcare services	SRV
High impact industry	AV
Hospital	HRV
Hotel	HRV
Indoor sport and recreation	HRV
Low impact industry	HRV
Marine industry	AV
Market	SRV
Medium impact industry	AV
Nightclub entertainment facility	WCV
Office	SRV
Outdoor sales	AV
Outdoor sport and recreation	HRV
Place or worship	SRV
Service industry	HRV
Service station	AV
Shop/shopping centre	SRV for 200m^2 or less gross leasable area
	HRV for 201m^2 – 2,000m^2
	AV for 2,001m^2 – 20,000m^2
	AV for 20,001m^2 or more gross leasable area
Showroom	HRV
Tourist park	HRV
Veterinary services	SRV
Warehouse	AV
Any other non-residential use	As determined by council

Note:
AV = Articulated vehicle[24]
HRV = Heavy rigid vehicle[24]
MRV = Medium rigid vehicle[24]
SRV = Small rigid vehicle[24]
WCV = Waste Collection Vehicle – refer to Table 4 in Section 2.4.1.4 of this policy for the dimensions of the appropriate WCV.

(3) Manoeuvring areas (where required) for residential uses are designed to accommodate the service vehicle appropriate to the use nominated in Table 13 below.

Table 13: Service vehicle for residential uses

Use	Service Vehicle
Multiple dwelling	WCV where on site waste servicing is required
	SRV where waste collection is from the kerbside
Relocatable home park	HRV
Resort complex	WCV
Retirement facility	WCV
Short-term accommodation	WCV

Note:
SRV = Small rigid vehicle[24]
WCV = Waste Collection Vehicle – refer to Table 4 in Section 2.4.1.4 of this policy for the dimensions of the appropriate WCV.

[24] Refer AS2890.2: Off-street commercial vehicle facilities for vehicle dimensions and manoeuvring requirements.

4.0 LANDSCAPING

4.1 RELATIONSHIP WITH THE PLANNING SCHEME

(1) This section sets out:

(i) particular standards called up as acceptable outcomes in 9.4.3 Landscape Code. These are contained within the following subsections:
4.2.1 Plant species
4.2.2 Street planting
4.2.3 Street furniture

(ii) information council may request to demonstrate compliance with the performance outcomes of the code. These are contained in the following subsections:
4.6.1.1 Arborist reports
4.6.1.2 Tree management plans

(iii) guidance for applicants contained in the following subsection:
4.3.2 Street tree planting

4.2 PLANT SPECIES

4.2.1 Standards called up as acceptable outcomes

This section sets out the standards called up in AO9.1 in the Landscaping Code. These standards represent the "acceptable outcome" which meets the performance outcome set out in the code.

(1) Plant species for conservation and rehabilitation areas are to be selected from the Regional Ecosystem Species Database as applicable to the regional ecosystem shown in Council's red-e-map.

http://indigiscapes.redland.qld.gov.au/Plants/Pages/Regional-Ecosystems.aspx

(2) Plant species for open space and other landscaped areas to be transferred into council ownership are to be selected from Appendix B.

4.3 STREET TREE PLANTING

4.3.1 Standards called up as acceptable solutions

This section sets out the standards called up in AO16.1 in the Landscape Code. These standards represent the "acceptable outcome" which meets the performance outcome set out in the code.

(1) Street trees are to be selected from the species listed in Appendix B.

(2) For narrow verges or verges with pathways with less than 2m between the edge of the footpath and the back of kerb, street tree species selected from Appendix B must be from the narrow verge column.

(3) Street trees listed in Appendix B as feature trees are suitable for entry statements or for limited use within parkland areas.

(4) A variety of street trees are to be selected to create a visually interesting streetscape.

(5) Planting is to be undertaken in accordance with the following:
- (a) street trees are planted a minimum of:
  - 4 metres from driveways, fire hydrants, water valves, other infrastructure pits and stormwater infrastructure;
  - 8 metres from power poles and street lights;
  - 10 metres from a departing corner; and
  - 15 metres from an approaching corner and bus stop;
- (b) root barriers are provided where the trunk diameter will be greater than 100mm at maturity; and,
- (c) root directors appropriate to the species are used to protect pavements and hard landscaped areas where the width or the planted area is less than 2m.

(6) Verge areas are turfed with a minimum depth of 100mm friable organic soil.

(7) Landscaped medians, traffic islands and round-a-bouts provide (subject to council approval):
- (a) type SM5 semi-mountable kerb keyed a minimum of 135mm into the pavement;
- (b) adequate site preparation and soil depths with a minimum soil depth of 400mm friable organic soil;
- (c) root barriers where the trunk diameter will be greater than 100mm at maturity; and,
- (d) sub-soil drainage.

(8) Planting on centre islands and adjacent to round-a-bouts must take into account the provision of adequate sight distance in accordance with *Austroads: Guide to Road Design Part 3: Geometric Design*.

4.3.2 Guidance for applicants

(1) Street trees are planted at the latest possible stage of development, after all other infrastructure has been completed to minimise damage to the trees.

4.4 RETAINED VEGETATION

4.4.1 Information that Council may request

This section sets out information that may be requested to demonstrate compliance with the performance outcomes in the Landscape Code.

4.4.1.1 Arborist's reports

(1) An arborist's report may be required to determine the condition of existing vegetation, recommend vegetation to be removed or retained and provide parameters to minimise the risk to, and long term viability of, retained vegetation.

(2) All arborist's reports must be undertaken by a qualified arborist (AQF level 5) with membership of a relevant association and relevant local experience.

(3) An arborist's report must include:
- (a) an assessment of tree characteristics, current health and defects of all significant trees and any other trees and shrubs which overhang from neighbouring properties. A proforma format is acceptable provided it is accompanied by relevant discussion and photos and includes scientific reasoning to support statements;
- (b) a contextual analysis which describes, in text and with photos, the tree as an element of an ecological unit, cultural landscape, or historic listing such as a vegetation protection ordinance;
- (c) photographs of any disease, damage or defect with descriptions and annotated photos showing recommendations and actions for remediation and an estimate of the remaining lifespan of tree or major branch affected, and relative risk to human safety or property;

(d) photographs and a scale tree plot showing canopy height and root zone spread in relation to any existing or proposed building/driveway, calliper of trunk at chest height, spot height of trunk, botanical name and common name;
(e) the extent of any earthworks in the vicinity;
(f) any weed and invasive species as nominated in local government's pest management plan and proposed weed removal methods;
(g) protection measures during construction phase which should include tree protection zones and structural root zones and protective barriers for tree trunks and root zones;
(h) methods for trimming of tree roots and canopy in accordance with *AS4970-2009 - Trees on Development Sites*;
(i) disturbance to tree root zone for hard landscape works such as cultivation for new plant material;
(j) the impacts of proposed materials for hard landscape works, such as permeable paving and retaining edges;
(k) proposed irrigation and fertilizer/nutrient regime; and,
(l) recommendations for removal/retention, protection and/or pruning of trees including any required inspections and monitoring.

5.0 PARKS

5.1 RELATIONSHIP WITH THE PLANNING SCHEME

(1) Desired standards of service for Redland's trunk park network are established under the local government infrastructure plan (LGIP).

(2) This section sets out:

(iv) particular standards called up as acceptable outcomes in 9.4.3 Landscape Code. These are contained within the following subsections:
- 5.2.1 Paths in parks and open spaces
- 5.4.1 Utilities in parks
- 5.5.1 Park furniture

(v) information council may request to demonstrate compliance with the performance outcomes of the code. These are contained in the following subsections:
- 5.6.2.1 Open space management plans
- 5.6.2.2 Tree management plans

(vi) guidance for applicants contained in the following subsections:
- 5.2.2 Paths in parks and open spaces
- 5.3.1 Signage in parks
- 5.6.1 Earthworks, topsoiling, turf and landscaping
- 5.7.1 Types of parks

5.2 PATHS IN PARKS AND OPEN SPACES

5.2.1 Standards called up as acceptable outcomes

(1) Paths in parks and open space areas are designed in accordance with the standard drawings in section 8 of this policy.

5.2.2 Guidance for applicants

(1) Paths in parks and open space areas are to be designed to avoid proximity to thick vegetation and large trees (existing and future) to avoid damage to the path, protect vegetation and maintain adequate sight distance for cyclists.

5.3 SIGNAGE IN PARKS

5.3.1 Guidance for applicants

(1) Signage is provided in a park to facilitate land identification, and to promote safe and appropriate use.

(2) Signage should be placed in front of vegetation or other background landscaping to reduce the landscape impact.

(3) All parks signs are designed to the standards specified in *Redland City Council Parks and Conservation & Corporate Style Manual* (March 2008) which will comply with Australian Standards.

(4) Signage should include:
- (i) an approved park name sign, directional signs and information signs at the primary public access point/s to the park;
- (ii) information and directional sign should also be provided at the primary access point/s to the park and any sites of special interest or key points of access within the park;
- (iii) warning signs are to be installed at sites of potential public risk in the park such as at creeks liable to flooding.

(5) The content of proposed descriptive and interpretive signage should be submitted for approval with the landscape plan.

5.4 UTILITIES

5.4.1 Standards called up as acceptable outcomes

This section sets out the standards called up in AO8.1, AO10.1 AO12.1 and AO13.1 of the Infrastructure Works Code. These standards represent the "acceptable outcome" which meets the performance outcome set out in the code.

(1) Parks are to be provided with a water supply that is a minimum of:
- (i) one 25mm diameter water service for each hectare (or part) of park areas;
- (ii) one water meter in all park.

(2) Sewer connections are to be provided where public toilets are likely to be installed, in accordance with the embellishment standards set out in the LGIP.

(3) Underground power reticulation is to be provided and the power supply is to be metered.

(4) Lighting is to be provided within parks:
- (d) at intervals along paths that transverse parkland;
- (e) points of conflict; and,
- (f) at park entrances.

5.5 PARK FURNITURE

5.5.1 Standards called up as acceptable outcomes

This section sets out the standards called up in AO17.1 in the Landscape Code. These standards represent the "acceptable outcome" which meets the performance outcome set out in the code.

(1) All park furniture is designed, constructed and located in accordance with relevant Australian standards and the following principles:
- (a) complements and enhances other recreation opportunities in the park;
- (b) is served by a continuous accessible pedestrian path;
- (c) uses low maintenance materials; and,
- (d) where possible, uses alternative technology such as durable recycled materials, solar energy and rainwater harvesting.

(2) Seats are:
- (a) located in areas with interesting outlooks and where they can obtain maximum shade;
- (b) provided in proximity to playgrounds or active recreation nodes, around sports fields, at viewpoints and at resting points along paths; and,
- (c) constructed on a concrete pad.

(3) Seating and tables complement and enhance other recreational opportunities in the park, and:
- (a) are to be provided in conjunction with a playground or other activity space;
- (b) are located at attractive and accessible locations or at places of special interest;
- (c) have vehicular access for cleaning and maintenance purposes; and,
- (d) generally include electric barbeques.

(4) Waste bins are:
- (a) provided in fire proof wheelie bin enclosures;
- (b) where practical, bins are located near a road or the perimeter of the park where they can be serviced without the need to drive the refuse collection truck into the park;
- (c) located near BBQ areas and seats and tables; and,
- (d) include dog refuse bins in adjacent to walking trails and dog off leash areas.

(5) Drinking bubblers and fountains are provided near seats and tables, playgrounds, BBQ areas, active recreation pathways, sporting nodes and dog off leash areas where visitor use is high.

(6) Playground equipment conforms to:
- AS/NZS 4486.1 - Playground and playground equipment - Development, installation, inspection, maintenance and operation; and,
- AS/NZS 4422 - Playground surfacing - Specifications, requirements and test methods.

(7) Shade structures are provided using shade ports (not sails) and are:
(a) offset to the north and west of the play elements in order to maximise the shade benefits;
(b) vandal resistant, meaning not able to be climbed on, burnt, torn, ripped or stolen;
(c) designed so that the roof is not accessible by persons at any point, particularly when standing on the highest part of the playground equipment or furniture;
(d) certified as designed and constructed in accordance with the relevant Australian Standards and the *Building Code of Australia* by a Registered Professional Engineer Queensland (RPEQ).

(8) Approved tree species may be planted where appropriate to complement the shade port and ultimately, to replace the need for shade structures.

(9) Public toilets are located and designed to:
(i) be easily maintained;
(ii) to avoid nuisance to neighbours;
(iii) within reasonable proximity to a car park or other demand source;
(iv) on suitable terrain to facilitate an accessible path of travel;
(v) provide convenient access for the elderly and disabled to the toilet facility and into at least one cubical; and,
(vi) allow for casual surveillance from surrounding streets or other sites with frequent public use.

(10) Bollards:
(i) may be required in association with infrastructure such as playground equipment; and,
(ii) should be provided at park entry points in the form of a lockable fold-down metal bollard.

5.6 EARTHWORKS, TOPSOILING, TURF AND LANDSCAPING

5.6.1 Guidance for applicants

(1) Proposed park areas are to be levelled to provide a final landform suitable for ease of maintenance and practical use by the public.

(2) Where filling is required, sufficient topsoil is provided in order to:
(i) support the growth of flora that is compatible with the proposed use of the parkland; and,
(ii) minimise the effects of gases, minerals, and salts in the underlying layers of earth, whether these are naturally occurring or imported.

(3) Seventy-five (75) mm compacted thickness of approved topsoil is provided over all disturbed areas within parks. Soils to be used under turfed areas needs to meet *AS 4419 – Soils for landscaping and garden use*. Such areas are to be turfed, fertilised, watered regularly and maintained.

(4) Parks are to be provided with a turf grass cover over all areas not retained as native vegetation or provided with softfall in association with play equipment. Turf is to be:

(i) Cynodon spp (green couch) or common species eg. Wintergreen; and,
(ii) cut from a weed free environment and is not to include any viable weed seed.

(5) Species used in landscaping within public parks is to be undertaken in accordance with Appendix B of this planning scheme policy.

5.6.2 Information that Council may request

5.6.2.1 Open space management plan

(1) An open space management plan may be required for areas of open space to be transferred into Council ownership to provide information of the ongoing maintenance and management requirements and to assist Council in determining the maintenance program and associated costs.

(2) An open space management must address:

- identification of the purpose of the open space area;
- future management and maintenance regimes for the protection of significant vegetation area, ecological systems, waterways and fauna;
- future management of bush fire hazard (where appropriate);
- ongoing management and control of weeds and pests;
- tree management procedures (refer section 5.6.2.2 Tree management plans);
- maintenance of any structures and hard surfacing; and,
- management of rubbish.

5.6.2.2 Tree management plans

(1) A tree management plan may be required to provide direction for the management of the seasonal growth of mature/maturing trees including existing trees and new tree plantings. The tree management plan must address:

(a) tree growth to achieve the intent of the landscape design and vegetation; management plan through correct and uniform practices;
(b) reduction of hazard development, branch failure, fungal infection or premature tree death;
(c) reduction of the likely impact of storm damage after the site has been occupied;
(d) formative pruning of young and developing trees where deemed necessary in accordance with *AS4373 - Pruning of Amenity Trees*;
(e) the minimisation of any potential risk to people and property;
(f) change of any conditions around the site during the development stages, and how changes are to be managed; and
(g) a process for annual technical reports (generally initiated annually in May/June prior to the spring growth period) and is to include provision for the supervision of any annual pruning, crown modification in accordance with *AS4373 - Pruning of Amenity Trees*.

5.7 PARK TYPES AND FUNCTIONS

5.7.1 Guidance for applicants

(3) The park function and type referred to in this section relates to the components of the open space network described in part 10.5.6 of the local government infrastructure plan (LGIP). Park functions may include:

(ii) sport;
(iii) recreation;
(iv) community;
(v) recreation corridor;
(vi) ecological;
(vii) amenity;
(viii) public utility; or
(ix) unallocated.

(4) Recreation parks have the hierarchy:
- (i) Type 1—destination parks
- (ii) Type 2—community parks
- (iii) Type 3—neighbourhood parks
- (iv) Type 4—meeting place parks
- (v) Type 5—civic spaces

(5) These are described generally as follows:

(i) Type 1 – Destination parks

Type 1 parks have very high levels of visitation. Some type 1 parks may experience very high levels of visitation for short periods of time such as for an event or over a holiday season while others tend to have a more consistent level of visitation over the year, though there may well be variations during the week.

Major parks are provided where the opportunity arises—they may not be distributed equitably across the city. They have unique values that differentiate them from other types of recreation park.

They are usually associated with attractive natural landscapes or historic, or unique man-made features that make them very popular with residents and visitors. They may also be developed to preserve Indigenous heritage.

The level of embellishment needs to be able to support the high loads so there is often a higher level of hard surfacing, signage, barrier controls and similar. Type 1 parks generally require good public transport access or be capable of supporting significant car parking.

Type 1 parks may well have commercial ventures within or adjacent to the park and have areas suited to licensing for events.

(ii) Type 2 – Community parks:
Type 2 parks are spread throughout the city with most urban residents being within a short drive. All type 2 parks are, or will eventually be, connected into the city's cycleway and pedestrian network so that they are easily accessed by these forms of transport.

These parks offer a variety of activities sufficient to keep visitors entertained for several hours. They may range between 2ha and 10ha in size.

Typically the park will offer higher order play experiences for toddlers through to teenagers. Picnic facilities such as barbecues and shelters, and clean, contemporary public amenities allow for extended family and group visits.

Community events that require a park-based setting such as car rallies, markets, musical events and film nights will usually be accommodated in a type 2 park.

(iii) Type 3 – Neighbourhood parks
In suburban areas type 3 parks are the most common park type. Type 3 parks are usually accessed by walking or cycling and appeal to the people living within that walk or cycle catchment. The park area is usually smaller than type 1 and 2 parks and the park is often located within a residential setting. They generally range between 5000m^2 and 2ha in size.

Embellishment will be focussed on a theme such as youth play, natural area play, community gardening, exotic trees or quiet contemplation to add variety across the park type. Some parks may have relatively little embellishment whereas others are highly embellished.

Any theme-based development of this park type will be driven by the demographics and the wants and needs of the catchment community.

(iv) Type 4 – Meeting place parks
Type 4 parks are small green spaces located within concentrated industrial estates and commercial areas. They serve as meeting points for workers and their families or attractive places for lunch or "smoko" for outdoor workers, sales people and similar occupations who work from their vehicle during the day.

Type 4 parks are usually quite small with shaded and sunny spaces to suit the seasons. Seats, tables, rubbish bins and water are the primary embellishments. An area for a food or coffee concession-van may be set aside if required.

(v) Type 5 – Civic spaces
Civic spaces are relatively small areas that are used for organised community events, rallies, performances and similar that attracts a significant crowd. As the use is often very intense there are often high levels of hard surfacing and minimal use of grass.

6.0 DOCUMENTATION

(1) This part of the policy sets out the requirements for drawing standards, design calculations, inspections, quality assurance documentation and as constructed plans.

6.1 DESIGN DRAWING STANDARDS

This part sets out the required drawing standards for engineering and landscape design drawings.

6.1.1 General

(1) Scales used for all drawings are those recommended by the Standards Association of Australia which are 1:1, 1:2.5, and 1:5 and multiples of 10 of these scales. 1:2 or multiples thereof are not desirable.

The following scales are suggested but these may be varied, as appropriate to the works concerned:

(a) plan - 1:1000 or 1:500;
(b) longitudinal section:
  (i) horizontal - 1:1000 or 1:500;
  (ii) vertical - 1:100 or 1:50;
(c) cross sections - 1:100;
(d) intersection details - 1:250;
(e) engineering details - 1:25 or 1:10.

(2) Landscape plan scales are to match with site plans, architectural and/or engineering drawing scales as applicable.

(3) Linear dimensions on all drawings are in metres, with the exception of some detail drawings of small structures such as access chambers, which may be in millimetres.

(4) Sufficient survey information/levels are obtained to enable:
(a) long sections to be shown for the centreline of all roads, stormwater drainage lines and sewerage lines, with natural surface levels nominally shown at twenty (20) metre intervals and at significant changes of grade on the natural surface;
(b) cross sections are drawn for roads and open drains nominally at twenty (20) metre intervals and at significant changes of grade on the longitudinal section; and,
(c) contours of 0.5 metre maximum intervals are drawn representing the natural surface of the land.

6.1.2 Engineering Design Drawings

(1) All engineering drawings and calculations are signed as checked and approved by a Registered Professional Engineer of Queensland (RPEQ) (Civil).

(2) Street lighting and electricity reticulation is prepared and certified by a RPEQ (Electrical) and co-ordinated and lodged by the RPEQ (Civil) who will act as the principal consulting engineer.

(3) The design includes sufficient information outside the boundaries of the premises as determined by the local government to verify that future extension of the proposed works can proceed in accordance with local government standards and without any undue cost to future development.

(4) Where the local government has approved staged development, the local government may require engineering design and construction to include the whole of the land, or such additional parts of the land as will enable the local government to maintain the works in a satisfactory condition if the balance of the development does not proceed to completion.

(5) Engineering drawings, in general include the following:
- (a) title block;
- (b) locality plan;
- (c) layout and stage plan;
- (d) plan of each new road;
- (e) detail plans of each intersection and cul-de-sac;
- (f) longitudinal section of each road;
- (g) type cross sections;
- (h) cross sections of each road;
- (i) signs and pavement marking plan;
- (j) longitudinal section of each drainline;
- (k) stream and open channel drainage plans;
- (l) stormwater drainage catchment plan;
- (m) stormwater drainage calculations;
- (n) earthworks plan;
- (o) sewerage reticulation plan;
- (p) longitudinal section of each sewer line;
- (q) water reticulation plan;
- (r) landscape plan;
- (s) erosion and sediment control plan;
- (t) water quality control provisions; and,
- (u) electrical reticulation, street lighting and conduit plan.

(6) The following information must be included on all plans:
- (a) the local government's file reference number;
- (b) development name, if any;
- (c) real property description;
- (d) locality;
- (e) developer's name;
- (f) scales;
- (g) origin permanent survey mark for level datum and level;
- (h) drawing number and sheet number;
- (i) schedule and date of amendments;
- (j) signed design certification;
- (k) signed check certification; and,
- (l) signed approval certification, by the relevant qualified person.

6.1.2.1 Layout and stage plan

(1) For large developments, the layout plan shows the relationship of all new roads to each other, and to existing roads adjoining the development.

(2) Where development is planned in stages, the boundaries of proposed stages are shown on the plan, and the stages identified by numbering.

(3) Existing and proposed streets which are adjacent to or fronting the proposal are included on the layout plans.

(4) All services, natural features, significant trees and the like are shown on existing road reserves.

(5) Details of the permanent survey mark, including the AHD level from which the levels were transferred, are included.

6.1.2.2 Plan of each new road

(1) The plan of each road includes:
- (a) road boundaries;
- (b) lot boundaries, both existing and proposed;
- (c) centreline or other construction line;
- (d) chainages on centreline or construction line;
- (e) bearings of the centreline or construction line;
- (f) offsets if the construction line is not the centreline;
- (g) tangent point chainages of each curve;
- (h) radius and tangent length of each curve;
- (i) road boundaries, centreline, and bearing of each intersecting road;
- (j) chainage of the intersection point of road centrelines;
- (k) channel lip lines, kerb types, lip radii and chainage of all tangent points of lip lines;
- (l) edge of pavement, where no kerb and channel is proposed;
- (m) dimensioned road, verge, footpath and pavement widths, where these differ from the standard cross section;
- (n) location and details of signs and road markings proposed;
- (o) drain line locations and diameters of pipes;
- (p) access chamber locations;
- (q) gully location tabulated to include type, chainage, centre of grate lip level, pipe diameter and invert levels;
- (r) location of existing utilities or other existing works within the site;
- (s) limits and levels of lot filling or grading;
- (t) co-ordinates of all set out points;
- (u) origin permanent survey mark for AHD and level;
- (v) origin permanent survey marks for horizontal datum and coordinates;
- (w) location and levels of survey control stations reference marks on AHD; and,
- (x) north point.

6.1.2.3 Detail plans of intersections, culs-de-sac or the like

(1) Intersection detail plans include all relevant information required for plans together with additional details such as channel lip levels on all kerb and channel returns, pavement contours and channelisation works.

(2) Lip level longitudinal grading plots for kerb returns and culs-de-sac are shown on the drawing or alternatively, photocopies of plots may be submitted for examination.

6.1.2.4 Longitudinal sections of roads

(1) The longitudinal section of each road includes:
- (a) chainages;
- (b) peg levels;
- (c) design road centreline levels;
- (d) a plot of the existing surface on the construction centreline;
- (e) design grades;
- (f) chainage and level of tangent points of vertical curves;
- (g) sight distance diagram for each direction of travel (for collector or higher order roads only); and,
- (h) line marking where applicable.

6.1.2.5 Type cross sections of roads

(1) A standard cross section is shown for each road, including:
- (a) road width;
- (b) pavement widths, lip to lip dimension;
- (c) road verge widths;
- (d) concrete footpath and cycle paths;
- (e) crossfalls of pavement and road verges;

(f) pavement depth;
(g) type of kerb and channel; and,
(h) type of pavement surfacing.

6.1.2.6 Cross sections of roads

(1) A cross section is shown for each chainage on each road.

(2) Cross sections show:
(a) road boundaries;
(b) pavement centreline, or other construction lines;
(c) natural surface;
(d) design cross section; and,
(e) crossfall of pavement and road verge, pavement and road verge widths, and pavement depths, wherever these differ from the standard cross section.

(3) When existing bitumen sealed roads are widened, cross sections include the full existing sealed pavement cross section at not more than 10 metre intervals.

(4) Each cross section shows the percentage crossfall on the existing bitumen surface and the design crossfall to the lip of the proposed kerb and channel.

(5) Notations on drawings also require the supervising engineer to check for any errors between the design and the set out of the kerb and channel before the kerb and channel is constructed.

6.1.2.7 Signs and road pavement marking plans

(1) These plans show all necessary traffic lights, warning signs, regulatory signs, direction signs and pavement marking details, adequately dimensioned for accurate setting out. The sign and line marking information is on a separate set of plans to other plans referred to above.

6.1.2.8 Longitudinal sections of stormwater drain lines

(1) A longitudinal section of each drain line is shown, including:
(a) chainages;
(b) existing surface levels;
(c) design invert levels;
(d) access chamber chainages, inlet and outlet invert levels, and finished surface levels of
(e) structures;
(f) distances between access chambers;
(g) grade of each pipe in percent;
(h) diameter of each pipe length;
(i) class of each pipe, length and type of pipe;
(j) design discharge;
(k) design velocity; and,
(l) design hydraulic grade line.

(2) All piped drainage and constructed or natural channels used to convey runoff as part of the development are shown on drawings.

(3) Longitudinal sections and cross sections of all channels show the calculated hydraulic grade line for the design frequency.

(4) Piped drainage is included either on the road longitudinal sections where applicable or detailed separately.

6.1.2.9 Stormwater drainage catchment plan

(1) The catchment plan shows all catchments, including external areas contributing to the stormwater drainage design, and the following:
- (a) road boundaries;
- (b) lot boundaries;
- (c) peg lines and chainages;
- (d) finished surface contours at not more than 2 metres vertical interval or 30 metres horizontal interval with spot levels where 0.5 metre contours are more than 30 metres apart, all on AHD;
- (e) identification of drainlines;
- (f) access chambers, catchpits, location and type of stormwater improvement devices or associated infrastructure; and,
- (g) drainage easements where required over underground drainlines and outlets.

(2) Waterway longitudinal sections and cross sections are included in the drainage plans at intervals not exceeding 100 metres in order to determine flood levels.

6.1.2.10 Waterway and open channel plans

(1) Engineering drawings for waterways and open channels, whether natural or constructed, include the following information:
- (a) longitudinal and cross sections with invert levels, 50 percent AEP and 1 percent AEP flood levels, and where applicable, existing and proposed surface profiles;
- (b) plans showing existing and proposed surface contours, where applicable, and 1 percent and 50 percent AEP flood lines. Additionally, show 10 percent AEP flood lines in parkland; and,
- (c) details of all proposed construction, landscaping and maintenance.

6.1.3 Landscaping Design Plans

(1) The preferred scales of landscape drawings are as follows:
- (a) concept plans - minimum 1:500 preferred 1:100/1:250;
- (b) sketch plans and working drawings - minimum 1:250; and,
- (c) construction details - minimum 1:50;

(2) Landscape design plans must include (where relevant):
- (a) north point;
- (b) plan scales that are compatible with site plans, architectural and engineering drawings;
- (c) existing site information including, but not limited to, significant vegetation, boundaries;
- (d) contours, easements and drainage lines;
- (e) the proposed site layout (including proposed building footprint/s, heights and finished floor levels);
- (f) adjoining structures including trees that overshadow the site;
- (g) existing vegetation that is to be retained and/or removed;
- (h) location of identified areas of ecological value and/or ecological corridors;
- (i) location of adjoining pedestrian, bikeway and vehicular linkages;
- (j) proposed planting themes and entry treatments;
- (k) proposed surface treatments including paths and driveways;
- (l) proposed site contours and any retaining structures
- (m) location of proposed recreation facilities and/or infrastructure;
- (n) drainage and open space corridors;
- (o) bushfire hazard zones and fire trails;
- (p) entry statements and signage treatment;
- (q) indicative positions of all street furniture;
- (r) proposed lighting
- (s) communal and private open space areas;
- (t) external storage spaces and structures, including pergolas and sheds;
- (u) utility areas, clothes drying, waste and recycling storage collection areas; and,
- (v) fencing height and style;

6.2 DESIGN CALCULATIONS

(1) All engineering designs are to be fully documented and include all information necessary for interpretation of design. Proprietary computer software is supported by verification procedures and details of their theoretical basis. All software used is well documented and is an extensively used product.

(2) The consulting engineer must provide an electronic copy of the data and output files for the engineering design where appropriate.

(3) Tabulated calculations for urban drainage are required, including the same information and similar format as that shown in the Queensland Urban Drainage Manual (QUDM).

(4) Revised stormwater drainage calculations are resubmitted where the drainage is redesigned.

6.3 INSPECTIONS

(1) Prior to or during the construction phase inspections must be undertaken at the hold points nominated below and at any other time in accordance with the conditions of the development approval.

6.3.1 Prestart meeting

(1) Where required, a prestart meeting between the local government's representative/s and the consulting engineer, principal contractor and other relevant parties is to be undertaken prior to any works commencing on site.

(2) The consulting engineer is to allow a minimum of five business days from the date of the inspection request and that of the prestart meeting.

(3) At the time of or prior to requesting a prestart meeting, the consulting engineer must ensure all relevant documents have been submitted to Council including any permits and payment of any bonds in accordance with the conditions of the development approval.

6.3.2 Compliance inspection

(1) Upon completion of the development, a compliance inspection is to be undertaken with the consulting engineer and other relevant parties. The compliance inspection must be undertaken prior to sealing of the survey plan or the use of the development commencing, whichever is the soonest.

(2) All relevant documentation must be provided to council five business days prior to the inspection.

6.3.3 Works to be transferred into council ownership

(1) Where works involve the construction of assets to be transferred into council ownership the following inspections and/or submission of documentation may be required.

6.3.3.1 Roads

6.3.3.1.1 Pavement design

(1) Prior to commencing any pavement works, the consulting engineer must submit to council the subgrade test results including a plan showing the location of the tests and a proposed pavement design in accordance with section 3.4.1.10 of this policy for council approval.

6.3.3.1.2 Sub grade inspection

(1) A sub-grade inspection is required with council representatives after boxing out of the road for proof rolling of the subgrade and confirmation of the depth.

(2) The consulting engineer must contact council a minimum of 24hrs prior to the proposed inspection time to request a sub-grade inspection with council representatives.

(3) Pavement works may not proceed any further until a successful sub grade inspection has been undertaken.

6.3.3.1.3 Minus 250 inspection

(1) Where the proposed pavement is greater than 400mm in depth, a minus 250 inspection must be undertaken at 250mm below the final pavement level (280mm below the final AC surface level) for proof rolling, depth confirmation and inspection of the side drains.

Note: For pavements less than 400mm a minus 250 inspection is not required, the next hold point is the pre-seal inspection.

(2) The consulting engineer must contact council a minimum of 24hrs prior to the proposed inspection time to request an inspection with council representatives.

(3) Pavement works may not proceed any further until a successful minus 250 inspection has been undertaken.

6.3.3.1.4 Pre-seal inspection

(1) A pre-seal inspection is required with council representatives at the final pavement surface level for proof rolling of the pavement and checking of the shape.

(2) The consulting engineer must contact council a minimum of 24hrs prior to the proposed inspection time to request a pre-seal inspection with council representatives.

(3) AC surfacing works may not commence until a successful pre-seal inspection has been undertaken by council.

6.3.3.2 On-maintenance Inspection

(1) An on-maintenance inspection must be undertaken upon the completion of all civil and landscaping works that are to be transferred into council ownership. All required documentation and as-constructed drawings (in accordance with section 6.4 of this policy) must be submitted to the local government a minimum of five business days prior to requesting an inspection.

(2) Once the development is accepted on maintenance the defect liability period commences which is the period for which the applicant will be liable for any defects in materials, construction, maintenance (in the case of landscaping) and/or design intent of any works that are to be transferred into council ownership.

(3) As a result of council's review of the as-constructed information and an on-maintenance inspection of the completed works, the as-constructed information or documentation may require amendment. Where amended as constructed information is required, the applicant must either submit the amended drawings or lodge a bond for the security of the preparation and submission of as-constructed information prior to on-maintenance being formally accepted by council (refer to section 7.2.5 of this policy for information regarding bonding of as-constructed information).

6.3.3.3 Defect Liability Period

(1) The defect liability period for assets to be dedicated to Council is a minimum of twelve months from the date at which the works are accepted on maintenance by Council except for:
- (a) sewage pumping stations where the on-maintenance period is a minimum of 12 months commencing after a minimum of 15 equivalent tenements have been completed;
- (b) landscaping works where the period may vary from a minimum of six months to a maximum of 24 months depending on the scale of development and in order to ensure establishment and survival of planted species through varying seasonal conditions; and,
- (c) stormwater treatment devices where the period may vary from a minimum of 12 months to a maximum of 24 months depending on the scale of development and in order to ensure establishment and effective operation of the asset due to seasonal variations.

6.3.3.4 Off-maintenance Inspection

(1) An off maintenance inspection must be undertaken after the defect liability period has been completed and prior to formal acceptance of the works off maintenance by council.

(2) All required documentation must be provided to council a minimum of 5 days prior to requesting an off maintenance inspection.

(3) Any outstanding amended as constructed information must be finalised prior to off maintenance being accepted.

6.4 QUALITY ASSURANCE DOCUMENTATION AND TESTING

6.4.1 Documentation

(1) The following documentation must be submitted to the local government prior to requesting an on maintenance inspection:
- (a) conformance certificates for products and materials;
- (b) operating manuals;
- (c) inspection and testing certification;
- (d) copies of relevant test results (refer to checklist in Appendix C);
- (e) copies of stormwater quality device testing and certification
- (f) certification that any playground equipment or other park embellishment/street furniture has been installed or constructed in accordance with the relevant standards; and,
- (g) any other site specific testing required by the local government.

(2) An electronic copy of all documentation is to be provided in one complete assembled PDF document including a table of contents.

(3) Should any of the above test results fail to meet the local government's requirements the consulting engineer must include details of re-testing/rectification.

6.4.2 Certified Design As-Constructed Drawings

(1) Design drawings associated with the operational works approval are to be amended to reflect the final constructed works and submitted to the local government in digital (PDF) format.

(2) The following list includes specific drawings required in this format. Other drawings may be required as determined by the local government on an individual project basis:
- (a) cover sheet - locality plan, notes and details;
- (b) roadway and earthwork layout plans;
- (c) road longitudinal and cross sections;
- (d) road intersection details;
- (e) stormwater longitudinal sections;
- (f) stormwater details including access chambers, stormwater treatment devices and/or other associated infrastructure;

(g) drainage catchment plans including plot of relevant flood lines of waterways;
(h) drainage calculation sheets;
(i) signing and line marking plans;
(j) erosion and sediment control plans (final phase only);
(k) earthworks;
(l) landscaping plans;
(m) level datum, permanent survey mark number and reduced level adopted from which the site datum was determined; and
(n) the location, number and reduced level of all permanent survey marks located within the development.

(3) Each amended drawing is to show the following:
(a) the development name and stage;
(b) the name of the consulting engineer submitting the information;
(c) the local government's development reference file number;
(d) certification in accordance with the requirements above;
(e) property and easement boundaries as shown on the approved calculated lot layout;
(f) lot numbers as shown on the approved calculated lot layout; and
(g) approved road names.

6.4.3 Certified Digital As-Constructed Drawings

(1) Digital as-constructed information is to be submitted in accordance with the ADAC Data Capture Guidelines in Appendix D except for sewer and water assets which is in accordance with the SEQ Water Supply and Sewerage Design and Construction Code.

(2) All as-constructed engineering drawings must be certified as-constructed works by a registered professional engineer Queensland (RPEQ) in the form of a note on each drawing which confirms that it is a true and correct record of the works constructed. The required certificate is:

As-Constructed Works

It is certified that works herein have been constructed to relevant approved specifications and the operational works approval. The as-constructed drawings for these works constitutes a true and correct record of the works constructed and complies with the design intent.

Signature ..... RPEQ No. .....
Date of Practical Completion.....
Company Title .....

(3) All as-constructed drawings are certified as-constructed works by a registered surveyor (Queensland), in the form of a note on each drawing. This will indicate that the location, the levels and the dimensions shown thereon are a correct record of an as-constructed survey performed in accordance with the prescribed accuracy standards. The required certificate is:

As-Constructed Works

It is certified that the locations, levels and dimensions of the infrastructure shown herein are a true representation of the constructed works and that the as-constructed survey was performed to the prescribed accuracy standards.

Registered Surveyors signature.....
Company Title .....

Note: A registered surveyor is a person or a body corporate registered as a surveyor by the Surveyors Board of Queensland under the Surveyors Act 2003.

(4) The accuracy of surveyed as-constructed features is ± 0.05 metres horizontally and ± 0.01 metres vertically (at 3σ).

(5) The licensed/registered surveyor's certification provided to the local government must confirm that:
- (a) the road construction provides minimum verge widths and pavement widths in accordance with the approved engineering drawings;
- (b) the stormwater drainage pipes and access chambers are within easements and/or drainage reserves provided in accordance with the development approval; and,
- (c) the roof water and inter-lot drainage construction and sewerage construction are in correct relationship to property boundaries as required by the local government's standards.

6.4.4 Manuals for mechanical and electrical equipment

(1) Operation and maintenance manuals are provided covering the installation, commissioning, operation and maintenance of equipment supplied.

6.4.4.1 Standards

(1) Manuals comply with the current editions of all applicable Australian Standards, and in particular:
- (a) *AS1000: 1998 - The International System of Units, SI, and its Application;*
- (b) *AS1100: 1992 - Technical drawing - General principles;*
- (c) *AS1101: 1993 - Graphical Symbols for General Engineering;*
- (d) *AS1102: 1989 - Graphical Symbols for Electro-technology.*

6.4.4.2 Manual Detail

(1) Manuals are sufficiently comprehensive to enable local government staff to operate and maintain the equipment in an efficient and workmanlike manner.

(2) Manuals include descriptive information relating to individual items of equipment to assist personnel in becoming familiar with the equipment and its operation.

(3) Manuals include clear and concise instructions so as to allow proper and safe installation, commissioning, operation, correct maintenance, and compliance with the Manufacturer's Warranty.

(4) Such information relates specifically to the equipment as supplied. Any information which does not pertain to the equipment supplied is removed or deleted. Maintenance instructions are in sufficient detail to enable overhaul and replacement of all parts.

6.4.4.3 Submission

(1) One draft copy of the manual is submitted to the local government for review and approval. The local government will return a copy of this draft with appropriate comments. These comments are incorporated into a revised draft manual, one copy of which is re-submitted for a second review.

(2) This review by local government will not relieve the Developer of the responsibility to provide a useful and professionally prepared document.

(3) At such time when the local government's comments confirm that the manual is acceptable, the Contractor is to prepare the final manual.

(4) Provide an electronic (PDF) copy of the final manual to the local government before the works are accepted on-maintenance.

6.4.4.4 Addenda

(1) Should it become necessary to modify the final manual at some later stage, such as the inclusion of as-constructed information, the developer is to issue copies of the addenda to the local government for inclusion within the existing manuals.

(2) If, in the opinion of the local government, the addendum modifies the existing manuals extensively, the developer must re-issue the manuals completely.

6.4.4.5 Manual Construction

(1) All units are SI units.

(2) All information is in English.

(3) All data sheets for proprietary equipment plant are clearly reproduced and are to indicate the appropriate information pertinent to the installation.

(4) The title and drawing number, issued by the local government, is displayed on the front cover and spine of the document to enable the manual to be included in the drawing register.

6.4.4.6 Content

(1) As a minimum, the document contains:
- (a) equipment specification, including a complete system description and a full specification for each individual item of equipment;
- (b) a complete listing of the plant, equipment, valves, pipes and other items supplied and installed, including model and serial numbers;
- (c) functional description of its operation;
- (d) erection, assembly, installation, pre-commissioning and commissioning instructions and diagrams;
- (e) detailed operating instructions;
- (f) service and maintenance schedule and instructions including dismantling/assembly procedures and a table of maintenance tasks showing recommended time intervals between carrying out these tasks;
- (g) lubrication schedule, including details of lubricant types, grades and trade names, initial fill quantities, and re-lubrication quantities and intervals;
- (h) tabulation of all consumables excluding lubricants but including fuel type and quantity, electrical components, chemicals and other relevant data; and,
- (i) performance specification, including commissioning data.

6.5 SURVEY CONTROL

6.5.1 Horizontal Control

(1) The local government will supply without charge, the co-ordinates to be adopted for three or more survey control points, within the survey control network, adjacent to the development site.

(2) Where coordinated permanent survey marks are not available within 500 metres of the premises, the developer is responsible for:
- (a) establishing at least two permanent survey marks not less than 200 metres apart. Existing permanent survey marks, where available, may be adopted where ever they are secure;
- (b) coordination of these permanent survey marks on MGA coordinates to 3rd order, class C accuracy standards (< 0.03m positional uncertainty horizontally) as per the Inter-governmental committee on surveying and mapping standards and practices for control surveys (SP1); and,

(c) informing the local government and Department of Natural Resources and Mines (DNRM) of the method used in coordination, accuracy of coordinates and the coordinates determined for each of these permanent survey marks.

(3) All digital as-constructed information is supplied MGA coordinates.

6.5.2 Level Datum

(1) All levels supplied with As-Constructed information are reduced to and presented on Australian Height Datum (AHD).

(2) The local government will provide the reduced level to adopt for a permanent survey mark. The value provided is obtained from the local government's listing of DNRM survey control database and may vary from the value shown on the permanent survey mark sketch plan.

(3) For the extension of an existing development, as in staging, the reduced level provided for the initial permanent survey mark is adopted for the extension unless directed otherwise by the local government.

6.5.3 Permanent Survey Marks

(1) Permanent survey marks are placed on each development. Permanent survey marks are placed such that their spacing is not greater than 500 metres and not less than 100 metres.

(2) All permanent survey marks are connected to the cadastral boundaries of the development site and such connections are shown on the relevant cadastral survey plan. This is to include those marks used as horizontal control for the development works.

(3) Permanent survey marks are levelled to 4th order, class D (< 0.02m positional uncertainty horizontally) as per the Inter-governmental committee on surveying and mapping standards and practices for control surveys (SP1).

(4) A permanent mark sketch plan is completed and lodged with DNRM for each permanent survey mark placed. A copy of the sketch plan is submitted to the local government before the development will be approved for off-defect.

(5) Any permanent survey marks that cannot be located or are lost due to any associated development works are reported to the local government and DNRM for update of their Survey Control Database.

6.5.4 Survey Plans

(1) Survey plans submitted for sealing and registration must show the approved road names.

7.0 BONDING

7.1 RELATIONSHIP WITH THE PLANNING SCHEME

(1) This part sets out:

(i) guidance for applicants on the requirements for submission and return of security bonds. This is contained in the following subsections:

7.2.1 Types of security bonds
7.2.2 Performance bonds
7.2.3 Significant vegetation protection bonds
7.2.4 Uncompleted works bonds
7.2.5 As-constructed information bonds
7.2.6 Defect liability bonds
7.2.7 Form of security bonds
7.2.8 Deeds of agreement

7.2 SECURITY BONDS

7.2.1 Types of Security Bonds

(1) The five broad categories of security bonds are:
(a) performance bonds;
(b) significant vegetation protection bonds;
(c) uncompleted works bonds;
(d) as-constructed information bonds; and,
(e) defect liability bonds.

7.2.2 Performance Bonds

(1) Performance bonds are security bonds submitted to the local government prior to development works commencing, to secure the completion and fulfilment of specific conditions/works.

(2) The bond amount is subject to the type and scale of works carried out.

(3) Performance bonds must be submitted with the relevant submission of security bonds form and any other required documentation as outlined in the condition prior to a pre-start meeting or prior to development works commencing in the case where a pre-start meeting is not required.

(4) Performance bonds are refundable once the development is formally accepted on maintenance and the relevant refund of security bonds form is submitted to council.

(5) Where the condition/works are not completed to the satisfaction of the local government and in accordance with any relevant standards, the bond may be forfeited to cover the cost of the works.

7.2.3 Significant Vegetation Protection Bonds

(1) Significant vegetation protection bonds are security bonds submitted to the local government prior to the commencement of development works to secure and protect significant vegetation which has the potential to be detrimentally affected by the works.

(2) The bond amount is calculated by Council using tree evaluation methods which includes the cost to cover removal of the vegetation and replacement with the same species and maturity of vegetation (where this is possible).

(3) Significant vegetation protection bonds must be submitted with the relevant submission of security bonds form and any other required documentation prior to a pre-start meeting or prior to development works commencing in the case where a pre-start meeting is not required.

(4) Significant vegetation protection bonds are refundable upon completion of a minimum 12 month post-construction monitoring period (unless otherwise determined by the arborist) from the date all construction works are completed.

(5) Prior to the return of the bond, a report from a suitably qualified arborist (AQF level 5) must be provided which states that the vegetation is in sound health and confirms that the construction works have not had an adverse impact on the viability of the protected significant vegetation.

(6) Where the tree is found to be in poor health, and where recommended by the arborist, a further monitoring period may be agreed to by Council.

(7) In the event of decline or death of the vegetation, the bond will be forfeited to cover the cost of removal of the vegetation and replacement (where possible).

7.2.4 Uncompleted Works Bonds

(1) Uncompleted works bonds are security bonds submitted to the local government prior to the completion of development works, to cover the costs of all uncompleted works to enable council approval of the survey plan.

(2) Council may accept an uncompleted works bonds subject to (but not limited to) completion of the following level of works as detailed in the table below.

Table 1 - Level of Completion of Works

Type of Works	Level of Completion of Works
Construction and Earthworks	(1) 100 percent of bulk earthworks are completed and stabilised to the local government's satisfaction including the completion of any retaining walls; (2) 100 percent of the kerb and channel is completed to the local government's satisfaction; (3) Roads are certified by an authorised surveyor that the roads are within the correct alignment, where applicable; (4) 50 percent of the total value of construction works are completed to the local government's satisfaction; (5) All testing results (including RPEQ certification for retaining structures) and preliminary as-constructed information is provided to the local government.
Sewerage and Water Supply Works	(1) 100 percent of the total value of sewerage and water supply works, including external and internal reticulation, are completed to the local government's satisfaction; (2) All testing results and preliminary as-constructed information is provided to the local government.

(3) The bonding of uncompleted works relating to erosion and sediment control is generally not permitted.

(4) Prior to approval of the survey plans, council must be satisfied that all works and services will be completed and operational within three months of the date of approval of the plan of survey. A written undertaking from the supervising RPEQ to this effect will be required at the time of submission of the bond request.

(5) The uncompleted works bond is to the greater value of either -
(a) 150 percent of the estimated uncompleted works costs; or
(b) $5000.

(6) For all uncompleted works council requires a fully priced bill of quantities[25] certified by an RPEQ detailing the works completed and the works still outstanding.

(7) The applicant must lodge a formal request with council which must include the following (where applicable):
(a) the relevant bond submission form;
(b) all QA documentation for the completed works;
(c) as constructed plans for the completed works; and,
(d) a bill of quantities (signed by an RPEQ).

(8) After the bond submission is reviewed, council will confirm agreement of the proposed security bond amount with the applicant.

(9) Uncompleted works bonds are refundable once the development has been accepted on maintenance and all uncompleted works finalised and the relevant return of security bonds form is submitted to council.

(10) Where the works are not completed to the relevant standard within a reasonable timeframe, the bond may be forfeited to cover the cost of the works.

(11) Where agreed to by Council, bond reductions may be accepted. A request for a bond reduction must be accompanied by a fully price bill of quantities, updated as constructed plans and quality assurance documentation (where relevant) and the relevant return of security bond form.

7.2.5 As-Constructed Information Bonds

(1) As constructed information bonds are security bonds submitted to the local government prior to formal acceptance of the development works on maintenance, to secure the completion of the associated as constructed plans. Once the bond is received and reviewed, the development may be accepted on maintenance by council.

(2) The bond amount is calculated in accordance with Table 1 below.

[25] a bill of quantities is a fully priced itemised list, certified by an RPEQ, of the assets to be transferred to council ownership.

Table 1: As-constructed bond calculation

ROL or MCU	
Number of lots or units	**Charge per lot or unit**
Up to 5	$ 550
6 – 10	$ 500
11 – 40	$ 450
40 – 60	$ 440
Over 60	$27,000 flat rate
Non-residential MCU	$2,500 or 2.5% of the civil construction costs (whichever is greater)

(3) Amendments to as-constructed drawings or documentation required by council are to be completed and the information resubmitted to the satisfaction of council a maximum of 1 month after the date of on maintenance.

(4) As-constructed bonds must be submitted with the relevant submission of security bonds form.

(5) The bond will be returned upon acceptance of the final as-constructed plans and submission of the relevant return of security bonds form.

(6) Non-compliance with resubmission of amended as-constructed information within this period may result in:
(a) the defect liability period being extended until the as-constructed data is submitted to council; or
(b) the as-constructed information bond being forfeited to cover all costs incurred by council for the capture and presentation of the information.

7.2.6 Defect liability bonds

(1) Defect liability bonds are security bonds submitted to council prior to formal acceptance of the development on maintenance for all assets to be transferred into council ownership and cover the cost of repair/replacement of defective assets and landscaped areas, during the defect liability period.

(2) All assets and landscaped areas that are to be transferred into council ownership must undergo a defect liability period as specified by the conditions of the development approval/s.

(3) For landscaped areas, the areas must be maintained during the defect liability period in accordance with the approved maintenance program and any applicable condition of approval. Where there is a significant loss of plants (as determined by council), the plants must be replaced and a minimum 3 month establishment period undergone prior to the landscaping being accepted off maintenance.

(4) For civil works, all assets to be transferred into council ownership must be repaired/replaced where there is any defective work or where the assets do not meet the design intent prior to the development being accepted off maintenance.

(5) The defect liability period commences following formal acceptance of the works on maintenance by council.

(6) The defect liability bond is the greater value of either:
(a) 10% of the contributed assets; or
(b) $2500.

(7) A fully priced bill of quantities certified by a RPEQ must be submitted to council detailing the development works that are to be transferred into council ownership.

(8) Defect liability bonds are refundable upon council acceptance of the development off maintenance and submission of the relevant return of security bonds form.

(6) In the event that there are defective works that are not rectified the bond may be forfeited to cover the cost of the works.

7.2.7 Form of security bonds

(1) Security bonds submitted to the local government may be in the form of either:

(a) cash; or
(b) bank guarantees.

(2) Cash security bonds may be paid in the form of a cheque. However, in the case of the personal cheque, the security bond will not be processed and approved until the cheque amount is cleared.

(3) The local government will not accept any other form of security bonds other than those outlined above unless detailed in an infrastructure agreement or conditioned under a development approval.

(4) The local government requires security bonds to be submitted to the local government in the form of cash for the following development works:

(a) road cleaning;
(b) road opening;
(c) vegetation protection for amounts of $10 000 and less.

(5) The local government requires bank guarantees that:

(a) are irrevocable guarantees from a recognised trading bank;
(b) are open ended with no expiry date;
(c) are unconditional;
(d) detail the full and correct name of the customer/applicant;
(e) detail the full and correct real property description to identify the property for which the security bond is for;
(f) where applicable, detail the different types of bonds, the relevant amounts covered by the guarantee, and a statement describing the specific purpose(s) of the bond;
(g) give the council development approval number/s; and,
(h) are for the total secured sum.

7.2.8 Deeds of Agreement

(1) For security bond amounts:

(a) between $250 000 and $500 000 - the local government requires a standard deed of agreement to be signed by the applicant and a delegate of the council which specifies the required security bond amount/s; or

(b) greater than $500 000 - the local government requires a security bond agreement, prepared by the local government's solicitors, to be signed by the applicant, any party holding a mortgage over the property and a delegate of the council which specifies the required security bond amount/s. The cost of the preparation of the security bond agreement is to be borne by the applicant.

8.0 STANDARD DRAWINGS

8.1 GENERAL

Topic	Drawing No	Title
Fencing	IPWEA GS-042	Fencing – Log Barrier and Alternative Hardwood Timber Bollard
	IPWEA GS-043	Fencing – Locking Rail Types 1, 2 and 3
	IPWEA GS-044	Fencing – Tubular Steel Fence With & Without Chain Wire
	IPWEA GS-045	Fencing – Welded Mesh Fencing and Control Fence
	IPWEA GS-047	Fencing – Entrance Barrier – Single Swing Gate
	IPWEA GS-048	Fencing – Entrance Barrier – Double Swing Gate

8.2 STORMWATER DRAINAGE AND WATER QUALITY

Topic	Drawing No	Title
Access chamber	IPWEA DS-010	Access Chamber – Stormwater Access Chamber Details – 1050 to 2100 dia.
	IPWEA DS-015	Access Chamber – Manhole Frame – Roadway and Non-Roadway – 1050 to 2100 dia.
	IPWEA DS-018	Access Chamber – Manhole Riser Details (Roadway)
	IPWEA DS-019	Access – Chamber – Manhole Cover (Roadway) 1050 to 2100 dia
	IPWEA DS-020	Access Chamber – Manhole Cover (Non -Roadway) 1050 to 2100 dia
	IPWEA DS-021	Access Chamber – Manhole Cover Concrete Infill (Pedestrian Traffic) 1050 to 2100 dia
Bedding and backfilling	IPWEA DS-030	Excavation, Bedding and Backfilling Rigid & Flexible Drainage Pipes
	IPWEA DS-031	Excavation, Bedding and Backfilling Precast Box Culverts
Erosion and sediment control	IPWEA DS-040	Sediment Control – Sediment Control Devices – Sediment Fence – Entry/Exit Sediment Trap
	IPWEA DS-041	Sediment Control – Sediment Control Devices – Kerb and Field Inlets – Check Dams & Straw Bales
Drainage pits	IPWEA DS-050	Drainage Pits – Field Inlet – Type 1 and Type 2
	IPWEA DS-061	Drainage Pits – Kerb Inlet – Precast Lintel Details
	IPWEA DS-062	Drainage Pits – Kerb Inlet – Grate and Frame
	IPWEA DS-063	Drainage Pits – Kerb Inlet – Lip in Line – General Arrangement
	IPWEA DS-069	Drainage Pits – Field Inlet Pit – Dome Top Cover (900 x 600)
Bioretention	IPWEA DS-070	Bioretention Drainage Profile – Type 1 – Saturated Zone – Unconstrained
	IPWEA DS-071	Bioretention Drainage Profile – Type 1 – Saturated Zone – Constrained
	IPWEA DS-072	Bioretention Drainage Profile – Type 2 – Sealed
	IPWEA DS-073	Bioretention Drainage Profile – Type 3 – Conventional
	IPWEA DS-074	Bioretention Drainage Profile – Type 4 – Pipeless
	IPWEA DS-075	Large Bioretention Sediment Forebay
	IPWEA DS-076	Bioretention Weir
	IPWEA DS-077	Bioretention Street Tree
	IPWEA DS-078	Bioretention Standard Notes
Inlet screen	IPWEA DS-082	Drainage Details – Culvert Inlet Screen

8.3 ROADS

Topic	Drawing No	Title
Driveways	R-RCC-1	Domestic Driveway Crossover
	R-RCC-2	Commercial/Industrial/Multiple Dwelling/Apartment Building Driveway Crossover (Type A)
	R-RCC-3	Commercial/Industrial Driveway Crossover (Type B)
	IPWEA RS-056	Driveways – Rural Driveway
Footpaths	R-RCC-4	Concrete Footpath and Shared Use Paths
	R-RCC-5	Footpath Profile
Utilities in road reserve	R-RCC-6	Public Utilities in Road Reserve – corridors and alignments
	R-RCC-7	Public Utilities in Road Reserve – conduit sections
Kerb and channel	IPWEA RS-080	Kerb and Channel – Profiles and Dimensions – Including Edge Restraints, median & Channel
	IPWEA RS-081	Kerb and Channel – Residential Drainage Connections
Kerb ramps	IPWEA RS-090	Kerb Ramps – Ramped Pedestrian Crossings
	IPWEA RS-091	Kerb Ramps – Ramped and Cut Through Treatments – For Pedestrian Crossings, Slip Lanes and Medians
	IPWEA RS-092	Kerb Ramps – Installation of TGSIs – on Ramped Kerb Crossings
	IPWEA RS-093	Kerb Ramps – Installation of TGSIs – on Ramped Kerb Crossings – Application Examples
	IPWEA RS-094	Kerb Ramps – Locations and Configurations
Signs	IPWEA RS-130	Road Furniture - Street Name Sign and Location (Fingerboard)
	IPWEA RS-131	Road Furniture – Traffic Sign Installation Details
Subsoil drains	IPWEA RS-140	Subsoil Drains – Details and Location
	IPWEA RS-142	Subsoil Drains – Access Points
Pavement trenching and widening	IPWEA RS-170	Pavement Extension – Trenching and Widening

8.4 CYCLEWAYS

Topic	Drawings No	Title
Entrance control	IPWEA PS-010	Bikeway Entrance Control – Type 1 – Low Volume
	IPWEA PS-011	Bikeway Entrance Control – Type 2 – High Volume
	IPWEA PS-013	Bikeway Slowdown Control – Reverse Curve
	IPWEA PS-015	Bikeway Entrance Control – Offset Chicane
Deflection rail	IPWEA PS-016	Bikeway Furniture Details – Deflection and Rest Rail Detail

8.5 LANDSCAPING

Topic	Drawings No	Title
Street tree planting	IPWEA GS-010	Landscaping – Street Tree Planting Details Including Root Barrier
	IPWEA GS-011	Landscaping – Street Tree Planting Details Wide Median
	IPWEA GS-012	Landscaping – Street Tree Planting Details Narrow Median

APPENDIX A

EROSION AND SEDIMENT CONTROL FORMS AND CERTIFICATION

REDLAND CITY COUNCIL

Erosion Hazard Assessment

Redland City Council (RCC), *Erosion Hazard Assessment* must be read in conjunction with the *Erosion Hazard Assessment-*

What is an Erosion Hazard Assessment (EHA)?
Soil erosion and sediment from urban development, particularly during construction activities, is a significant source of sediment pollution in Redland's waterways. The Erosion Hazard Assessment determines whether the risk of soil erosion and sediment pollution to the environment is 'low' , 'medium' or 'high'.

When is the EHA required?
An *Erosion Hazard Assessment* form must be completed and lodged with RCC for any Development Application (ie MCU or ROL) that will result in soil disturbance OR Operational Works or Compliance Assessment Application for 'Filling' or Excavation.

Failure to submit this form during lodgement of an application may result in assessment delays or refusal of the application.

Assessment Details

1 Please turn over and complete the erosion hazard assessment.

2 Based on the erosion hazard assessment overleaf, is the site:

☐ ***A 'low' risk site***

Best practice erosion and sediment control (ESC) must be implemented but no erosion and sediment control plans need to be submitted with the development application. Field guides for best practice ESC can be found at http://www.austieca.com.au/publications/book-5-field-guides

☐ ***A 'medium' risk site***

If the development is approved, the applicant will need to engage a Registered Professional Engineer (RPEQ) or Certified Professional in Erosion and Sediment Control (CPESC) to prepare an ESC Program and Plan and supporting documentation — in accordance with the requirements of the Infrastructure Works Planning Scheme Policy.

☐ ***A 'high' risk site***

If the development is approved, the applicant will need to engage a RPEQ and CPESC to prepare an ESC Program and Plan and supporting documentation — in accordance with the requirements of the Infrastructure Design Planning Scheme Policy. The plans and program will need to be certified by a CPESC.

Taken and modified from Brisbane City Councils EHA

3 Site Information and Certification

Application number (if known)

Site address

Postcode

I certify that:

☐ I have made all relevant enquiries and am satisfied no matters of significance have been withheld from the assessment manager.

☐ I am a person with suitable qualifications and/or experience in erosion and sediment control.

☐ The Erosion Hazard Assessment was completed in accordance with the RCC Infrastructure Design Planning Scheme Policy.

☐ The Erosion Hazard Assessment accurately reflects the site's overall risk of soil erosion and sediment pollution to the environment.

☐ I acknowledge and accept that the RCC, as assessment manager, relies, in good faith, on this certification as part of its development assessment process and the provision of false or misleading information to the RCC constitutes an offence for which RCC may take punitive steps/ action against me/ enforcement action against me.

Certified by *Print name*

Certifier's signature

Date

/ /

Page 2

Assessment Table

Table 1: Low Risk Test

		Yes	No
1.1	Is the area of land disturbance > 1000 m²		
1.2	Does any land disturbance occur in a RCC Waterways, Wetland and Moreton Bay overlay area.		
1.3	Does any land disturbance occur in a RCC Landslide Hazard overlay or is there any slope on site during or after construction that is steeper than 15%, and longer than 3 m in length.		
1.4	Does any land disturbance occur below 5 m AHD		
1.5	Does development involve endorsement of a staging plan		
1.6	Is there an upstream catchment passing through the site > 1 hectare		

Have you answered 'yes' to any of the questions in Table 1?	Yes	No

If '*No*' then site is low risk with respect to erosion and sediment control

If '*Yes*' then proceed to Table 2

Table 2: Medium Risk Test

		Yes	No
2.1	Is the area of land disturbance > 1 hectare		

If '*No*' then site is medium risk with respect to erosion and sediment control

If '*Yes*' then proceed to Table 3

Table 3: High Risk Test

3.1	Is there an upstream catchment passing through the site > 1 hectare		
3.2	Have you answered yes to 1.2 above (Water ways)		
3.3	Have you answered yes to 1.3 above (Steep Slope)		

Have you answered 'yes' to any of the questions in Table 3?	Yes	No

If '*No*' then site is medium risk with respect to erosion and sediment control

If '*Yes*' then site is high risk with respect to erosion and sediment control

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REDLAND CITY COUNCIL
DESIGN CERTIFICATE

Erosion and Sediment Control

This form is to be completed and signed by the suitably qualified and experienced professional responsible for the preparation of the Erosion and Sediment Control Plan (ESCP).

Name of Development: _____

Location of Development: _____

Land Owner: _____

Supervising Engineer: _____

Related or Higher-Order Approval Number: _____

Operational Works Approval Number: _____

Drawing/Report Numbers for documents associated with this Certification: _____

MANDATORY INFORMATION: You are required to answer the following question. If the answer to the question is "NO", provide details of how compliance with the Conditions of the Development Permit will be achieved

	YES	NO
Is the ESCP and associated documentation in accordance with the requirements of the Conditions of the Development Permits which apply to the site	❑	❑

DETAILS IF THE QUESTION IS ANSWERED "NO": (Provide details of how compliance with the Conditions of the Development Permits and obligations of the *Environmental Protection Act 1994* will still be achieved). Use separate sheet if necessary.

_____

_____

_____

_____

CERTIFICATION

I certify that this information has been provided in accordance with Council's requirements and that, having made all relevant enquiries, I am satisfied that no matters of significance have been withheld from Council's Delegate. This form was completed by myself, or under my direct supervision, and I am suitably qualified and/or experienced to provide such certification. The information submitted is, to the best of my knowledge and belief, true, accurate and complete. I acknowledge and accept that the Council, as the administering authority relies, in good faith, on this certification as part of its development approval process and that the provision of false or misleading information to the Council constitutes an offence against the *Sustainable Planning Act 2009*.

Certified By (print name in full): _____

RPEQ No or CPESC No: _____

P.I. Insurance No. & Company: _____

_____

Certifier's Signature: _____ **Date:** _____

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REDLAND CITY COUNCIL
INSPECTION CERTIFICATE

Erosion and Sediment Control

This form is to be completed and signed by a suitably qualified and experienced professional.

Name of Development: _____

Location of Development: _____

Land owner: _____

Inspected by (Name/Company): _____

Related or Higher-Order Approval Number: _____

Operational Works Approval Number: _____

Construction Stage/Hold Point: _____

Time and Date of inspection: _____

MANDATORY INFORMATION: You are required to answer the following question:

	YES	NO
(a) In regard to erosion and sediment control, at the time of inspection, was the development site in compliance with the development permits applicable to the works.	❑	❑

If answered "NO" to Question a) then complete Question b)

(b) Has specific advice been given to the applicant, which if implemented, will achieve compliance with the development consent and the obligations and duties of the *Environmental Protection Act 1994*	❑	❑

DETAILS IF QUESTION a) ANSWERED "NO": Provide a summary of the advice issued to the Land owner to ensure compliance with the Conditions of the Development Permit and obligations under the *Environmental Protection Act 1994* will be achieved. Use separate sheet if necessary _____

_____

_____

CERTIFICATION

I certify that this information has been provided in accordance with Council requirements and that, having made all relevant enquiries, I am satisfied that no matters of significance have been withheld from Council's Delegate. This form was completed by myself, or under my direct supervision, and I am suitably qualified and/or experienced to provide such certification. The information submitted is, to the best of my knowledge and belief, true, accurate and complete. I acknowledge and accept that the Council, as the administering authority relies, in good faith, on this certification as part of its development process and that the provision of false or misleading information to the Council constitutes an offence against the *Sustainable Planning Act 2009*.

Certified By (print name in full): _____

RPEQ No or CPESC No: _____

P.I. Insurance No. & Company: _____

_____

Certifier's Signature: _____ **Date:** _____

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APPENDIX B

Tree Species List

Botanical Name	Common Name	Height	Canopy Width	Canopy Type				E/green	Endemic	Planting Location			Soil Type			Plant under P/lines	Flower Characteristics	
				S	M	L	U			Street	Narrow Verge (<2m)	Park	Coastal	Alluvial	Hilly Terrain of Hinterland		Colour	Months
Acmena hemilampra	Broad Leaved Lilly Pilly	6-12m	5m		●			●		●			●				White	O,N
Acmena smithii	Lilly Pilly	5-8m	3m		●			●		●			●	●			White	S,O,N,D,J,F
Agathis robusta	Kauri Pine	20m	8m				●	●		F		●		●	●			
Alectryon connatus	Grey Bird's Eye	18m	6-8m		●			●		●			●				Yellow	F,M
Alectyron coriaceus	Beach Bird's Eye	4-5m	2-3m	●				●	●	●	●		●				Yellow	D,J,F
Allocaasuarina littoralis	Coastal Sheoak	10m	3-5m		●			●				●	●				Red	M,A,M
Allocasuarina torulosa	Forest Oak	10-15m	5-8m		●			●				●		●			Red	S,O,N,D,J,F
Araucaria cunninghamii	Hoop Pine	50m	6-8m				●	●		F		●	●	●	●			
Araucaria hetrophylla	Norfolk Island Pine	60m	8-10m				●	●		F		●	●					
Backhousia citriodora	Lemon Scented Myrtle	3-6m	2-4m	●				●		●	●		●	●	●		White	D,J,F,M
Banksia aemula	Wallum Banksia	5m	2-3m	●				●		●	●			●			Yellow	M,A,M,J
Banksia integrifolia	Coastal Banksia	5m	2-3m	●				●		●	●	●	●				Yellow	J,F,M,A,M,J
Banksia oblongifolia	Fern Leaved Banksia	2m	1-2m		●			●				●	●				Yellow	M,A,M,J,J
Brachychiton acerifolius	Illawarra Flame Tree	10m	4-6m		●							●		●	●		Red	D,J,F
Brachychiton bidwillii	Little Kurrajong	6-8m	2-3m		●							●		●	●		Red/Pink	D,J,F
Buckinghamia celsissima	Ivory Curl	5-8m	2-4m	●	●			●		●	●			●	●	●	Cream/Yellow	J,F,M
Callistemon viminalis'	Weeping Bottlebrush	2m	3m					●		●			●	●			Red	O,N,D,J,F
Callistemon viminalis'	Dawson River'	5m	2-3m	●				●		●	●		●	●	●	●	Red	S,O,N,D,J,F
Callistemon viminalis'	Hannah Ray'	5m	2-3m	●				●		●	●		●	●	●	●	Red	S,O,N,D,J,F
Callitris columellaris	Bribie Island Pine	10m	4-6m			●		●				●	●					
Casuarina equisetifolia	Horse tail Sheoak	10-15m	4-6m		●			●				●	●				Red	S,O
Casuarina glauca	Swamp Oak	10-20m	4-8m		●			●				●	●	●			Red	S,O
Corymbia cirtriodora	Lemon Scented Gum	30m	10-15m			●		●				●		●	●		Cream/White	D,J,F,M
Corymbia intermedia	Pink Bloodwood	30m	10-12m			●		●	●			●		●	●		Cream/White	D,J,F
Cryptocarya laevigata	Glossy Laurel	6m	2-3m		●			●				●		●			Cream/White	O,N
Cryptocarya triplinervis	Three Veined Laurel	12m	4m		●			●	●			●		●			Green	S,O,N
Cupaniopsis anacardioides	Tuckeroo Tree	8-12m	4-5m		●			●		●		●	●			●	Yellow	D,J,F
Delonix regia	Poinciana Tree	8-15m	8-10m			●		●		F		●	●	●	●		Red/Orange	N,D,J
Elaeocarpus eumundii	Eumundii Quandong	8-12m	4m				●	●		●				●	●		Cream	N,D
Elaeocarpus grandis	Blue Quandong	15-25m	8m			●		●				F		●	●		White	M,A,M
Elaeocarpus obovatus	Hard Quandong	10-15m	4-5m		●			●		●			●	●			White	D,J,F,M
Elaeocarpus reticulatus	Blueberry Ash	5-6m	3-4m	●	●			●		●	●			●	●		White/Pink	D,J,F
Eucalyptus microcorys	Tallow wood	30m	5-10m			●		●		A		●		●	●		White	J,A,S,O,N
Eucalyptus pilularis	Blackbutt	25m	10m			●		●				●		●	●		White	S,O,N,D,J,F,M
Eucalyptus resinifera	Red Mahogany	15-20m	5-10m			●		●				●		●	●		White	O,N,D,J,F
Eucalyptus tereticornis	QLD Blue Gum	20m	5-10m			●		●				●		●	●		White	J,J,A,S,O,N
Corymbia tessellaris	Moreton Bay Ash	35m	10-15m			●		●				●		●	●		White	J,A,S,O,N
Ficus macrophylla	Moreton Bay Fig	30m	20m			●		●	●			F	●	●	●			
Ficus obliqua	Green Leafed MB Fig	10m	5-8m		●			●	●			F		●	●			
Flindersia australis	Crows Ash	10m	5-8m		●			●		●							Cream/White	S,O,N

Botanical Name	Common Name	Height	Canopy Width	Canopy Type				Evergreen	Endemic	Planting Location			Soil Type			Plant under Pylines	Flower Characteristics	
				S	M	L	U			Street	Narrow Verge (<2m)	Park	Coastal	Alluvial	Hilly Terrain of Hinterland		Colour	Months
Flindersia brayleana	Queensland Maple	10m	4-8m		●			●		●				●	●		Cream/White	S,O,N,D,J,F
Flindersia xanthoxyla	Yellow wood	10m	4-8m		●			●	●	●				●	●		Cream/White	D,J,F
Gmelina leichardtii	White Beech	6m	3-4m		●			●				●		●	●		Cream	S,O,N
Grevillea baileyana	White Oak	6m	2-4m	●	●			●		●	●			●	●		White	M,J,J
Guoia semiglauca	Guoia / White Quince	5-6m	2-3m	●	●			●	●	●	●		●	●		●	White	S,O,N
Harpullia pendula	Tulipwood	5-6m	2-3m	●	●			●		●	●			●	●		Yellow/Green	S,O,N,D
Hibiscus tiliaceus	Cottonwood	10m	5-10m		●			●				●	●				Yellow	D,J,F
Lepiderma pulchella	Fine Leaf Tuckeroo	5m	2-3m	●	●			●		●	●		●	●			Yellow	D,J,F
Leptospermum petersonii	Lemon Scented Tea Tree	5m	2-3m	●				●		●	●		●	●		●	White/Pink	D
Lophostemon confertus	Brushbox	8m	4-5m		●			●		A		●		●	●		White	O,N,D
Lophostemon suaveolens	Swamp Mahogany	15m	5-8m		●			●		A		●		●	●		White	D,J,F
Magnolia grandiflora 'Little Gem'	Magnolia 'Little Gem'	6m	2-4m	●	●			●		●	●			●	●	●	White	S,O,N
Melaleuca linariifolia	Snow in Summer	12m	5m	●	●			●		●	●	●		●		●	Cream/White	S,O,N
Melaleuca quinquenervia	Broad leafed paperbark	10-15m	5-10m			●		●	●			●	●	●			Cream	S,O,N,D,J,F,M,A
Melia azederach	White Cedar	10m	2-4m		●							●		●			Mauve	S,O,N
Pandanus pendunculatus	Screw Pine	7m	4-6m		●			●				F	●					
Peltophorum pterocarpum	Yellow Flame Tree	15-20m	10-15m			●						F		●	●		Yellow	O,N,D,J,F
Podocarpus elatus	Brown Pine	10m	2-3m		●			●		F		F		●	●			
Syzygium australae	Shrub Cherry	8m	2-3m		●			●		●		●	●	●	●		White	S,O,N
Syzygium jambos	Rose Apple	8m	4-6m			●		●		●		●		●	●		White	O,N,D
Syzygium leuhmanii	Riberry	8m	2-4m		●			●	●	●		●	●	●	●		White	O,N,D
Syzygium oleosum	Blue Lilly Pilly	8m	2-4m		●			●	●	●		●		●			White	N,D,J,F,M,A,M
Tabebuia chrysanthus	Yellow Tabebuia	8m	3-5m	●	●					●	●		●	●			Yellow	S,O,N
Tabebuia palmeri	Pink Trumpet Tree	8m	3-5m	●	●					●	●		●	●			Pink	S,O,N
Tabebuia rosea	Pink Trumpet Tree	8m	3-5m		●					F			●	●			Pink	S,O,N
Tristaniopsis laurina	Water Gum	8m	4-6m		●			●		●			●	●			Yellow	D,J,F
Waterhosia floribunda	Weeping lilly Pilly	10m	5-6m		●			●		●				●			White	S,O,N,D,J,F
Xanthostemon chrysanthus	Golden Penda	5-6m	2-3m	●	●			●		●	●		●	●		●	Yellow	S,O,N,D,J,F

Legend

Canopy Width

S - up to 6m

M - 6 to 15m

L - Larger than 15m

U - Upright tree habit

Only on North Stradbroke Island

Only for Main Road Wellington Point, Colburn Ave Vic Point, Wellington St Ormiston, Bloomfield St Cleveland

Planting Location

F - Feature tree

A - Subject to Council approval

Appendix C

On-Maintenance Checklist and Certification

Development Application Number: .....

Address: .....

	N/A	Attached
Certified As-Constructed Drawings		
Digital (ADAC) as-constructed drawings	☐	☐
Design as-constructed drawings	☐	☐
Inspection and Testing Documentation		
General		
RPEQ certification	☐	☐
Earthworks		
Compaction of fill	☐	☐
Level 1 report (certified by an RREQ)	☐	☐
Retaining wall certification	☐	☐
Roadworks		
Sub grade compaction	☐	☐
CBR 15 material quality	☐	☐
CBR 15 compaction-100 percent standard	☐	☐
Subgrade course material quality	☐	☐
Subgrade course compaction-100 percent standard	☐	☐
Base course material quality	☐	☐
Base course compaction-98 percent modified	☐	☐
Bituminous (chip) seal application rates	☐	☐
AC core compactions-92 percent	☐	☐
AC core depth-25mm/40mm	☐	☐
Water (in accordance with SEQ Code)		
Grading to water main bedding/surround material	☐	☐
Water main pressure tests	☐	☐
Water main bacteria test	☐	☐
Water meter installation details	☐	☐
Water main trench compaction	☐	☐

	N/A	Attached
Sewer (in accordance with SEQ Code)		
Grading to sewer bedding/surround material	☐	☐
Sewer pressure tests	☐	☐
Sewer main trench compaction	☐	☐
Sewer main closed circuit television report	☐	☐
Drainage		
Grading to stormwater drainage bedding material	☐	☐
Stormwater main trench compaction	☐	☐
Stormwater main closed circuit television report	☐	☐
Stormwater Treatment Device		
Subsoil drain filter media grading	☐	☐
Filter media certification (refer section 4 of Water by Design – Bioretention Technical Design Guidelines)	☐	☐
Maintenance plan	☐	☐
Other		
Concrete testing	☐	☐
Acoustic fence certification (form 15 and 16)	☐	☐
Operating manuals	☐	☐
Dust complaint resolved	☐	☐
Lots effectively stabilised	☐	☐
Other complaints resolved	☐	☐
Payments		
Defect liability bond	☐	☐
Sewer connection	☐	☐
Water connection	☐	☐
Other bonds/payments-	☐	☐

Other Items:.....
.....
.....
.....
.....
.....

Note – This is not a comprehensive list and the applicant is requested to include additional items when applicable.

Verification by Consultant.....Date.....

RPEQ Certification

It is hereby certified that all inspections and supervision were carried out at the appropriate stages of construction. The supervision and testing associated with the works are in accordance with the specifications, documentation and requirements of the relevant local government codes and policies. The Supervisor possesses appropriate recognised qualifications and experience.

Name:..... Company .....

Signature..... Date.....RPEQ No.....

AILA Landscape Certification

It is hereby certified that all inspections and supervision were carried out at the appropriate stages of construction. The supervision and testing associated with the works are in accordance with the specifications, documentation and requirements of the relevant local government codes and policies. The Supervisor possesses appropriate recognised qualifications and experience.

Name:..... Company .....

Signature..... Date.....AILA No.....

APPENDIX D

ADAC Data Capture Guidelines

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1. Purpose

The purpose of this document is to provide practical guidelines and general assistance with respect to the creation and provision of compliant ADAC XML files. ADAC XML files are to accompany any associated bundle of "As-Constructed" plans, drawings, schedules and associated information reflecting newly constructed civil infrastructure and associated assets handed over to Redland City Council.

On completion of physical works and prior to asset handover, "As-Constructed" (also known as "As-Built") information is used to indicate the locations of infrastructure installed as a part of the physical works. The final "As-Constructed" data should accurately reflect material types, specifications and other asset-specific information. The digital ADAC XML file is a complete and detailed digital record of "As-Constructed" Plan information and is used by Council to populate its asset system.

Specific details regarding the preparation and presentation of any required "As-Constructed" drawings and plans accompanying the ADAC XML can be accessed via the *Redlands Planning Scheme Policy 2 – Infrastructure Works*.

2. Introduction to ADAC XML

ADAC XML files are an accompaniment to the "As-Constructed" bundle of information required by Council as part of the final approval and handover of associated civil infrastructure and associated assets constructed.

Compliant ADAC XML files contain a structured and precise digital record of the assets described in the "As-Constructed" plans and other associated engineering documentation. Details include survey-accurate cadastral and boundary references, geometries and relative levels as well as detailed records of the new assets including accompanying attribute information.

ADAC XML files may also be used as a cross-check on accuracy and completeness of the "As-Constructed" information provided. The digital files afford a further confirmation of compliance with development approval conditions as well as helping to verify engineering specifications and other design-related requirements.

Depending on the tools (XML generator) being used to generate the ADAC XML, compliant files may be initially created during survey capture and then finalised in conjunction with the creation of the "As-Constructed" drawings. Alternatively the XML files may be generated after the electronic "As-Constructed" drawings have been finalised. It is essential that the "As-Constructed" drawings are created using complete and accurate information to correctly identify the assets and the locations being represented in the ADAC XML file.

On receipt of the "As-Constructed" bundle of information, Council will undertake data format and conformance checks on the ADAC XML file to confirm the completeness and validity of the details. Should significant anomalies, errors or missing information be identified during these checks, the ADAC XML file(s) may be returned to the provider for correction and resubmission in accordance with applicable conditions, potentially delaying the progress of the asset handover process.

Once the ADAC XML file(s) are accepted by Council, they are then uploaded to various internal systems and used to assist in the long-term management of the infrastructure. The detailed asset and location data is also available to external agencies in the future via various digital formats.

3. General Requirements

The ADAC XML file shall be produced using the most recent ADAC XML schema release (e.g. Version 4.1) and should be "validated" for compliance before being submitted to Council. Details on the data schema (attributes and mandatory status) describing the asset classes and sub-classes to be addressed by the ADAC capture process can be found throughout this document.

4. Datum Information

Data contained in the ADAC XML file(s) must reflect the survey details of the assets exactly as found in the real world and as accurately reflected in the "As-Constructed" drawings. Unless otherwise specified, survey details must be derived from permanent survey marks (PSMs), with Map Grid of Australia (MGA Zone 56 – GDA 94) co-ordinates and AHD levels to be to fourth order standard as defined by ICSM Standard for the Australian Survey Control Network Special Publication 1 (SP1) Version 2.0 October 2013.

5.0 Asset Capture Guidelines

The following section is intended to provide guidance on the capture of assets within the ADAC XML in a manner which is acceptable to Redland City Council.

The physical nature of assets will determine where/if assets are captured separately within the ADAC XML file. For example, a pathway would be captured as individual and separate features to reflect any changes in physical properties, such as width or material type. Where possible, diagrams and images have been supplied in this document to assist in asset capture.

5.1 Global Asset Attribution

Mandatory Attribution: The following attribution covered under the Global Types section of ADAC is mandatory for all assets:

Element Name	Mandatory (Y/N)
InfrastructureCode	N
Owner	N
Status	Y
Notes	N
SupportingFiles	N

The **Notes** element should be used to record any additional information regarding the asset, or to record attribute information which isn't available within the defined enumerations in the schema.

The **Status** is a critical element within the XML, as it is what Council uses to load new and dispose existing assets into the asset register. Please note the descriptions for each status below:

Status	Description
As-Constructed	New asset described as constructed
Existing	Existing asset described as encountered
Design	Future asset described as a design
Removed	Previously existing asset described as it was prior to removal
Retired	Pre-existing asset no longer in use, but left in-situ.
Rehabilitated	Existing asset repaired, refitted or refurbished as part of works project.

5.2 Cadastre assets

5.2.1 Cadastral Connection

Asset Capture: Simple linear feature capturing the cadastral connections as deduced from observations and the survey reference mark(s).

Spatial Relationship: Must be coincident to the vertices that define the Cadastre Lot boundary features and relevant PSMs.

Mandatory Attribution: The following attribution is mandatory for *Cadastral Connections*:

Element Name	Mandatory (Y/N)
Bearing	N
Distance_m	N

5.2.2 Easement

Asset Capture: Multi-patched area feature representing a new or existing Easement.

Spatial Relationship: May share boundaries with WaterCourseReserve, LotParcels or RoadReserve. Node points between shared boundaries must be coincident i.e. no overlaps or "slivers".

Mandatory Attribution: The following attribution is mandatory for *Easements*:

Element Name	Mandatory (Y/N)
LotNo	N
PlanNo	N

5.2.3 Lot Parcels

Asset Capture: Multi-patched area feature representing the boundary of a titled or proposed Cadastral Lot.

Spatial Relationship: May share boundaries with RoadReserves, WaterCourses or Easements. Node points between shared boundaries must be coincident i.e. no overlaps or "slivers".

Mandatory Attribution: The following attribution is mandatory for *Lot Parcels*:

Element Name	Mandatory (Y/N)
LotNo	N
PlanNo	N
CancelledLotPlan	N
TitledArea_sqm	N

5.2.4 Road Reserve

Asset Capture: Multi-patched area feature representing a gazetted or soon to be gazetted Road reserve boundary.

Spatial Relationship: May share boundaries with WaterCourseReserve, LotParcels, other RoadReserve or Easements. Node points between shared boundaries must be coincident i.e. no overlaps or "slivers".

Mandatory Attribution: The following attribution is mandatory for *Road Reserves*:

Element Name	Mandatory (Y/N)
Name	Y

5.2.5 Survey Mark

Asset Capture: Simple point feature representing a Permanent Survey Mark.

Spatial Relationship: May be used in a Cadastral Connection (as in lot parcels, noted above).

Mandatory Attribution: The following attribution is mandatory for *Survey Marks*:

Element Name	Mandatory (Y/N)
MarkName	Y

5.2.6 Water Course Reserve

Asset Capture: Multi-patched area feature representing the boundary of a Water Course reserve.

Spatial Relationship: May share boundaries with RoadReserves, LotParcels or Easements. Node points between shared boundaries must be coincident i.e. no overlaps or "slivers".

Mandatory Attribution: The following attribution is mandatory for *Water Course Reserves*:

Element Name	Mandatory (Y/N)
Name	Y

5.3 Open Space Assets

5.3.1 Activity Area

General Information: Examples include: Sports Fields, Courts, Playgrounds and Animal Agility Areas.

Asset Capture: Multi-patched area feature representing different activity areas. For playgrounds, this will often align with the soft fall boundaries. For animal agility areas, this will often align with the fencing surrounding the area. For sports fields and courts, this will often align with the marked boundaries of the area, or the edge of the material. Please refer to the dashed yellow line in the example shown below in **Figure 1** representing activity areas for dedicated purposes.



Figure 1

Spatial Relationship: Feature must be totally within the Parent Open Space Activity Area feature.

Mandatory Attribution: The following attribution is mandatory for *Activity Areas*:

Element Name	Mandatory (Y/N)
Use	Y
Type	N
UnderSurfaceMaterial	Y
EdgeType	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Activity Areas* is **± 5m.**

5.3.2 Activity Point

General Information: Includes individual pieces of playground, fitness, animal agility or sports equipment.

Asset Capture: Simple point feature representing individual activity assets that typically fall within an Activity Area. Playground modules should be represented as a single feature, located by its approximate centre point. Please refer to the yellow dots in the example shown in **Figure 1**.

Spatial Relationship: Should typically fall within a defined Activity Area feature.

Mandatory Attribution: The following attribution is mandatory for *Activity Points*:

Element Name	Mandatory (Y/N)
Use	Y
Type	Y
Material	Y
Theme	N
Units	N
Manufacturer	N
ModelNumber	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Activity Points* is **± 5m.**

5.3.3 Artwork

General Information: Includes Entry Statements, Memorials, Monuments, Plaques, Sculptures & Statues.

Asset Capture: Simple point feature representing the centre of an asset.

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is mandatory for *Artwork*:

Element Name	Mandatory (Y/N)
Type	Y
Material	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Artwork* is **± 5m.**

5.3.4 Barbeque

General Information: Not applicable.

Asset Capture: Simple point feature representing the centre of the barbeque. Any hot water units, taps, lighting or shelters associated with the barbeque should be captured as separate features. The slab the barbeque is installed on is **not** considered part of the asset and needs to be separately captured.

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is mandatory for *Barbeques*:

Element Name	Mandatory (Y/N)
EnergySource	Y
Plates	Y
SurroundingMaterial	Y
TopMaterial	Y
Manufacturer	N
ModelNumber	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Barbeques* is **± 5m.**

5.3.5 Barrier Continuous

Asset Capture: Complex linear feature (polylines including curves but not bézier curves) representing a barrier type asset (e.g. fences, bollards, guardrails, pedestrian fall protection). Please refer to the dashed yellow line in the example shown below in **Figure 2**.

Guardrails should be captured under *Barrier Continuous*. When capturing guardrails, the attribution should be populated as follows:

- **Type:** "Vehicle Barrier"
- **UprightMaterial:** Material of the posts
- **LinkMaterial:** Material of the rail
- **TopMaterial**: None
- **Length:** Length of the railing, including end treatments
- **Height:** Height of the railing
- **Notes:** Include the following:
  - Armour Rail / Steel Wire Rope / Wall
  - Leading & trailing end treatments

Spatial Relationship: None.



Figure 2

Mandatory Attribution: The following attribution is mandatory for *Barrier Continuous*:

Element Name	Mandatory (Y/N)
Type	Y
UprightMaterial	Y
LinkMaterial	Y
TopMaterial	N
Length_m	Y
Height_m	Y
UprightNumber	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Barrier Continuous* is **± 5m.**

5.3.6 Barrier Point

General Information: Includes bollards and locking posts.

Asset Capture: Simple point feature representing the centre of an asset. Road guide posts are not to be captured as Barrier Points (not captured by Redland City Council).

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is mandatory for *Barrier Points*:

Element Name	Mandatory (Y/N)
Type	Y
UprightMaterial	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Barrier Points* is **± 5m**.

5.3.7 Bicycle Fitting

General Information: Not applicable.

Asset Capture: Simple point feature representing the centre of a bicycle fitting. Any slab the bicycle fitting is installed on is **not** considered part of the asset and needs to be captured separately.

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is mandatory for *Bicycle Fittings*:

Element Name	Mandatory (Y/N)
Type	Y
Material	Y
Manufacturer	N
ModelNumber	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Bicycle Fitting* is **± 5m**.

5.3.8 Boating Facility

General Information: Not applicable.

Asset Capture: Area feature representing an individual boating facility such as a pontoon, ramp or jetty.

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is mandatory for *Boating Facilities*:

Element Name	Mandatory (Y/N)
Type	Y
Material	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Boating Facilities* is **± 5m**.

5.3.9 Building

General Information:

Asset Capture: Area feature (closed polygon) representing the vertical Building footprint for a structure other than a shelter.

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is mandatory for *Buildings*:

Element Name	Mandatory (Y/N)
Type	Y
Material	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Buildings* is **± 5m**.

5.3.10 Electrical Conduit

General Information: Not applicable.

Asset Capture: Complex linear feature (polylines including curves but not bézier curves) representing a conduit run.

Spatial Relationship: Conduit shown as a polyline starting and finishing at coincident points with each associated fitting.

Mandatory Attribution: The following attribution is mandatory for *Electrical Conduits*:

Element Name	Mandatory (Y/N)
Type	Y
Material	Y
Diameter_mm	Y
Length_m	Y
Protection	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Electrical Conduits* is **± 5m**.

5.3.11 Electrical Fitting

General Information: Includes Lights, Pits, Poles, Power Outlets and Switchboards.

Asset Capture: Simple point feature representing the centre point of the asset. Council requires all Rate 3 lighting installed to be included in the XML. For lights affixed to a pole, a separate Pole feature does not need to be captured. Bollard lighting does not require a separate Pole feature to be captured.

Spatial Relationship: Must be coincident to Electrical Conduit polylines. Lights with poles will have coincidence geometry.

Mandatory Attribution: The following attribution is mandatory for *Electrical Fittings*:

Element Name	Mandatory (Y/N)
Type	Y
Base	N
Material	Y
EnergySource	N
Manufacturer	N
ModelNumber	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Electrical Fittings* is **± 5m**.

5.3.12 Fixture

General Information: Includes Dog Bag Dispensers, Fish Cleaning Stations, Goal Posts, Planter Boxes, Flag Poles, Scoreboards and Dog Bowls fixed to taps or drink fountains.

Asset Capture: Simple point feature representing the centre of an asset. Dog bag dispensers including a pole do not require the pole to be separately captured. The slab the fixture is installed on is **not** considered part of the asset and needs to be separately captured.

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is mandatory for *Fixtures*:

Element Name	Mandatory (Y/N)
Type	Y
Material	Y
Manufacturer	N
ModelNumber	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Fixtures* is **± 5m**.

5.3.13 Landscape Area

General Information: Not applicable.

Asset Capture: Multi-patched area feature representing the "footprint" of a landscaped area. Individual areas are required where the type of Landscaping changes (e.g. garden beds, grass). Only Gardens, Grass and Synthetic Grass are required to be included in the XML.

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is mandatory for *Landscape Areas*:

Element Name	Mandatory (Y/N)
Type	Y
EdgeMaterial	N
RootBarrier	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Landscape Areas* is **± 5m**.

5.3.14 Open Space Area

General Information: Examples include areas such as Parks or Bushlands.

Asset Capture: Multi-patched area feature representing the complete "footprint" of the Open Space area and enclosing relevant Open Space assets. For example, parks will often align with the cadastral *Lot Parcels*, in which case the lot boundaries can be used to represent the Open Space feature. Please refer to the dashed red line in the example shown in **Figure 1**.

Spatial Relationship: Not applicable

Mandatory Attribution: The following attribution is mandatory for *Open Space Areas*:

Element Name	Mandatory (Y/N)
Name	Y
Type	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Open Space Areas* is **± 5m.**

5.3.15 Retaining Wall

General Information: Not applicable.

Asset Capture: Complex linear feature (polylines including curves but not bézier curves) representing a retaining wall. While recognised as a three dimensional object, the retaining wall is typically captured as a linear course where the wall intersects the ground. Figure 3 shows the capture location of a new retaining wall (red hatched). Where the retaining wall gradually changes height over its length, the height is to be taken from the highest point of the wall.



Figure 3

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is mandatory for *Retaining Walls*:

Element Name	Mandatory (Y/N)
Use	Y
Material	Y
Construction	N
Length_m	Y

Element Name	Mandatory (Y/N)
Height_m	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Retaining Walls* is **± 5m.**

5.3.16 Seat

General Information: Not applicable.

Asset Capture: Simple point feature representing the centre of a seat. Seating associated with a table are not to be captured separately. The slab the seat is installed on is **not** considered part of the asset and needs to be separately captured.

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is mandatory for *Seats*:

Element Name	Mandatory (Y/N)
SeatType	Y
Places	N
Material	Y
Manufacturer	N
ModelNumber	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Seats* is **± 5m**.

5.3.17 Shelter

General Information: Not applicable.

Asset Capture: Simple point feature representing the centre of a shelter. Any lighting, tables, seats or barbeques located underneath the shelter are to be captured as separate assets. Shade sails which share a common pole should be treated as the one feature. Poles associated with shade sails / shelters do not need to be captured separately. The slab the shelter is installed on is **not** considered part of the asset and needs to be separately captured.

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is mandatory for *Shelters*:

Element Name	Mandatory (Y/N)
Type	Y
ConstructionType	N
FloorMaterial	Y
WallMaterial	Y
RoofMaterial	Y
Manufacturer	N
ModelNumber	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Shelters* is **± 5m**.

5.3.18 Sign

General Information: Not applicable.

Asset Capture: Simple point feature representing the centre of a sign. Poles associated with the sign do not need to be separately captured.

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is mandatory for *Signs*:

Element Name	Mandatory (Y/N)
Type	Y
Material	Y
Structure	N
SignText	Y
Rotation	N
Manufacturer	N
ModelNumber	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Signs* is **± 5m**.

5.3.19 Table

General Information: Not applicable.

Asset Capture: Simple point feature representing the centre of a table.

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is mandatory for *Tables*:

Element Name	Mandatory (Y/N)
Type	Y
SeatType	N
Places	N
Material	Y
Manufacturer	N
ModelNumber	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Tables* is **± 5m**.

5.3.20 Waste Collection Point

General Information: Includes any poles, stands or enclosures associated with a bin.

Asset Capture: Simple point feature representing the centre of the asset.

Spatial Relationship: Not applicable.

Mandatory Attribution: The following attribution is mandatory for *Waste Collection Points*:

Element Name	Mandatory (Y/N)
Type	Y
Material	Y
Manufacturer	N
ModelNumber	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Waste Collection Points* is **± 5m**.

5.5 Stormwater

5.5.1 End Structure

General Information: Represents a stormwater headwall / end wall.

Asset Capture: Simple point feature representing the top of the headwall (refer **Figure 4**). Fences surrounding the end structure should be captured separately as *Barrier Continuous*.

Spatial Relationship: Should be coincident to a stormwater pipe.



Figure 4

Mandatory Attribution: The following attribution is mandatory for *End Structures*:

Element Name	Mandatory (Y/N)
StructureID	N
StructureLevel_m	Y
EndWallType	N
EndWallConstruction	N
WingWallType	N
WingWallConstruction	N
ApronType	N
ApronConstruction	N
GrateType	N
TideGate	N
PredominantMaterial	Y
OutletProtectionType	N
Rotation	N

Positional Accuracy: The minimum accepted horizontal accuracy for *End Structures* is **± 0.1m**.

5.5.2 Fitting

General Information: Represents a stormwater end cap.

Asset Capture: Single point feature representing the centre point of the fitting.

Spatial Relationship: Must be coincident to the end point a Stormwater pipe feature.

Mandatory Attribution: The following attribution is mandatory for *Fittings*:

Element Name	Mandatory (Y/N)
FittingType	Y
Rotation	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Fittings* is **± 0.1m**.

5.5.3 GPT Complex

General Information: Not applicable.

Asset Capture: Single point feature located at the centre of chamber on the top surface. Capturing centre of lid is appropriate only when the lid is centred over the chamber.

Gross Pollutant Trap (GPT) Complex assets are Commercial or Custom built devices (e.g. Humes Interceptor).

Spatial Relationship: GPT Complex assets must be coincident to pipe features as per Pits/Manhole features.

Mandatory Attribution: The following attribution is mandatory for *GPT Complexes*:

Element Name	Mandatory (Y/N)
Sqid_Id	N
Manufacturer	Y
ModelNumber	Y
Length_mm	Y *(if rectangular)*
Width_mm	Y *(if rectangular)*
Diameter_mm	Y *(if circular)*
Function1	Y
Function2	N
Function3	N
US_PipeDiameter_mm	N
DS_PipeDiameter_mm	N
SurfaceLevel_m	Y
CleanoutLevel_m	N
Depth_m	Y
SumpDepth_m	N
HasFilterMedia	N
HasBasket	N
HasBoards	N

Element Name	Mandatory (Y/N)
DesignFlow_m3s	N
MaxContaminantVolume_m3	N
MaxInternalVolume_m3	N
MaintenanceCycle_mnths	N
Rotation	N

Positional Accuracy: The minimum accepted horizontal accuracy for *GPT Complexes* is **± 0.1m**.

5.5.4 GPT Simple

General Information: Not applicable.

Asset Capture: Single point feature located at the centre of chamber on the top surface. Capturing centre of lid is appropriate only when the lid is centred over the chamber.

Gross Pollutant Trap (GPT) Simple assets are "in pit" basket or "end of line" devices.

Spatial Relationship: A GPT Simple asset's spatial location must correlate with a Pit/Manhole asset as they are housed within those structures and can be removed for maintenance or relocation.

Mandatory Attribution: The following attribution is mandatory for *GPT Simple*:

Element Name	Mandatory (Y/N)
Sqid_Id	N
Construction	N
Manufacturer	N
ModelNumber	N
TreatmentMeasure	Y
Function1	Y
Length_mm	N
Width_mm	N
MaintenanceCycle_mnths	N
Rotation	N

Positional Accuracy: The minimum accepted horizontal accuracy for *GPT Simple* is **± 0.1m**.

5.5.5 Non GPT Simple

General Information: Not applicable.

Asset Capture: Single point feature located at the centre of chamber on the top surface. Capturing centre of lid is appropriate only when the lid is centred over the chamber.

Non GPT Simple assets represent basic and minor sand filtration storage.

Spatial Relationship: Non GPT Simple assets must be coincident to pipe features as per Pits/Manhole features.

Mandatory Attribution: The following attribution is mandatory for *Non GPT Simple*:

Element Name	Mandatory (Y/N)
Sqid_Id	N
Construction	N
Manufacturer	N
ModelNumber	N
TreatmentMeasure	Y
Function1	Y
Function2	N
Function3	N
Length_mm	Y
Width_mm	Y
MaintenanceCycle_mnths	N
Rotation	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Non GPT Simple* is **± 0.1m**.

5.5.6 Pipe

General Information: Not applicable.

Asset Capture: A simple linear feature representing the invert of the pipe or midpoint of a box asset. Multiple-celled culverts & pipes should always be represented individually; therefore the number of cells attribute should always be "1". Line direction should be enforced from Gravity Upstream (higher AHD level) to Gravity Downstream (lower AHD level) due to gravitation flow. Pipe features are captured from the intersection of pipe material and chamber wall. Refer to **Figure 5** and **Figure 6**.

Figure 5 represents a single-celled pipe asset where vertices one and four represent the maintenance hole capture and vertices two and three are the intersection of the Pipe material and the chamber wall.

Figure 6 represents an irregular shaped pit with multiple multi-celled pipes entering the pit asset and a large single-celled asset exiting the pit with an outlet through an End Structure.

Pipes are to be captured based on their physical and spatial properties and attributes. For example, if a pipe changes size, material, class, embedment or direction etc. then it must be broken and captured separately.

Spatial Relationship: May be coincident to Stormwater point features.

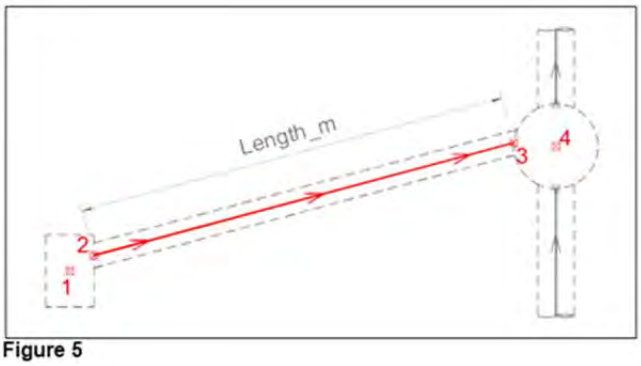


Figure 5

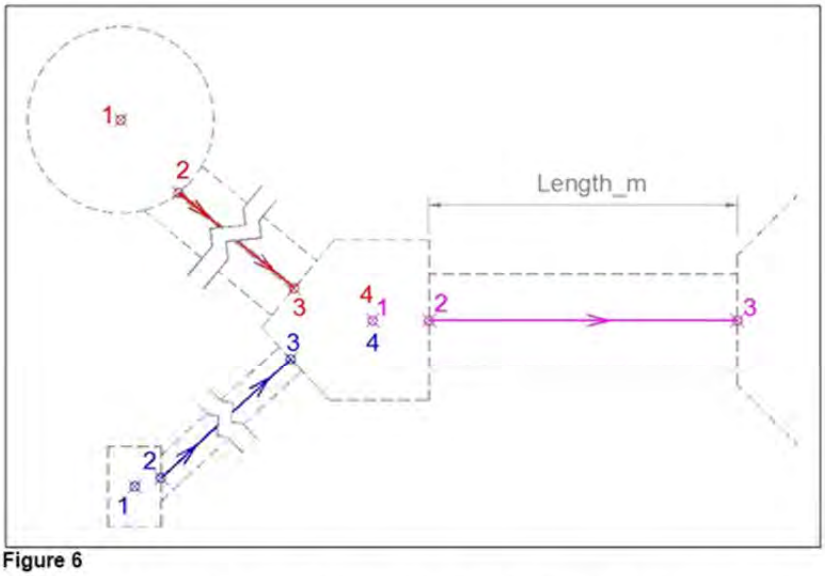


Figure 6

Mandatory Attribution: The following attribution is mandatory for *Pipes*:

Element Name	Mandatory (Y/N)
US_InvertLevel_m	Y
DS_InvertLevel_m	Y
US_SurfaceLevel_m	Y
DS_SurfaceLevel_m	Y
Diameter_mm	Y *(if circular)*
Height_mm	Y *(if box)*
Width_mm	Y *(if box)*
Material	Y
Class	Y *(if circular)*
JointType	Y *(if circular)*
Cells	N

Element Name	Mandatory (Y/N)
ConcreteCoverType	N
Grade	Y
Length_mm	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Pipes* is **± 0.1m**.

5.5.7 Pit

General Information: Not applicable.

Asset Capture: Simple point feature representing the centre of chamber of a pit or manhole. If the asset's Use = "Pit" then the InletType element must be populated. If the Lintel element is not nil, then the InletConfig element must be populated. The InletConfig's Left/Centre/Right is referenced from the road crown looking at the lintel.

Spatial Relationship: Not Applicable.

Mandatory Attribution: The following attribution is mandatory for *Pits*:

Element Name	Mandatory (Y/N)
PitNumber	N
Use	Y
ChamberConstruction	N
Length_mm	Y *(if rectangular)*
Width_mm	Y *(if rectangular)*
Diameter_mm	Y *(if circular)*
Radius_mm	Y *(if extended)*
Extension_mm	Y *(if extended)*
LidType	Y
SurfaceLevel_m	Y
InvertLevel_m	Y
Depth_m	Y
InletConfig	N
InletType	Y *(if inlet exists)*
LintelConstruction	Y *(if lintel exists)*
LintelLength_m	Y *(if lintel exists)*
OutletType	N
FireRetardant	N
Rotatation	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Pits* is **± 0.1m**.

5.5.8 Surface Drain

General Information: Not applicable.

Asset Capture: Simple linear feature representing the invert of the channel. Surface Drains are to be captured based on their physical and spatial properties and attributes. For

example, if a surface changes size, material, shape etc. then it must be broken and captured separately. Figure 9 indicates the capture of a major surface drain as well as a smaller surface drain feeding into it. The main surface drain has been broken into separate features where the main change of width occurs. The smaller surface drain ends at the intersection of the main surface drain's outer edge.



Figure 7

Spatial Relationship: May be coincident to End Structures and WSUD regions/polygons.

Mandatory Attribution: The following attribution is mandatory for *Surface Drains*:

Element Name	Mandatory (Y/N)
Type	Y
Shape	Y
LiningMaterial	Y
LinedWidth_m	N
BatterMaterial	Y
BatterWidth_m	N
US_InvertLevel_m	N
DS_InvertLevel_m	N
AverageGrade	N
Length_m	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Surface Drains* is **± 1m**.

5.5.9 WSUD Complex Area

General Information: Not applicable.

Asset Capture: Water Sensitive Urban Design (WSUD) areas such as kerbside bio-filtration beds or purpose built drainage swales should be captured individually as a region/polygon. Individual areas are to be recorded within the ADAC data capture fields defining class type (e.g swale, buffer strip, bio-retention basin). Any associated infrastructure with the WSUD (e.g. vehicle accesses, fences, gates, etc.) should be captured separately. **Figure 8** demonstrates the capture of a WSUD and associated infrastructure, including a Vehicle Access (red polygon) and a gate (blue hatched line).



Figure 8

Spatial Relationship: Not Applicable.

Mandatory Attribution: The following attribution is mandatory for *WSUD Complex Areas*:

Element Name	Mandatory (Y/N)
Sqid_Id	N
TreatmentMeasure	Y
Function1	Y
Function2	N
Function3	N
PondingArea_m2	N
PondingDepth_m	N
FilterArea_m2	N
FilterDepth_m	N
TransitionDepth_m	N
DrainageDepth_m	N

Element Name	Mandatory (Y/N)
MacrophyteZoneArea_m2	N
MacrophyteZoneDepth_m	N
CoarseSedimentArea_m2	N
SedimentVolume_m3	N
MinSurfaceLevel_m	N
PermanentPondLevel_m	N
OutletLevel_m	N
DesignFlow_m3s	N
HasSpillway	N
MaintenanceCycle_mnths	N

Positional Accuracy: The minimum accepted horizontal accuracy for *WSUD Complex Areas* is **± 5m**.

5.6 Supplementary

Supplementary features are used to record additional asset types or points of reference which isn't otherwise covered under the ADAC schema. Redland City Council has specified additional asset types required to be supplied in the XML under its *As-Constructed Data Standard*. The details for these asset types have been supplied below:

5.6.1 Point Feature / Polyline Feature / Polygon Feature (Additional Information)

Asset Capture: Simple Point, Complex Polyline or Multipatch Area feature (depending on the feature type) representing additional reference information that add clarity or context to the strict ADAC features.

Spatial Relationship: Not applicable**5.6.2 Artificial Fauna Habitat (Polygon Feature)**

General Information: Represents artificial fauna habitats such as glider poles, nesting platforms and ground hollows.

Asset Capture: Multi-patched area feature representing the footprint of the artificial fauna habitat. These are to be recorded with a **Class** element of "Artificial Fauna Habitat".

Spatial Relationship: Not applicable.

Attribution: The following attribution is to be recorded against features identified as *Artificial Fauna Habitats*:

Attribute	Description	Type	Mandatory?	Allowable Values
Type	The type of Habitat eg: glider pole and ground hollow	TextValue	Y	Glider Pole
				Glider Rope
				Ground Hollow
				Log
				Nesting Platform
				Rock
Material	The predominant material	TextValue	Y	Concrete
				Fibreglass
				Masonry
				Plastic
				Rock
				Steel Galvanised
				Steel Powder Coated
				Timber
				Combination
Height	The height of the habitat in metres (2 decimal places).	DecimalValue	Y	
Pole Mounted	Is the feature mounted to a pole?	TextValue	N	Yes
				No

Positional Accuracy: The minimum accepted horizontal accuracy for *Artificial Fauna Habitats* is **± 5m**.

5.6.3 Bridge (Polygon Feature)

General Information: Not applicable.

Asset Capture: Multi-patched area feature representing the footprint of the bridge, from abutment to abutment (refer **Error! Reference source not found.**). These are to be recorded with a **Class** element of "Bridge". For road bridges which include a separated footbridge, the footbridge is considered part of the road bridge if it shares the same load bearing structure.



Figure 9

Spatial Relationship: Not applicable.

Attribution: The following attribution is to be recorded against features identified as *Bridges*:

Attribute	Description	Type	Mandatory?	Allowable Values
Bridge Name	Bridge descriptor name.	TextValue	N	
Deck Width	Deck width measured from outside to outside.	DecimalValue	Y	
Deck Length	Deck length measured from abutment to abutment.	DecimalValue	Y	
Deck Area	Deck area in square metres.	DecimalValue	Y	
Vertical Clearance	Vertical clearance under the bridge, measured from the highest astronomical tide or the crown of the road.	DecimalValue	Y	
Design Load	Maximum design load limit of the	DecimalValue	N	

Attribute	Description	Type	Mandatory?	Allowable Values
	bridge, in tonnes			
Actual Load Allowance	Maximum actual load limit of the bridge in tonnes, where differs from the design load.	DecimalValue	N	
Bridge Crossing Type	What is the bridge crossing?	TextValue	Y	Over Road Under Road Over Water Over Rail Under Rail Other
Footpath	Are there footpaths fixed to the bridge?	TextValue	Y	Nil One Side Both Sides
Span Type	The type of span used on the bridge.	TextValue	Y	Arch Beam girder Box girder Composite slab Concrete portal Truss
Span Length	Maximum length of each span, in metres.	DecimalValue	Y	
Span Quantity	Number of spans.	IntegerValue	Y	
Primary Bridge Use	The primary purpose of the bridge.	TextValue	Y	Pedestrian Vehicular Cycleway Rail
Lanes	Number of trafficable lanes on the bridge.	IntegerValue	N	

Positional Accuracy: The minimum accepted horizontal accuracy for *Bridges* is **± 5m**.

5.6.4 Fire Management (Polyline Feature)

General Information: Represents Fire Control Lines and Fire Trails.

Asset Capture: Complex linear feature (polylines including curves but not Bezier curves) representing the centre longitudinal axis of a fire trail or fire control line. These are to be recorded with a **Class** element of "Fire Management".

Spatial Relationship: Not applicable.

Attribution: The following attribution is to be recorded against features identified as *Fire Management*:

Attribute	Description	Type	Mandatory?	Allowable Values
Type	The type of Fire Management feature (e.g. fire trail, fire control line).	TextValue	Y	Fire Control Line Fire Trail
Trail Category	The type of fire trail. Only applicable when the Type is "Fire Trail"	TextValue	N	1 2

Attribute	Description	Type	Mandatory?	Allowable Values
	Refer below for a description of each category.			3a
				3b
				4
				5
Surface Material	The surface material of the fire trail or control line	TextValue	Y	Bitumen
				Concrete
				Exposed Aggregate
				Grass
				Gravel
				Pavers
				Natural
				Sand
				Timber
Length	Length in metres (2 decimal places).	DecimalValue	Y	
Width	Width in metres (2 decimal places).	DecimalValue	N	

Trail Categories:

1: strategically important fire control line (sealed or well-formed road)
2: major control line (well formed, 10% gradient)
3a: permanent medium fire control line (4x4 vehicle on 10% - 17% gradient)
3b: permanent minor fire control line (4x4 vehicle 17% - 38% gradient)
4: temporary fire control line (4x4 vehicle 17% - 38% gradient)
5: dormant fire control line (4x4 vehicle 20% - 45% gradient)

Positional Accuracy: The minimum accepted horizontal accuracy for *Fire Management* is **± 5m**.

5.6.5 Foreshore Protection (Polygon Feature)

General Information: Represents seawalls, groynes & artificial reefs.

Asset Capture: Multi-patched area feature representing the footprint of the foreshore protection asset. These are to be recorded with a **Class** element of "Foreshore Protection".

Spatial Relationship: Not applicable.

Attribution: The following attribution is to be recorded against features identified as *Foreshore Protection*:

Attribute	Description	Type	Mandatory?	Allowable Values
Type	The type of foreshore protection (e.g. seawall, groyne, artificial reef).	TextValue	Y	Seawall
				Groyne
				Artificial Reef
Material	The predominant material of the foreshore protection asset.	TextValue	Y	Geotextile
				Clay Shale
				Mass Concrete Block
				Clay Shale / Geotextile

Attribute	Description	Type	Mandatory?	Allowable Values
				Armour Rock/Boulder
				Boulder
Length	Length in metres (2 Decimal Places)	DecimalValue	N	
Width	Width in metres (2 Decimal Places)	DecimalValue	N	
Height	Height in metres (2 Decimal Places)	DecimalValue	Y	
Top Reduced Level	Level of the top of the asset in metres AHD.	DecimalValue	N	
Base Reduced Level	Level of the base of the asset in metres AHD.	DecimalValue	N	
Surface Material	Only required when there is pedestrian access over the asset.	TextValue	N	Bitumen
				Concrete
				Gravel
				Sand

Positional Accuracy: The minimum accepted horizontal accuracy for *Foreshore Protection* is **± 5m**.

5.6.6 Platform (Polygon Feature)

General Information: Not applicable.

Asset Capture: Multi-patched area feature representing the footprint of the platform. These are to be recorded with a **Class** element of "Platform".

Spatial Relationship: Not applicable.

Attribution: The following attribution is to be recorded against features identified as *Platforms*:

Attribute	Description	Type	Mandatory?	Allowable Values
Function	Primary purpose of the platform.	TextValue	Y	Viewing
				Fishing
				Other
Deck Material	Predominant material of the platform deck.	TextValue	Y	Timber
				Paved
				Concrete
Substructure Material	Predominant material of the platform substructure.	TextValue	N	Timber
				Concrete
				Steel
External Handrail Material	Predominant material of the platform handrails.	TextValue	N	Timber
				Metal
				None
Maximum Height	The maximum distance between the deck and the ground in metres (2 decimal places).	DecimalValue	N	
Length	Length in metres (2 decimal places)	DecimalValue	N	
Width	Width in metres (2 decimal places)	DecimalValue	N	
Area	Area in square metres (2 decimal places)	DecimalValue	N	

Positional Accuracy: The minimum accepted horizontal accuracy for *Platforms* is **± 5m**.

5.6.7 Prepared Surface (Polygon Feature)

General Information: Represents a slab, pad or prepared surface other than an activity area.

Asset Capture: Multi-patched area feature representing the footprint of the prepared surface. These are to be recorded with a **Class** element of "Prepared Surface".

Spatial Relationship: Not applicable.

Attribution: The following attribution is to be recorded against features identified as *Prepared Surfaces*:

Attribute	Description	Type	Mandatory?	Allowable Values
Function	The purpose of the prepared surface.	TextValue	Y	Annex Slab
				Hose Down Pad
				Recreational
				Storage
				Various/Other
Material	The material of the prepared surface.	TextValue	Y	Bitumen
				Concrete
				Exposed Aggregate
				Gravel
				Other
				Synthetic Grass
				Pavers
Length	Length in metres (2 decimal places)	DecimalValue	N	
Width	Width in metres (2 decimal places)	DecimalValue	N	
Area	Area in square metres (2 decimal places)	DecimalValue	N	

Positional Accuracy: The minimum accepted horizontal accuracy for *Prepared Surfaces* is **± 5m**.

5.6.8 Swimming Pool (Polygon Feature)

General Information: Not applicable.

Asset Capture: Multi-patched area feature representing the footprint of the pool shell. These are to be recorded with a **Class** element of "Swimming Pool".

Spatial Relationship: Not applicable.

Attribution: The following attribution is to be recorded against features identified as *Swimming Pools*:

Attribute	Description	Type	Mandatory?	Allowable Values
Type	The type of swimming pool.	TextValue	Y	Wading
				Lap

Attribute	Description	Type	Mandatory?	Allowable Values
				Hydrotherapy
				Recreational
				Diving
				Learn to Swim
Indoor or Outdoor	Is the swimming pool located indoors or outdoors?	TextValue	Y	Indoor
				Outdoor
Material	Material of pool shell.	TextValue	N	Fibreglass
				Concrete
Finish	Finish applied to the pool shell material.	TextValue	Y	Fibreglass
				Paint
				Pebble Crete
				Tile
Lanes	The number of lanes.	IntegerValue	N	
Length	Length of the pool in metres.	DecimalValue	Y	
Width	Width of the pool in metres.	DecimalValue	Y	
Volume	Volume of the pool in cubic metres.	DecimalValue	Y	
Minimum Depth	The minimum depth of the pool, in metres.	DecimalValue	Y	

Positional Accuracy: The minimum accepted horizontal accuracy for *Swimming Pools* is **± 5m**.

5.6.9 Swimming Pool Heating Equipment (Point Feature)

General Information: Not applicable.

Asset Capture: Point feature representing the centre of the pool heating equipment. These are to be recorded with a **Class** element of "Pool Heating Equipment".

Spatial Relationship: Not applicable.

Attribution: The following attribution is to be recorded against features identified as *Pool Heating Equipment*:

Attribute	Description	Type	Mandatory?	Allowable Values
Type	The power source of the equipment.	TextValue	Y	Gas
				Electric
				Solar
Component	The type of pool heating equipment.	TextValue	Y	Exchanger
				Pump
				Valve
				Controller
				Solar Collector

Positional Accuracy: The minimum accepted horizontal accuracy for *Pool Heating Equipment* is **± 5m**.

5.6.10 Swimming Pool Fixture (Point Feature)

General Information: Not applicable.

Asset Capture: Point feature representing the centre of the pool fixture. These are to be recorded with a **Class** element of "Pool Fixture".

Spatial Relationship: Not applicable.

Attribution: The following attribution is to be recorded against features identified as *Pool Fixture*:

Attribute	Description	Type	Mandatory?	Allowable Values
Type	The type of pool fixture.	TextValue	Y	Tower Springboard Lifeguard Tower/Chair Access Ladder Starting Podium
Material	The material type of the pool fixture.	TextValue	Y	Aluminium Concrete Plastic Stainless Steel Steel Timber Masonry Fibreglass Combination
Finish	The finish applied to the pool fixture material.			Painted Polished Powdercoated Galvanised Stained PVC/Rubberised Coating

Positional Accuracy: The minimum accepted horizontal accuracy for *Pool Fixtures* is **± 5m**.

5.6.11 Water Body (Polygon Feature)

General Information: Represents man-made water bodies. Not to be used to represent WSUD areas.

Asset Capture: Multi-patched area feature representing the footprint of the water body. These are to be recorded with a **Class** element of "Water Body".

Spatial Relationship: Not applicable.

Attribution: The following attribution is to be recorded against features identified as *Water Body*:

Attribute	Description	Type	Mandatory?	Allowable Values
Maximum Depth	Maximum depth of the water body, in metres.	DecimalValue	N	

Positional Accuracy: The minimum accepted horizontal accuracy for *Water Bodies* is **± 5m**.

5.6.12 Weighbridge (Polygon Feature)

General Information: Not applicable.

Asset Capture: Multi-patched area feature representing the footprint of the weighbridge. These are to be recorded with a **Class** element of "Weighbridge".

Spatial Relationship: Not applicable.

Attribution: The following attribution is to be recorded against features identified as *Weighbridge*:

Attribute	Description	Type	Mandatory?	Allowable Values
Total Length	Total length of weighbridge in metres (2 decimal places).	DecimalValue	N	
Width	Width of weighbridge in metres (2 decimal places).	DecimalValue	N	
Number of Lanes	Number of lanes on the weighbridge.	IntegerValue	N	
Number of Decks	Number of separate weighing decks.	IntegerValue	N	
Maximum Weight	Maximum weight limit, in tonnes.	DecimalValue	N	
Deck Material	Material type of the weighbridge deck(s).	TextValue	Y	Concrete Concrete / Steel

Positional Accuracy: The minimum accepted horizontal accuracy for *Weighbridge* is **± 5m**.

5.7 Surface

5.7.1 Contour

Asset Capture: Linear feature capturing a single contour feature.

Spatial Relationship: Not applicable.

5.7.2 Spot Heights

Asset Capture: Simple point feature representing a single elevation point.

Spatial Relationship: Not applicable.

5.8 Transport

5.8.1 Flush Point

Asset Capture: Simple point feature representing the outlet of sub-soil drains into drainage pits/maintenance holes.

Spatial Relationship: Must be coincident to Sub Soil Drain assets.

Mandatory Attribution: The following attribution is mandatory for *Flush Points*:

Element Name	Mandatory (Y/N)
Function	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Flush Points* is **± 1m**.

5.8.2 Parking

Asset Capture: Multi-patch region/polygon feature representing the area of Parking. Asset capture is based on physicality therefore separate regions/polygons are required if any part of the pavement profile changes i.e. Surface, Base, Sub-Base, Lower Sub-Base and/or Subgrade.

Spatial Relationship: Must be coincident to other regions representing pavement / parking where there is a common boundary (e.g. no slivers/overlaps).

Mandatory Attribution: The following attribution is mandatory for *Parking*:

Element Name	Mandatory (Y/N)
Name	Y
NoOfCarparks	N
OnOffStreet	Y
SurfaceType	Y
SurfaceThickness_mm	Y
SurfaceArea_sqm	Y
PavementType	N
BaseLayerType	Y
BaseLayerDepth_mm	Y
BaseStabilisation	Y *(if Base stabilised)*
SubBaseLayerType	Y (*if SubBase exists)*
SubBaseLayerDepth_mm	Y (*if SubBase exists)*
SubBaseStabilisation	Y (*if SubBase stabilised)*
LowerSubBaseLayerType	Y (*if Lower SubBase exists)*
LowerSubBaseLayerDepth_mm	Y (*if Lower SubBase exists)*
LowerSubBaseStabilisation	Y (*if Lower SubBase stabilised)*
PavementGeoTextile	N
SubgradeCBR	Y
SubgradeStabilisation	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Parking* is **± 5m**.

5.8.3 Path Structure

Asset Capture: Complex linear feature (polylines including curves but not Bezier curves) representing the centre longitudinal axis of a path structure.

Spatial Relationship: Changes in surface types or widths must be represented as separate features.

Mandatory Attribution: The following attribution is mandatory for *Path Structures*:

Element Name	Mandatory (Y/N)
Use	Y
Structure	Y
SurfaceMaterial	Y
SubStructureMaterial	Y
Width_m	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Path Structures* is **± 5m**.

5.8.4 Pathway

Asset Capture: Complex linear feature (polylines including curves but not Bezier curves) representing the centre longitudinal axis of a pathway. Changes in surface types or widths must be represented as separate features.



Figure 10



Figure 11

Spatial Relationship: **Figure 10** and **Figure 11** are examples of the capture of a pathway (blue hatched line) and its relationship with pram ramps (red point).

Mandatory Attribution: The following attribution is mandatory for *Pathways*:

Element Name	Mandatory (Y/N)
Use	Y
Structure	N
SurfaceMaterial	Y
Width_m	Y
Depth_mm	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Pathways* is **± 5m**.

5.8.5 Pavement

Asset Capture: Multi-patch region/polygon feature representing the area of Pavement. Asset capture is based on physicality therefore separate regions/polygons are required if any part of the pavement profile changes i.e. Surface, Base, Sub-Base, Lower Sub-Base and/or Subgrade. **Figure 12** demonstrates the capture locations of a Pavement. The blue line represents the capture location where kerb exists (back of kerb), the yellow line represents where no kerb exists (edge of seal) and the red line represents where separate pavement areas are recorded for each road.

Spatial Relationship: Must be coincident to other regions representing pavement / parking where there is a common boundary- no slivers/overlaps.

Mandatory Attribution: The following attribution is mandatory for *Pavements*:

Element Name	Mandatory (Y/N)
Name	Y
SurfaceType	Y

Element Name	Mandatory (Y/N)
SurfaceThickness_mm	Y
SurfaceNomWidth_m	Y
PavementType	N
BaseLayerType	Y
BaseLayerDepth_mm	Y
BaseStabilisation	Y *(if Base stabilised)*
SubBaseLayerType	Y (*if SubBase exists)*
SubBaseLayerDepth_mm	Y (*if SubBase exists)*
SubBaseStabilisation	Y (*if SubBase stabilised)*
LowerSubBaseLayerType	Y (*if Lower SubBase exists)*
LowerSubBaseLayerDepth_mm	Y (*if Lower SubBase exists)*
LowerSubBaseStabilisation	Y (*if Lower SubBase stabilised)*
PavementGeoTextile	N
SubgradeCBR	Y
SubgradeStabilisation	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Pavements* is **± 5m**.



Figure 12

5.8.6 Pram Ramp

Asset Capture: Simple point feature representing a pram ramp. Typically captured in the centre of Pram Ramp where it transitions to a Kerb/Road. Refer to **Figure 10** and **Figure 11** for the capture of Pram Ramps. The pram ramp (which is highlighted by the red polygon) is captured based on the red point.

Spatial Relationship: May be coincident with a Road Edge feature.

Mandatory Attribution: The following attribution is mandatory for *Pram Ramps*:

Element Name	Mandatory (Y/N)
Rotation	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Pram Ramps* is **± 5m**.

5.8.7 Road Edge

Asset Capture: Complex linear feature (polylines including curves but not bézier curves) representing the top (back) of kerb. In case of inverts, edge of concrete furthest from road centreline. Refer to the blue line in **Figure 12** for capture location.

Spatial Relationship: Must be coincident to other polylines representing road edge where there is a common boundary between kerb types / material change i.e. no slivers and/or overlaps.

Mandatory Attribution: The following attribution is mandatory for *Road Edges*:

Element Name	Mandatory (Y/N)
Type	Y
Length_m	Y
PavementExtension_mm	N

Positional Accuracy: The minimum accepted horizontal accuracy for *Road Edge* is **± 5m**.

5.8.8 Road Island

Asset Capture: Multi-patch region/polygon feature representing the area of Island/LATM bounded by the back of Kerb features. Asset capture is based on physicality therefore separate regions/polygons are required if the Type of Island or Infill changes. Refer to **Figure 13** for an example of asset capture.

Spatial Relationship: Must be coincident to other regions representing road islands where there is a common boundary i.e. no slivers and/or overlaps.

Mandatory Attribution: The following attribution is mandatory for *Road Islands*:

Element Name	Mandatory (Y/N)
Type	Y
Area_sqm	Y
InfillType	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Road Islands* is **± 5m**.



Figure 13

5.8.9 Road Pathway

Asset Capture: Complex linear feature (polylines including curves but not Bezier curves) representing the centre longitudinal axis of a road pathway (on-road cycleway).

Spatial Relationship: Not applicable

Mandatory Attribution: The following attribution is mandatory for *Road Pathways*:

Element Name	Mandatory (Y/N)
Use	Y
Structure	N
SurfaceMaterial	Y
Width_m	Y

Positional Accuracy: The minimum accepted horizontal accuracy for *Road Pathways* is **± 5m**.

5.8.10 Sub Soil Drain

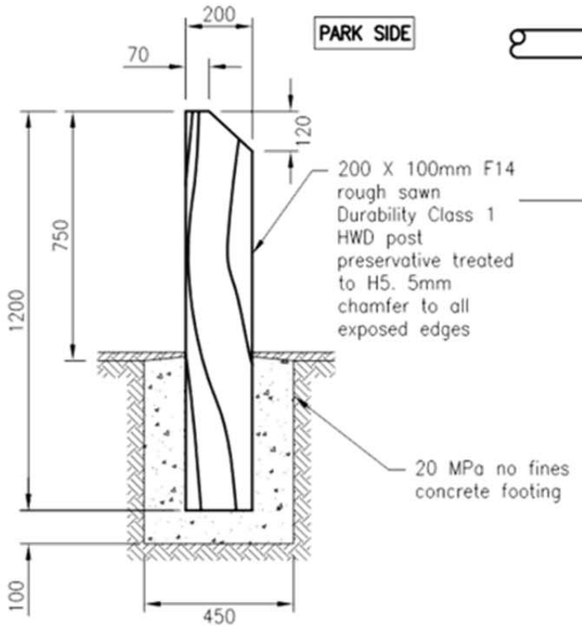
Asset Capture: Simple Linear feature (i.e. straight lines) representing the Invert of a circular sub-soil drain pipe asset. Pipes are typically broken where the Use and/or Type of drain changes.

Spatial Relationship: Must be coincident to Flush Points.

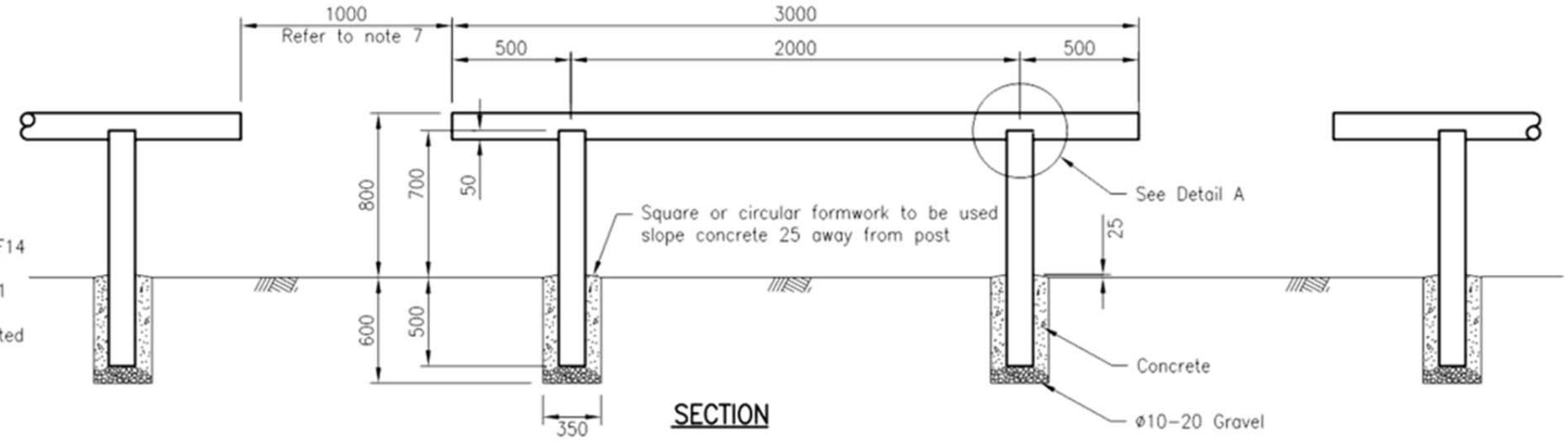
Mandatory Attribution: The following attribution is mandatory for *Sub Soil Drains*:

Element Name	Mandatory (Y/N)
Use	Y
Type	Y
Length_m	Y

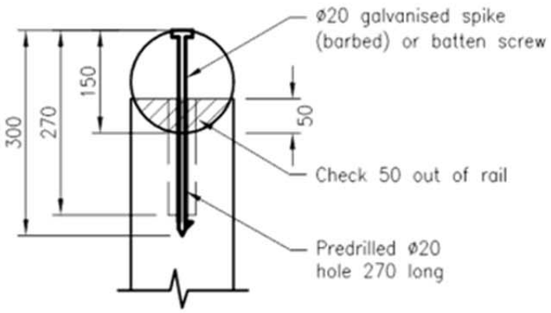
Positional Accuracy: The minimum accepted horizontal accuracy for *Sub Soil Drains* is **± 1m**.



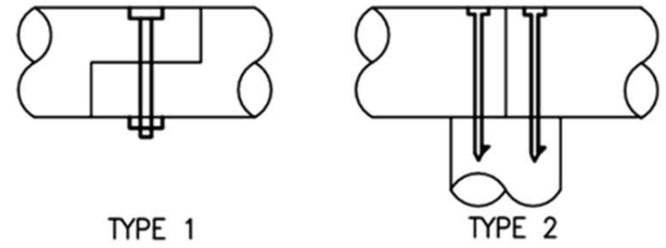
SIDE SECTION



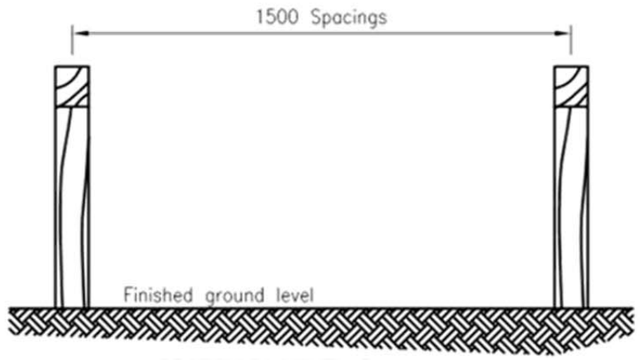
SECTION



DETAIL A

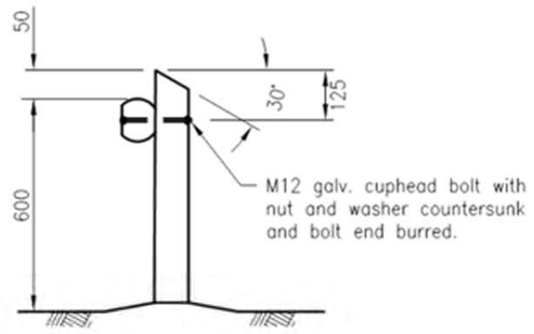


TYPICAL RAIL JOINTS
FOR CONTINUOUS FENCING



FRONT ELEVATION
HARDWOOD
TIMBER BOLLARD

Refer to relevant Council for Bollard Type



ALTERNATIVE RAIL

NOTES:

1. Concrete N25 in accordance with AS 1379 and AS 3600. Durability class H5 min to AS 1604.
2. All hardwood timber to be Durability class 1, F14 preservative treated to H5.
3. Log Barriers to be 150 diameter, Grade A treated to AS 1604. Use of CCA treated timber to be approved by relevant Council prior to installation.
4. Paint all cut surfaces with industrial clear water repellant to lock in chemicals used on CCA, in accordance with AS 1607.
5. Material
   Hexagonal head bolts to AS 1111.
   Nuts to AS 1112.
   Washers to AS 1237.
   Galvanising to AS 1214.
6. Check for service locations prior to boring for posts
7. The speed environment of the road should be considered when determining the lateral placement of log barrier fencing adjacent to the road way. Refer Austroad "Guide to Road Design – Part 6".
8. All dimensions are in millimetres unless shown otherwise.

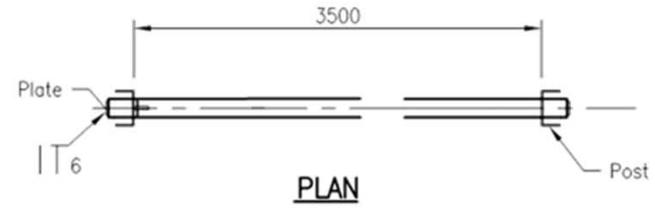
These drawings have been developed in consultation between the participating Councils.
BEFORE USE, the user shall confirm that the drawing has been adopted by the appropriate Council.

Rv	DATE	REVISIONS
E	06/14	Review
D	03/13	Amended Drawing Number
C	02/11	Review
B	06/10	Review
A	06/09	ORIGINAL ISSUE

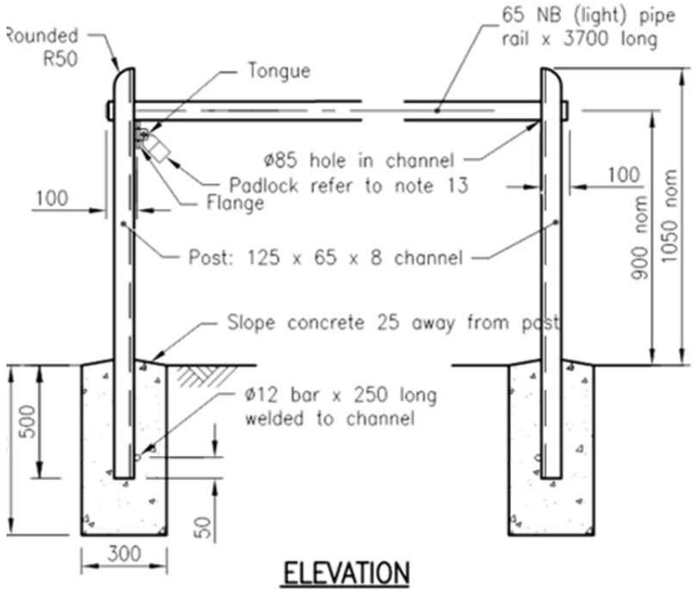
INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

FENCING
LOG BARRIER AND ALTERNATIVE
HARDWOOD TIMBER BOLLARD

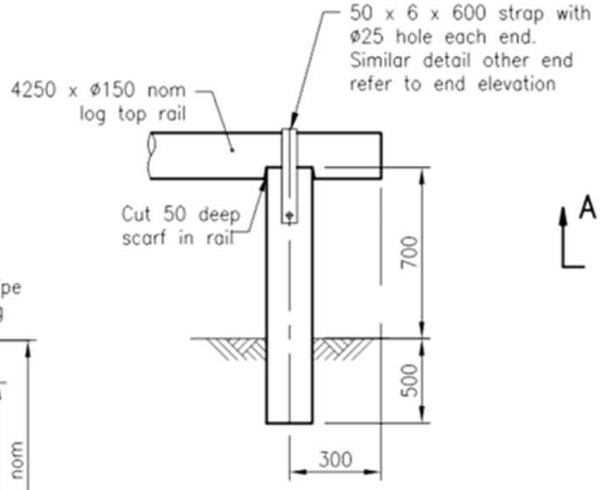
GS–042



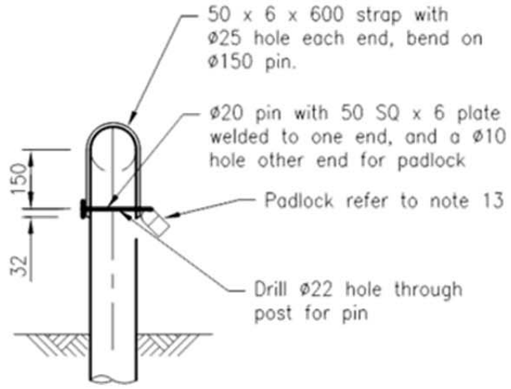
PLAN



ELEVATION

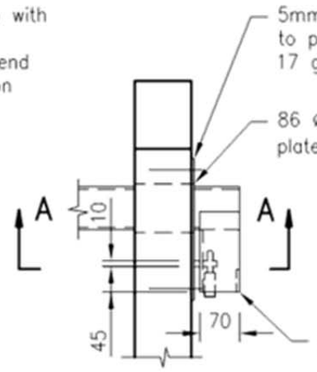


ELEVATION

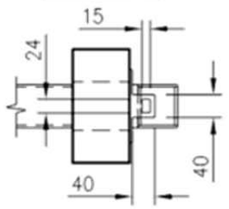


END ELEVATION

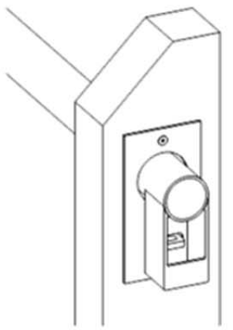
LOCKING RAIL TYPE 2



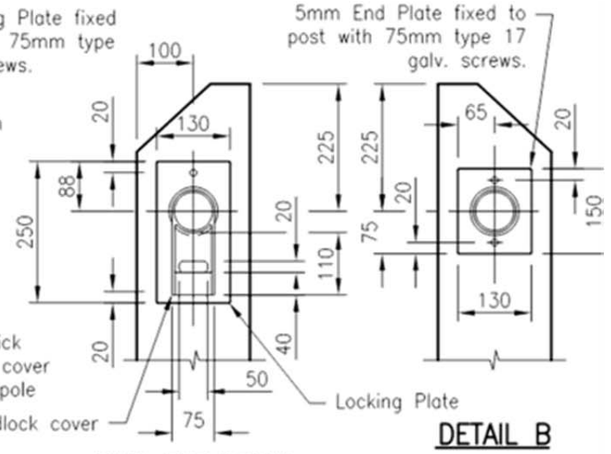
DETAIL A



SECTION A–A

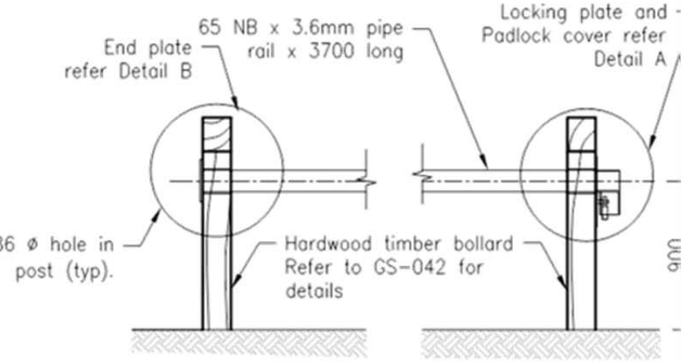


ISOMETRIC VIEW



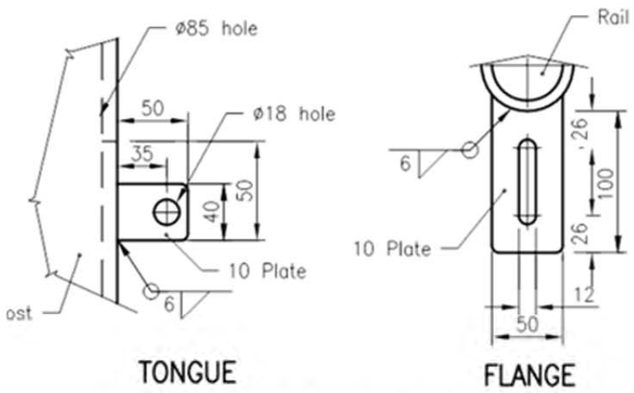
DETAIL B

END ELEVATION



ELEVATION

LOCKING RAIL TYPE 3



TONGUE

FLANGE

LOCKING RAIL TYPE 1

NOTES:

1. All pipes medium black tube to AS 1074.
2. All welds to AS 1554.
3. All welding symbols to AS 1101.3.
4. Steel plates to be Grade 250 to AS 3678.
5. Bar and channels to be Grade 250 to AS 3679.
6. All fabricated work, including plate key, shall have smooth ground edges.
7. All steelwork to be hot dipped galvanised after fabrication to AS 4680.
8. Concrete N25 in accordance with AS 1379 and AS 3600.
9. Log Barriers to be 150 dia. Grade A treated to AS 1604.
10. Use of CCA treated timber to be approved by relevant Council prior to installation.
11. Paint all cut CCA surfaces with industrial clear water repellant to lock chemicals used on CCA, in accordance with AS 1607.
12. All hardwood timber to be Durability Class 1 F14, preservative treated to H5.
13. Refer to relevant Council for supply of approved locking system.
14. Locking rail to be painted yellow (Safety) or as specified.
15. All dimensions are in millimetres unless shown otherwise.

These drawings have been developed in consultation between the participating Councils.
BEFORE USE, the user shall confirm that the drawing has been adopted by the appropriate Council.

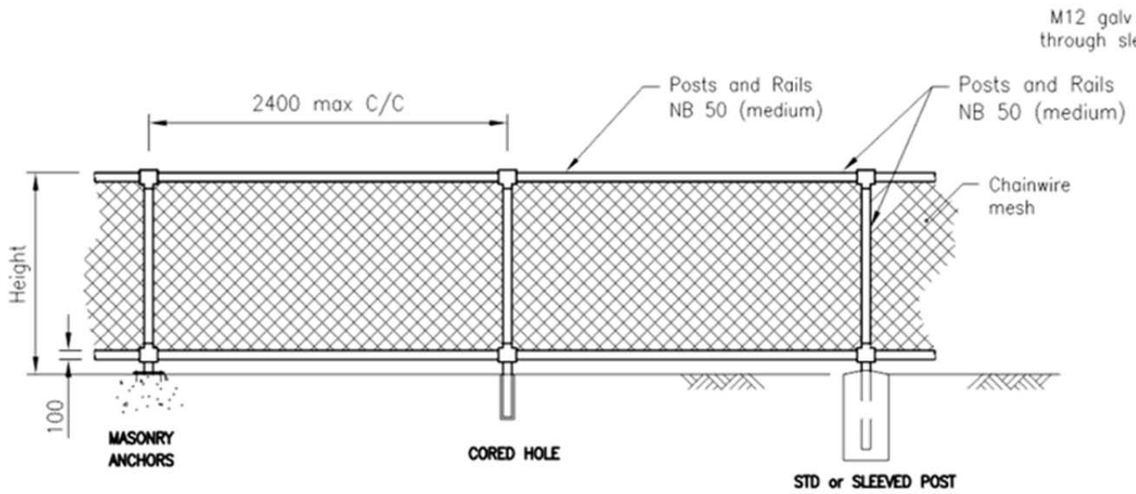
06/14	Review
03/13	Amended Drawing Number
03/13	Drawing number changed & Type 2 Rail height amended
06/11	Review
06/10	Review
11/15	Isometric View added

INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA

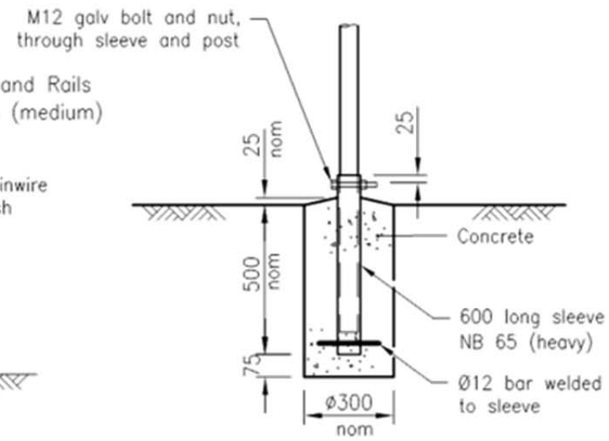
STANDARD DRAWINGS

FENCING
LOCKING RAIL
TYPES 1, 2 & 3

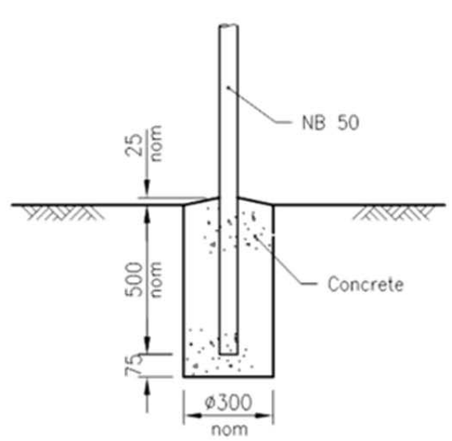
GS-043



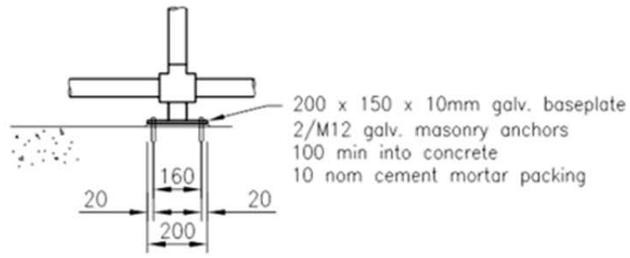
TYPE 1 – A (Height – 1100)
TYPE 1 – B (Height – 1350)



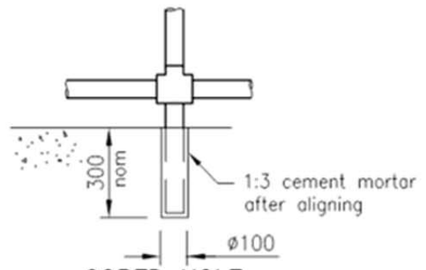
SLEEVED POST



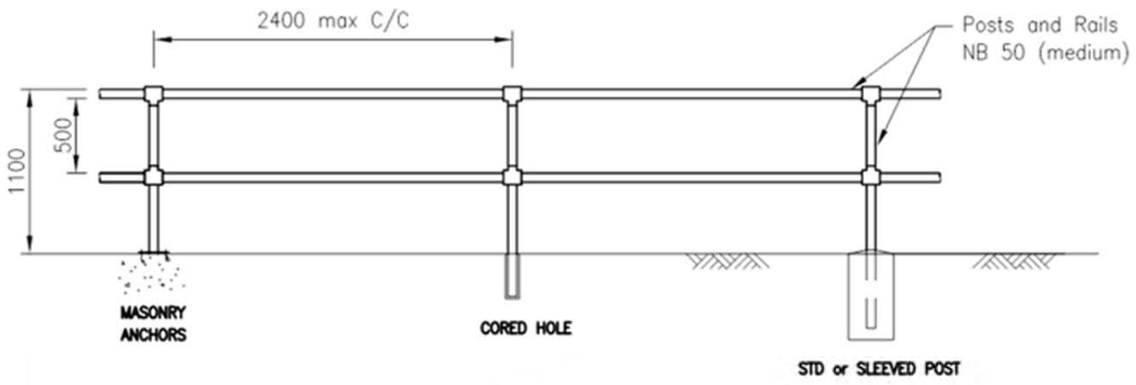
STD. POST



MASONRY ANCHORS



CORED HOLE



TYPE 2

FOOTING DETAILS

NOTES

1. Refer project drawings for type of fence to be installed and type of footing to be adopted.
2. Construction of posts & rails shall be done using standard coupling connections only. (no welds).
3. Chainwire to be 50 x 2.5mm galv. to AS 2423 or plastic coated. Chainwire to be fixed using 1.6mm wire ties.
4. ø12 bars, Grade 250 steel to AS 1302
5. Hexagonal head bolts to AS 1111 Nuts to AS 1112 Washers to AS 1237 Galvanizing to AS 4680
6. All rails and posts galvanised steel tube to AS 1074.
7. Concrete N25 in accordance with AS 1379 and AS 3600.
8. All dimensions are in millimetres unless shown otherwise

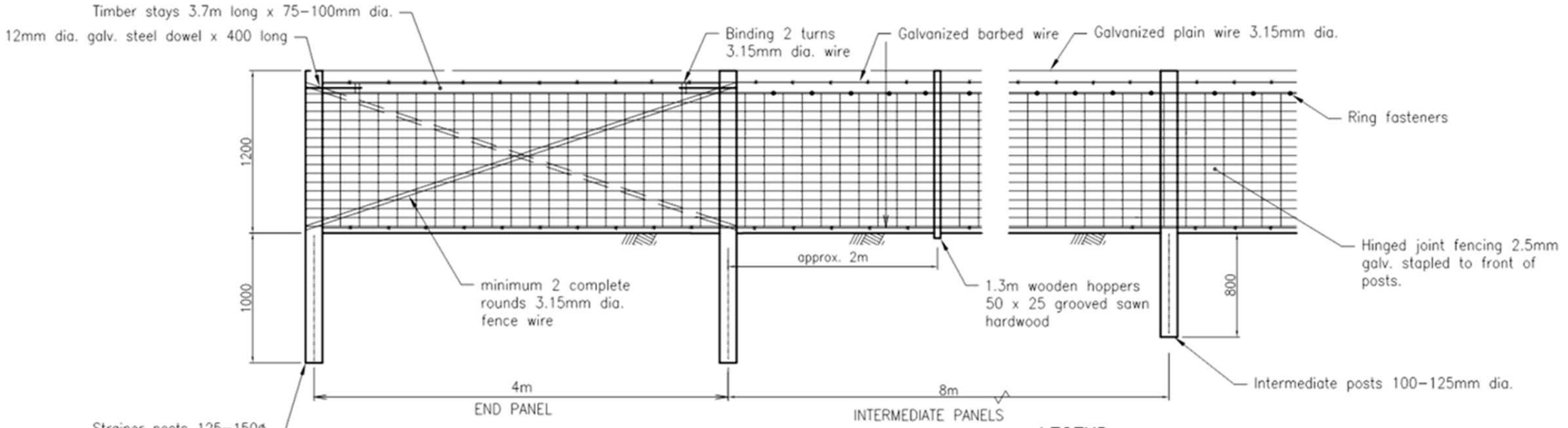
These drawings have been developed in consultation between the participating Councils.
BEFORE USE, the user shall confirm that the drawing has been adopted by the appropriate Council.

Rv	DATE	REVISIONS
D	06/14	Review
C	03/13	Amended Drawing Number
B	12/11	Revised Issue
A	03/08	ORIGINAL ISSUE

INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

FENCING
TUBULAR STEEL FENCE
WITH & WITHOUT CHAIN WIRE

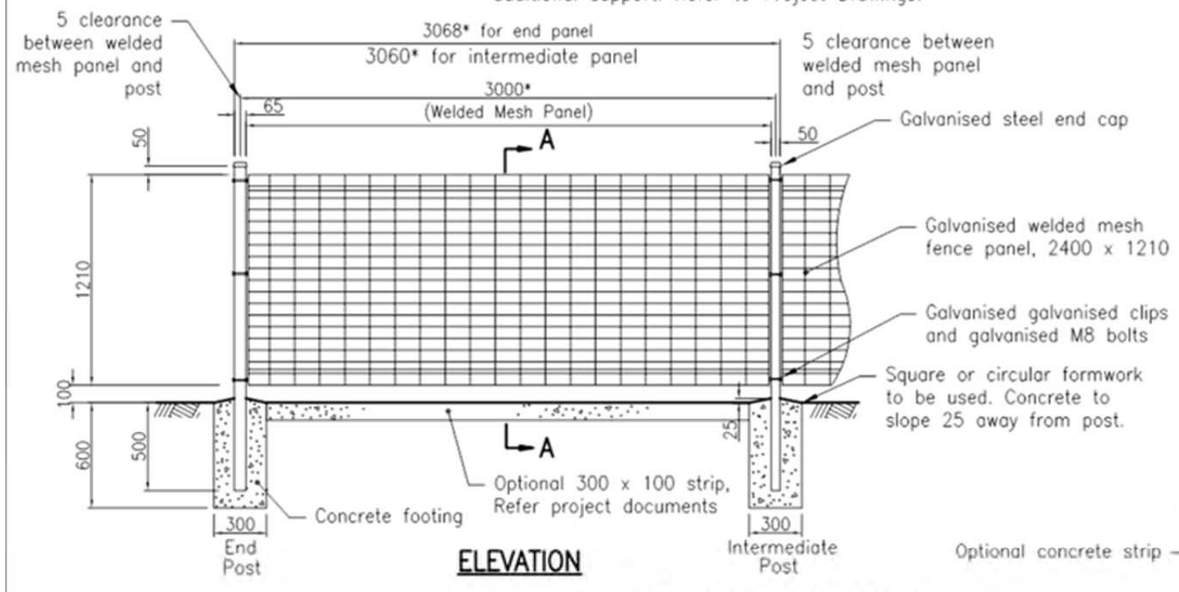
GS–044



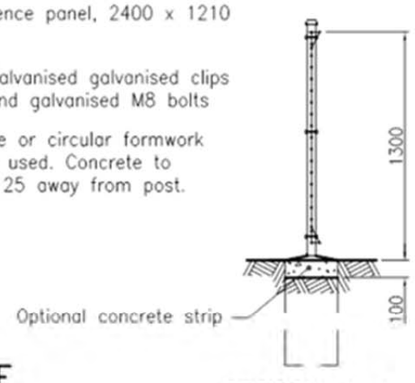
CONTROL FENCE

LEGEND

- Wire fixed to back of posts



ELEVATION



SECTION A–A

WELDED MESH FENCE

NOTES

A – Welded Mesh Fence

1. Gate and end posts to be 65x65x2 galvanized steel section to AS 1163.
2. Intermediate posts to be 50x50x2 galvanized steel section to AS 1163.
3. Panels to be fixed to posts using standard galvanized clips and galvanized M8 bolts.
4. Galvanizing to AS 1214 and AS 1650.
5. Concrete N25 in accordance with AS 1379 and AS 3600.
6. Posts are to be vertical. Raked panels are available for slopes up to 1 in 5.
7. Nuts to be spot welded to bolts as an anti–theft deterent.

B – Control Fence

1. All barbed wire, plain wire, hinged joint fencing, staples and ring fasteners to be galvanized to AS 2423.
2. Provide strainer panels at 100 to 140m spacing. Panels to be as for 'End Panels' with an extra 2/3.15mm wire brace as indicated by broken lines.
3. Posts may be tea–tree, split hardwood or sawn timber.
4. Where fences turn 90° adopt an end panel going away in each direction.
5. Dowels, Grade 250 to AS 3679.

C – General

1. All dimensions are in millimetres unless shown otherwise.

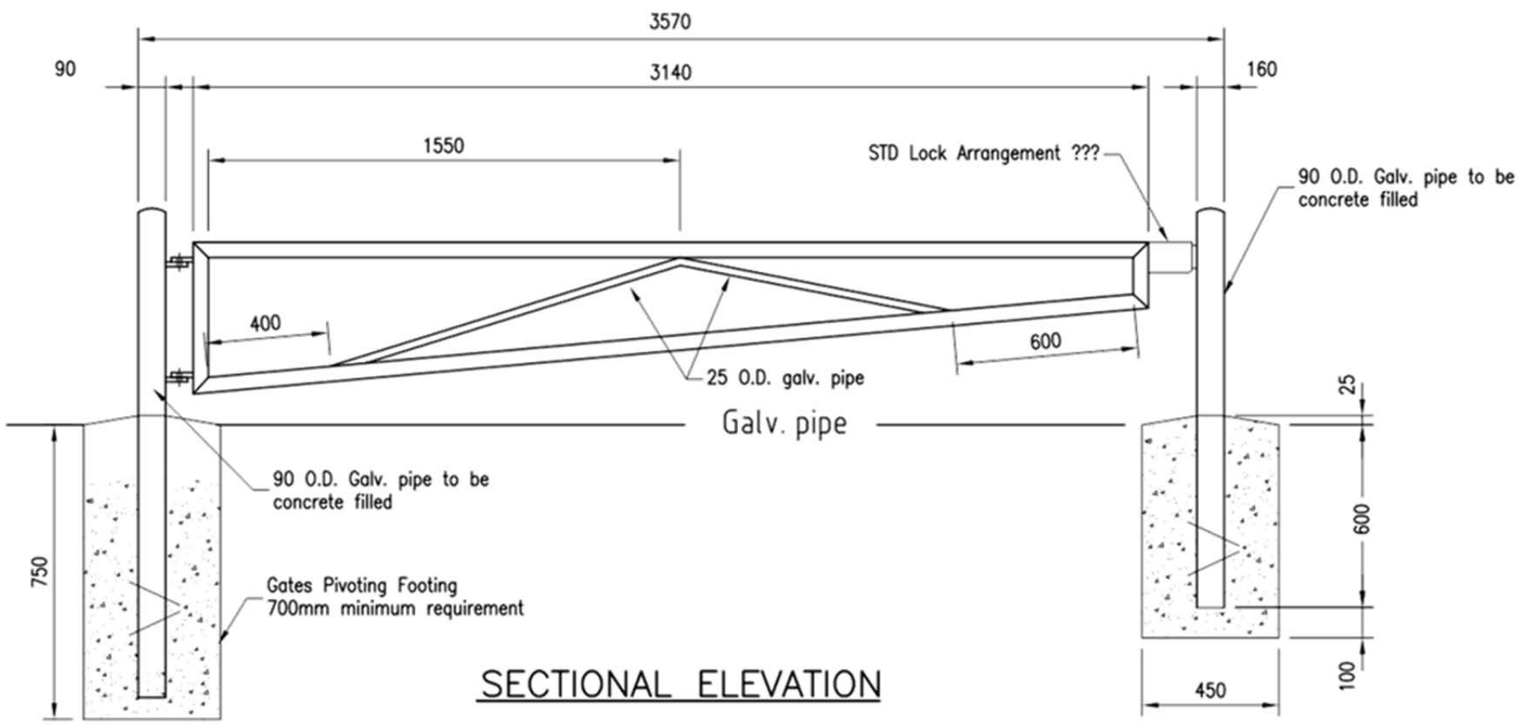
These drawings have been developed in consultation between the participating Councils.
BEFORE USE, the user shall confirm that the drawing has been adopted by the appropriate Council.

Rv	DATE	REVISIONS
B	03/14	Amended Drawing Number
A	12/95	ORIGINAL ISSUE

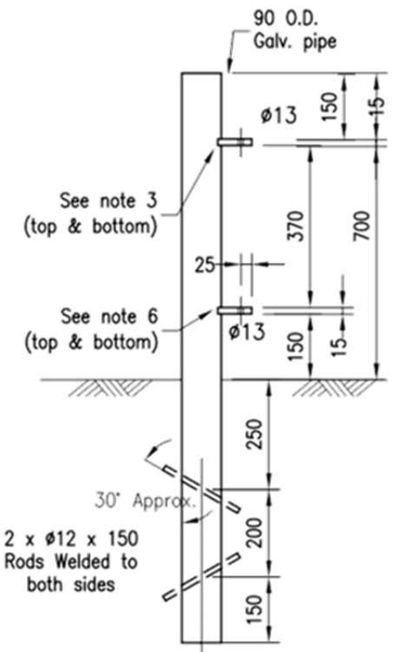
INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

FENCING
WELDED MESH FENCING
AND CONTROL FENCE

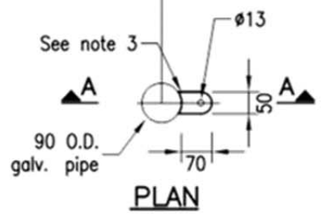
GS–045



SECTIONAL ELEVATION



SECTION A–A

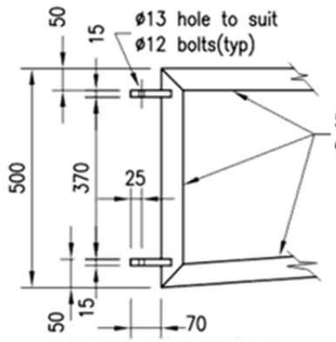


PLAN

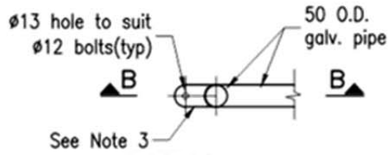
POST HINGE DETAILS

NOTES

1. All concrete to be grade N25
2. Gate to be mounted to post with two M12 galvanised steel bolts 40 long suitably burred after erection.
3. Hinge lugs to be 6 fillet welded to post and gate prior to erection
4. All end and mitre joints to be butt welded all around.
5. All pipes to be medium gauge heavy galvanised finished with two coats of two pack 125 micron minimum total thickness (e.g. Wattly Paracryl or equivalent process). Colour to match colorbond "Caulfield Green".
6. All welds and bare metal to be thoroughly cleaned and painted with cold galvanising primer prior to finish coat.
7. All dimensions are in millimetres unless shown otherwise.



SECTION B–B

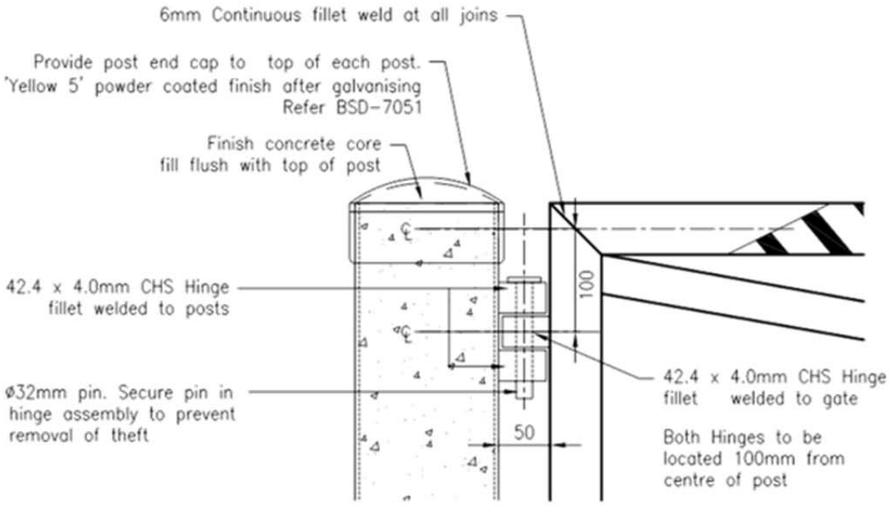


PLAN

GATE HINGE DETAILS

These drawings have been developed in consultation between the participating Councils.
BEFORE USE, the user shall confirm that the drawing has been adopted by the appropriate Council.

Rv	DATE	REVISIONS	INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA STANDARD DRAWINGS	FENCING ENTRANCE BARRIER SINGLE SWING GATE	GS–047	Rv
	February	Original Issue				

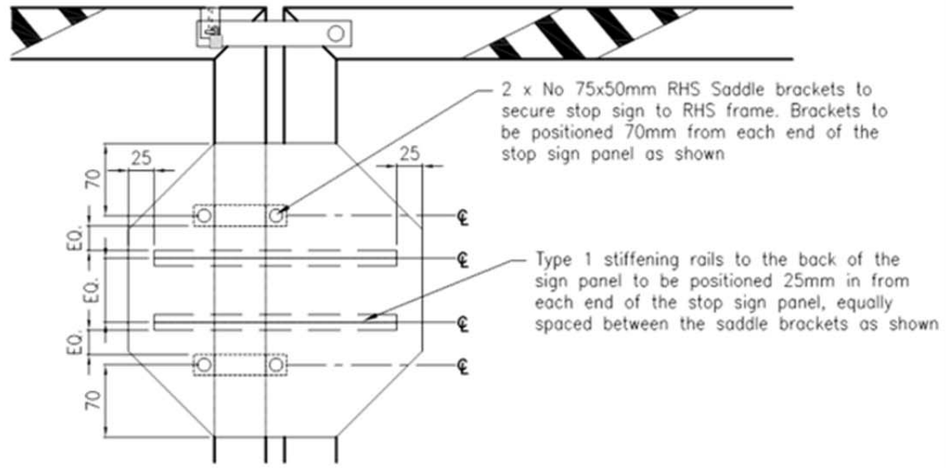


STEEL LOCK GATE HINGE DETAIL

SCALE: 1:5

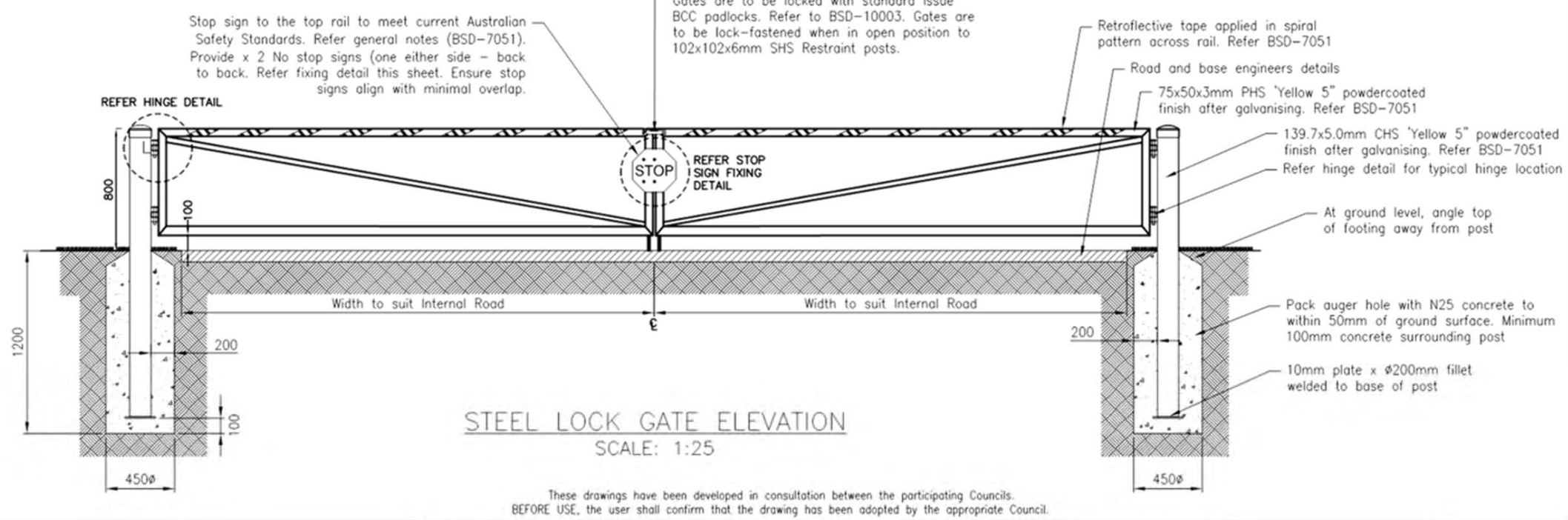
REFER TO BSD-7051 FOR ASSOCIATED SPECIFICATIONS.

NOTE: Provide fixings of a type and material suitable, sufficient and matching in finish and appearance to the components fastened. Provide insulation between dissimilar materials, unless specified otherwise. Where possible all fixings to be tamper/vandal proof to minimise theft or damage. As an example: Only one sign is shown attached to gate frame.



STOP SIGN FIXING DETAIL

SCALE: 1:5



STEEL LOCK GATE ELEVATION

SCALE: 1:25

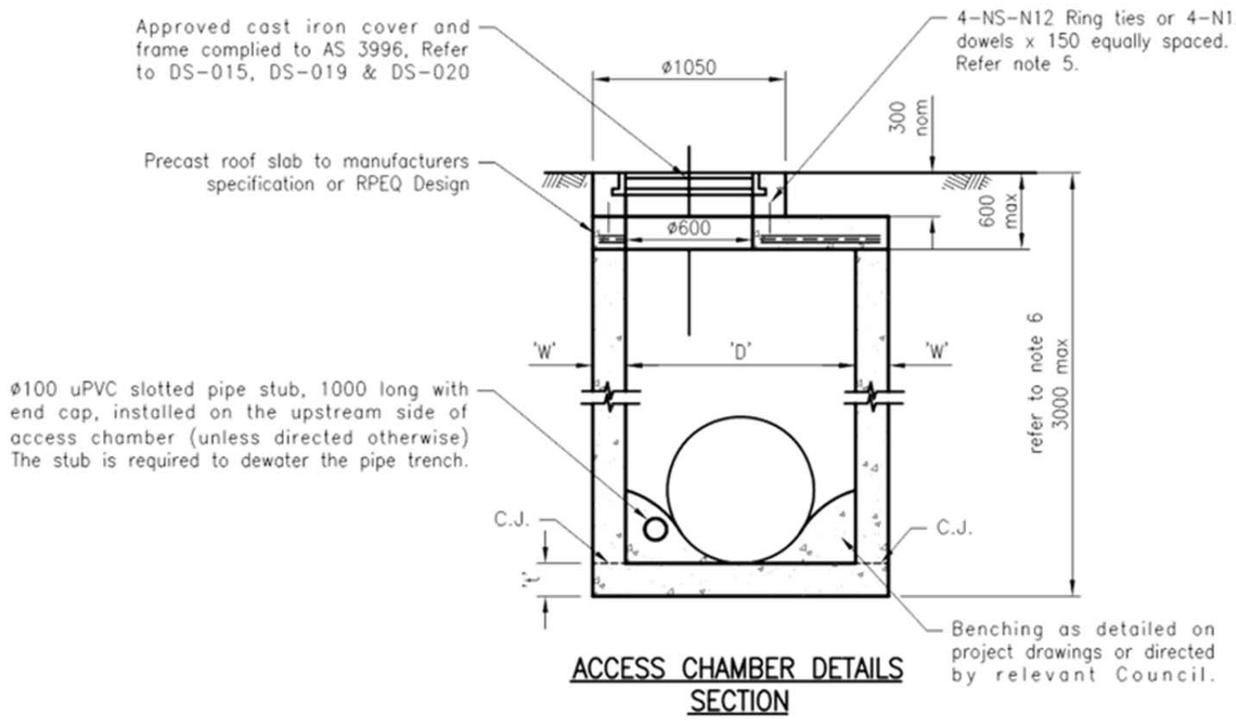
These drawings have been developed in consultation between the participating Councils.
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INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA STANDARD DRAWINGS	FENCING ENTRANCE BARRIER DOUBLE SWING GATE	GS-048



ROOF RING PLAN

For use in raising covers and frames of existing access chambers
* Size to suit existing access chamber



ACCESS CHAMBER DETAILS SECTION

DIMENSION

Access chamber DIA 'D'	FLOOR THICKNESS 't'		Wall thickness 'W'	Roof/Floor slab DIA
	INLET	OUTLET		
1050	175	150	150	1350
1200	250	225	225	1650
1350	250	225	225	1800
1500	250	225	225	1950
1800	250	225	250	2300
2100	275	250	275	2650

NOTES:

1. Concrete: Benching N25, Structural N40 (precast), N32 (Cast insitu) in accordance with AS1379 and AS 3600.
2. Access chambers which are proprietary items are required to be designed and certified to AS 3996–1992. Access covers subject to road traffic shall be of Class D design, where Minimum Ultimate Limit State Design Load = 210kN. Access covers subject to pedestrian traffic and occasional vehicle load shall be of Class C design, where Minimum Ultimate Limit State Design Load =150kN. (Ref: AS 3996–1992 and Austroads Bridge Design Code 1992).
3. Cover and frame, gray cast iron, Grade > T220 to AS 1830.
4. Refer Project Drawings for size and level of culverts, chamber cover level and setout point details.
5. Precast manhole top slabs are to be supplied with four (4) factory installed ring ties or alternately dowel bars may be accepted, subject to approval from the relevant Council.
6. Manholes deeper than 3000 require individual design and certification.
7. All dimensions are in millimetres unless shown otherwise.

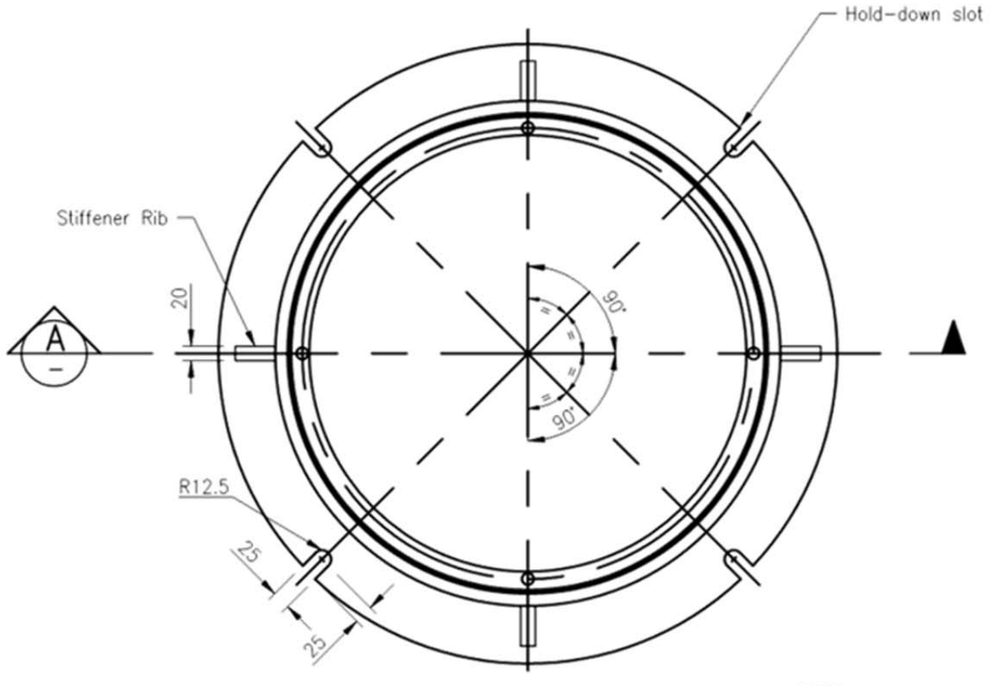
These drawings have been developed in consultation between the participating Councils.
BEFORE USE, the user shall confirm that the drawing has been adopted by the appropriate Council.

Rv	DATE	REVISIONS
D	06/14	Review
C	03/14	Amended Drawing Number
B	11/12	Concrete Strength Amended
A	10/12	ORIGINAL ISSUE

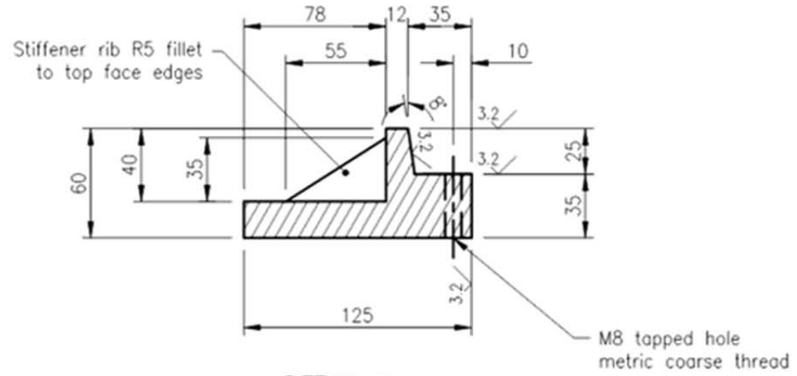
INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

STORMWATER ACCESS CHAMBER DETAIL
1050 TO 2100 DIAMETER

DS–010

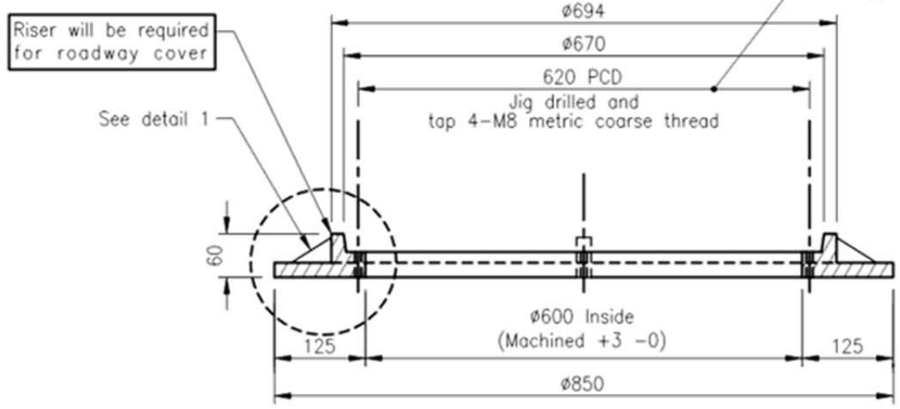


PLAN



DETAIL 1

NOTE:
Gauge shall be used to check PCD and tapped hole position



SECTION A

NOTES:

1. All edges to be square.
2. Casting to be free of burrs and pits.
3. Material
   Grey Cast iron (AS 1830)
   Tensile strength : >T220
   Hardness : 145–185 (HB)
   Design Load = 210kN (AS 3996)
   Mass = 59.5Kg
4. Tolerances
   Cast size ± 1.00mm
   Angle Profile ± 0.25°
   Machined size ± 0.125mm
   Overall diameter of cover + 0mm–0.25mm
   DFT of coating 50 µm
5. Machine surface symbol: 3.2
6. All machined surfaces shall have a coating approved as fit for the purpose of providing a rust proof, non-stick and gas/water proof joint.
7. Refer Std Dwg No DS-018 for manhole riser details.
8. Refer Std Dwg No DS-019, DS-020 and DS-021 for manhole cover details.
9. All dimensions are in millimetres unless shown otherwise.

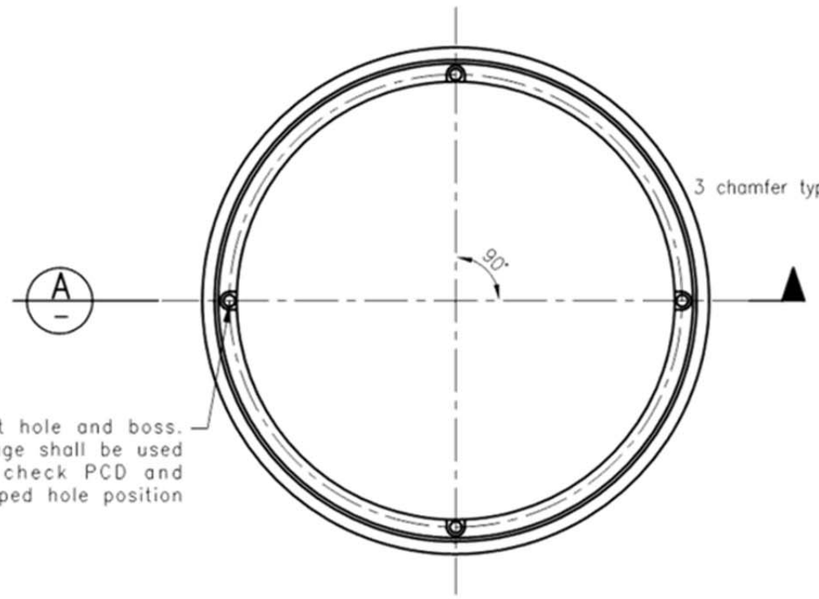
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Rv	DATE	REVISIONS
C	06/14	Review
B	03/14	Amended Drawing Number
A	10/12	ORIGINAL ISSUE

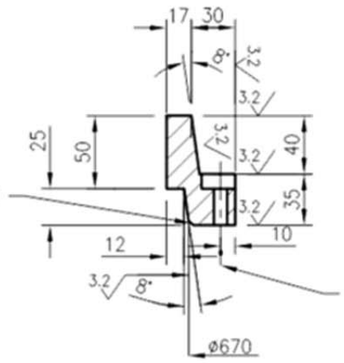
INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

MANHOLE FRAME
(ROADWAY AND NON-ROADWAY)
1050 TO 2100 DIAMETER

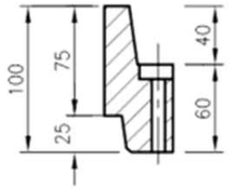
DS-015



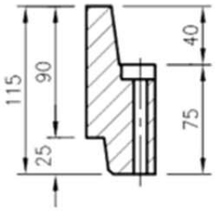
PLAN



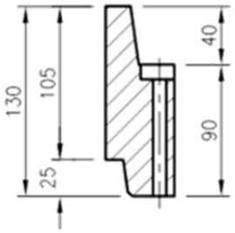
35 RISER
MASS: 27.5kg



60 RISER
MASS: 32kg



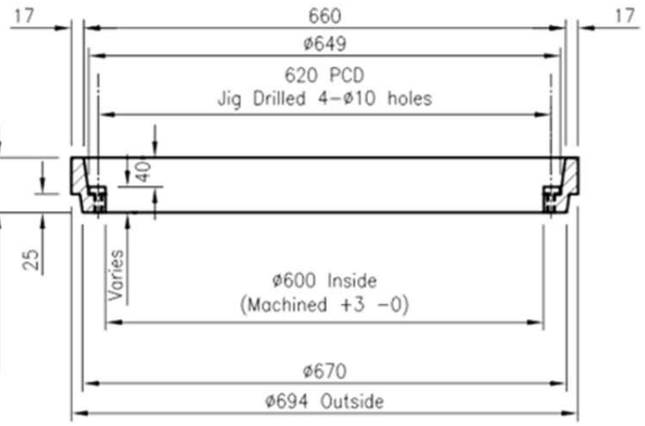
75 RISER
MASS: 38kg



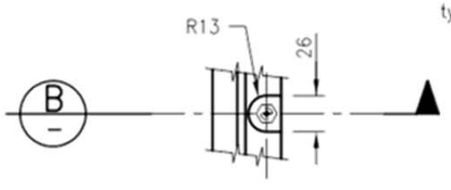
90 RISER
MASS: 44kg

RISER DETAILS

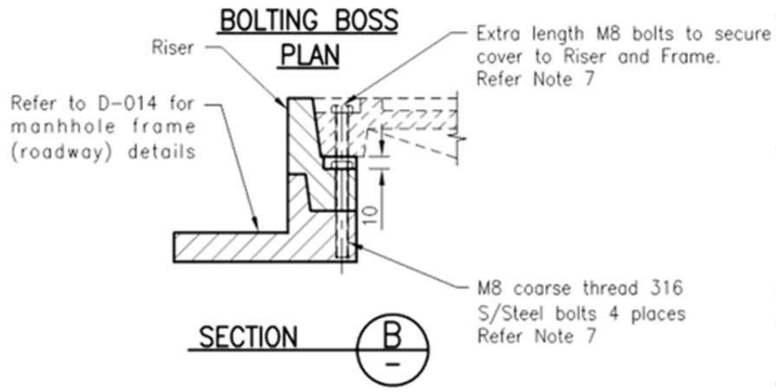
(Refer to 35 riser for typical dimensions for all risers)



SECTION A



BOLTING BOSS PLAN



SECTION B

TYPICAL ASSEMBLY

Bolts: 60 long for 35 riser
90 long for 60 riser
110 long for 75 riser
115 long for 90 riser

TABLE 1

RISER HEIGHT	BOLT LENGTH	
	FOR RISER ONLY	FOR RISER WITH COVER
35	60	100
60	90	130
75	110	150
90	115	160

NOTES:

1. All edges to be square.
2. Casting to be free of burrs and pits.
3. Material
   Ductile cast iron
   Tensile strength : 600–3 (AS 1831)
   Hardness : 145–185 (HB)
   Design load = 210kN (AS 3996)
   Mass = varies
4. Tolerances
   Cast size ± 1.00mm
   Angle profile ± 0.25°
   Machined size ± 0.125mm
   Overall diameter of cover +0mm–0.25mm
   DFT of coating 50 µm
5. Machine surface symbol: 3.2
6. All machined surfaces shall have a coating approved as fit for the purpose of providing a rust proof, non stick and gas/water proof joint.
7. Four (4) M8 Course Thread Stainless Steel Bolts must be supplied and used to fix riser to frame, where cover is required to be bolted down, min two extra length bolts must be used to secure cover and raiser to frame, with two remaining bolts securing riser to frame. Refer TABLE 1 for bolt Lengths
8. Refer Std Dwg DS–015 for manhole frame details.
9. Refer Std Dwg DS–019, DS–020 and DS–021 for manhole cover details.
10. All dimensions are in millimetres unless shown otherwise.

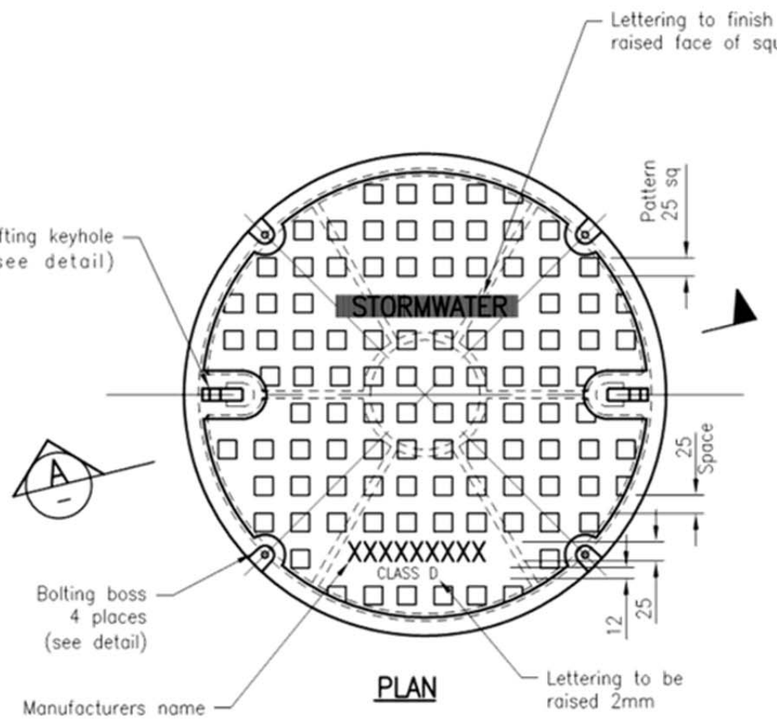
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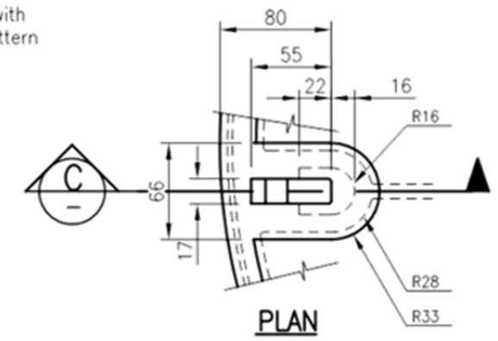
INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

MANHOLE RISER DETAILS
(ROADWAY)

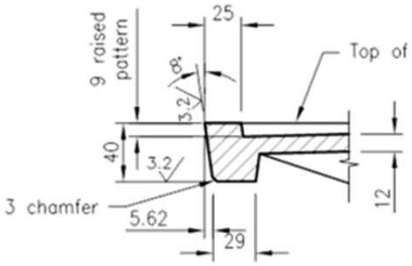
DS–018



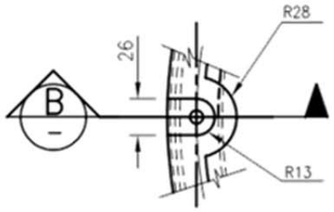
PLAN



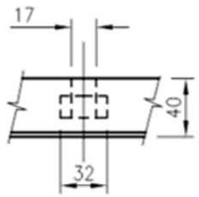
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TYPICAL EDGE DETAIL

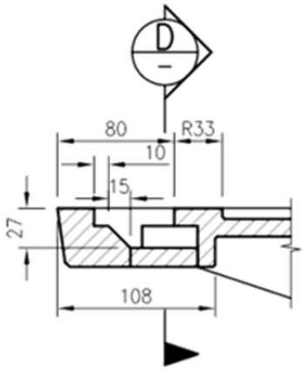


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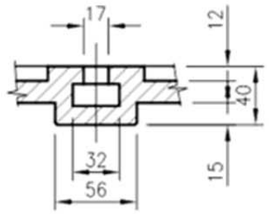


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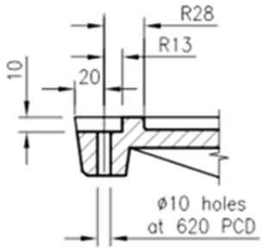
Riser will be required for roadway cover



SECTION C



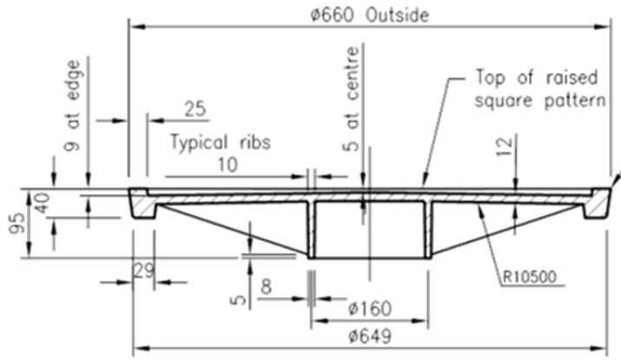
SECTION D



SECTION B

LIFTING KEYHOLE DETAIL

BOLTING BOSS DETAIL



SECTION A

NOTES:

1. All edges to be square.
2. Casting to be free of burrs and pits.
3. Material
   Ductile cast iron
   Tensile Strength: 600–3 (AS 1831)
   Hardness: 145–185 (HB)
   Design Load = 210kN (AS 3996)
   Mass = 49kg
4. Tolerances
   Cast Size ± 1.00mm
   Angle profile ± 0.25°
   Machined Size ± 0.125mm
   Overall diameter of cover +0mm–0.25mm
   DFT of coating 50 μm
5. Machine surface symbol: 3.2
6. All machine surfaces shall have a coating approved as fit for purpose of providing a rust proof, non-stick and gas/water proof joint.
7. Lids to be bolted down if directed by Designer. min two extra length bolts must be used to secure Cover and Riser to frame. Refer to D–018 for Riser detail and Bolt lengths.
8. Refer Std Dwg DS–015 for manhole frame details.
9. Refer Std Dwg DS–018 for manhole riser details.
10. Refer Std Dwg DS–020 and DS–021 for alternate cover details.
11. All dimensions are in millimetres unless shown otherwise.

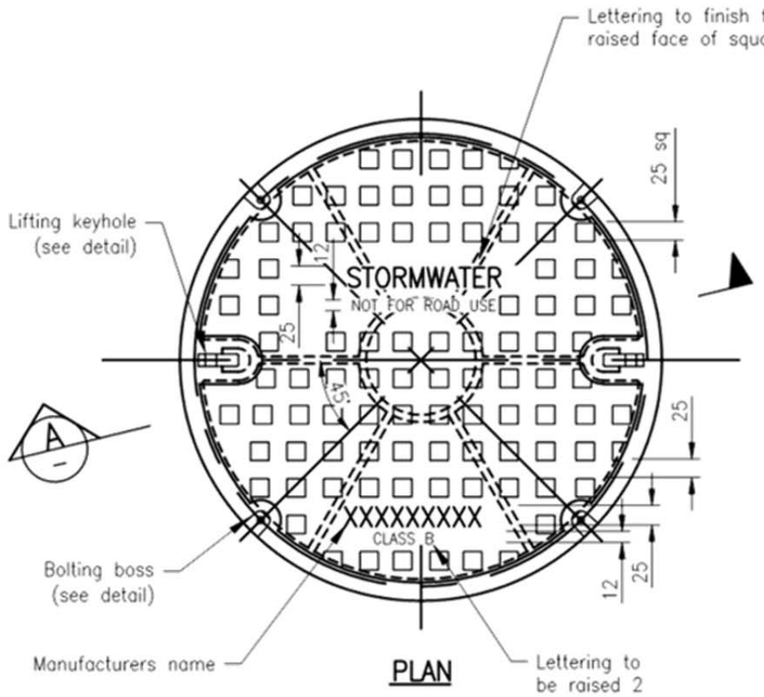
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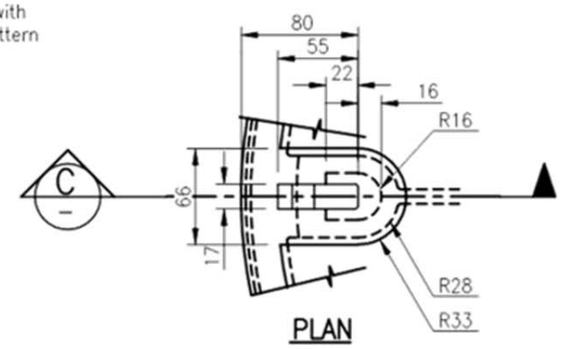
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STANDARD DRAWINGS

MANHOLE COVER
(ROADWAY)
1050 TO 2100 DIAMETER

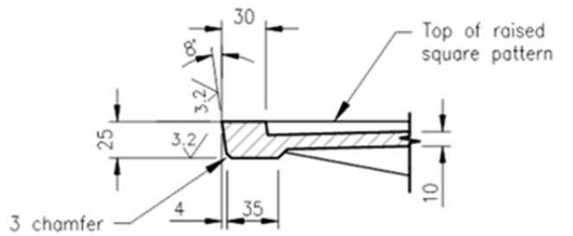
DS–019



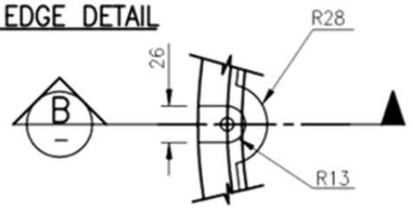
PLAN



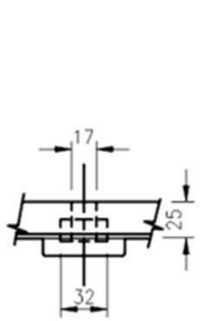
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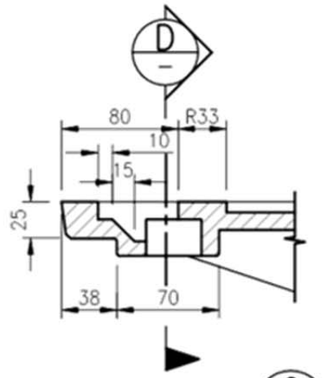
TYPICAL EDGE DETAIL



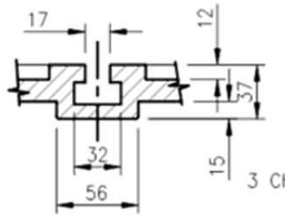
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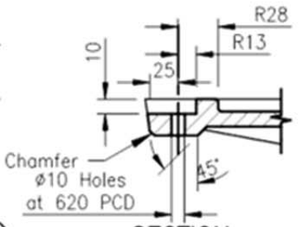
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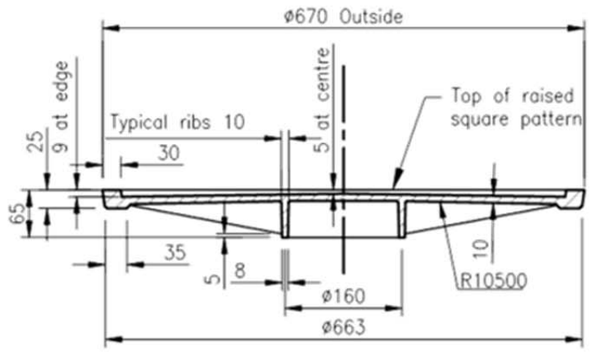
SECTION C



SECTION D



SECTION B



SECTION A

LIFTING KEYHOLE DETAIL

BOLTING BOSS DETAIL

NOTES:

1. This drawing is for use in non commercial loading applications where vehicle loads are less than 3.5t.
2. All edges to be square.
3. Casting to be free of burrs and pits.
4. Material
   Ductile cast iron
   Tensile strength : 600-3 (AS 1831)
   Hardness : 145-185 (HB)
   Design load = 80kN (AS 3996)
   Mass = 39kg
5. Tolerances
   Cast size ± 1.00mm
   Angle profile ± 0.25°
   Machined size ± 0.125mm
   Overall diameter of cover +0mm-0.25mm
   DFT of coating 50 µm
6. Machine surface symbol: 3.2
7. All machine surfaces shall have a coating approved as fit for purpose of providing a rust proof, non-stick and gas/water proof joint.
8. Lids to be bolted down if required by Design, using M8 coarse thread 316 stainless steel bolts in four (4) places.
9. Refer Std Dwg DS-015 for manhole frame details.
10. Refer Std Dwg DS-018 for manhole riser details.
11. Refer Std Dwg DS-019 and DS-021 for alternate cover details.
12. All dimensions are in millimetres unless shown otherwise.

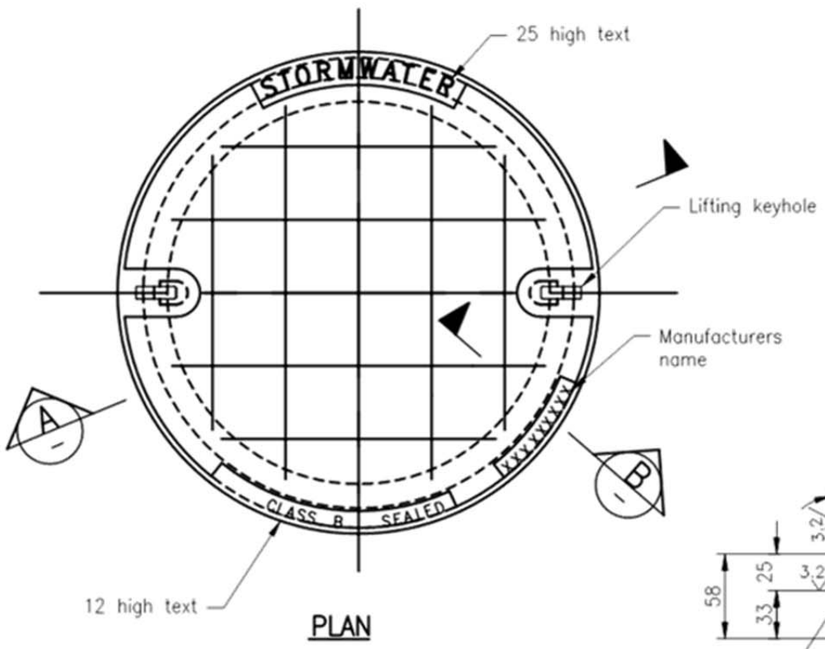
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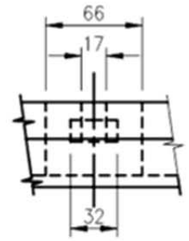
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STANDARD DRAWINGS

MANHOLE COVER
(NON ROADWAY)
1050 TO 2100 DIAMETER

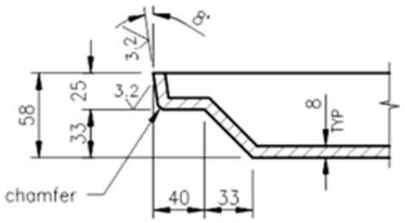
DS-020



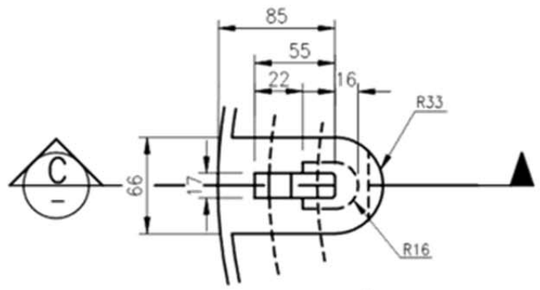
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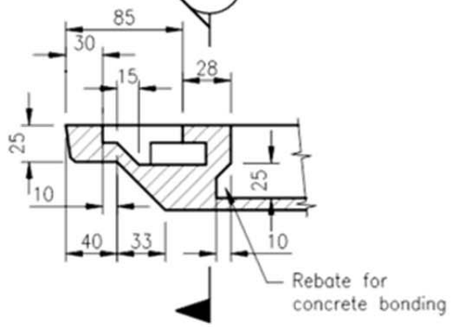
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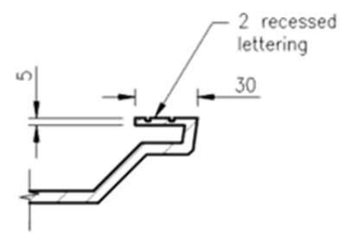
DETAIL 1



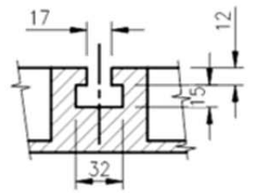
PLAN D



SECTION C

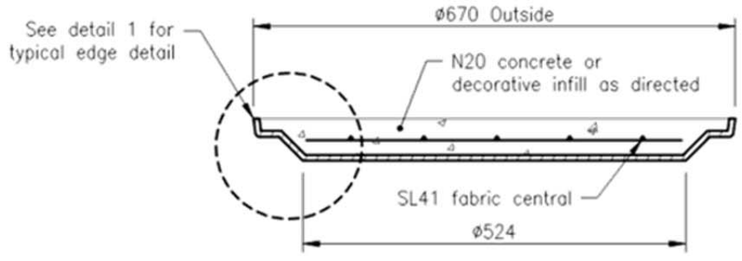


SECTION B



SECTION D

LIFTING KEYHOLE DETAILS



SECTION A

NOTES:

1. This drawing is for use in non roadway application subject to pedestrian loadings only.
2. All edges to be square
3. Casting to be free of burrs and pits.
4. Material
   Ductile cast iron
   Tensile strength : 600-3 (AS 1831)
   Hardness : 145-185 (HB)
   Design Load : 80kN (AS 3996)
   Mass = 59.5kg
5. Tolerances
   Cast size ± 1.00mm
   Angle profile ± 0.25°
   Machined size ± 0.125mm
   Overall diameter of cover +0mm-0.25mm
   DFT of coating 50µm
6. Machine surface symbol: 3.2
7. All machined surfaces shall have a coating approved as fit for the purpose of providing a rust proof non-stick and gas/water proof joint.
8. Refer Std Dwg DS-015 for manhole frame details.
9. Refer Std Dwg DS-018 for manhole riser details.
10. Refer Std Dwg DS-019 and DS-020 for alternate cover details.
11. All dimensions are in millimetres unless shown otherwise.

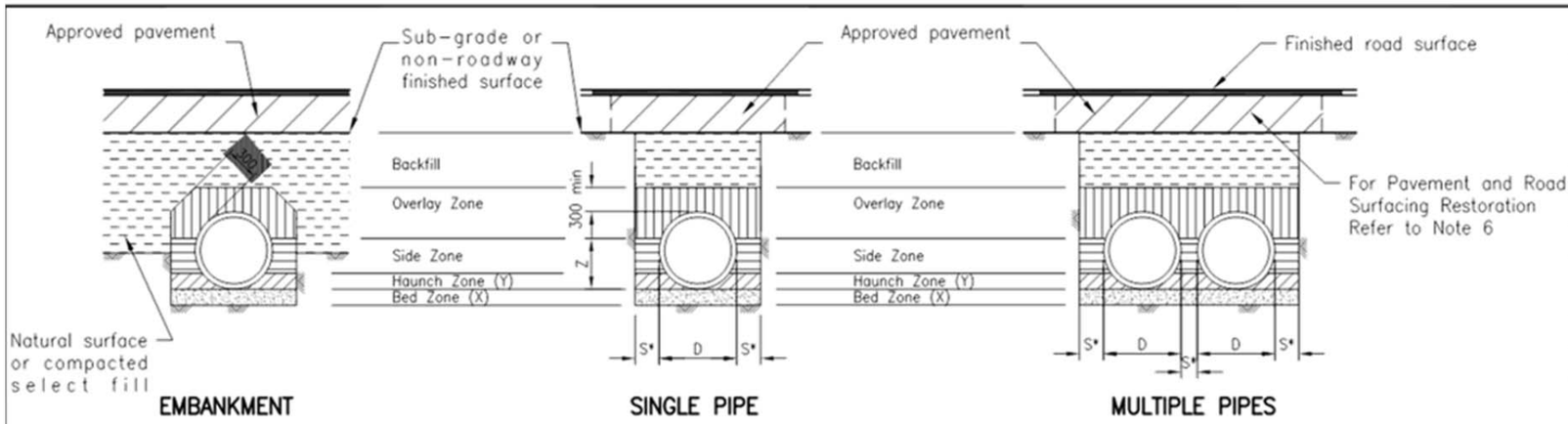
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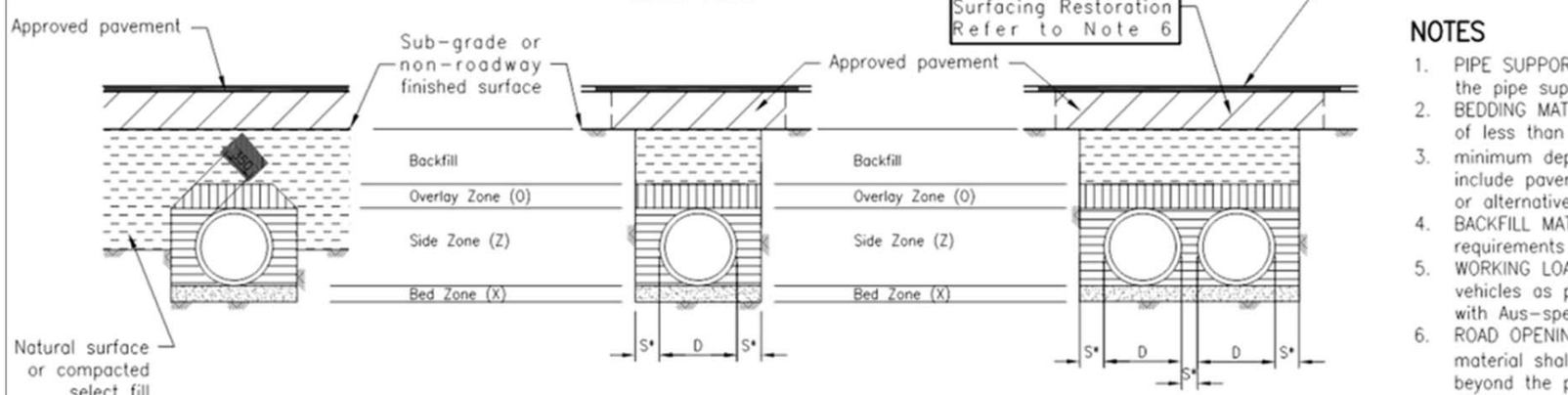
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STANDARD DRAWINGS

MANHOLE COVER CONCRETE INFILL (PEDESTRIAN TRAFFIC) 1050 TO 2100 DIAMETER

DS-021



RIGID PIPE



FLEXIBLE PIPE

TABLE 1

BEDDING MATERIAL GRADING (% weight passing)		
Sieve size	**Bed & Haunch zones**	**Side zones**
75.0		100
19.0	100	
9.5		50 – 100
2.36	50 – 100	30 – 100
0.60	20 – 90	15 – 50
0.30	10 – 60	
0.15	0 – 25	
0.075	0 – 10	0 – 25

The use of Controlled Low Strength Material (CLSM) in lieu of the material in Table 1 is to be approved by the relevant Council.

NOTES

1. PIPE SUPPORT TYPE – unless shown otherwise on the project drawings, the pipe support shall be HS3 within road reserve and H2 elsewhere.
2. BEDDING MATERIAL shall comply with Table 1 and have a Plasticity Index of less than 6.
3. minimum depth of OVERLAY ZONE above pipes / culverts as shown may include pavement. Pavement within this area to be compacted by hand or alternatively a lean mix concrete pavement layer may be used.
4. BACKFILL MATERIAL shall be Select Backfill complying with the requirements of Aus-Spec 1352 Pipe drainage.
5. WORKING LOADS are those due to fill material and standard highway vehicles as per AS 3725. Allowance for construction loads shall comply with Aus-spec 1352 Pipe Drainage.
6. ROAD OPENINGS AND RESTORATION – Approved replacement pavement material shall extend a min 300mm (subject to depth of pavement) beyond the perimeter of any trench excavation. The road surfacing shall extend min 100mm beyond the perimeter of any pavement replacement.
7. WINGWALLS fill/backfill material shall be placed 300mm thick behind wingwalls for the length and height of the wings.
8. Increase excavation locally at spigot and socket joints (Rigid pipes) to ensure minimum cover as shown.
9. Unless directed otherwise, provide pipe stub to de-water drainage trench. Stub to be 3m long x 100mm dia. corrugated polyethylene pipe class 400 to AS 2439 (with end cap) installed on the upstream face of manholes.
10. All dimensions are in millimetres unless shown otherwise.

PIPE INSTALLATION DIMENSIONS

	RIGID PIPE				FLEXIBLE PIPE			
D (Dia.)	X	Y	Z	S*	X	Z	O	S*
>300 <450	100	0.3 D	–	300	100	Pipe Dia.	150	300
>450 <600	100	0.3 D	–	300	150	Pipe Dia.	150	300
>600 <900	100	0.3 D	–	600	150	Pipe Dia.	200	600
>900 <1200	100	0.3 D	–	600	150	Pipe Dia.	200	600
>1200 <1500	100	0.3 D	–	600	150	Pipe Dia.	200	600
>1500	150	0.3 D	> 0.7 D	900	150	Pipe Dia.	0.25 D	900

S* – Where the use of Controlled Low Strength Material (CLSM) has been approved, the space between multiple pipes and the side of the trench can be reduced in accordance with the requirements of the relevant Australian Standard.

REFERENCED DOCUMENTS
Australian Standards:
AS 3725 Loads on Buried Concrete Pipes
AS 4139 Fibre reinforced concrete pipes and fittings
AS/NZS 2566.1 Buried Flexible Pipelines –Structural Design
AS/NZS 2566.2 Buried Flexible Pipelines – Installation

Specifications:
Nat-Spec 1352 Pipe drainage
Nat-spec 1152 Road Openings and Restorations
Nat-Spec 1112 Earthworks (Roadways)

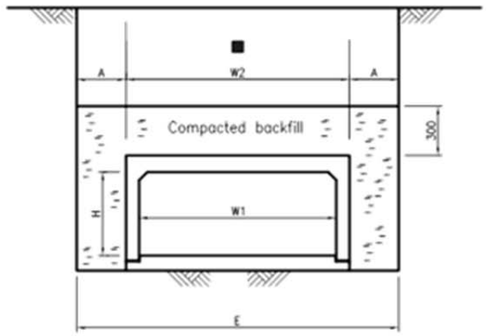
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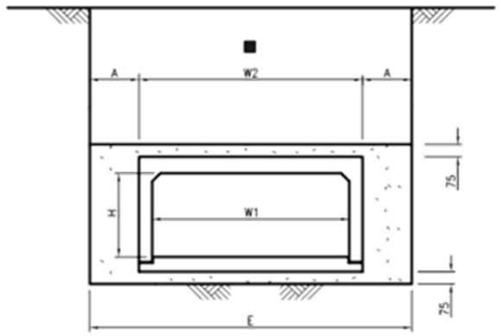
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STANDARD DRAWINGS

EXCAVATION, BEDDING AND BACKFILLING
RIGID & FLEXIBLE DRAINAGE PIPES

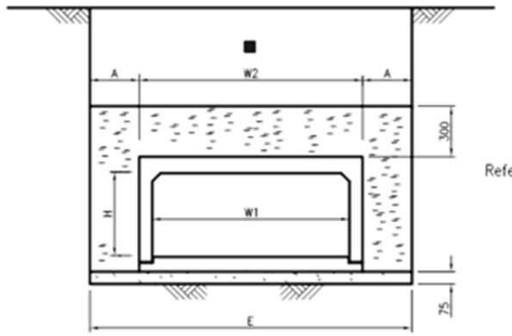
DS-030



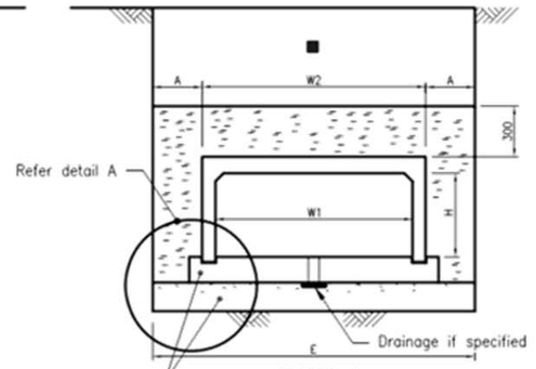
TYPE 1
NATURAL BEDDING



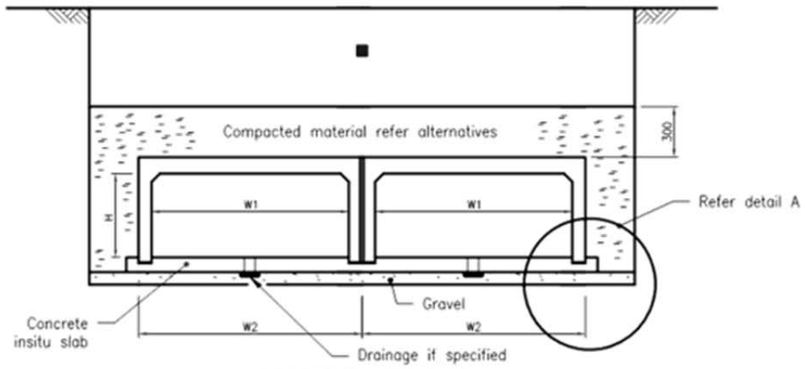
TYPE 2
SAND SURROUND



TYPE 3
SAND BEDDING



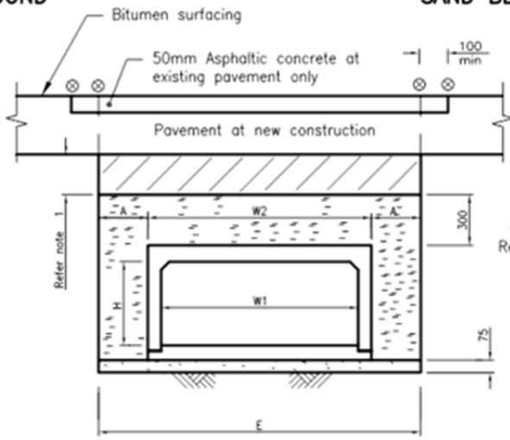
TYPE 4
INSITU BASE SLAB



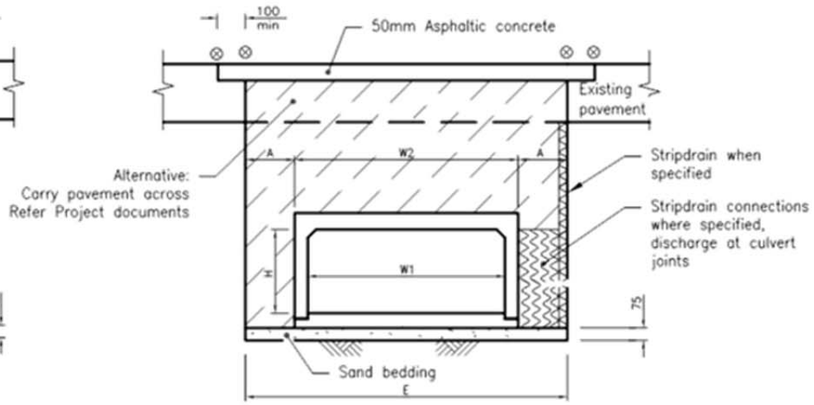
MULTIPLE CULVERTS

W1	W2	E nom
300	420	1000
375	500	1100
450	570	1200
600	730	1300
750	890	1500
900	1050	1700
1200	1360	2000
1520	1700	2300
1820	2010	2600
2130	2340	3000
2440	2670	3300

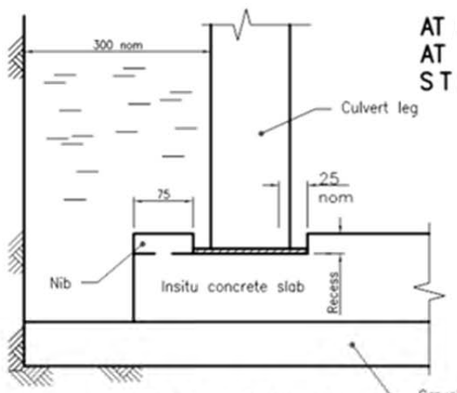
EXCAVATION WIDTH



ALTERNATIVE A
AT EXISTING SURFACED PAVEMENTS OR AT NEW PAVEMENTS ON RESIDENTIAL STREETS & RURAL ROADS



ALTERNATIVE B
AT EXISTING SURFACED PAVEMENTS OR ON INDUSTRIAL, TRUNK COLLECTOR, SUB-ARTERIAL STREETS/ROADS



TYPICAL DETAIL A

LEGEND

A	300mm nom.
■	Refer Alternative A for backfill requirements at new pavement
⊗	Saw cut at existing pavement
	Gravel (min CBR15) or 75mm crusher run backfill
	Lean mix concrete backfill (1:15 mix)
	10mm Cement mortar bed, 1:3 mix

NOTES:

1. Backfill compaction: Approved fill/approved bedding/compacted backfill/CBR15 Gravel 90% Compacted gravel (300 layer) under road pavement 95% Compacted fill – at footpaths/private property 90% max densities determined by Standard Compaction tests to AS 1289.E5.1
2. Refer to DTMR Std. Dwg. 1316 for installation of of precast culverts.
3. Tape all joints with 75 wide Denso (600) Tape or equivalent.
4. All dimensions are in millimetres unless shown otherwise

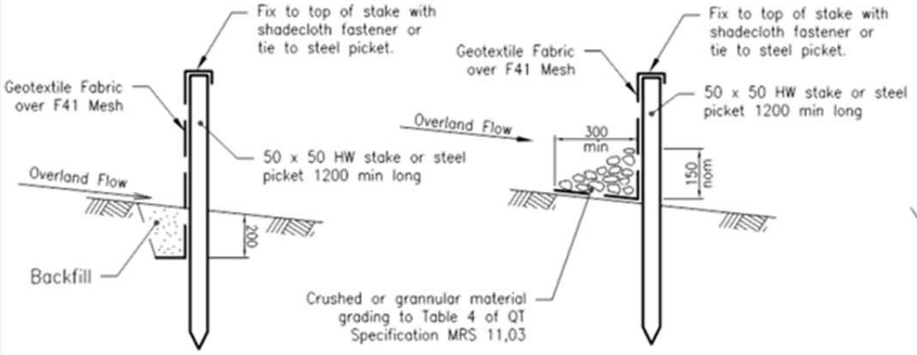
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Rv	DATE	REVISIONS
C	06/14	Review
B	03/14	Amended Drawing Number
A	10/12	ORIGINAL ISSUE

INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

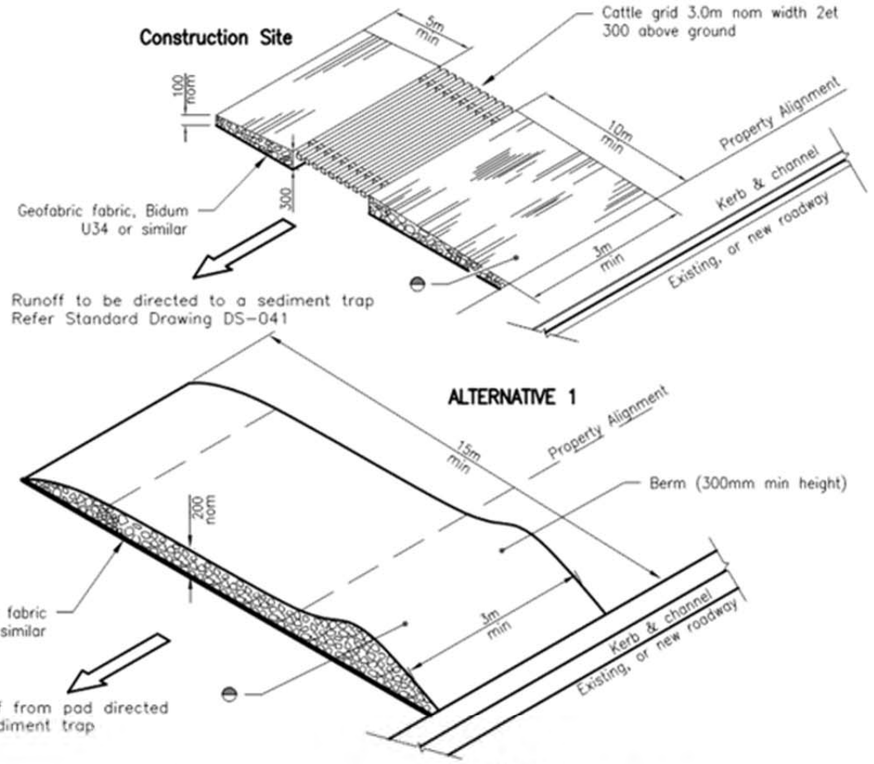
EXCAVATION, BEDDING AND BACKFILLING PRECAST BOX CULVERTS

DS-031



ALTERNATIVE 1

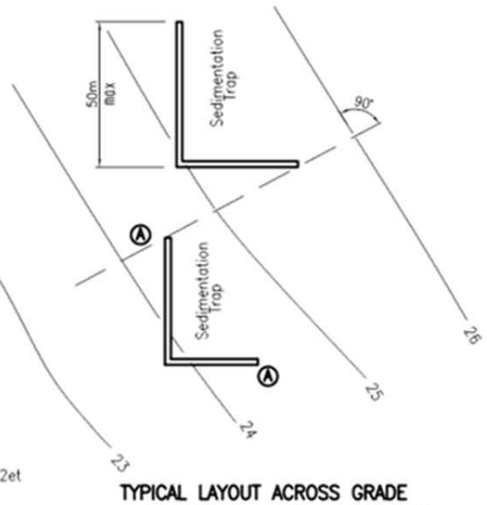
ALTERNATIVE 2



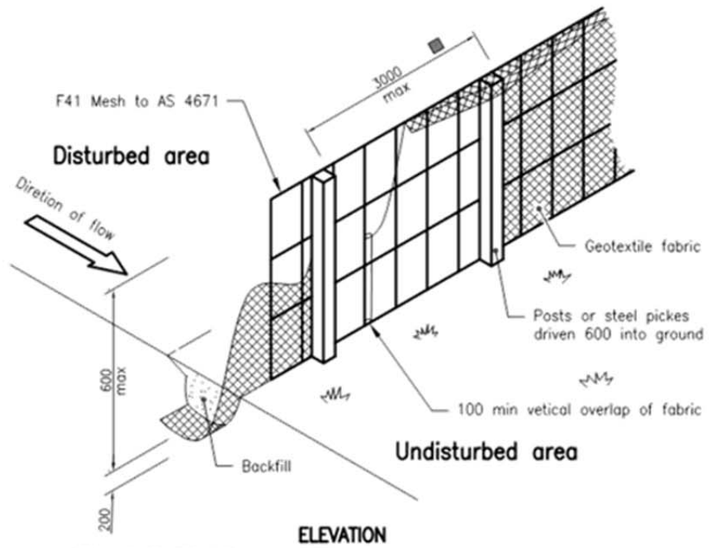
ALTERNATIVE 2
TEMPORARY CONSTRUCTION ENTRY/EXIT SEDIMENT TRAP

LEGEND

- Unbound pavement material (gravel) to Grading B Table 9 of QT Specification MRS11.05 exclude material finer than AS sieve 2.36
- Without F41 mesh 2000 max C/C



TYPICAL LAYOUT ACROSS GRADE
points A at same elevation



ELEVATION

SEDIMENT FENCE

NOTES:

GENERAL

1. All erosion and sediment controls to be in accordance with "Best Practice Erosion and Sediment Control", International Erosion and Sediment Control Association (IECA), Australasia Chapter, 2008 and to the satisfaction of the superintendent,
2. Temporary drainage control. Flow should be diverted around the work site where possible.
3. All drainage, erosion and sediment controls to be installed and be operational before commencing up-slope earthworks.
4. All control measures to be inspected at least weekly and after significant runoff producing storms.
5. Control measures may be removed when on-site erosion is controlled and 70% permanent soil coverage is obtained over all upstream disturbed land.
6. In areas where runoff turbidity is to be controlled, exposed surfaces to be either mulched, covered with erosion control blankets or turfed if earthworks are expected to be delayed for more than 14 days.
7. Straw bale sediment traps are a secondary option which generally should not be used if other options are available.

SEDIMENT FENCE

8. Not to be located in areas of concentrated flow.
9. Normally located along the contour with a maximum catchment area 0.6 ha per 100m length of fence.
10. Woven fabrics are preferred, non-woven fabrics may be used on small work sites, i.e. operational period less than 6 months or on sites where significant sediment runoff is not expected.
11. Where fences need to be located across the contour the layout shall conform to 'Typical Layout Across Grade'.
12. Fences are required 2m min from toe of cut or fill batters, where not practical one fence can be at the toe with a second fence 1m min away. Fence should not be located parallel with toe if concentration of flow will occur behind the fence.
13. Temp Construction Entry/Exit Sediment Trap.
14. Adjacent stormwater runoff to be diverted away from entry/exit.
15. Wheel – wash or spray unit may be required during wet weather.
16. Safety issues must be considered at all times, incorporate traffic control devices to the satisfaction of the superintendent.
17. All dimensions are in millimetres unless indicated otherwise.

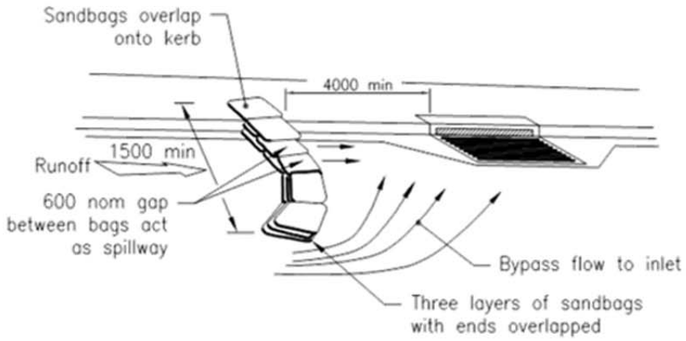
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D	06/14	Review
C	03/14	Amended Drawing Number
B	11/12	Note 1a Added
A	10/12	ORIGINAL ISSUE

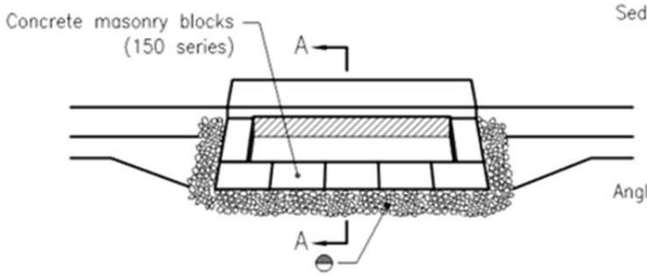
INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

SEDIMENT CONTROL DEVICES
SEDIMENT FENCE, ENTRY/EXIT SEDIMENT TRAP

DS-040



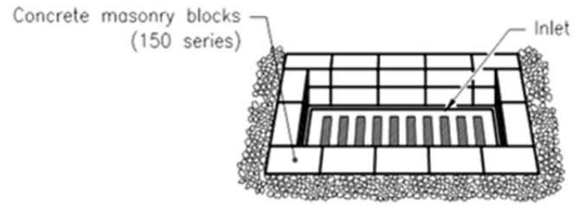
ON GRADE KERB INLET SEDIMENT TRAP

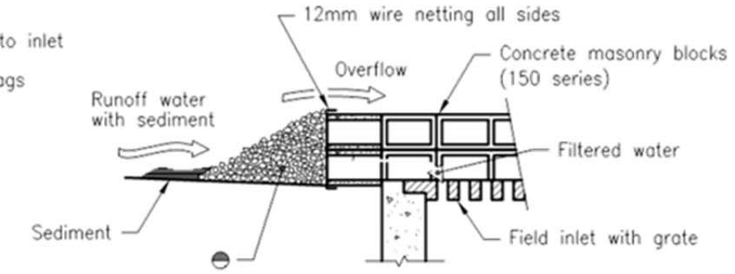


SECTION A–A

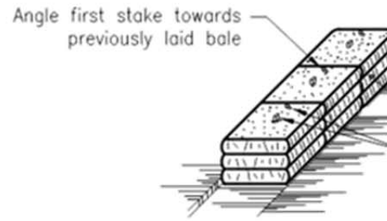
SAG INLET SEDIMENT TRAP

A stabilised bypass 'overland flow path' should exist adjacent to inlet in genuine sags.





FIELD INLET SEDIMENT TRAP

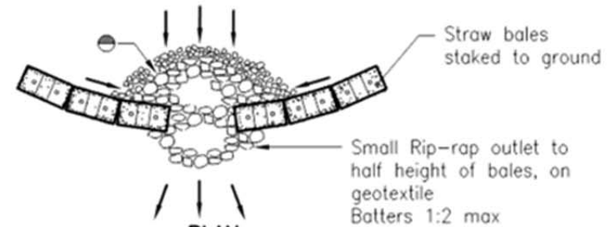


ANCHORING DETAIL



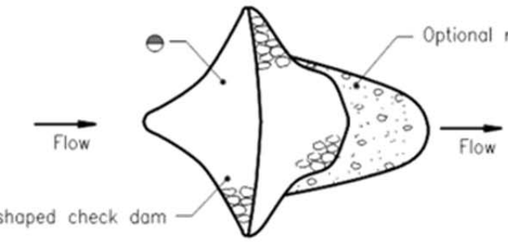
BEDDING DETAIL

STRAW BALE BANK SEDIMENT CONTROL

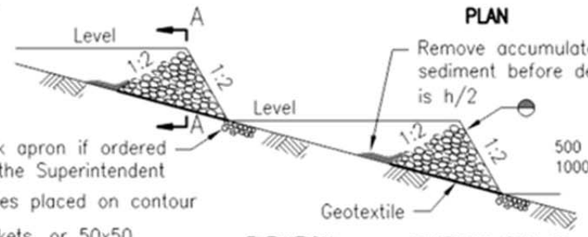


PLAN

STRAW BALE AND STONE TRAP SEDIMENT CONTROL – CONCENTRATED FLOW

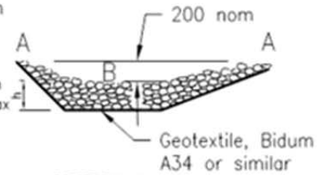


PLAN



ELEVATION

CHECK DAMS FLOW CONTROL



SECTION A–A

NOTES

1. All erosion and sediment controls to be in accordance with "Best Practice Erosion and Sediment Control", International Erosion and Sediment Control Association (IECA), Australasia Chapter, 2008 and to the satisfaction of the superintendent.
2. Field Inlet
   a. A stabilised bypass overland flow path should exist adjacent to the field inlet.
   b. Water level control perimeter banks may be required.
   c. Blocks to be restrained by a horizontal timber rail at block joint height fixed to timber stakes at corners.
3. Check Dams
   a. Catchment area limited to 4 ha.
   b. Use in minor open drains only, (velocity control), sediment collection is a secondary purpose.
4. Straw Bale Banks
   a. Bales shall be placed at the toe of a slope or on the contour, in a row with ends tightly abutting the adjacent bales
   b. Each bale shall be embedded in the soil a minimum of 100mm on the downstream side and placed so the bindings are horizontal.
   c. Bales shall be securely anchored in place with either two stakes or steel pickets driven through the bale. The first stake in each bale shall be driven toward the previously laid bale at an angle to force the bales together.
   d. Inspections shall be frequent and repair or replacement shall be made promptly as needed. Replace at least 3 monthly.
5. Safety issues must be considered at all times, incorporate traffic control devices to the satisfaction of the Superintendent.

LEGEND

Gravel filter, refer Grading B Table 9 of QT Specitifation MRS 11.05 excluded material finer then AS sieve 2.36

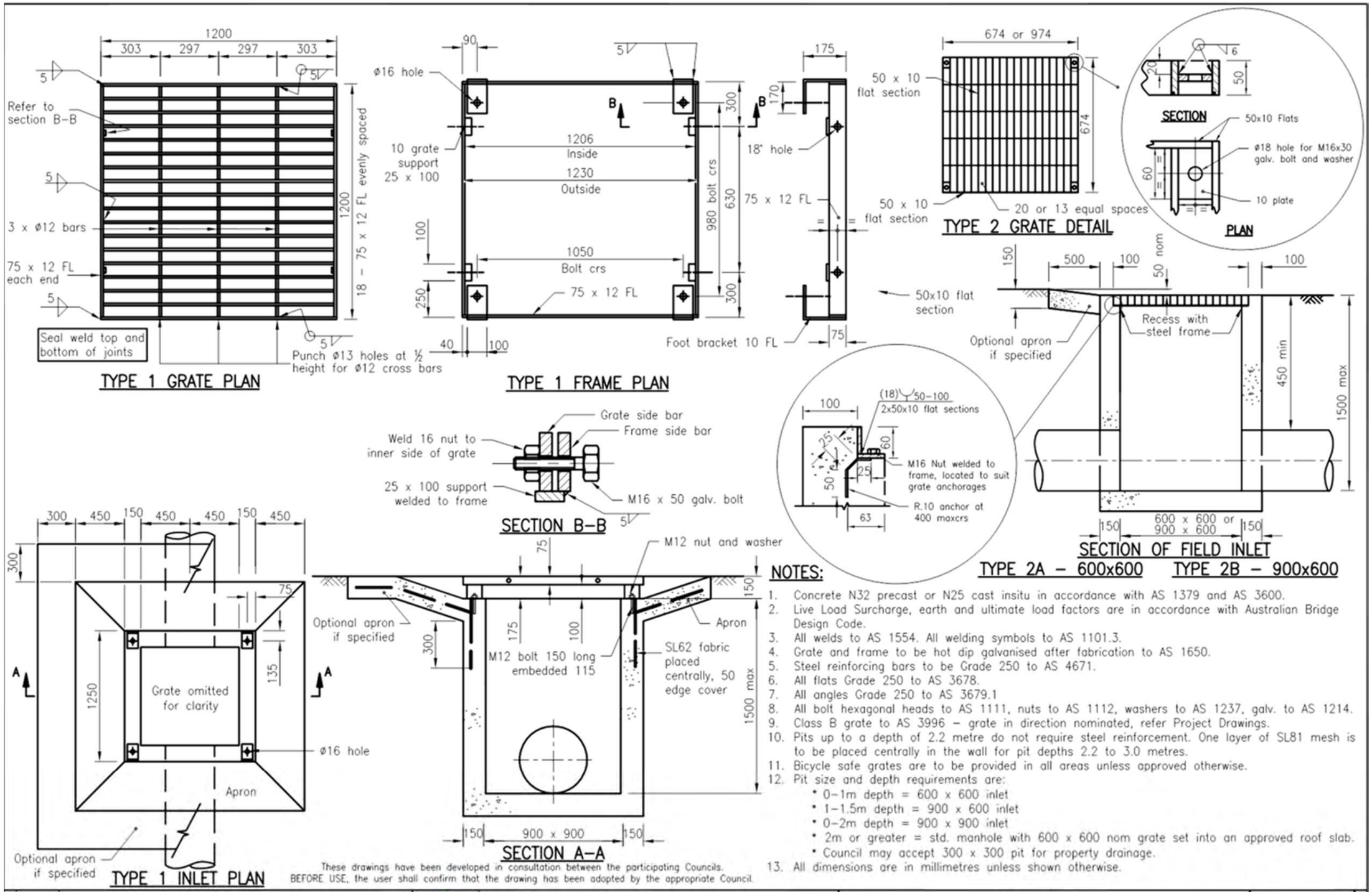
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Rv	DATE	REVISIONS
D	06/14	Review
C	03/14	Amended Drawing Number
B	11/12	Note 1 Added
A	10/12	ORIGINAL ISSUE

INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

SEDIMENT CONTROL DEVICES
KERB AND FIELD INLET –
CHECK DAMS & STRAW BALES

DS–041



NOTES:

1. Concrete N32 precast or N25 cast insitu in accordance with AS 1379 and AS 3600.
2. Live Load Surcharge, earth and ultimate load factors are in accordance with Australian Bridge Design Code.
3. All welds to AS 1554. All welding symbols to AS 1101.3.
4. Grate and frame to be hot dip galvanised after fabrication to AS 1650.
5. Steel reinforcing bars to be Grade 250 to AS 4671.
6. All flats Grade 250 to AS 3678.
7. All angles Grade 250 to AS 3679.1
8. All bolt hexagonal heads to AS 1111, nuts to AS 1112, washers to AS 1237, galv. to AS 1214.
9. Class B grate to AS 3996 – grate in direction nominated, refer Project Drawings.
10. Pits up to a depth of 2.2 metre do not require steel reinforcement. One layer of SL81 mesh is to be placed centrally in the wall for pit depths 2.2 to 3.0 metres.
11. Bicycle safe grates are to be provided in all areas unless approved otherwise.
12. Pit size and depth requirements are:
    - 0–1m depth = 600 x 600 inlet
    - 1–1.5m depth = 900 x 600 inlet
    - 0–2m depth = 900 x 900 inlet
    - 2m or greater = std. manhole with 600 x 600 nom grate set into an approved roof slab.
    - Council may accept 300 x 300 pit for property drainage.
13. All dimensions are in millimetres unless shown otherwise.

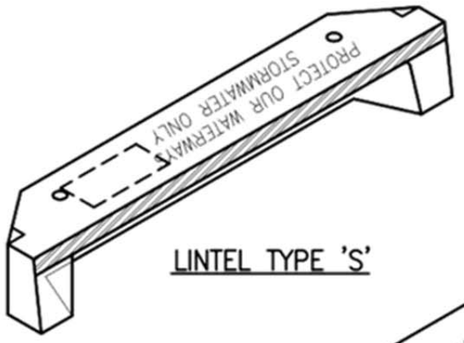
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Rv	DATE	REVISIONS
D	06/14	Review
C	03/14	Amended Drawing Number
B	11/12	Pit max Depth Added
A	10/12	ORIGINAL ISSUE

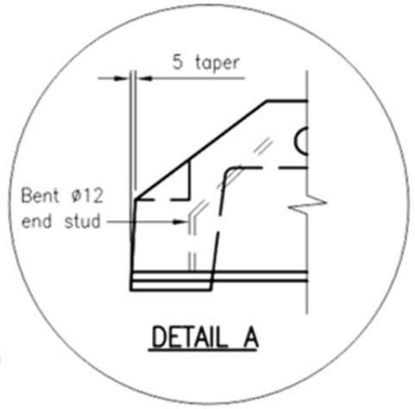
INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

DRAINAGE PITS
FIELD INLET
TYPE 1 AND TYPE 2

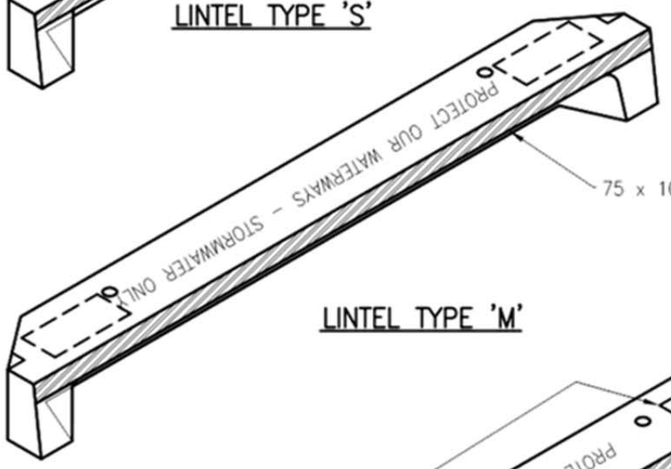
DS–050



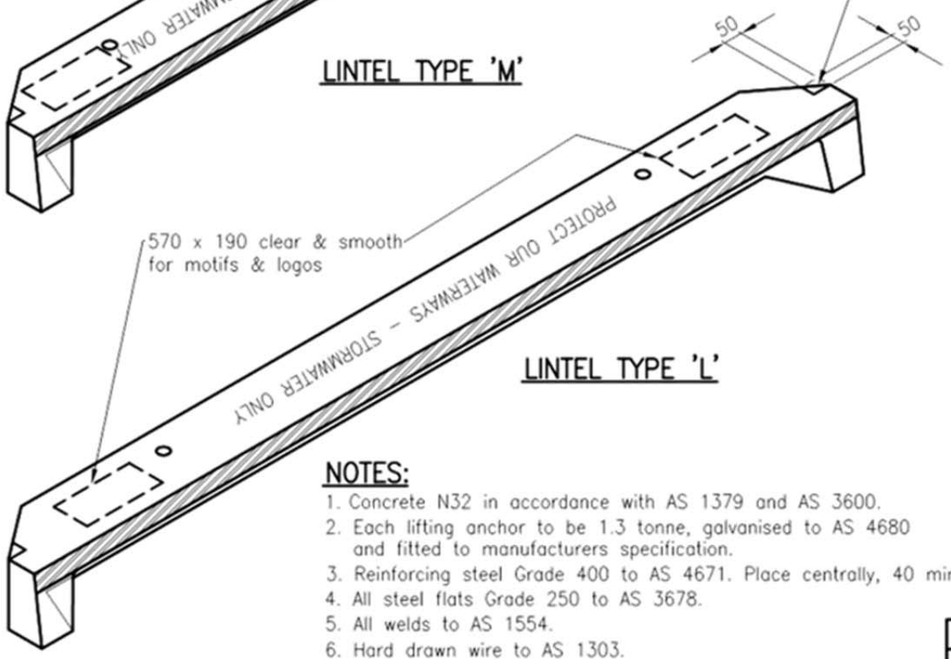
LINTEL TYPE 'S'



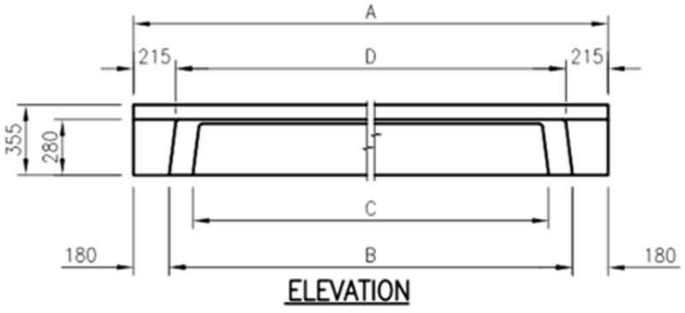
DETAIL A



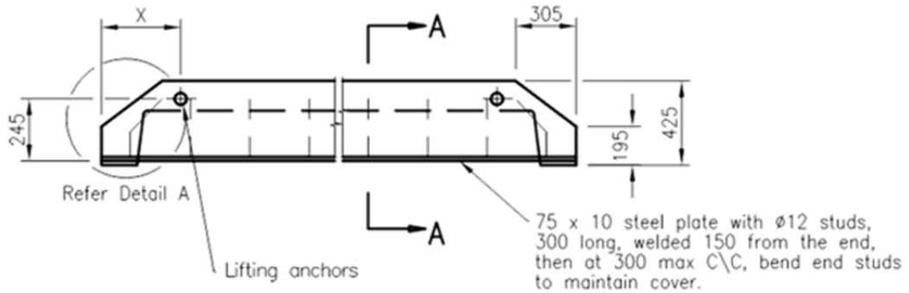
LINTEL TYPE 'M'



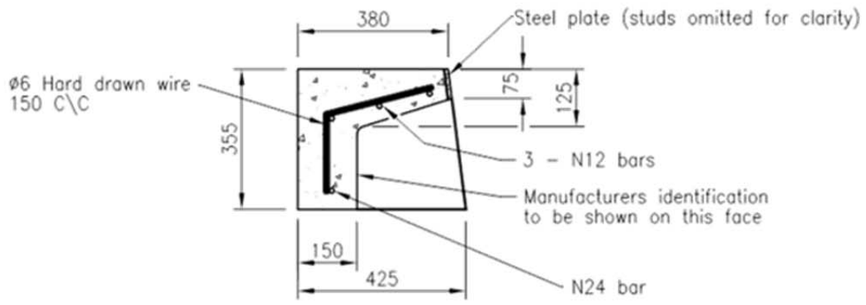
LINTEL TYPE 'L'



ELEVATION



PLAN



SECTION A–A

NOTES:

1. Concrete N32 in accordance with AS 1379 and AS 3600.
2. Each lifting anchor to be 1.3 tonne, galvanised to AS 4680 and fitted to manufacturers specification.
3. Reinforcing steel Grade 400 to AS 4671. Place centrally, 40 min end cover.
4. All steel flats Grade 250 to AS 3678.
5. All welds to AS 1554.
6. Hard drawn wire to AS 1303.
7. Steel plate hot dip galvanised after fabrication to AS 4680.
8. Lintel text 40mm high letters imprinted 5mm into concrete. Words face footpath.
9. All dimensions are in millimetres unless shown otherwise.

LINTEL	A	B	C	D	X	MASS (kg)
S	2400	2040	1800	1970	400	445
M	3600	3240	3000	3170	690	550
L	4800	4440	4200	4370	1000	725

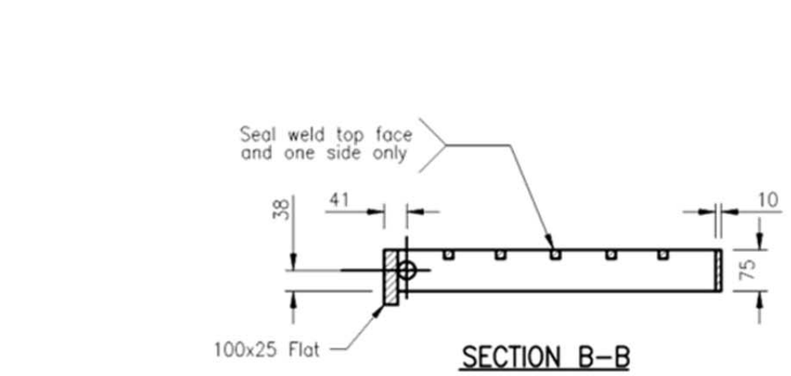
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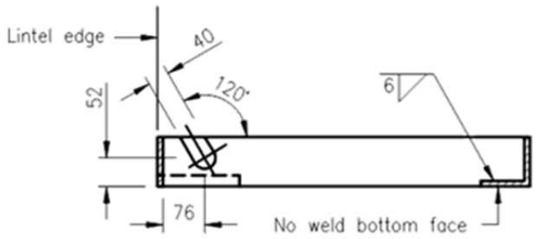
INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALIA
QUEENSLAND DIVISION INC.
STANDARD DRAWINGS

DRAINAGE PITS
KERB INLET
PRECAST LINTEL DETAILS

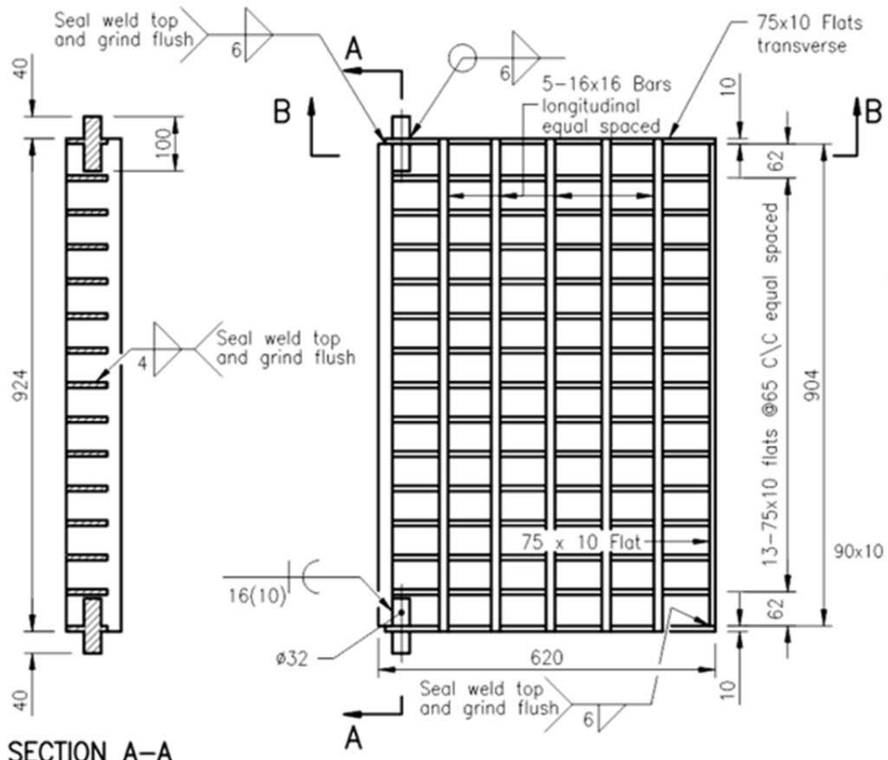
DS–061



SECTION B–B

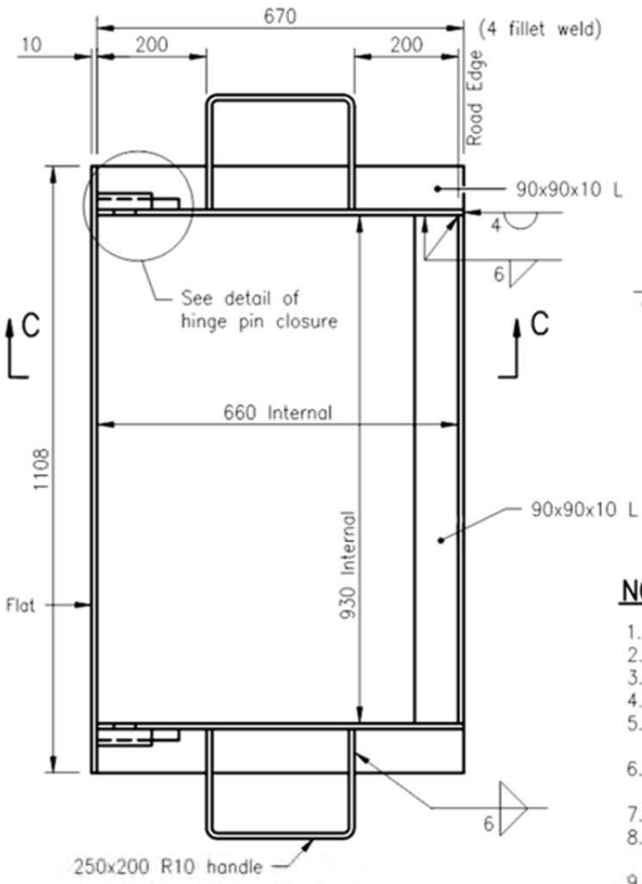


SECTION C–C

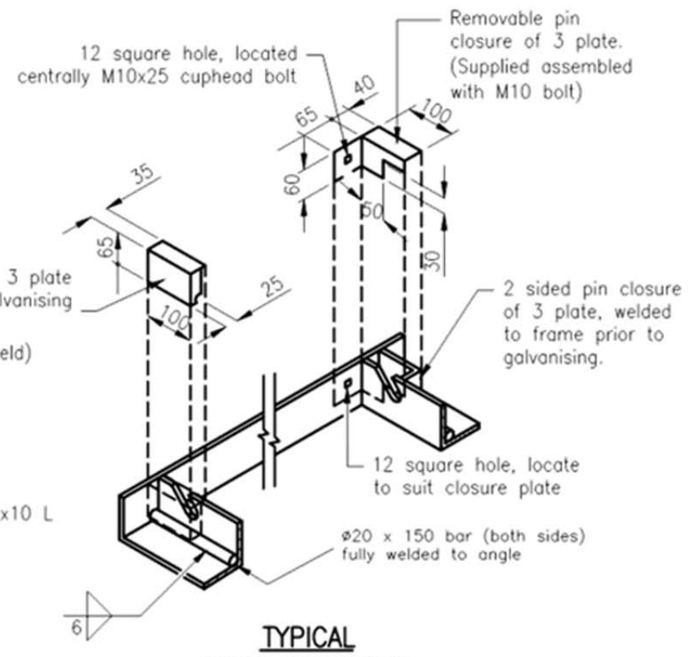


SECTION A–A

PLAN OF GRATE



PLAN OF FRAME



TYPICAL DETAIL OF HINGE PIN CLOSURES

A locking device shall be provided in accordance with clause 3.2.1.4 of AS 3996.

NOTES:

1. Mass of grate = 85 kg.
2. Mass of frame = 39 kg.
3. All steel flats Grade 250 to AS 3678.
4. All steel bars and angles Grade 250 to AS 3679.
5. Grate, Frame and Hinge to be hot dip galvanised after fabrication to AS 1650.
6. All bolt hexagonal heads to AS 1111, Nuts to AS 1112, Washers to AS 1237 and Galv. to AS 1214.
7. All welds to AS 1554. Welding symbols to AS 1101.3.
8. Refer Std Dwg DS–060 and DS–063 for kerb inlet details Refer Std Dwg DS–061 for precast lintel details.
9. Grate and Frame to be Class D bicycle safe to AS 3996.
10. Alternative fabricated steel grate and frame may be used when approved by relevant Council
11. All dimensions are in millimetres unless shown otherwise

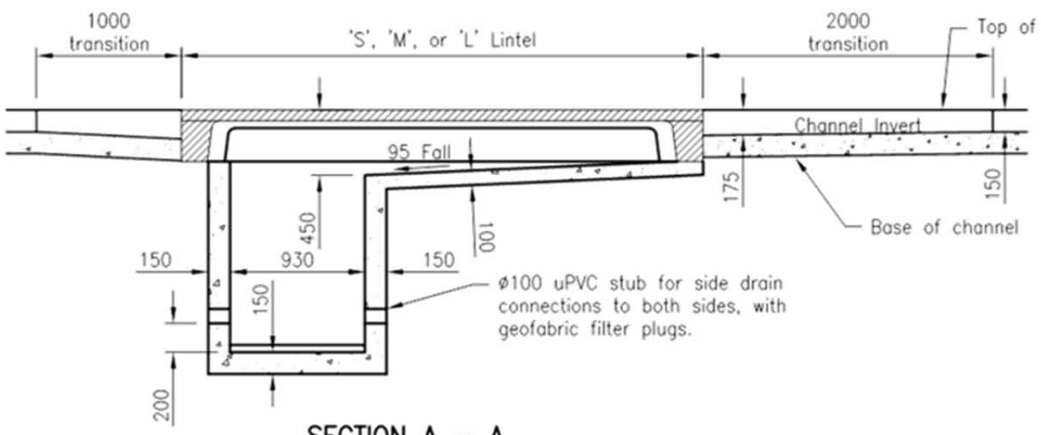
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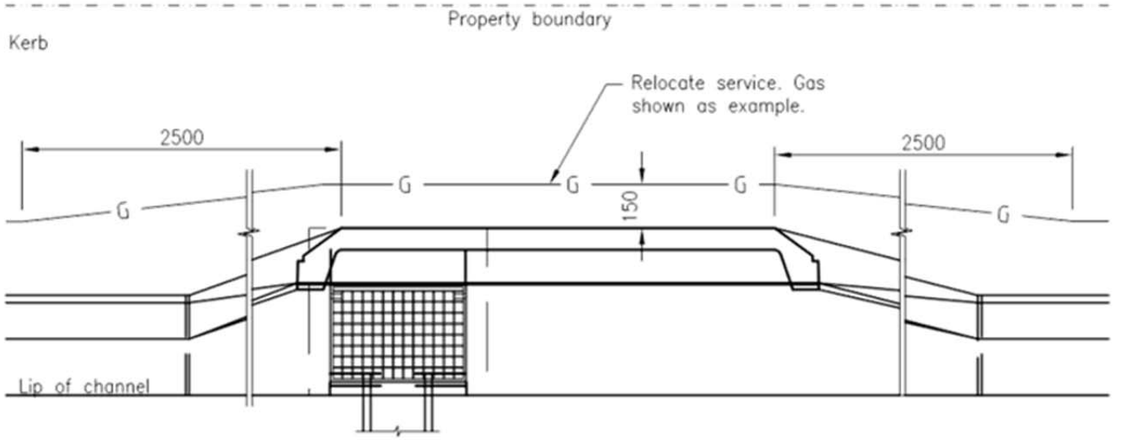
INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

DRAINAGE PITS
KERB INLET
GRATE AND FRAME

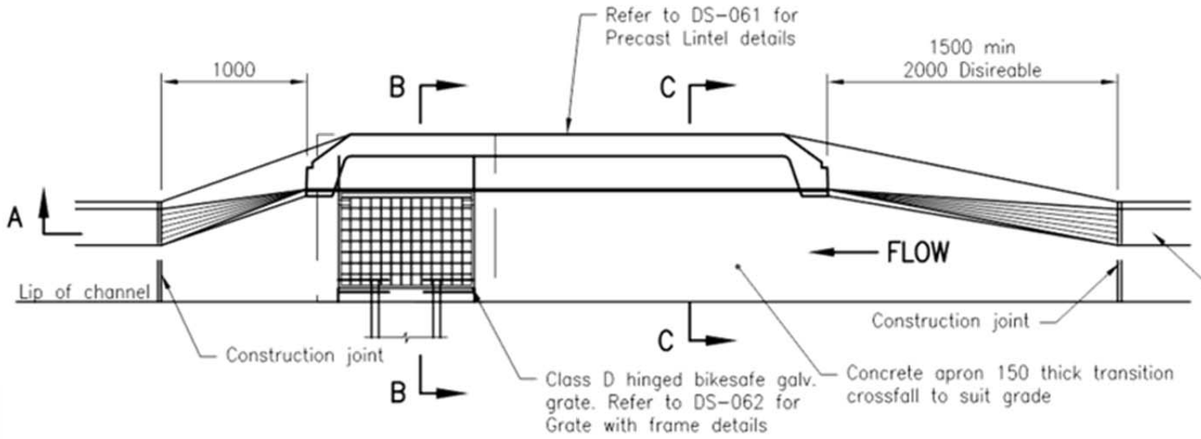
DS–062



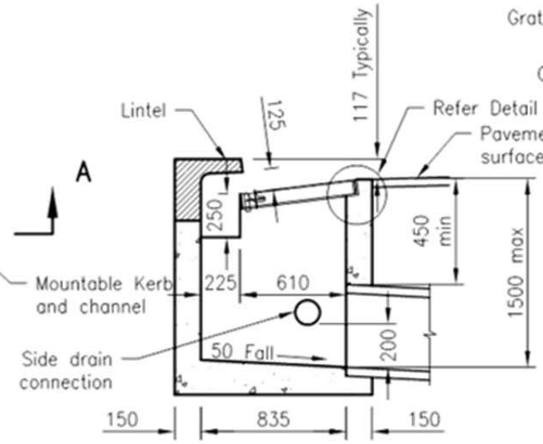
SECTION A – A



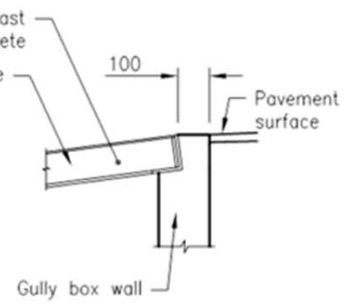
SERVICE RE-ALIGNMENT DETAILS



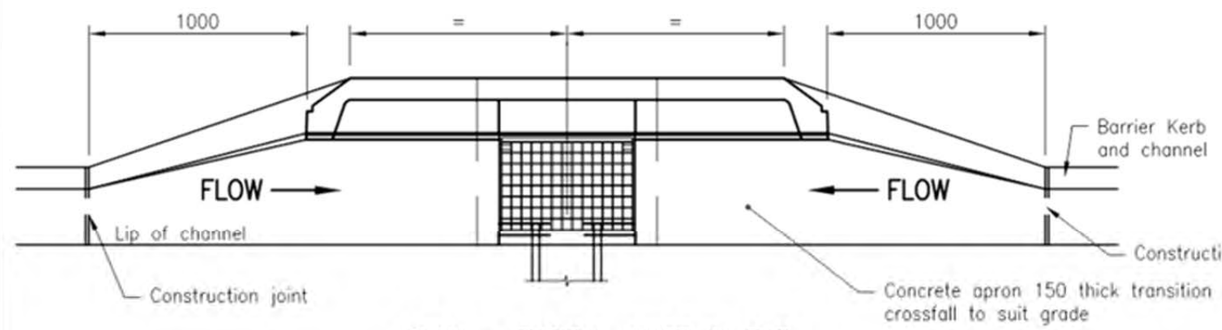
PLAN – TYPICAL INLET ON GRADE



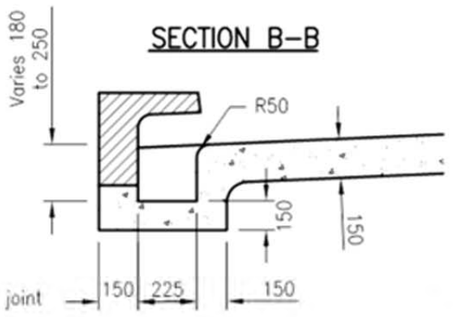
SECTION B–B



DETAIL A



PLAN – TYPICAL INLET IN SAG



SECTION C–C

NOTES

1. The kerb inlet may be cast–in–situ or precast. This drawing indicates a cast–in–situ catchpit with a precast lintel.
2. Precast concrete N32 in accordance with AS 1379 and AS 3600.
3. Cast in–situ concrete N32 in accordance with AS 1379 and AS 3600.
4. Refer to project drawings for set out point detail.
5. All dimensions are in millimetres unless shown otherwise.

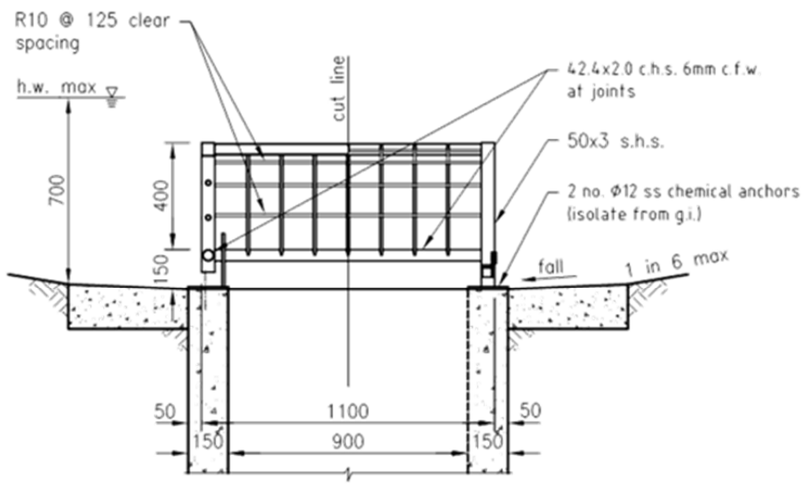
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B	03/14	Amended Drawing Number
A	10/12	ORIGINAL ISSUE

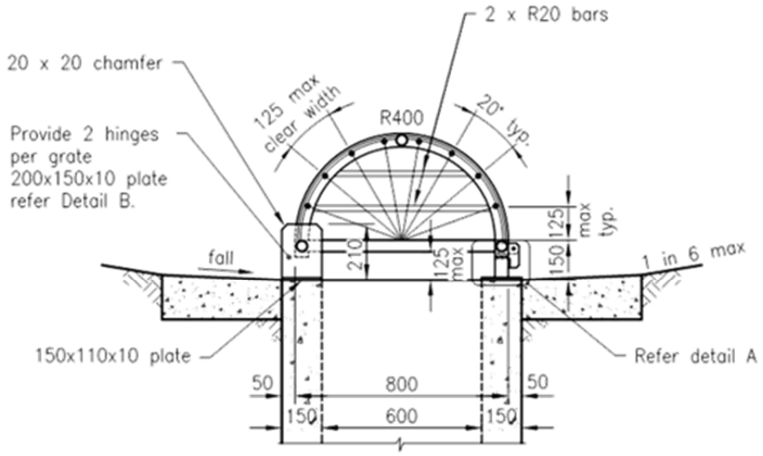
INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

DRAINAGE PITS
KERB INLET – LIP IN LINE
GENERAL ARRANGEMENT

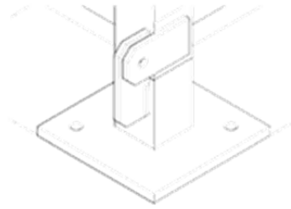
DS–063



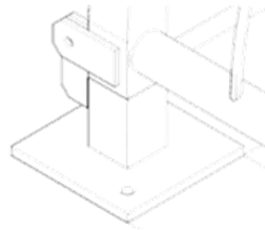
SECTION B–B
TYPE 1 GENERAL USE



SECTION A–A



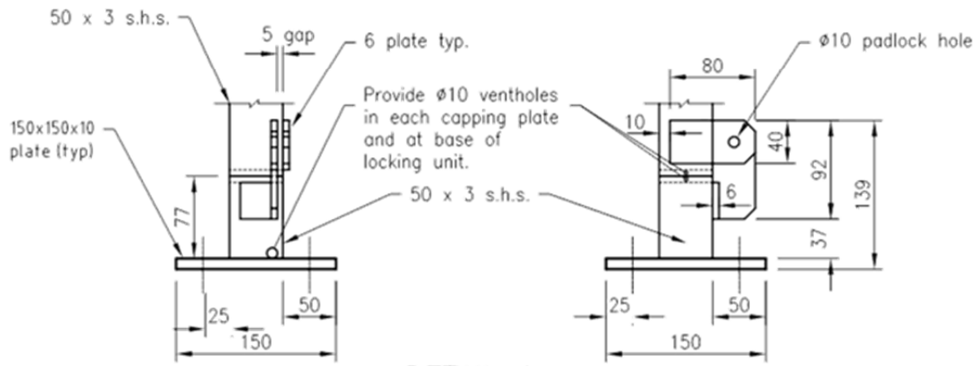
LOCKING UNIT A



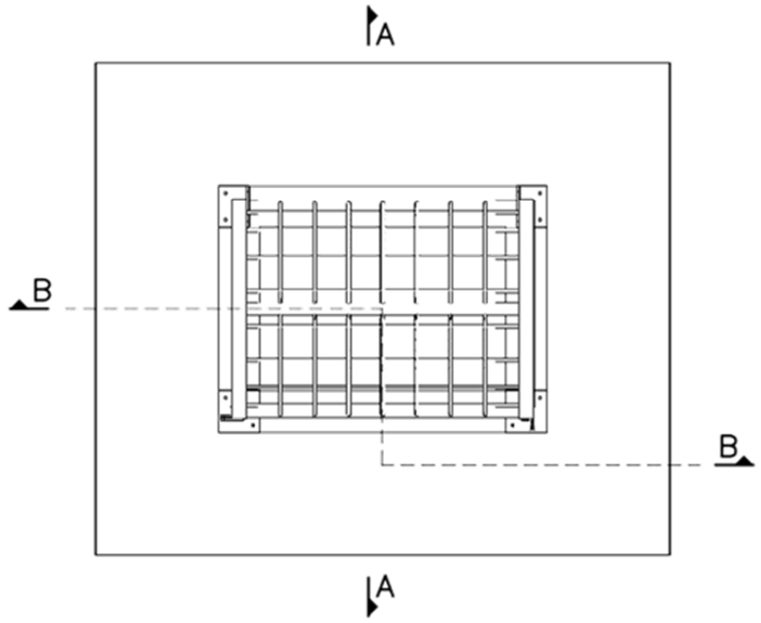
LOCKING UNIT B



DETAIL B



DETAIL A

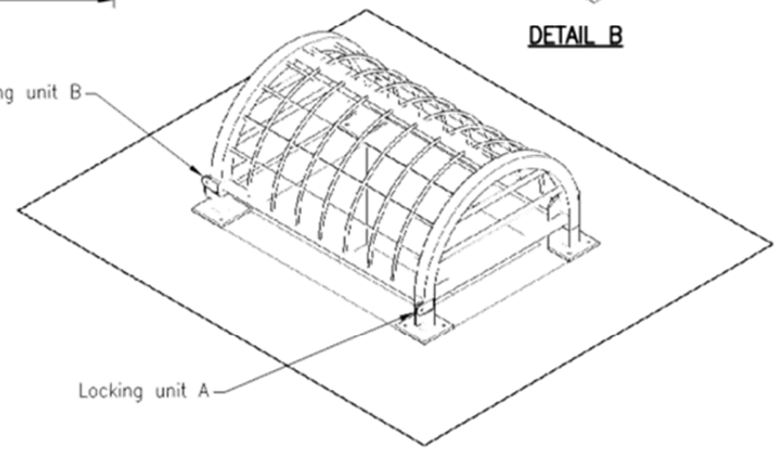


PLAN

NOTES:

1. Concrete to be grade N32.
2. All components to be hot–dipped galvanised to AS/NZS 4680 after fabrication.
3. All welds 6mm c.f.w. all round.
4. All edge distances to chemical anchors to be not less than 25mm.
5. Locking units to be secured with hot dipped galvanised m8 bolts with snug tightened nut upon installation.
6. Ensure clear opening widths of 125 max in fabrication and installation for child proof safety.
7. Dimensions are in millimetres unless shown otherwise.

THIS IS NOT A FRANGIBLE ITEM



ISOMETRIC VIEW

These drawings have been developed in consultation between the participating Councils.
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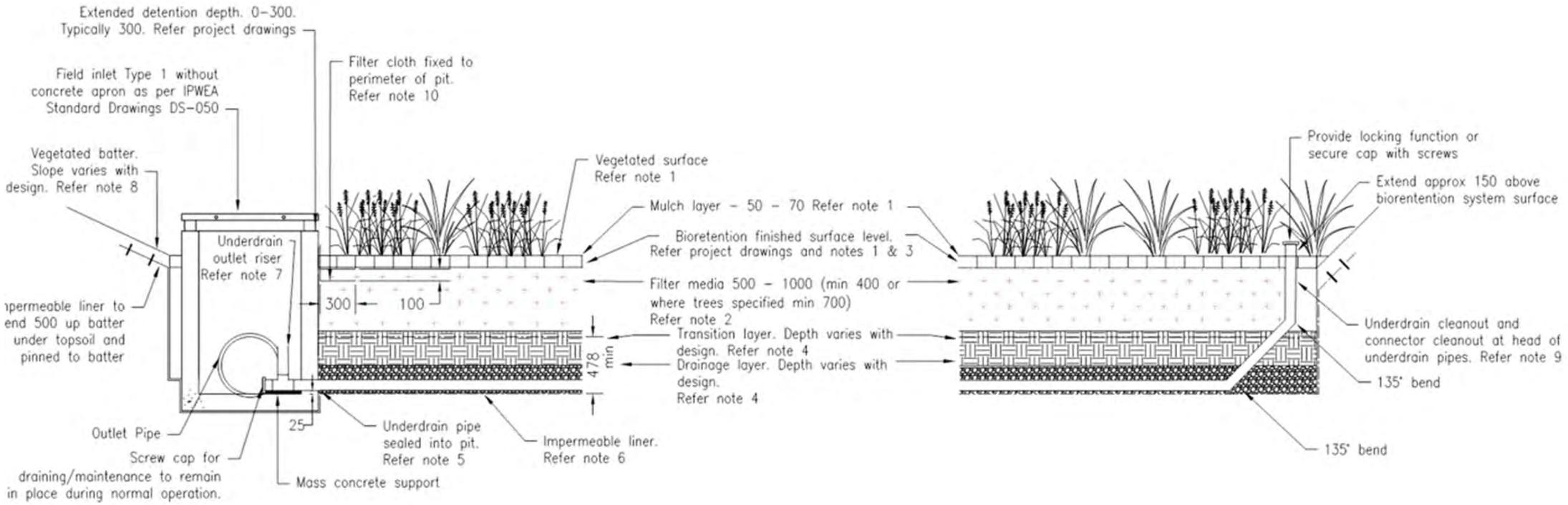
Rv	DATE	REVISIONS
B	06/14	Review
A	10/13	ORIGINAL ISSUE

INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

DRAINAGE PITS
FIELD INLET PIT
DOME TOP COVER (900x600)

DS–069

Rv B A

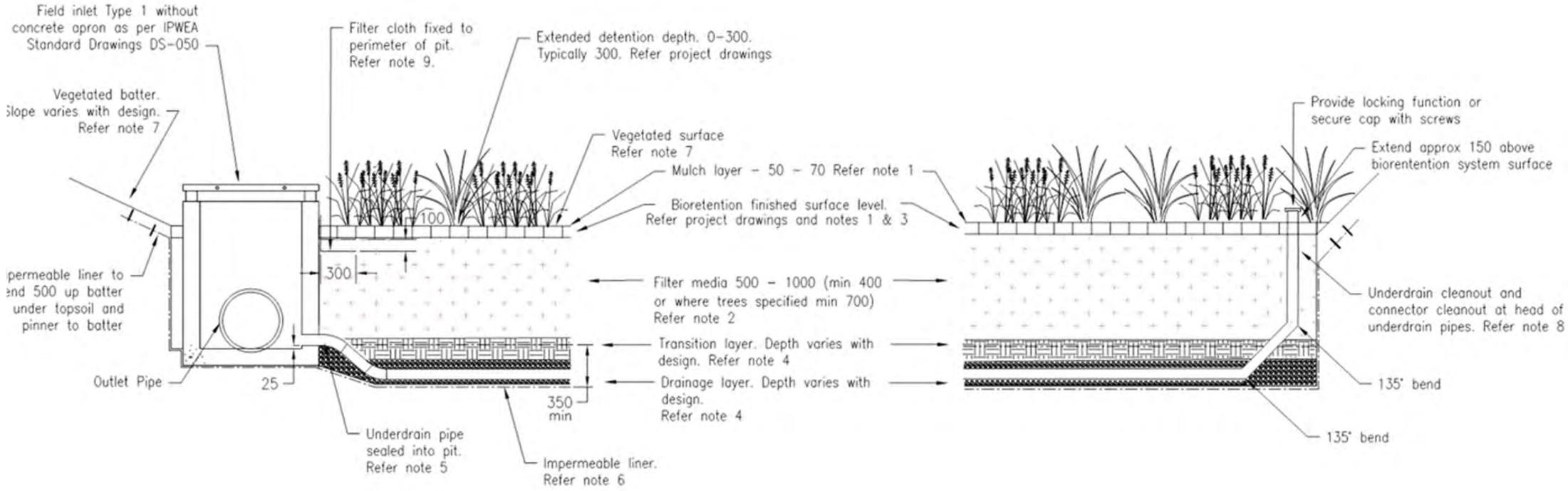


NOTES:

1. Bioretention system surface. Surface level is top of filter media. Surface to be mulched and planted as per project drawings and the 'Bioretention Technical Design Guidelines' (Water by Design).
2. Filter media specification shall be in accordance with the 'Adoption guidelines for Stormwater Biofiltration Systems (CRC for water sensitive cities) and the Bioretention Technical Design Guidelines (Water by Design). Bioretention hydraulic conductivity shall be in accordance with Practice Note 1: in situ Measurement of Hydraulic Conductivity' (FAWB). The number of samples to be tested shall be in accordance with the 'Construction and Establishment Guidelines – Swales, Bioretention Systems and Wetlands' (Water by Design).
3. Construction tolerances shall be in accordance with the 'Construction and Establishment Guidelines –Swales, Bioretention Systems and Wetlands' (Water by Design)
4. Transition layer and drainage layer depths vary with design. Depths and specification to be in accordance with project drawings and the 'Bioretention Technical Design Guidelines' (Water by Design)
5. Underdrain. Slotted rigid pipe laid flat. Refer to project drawings for diameter and pipe invert. Pipe should not be installed with a filter sock surrounding pipe. Underdrain pipes shall be sealed into pits using grout or other approved watertight seal.
6. Impermeable liner. Compacted clay or synthetic liner with permeability of no greater than 1×10^{-9}m/s. Impermeable liner to be sealed around all protrusions. Synthetic liners to be installed and sealed in accordance with manufacturers requirements. Impermeable liner as per project drawings and 'Bioretention Technical Design Guidelines' (Water by Design)
7. Underdrain outlet riser establishes max saturated zone water level. Underdrain outlet riser as per project drawings and 'Bioretention Technical Design Guidelines' (Water by Design)
8. Vegetated batter. Slope and planting to be in accordance with project drawings and 'Bioretention Technical Design Guidelines' (Water by Design).
9. Inspection/cleanout point. Vertical solid pipe section attached to the end of each underdrain in accordance with project drawings and the 'Bioretention Technical Design Guidelines'(Water by Design)
10. Filter cloth to be fixed to perimeter of pit to avoid runnelling of water between pit and soil interface. Begin filter cloth 100 above surface. Extend to 100 below surface. Continue 300 horizontally into filter media.
11. For general design and construction notes refer to DS–078
12. All dimensions in millimetres unless otherwise noted.

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INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA STANDARD DRAWINGS	BIORETENTION DRAINAGE PROFILE – TYPE 1 SATURATED ZONE – UNCONSTRAINED	DS–070

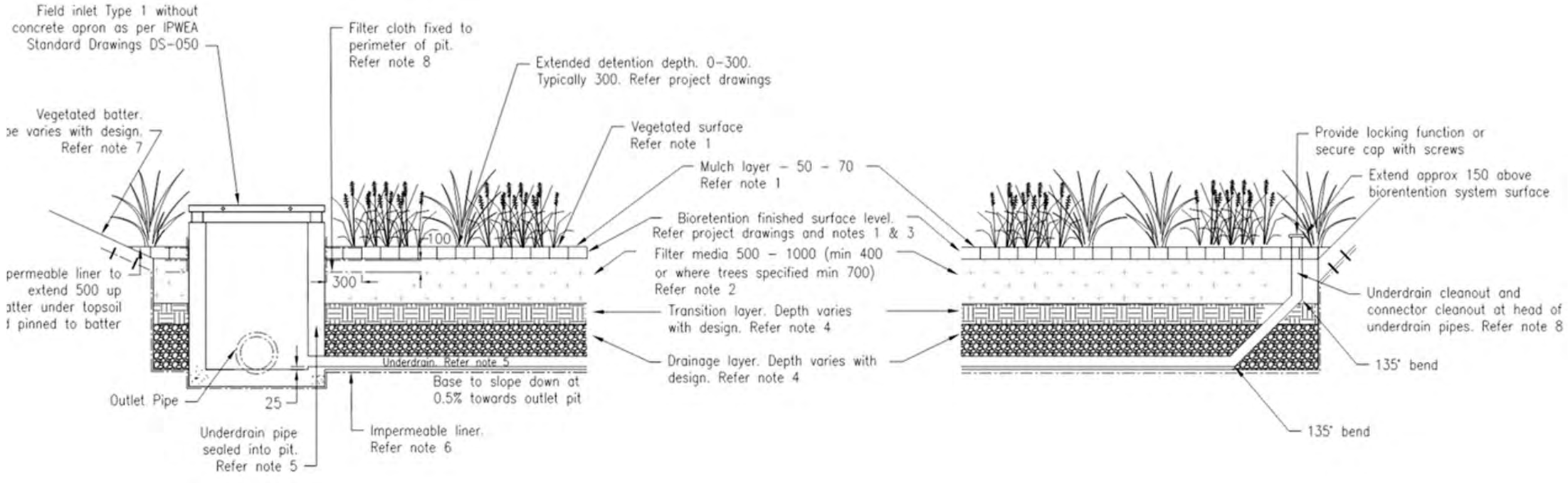


NOTES:

1. Bioretention system surface refer note 1 DS-070
2. Filter media specification refer note 2 DS-070
3. Construction tolerances refer note 3 DS-070
4. Transition layer and drainage layer refer note 4 DS-070
5. Underdrain refer note 5 DS-070
6. Impermeable liner refer note 6 DS-070
7. Vegetated batter refer note 8 DS-070
8. Inspection/cleanout point refer note 9 DS-070
9. Filter cloth refer note 10 DS-070
10. For general design and construction notes refer to DS-078
11. All dimensions in millimetres unless otherwise noted.

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INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA STANDARD DRAWINGS	BIORETENTION DRAINAGE PROFILE - TYPE 1 SATURATED ZONE - CONSTRAINED	DS-071

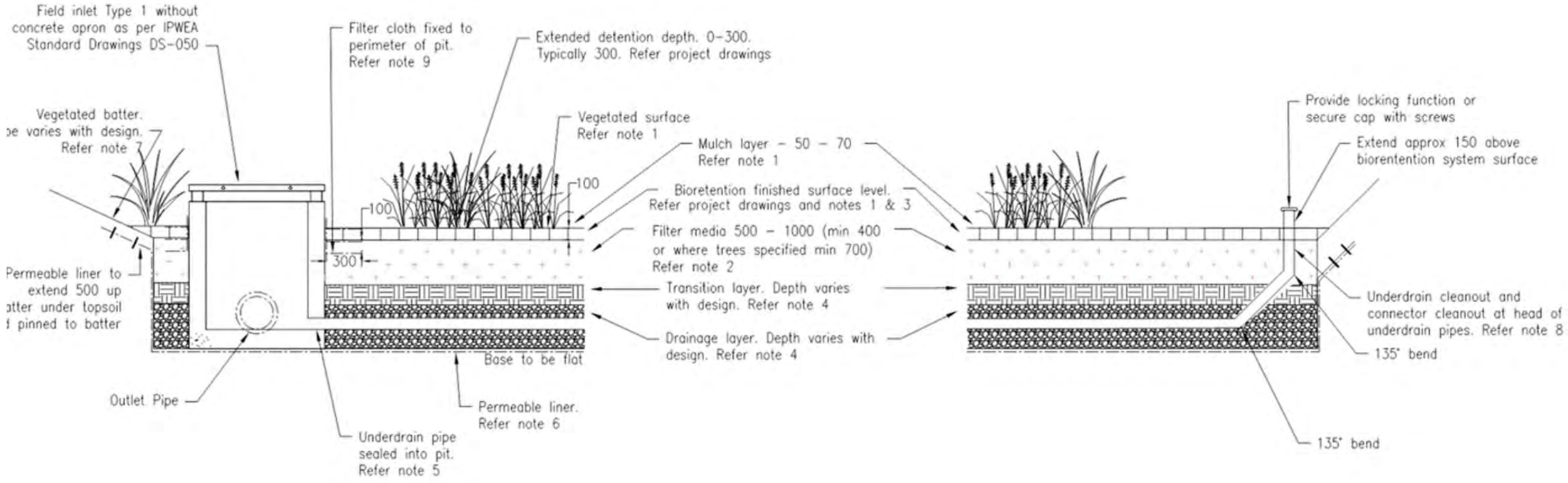


NOTES:

1. Bioretention system surface. Refer note 1 DS-070
2. Filter media specification. Refer not 2 DS-070
3. Construction tolerances. Refer note 3 DS-070
4. Transition layer and drainage layer. Refer note 4 DS-070
5. Underdrain. Refer note 5 DS-070
6. Impermeable liner. Refer note 6 DS-070
7. Vegetated batter. Refer note 8 DS-070
8. Inspection/cleanout point. Refer note 9 DS-070
9. Filter Cloth refer note 10 DS-070
10. For general design and construction notes refer to DS-078
11. All dimensions in millimetres unless otherwise noted.

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INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA STANDARD DRAWINGS	BIORETENTION DRAINAGE PROFILE - TYPE 2 SEALED	DS-072

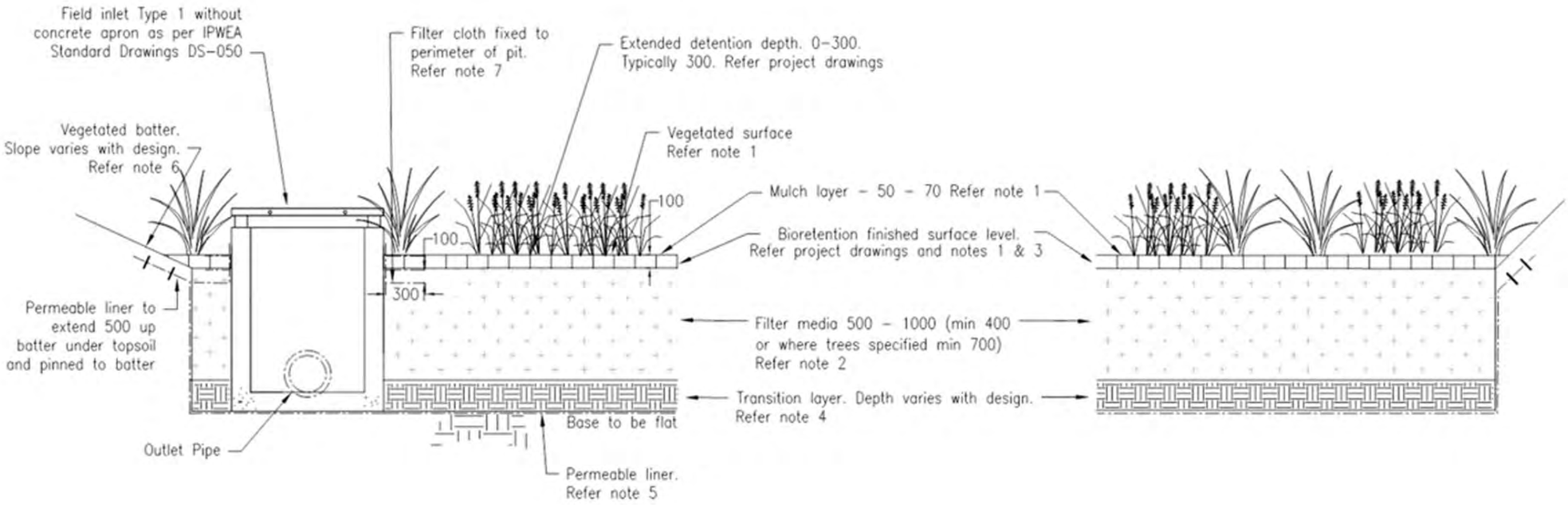


NOTES:

1. Bioretention system surface. Refer note 1 DS-070
2. Filter media specification. Refer note 2 DS-070
3. Construction tolerances. Refer note 3 DS-070
4. Transition layer and drainage layer. Refer note 4 DS-070
5. Underdrain. Refer note 5 DS-070
6. Permeable liner. Non-woven geotextile filter cloth to base and sides of bioretention system. Filter cloth not to be placed between any filter layers. Permeable liner as per project drawings and "Bioretention Technical Design Guidelines' (Water by Design).
7. Vegetated batter. Refer note 8 DS-070
8. Inspection/cleanout point. Refer note 9 DS-070
9. Filter cloth refer note 10 DS-070
10. For general design and construction notes refer to DS-078
11. All dimensions in millimetres unless otherwise noted.

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INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA STANDARD DRAWINGS	BIORETENTION DRAINAGE PROFILE - TYPE 3 CONVENTIONAL	DS-073

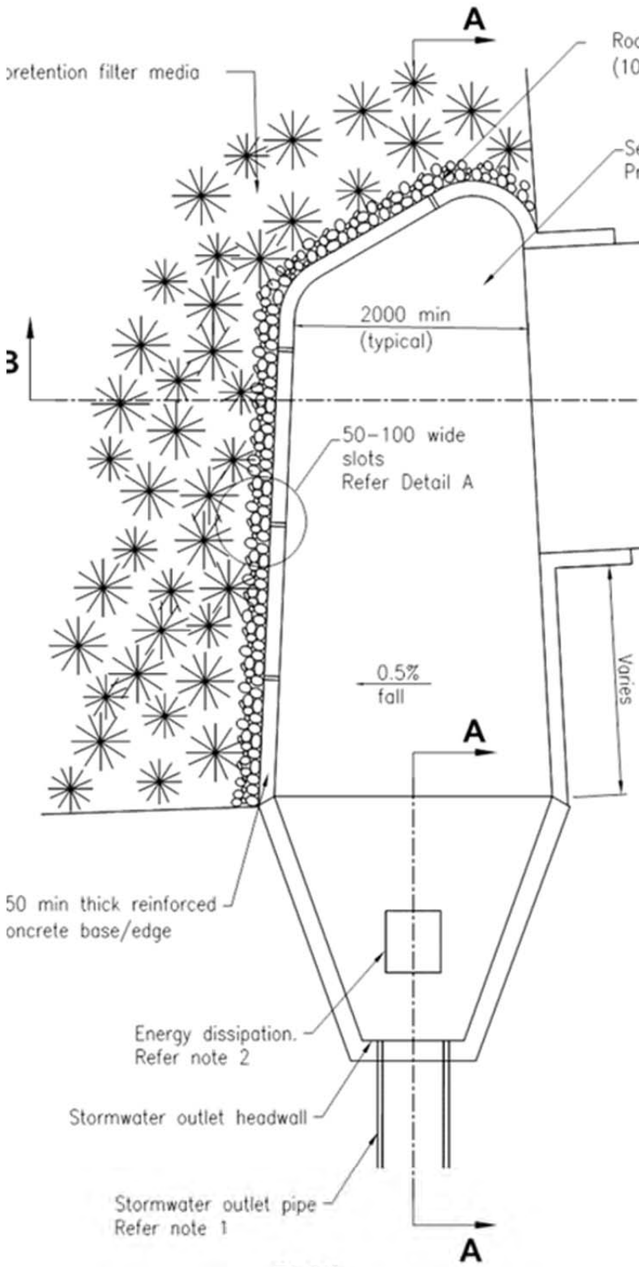


NOTES:

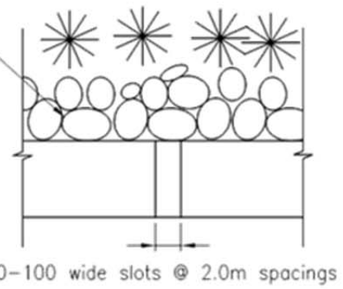
1. Bioretention system surface. Refer note 1 BIO-01
2. Filter media specification. Refer note 2 BIO-01
3. Construction tolerances. Refer note 3 BIO-01
4. Transition layer depth varies with design. Depth and specification to be in accordance with project drawings and the 'Bioretention Technical Design Guidelines' (Water by Design).
5. Permeable liner. Refer Note 6 DS-073
6. Vegetated batter. Refer not 8 DS-078
7. Filter cloth refer note 10 DS-070
8. For general design and construction notes refer to DS-078
9. All dimensions in millimetres unless otherwise noted.

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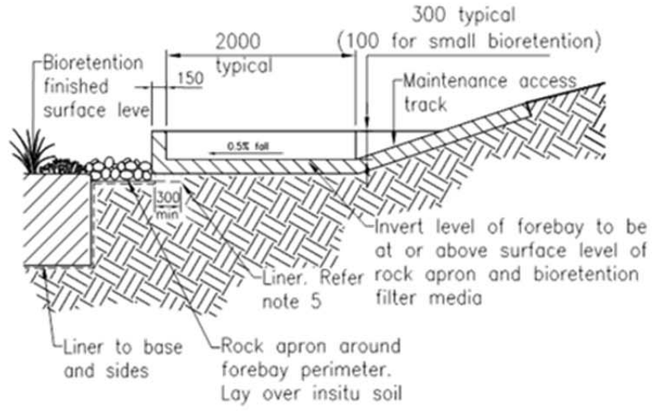
INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA STANDARD DRAWINGS	BIORETENTION DRAINAGE PROFILE - TYPE 4 PIPELESS	DS-074



PLAN



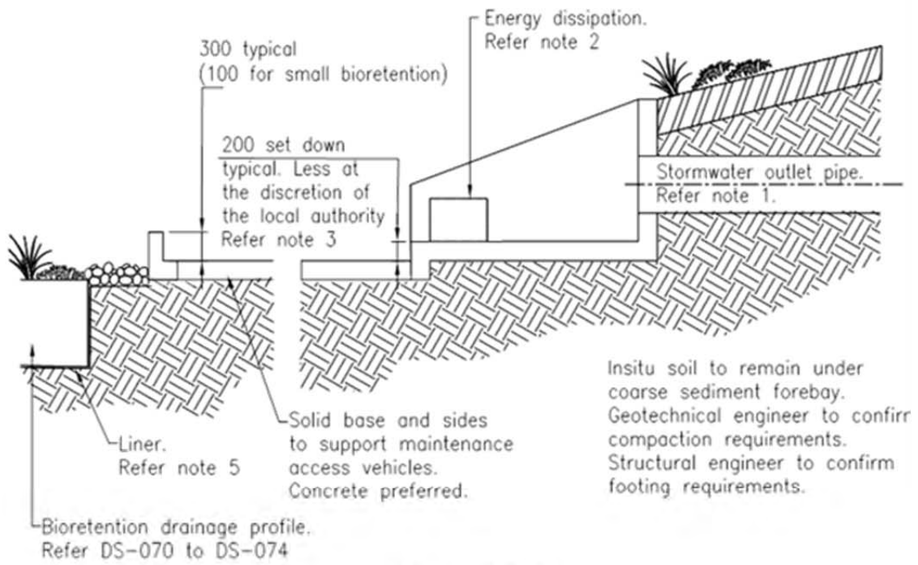
DETAIL A



SECTION B-B

NOTES:

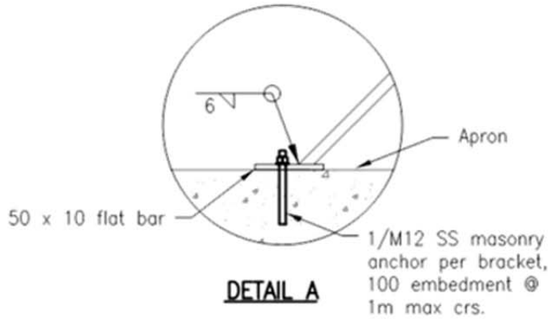
1. Stormwater outlet pipe. Refer project drawings for diameter and invert level. Pipe to be aligned to within 40° max of long axis of the coarse sediment forebay.
2. Energy dissipation to be in accordance with the "Bioretention Technical Design Guidelines" (Water by Design) and QUDM
3. Set down for sediment accumulation required subject to local authority requirements and site constraints. Set down of up to 200mm is typical. Can be flush at local authority discretion.
4. Maintenance access track. Treatment may include reinforced turf, planting, gravel or concrete and depend on grade. Treatment to be in accordance with the "Bioretention Technical Design Guidelines" (Water by Design)
5. Liner may be permeable (refer note 12 on DS–078) or impermeable (refer note 13 on DS–078) depending on design. Refer to project drawings. Lay Liner over insitu soil. pin Liner underneath sediment forebay 300mm minimum.
6. For general design and construction notes refer to DS–078
7. All dimensions in millimetres unless specified otherwise.



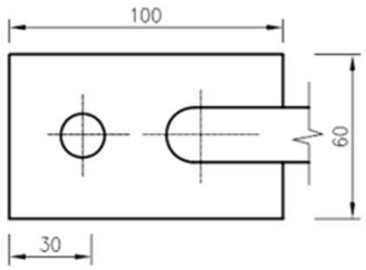
SECTION A-A

These drawings have been developed in consultation between the participating Councils.
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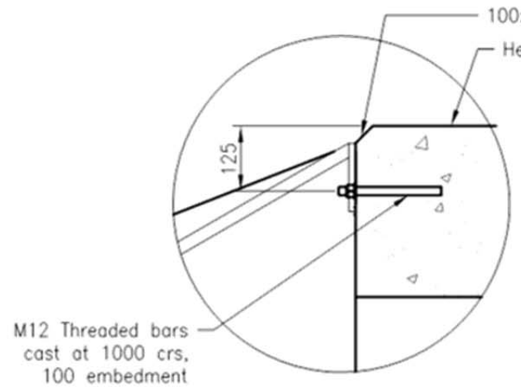
INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA STANDARD DRAWINGS	LARGE BIORETENTION SEDIMENT FOREBAY	DS–075



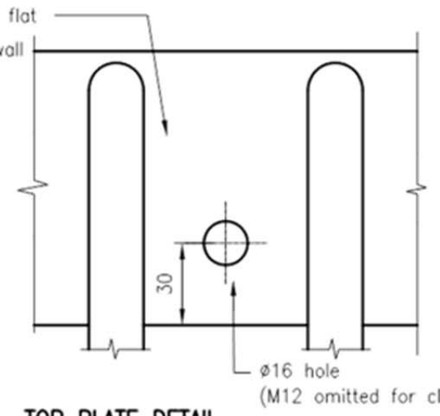
DETAIL A



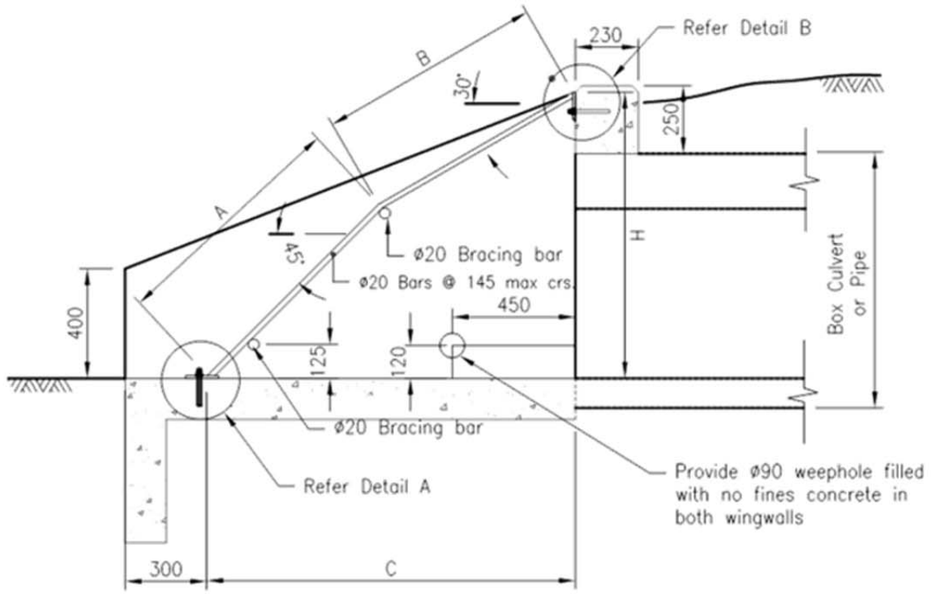
BOTTOM PLATE DETAIL



DETAIL B

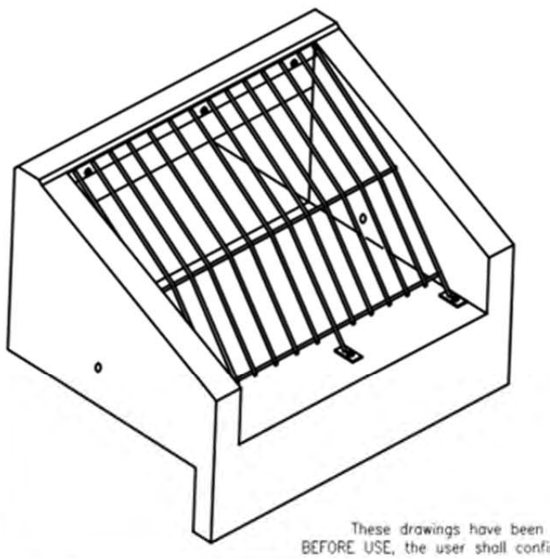


TOP PLATE DETAIL



SECTION A–A

Reinforcement omitted for clarity

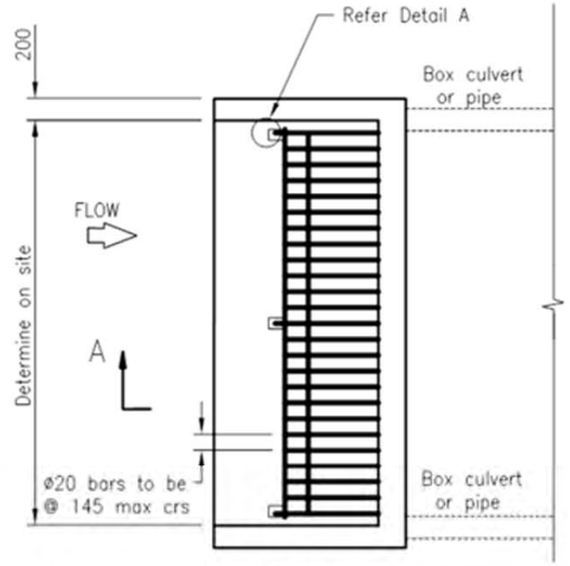


NOTES:

1. For Wingwall and Headwall details and reinforcement, refer TMR Std Dwg 1303
2. For Apron details and reinforcement, refer TMR Std Dwg 1318 (Type 3 Apron)
3. Concrete to be Class N32/20 AS1379–3600.
4. All cover to reinforcement to be 50mm minimum.
5. Cover in aggressive environments refer TMR Std Dwg 1303.
6. All sections to be grade 300 and all bar to be grade 400.
7. All welds to conform to AS1554 and be 6mm continuous fillet welds unless otherwise noted.
8. All steelwork to be hot dip galvanised after fabrication to AS4680.
9. All nuts, bolts and washers to be stainless steel grade 316. with isolation washers.
10. Refer to TMR Standards for safe distances to carriageways.
11. All dimensions are in millimetres unless shown otherwise.

TABLE 1

CULVERT HEIGHT	A	B	C	SCREEN HEIGHT
375	500	613	884	660
450	575	671	988	742
600	675	841	1206	898
750	800	977	1411	1054
900	900	1181	1659	1227
1200	1150	1478	2093	1552



PLAN

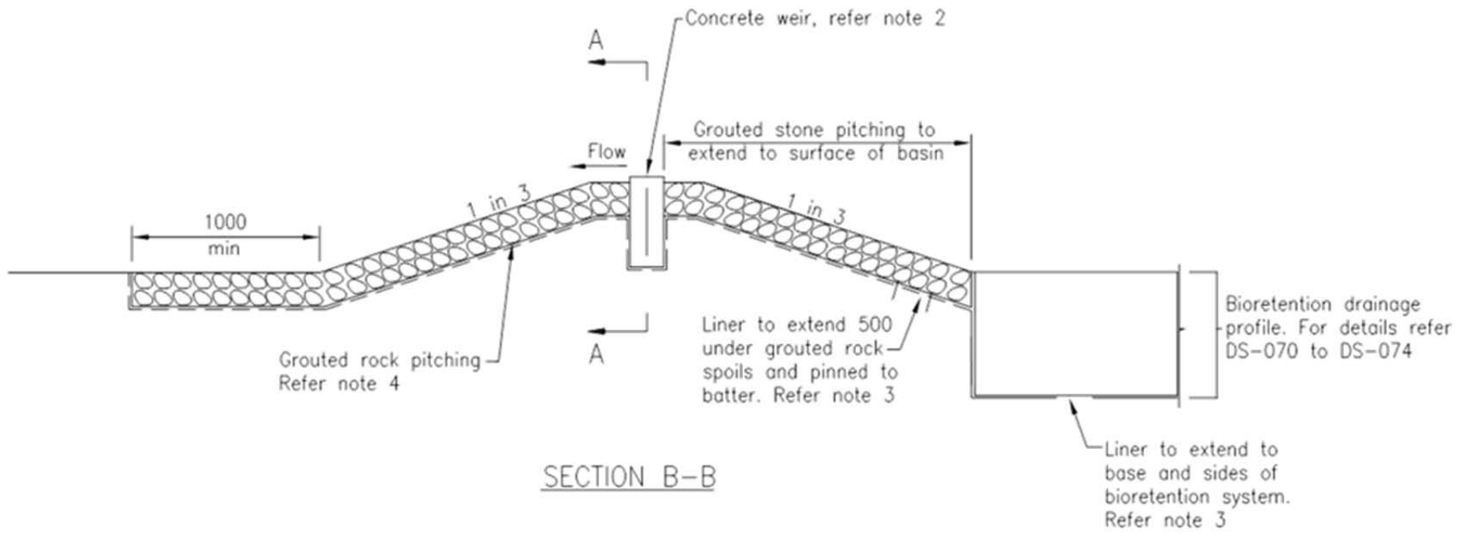
These drawings have been developed in consultation between the participating Councils.
BEFORE USE, the user shall confirm that the drawing has been adopted by the appropriate Council.

Rv	DATE	REVISIONS
C	06/14	Review
B	03/14	Amended Drawing Number
A	10/12	ORIGINAL ISSUE

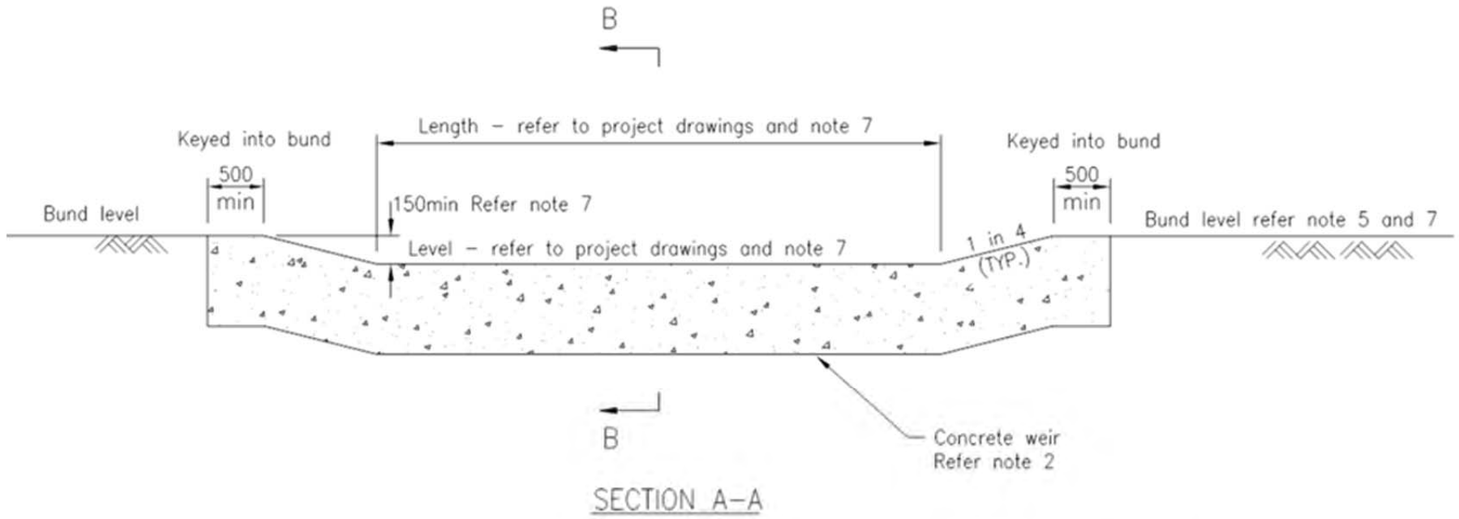
INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

DRAINAGE DETAILS
CULVERT INLET SCREEN

DS–082



SECTION B–B



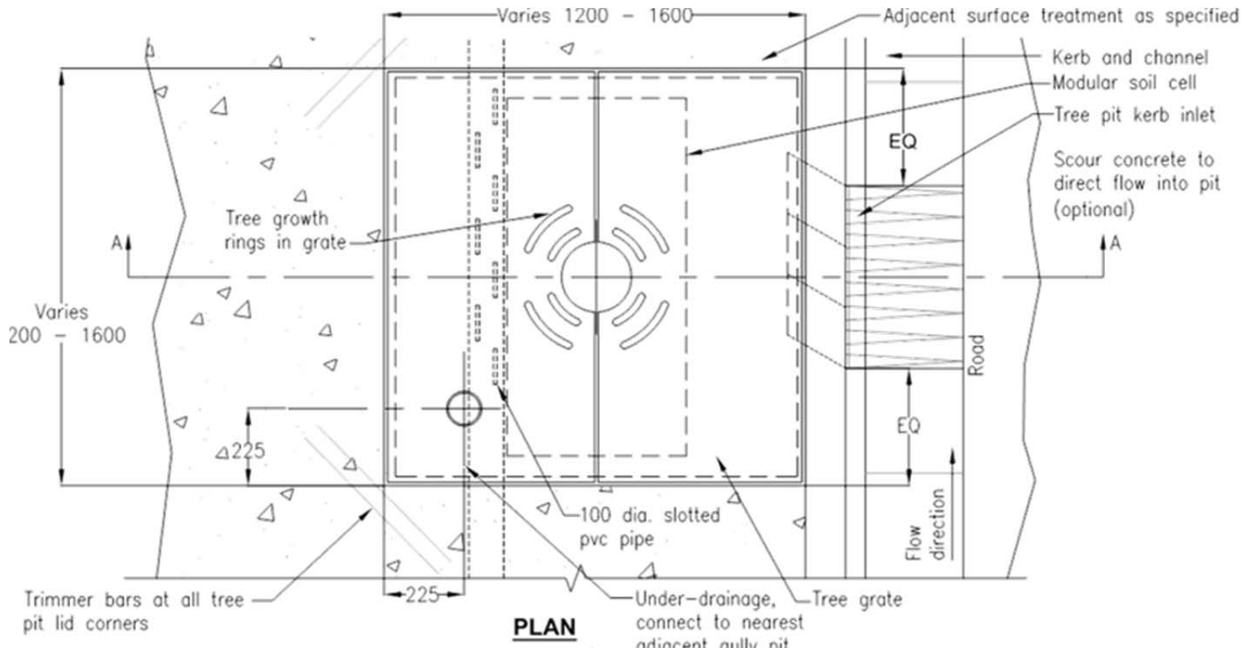
SECTION A–A

NOTES:

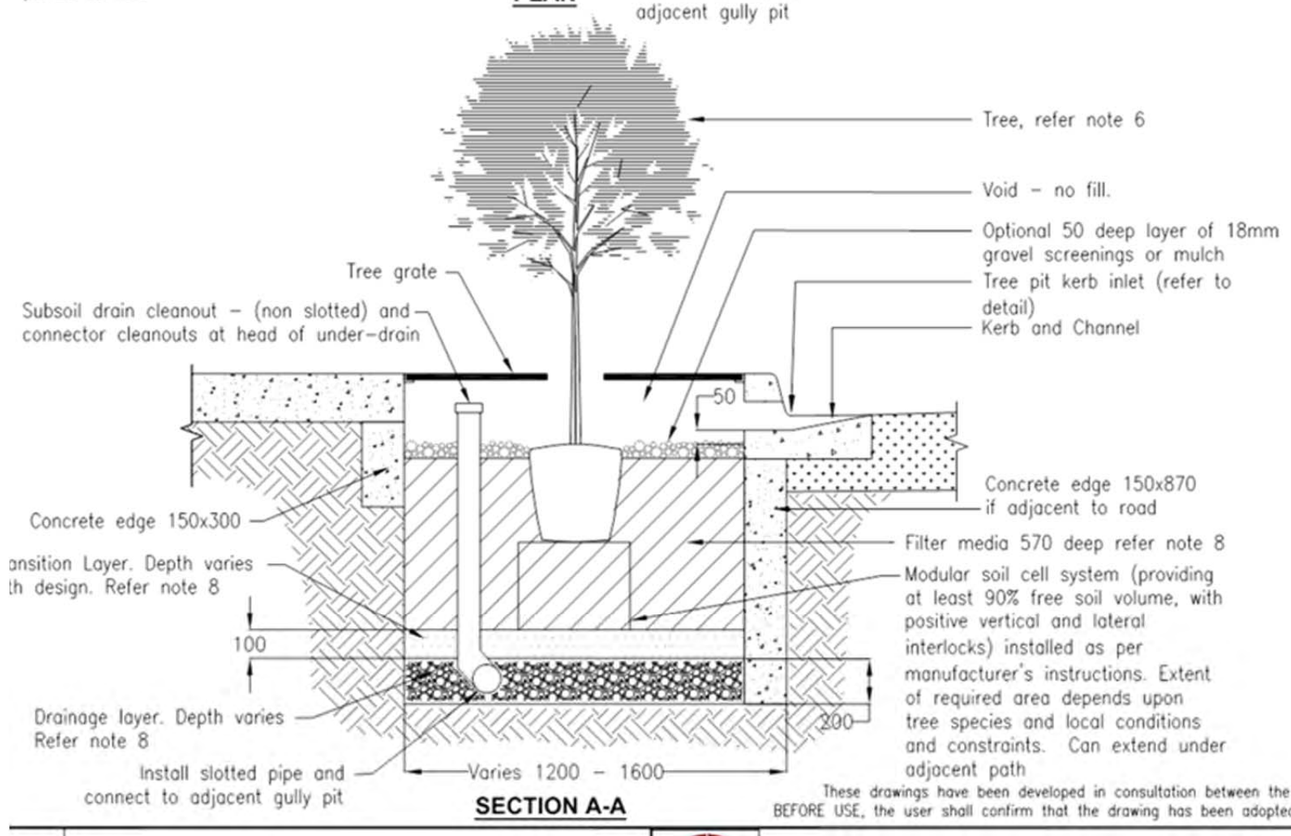
1. Insitu material to be tested and approved by geotechnica engineer prior to weir construction.
2. Concrete weir – 300 wide x 600 deep concrete (N32) with SL82 mesh placed centrally.
3. Liner. permeable or impermeable depending on design. Refer to DS-070 to DS-074
4. Grouted stone pitching – stones 75–100, 300 thick on filter cloth, refer note 3. Refer landscape drawings and project drawings for plant specification and details. Geotechnical engineer to confirm compaction requirements for bund subsoil.
5. 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. Construction tolerances and bund levels must be noted on project plans.
6. For extent and details of scour protection refer to project drawings.
7. Bund level, refer to project drawings for minimum freeboard requirements. Bund levels must be noted on project drawings.
8. All dimensions are in millimetres unless otherwise noted.

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INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA STANDARD DRAWINGS	BIORETENTION WEIR	DS-076



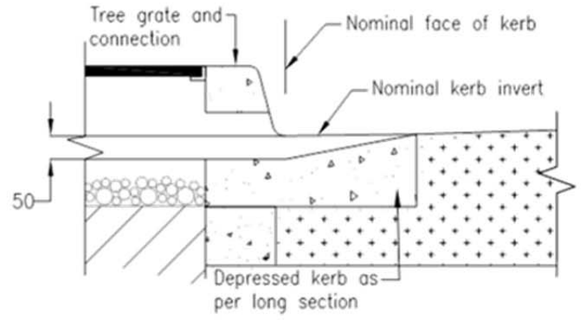
PLAN



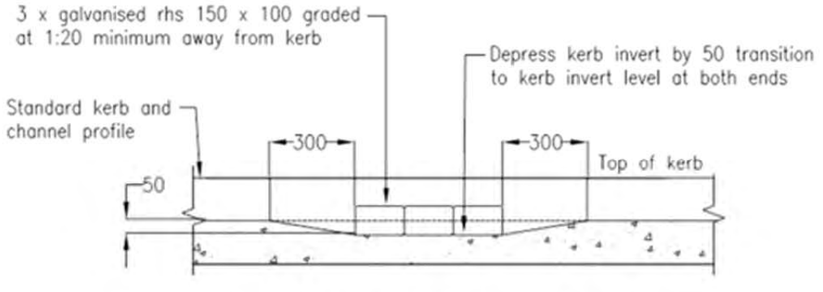
SECTION A-A

NOTES:

1. For general design and construction notes refer to DS–078.
2. WSUD kerb shown is only suitable for street tree pits and small raingardens. Larger systems may need specific inlet design or multiple inlets.
3. Where no parking lane exists, RHS kerb inlet may be replaced by an open kerb cut.
4. Ensure tree pit drainage is connected to stormwater system to avoid flooding the tree.
5. Tree pits are to be located upstream of gully pits.
6. Street tree to be appropriate for traffic sight lines.
7. Filter media specification shall be in accordance with the 'Guidelines for Soil filter Media i Bioretention systems' (FAWB) and the Bioretention Technical Design Guidelines (Water by Design). Bioretention hydraulic conductivity shall be in accordance with 'Practice Note 1: InSitu Measurement of Hydraulic Conductivity' (FAWB). The number of samples to be testec shall be in accordance with the 'Construction and Establishment Guidelines –Swales, Bioretention Systems and Wetlands' (Water by Design).
8. Transition layer and drainage layer specifications to be in accordance with Bioretention Technical Design Guidelines (Water by Design.
9. All dimensions in millimetres unless specified otherwise.



TREE PIT KERB INLET TYPICAL SECTION



TREE PIT KERB INLET ELEVATION

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INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA STANDARD DRAWINGS	BIORETENTION STREET TREE	DS–077

Bioretention System Specification

1. Referenced documents.
   The following documents are incorporated into this specification by reference:
   1.1. Standards
      1.1.1. AS 1289 - Methods of Testing Soils for Engineering Purposes
      1.1.2. AS 1289.5.4.1-2007- Soil Compaction and Density Tests--Compaction Control Test--Dry Density Ratio, Moisture Variation and Moisture Ratio
      1.1.3. AS 1289.5.7.1-2006 - Soil Compaction and Density Tests--Compaction Control Test--Hilf Density Ratio and Hilf Moisture Variation (rapid method)
      1.1.4. AS 2758 - Aggregates and Rock for Engineering Purposes
      1.1.5. AS 4419 - Soils for Landscaping and Garden Use
      1.1.6. 1.1.6 AS 4454 - Composts, Soil Conditioners and Mulches
   1.2. Other publications
      1.2.1. Guidelines for Soil Filter Media in Bioretention Systems (FAWB) - the current version of the guideline can be found at http://www.monash.edu.au/FAWB/
      1.2.2. Construction and Establishment Guidelines - Swales, Bioretention systems and Wetlands (Water by Design) http://waterbydesign.com.au/ceguide/
      1.2.3. Transferring Ownership of Vegetated Stormwater Assets (Water by Design) http://waterbydesign.com.au/transferguide/
      1.2.4. Transferring Ownership of Vegetated Stormwater Assets (Water by Design) http://waterbydesign.com.au/transferguide/
      1.2.5. Bioretention Technical Design Guidelines (Water by Design) http://waterbydesign.com.au/techguide/
      1.2.6. Water Sensitive Urban Design Field Guide (Water by Design)
2. Abbreviations and definitions
   2.1. The bioretention system specification consists of the following abbreviations and definitions:
   2.2. Filter: soil layer which acts as a pollutant filter and supports plant growth.
   2.3. Impermeable liners: the liner that prevents water movement between the filter and the surrounding soils and defines the edge of the system
   2.4. Transition layer: layer to separate filter layer from the drainage layer to avoid migration of soils from the filter to the drainage layer
   2.5. Drainage layer: relatively tree draining layer to convey infiltrated water to the underdrainage.
   2.6. Under-drains: slotted drains collect treated stormwater from the drainage layer at the base of the bioretention system.
3. Test methods and standards
   3.1. The following test methods and standards are to be used as specified in the above guidelines when conducting tests associated with this specification:
   3.2. The hydraulic conductivity of potential filter media shall be measured using the ASTM F1815-11 method
   3.3. Particle size distribution: AS1289.3.6.1 - 1995
   3.4. Soils for landscaping and garden use: AS4419 - 2003.
4. Materials
   4.1. Materials shall meet the required specifications detailed in *Section 8 Filter media, Section 9 Transition layer, Section 10 Drainage layer, Section 11 Under drainage, Section 12 Permeable liner, Section 13 Impermeable liner and Section 14 Landscaping* of this document.
   4.2. All materials must be certified by the supplier with certification and delivery supply dockets shall be provided on request to certify the material delivered is the material tested.
5. Timing and erosion and sediment control
   5.1. The timing of civil and landscape works for bioretention systems must be carefully planned to ensure that both the bioretention system and the downstream waterways, are not impacted by stormwater and sediment (e.g. through best practice erosion and sediment control). In particular, the drainage layer, transition layer and filter media must not be placed until the risk of high sediment loading from upstream construction activities has been mitigated. The construction sequence must be approved by the superintendent.
   5.2. Erosion and sediment control during construction must be delivered in accordance with all legislative requirements including, where required, the preparation of site-specific ESC plan/s in accordance with current Best Practice Erosion and Sediment Control (e.g. IECA 2008, or later version).
6. Earthworks and hydraulic structures
   6.1. The construction of hydraulic structures must ensure the design levels are achieved. Bunds/ embankments surrounding the system shall be at correct levels. The below table summarises the construction tolerances for each element of a typical bioretention system.
   6.2. Bioretention systems tolerances

Bioretention element	Tolerance (unless specified otherwise)
Hydraulic structures	+ /- 25 mm (+/- 15 mm for streetscape systems)
Earthworks	+ /-50 mm
Under-drainage	+/- 25 mm
Drainage and transition layers	+ 25 mm
Surface level	+/- 25 mm +/- 40 mm for filter media >300 m² provided the average extended detention requirement is within 25 mm of the design requirement.
Embankments and bunds	-25 mm, + 50 mm

7. Maintenance access.
   Maintenance access is provided in accordance with the design drawings.

8. Filter media
   8.1. Materials
   A fundamental part of bioretention systems is the filter media. The main role of the filter media is to support vegetation and remove pollutants. Filter media should be loamy sand that has high permeability when compacted. It should not contain any rubbish or deleterious material. The loamy sand should contain some organic matter to improve water-holding capacity and plant health, but it should be low in nutrient content. The filter media must be compliant with AS4419 - Soils for Landscaping and Garden Use, and meet the following requirements:

Parameter	Test method in accordance with	Requirement
Saturated hydraulic conductivity	ASTM f1815-11	50 - 500 mm/hr (200 preferred)
pH	AS 4419	5.5 - 7.5
Electrical conductivity	AS 4419	<1.2 dS/m
Nitrogen content	AS 4419	<800 mg/kg
Phosphorus content	AS 4419	<40 mg/kg
Organic content	AS 4419	3% - 10%. Where organic content is below this threshold, the filter media may be ameliorated by adding 50 mm of compost and tining it into the top 150 mm of filter media.
Particle size distribution	AS 1289.3.6.1 - 1995	Clay & silt 3 - 6% (<0.05 mm) Very fine sand 5 - 30% (0.05 - 0.15 mm) Fine sand 10- 30% (0.15 - 0.25 mm) Medium to coarse sand 40- 60% (0.25 - 1.0 mm) Coarse sand 7 - 10% (1.0 - 2.0 mm) Fine gravel <3% (2.0 - 3.4%)

Source: Guidelines for Soil Filter Media in Bioretention Systems (FAWB) and Bioretention Technical Design Guidelines (Water by Design)

Filter media must be free of weeds and propagates. Other characteristics of the filter media required for plant growth should be confirmed with a soil analysis or confirmed with a horticulturist/landscape architect.

8.2. Testing frequency
Suitable filter media can be delivered to site or imported sand can be ameliorated to meet the above specification. In either case, the media shall be tested against the above parameters at one sample per 500 m3 of filter media. For soil supplied to site, testing must be undertaken on the actual material to be delivered to the bioretention system. The supplier and contractor will be responsible for ensuring the filter media meets the specification and the correct material is delivered to site prior to installation.

8.3. Installation and compaction
When installing, the following specifications shall be applied:
   8.3.1. Filter media shall be installed and compacted in two lifts for depths of over 500 mm. Compaction shall be light and even across the surface.
   8.3.2. The top surface of the drainage layer, transition layer and the filter media layer shall be level and free from localised depressions to ensure even distribution of stormwater flows across the surface and prevent localised ponding.
   8.3.3. Filter fabric must not be used between drainage layer, transition layer and the filter media layers or wrapped around the under-drainage

9. Transition layer
   9.1. Transition layers prevent filter media migrating into the drainage layer.
      9.1.1. Materials
         9.1.1.1. Transition layer shall be minimum thickness of 100 mm coarse sand unless otherwise specified (typically 1mm particle size diameter) with <2% fines.
         9.1.1.2. A particle size distribution for the sand shall be obtained to ensure that it meets the following criteria (VicRoads).
         9.1.1.3. D15 (transition layer) ≤ 5 x D85 (filter media)
      9.2. Testing
      A sample of the proposed transition layer is to be provided to the superintendent for approval prior to installation. The superintendent may require the transition layer to be tested to ensure its particle size.

10. Drainage layer
Drainage layers convey infiltrated water into the slotted under-drainage pipes.
   10.1. Materials
      10.1.1. Drainage layer shall be comprised of fine gravel (nominal 2-5 mm) with <2% fines and a minimum saturated hydraulic conductivity of 400 mm/hr. The depth of the drainage layer shall ensure at least 50 mm of aggregate cover over all perforated under-drainage pipes.
      10.1.2. A particle size distribution for the gravel shall be obtained to ensure that it meets the following bridging criteria (VicRoads): D15 (drainage layer) ≤ 5 x D85 (transition layer)
   10.2. Testing
      A sample of the proposed drainage layer is to be provided to the superintendent for approval prior to installation. The superintendent may require the drainage layer to be tested to ensure its particle size.

11. Under-drainage
   11.1. Materials
      Either slotted rigid pipe (HDPE or similar) or ag-pipe can be used for under-drainage as specified in the construction drawings. When installing, the following specifications shall be considered:
      11.1.1. Typically 100 mm-slotted HDPE pipe is the preferred type of rigid pipe.
      11.1.2. The slots in the pipe shall not allow the drainage layer aggregate to freely enter the pipe (under-drainage with slot width of 2 mm or smaller is preferred).
      11.1.3 Under-drainage pipes must not be surrounded by any geofabric or sock.
   11.2. Installation
      11.2.1. The maximum spacing of under-drains for bio-retention systems <100 m2 is 1.5 m from centre to centre. For bioretention systems >100 m2 the maximum spacing can be increased to 2.0 - 2.5 m if specified in the construction drawings.
      11.2.2. The under-drains shall be sloped towards the outlet pit (min. 0.5% longitudinal grade) and the base of filtration trench shall be free from localised depressions. For bioretention systems with a saturated zone a 0% pipe grade is acceptable.
      11.2.3. All junctions and connections shall be appropriately sealed.
      11.2.4. Under-drainage pipes shall be sealed into the overflow pit.
      11.2.5. All under drainage pipes to have raised clean out points constructed from non-slotted pipes which extend to 150 mm above filter media surface

12. Permeable liner (where specified)
   12.1. A permeable geotextile liner fabric must be used to line the outside of the bioretention system.
   12.2. The liner must extend at least 500 mm beyond the top of the sides and must be keyed into batter and covered by at least 200 mm of topsoil.
   12.3. The liner must be resistant to all soil acids and alkalis, resistant to microorganisms and comply with the requirements of AS3706.12 and AS3706.13.

13. Impermeable liner (where specified)
   13.1. Materials
      Liner options include clay, geosynthetic bentonite clay liners or high-density poly ethylene (HDPE) liners. Refer to the project drawings for liner details.
   13.2. Installation
      Installation must be in accordance with manufacturers specifications and design drawings and achieve the following:
      13.2.1 The liners shall be keyed into the batters and to the embankments.
      13.2.2. Liners must be sealed around protrusions such as outlet pipes.
      13.2.3 Must achieve a maximum permeability of $1x10^{-9}$m/s

14. Landscaping
   14.0. Refer to landscape design drawings.
   14.1. Batter slopes must have min 200 mm topsoil which must be tested by a NATA-accredited laboratory in accordance with AS 4419.
   14.2. Subsoils to be cultivated to 150 mm prior to placing topsoil on batter slopes.
   14.3. Planting densities and species must be consistent with the landscape design drawings. No substitutions should be made unless approved by the superintendent.
   14.4. Plants supplied to site must:
      14.4.1 be grown in clean, weed- and pest-free conditions;
      14.4.2 be well developed, sun-hardened and contain a fully established root ball that does not crumble when removed from its container.
      14.4.3 be at least 200 mm high.
      14.4.4 show no sign of pest and disease
      14.4.5 show no signs of nutrient deficiency
      14.4.6 be free from weeds
      14.4.7 be clearly labelled
      14.4.8 be supplied in a container that is at least 90 mm high x 50 mm wide
   14.5. Preparing Filter media: Unless specified otherwise, each plant must receive at least 10 g of slow-release native fertilizer in granular or tablet form. Pre-hydrated water crystals may be applied at 1-2% by weight.
   14.6. Mulch must be applied in accordance with the design drawings, be applied prior to planting, provide coverage of the soil and not exceed 75 mm thickness, and be kept 50 mm clear of plant stems. Unless otherwise specified, mulch should be fine sugar cane mulch secured in place by a loose weave jute net pinned at 500 mm centres.
   14.7. Filter media surface and plant stock are to be watered immediately prior to planting. Unless otherwise specified, plants should be planted in clumps of the same species, and large monocultures avoided.
   14.8. Plant method must minimise soil compaction and ensure that all roots are covered by at least 10 - 20 mm of soil, avoid covering plant crowns.
   14.9. Unless specified otherwise, the following irrigation schedule applies during plant establishment (at 2.5 - 5 L per plant per week)
      - Week 1-5 Five waterings per week
      - Week 6-10 Three waterings per week
      - Week 11-15 Two waterings per week
      - Thereafter As required to sustain plants until successful establishment
   14.10. Replanting must occur during the establishment period if less than 90% of plants survive.
   14.11. Successful plant establishment in bioretention systems is considered when the plants are robust and self-sustaining, and meet the following criteria.
      - Vegetation must cover at least 90% of the bioretention surface with mulch covering the remainder (< 10% mulch visible from above)
      - Average groundcover plant height must be greater than 500 mm.
      - Plants must be healthy and free from disease.
      - No weeds or litter to be present.

15. Certification and chain of custody
   15.1. The following certification and the chain of custody applies to bioretention media:
      15.1.1. The supplier and contractor are responsible for ensuring the bioretention media meets the specifications outlined in these guidelines and that the correct material is delivered to site. The supplier must arrange for testing of the filter media by a soil laboratory certified for the methods in accordance with the requirements listed above. On the basis of the testing, the soil laboratory and supplier must certify the material meets these specifications. The supplier must provide the certification and laboratory test results to the contractor with the supply docket.
      15.1.2. The contractor provides a copy of the supplier's certification, test results and supply docket to the site superintendent or bioretention designer for review.
      15.1.3. Following review of the certification, test results and the supply docket, the site superintendent or bioretention designer approves installation of the bioretention media.
      15.1.4. The relevant sections of the bioretention media sign-off form as per the Construction and Establishment Guidelines (Water by Design) should be completed and signed. This sign-off form is provided as part of the construction certification by the site superintendent or bioretention designer.

16. Hold points
   16.1. The following hold points must be observed in accordance with the most recent Water by Design construction checklists and superintendent approval is required for works to proceed:
      16.1.1. Prestart meeting
      16.1.2. Completion of hydraulic structures and under-drainage
      16.1.3 Prior to placing filter media
      16.1.4. After placement of filter media (prior to applying mulch and planting).

17. Compliance testing (for on-maintenance or off-maintenance)
   17.1. Compliance testing must be in accordance with chapter 5 of Transferring Ownership of Vegetated Stormwater Assets (Water by Design). Checklists must be completed and signed by the superintendent.

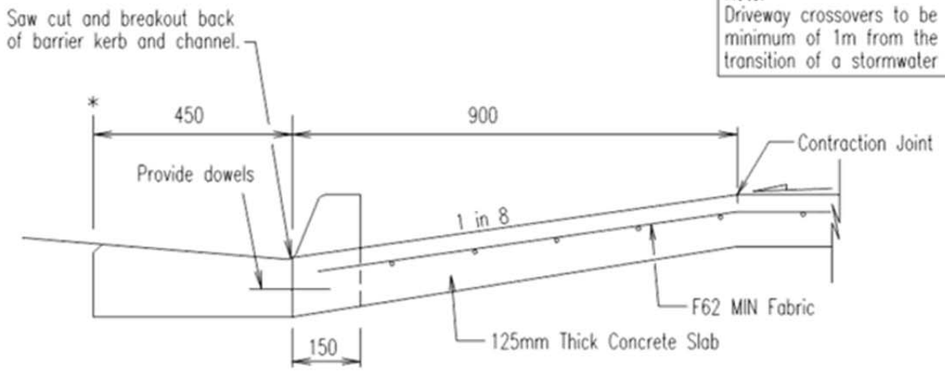
Disclaimer: it is the responsibility of the certifying registered professional engineer to ensure these standard notes are adapted to the specific needs of the project. It is expected that additional drawing notes would be required to cover other important project issues (e.g. Workplace Health and Safety, Environmental Protection, Erosion and Sediment Control, etc). Healthy Waterways, IPWEA and all contributors to this document accept no liability for the use, misuse or any omission or inaccuracy in this document.

These drawings have been developed in consultation between the participating Councils.
BEFORE USE, the user shall confirm that the drawing has been adopted by the appropriate Council.

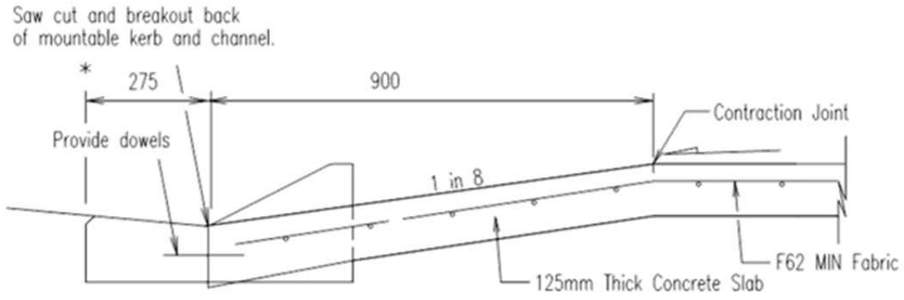
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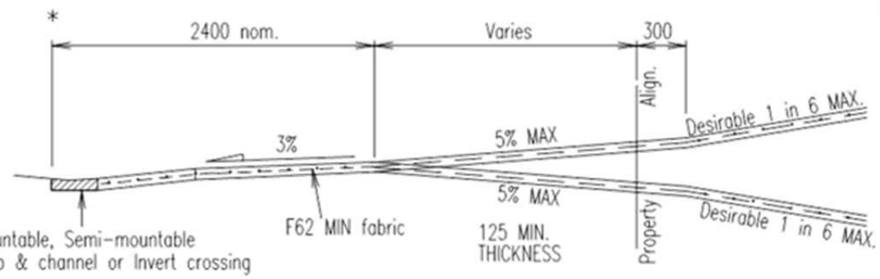
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BARRIER KERB & CHANNEL – TYPE B1

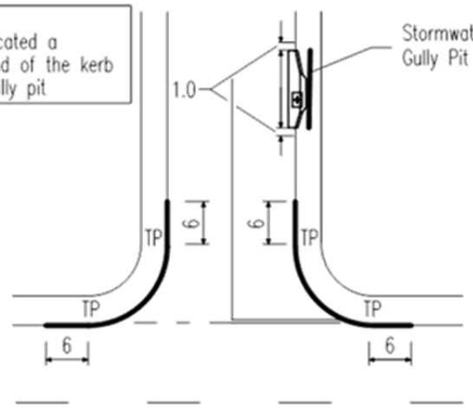


MOUNTABLE KERB & CHANNEL – TYPE M1

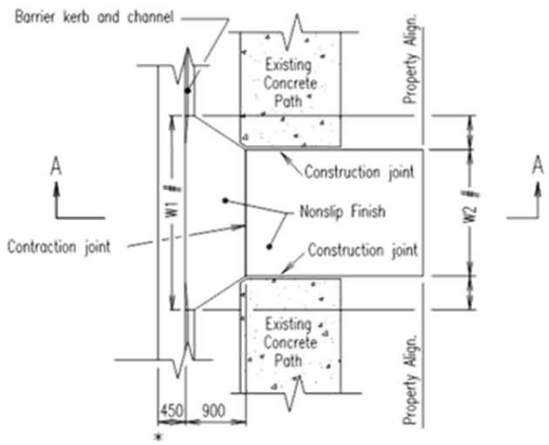


SECTION A–A

Note:
Driveway crossovers to be located a minimum of 1m from the end of the kerb transition of a stormwater gully pit



Prohibited Locations shown in a heavy line.
All Dimensions are in Metres.



SLAB ABUTTING CHANNEL INVERT BARRIER KERB AND CHANNEL

TABLE 1 – DRIVEWAY CROSSOVER WIDTHS

	Description	No. of Crossings Permitted	W1	W2	Special Conditions
Single Dwelling House	Single Garage	1	4.5m	3.5m	1. W1 must not be more than 50% of the total lot frontage width
	Double Garage	1	6.0m	5.0m	
	Double Garage	2	6.0m	5.0m	1. Min. 20m frontage 2. Min 6m between crossovers 3. Max. combined total width 9m
	Double garage or carport on property boundary	1	7.0m	6.0m	
Duplex	Duplex with frontage of less than 20m	1	7.0m	6.0m	
		2	4.0m	3.0m	1. Min. 6m between crossovers
	Duplex with frontage of 20m or more	2	4.0m	5.0m	1. Min. 6m between crossovers
W1 – Maximum allowable width at kerb invert (including splays)					
W2 – Maximum allowable width at property boundary					

LEGEND

* Lip Line for Setting Out
# Refer to Table 1

NOTES:

1. Crossings are not designed for commercial vehicles.
2. Reprofile and turf adjacent footpath to finish flush with driveway. Footpath earthworks adjoining concrete must be well compacted.
3. Where concrete paths exist, sawcut and grade smoothly to driveway crossover and join with expansion joint
4. Concrete surface tolerance to be $^{+5mm}_{-0mm}$, over 3 metre sections.
5. Concrete N25 in accordance with AS 1379 and AS 3600.
6. Reinforcement fabric to AS 4671, 50 top and edge cover, lap fabric 250.
7. Expansion joints to be 10 thick, full depth closed cell cross linked polyethylene foam (85 – 150 kg/m)
8. Other kerb and channel types shall ,have the same construction treatment as shown on this drawing.
9. All reinforcing mesh shall be supported on bar chairs.
10. Driveways are not to be constructed within 1m of a stormwater gully pit.
11. Galvanised steel dowels, 12mm dia, 250mm long and spaced at 500mm centres are used when joining to concrete paths and where the kerb is removed to ensure a flush joint is maintained.
12. Reinforcing mesh to be cut at construction joint
13. All dimensions in millimetres.
14. Removal of mountable kerb is optional on collector street, access streets and access places.
15. All driveway crossovers are to be constructed perpendicular to the road.

	REVISIONS	DATE	APPROVED
H	UPDATED	3/17	
G	UPDATED	3/10	
F	AMENDED	12/07	
E	AMENDED	7/05	
D	AMENDED	2/03	
C	AMENDED	1/02	
B	AMENDED	1/99	
A	ORIGINAL ISSUE	1/98	

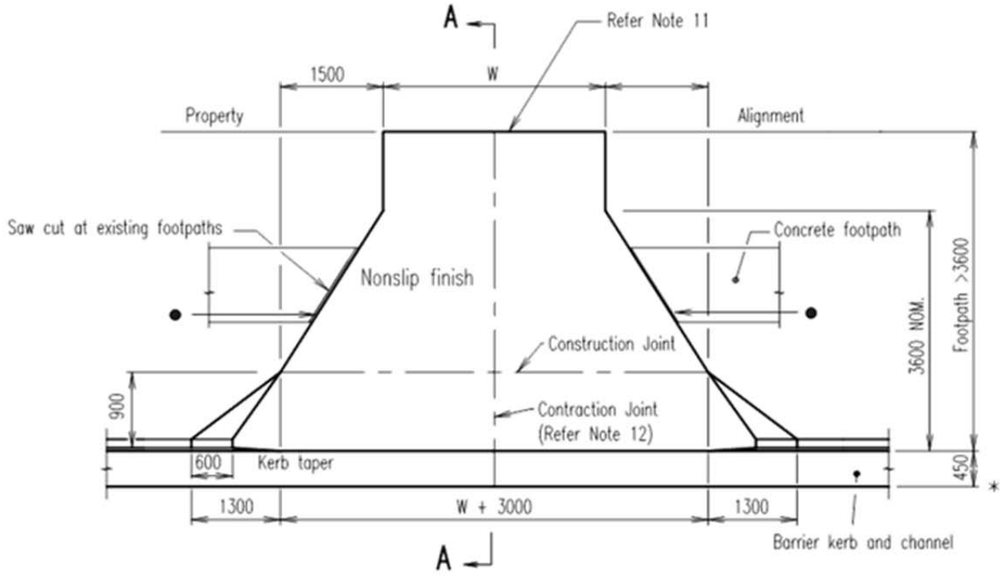
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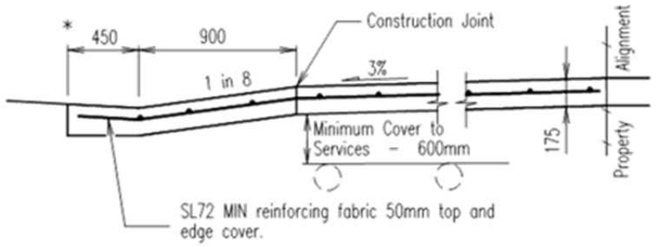
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DOMESTIC DRIVEWAY CROSSOVER FOR KERB AND CHANNEL

ROAD/STREET
Standard Drawing
R–RCC–1



PLAN – WIDE FOOTPATHS

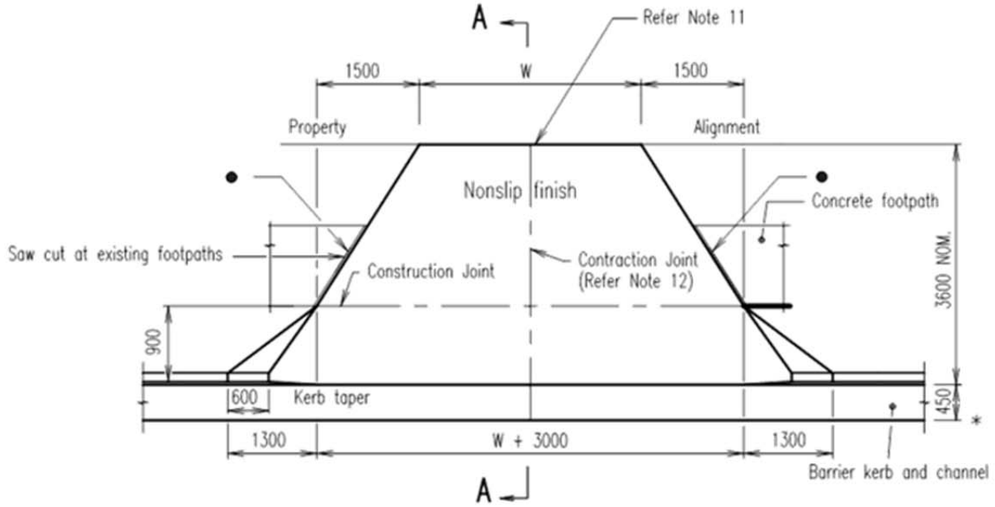


SECTION A – A

LEGEND

* Lip Line

● Expansion joints to be 10 thick, full depth closed cell cross linked polyethylene foam (85 – 150 kg/m³). Also refer Note 12.



PLAN – 3.6m FOOTPATH

NOTES:

1. Concrete N25 in accordance with AS 1379 and AS 3600.
2. Reinforcing fabric to AS 4671. Lap fabric 250mm.
3. Depths of concrete and reinforcing steel shown are the minimum requirements for good foundation conditions, and average traffic loading. Where this does not apply, depths of concrete and reinforcing shall be increased to suit specific conditions.
4. Design of crossings may vary, refer project drawings.
5. Dimension W, 3.0m One way, 5.5m Two way, refer specification or project drawings.
6. Reprofile adjacent footpath to match driveway,as directed by Redland City Council. Footpath earthworks adjoining concrete must be well compacted.
7. Existing footpath profile to be maintained where possible.
8. Compaction for subgrade 95% Standard to AS 1289.5.1.1.
9. Where subgrade is less than CBR 5 excavate and provide imported material to satisfaction of the Superintendent.
10. The driveway shall be concrete unless otherwise approved.
11. Gully pits may be provided on each side inside the property boundary when discharging to street underground drainage. Alternatively, a grated drain may be provided on the side of the property boundary. Refer project Drawings.
12. Galvanised steel slip dowels, 12mm dia, 250mm long and spaced at 500mm are used when joining to concrete paths to ensure a flush joint is maintained.
13. Contraction joints are required at 3 to 4.5m centres.
14. All reinforcing mesh shall be supported on bar chairs.
15. This drawing indicates the minimum standard required unless otherwise specified in the development approval.
16. All dimensions in millimetres.

E	UPDATED	3/10	
D	AMENDED	7/05	
C	AMENDED	1/02	
B	AMENDED	1/99	
A	ORIGINAL ISSUE	1/98	
REVISIONS		DATE	APPROVED

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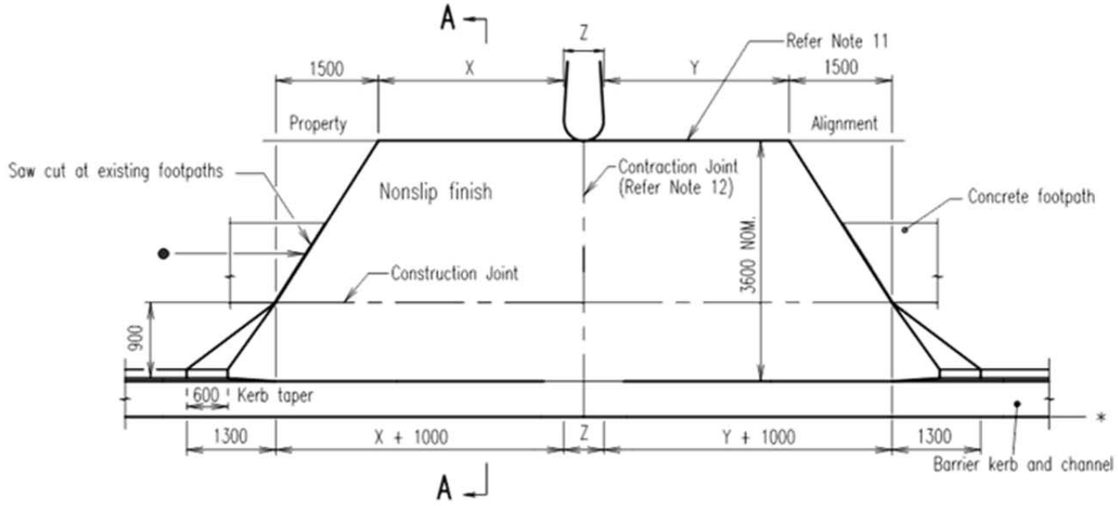
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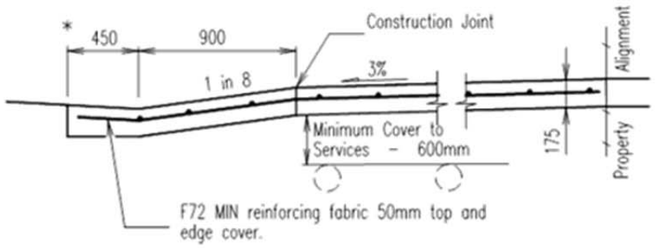
COMMERCIAL / INDUSTRIAL/ MULTIPLE DWELLING / DRIVEWAY CROSSOVER

ROAD/STREET
Standard Drawing
R–RCC–2

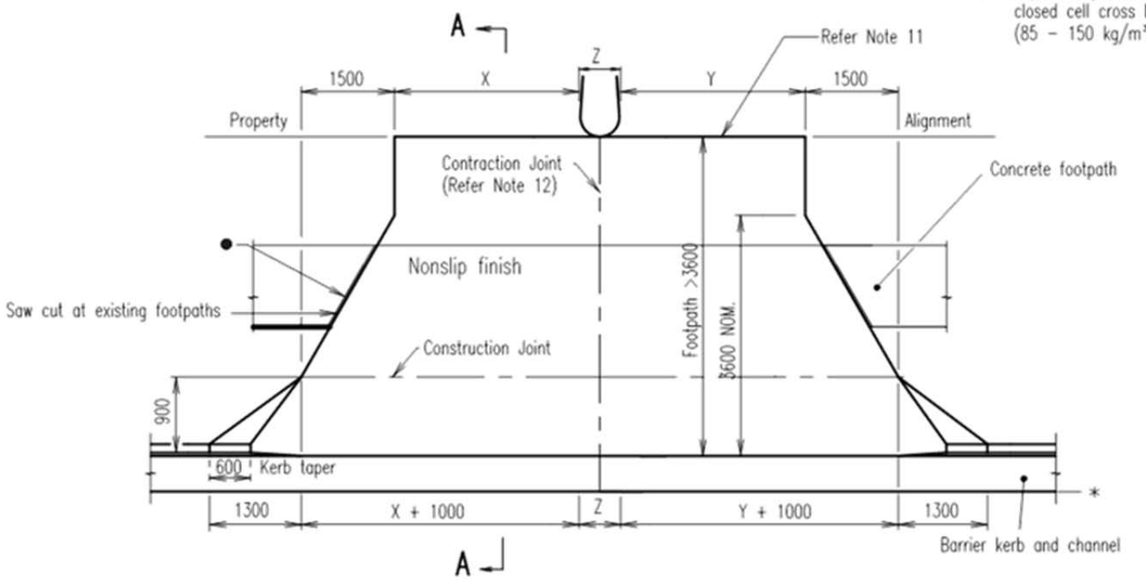
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PLAN – 3.6m FOOTPATH



SECTION A – A



PLAN – WIDE FOOTPATHS

LEGEND

* Lip Line

● Expansion joints to be 10 thick, full depth closed cell cross linked polyethylene foam (85 – 150 kg/m³).

NOTES:

1. Concrete N25 in accordance with AS 1379 amd AS 3600.
2. Reinforcing fabric to AS 4671. Lap fabric 250mm.
3. Depths of concrete and reinforcing steel shown are the minimum requirements for good foundation conditions, and average traffic loading. Where this does not apply, depths of concrete and reinforcing shall be increased to suit specific conditions.
4. Design of crossings may vary, refer project drawings.
5. Dimensions X, Y, & Z , refer specification or project drawings. Unless otherwise specified X = 5500, Y = 4500 and Z = 1200
6. Reprofile adjacent footpath to match driveway, as directed by Redland City Council. Footpath earthworks adjoining concrete must be well compacted.
7. Existing footpath profile to be maintained where possible.
8. Compaction for subgrade 95% Standard to AS 1289.5.1.1.
9. Where subgrade is less than CBR 5 excavate and provide imported material to satisfaction of the Superintendent.
10. The driveway shall be concrete unless otherwise approved.
11. Gully pits may be provided on each side inside the property boundary when discharging to street underground drainage. Alternatively, a grated drain may be provided on the side of the property boundary. Refer project Drawings.
12. Contraction Joints are required in driveway at 3 to 4.5m centres.
13. All reinforcing mesh shall be supported on bar chairs.
14. This drawing indicates the minimum standard required unless otherwise specified in the development approval.
15. All dimensions in millimetres.

	REVISIONS	DATE	APPROVED
E	UPDATED	3/10	
D	AMENDED	6/04	
C	AMENDED	1/02	
B	AMENDED	1/99	
A	ORIGNIAL ISSUE	1/98	

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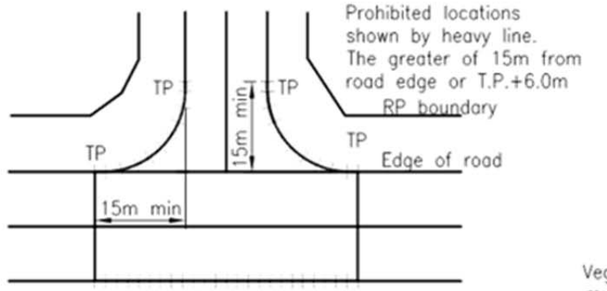
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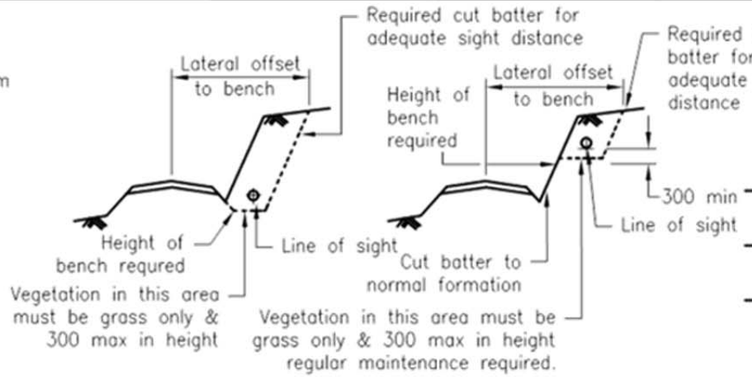
COMMERCIAL/INDUSTRIAL DRIVEWAY CROSSOVER

Standard Drawing
R-RCC-3

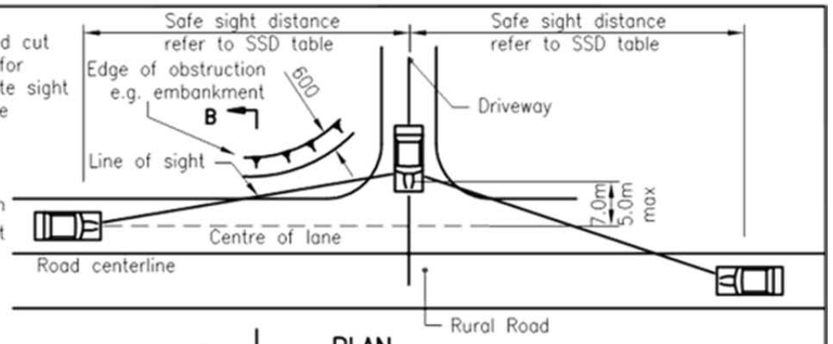
A B C D E



PROHIBITED LOCATIONS AT INTERSECTIONS FOR RURAL DRIVEWAYS

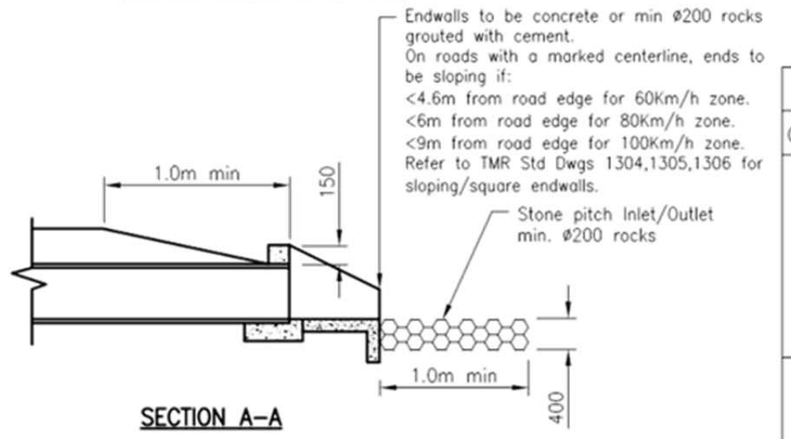


BENCHING DETAIL



B

PLAN



SECTION A–A

SECTION B–B

PIPE SIZE		
Catchment Area	ARI 2	ARI 10
<0.5Ha	375	450
<1.0Ha	450	525
<1.5Ha	525	600
<2.5Ha	600	2/450
<3.0Ha	2/450	2/525
<4.0Ha	2/525	2/600
<5.0Ha	2/600	(2)

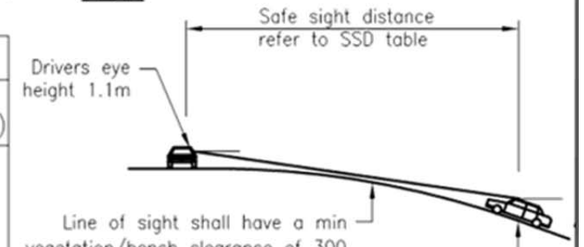
For average daily traffic <= 2000, ARI 2
For average daily traffic > 2000, ARI 10

(1) Alternatives may be approved if supported with calculations in accordance with the provisions of the Queensland Urban Drainage Manual or under the provisions of Council's Planning Scheme.

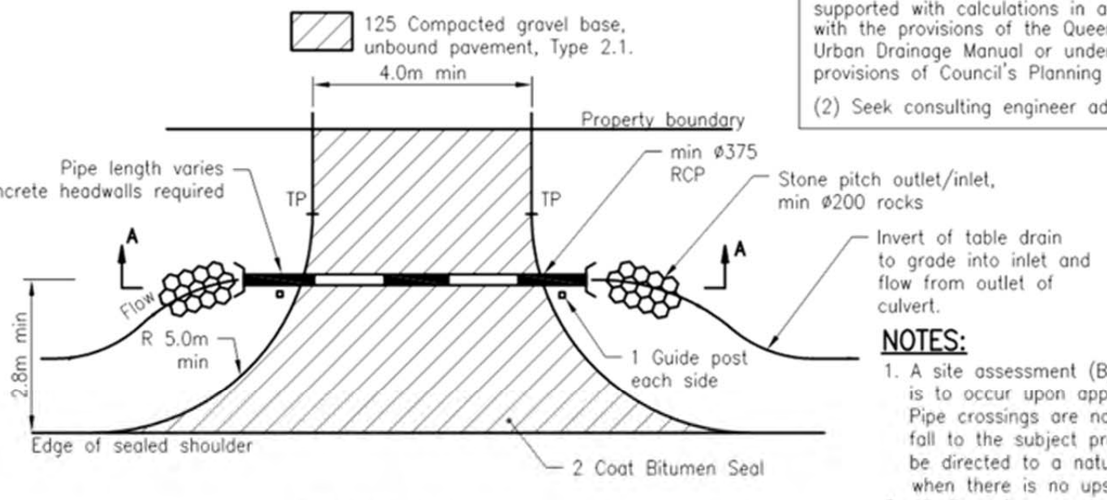
(2) Seek consulting engineer advice.

Safe Sight Distance	
Speed Limit (km/h)	Safe Sight Distance (m)
40	73
50	97
60	123
70	151
80	181
90	214
100	248

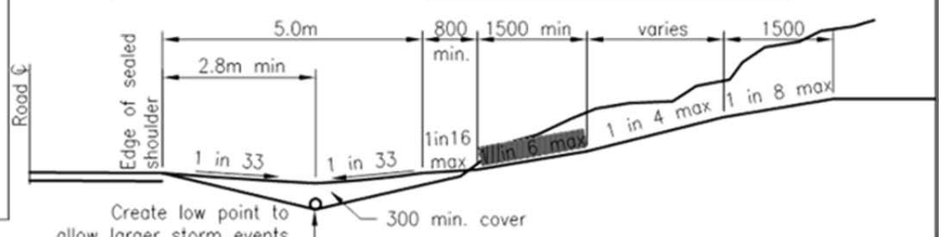
Based on Austroads Part 4A – 2009, Table 3.2



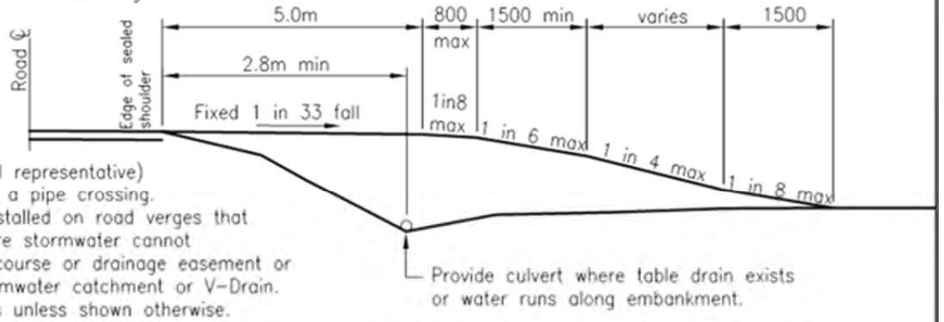
LONGITUDINAL SECTION SSD – EXITING FROM DRIVEWAY



DRIVEWAY PLAN



TYPICAL DRIVEWAY SECTION – ROAD IN CUT



TYPICAL DRIVEWAY SECTION – ROAD IN FILL

NOTES:

1. A site assessment (By a Council representative) is to occur upon application for a pipe crossing. Pipe crossings are not to be installed on road verges that fall to the subject property where stormwater cannot be directed to a natural water course or drainage easement or when there is no upstream stormwater catchment or V-Drain.
2. All dimensions are in millimetres unless shown otherwise.

These drawings have been developed in consultation between the participating Councils.
BEFORE USE, the user shall confirm that the drawing has been adopted by the appropriate Council.

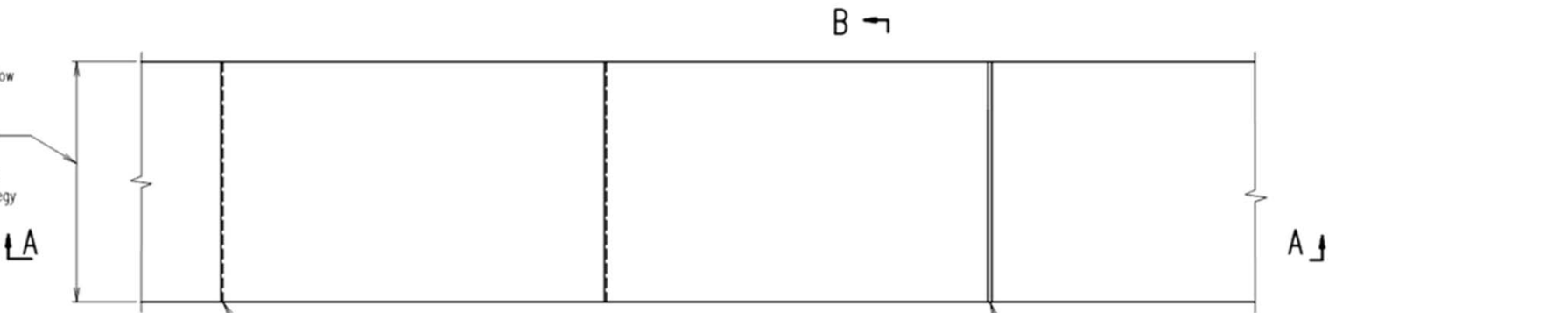
Rv	DATE	REVISIONS
F	06/14	Review
E	03/14	Amended Drawing Number
D	12/11	Drawing number changed from SEQ R-056 to RS-056
C	06/10	Review
B	06/09	Review
A	03/08	ORIGINAL ISSUE

INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

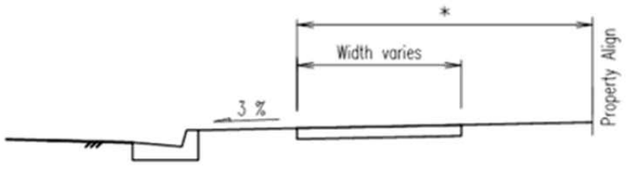
DRIVEWAYS
RURAL DRIVEWAY

RS–056

Width varies:
- Footpaths 1500 minimum width
- Shared use paths 2500 minimum, 2000 absolute minimum in restrcted/low use situations
- Commuter and recreational paths 2500 minimum width for lower order paths or 3000 maximum width for higher order paths in accordance with Redlands Cycling and Pedestrian Strategy Technical Report.



SECTION A – A



SECTION B–B

(Where kerb & channel exists)

FIBRE REINFORCED CONCRETE SPECIFICATION

The concrete shall be reinforced with a mixed dose of high performance polymer fibres and discreet graded fibrillated filament fibres. These fibres shall be provided as a coarse filament in an engineered contoured sinusoildal profile, of not less than 600 denier and discreet graded fibrillated filament fibres, of not greater than 6 denier. These fibres are to be manufactured from virgin polypropylene and added to the concrete, at the rate of 4.6kg per cubic metre. The 4.6kg shall consist of 3.8kg of HPP and 0.8kg of discrete graded fibrillated filament fibres.

LEGEND

* 2700 width for 4000 verge
Distance varies to provide adequate clearance to street light poles, trees and fixed objects on wider verges.

\# Alternative treatment without fibres, where specified by Council is SL62 reinforcing fabric, 50mm top edge cover, supported on bar chairs. Also refer Note 5.

NOTES

1. Concrete N25 in accordance with AS 1379 and AS 3600. with polypropylene fibres incorporated into the concrete mix Refer Fibre Reinforced Concrete Specification
2. All concrete to be broom finished.
3. Contraction/expansion joints, 2m MAX spacing.
4. Finished surface tolerance to be maximum +6mm relative to kerb level and crossfall specified. -0mm
5. Thickness to be increased to 125mm at residential vehicular crossovers and through parks and reserves. Provide a contraction joint at both ends of crossover
6. Concrete footpaths, adjoining existing driveways are to be transitioned over a minimum 5.0m length.
7. Galvanised steel slip dowels, 12mm dia, 250mm long and spaced at 500mm are used wehn joining to existing concrete paths to ensure a flush joint is maintained.
8. A street opening permit must be obtained from Council, seek approval of location and levels prior to excavation.
9. All dimensions in millimetres.

E	UPDATED	3/10	
D	AMENDED	8/05	
C	AMENDED	1/02	
B	AMENDED	1/99	
A	ORIGINAL ISSUE	1/98	
REVISIONS		DATE	APPROVED

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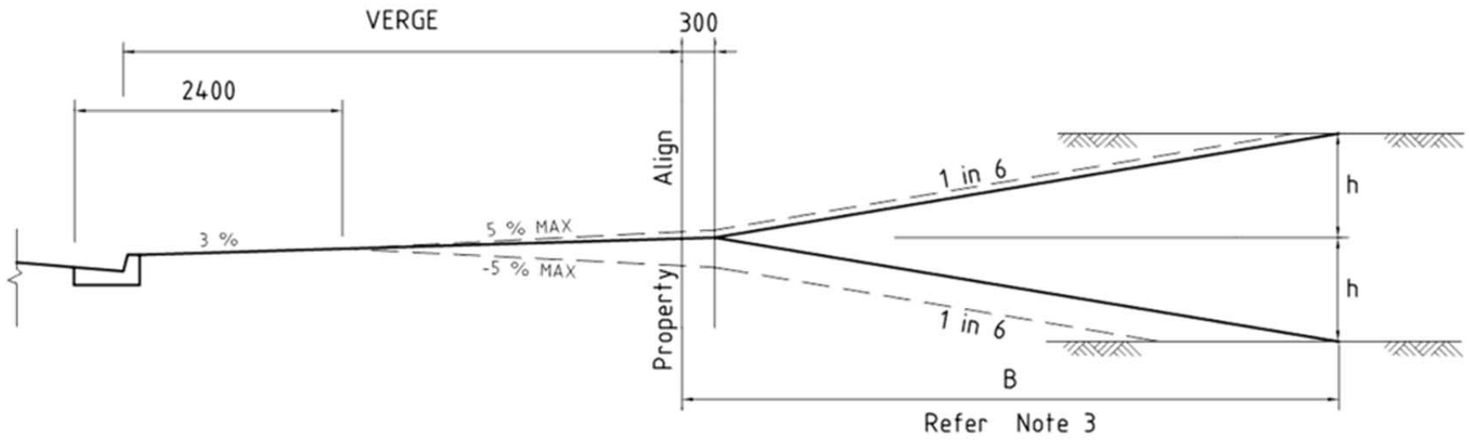
CONCRETE FOOTPATHS AND SHARED USE PATHS

ROAD/STREET

Standard Drawing

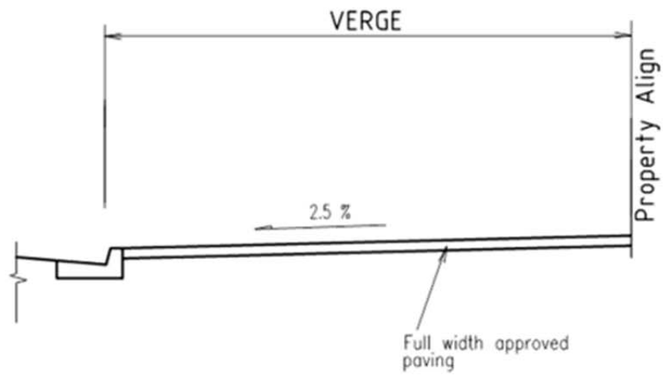
R–RCC–4

A B C D E



RESIDENTIAL FOOTPATH PROFILE & ADJOINING BATTER

Scale 1:50



COMMERCIAL FOOTPATH PROFILE

NTS

NOTES

1. Where h < 750, a standard 3% footpath with 1 in 6 batter shall be adopted.
2. Where h > 750, a combination of 3% and + 5% Max. may be adopted for the footpath profile with 1 in 6 slopes in private property.
3. Where B > 6000 when adopting 1 in 6 batters they may be increased to 1 in 4 Max. with B constant at 6000.
4. Where h > 1500, 1 in 2 batters may be provided with access points to each property graded at 1 in 4. (Not to be adopted unless approved by the Manager Infrastructure Development.
5. Provide Topsoil and Turfing as specicfied.
6. All grades are to conform with regard to accessability to all members of the community.
7. Variations may be approved at the descretion of the Manager Infrastructure Develpment.
8. Paving type and pattern to be approved by Redland Shire Council.

C	UPDATED	3/10	
B	AMENDED	1/99	
A	ORIGINAL ISSUE	1/98	
	REVISIONS	DATE	APPROVED

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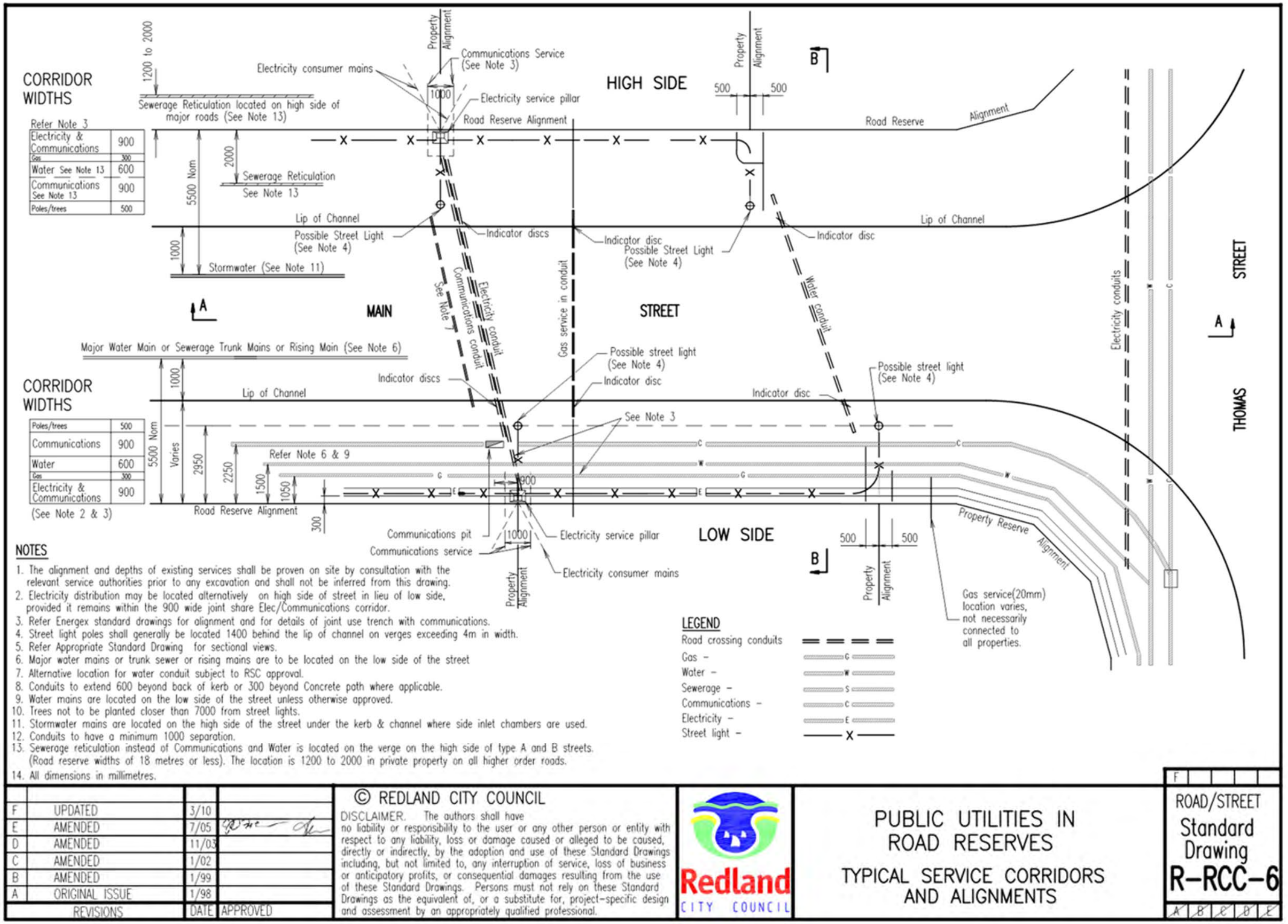
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FOOTPATH PROFILE POLICY

ROAD/STREET
Standard Drawing
R-RCC-5

A B C



NOTES

1. The alignment and depths of existing services shall be proven on site by consultation with the relevant service authorities prior to any excavation and shall not be inferred from this drawing.
2. Electricity distribution may be located alternatively on high side of street in lieu of low side, provided it remains within the 900 wide joint share Elec/Communications corridor.
3. Refer Energex standard drawings for alignment and for details of joint use trench with communications.
4. Street light poles shall generally be located 1400 behind the lip of channel on verges exceeding 4m in width.
5. Refer Appropriate Standard Drawing for sectional views.
6. Major water mains or trunk sewer or rising mains are to be located on the low side of the street
7. Alternative location for water conduit subject to RSC approval.
8. Conduits to extend 600 beyond back of kerb or 300 beyond Concrete path where applicable.
9. Water mains are located on the low side of the street unless otherwise approved.
10. Trees not to be planted closer than 7000 from street lights.
11. Stormwater mains are located on the high side of the street under the kerb & channel where side inlet chambers are used.
12. Conduits to have a minimum 1000 separation.
13. Sewerage reticulation instead of Communications and Water is located on the verge on the high side of type A and B streets. (Road reserve widths of 18 metres or less). The location is 1200 to 2000 in private property on all higher order roads.
14. All dimensions in millimetres.

LEGEND

Road crossing conduits
Gas – G
Water – W
Sewerage – S
Communications – C
Electricity – E
Street light – X

F	UPDATED	3/10	
E	AMENDED	7/05	
D	AMENDED	11/03	
C	AMENDED	1/02	
B	AMENDED	1/99	
A	ORIGINAL ISSUE	1/98	
REVISIONS		DATE	APPROVED

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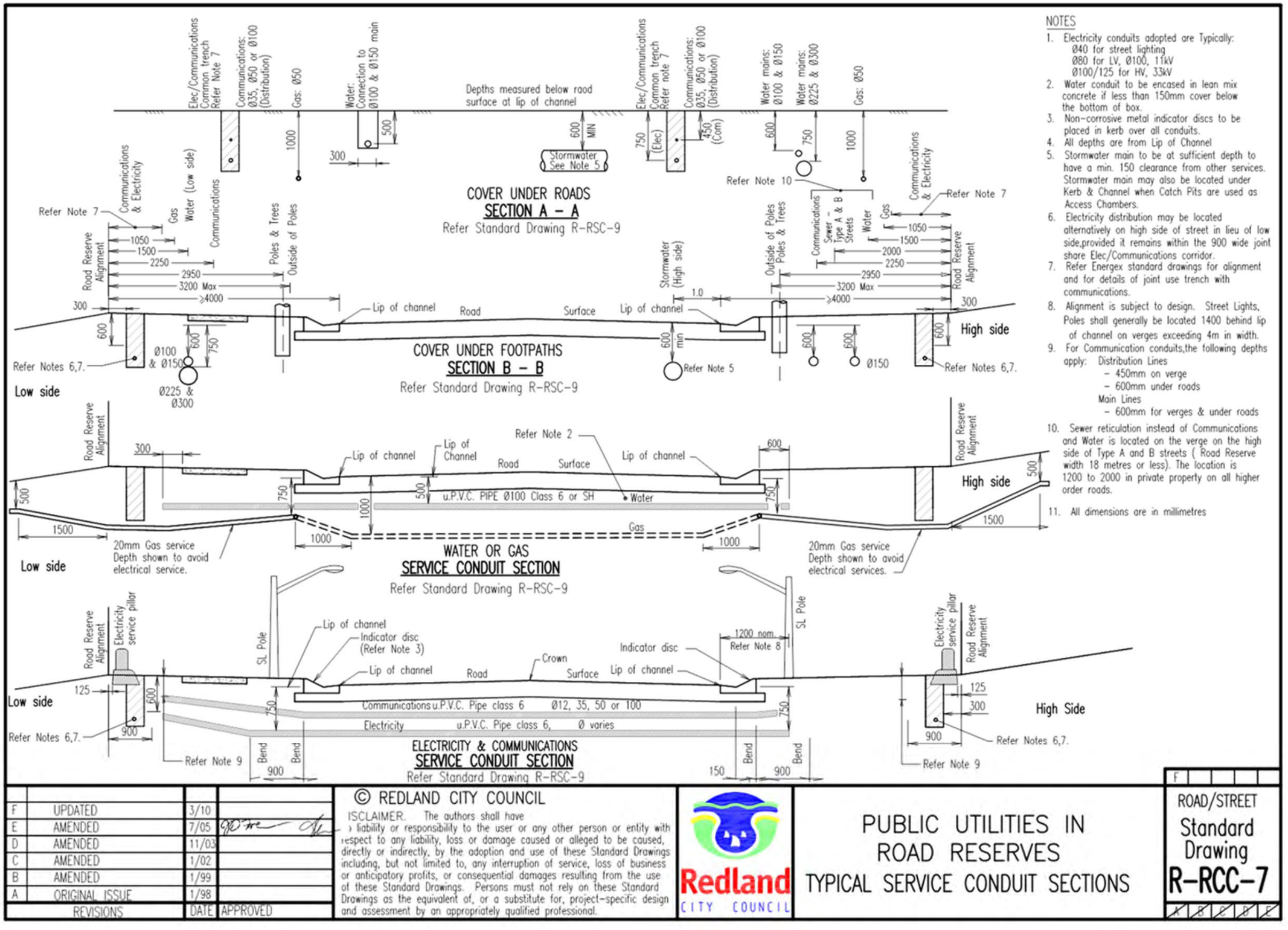
Redland CITY COUNCIL

PUBLIC UTILITIES IN ROAD RESERVES

TYPICAL SERVICE CORRIDORS AND ALIGNMENTS

ROAD/STREET
Standard Drawing
R–RCC–6

F | A | B | C | D | E



NOTES

1. Electricity conduits adopted are Typically:
   Ø40 for street lighting
   Ø80 for LV, Ø100, 11kV
   Ø100/125 for HV, 33kV
2. Water conduit to be encased in lean mix concrete if less than 150mm cover below the bottom of box.
3. Non-corrosive metal indicator discs to be placed in kerb over all conduits.
4. All depths are from Lip of Channel
5. Stormwater main to be at sufficient depth to have a min. 150 clearance from other services. Stormwater main may also be located under Kerb & Channel when Catch Pits are used as Access Chambers.
6. Electricity distribution may be located alternatively on high side of street in lieu of low side,provided it remains within the 900 wide joint share Elec/Communications corridor.
7. Refer Energex standard drawings for alignment and for details of joint use trench with communications.
8. Alignment is subject to design. Street Lights, Poles shall generally be located 1400 behind lip of channel on verges exceeding 4m in width.
9. For Communication conduits,the following depths apply: Distribution Lines
   – 450mm on verge
   – 600mm under roads
   Main Lines
   – 600mm for verges & under roads
10. Sewer reticulation instead of Communications and Water is located on the verge on the high side of Type A and B streets (Road Reserve width 18 metres or less). The location is 1200 to 2000 in private property on all higher order roads.
11. All dimensions are in millimetres

F	UPDATED	3/10	
E	AMENDED	7/05	
D	AMENDED	11/03	
C	AMENDED	1/02	
B	AMENDED	1/99	
A	ORIGINAL ISSUE	1/98	
REVISIONS		DATE	APPROVED

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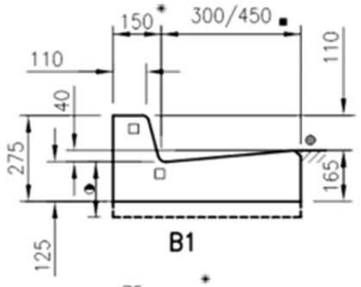
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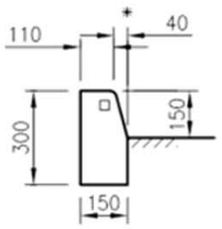
PUBLIC UTILITIES IN ROAD RESERVES
TYPICAL SERVICE CONDUIT SECTIONS

ROAD/STREET
Standard Drawing
R-RCC-7

F | A | B | C | D | E

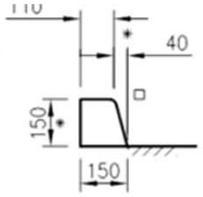


B1

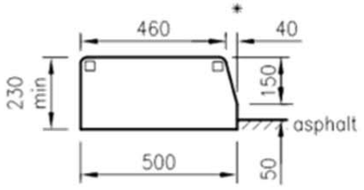


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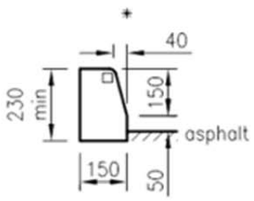
*For Carparks where overhang is required can reduce to 100.



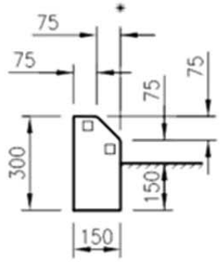
B4
BARRIER TYPE



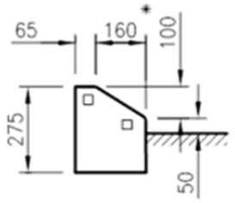
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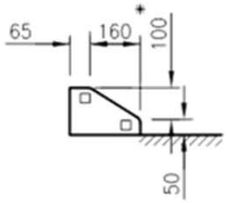
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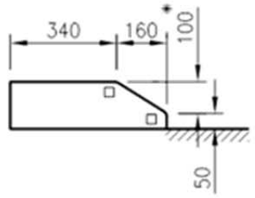
SM2



SM3

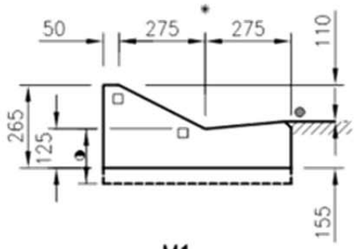


SM4
SEMI – MOUNTABLE TYPE

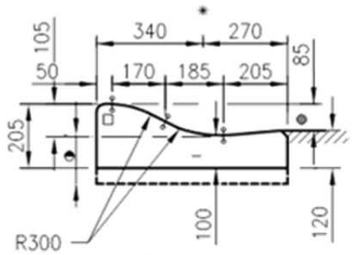


SM5

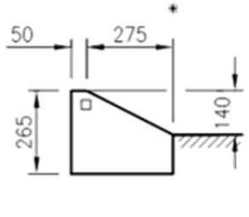
REFER TO PROJECT DRAWINGS FOR KERB SETOUT



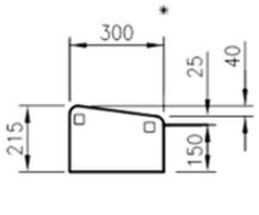
M1



M3



M4

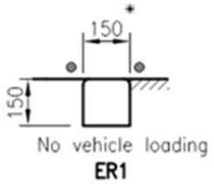


M6

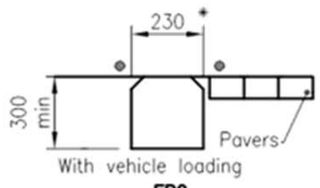
NOTES:

1. All materials and construction shall comply with . 2876 except for dimensions on this drawing.
2. All concrete N32 min (refer project documentatic in accordance with AS 1379 and AS 3600 unless approved otherwise by relevant Council.
3. Control joints shall be 3 metre centres unless otherwise directed by relevant Council.
4. Expansion joints at 12 metre centres unless otherwise directed by relevant Council. Expansion joints, preformed jointing material of bituminous fibreboard or equivalent approved by relevant Council.
5. All dimensions are in millimetres unless shown otherwise.

MOUNTABLE TYPE

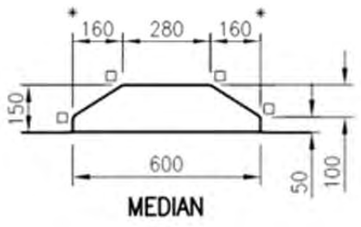


ER1

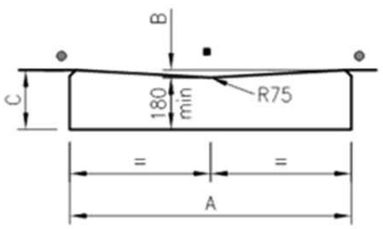


ER2

EDGE RESTRAINT



MEDIAN



DIMENSION		
A	B	C
600	25	200 min
900	40	220 min

For wider channel's refer to project drawings

CHANNEL

LEGEND

- nominal kerb line.
- Channel invert width, refer project drawings.
- R10 Radius.
- R20 Radius.
- 175 where specified for commercial and industrial applications, refer project drawings.

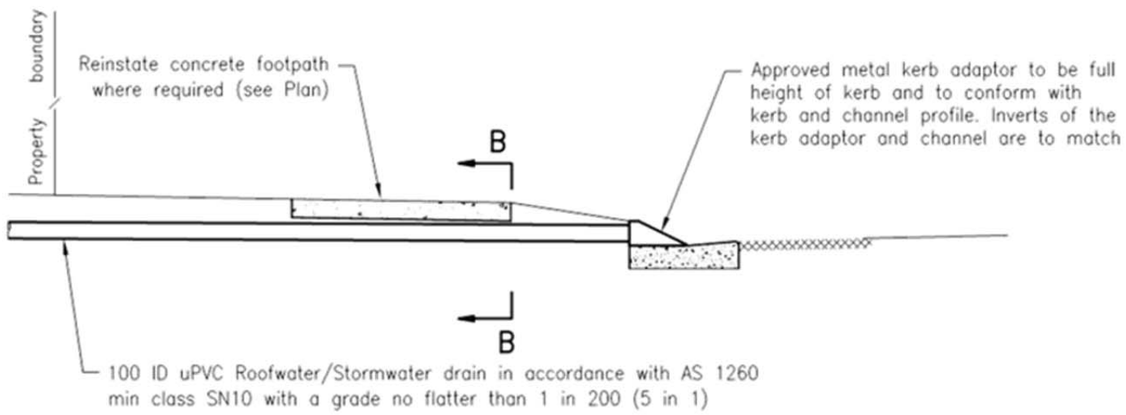
These drawings have been developed in consultation between the participating Councils.
BEFORE USE, the user shall confirm that the drawing has been adopted by the appropriate Council.

6/14	Review
6/11	Review
6/10	Review
6/09	Review
3/08	ORIGINAL ISSUE

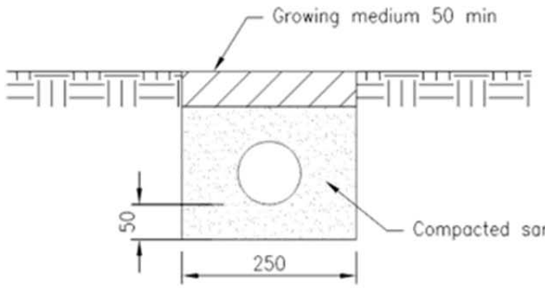
INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

KERB AND CHANNEL
PROFILES AND DIMENSIONS
INCLUDING EDGE RESTRAINTS, MEDIAN & CHANNEL

RS–080



SECTION A–A



SECTION B–B

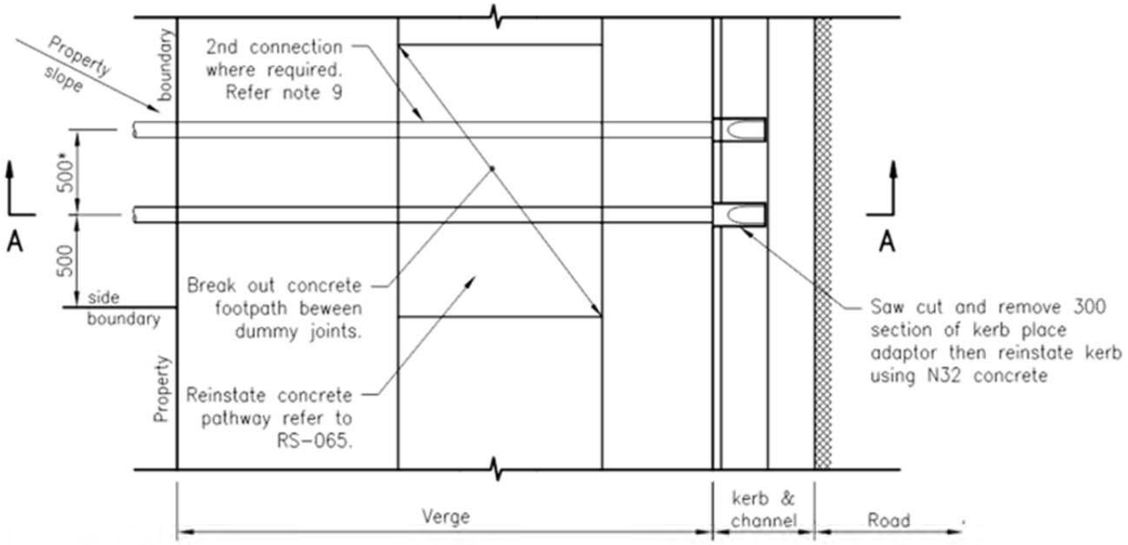
CAUTION
Verify location of services prior to commencement of work



Layback Kerb Adaptor Upright Kerb Adaptor

Note:
For specifications refer to manufacturer's product information.

TYPICAL FULL HEIGHT KERB ADAPTORS



* Spacing may be reduced if approved by relevant Council

PLAN

NOTES:

1. Kerb adaptors and other ancillary components within the verge are to be designed to cater for residential vehicle loadings and be approved by the relevant Council.
2. Roofwater/Stormwater drains are to transport only clean stormwater runoff from roofed or otherwise uncontaminated areas.
3. The requirements of AS 3500.3.1 Stormwater drainage – Performance requirements and the Queensland Building Code Regulations are to be met.
4. Roofwater/Stormwater drain outlets are not to be positioned within 5 metres of the upstream side of a catchpit (measured from the nearest catchpit component). Thus providing uncompromised capture efficiency of the catchpit. Outlets in this area are to discharge into the catchpit. The maximum discharge of stormwater drainage allowable to Council's kerb & channel street drainage system at any one location is 25 litres/second.
5. Council approval is required to connect to stormwater infrastructure such as manholes, catchpits and the like.
6. An alternative Roofwataer/Stormwater drain within the verge is two continual lengths of 125x75x3 hot dipped galvanised RHS at a grade no flatter than 1 in 200 and cut to finish flush with the kerb profile. All cut ends are to be cold galvanised and the kerb reinstated. Concrete cover to relevant Council approval.
7. Council's policy is that provision and maintenance of private Roofwater/Stormwater drains are the responsibility of the property owner. The property owner is also responsible for verge restoration to original conditions after construction.
8. Appropriate measures are to be taken to ensure work site safety during construction.
9. The minimum requirement for new allotments is the provision of two kerb adaptors plus piped drainage to the far edge of the concrete footpath where applicable.
10. All dimensions are in millimetres unless shown otherwise.

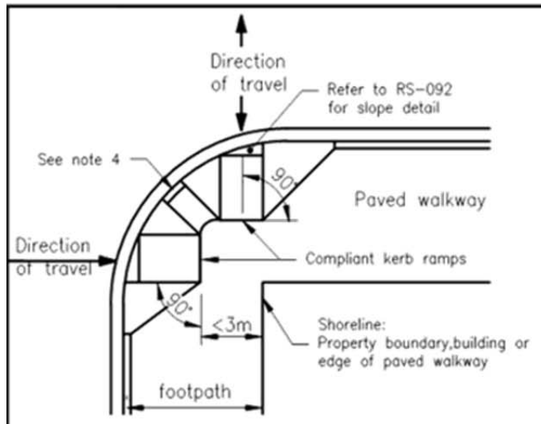
These drawings have been developed in consultation between the participating Councils.
BEFORE USE, the user shall confirm that the drawing has been adopted by the appropriate Council.

Rv	DATE	REVISIONS
F	03/14	Amended Standard Drawings
E	12/11	Drawing number changed from SEQ R-081 to R-081
D	06/11	Review
C	06/10	Review
B	06/09	Review
G	06/14	Review
		03/08 ORIGINAL ISSUE

INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

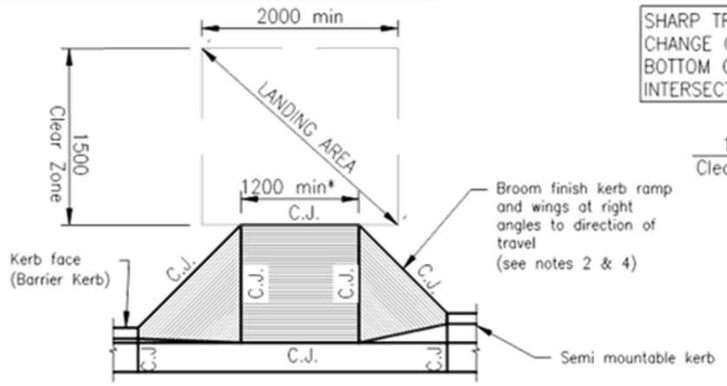
KERB AND CHANNEL
RESIDENTIAL DRAINAGE CONNECTIONS

RS–081



COMPLIANT KERB RAMP ALIGNMENT

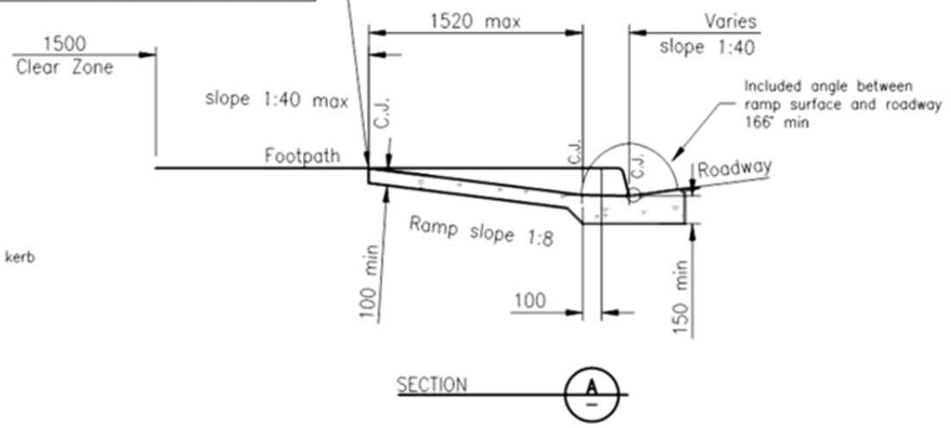
Refer drawing RS-092 for criteria where TGSI's are required.



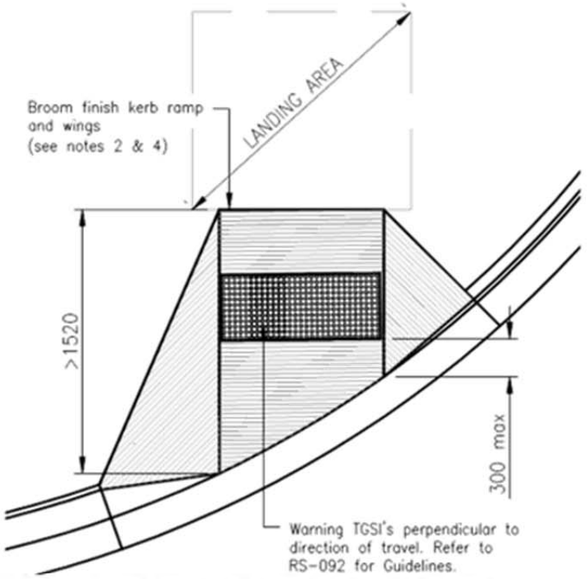
COMPLIANT KERB RAMP ALIGNMENT

SHARP TRANSITION (NO ROUNDING) AT CHANGE OF GRADE AT TOP AND BOTTOM OF RAMP AND AT INTERSECTION OF RAMP AND WINGS.

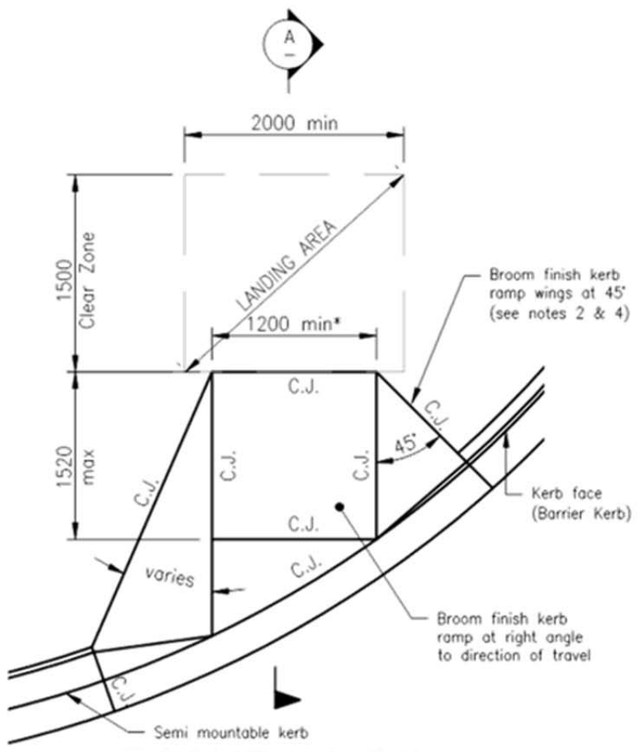
Barrier kerb shown. Details similar for semi mountable kerb



SECTION A–A



NON-COMPLIANT KERB RAMP PLAN VIEW



COMPLIANT KERB RAMP PLAN VIEW

*Kerb ramp to be 1200 min wide or as specified on construction drawings.

NOTES:

A compliant kerb ramp exists where all the following are satisfied:

1. TOP OF RAMP: There shall be a minimum obstruction free wheelchair turnaround distance of 1500 beyond the top of the ramp. The sharp transition at the top and bottom of the ramp shall be perpendicular to the direction of travel. The top of ramp landing area shall have a minimum of 2000 long by 1500 wide clear zone.
2. RAMP: maximum ramp slope for wheelchair access shall be 1:8. A sharp transition (no rounding) is to be maintained at the intersection of graded plane surfaces (top & bottom of ramp and intersection of ramp and wings). The intersection of the ramp and wings should be a tooled joint.
3. RAMP ALIGNMENT: Ramps shall be aligned parallel to the pedestrian direction of travel. Ramps on both sides of a carriageway shall be aligned with one another and the direction of travel.
4. KERB RAMP WINGS: The required wing angle is 45°. Subject to the approval of the superintendent, wings may be angled at less than 45° if the wing is required to be clear of traffic signals hardware, other wings or utility pits/manholes. Wing angle may also be reduced at obtuse angled intersections. Wing widths shall be between 600 and 1500. A maximum slope of 1 on 4 is to be maintained on the wings at the kerb face (ie min 600 wide wing for a 150 kerb). At least a 1 metre kerb upstand is desirable between adjacent kerb ramps wings on an intersection corner.
5. SURFACE OF RAMP and sloping sides shall be slip resistant as specified in AS/NZS 1428.1.

General:

6. CONCRETE to be Class N32/10. All concrete to be broom finished. Ramp to be cast monolithically with the channel or tray.
7. All dimensions are in millimetres unless shown otherwise.

Australian Standards:

AS 2876 Concrete kerbs and channels (gutters) – Manually or Machine Placed
AS 1428.1 Design for access and mobility – Part 1 General requirements for access – New building work
AS/NZS 1428.4.1 Design for access and mobility – Part 4.1 Means to assist the orientation of people with vision impairment – Tactile Ground Surface Indicators

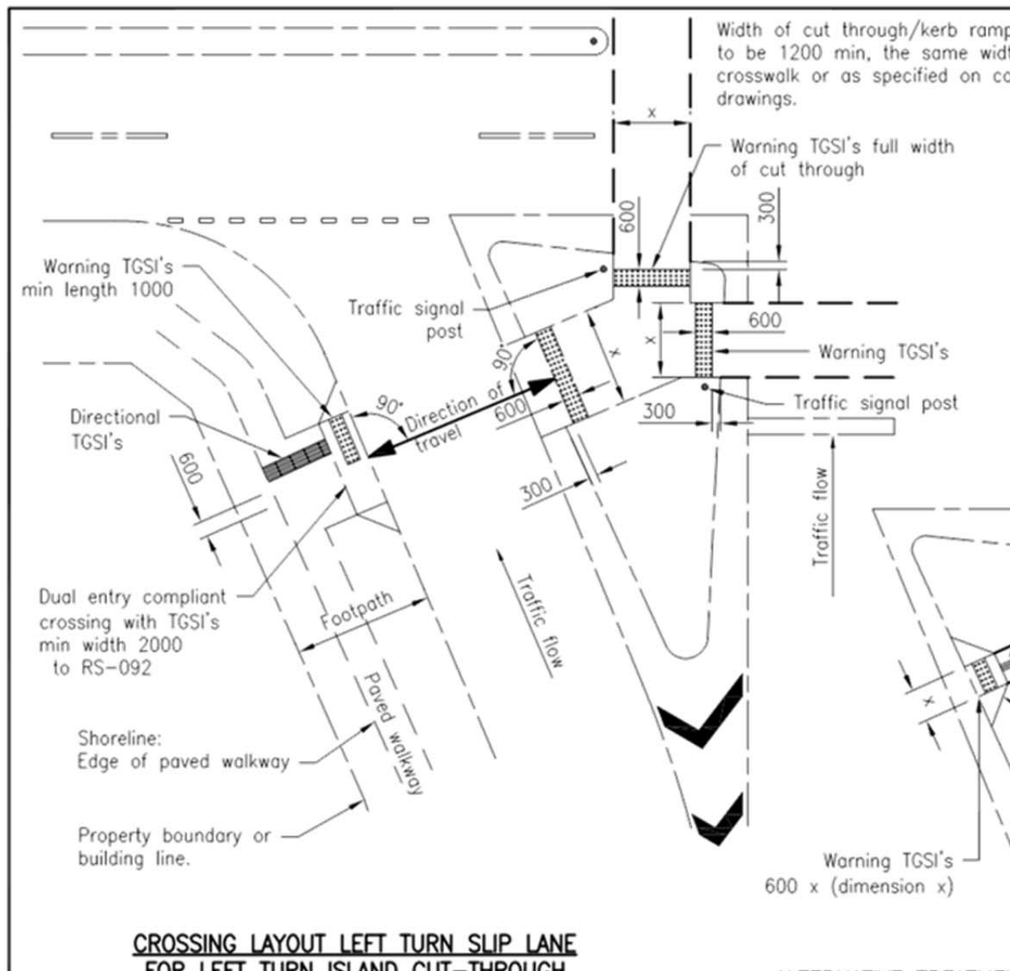
These drawings have been developed in consultation between the participating Councils. BEFORE USE, the user shall confirm that the drawing has been adopted by the appropriate Council.

Rv	DATE	REVISIONS
F	03/14	Amended Standard Drawings
E	12/11	Drawing number changed from SEQ R-090 to RS-090
D	06/11	Review
C	06/10	Review
B	06/09	Review
G	06/14	Review
		03/08 ORIGINAL ISSUE

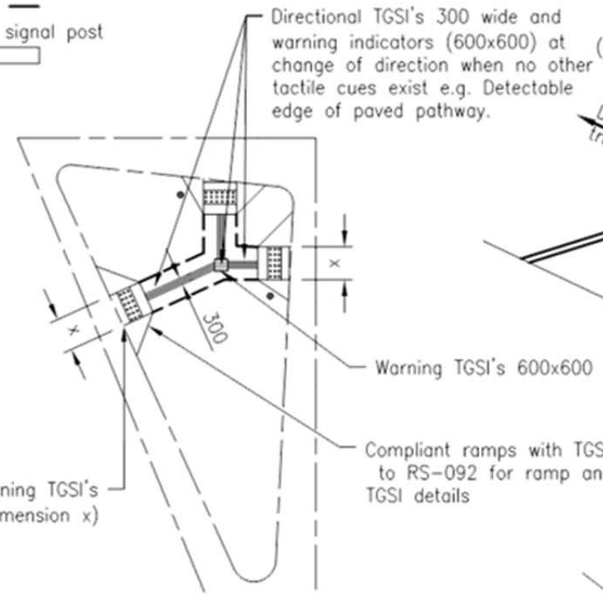
INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

KERB RAMPS
RAMPED PEDESTRIAN CROSSINGS

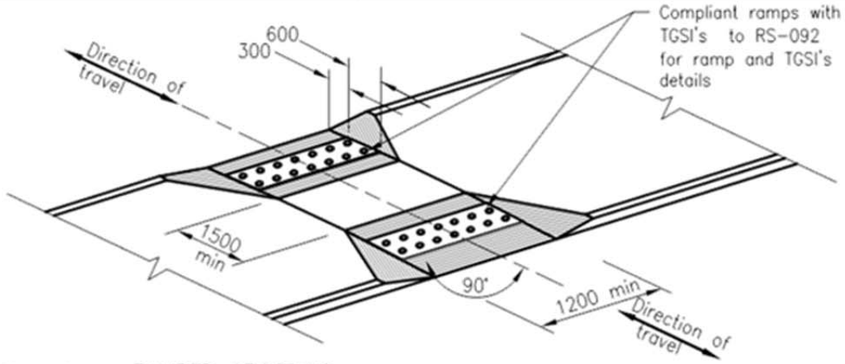
RS-090



CROSSING LAYOUT LEFT TURN SLIP LANE FOR LEFT TURN ISLAND CUT-THROUGH

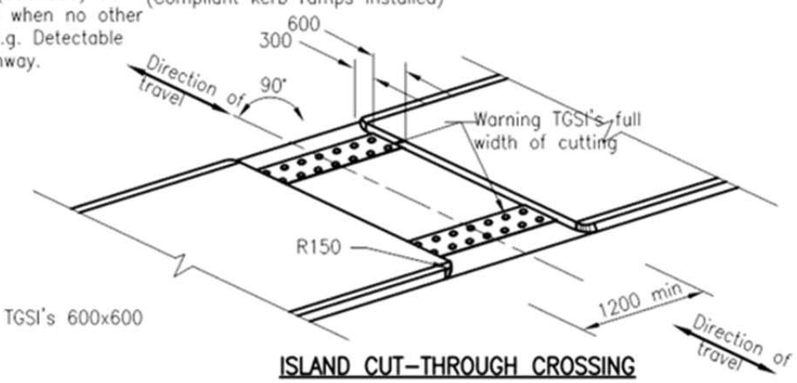


ALTERNATIVE TREATMENT ACROSS LEFT TURN ISLAND KERB RAMPS WITH DIRECTIONAL TGSI OR WALKWAY EDGE

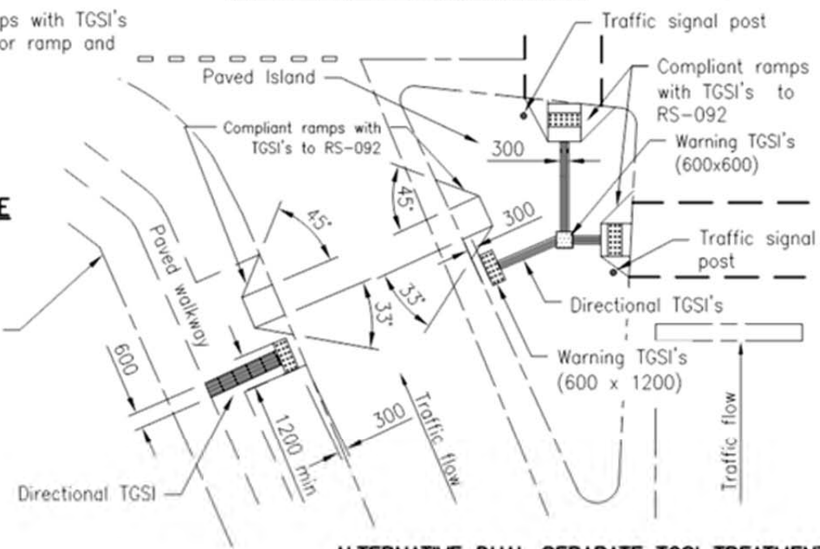


RAMPED CROSSING

(Compliant kerb ramps installed)



ISLAND CUT-THROUGH CROSSING



ALTERNATIVE DUAL SEPARATE TGSI TREATMENT ACROSS LEFT TURN SLIP LANE

NOTES:

1. Ramp details and notes as for Kerb Ramps to RS-090.
2. Tactile ground surface indicators (TGSI's) shall be in accordance with AS 1428.4.1.
3. Directional TGSI's to continue to the top of kerb ramp, unless edge of paved walkway provides consistent detectable cue for pedestrians with vision impairment.
4. Cut-through islands are to be constructed parallel to the direction of travel.
5. Installation of TGSI's on ramped kerb crossings to RS-092 & RS-093.
6. TGSI's to be provided at designated crossing points when new designs or modifications are being carried out to island or median cut throughs.
7. All dimensions are in millimetres unless shown otherwise.

REFERENCED DOCUMENTS:
Australian Standards:

AS 2876 Concrete kerbs and channels (gutters) – Manually or Machine Placed
AS 1428.1 Design for access and mobility – Part 1 General requirements for access – New building work
AS/NZS 1428.4.1 Design for access and mobility – Part 4.1 Means to assist the orientation of people with vision impairment – Tactile Ground Surface Indicators

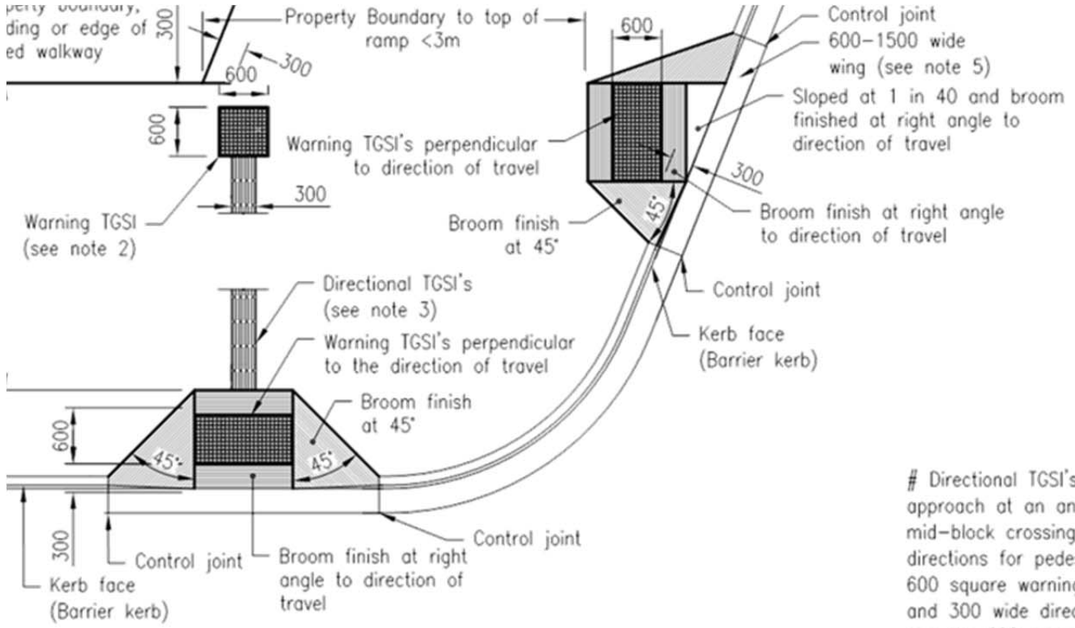
These drawings have been developed in consultation between the participating Councils.
BEFORE USE, the user shall confirm that the drawing has been adopted by the appropriate Council.

Rv	DATE	REVISIONS
F	06/14	Review
E	12/11	Drawing number changed from SEQ R-091 to RS-091
D	06/11	Review
C	06/10	Review
B	06/09	Review
A	03/08	ORIGINAL ISSUE

INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

KERB RAMPS
RAMPED AND CUT THROUGH TREATMENTS
FOR PEDESTRIAN CROSSINGS
SLIP LANES AND MEDIANS

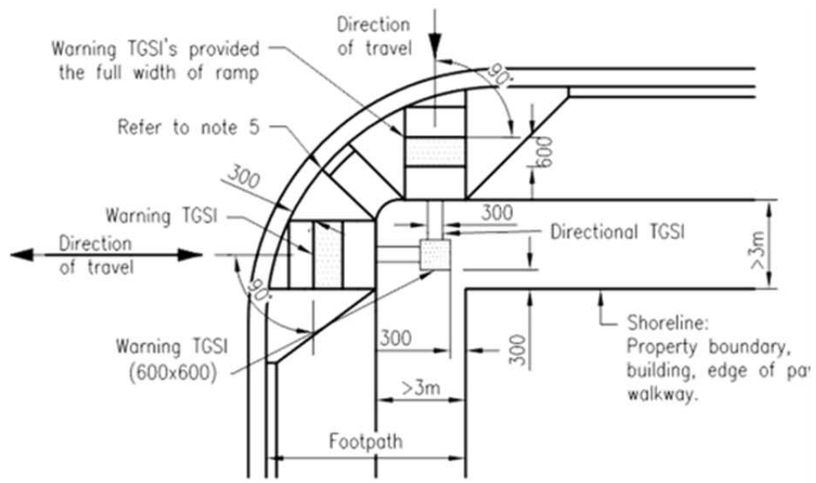
RS-091



COMPLIANT KERB RAMPS AND TGSI's APPLICATION EXAMPLE PLAN VIEW

Directional TGSI's are 600 wide where pedestrians approach at an angle to the path of travel (eg at a mid-block crossing point). If there is a choice of directions for pedestrians (eg on intersection corner) install 600 square warning TGSI's pad 300 from the shore line/s and 300 wide directional TGSI's between top of kerb ramp and the 600 square warning TGSI's pad.

*Kerb ramp to be 1200 min wide or as specified on construction drawings.

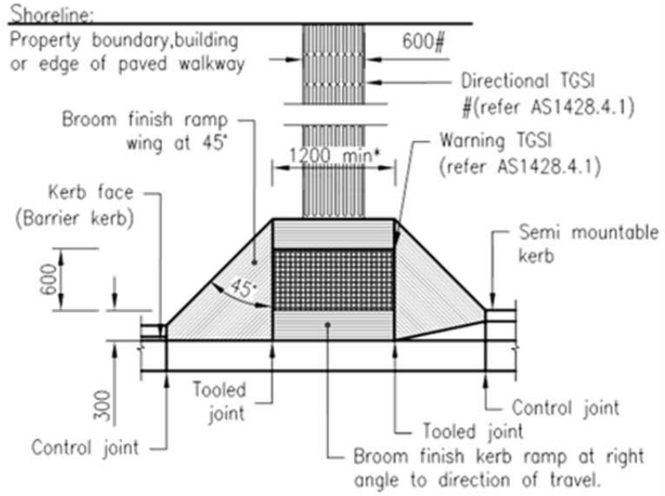


COMPLIANT KERB RAMP ALIGNMENT – incl. TGSI's

GUIDELINES

For the installation of Tactile Ground Surface Indicators (TGSI) for pedestrians with a vision impairment at ramped kerb crossings (kerb ramps):

A. Warning and directional TGSI's shall conform with AS/NZS 1428.4.1 Design for Access and Mobility – Part 4: Tactile Indicators.
B. Tactile indicators shall have luminance contrast in all conditions (eg wet/dry, day/night). Tactile indicators and their base shall be slip resistant. Refer AS/NZS 1428.4.1 for luminance contrast and slip resistance requirements.
C. Warning TGSI's shall be installed (dimensions in brackets are warning TGSI dimensions):
   a) to warn pedestrians with a vision impairment of hazards.
   b) 300 from any hazard e.g. roadway (600 deep x full width of kerb ramp, path of travel or cut through median/island)
   c) perpendicular to the direction of travel.
   d) at the intersection of 2 (or more) directional indicator strips to indicate a change of direction (600 x 600).
   e) When kerb ramp gradient is shallower than 1:8.5.
D. Directional TGSI's shall be installed (dimensions in brackets are directional TGSI dimensions):
   a) to give directional guidance to pedestrians with a vision impairment in the absence of normally available cues.
   b) along the centreline of the direction of travel.
   d) at mid-block kerb ramps or street crossings to direct pedestrians with a vision impairment to the crossing point (600 x property boundary to top of kerb ramp).
   e) between a warning indicator pad indicating a choice of directions and the top of kerb ramps where 2 pedestrian crossings exist on a corner of an intersection.
E. The installation of TGSI should be prioritised as follows:
   a) NO TGSI's REQUIRED when all criteria at Note G are satisfied;
   b) Multiple entry kerb ramp treatment installed (Dual entry or Dual separate). Multiple entry kerb ramps must only be installed when there is sufficient space on both sides of the crossing (see AS/NZS 1428.4.1 for details of multiple entry treatments);
   c) Warning TGSI on the face of a compliant kerb ramp.
F. If a warning TGSI treatment is installed, a warning TGSI treatment must be installed on the other side of the crossing.
G. TGSI's are not required at a crossing point if:
   a) a compliant kerb ramp is installed refer to RS-090.
   b) the top of ramp is within 3 metres of the end of the shore line (property boundary, building line or edge of paved walkway), and
   c) the ramp is in direct continuous accessible path of travel from the shore line (property line, building line or paved walkway) orientated in terms of normally available cues.
   In these situations, a colour treatment of the full width and length of the face of the ramp may assist pedestrians with a vision impairment.
H. Examples of normally available cues that aid people with a vision impairment are:
   a) sharp transitions in grade between surfaces eg top and bottom of a 1 on 8 kerb ramp; change in grade between ramp and ramp wings.
   b) audio tactile push buttons, refer MUTCD Parts 10 and 14 for location and orientation of pedestrian push buttons. Note, an audio tactile push button alone is an insufficient cue for a pedestrian with a vision impairment to find the crossing point.
   c) a detectable edge of a paved walkway or cut through island.



COMPLIANT MID BLOCK KERB RAMP incl. TGSI's

NOTES:

1. For details of compliant kerb ramps refer to RS-090 and RS-091.
2. Warning indicators required adjacent to shoreline (property boundary) to indicate change/choice of direction.
3. Directional indicators are required from the warning indicator pad to the top of the kerb ramps.
4. Warning indicators are required on the kerb ramp to warn of the hazard (the road/traffic). Can be omitted if kerb ramp is in accordance with AS 1428.1 & < 3 metres from the building line.
5. Kerb ramp wings may be angled at less than 45° if required to be clear of signals hardware, other kerb ramps or utility pits/manholes. Kerb ramp wings may also be reduced at obtuse angled intersections, wings shall have a width between 600mm and 1500mm. A maximum of 1:4 slope on kerb ramp wings should be maintained (600mm wide wing for a 150mm kerb). A 1m kerb upstand is desirable between adjacent ramp wings (which may necessitate reduced wing angles).
6. All Dimensions are in millimetres unless shown otherwise

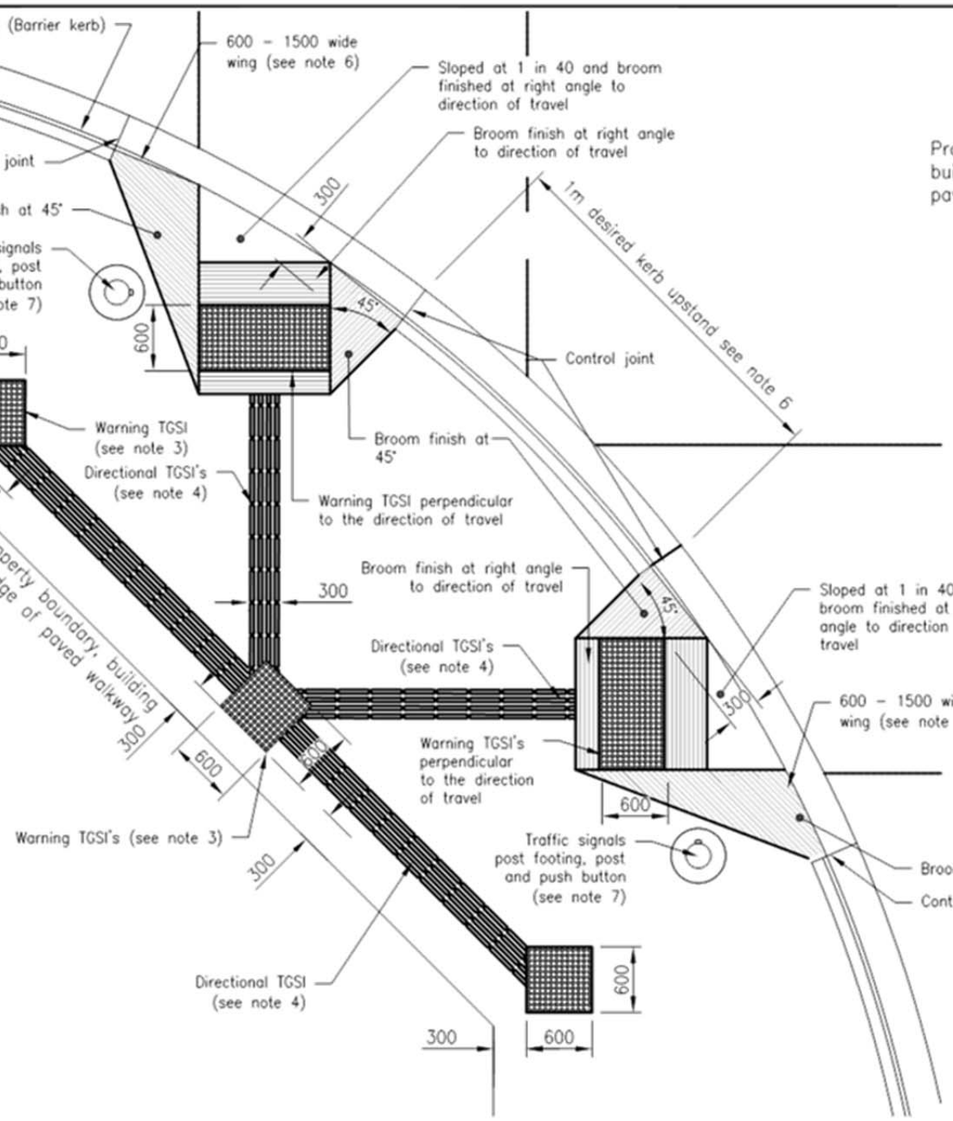
These drawings have been developed in consultation between the participating Councils.
BEFORE USE, the user shall confirm that the drawing has been adopted by the appropriate Council.

06/14	Review
03/14	Amended Drawing Number
12/11	Drawing number changed from SEQ R-092 to RS-092.
06/11	Review
06/10	Review
02/16	Amendment to Guideline B

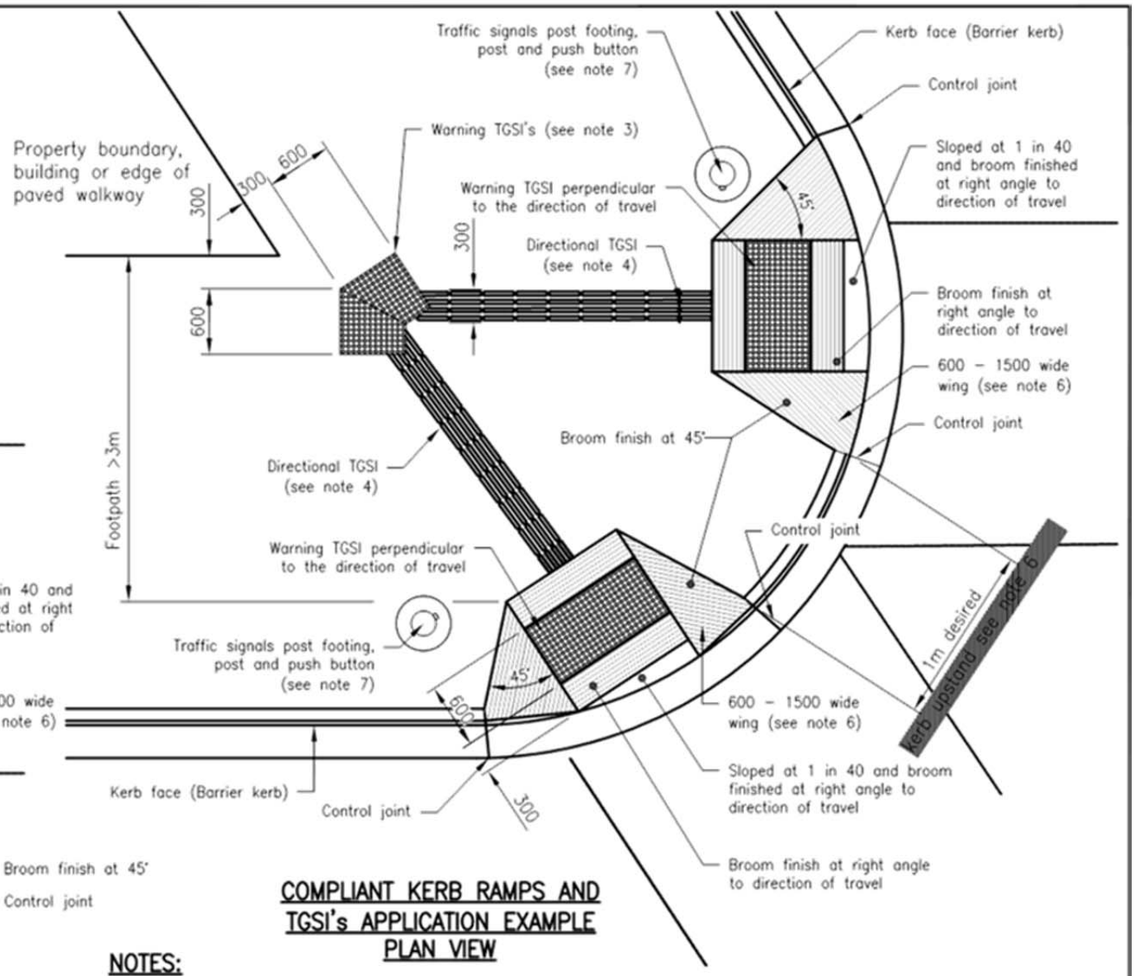
INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

KERB RAMPS
INSTALLATION OF TGSI's
ON RAMPED KERB CROSSINGS

RS-092



COMPLIANT KERB RAMPS AND TGSI's APPLICATION EXAMPLE PLAN VIEW



COMPLIANT KERB RAMPS AND TGSI's APPLICATION EXAMPLE PLAN VIEW

NOTES:

1. For details of compliant kerb ramps refer to RS-090.
2. For details of warning and directional TGSI's, refer to AS 1428.4.1
3. Warning indicators required adjacent to property boundary to indicate change of direction.
4. Directional indicators are required from the warning indicator pad to the top of the kerb ramps.
5. Warning indicators are required on the kerb ramp to warn of the hazard (the road/traffic)
6. Kerb ramp wings may be angled at less than 45° if required to be clear of signals hardware, other kerb ramps or utility pits/manholes. Kerb ramp wings may also be reduced at obtuse angled intersections, wings shall have a width between 600mm and 1500mm. A maximum of 1:4 slope on kerb ramp wings should be maintained (600mm wide wing for a 150mm kerb). A 1m kerb upstand is desirable between adjacent ramp wings (which may necessitate reduced wing angles).
7. For location of traffic signal posts and location and orientation of pedestrian push button assemblies refer to MUTCD Part 14. The push button post should be located on a level surface and the push button assembly located within the zone of common reach. Refer to AS 1428.2 i.e. button to be no more than 400mm outside the edge of a pathway or kerb ramp.
8. All dimensions are in millimetres unless shown otherwise.

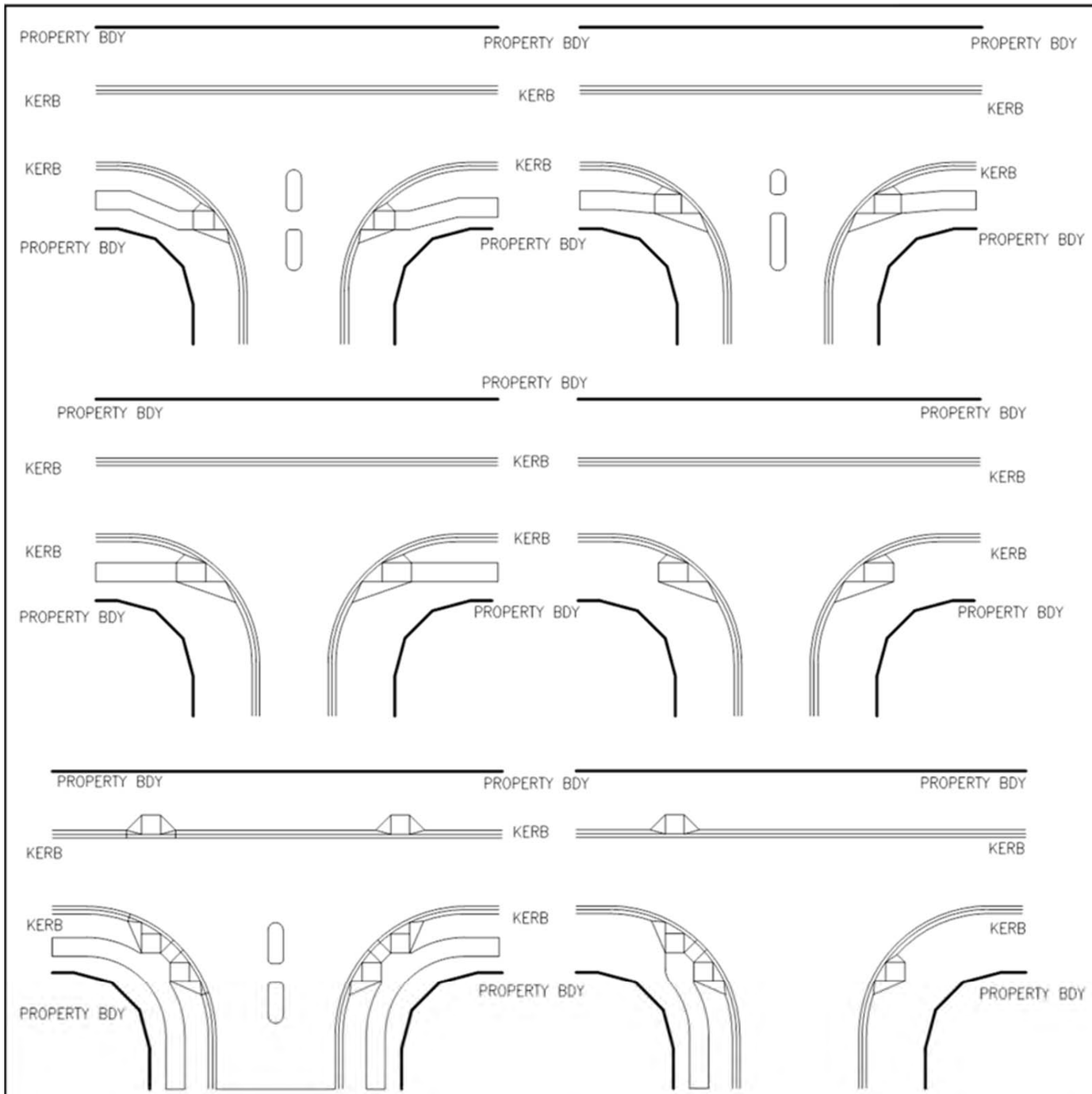
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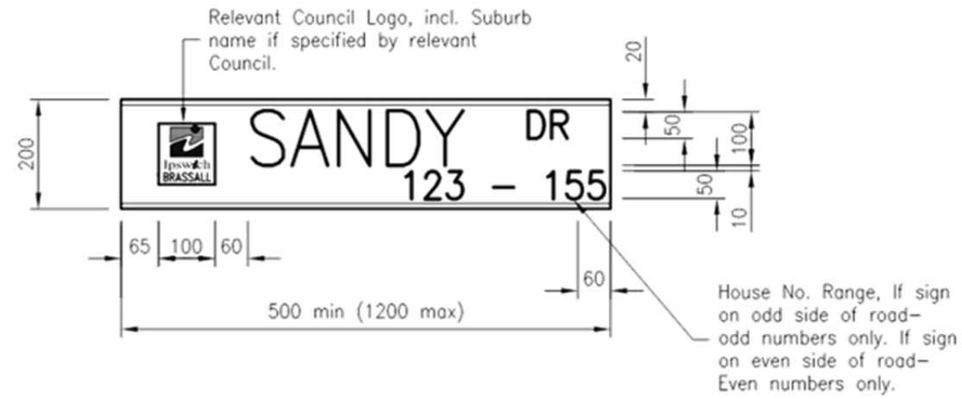
Rv	DATE	REVISIONS
E	06/14	Review
D	03/14	Amended Drawing Number
C	12/11	Drawing number changed from SEQ R-093 to R-093.
B	06/10	Review
A	06/09	ORIGINAL ISSUE

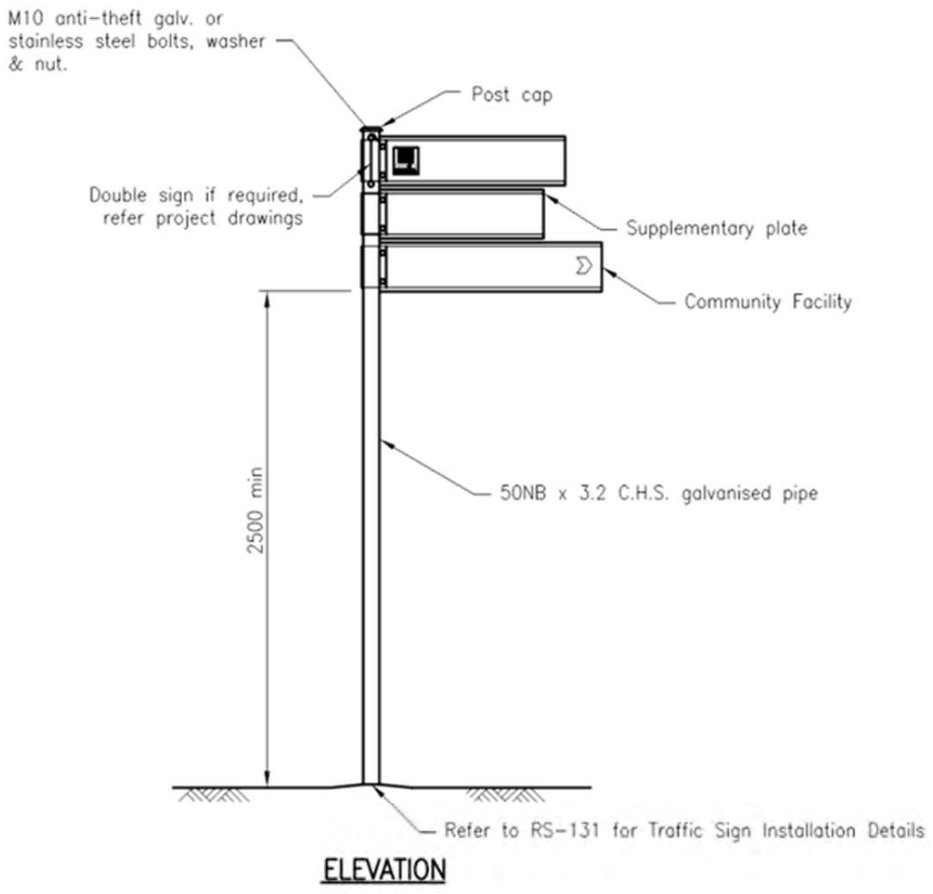
INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

KERB RAMPS
INSTALLATION OF TGSI's ON RAMPED KERB CROSSINGS
APPLICATION EXAMPLES

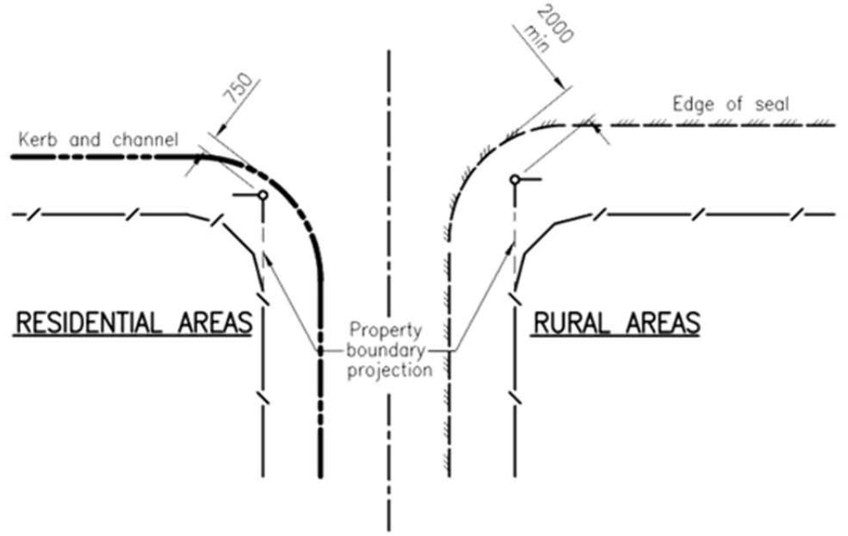
RS-093


PROPERTY BDY
KERB
PROPERTY BDY
KERB
PROPERTY BDY
KERB





ELEVATION



STREET NAME SIGN LOCATIONS

NOTES:

1. Street names must be approved by relevant Council.
2. Name plates: 200 mm wide x 3 mm thick extruded aluminium or polypropylene section with top and bottom edge thickening.
3. Colour: The recommended colour for street name signs is a black legend on a Class 1 retro–reflective white background in accordance with AS 1742.5.
4. Bracket: Proprietary bracket to suit standard name plate (including 2 x M10 x 25mm anti–theft cadmium or stainless steel bolts nuts and washers). Locking nut to be utilised if specified by relevant Council.
5. Lettering & Numerals : Letters: 100 mm high, Series D, (narrower lettering is permissible in accordance with the MUTCD). Numerals: 50 mm high, Series D. All text to AS 1744.
6. Supplementary Plates to be in accordance with the MUTCD.
7. Community Facility Plates: A desirable maximum of two and an absolute maximum of three facilities to be signposted at any one location in accordance with the MUTCD.
8. All signs are to be approved by relevant Council prior to erection.
9. Refer to RS–131 for Traffic Sign Installation Detail.
10. All dimensions are in millimetres unless shown otherwise.

These drawings have been developed in consultation between the participating Councils.
BEFORE USE, the user shall confirm that the drawing has been adopted by the appropriate Council.

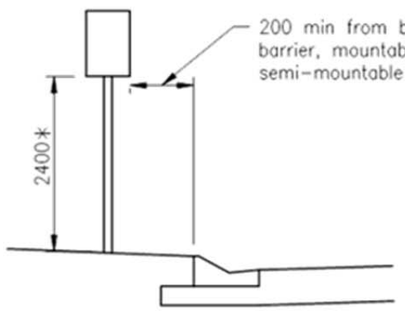
Rv	DATE	REVISIONS
E	06/14	Review
D	03/14	Amended Drawing Number
C	12/11	Amended to MUTCD and number changed SEQ R–130 to RS–130
B	06/11	Review
A	11/09	ORIGINAL ISSUE

INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

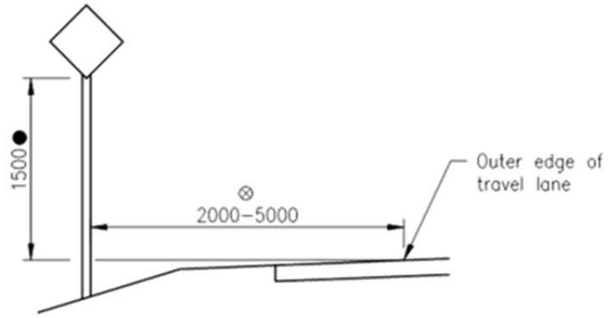
ROAD FURNITURE
STREET NAME SIGN AND LOCATION (FINGER BOARD)

RS–130

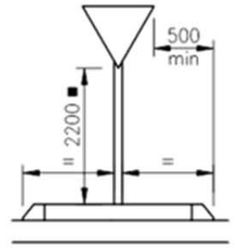
CAUTION
Confirm existence of services prior to installation of sign



RESIDENTIAL AREAS

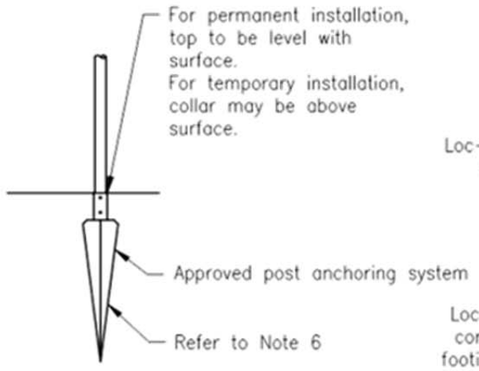


RURAL ROADS

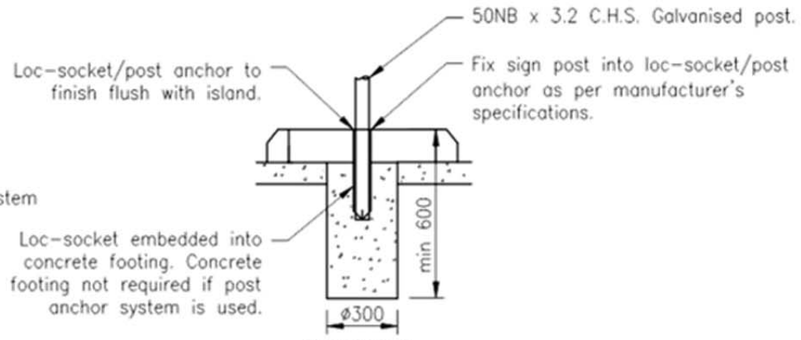


MEDIANS

LOCATION OF SIGNS



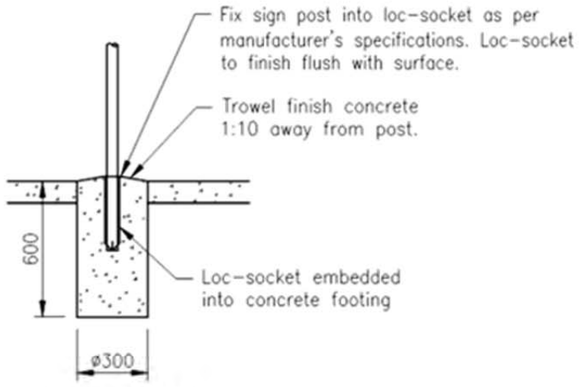
TYPICAL POST ANCHOR



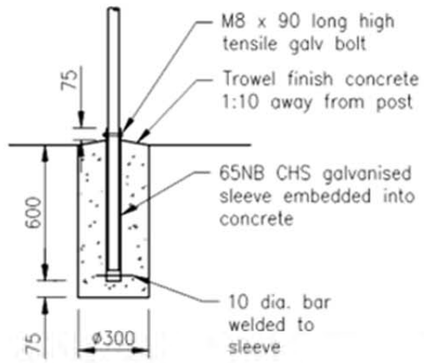
MEDIANS

LEGEND

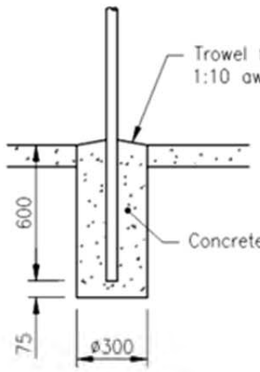
- * When sign overhangs a pathway, dimension to be 2500.
- ● Parking and Guide signs to be 2200 above road surface.
- ■ Some signs (Keep Left, No-U Turn, D4 Hazard series) to be mounted at 525. Height can be adjusted if there is a visibility problem.
- ⊗ At least 600 clearance to be provided to outer edge of shoulder, line of guide posts or guardrail.



LOC-SOCKET (OR SIMILAR)



TYPICAL SLEEVE



CONCRETE FOOTING

NOTES:

1. All signs are to be approved by relevant Council prior to erection.
2. Signs to be positioned on the side of street/road that provides best visibility. Underground services are to be located prior to installation.
3. Concrete N20 in accordance with AS 1379 and AS 3600.
4. Bars ø10, Grade 250 to AS 1302.
5. Refer to MUTCD for sign locations.
6. Relevant Council approved post anchoring system to be installed to comply with manufacturer's specifications. Other post mounting systems may be used if approved by relevant Council.
7. All dimensions are in millimetres unless shown otherwise.

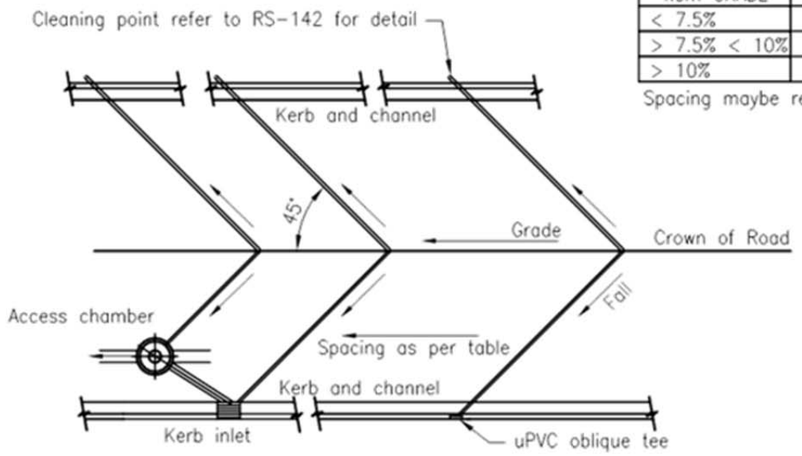
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Rv	DATE	REVISIONS
E	06/16	Review
D	06/14	Review
D	03/14	Amended Drawing Number
C	12/11	Drawing number changed from SEQ R-131 to RS-131
B	06/11	Review Issue
A	11/09	ORIGINAL ISSUE

INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

ROAD FURNITURE
TRAFFIC SIGN INSTALLATION DETAILS

RS-131

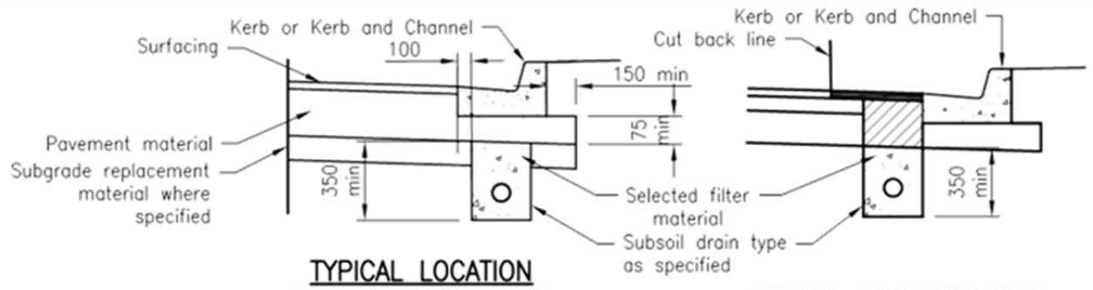


MITRE DRAIN SPACING

nom GRADE	SPACING
< 7.5%	40m centres
> 7.5% < 10%	30m centres
> 10%	20m centres

Spacing maybe reduced if required

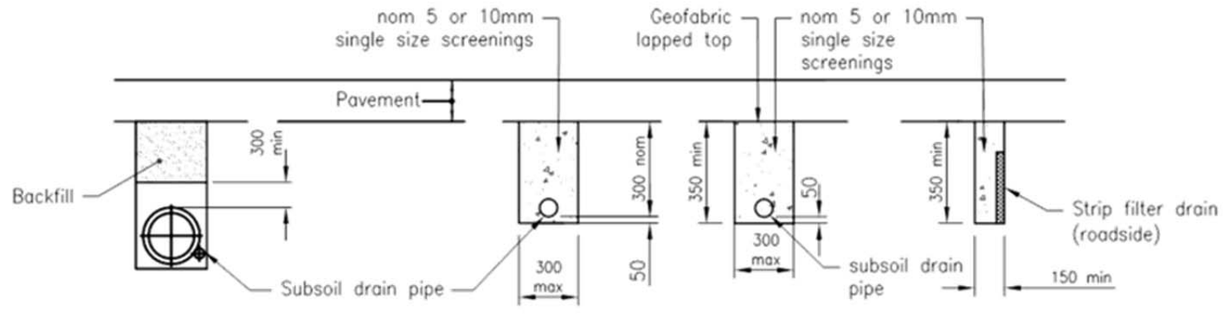
TYPICAL MITRE DRAIN LOCATIONS



TYPICAL LOCATION NEW CONSTRUCTION

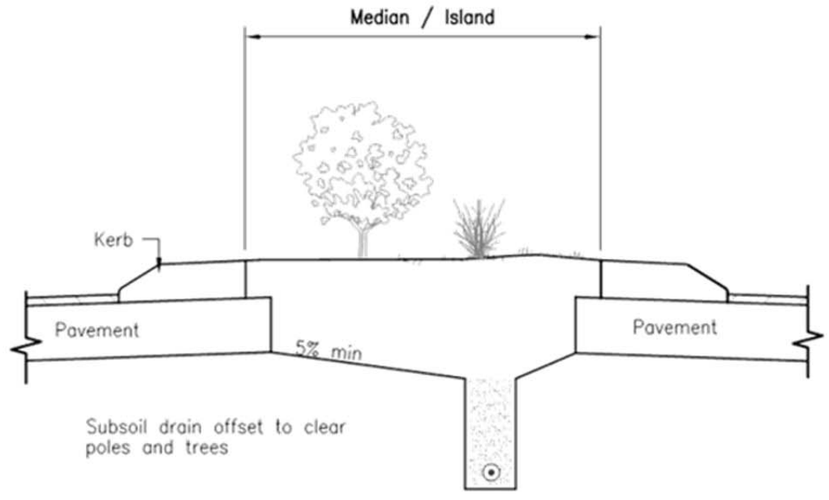
ALTERNATIVE LOCATION TO BE APPROVED BY RELEVANT COUNCIL

TYPICAL LOCATION WITH EXISTING K&C



STORMWATER DRAINAGE TRENCHES WITH SUBSOIL DRAINAGE

TYPE A/B TYPE B/C TYPE B/D

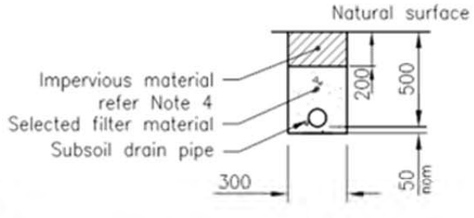


ALTERNATIVE LOCATION LANDSCAPE MEDIAN

A.S. SIEVE SIZE	5mm nom size % BY WT. PASSING	10mm nom size % BY WT. PASSING
13.20 mm	–	100
9.50 mm	–	85 – 100
6.70 mm	100	–
4.75 mm	85 – 100	0 – 20
2.36 mm	0 – 40	0 – 5
75 µm	0 – 2	0 – 2

FILTER MATERIAL GRADING

Unless otherwise specified



TYPE E

STANDARD SUBSOIL DRAIN

NOTES:

1. All subsoil drains to be Class 1000 polyethylene corrugated slotted pipe to AS 2439.1. Drains shall outlet at drainage pit, preferably or stormwater pipe 200 above invert min grade 0.5%, unless approved otherwise. Other pipes and fittings to be uPVC to AS 1254.
2. Filter materials not complying with the specified grading requirements may be used when approved by the relevant Council. A geofabric may be used to line trenches where approved by the relevant Council.
3. Refer to RS-142 for subsoil drainage access point details.
4. Impervious material to be provided where subsoil drainage is not under a pavement. When impervious material is omitted the backfill/selected filter material shall extend to underside of pavement.
5. All dimensions are in millimetres unless shown otherwise.

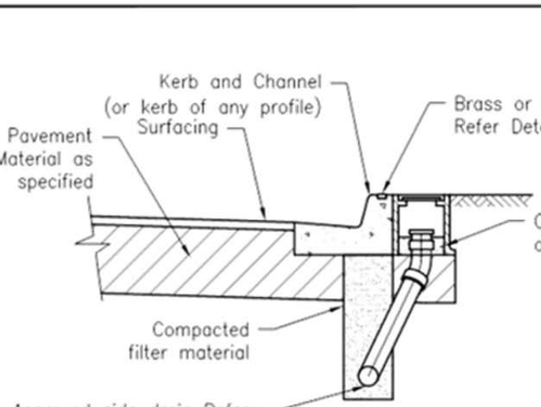
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Rv	DATE	REVISIONS
F	03/14	Amended Drawing Number
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D	06/11	Review
C	06/10	Review
B	06/09	Review
G	06/14	Review

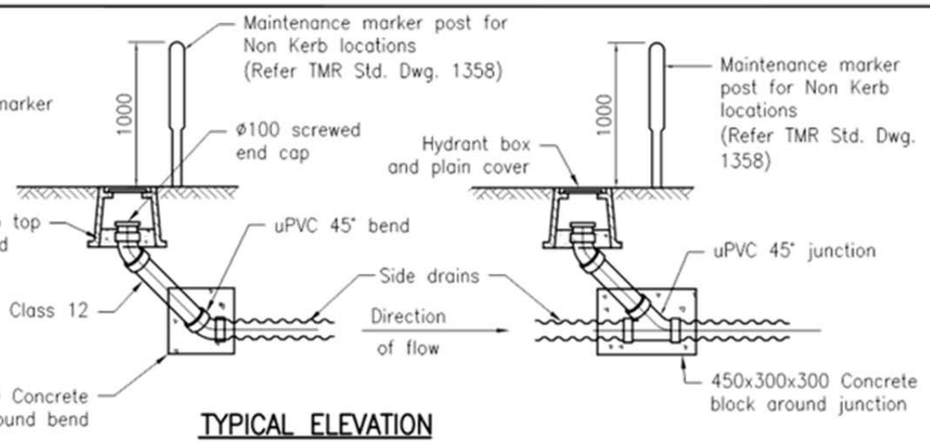
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STANDARD DRAWINGS

SUBSOIL DRAINS DETAILS AND LOCATIONS

RS-140



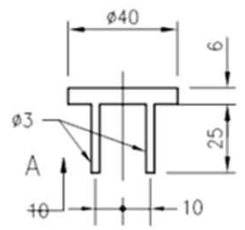
BEHIND KERB



TYPICAL ELEVATION



PLAN

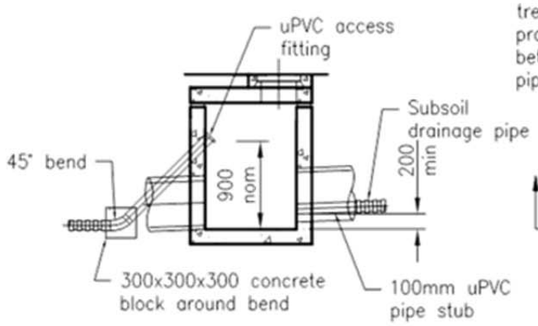


SECTION

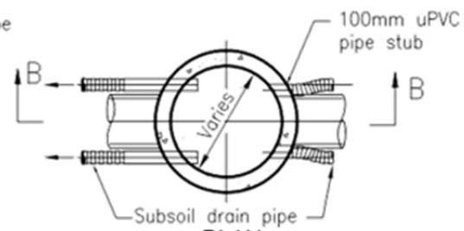
Approved propriety stainless
steel markers also permitted

BRASS MARKER DETAIL

* Bend may be omitted where there is insufficient depth to the side drain trench. A min fall of 100mm is to be provided in the connection pipe between the cap and the side drain pipe

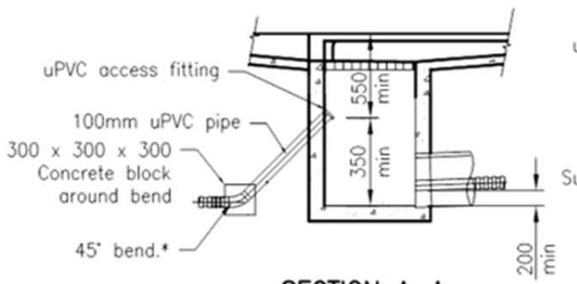


SECTION B-B

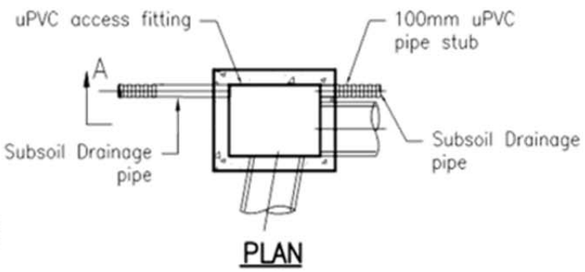


PLAN

CONNECTION DETAIL - ACCESS CHAMBER

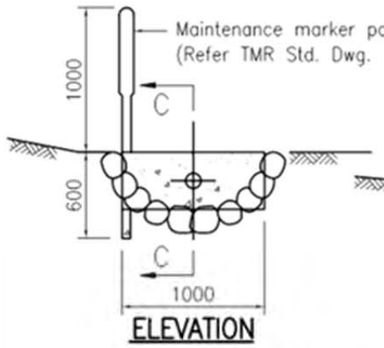


SECTION A-A

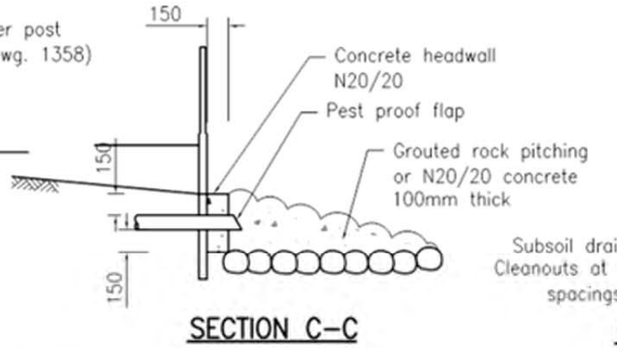


PLAN

CONNECTION DETAIL - KERB INLET

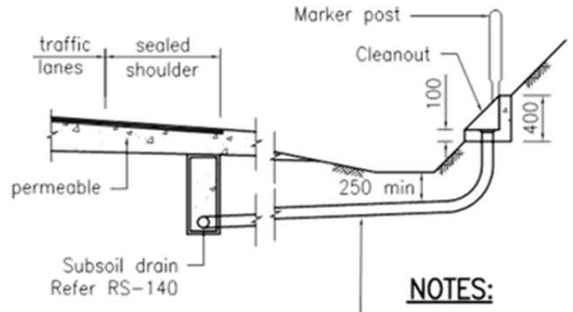


ELEVATION



SECTION C-C

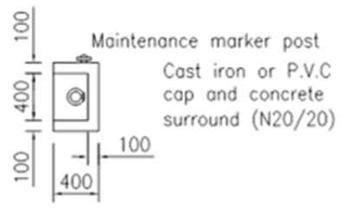
OUTLET TO NATURAL SURFACE



Subsoil drain cleanout - 100 dia upvc SH pipe
Cleanouts at head of pipe and at 60m maximum
spacings(50m spacing for strip filter drains)

CUTTING CROSS SECTION

SUBSOIL DRAIN AND CLEANOUT



CLEANOUT

NOTES:

1. Refer to RS-140 for subsoil drain details and locations.
2. All pipes and fittings other than subsoil drains to be 100 dia Class 12 pipe.
3. All subsoil drains shall be in accordance with TMR specification MRTS03.
4. Concrete anchors to be N20 in accordance with AS 1379 and AS 3600.
5. All dimensions are in millimetres unless shown otherwise.

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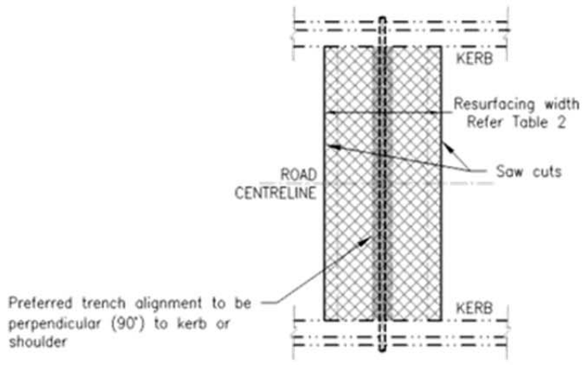
Rv	DATE	REVISIONS
E	06/14	Review
E	03/14	Amended Drawing number
D	12/11	Drawing number changed from SEQ R-142 to RS-142
C	06/11	Review
B	06/09	Review
A	03/08	ORIGINAL ISSUE

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STANDARD DRAWINGS

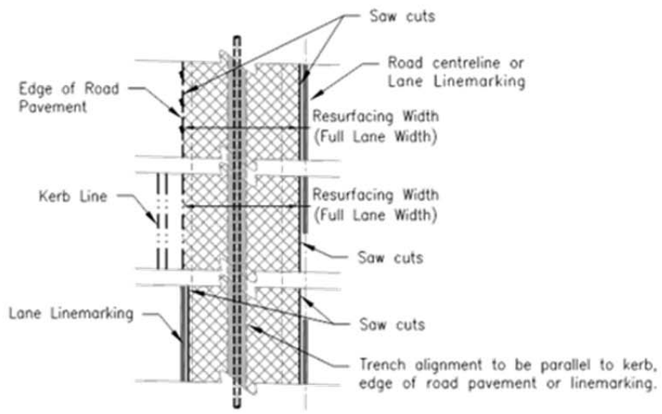
SUBSOIL DRAINS
ACCESS POINTS

RS-142

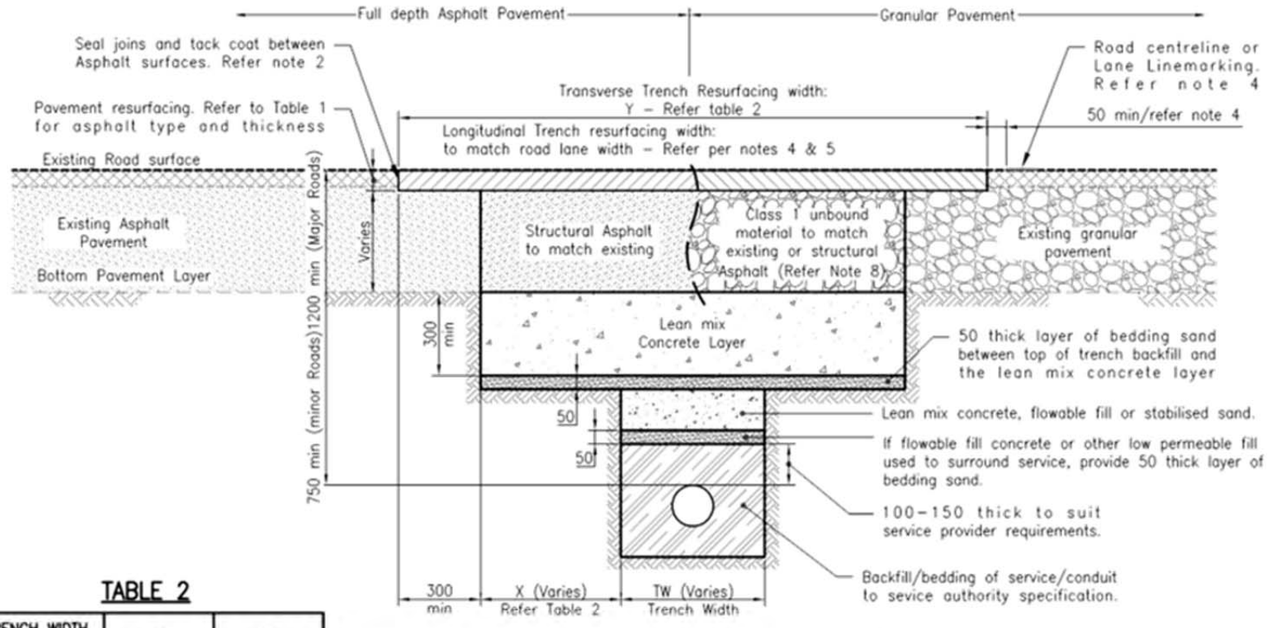
Rv: E D C B A



TYPICAL PLAN VIEW –
TRANSVERSE TRENCH



TYPICAL PLAN VIEW –
LONGITUDINAL TRENCH
(REFER NOTE 4)



TYPICAL TRENCH REINSTATEMENT CROSS–SECTION

TABLE 2

TRENCH WIDTH (TW)	X	Y
<600	TW/2 (150 min)	1500 min
>600	300 min	2200 min

TABLE 1 – SURFACE LAYER

	ASPHALT MIX		SURFACE THICKNESS (EXCLUDING PAVEMENT)	
LOCATION	BCC	TMR	EACH LAYER	TOTAL SURFACE THICKNESS
minor Road	Type 2	DG10	25–40	min 50mm or adjacent Asphalt thickness, whichever is greater
Major Road	Type 3	DG14	50–60	min 100mm or adjacent Asphalt thickness, whichever is greater

NOTES:

1. Trenchless Technology Techniques are the preferred method for road crossing services conduits in existing Roadways.
2. Asphalt to Asphalt joint – saw cut existing AC where shown or as agreed with Council Representative on site to provide clean cut and seal with bitumen emulsion crack sealant. Apply bitumen emulsion tack coat to all other newly exposed asphalt surfaces prior to placement of reinstated asphalt pavement or surface.
3. All exposed faces of gravel pavement to be primed during sealing operations.
4. Where the trench has been constructed longitudinally in the road, then the final surface repair width is to match the existing lane width and terminate 50mm clear of the road centreline or lane line linemarking to allow for the bitumen emulsion joint seal. Reinstatement of surface adjacent to the kerb or road pavement edge to extend fully to the kerb line or edge of pavement.
5. A part lane resurfacing may be approved where the full reinstatement is able to be completed between the inner and/or outer edge and centre of the lane.
6. The vertical deviation from a 3m straight edge parallel to the centre line of the existing road is not to exceed 5mm.
7. Asphalt surface repairs are to be undertaken within 24 hours unless approved otherwise by council. Final asphalt layers to be placed by paving machine.
8. Where structural asphalt is used to reinstate existing granular pavement, subsoil drainage is to be installed on the uphill side of the trench unless approved otherwise by council.
9. Standard drawings to be read in conjunction with the following reference specifications for civil engineering works:
   - S140 : Earthworks
   - S145 : Installation and maintenance of utility services
   - S300 : Quarry products
   - S310 : Supply of dense graded asphalt
   - S320 : Laying of asphalt
10. For backfill requirements for stormwater drainage pipes refer to DS–030.
11. All dimensions are in millimetres unless shown otherwise

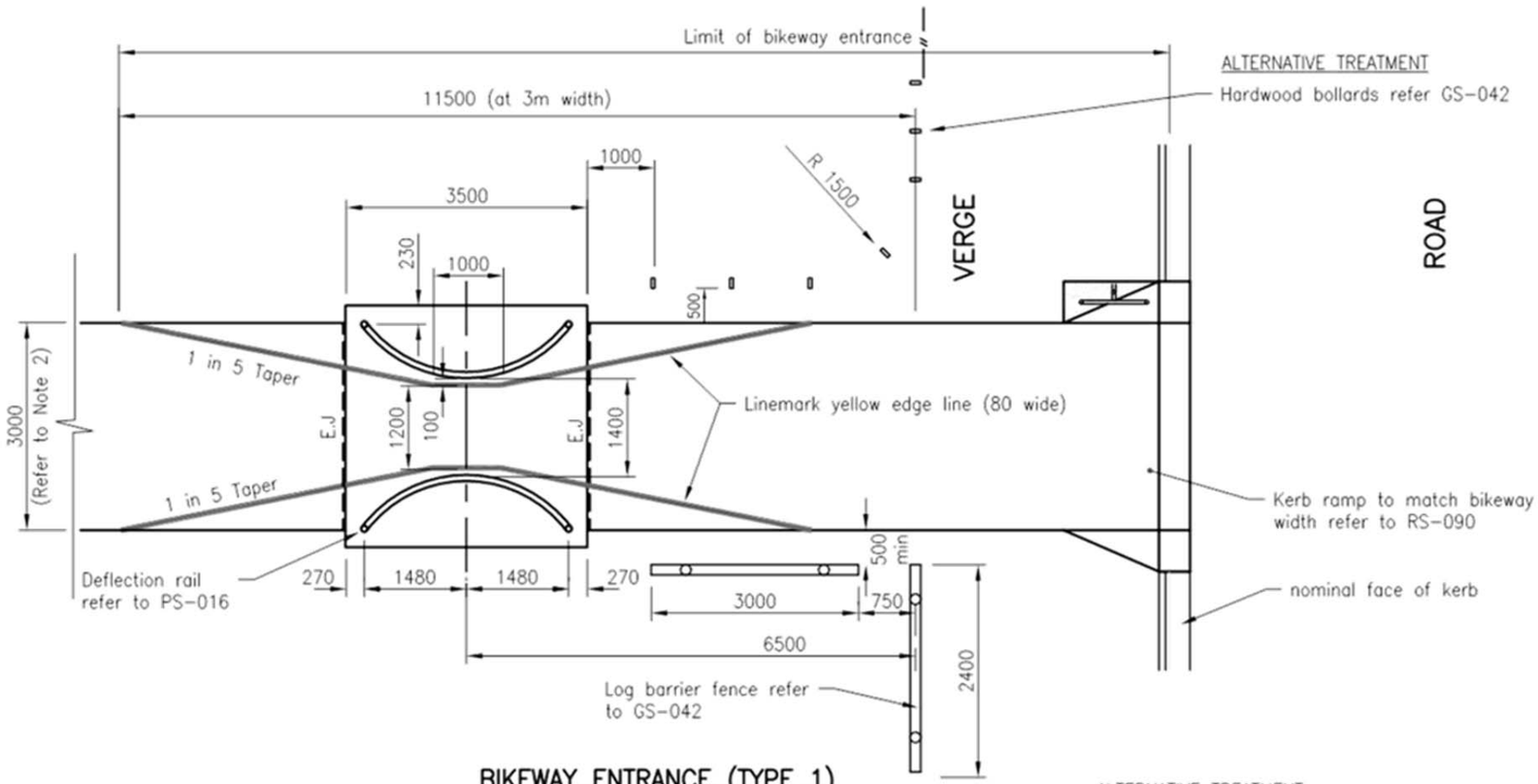
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D	12/11	Drawing number changed and reviewed
C	06/11	Review
B	06/09	Review
A	05/08	ORIGINAL ISSUE

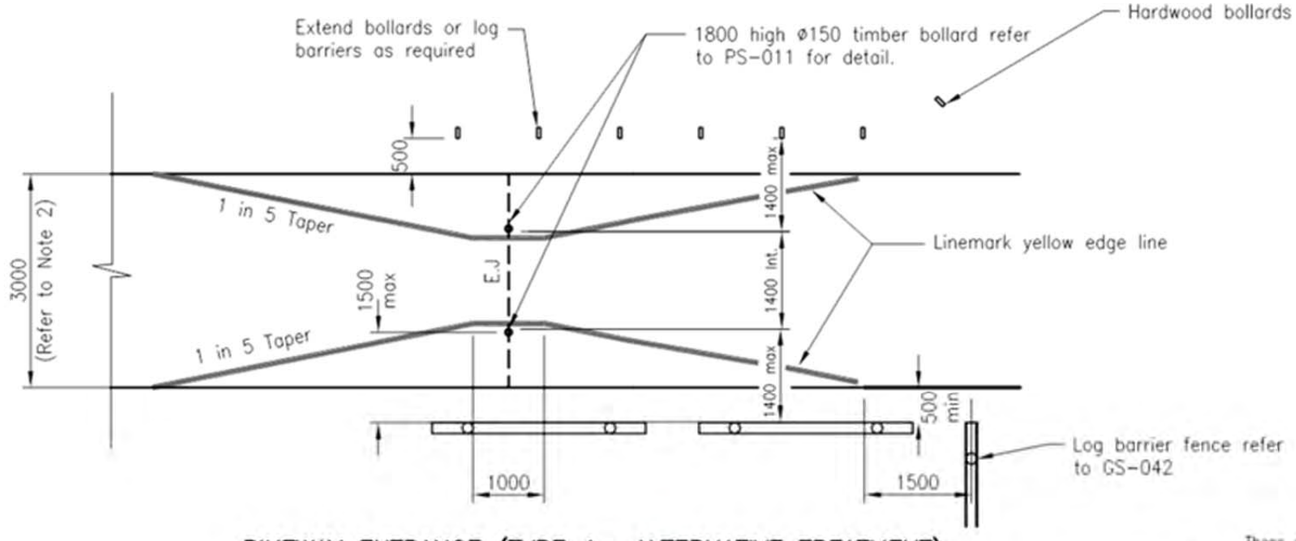
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STANDARD DRAWINGS

PAVEMENT EXTENSION
TRENCHING AND WIDENING

RS–170



BIKEWAY ENTRANCE (TYPE 1)



BIKEWAY ENTRANCE (TYPE 1- ALTERNATIVE TREATMENT)

LEGEND

Expansion joint (E.J) – – – – – – –

NOTES:

1. Concrete N25 in accordance with AS 1379 & AS 3600.
2. Bikeway to have preferred width of 3000, width may vary.
3. Deflection rails not to be installed on curves.
4. Pavement markings to be installed in waterborne paint or other suitable material. Material to have Anti-Slip/Skid material applied to surface. Thermoplastic materials are not to be used.
5. Refer to RS-065 for concrete construction details.
6. Refer to PS-011 for Type 2 high volume.
7. Refer to PS-013 for bikeway slowdown control reverse curve
8. Refer PS-016 for bikeway furniture details.
9. Refer to MUTCD and Austroads Guide to Road Design Part 6A for Bikeway design and signage.
10. All dimensions are in millimetres unless shown otherwise.

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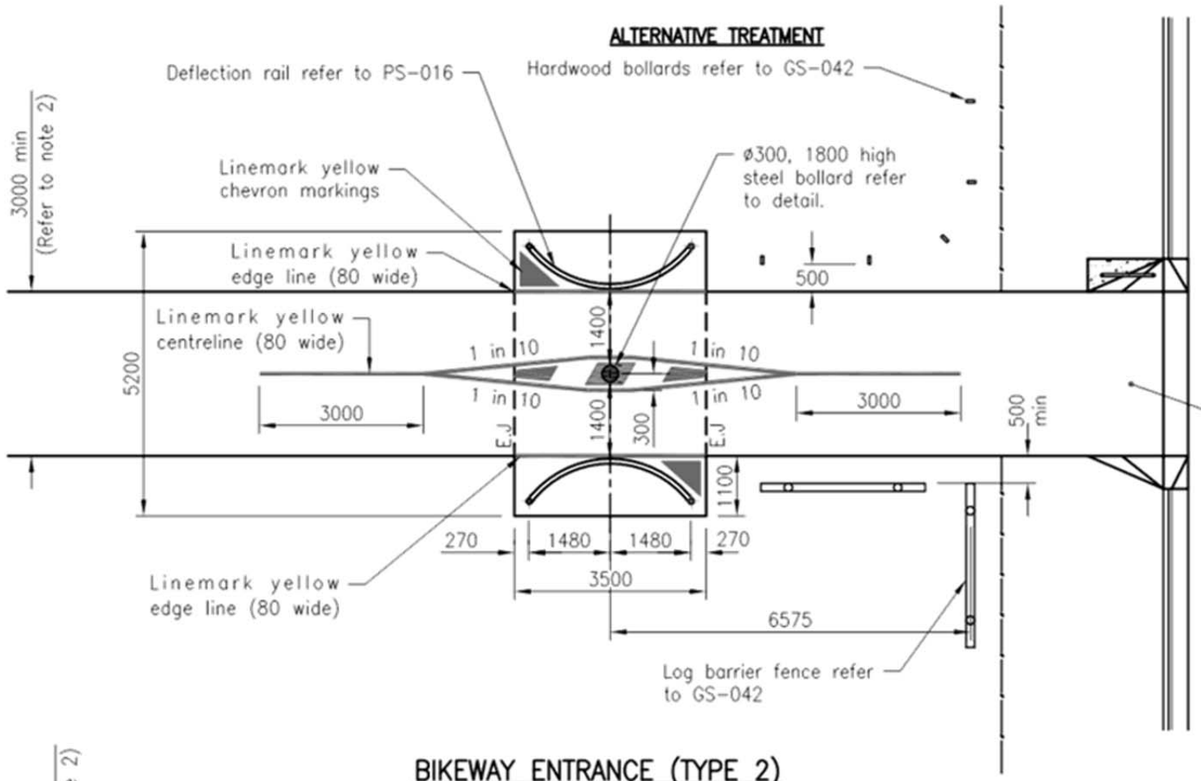
Rv	DATE	REVISIONS
F	06/14	Review
E	03/14	Amended Drawing Number
D	12/11	Drawing number changed from SEQ P-010 to PS-010
C	06/11	Review
B	06/10	Review
A	11/09	ORIGINAL ISSUE

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STANDARD DRAWINGS

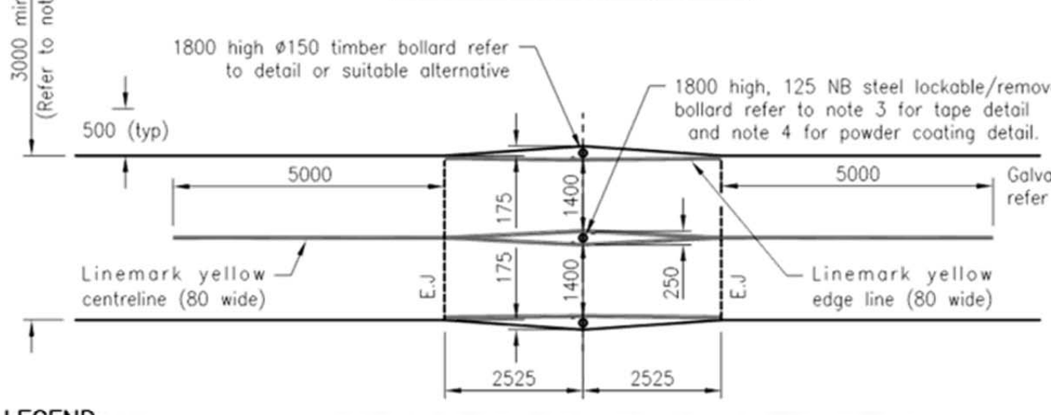
BIKEWAY ENTRANCE CONTROL
TYPE 1 – LOW VOLUME

PS-010

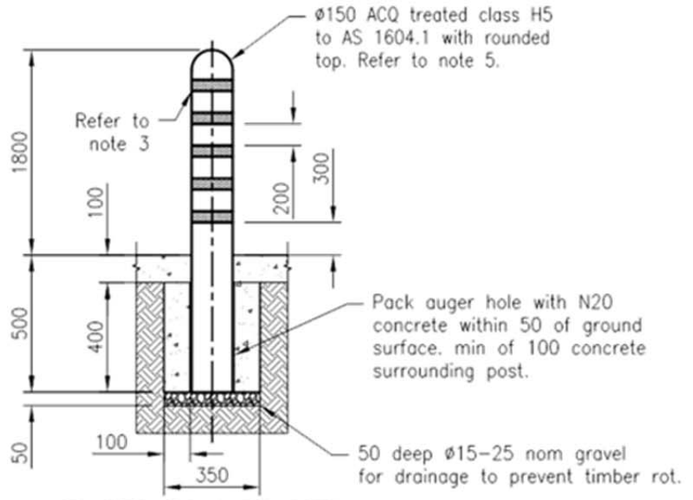
Rv: A B C D E F



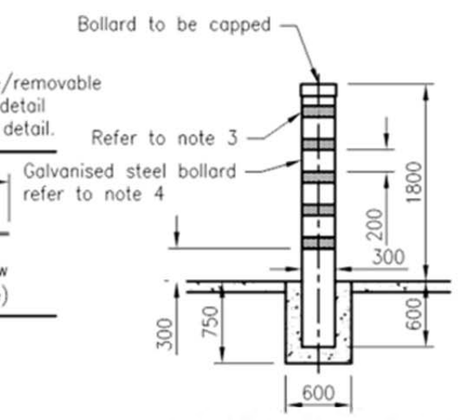
BIKEWAY ENTRANCE (TYPE 2)



BIKEWAY ENTRANCE (TYPE 2 – ALTERNATIVE)



TIMBER BOLLARD DETAIL



STEEL BOLLARD DETAIL

NOTES:

1. Concrete N25 in accordance with AS 1379 & AS 3600.
2. Bikeway to have minimum width of 3000. Width may be increased.
3. Reflective tape to be 100mm wide red class 1A retro-reflective sheeting.
4. Galvanised steel bollard to be powder coated Y11 canary yellow in accordance with AS 2700.
5. Paint timber bollard with two coats of lacquer acrylic Y11 canary yellow in accordance with AS 2700.
6. Refer to RS-065 for concrete construction details.
7. Prior to installation of timber bollards all edges, joints, cuts to receive coating with an approved timber preservative.
8. Pavement markings to be installed in waterborne paint or other suitable material. Material to have anti-slip/skid material applied to surface. Thermoplastic materials are not to be used.
9. Refer to MUTCD and Austroads Guide to Road Design Part 6A for Bikeway design and signage.
10. All dimensions are in millimetres unless shown otherwise.

LEGEND

Expansion joint (E.J) - - - - - - - -

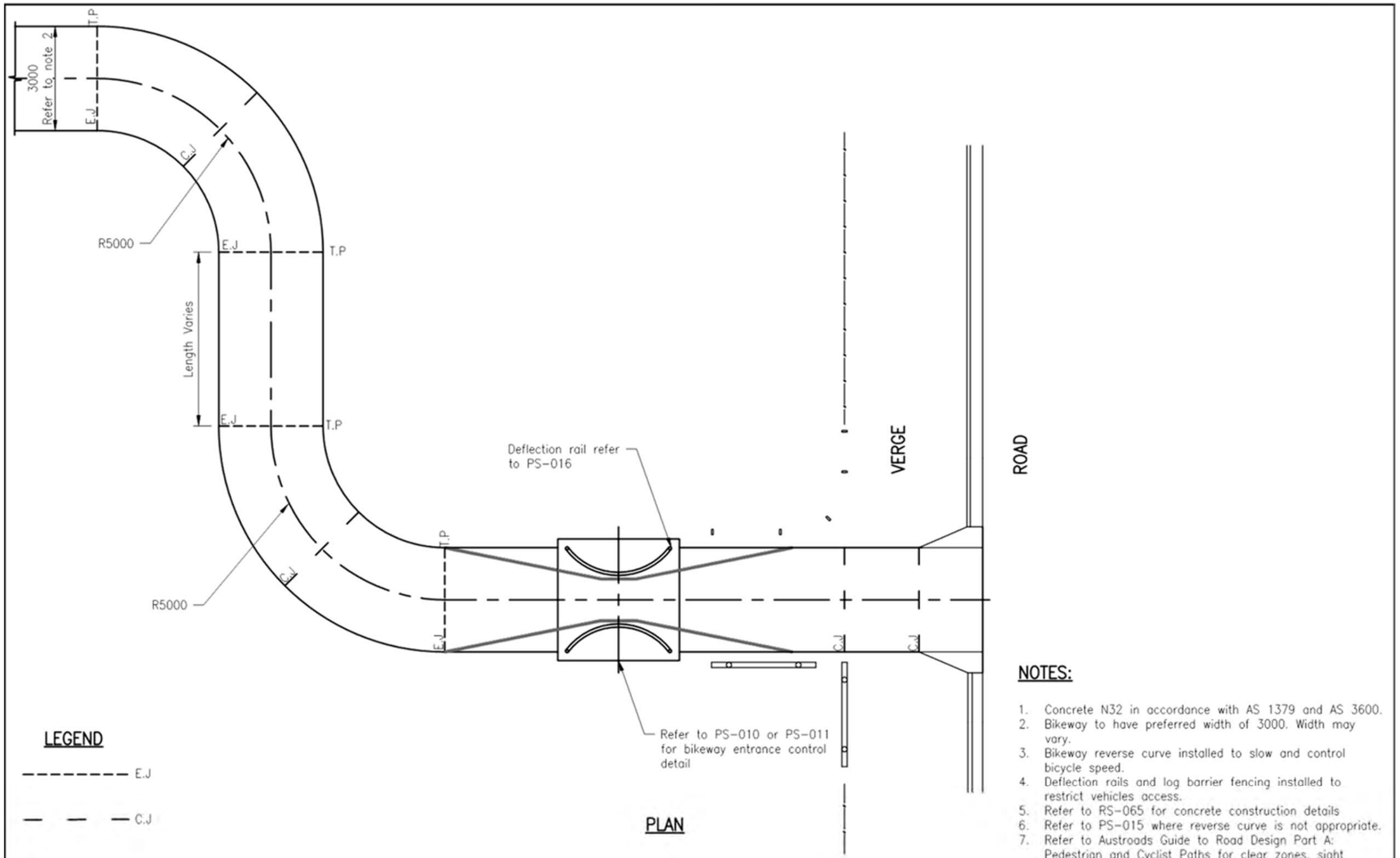
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Rv	DATE	REVISIONS
F	06/14	Review
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C	06/11	Review
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A	01/10	ORIGINAL ISSUE

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STANDARD DRAWINGS

BIKEWAY ENTRANCE CONTROL
TYPE 2 – HIGH VOLUME

PS-011



NOTES:

1. Concrete N32 in accordance with AS 1379 and AS 3600.
2. Bikeway to have preferred width of 3000. Width may vary.
3. Bikeway reverse curve installed to slow and control bicycle speed.
4. Deflection rails and log barrier fencing installed to restrict vehicles access.
5. Refer to RS-065 for concrete construction details
6. Refer to PS-015 where reverse curve is not appropriate.
7. Refer to Austroads Guide to Road Design Part A: Pedestrian and Cyclist Paths for clear zones, sight distance requirements and crossfalls.
8. All dimensions are in millimetres unless shown otherwise.

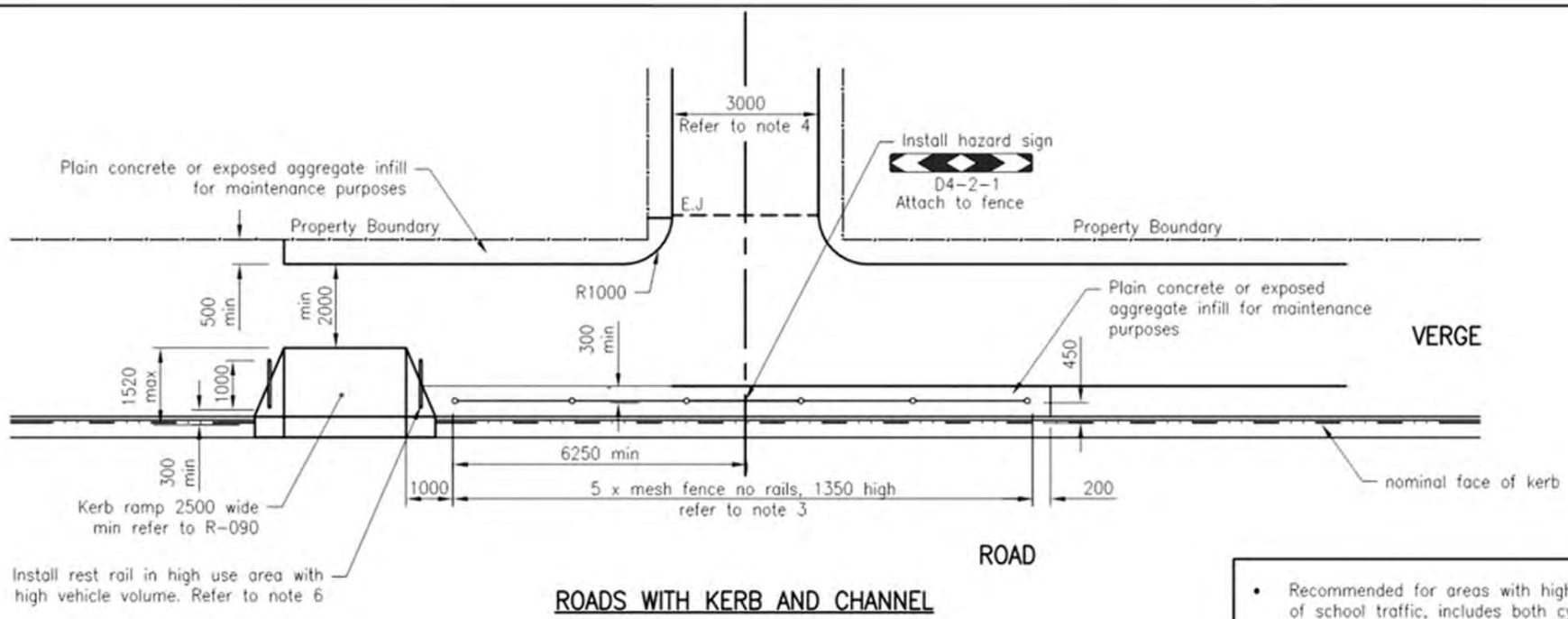
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Rv	DATE	REVISIONS
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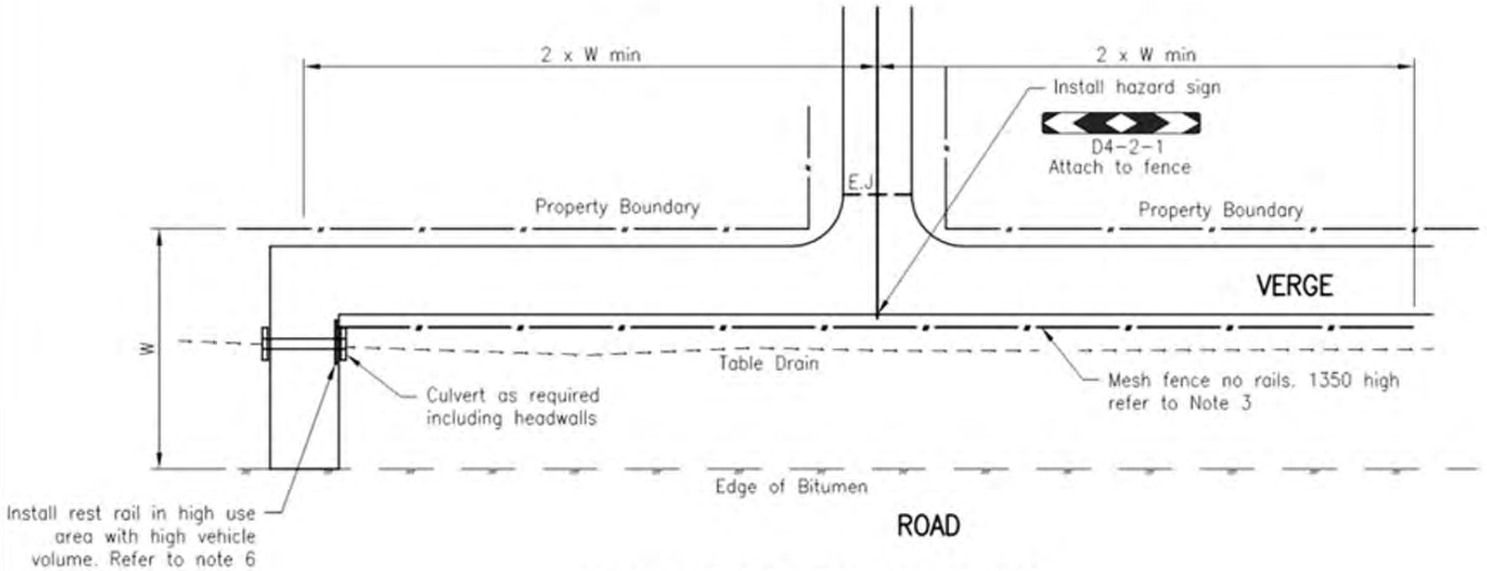
INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

BIKEWAY SLOWDOWN CONTROL
REVERSE CURVE

PS-013



ROADS WITH KERB AND CHANNEL



ROADS WITHOUT KERB AND CHANNEL

- Recommended for areas with high volumes of school traffic, includes both cyclists and pedestrians.
- Ramp position to face oncoming traffic where possible.

NOTES:

1. Concrete N32 in accordance with AS 1379 and AS 3600.
2. Refer to RS-065 for concrete construction details.
3. Mesh fence no rails details refer to GS-045.
4. Bikeway to have preferred width of 3000. Width may vary.
5. Kerb ramp details refer to RS-090.
6. Rest rail details refer to PS-016 and PS-010.
7. Installation of TGSI's refer to RS-092 and RS-093. TGSI's are required on a bikeway where a need for vision impaired pedestrian has been identified. TGSI's shall comply with AS 1428.4.1.
9. All dimensions are in millimetres unless shown otherwise.

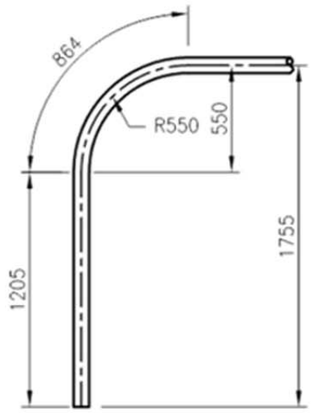
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C	06/11	Review
B	06/10	Review
A	08/09	ORIGINAL ISSUE

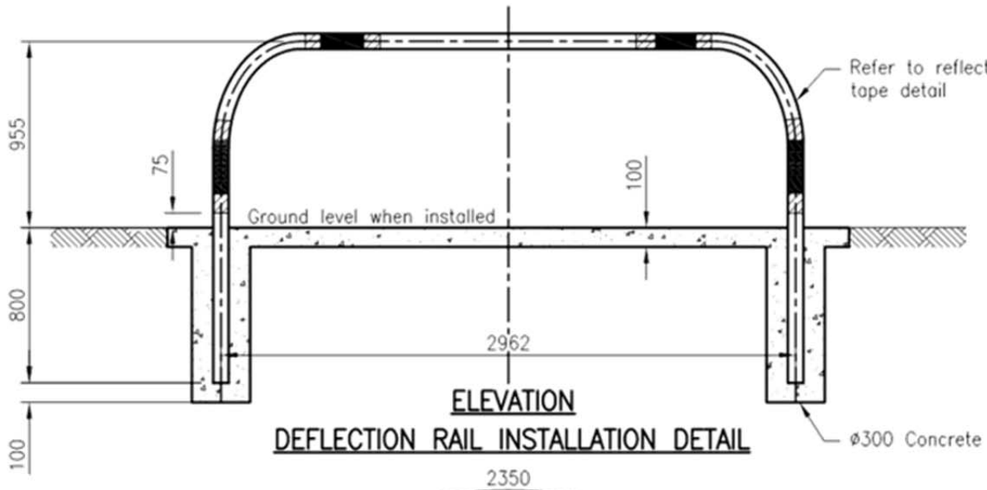
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BIKEWAY ENTRANCE CONTROL
OFFSET CHICANE

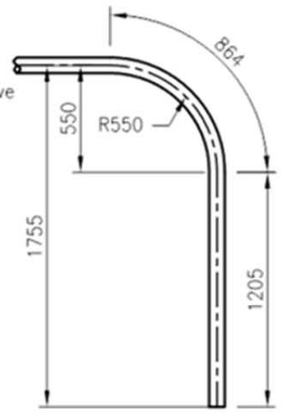
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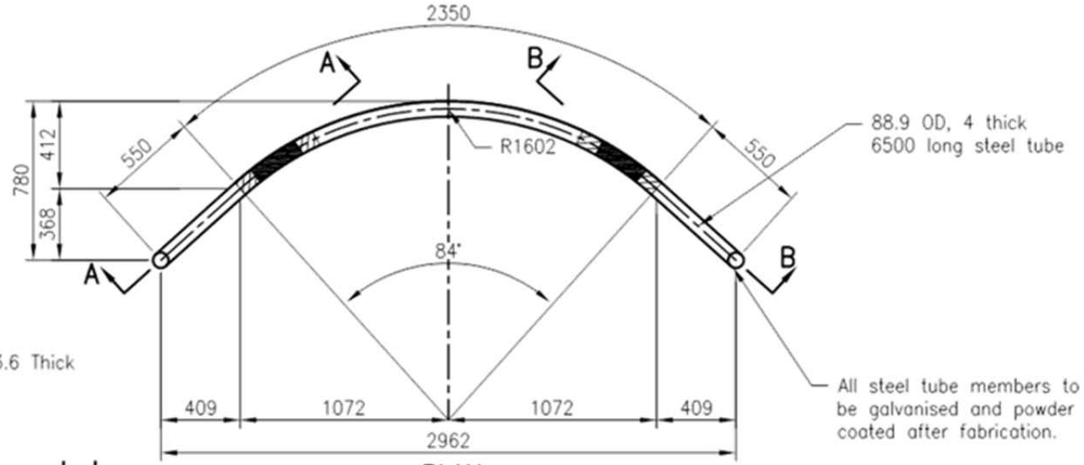
SECTION A–A



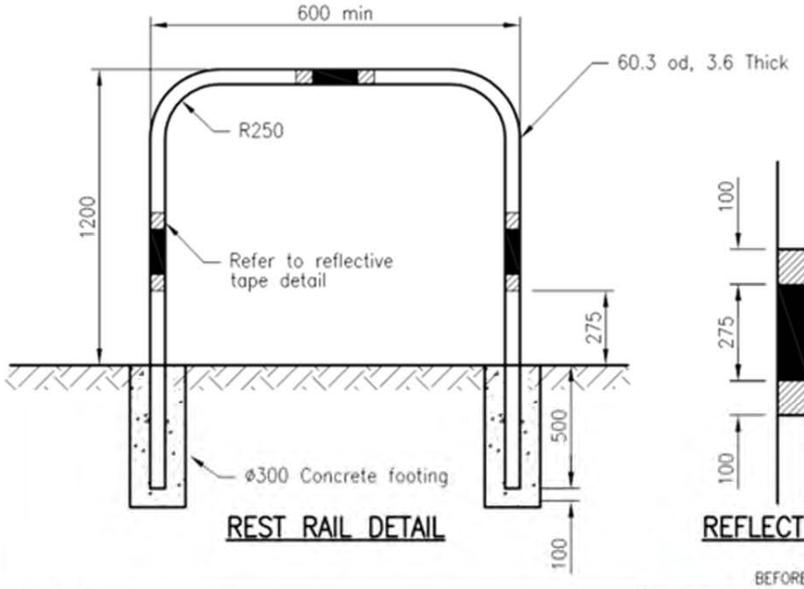
ELEVATION
DEFLECTION RAIL INSTALLATION DETAIL



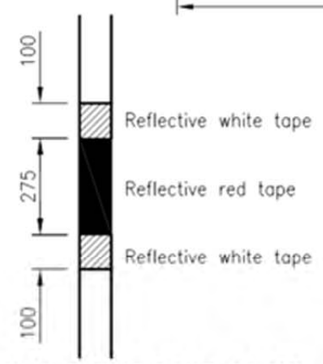
SECTION B–B



PLAN
DEFLECTION RAIL



REST RAIL DETAIL



REFLECTIVE TAPE DETAIL

NOTES:

1. Concrete footing to be grade N25 in accordance with AS 3600.
2. Refer to RS–065 for concrete construction details.
3. Galvanised steel tube in accordance with AS 1163.
4. Rollform deflection rail from a single piece 6500 long tube.
5. Reflective tape to be white and red class 1 in accordance with AS 1906.1
6. Galvanised steel to be powder coated in Y11 Canary Yellow to AS 2700–1996.
7. Refer to PS–010 & PS–011 for deflection & rest rail installation details on bikeways.
8. All dimensions are in millimetres unless shown otherwise.

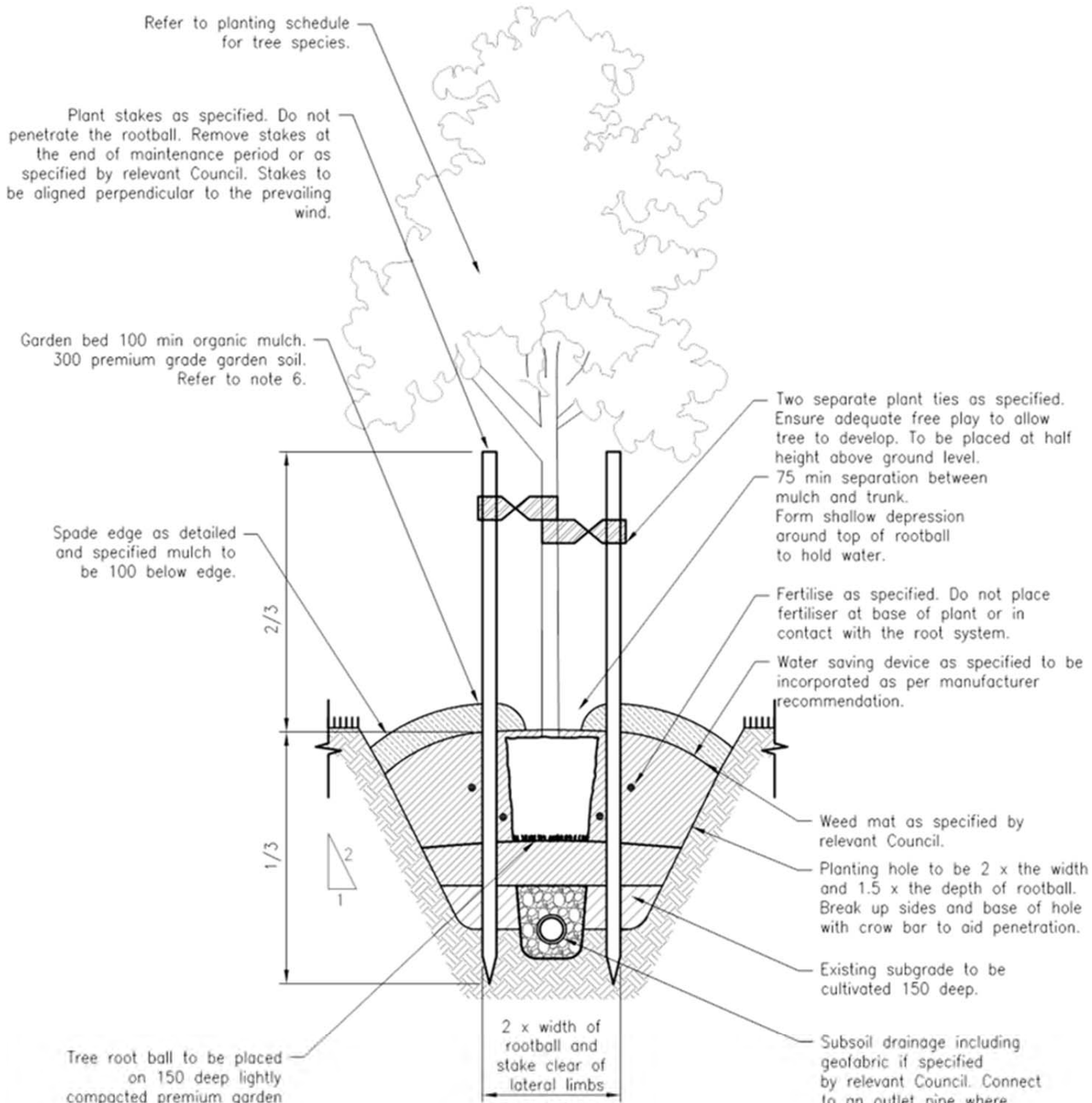
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Rv	DATE	REVISIONS
F	06/14	Review
E	03/14	Amended Drawing Number
D	12/11	Drawing number changed from SEQ P–016 to PS–016
C	06/11	Review
B	06/10	Review
A	08/09	ORIGINAL ISSUE

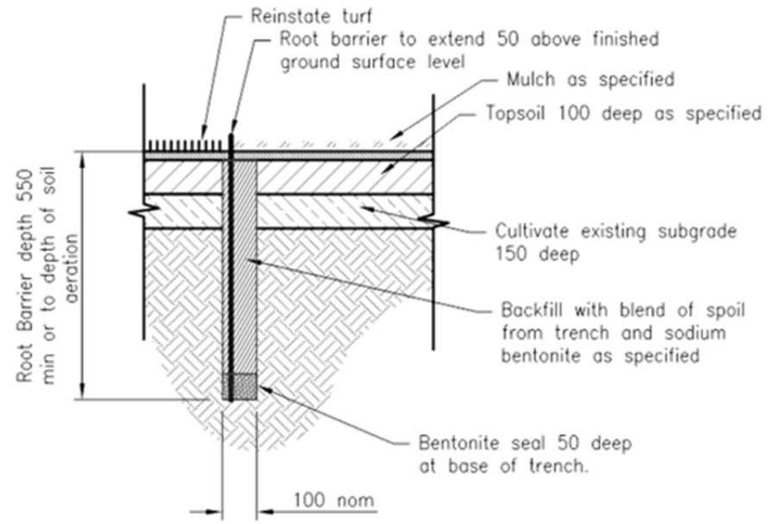
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STANDARD DRAWINGS

BIKEWAY FURNITURE DETAILS
DEFLECTION AND REST RAIL DETAIL

PS–016



ELEVATION
PLANTING AND STAKING



ROOT BARRIER

Refer to manufacturers specification, location of Root barrier as directed.

CAUTION
Verify location of services prior to commencement of work

NOTES:

1. Plant types as specified, refer project documentation. Prior to planting pre water hole and allow to soak away.
2. Form a saucer shaped depression around base of tree and water immediately.
3. Planting shall be a minimum of 650 from the back of kerb.
4. Provide gravel filter and connect to an outlet pipe where directed. Refer to grading requirements on RS-140.
5. For planting in medians refer to GS-011 and GS-012.
6. Garden bed organic mulch to conform to AS 4419 unless otherwise specified.
7. All dimensions are in millimetres unless shown otherwise.

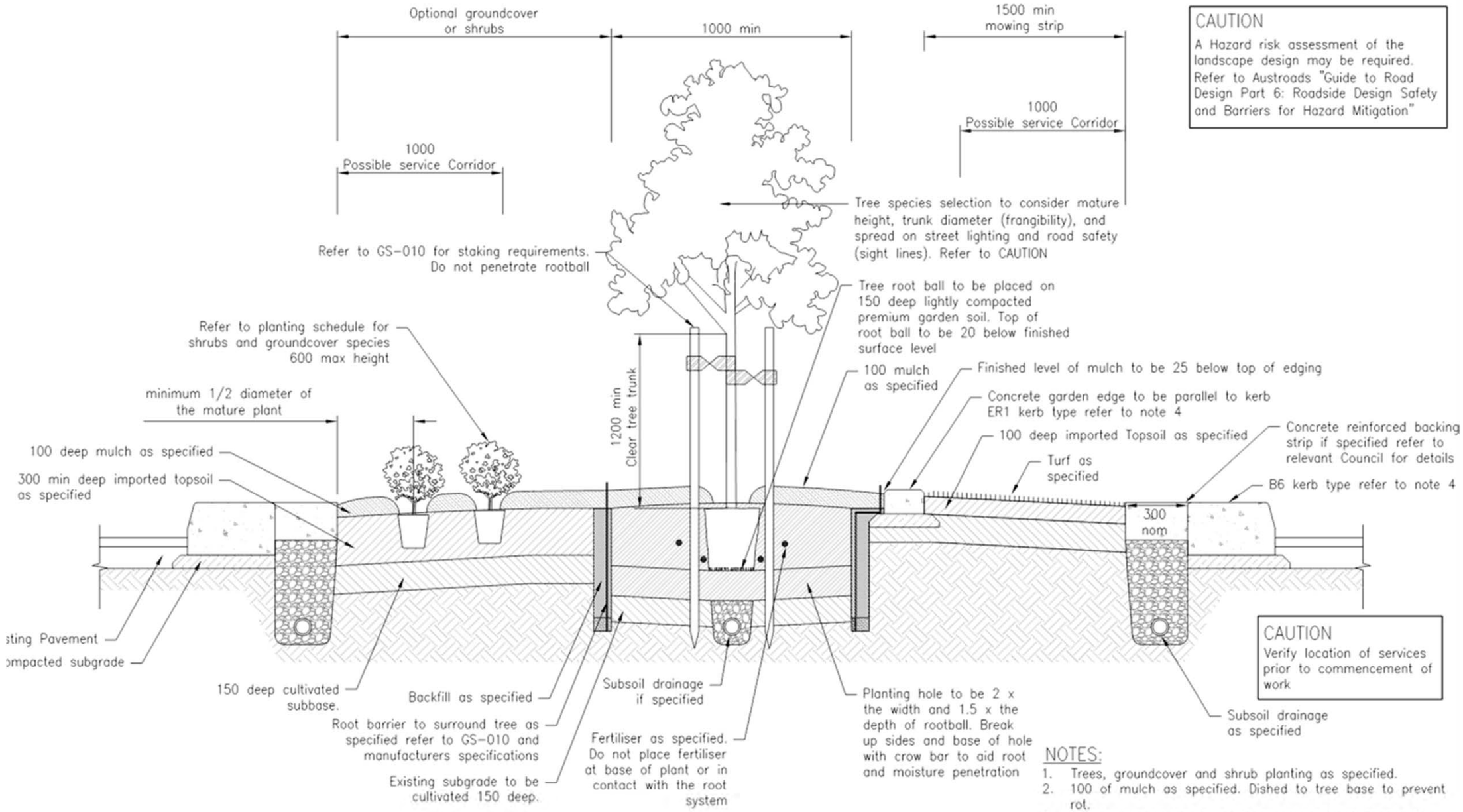
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Rv	DATE	REVISIONS
D	06/14	Review
C	03/14	Amended Drawing Number
B	03/13	Drawing number changed from SEQ G-010 to GS-010
A	01/10	ORIGINAL ISSUE

INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

LANDSCAPING
STREET TREE PLANTING DETAILS
INCLUDING ROOT BARRIERS

GS-010



TYPICAL MEDIAN PLANTING SECTION TREES, SHRUBS AND GROUNDCOVERS

These drawings have been developed in consultation between the participating Councils.
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NOTES:

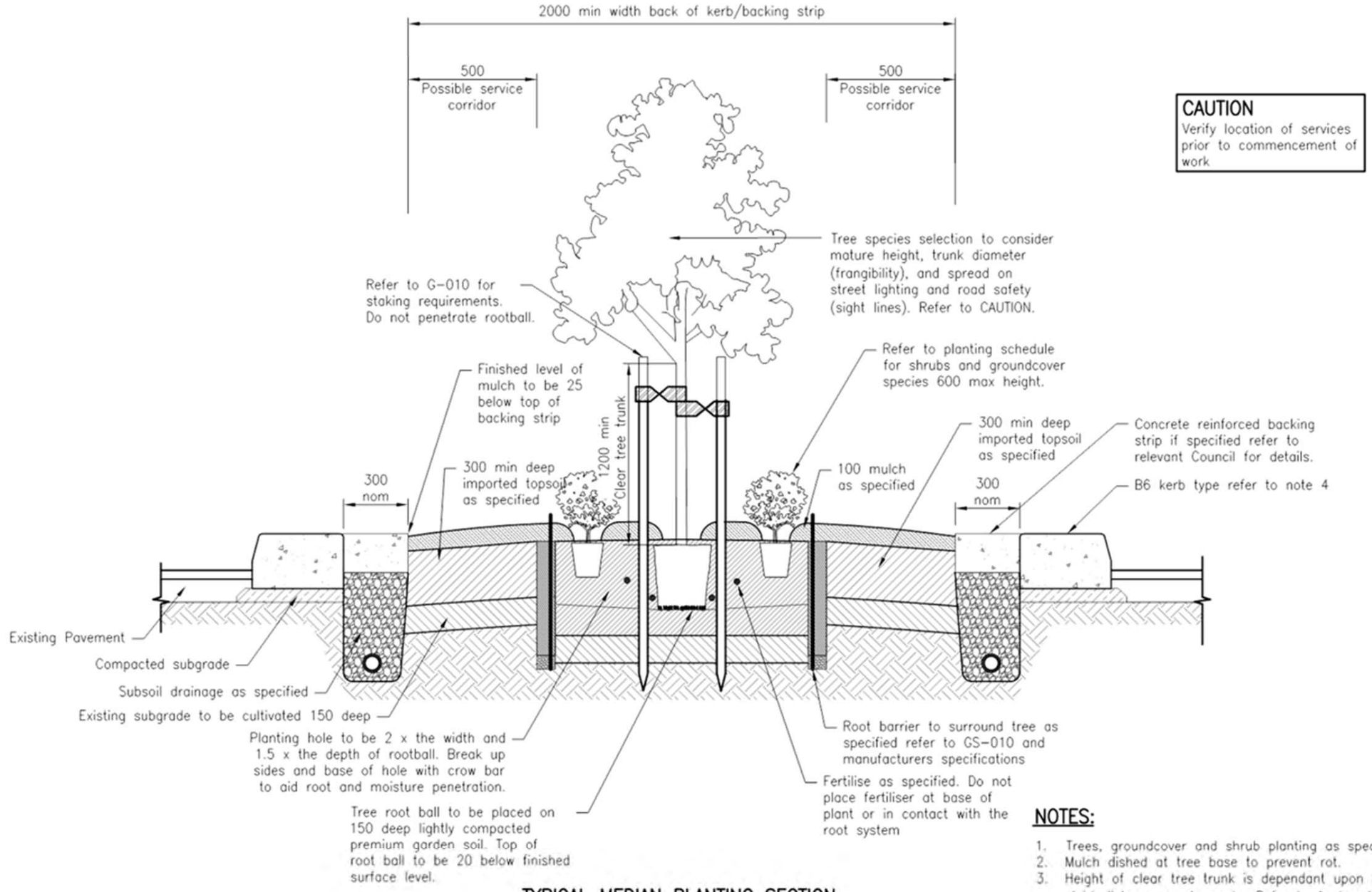
1. Trees, groundcover and shrub planting as specified.
2. 100 of mulch as specified. Dished to tree base to prevent rot.
3. Height of clear tree trunk is dependant upon road safety sight distance requirements. Refer to Austroads "Guide to Road Design Part 3 – Geometric Design"
4. Refer to RS-080 for kerb type unless otherwise specified by relevant Council.
5. All dimensions are in millimetres unless shown otherwise.

06/14	Review
03/14	Amended Drawing Number
03/13	Drawing number changed from SEQ G-011 to G-011.
06/11	Review
01/10	ORIGINAL ISSUE

INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA
STANDARD DRAWINGS

STREET TREE PLANTING DETAILS
WIDE MEDIAN

GS-011



TYPICAL MEDIAN PLANTING SECTION TREES, SHRUBS AND GROUNDCOVERS

NOTES:

1. Trees, groundcover and shrub planting as specified.
2. Mulch dished at tree base to prevent rot.
3. Height of clear tree trunk is dependant upon road safety sight distance requirements. Refer to Austroads "Guide to Road Design Part 3 – Geometric Design"
4. Refer to RS-080 for kerb type
5. All dimensions are in millimetres unless shown otherwise

These drawings have been developed in consultation between the participating Councils.
BEFORE USE, the user shall confirm that the drawing has been adopted by the appropriate Council.

Rv	DATE	REVISIONS
E	06/14	Review
D	03/14	Amended Drawing Number
C	03/13	Drawing number changed form SEQ G-012 to GS-012
B	02/11	Review
A	01/10	ORIGINAL ISSUE

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STANDARD DRAWINGS

STREET TREE PLANTING DETAILS
NARROW MEDIAN

GS-012

Rv E D C B A

3.0 PLANNING SCHEME POLICY 3 – FLOOD ANDSTORM TIDE HAZARD

3.1 RELATIONSHIP WITH THE PLANNING SCHEME

(1) This planning scheme policy sets out:

(i) information council may request for the preparation and submission of technical reports for proposed development affected by the flood prone, storm tide and drainage constrained land hazard overlays. These are contained in the following subsections:
3.2.1.1 Flood assessments
3.2.1.2 Storm tide assessments
3.3.1.1 Drainage constrained land assessments

(ii) general guidance for applicants which is contained in the following sections:
3.2.2.1 Hydrological analysis
3.2.2.2 Hydraulic analysis
3.2.2.3 Channel design
3.2.2.4 Trafficable access

3.2 FLOOD AND STORM TIDE ASSESSMENTS

The following information may be required to inform PO4 and PO6 of the Flood and Storm Tide Hazard Overlay Code.

3.2.1 Information that Council may request

3.2.1.1 Flood assessments

(1) A development application involving land that is within the flood hazard overlay may require the submission of a flood report detailing the impacts of the proposed development.

(2) A flood report must be certified by a suitably qualified Registered Professional Engineer of Queensland (RPEQ) and must contain:

(a) a site plan showing the location of existing and proposed structures;
(b) the location of existing and proposed drainage structures and overland flow paths;
(c) an assessment of the contributing catchment for the 50, 10, 5, 2 and 1% AEP design flood events including:
  (i) where in the storm tide area, the provision made for storm tide events;
  (ii) the extent, depth and velocity of the flood waters for each event;
  (iii) a contour plan with levels to AHD at 0.25m contours and details of any structures which may act as a hydraulic controls;
(d) scaled drawings for each design storm event showing a comparison between the existing and proposed scenario;
(e) the impact of the proposed development on surrounding properties;
(f) the extent and impact of any proposed earthworks or changes to the flow path;
(g) for overland flow, any potential blockages in the system from debris;
(h) where within the storm tide hazard area, the impact in terms of foreshore or bank stability and type of protection proposed; and,
(i) all relevant computer data files that are compatible with council's software.

3.2.1.2 Storm tide assessments

(1) A development application involving land that is within the storm tide hazard overlay may require the submission of a storm tide assessment which includes:

(a) a contour plan with levels to AHD at 0.25 metre contours which shows:
  (i) the extent of the storm tide inundation;
  (ii) the location of any existing and proposed structures on the lot;
  (iii) the extent of any proposed excavation and fill;
(b) any impacts on neighbouring properties; and,
(c) any impacts in terms of foreshore bank stability and the type of protection proposed.

3.2.2 Guidance for applicants

3.2.2.1 Hydrological Analysis

(1) Stream flow is to be simulated in accordance with the methods recommended in the Queensland Urban Drainage Manual (QUDM) and Australian Rainfall and Runoff (AR&R).

(2) Hydrological models are to account for all existing and future stream and catchment development.

(3) Model parameters are to be determined by calibration against past flood events and by recognised AR&R regional relationships.

(4) Calibration includes all major flooding events with recorded flood level information.

(5) Calibration models accurately reflect the existing development during the event.

(6) Flood analysis by accepted flood modelling techniques is carried out to determine the worst flooding scenario for the particular flood frequency in concern.

3.2.2.2 Hydraulic Analysis

(1) Flood levels are simulated in accordance with the methods recommended in QUDM and AR&R.

(2) Cross section information used in hydraulic calculations is based on a recent survey of the waterway or foreshore at sufficient detail to accurately model the terrain.

(3) Survey is to Australian Height Datum (AHD).

(4) Roughness coefficients are determined from calibration and published upper bound guidance values and accurately reflect terrain conditions.

(5) Hydraulic gradients are determined from surveyed flood levels or cross-sections up and downstream of the subject site.

(6) Flood levels for a particular annual exceedance probability (AEP) are determined from the design storm that yields the highest water level prediction.

3.2.2.3 Channel design

(1) Maximum average flow velocity in consolidated bare earth and vegetated channels is to comply with the lower of the tabulated values for easily erodible soils in QUDM and/or poor grass cover in AR&R.

(2) The maximum Froude number is less than 0.9 and supercritical flow is not acceptable.

(3) Manning's 'n' values are determined from the sources recommended in QUDM and published upper bound guidance values are adopted.

(4) Velocity and Froude number calculations are to include several stream flow events from a 50 percent AEP (2 year ARI) to 1 percent AEP (100 year ARI) storm event.

(5) Channel design is to minimise erosion potential.

(6) The minimum centreline radius of bends in channels is not less than four times the width of flow of a 1 percent AEP (100 year ARI) flow at that location.

(7) The maximum angle of deflection of the channel between the straight reaches upstream and downstream of the curve is not to exceed 60°.

(8) The channel is straight both upstream and downstream of all curves for a distance in each case equivalent to at least the radius of the curve.

(9) Access to channels is provided for maintenance equipment.

3.2.2.4 Trafficable access

(1) Trafficable access to the site during a flood or storm tide event is to consider emergency service access, the time of the road closure, the number of properties affected, the land use, and the flows depths and width limitations in accordance with section 7.3.15 of QUDM.

(2) Car parking should also be considered in accordance with section 7.3.10 of QUDM..

3.3 DRAINAGE CONSTRAINED LAND ASSESSMENT

3.3.1 Information that Council may request

The following may be required to inform PO7 in the Flood and Storm Tide Hazard Overlay Code.

3.3.1.1 Drainage constrained land assessments

(1) Where an application involves land on the Southern Moreton Bay Islands shown as drainage constrained an assessment that confirms the extent and effects of the drainage issues may be required. Depending on the type of drainage problem, the assessment may need to include:

(a) a contour plan with levels to AHD at 0.25 metre contours which shows the location of any existing and proposed structures on the site;
(b) existing contributing stormwater catchment and future catchment;
(c) the location, depth, width and velocity of calculated stormwater overland flow;
(d) the location of any easements (existing and proposed);
(e) a description of soil layers to a depth of 1.2 metres; and,
(f) the proposed remedial works to address the drainage problem (where possible).

3.3.2 Guidance for applicants

(1) Drainage constrained land on the Southern Moreton Bay Islands is primarily associated with:

(a) existing stormwater overland flow paths;
(b) access constraints due to stormwater overland flow;
(c) high water table; and,
(d) seepage (stormwater and wastewater).

4.0 PLANNING SCHEME POLICY 4 – LANDSLIDE HAZARD

4.1 Relationship with the planning scheme

(1) This part sets out:

(i) information that may be request by Council where development of is proposed on land within the landslide hazard overlay; and

(ii) guidance for applicants on good engineering practices for hillside development to assist applicants, engineers and planners in the design and application of appropriate type and form of developments that best reflects the capability of the land.

(2) Hazard ratings depicted in the Landslide Hazard Overlay use a classification system consistent with the procedures detailed in the paper entitled "A Method of Zoning Landslide Hazards", prepared by McGregor and Taylor and are listed in the table below. They have been mapped based on a grid system of 25m squares for the mainland, and 5m squares for the islands. Each square is defined by a point at its centroid, and data related to the average slope instability.

Table 1 – Hazard Ratings

Hazard Rating	Description
Very High	The event is expected to occur
High	The event will probably occur under adverse conditions
Medium	The event could occur under adverse conditions
Low	The event might occur under very adverse conditions

4.2 Information that Council may request

(1) A landslide assessment may be required to address PO1 of the Landslide Hazard Overlay Code. This must be undertaken by a suitably qualified Registered Professional Engineer Queensland (RPEQ).

4.2.1 Development within a very high or high landslide hazard area

(1) At minimum a geotechnical report must include:
(i) an extensive site investigation including subsurface investigation with groundwater measurements over at least one wet season;
(ii) the frequency of investigation locations should be no less than 1 location per 30m x 30m grid with an assessment of material strength by appropriate in-situ or laboratory testing. Investigations should establish a comprehensive geotechnical model over the whole site;
(iii) installation of groundwater monitoring points with measurements over at least one typical wet season and comparison of groundwater levels to rainfall events should be made;
(iv) a review of potential hazards; and
(v) an analysis of slope stability using a suitable model appropriate for the conditions.

(2) Where the analysis of slope stability indicates an unfavourable factor of safety, it is necessary to assess the risks to the community with regards to loss of life, injury and damage to infrastructure.

(3) The design of any proposed development must be reviewed and recommendations made by a suitably qualified RPEQ.

(4) Planning and implementation of a program of regular maintenance of slopes, cleaning of drainage course and monitoring of slope for signs of distress may also be required.

4.2.2 Development within a medium or low landslide hazard area

(1) At minimum a geotechnical report must contain:
- (i) a site walkover survey with investigations as required establishing a geotechnical model over the whole site. This may require moderate subsurface investigation or testing to provide subsoil material properties;
- (ii) a review of potential hazards; and
- (iii) an assessment of slope stability using a suitable model appropriate for the site conditions.

(2) Where the analysis of slope stability indicates an unfavourable factor of safety, it is necessary to assess the risks to the community with regards to loss of life, injury and damage to infrastructure.

(3) The design of any proposed development may need to be reviewed and recommendations made by a suitably qualified RPEQ.

4.3 Guidance for applicants

4.3.1 Road Design

(1) Roads on side slopes are usually formed by a combination of cut and fill operations. The design must incorporate effective drainage, and should incorporate good practices including:

- (i) the adoption of batter slopes appropriate to the engineering properties of the different materials exposed in the cut face. As a general rule batters in soil should be 2H:1V, in poor rock 1H:1V and in good rock 0.5H to 1V;
- (ii) where cuttings in rock are proposed, road alignments should be planned as not to coincide with major jointing orientations of the rock;
- (iii) the higher cut faces should include the provision of benches at vertical intervals of not greater than 10m. These benches are required to catch fallen material, to control drainage and to provide access for maintenance of the cut face;
- (iv) the provision of formed surface drains at the top of the cut slope, on the benches and at the toe of the cut slope;
- (v) the provision of slope protection, slope treatment or slope support in areas of potential concern. Slope protection against erosion may utilise a cover of topsoil and grass. On steeper slops treatment of erodible and closely joined rock is commonly by a cover mesh and shotcrete with rock bolts providing treatment of areas with adversely oriented joining. In areas of greater concern slope support can be provided by an engineered retaining wall. The design of the wall depends on the site conditions and cut dimensions but could include gabion crib, masonry and reinforced concrete wall designs.

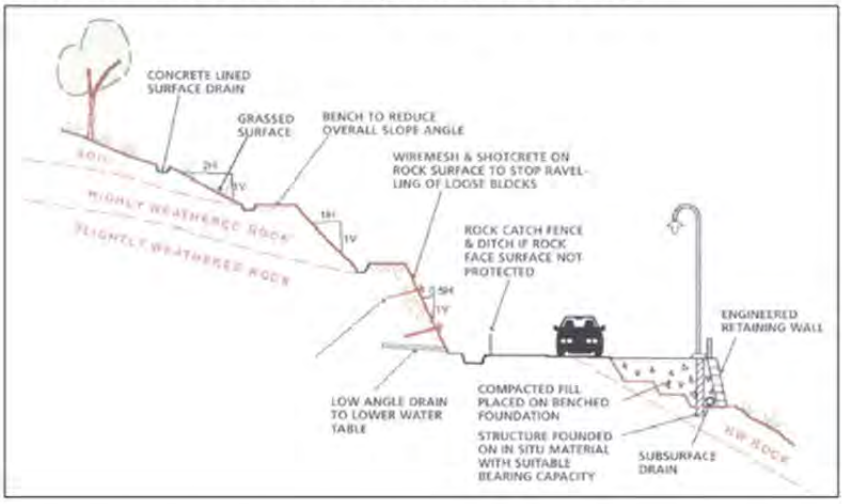
(2) The road fill embankment design should incorporate:
- (vi) the removal of all unsuitable material including trees, vegetation and topsoil from embankment foundation;
- (vii) the preparation of the embankment foundation by the formation of terraces across the slope. These terraces should be at least 2m wide with a maximum height of 0.6m;
- (viii) the installation of drainage, if required, in the foundation. This drainage may involve trench drains in areas of local seepage or a drainage blanket in an area that is generally wet;
- (ix) the embankment fill should be placed in an engineered manner. Placement of earth fill should be in layers – each not thicker than 300mm and compacted by roller to not less than 95% relative to Standard Compaction;

(x) the design of compacted earth fill slopes in soil should be no steeper than 1.5H:1V, and may often be lower subject to retained height, soil strength and maintenance considerations. Surface protection should be by grass or rock;

(xi) the provision of drainage at the crest and toe of the embankment as formed drains leading to an identified disposal area.

Examples of how to maintain slope stability for road design is illustrated in Figure 1.

Figure 1 – Possible methods of maintaining stability in road design



4.3.2 Examples of good hillside practices

Examples of good and poor hillside engineering practice are given in Table 1 and Figure 2 below.

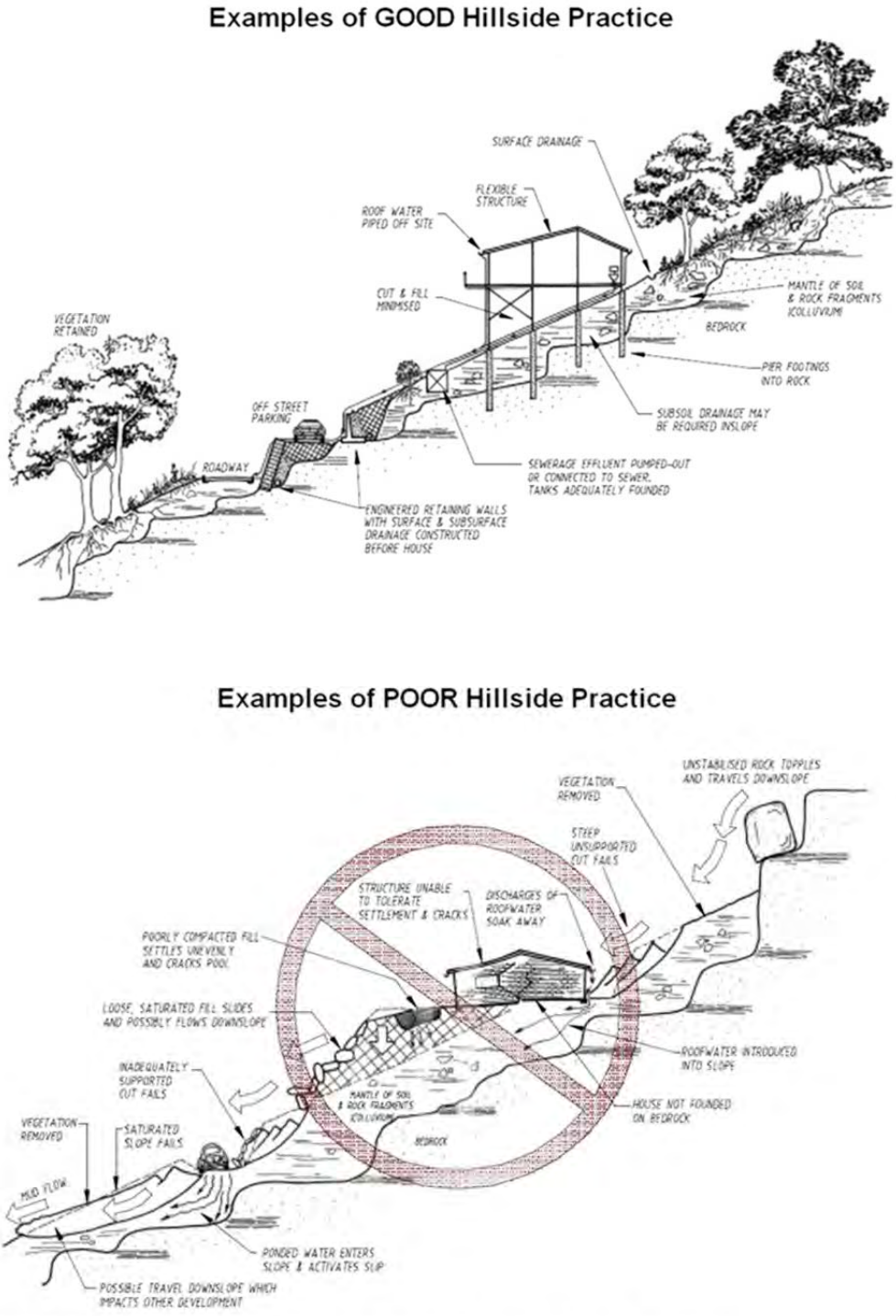
Table 1 – Guidelines for hillside construction practice

	GOOD ENGINEERING PRACTICE	*POOR ENGINEERING PRACTICE*
ADVICE		
GEOTECHNICAL ASSESSMENT	Obtain advice from a qualified, experienced geotechnical consultant at early stage of planning and before site works.	Prepare detailed plan and start site works before geotechnical advice.
PLANNING		
SITE PLANNING	Having obtained geotechnical advice, plan the development with the risk arising from the identified hazards and consequences in mind.	Plan development without regard for the Risk.
DESIGN AND CONSTRUCTION		
HOUSE DESIGN	Use flexible structures which incorporate properly designed brickwork, timber or steel frames, timber or panel cladding. Consider use of split levels. Use decks for recreational areas where appropriate.	Floor plans which require extensive cutting and filling. Movement intolerant structures.
SITE CLEARING	Retain natural vegetation wherever practicable.	Indiscriminately clear the site.
ACCESS & DRIVEWAYS	Satisfy requirements below for cuts, fills, retaining walls and drainage. Council specifications for grades may need to be modified. Driveways and parking areas may need to be fully supported on piers.	Excavate and fill for site access before geotechnical advice.
EARTHWORKS	Retain natural contours wherever possible.	Indiscriminant bulk earthworks.
CUTS	Minimise depth. Support with engineered retaining walls or batter to appropriate slope. Provide drainage measures and erosion control.	Large scale cuts and benching. Unsupported cuts. Ignore drainage requirements
FILLS	Minimise height. Strip vegetation and topsoil and key into natural slopes prior to filling. Use clean fill materials and compact to engineering standards. Batter to appropriate slope or support with engineered retaining wall. Provide surface drainage and appropriate subsurface drainage.	Loose or poorly compacted fill, which if it fails, may flow a considerable distance including onto property below. Block natural drainage lines. Fill over existing vegetation and topsoil. Include stumps, trees, vegetation, topsoil, boulders, building rubble etc in fill.
ROCK OUTCROPS & BOULDERS	Remove or stabilise boulders which may have unacceptable risk. Support rock faces where necessary.	Disturb or undercut detached blocks or boulders.
RETAINING WALLS	Engineer design to resist applied soil and water forces. Found on rock where practicable. Provide subsurface drainage within wall backfill and surface drainage on slope above. Construct wall as soon as possible after cut/fill operation.	Construct a structurally inadequate wall such as sandstone flagging, brick or unreinforced blockwork. Lack of subsurface drains and weepholes.
FOOTINGS	Found within rock where practicable. Use rows of piers or strip footings oriented up and down slope. Design for lateral creep pressures if necessary. Backfill footing excavations to exclude ingress of surface water.	Found on topsoil, loose fill, detached boulders or undercut cliffs.
SWIMMING POOLS	Engineer designed. Support on piers to rock where practicable. Provide with under-drainage and gravity drain outlet where practicable. Design for high soil pressures which may develop on uphill side whilst there may be little or no lateral support on downhill side.	
DRAINAGE		
SURFACE	Provide at tops of cut and fill slopes. Discharge to street drainage or natural water courses. Provide general falls to prevent blockage by siltation and incorporate silt traps. Line to minimise infiltration and make flexible where possible. Special structures to dissipate energy at changes of slope and or direction.	Discharge at top of fills and cuts. Allow water to pond on bench areas.
SUBSURFACE	Provide filter around subsurface drain. Provide drain behind retaining walls. Use flexible pipelines with access for maintenance. Prevent inflow of surface water.	Discharge roof runoff into absorption trenches.
SEPTIC & SULLAGE	Usually requires pump-out or mains sewer systems; absorption trenches may be possible in some areas if risk is acceptable. Storage tanks should be water-tight and adequately founded.	Discharge sullage directly onto and into slopes. Use absorption trenches without consideration of landslide risk.
EROSION CONTROL & LANDSCAPING	Control erosion as this may lead to instability. Revegetate cleared area.	Failure to observe earthworks and drainage recommendations when landscaping.
DRAWINGS AND SITE VISITS DURING CONSTRUCTION		
DRAWINGS	Building Application drawings should be viewed by geotechnical consultant	
SITE VISITS	Site Visits by consultant may be appropriate during construction	
INSPECTION AND MAINTENANCE BY OWNER		
OWNER'S RESPONSIBILITY	Clean drainage systems; repair broken joints in drains and leaks in supply pipes. Where structural distress is evident see advice. If seepage observed, determine causes or seek advice on consequences.	

Extract from "Landslide Risk Management Concepts and Guidelines", Australian Geomechanics Society Journal, Volume 37 No. 2, May 2002, p43.

4

Figure 2 – Illustration of good and poor hillside practices



Extract from "Landslide Risk Management Concepts and Guidelines", Australian Geomechanics Society Journal, Volume 32 No. 2, May 2002, P44

5

5.0 PLANNING SCHEME POLICY 5 – STRUCTURE PLANS

5.1 Relationship with the planning scheme

(1) This part sets out information council may request where development involves a large or greenfield development site to address the Performance Outcomes of the Emerging Community Zone Code and Reconfiguring a Lot Code.

5.2 Information Council May Request

5.2.1 General

(1) The planning and design process is expected to occur at a series of scales, with an increasing level of detail at each. All subdivisions must demonstrate how the proposed development meets the relevant performance outcomes. Accordingly, a broader structure plan may be required to determine that the proposal integrates well with the surrounding urban fabric. The preferred approach to the design process and the outputs expected from each stage are outlined below.

5.2.2 Site and context assessment

(1) Prior to preparing the structure plan, an assessment of the site and its context should be undertaken. A site analysis should investigate the following features as a minimum:

(a) environmentally significant areas including areas of bushland habitat, connecting corridors, foreshores, waterways, wetlands and significant individual trees;
(b) any natural hazards affecting the site and surrounds;
(c) topography and landscape features, views and vistas;
(d) the existing movement network and future connections, and their treatments; including public transport routes and their stops and pedestrian and cyclist paths;
(e) existing and proposed open space networks;
(f) existing and proposed social and physical infrastructure networks;
(g) the existing residences and structures, land uses and approvals on the site and surrounding sites; past land uses where relevant;
(h) the location of nearby schools, shopping centres, employment generators and other community facilities; the location of operating poultry farms or other potentially impacting activities; and
(i) where relevant, the location of breeding and sheltering areas for mosquitoes and biting midges;
Note: Refer to Queensland Health's guidelines to minimise mosquito and biting midge problems in new development areas.

5.2.3 Preparing a structure plan

(1) A structure plan is a conceptual plan which allows for a degree of flexibility, refinement and improvement at more detailed design stages.

(2) The extent of the information contained in a structure plan will depend upon the issues and their resolution, the context of the development in the surrounding area and the nature of site constraints and characteristics. Where necessary, it may be supported by technical information that provides the rationale for the approach adopted.

(3) A structure plan must clearly demonstrate how the proposed development will integrate with the surrounding community including existing parks, services and infrastructure networks including the movement system (road network, public transport facilities and pedestrian and cyclist paths), as well as the nature and staging of the proposed development.

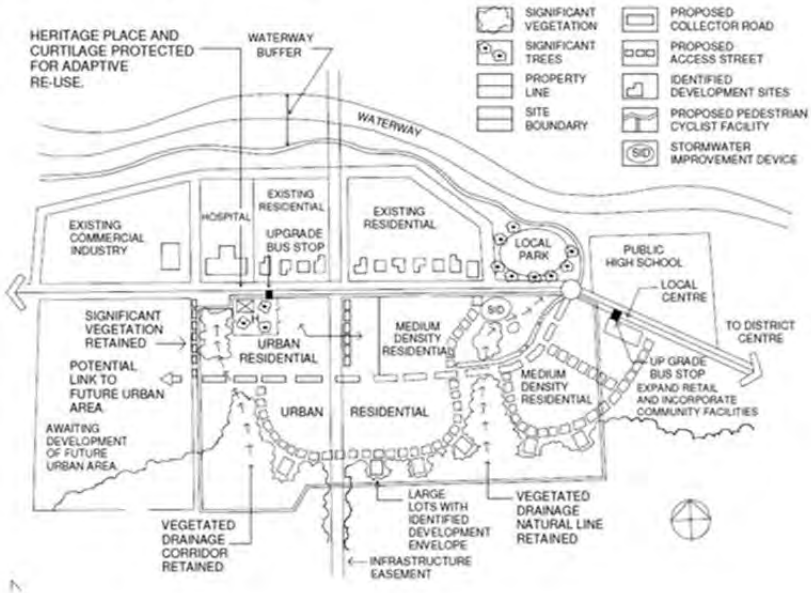
(4) At a minimum, the structure plan should set out:
- (a) the vision and guiding principles for the development or component precincts;
- (b) the approximate lot or dwelling yield for each part of the site (density);
- (c) the proposed mix of uses and location of each proposed land use, including (where applicable), the extent of facilities proposed such as community facilities, centres, employment and schools;
- (d) key urban design and landscaping elements or themes of the development and how these contribute to overall character, functionality and quality of the streetscape, built form and public realm components;
- (e) how development interfaces to the surrounding neighbourhood, and to other buildings or uses;
- (f) how significant environmental values are protected and enhanced, including continuation of environmental corridors;
- (g) how and where infrastructure is to be provided such as water, sewerage, stormwater and community infrastructure;
- (h) the proposed open space network; and
- (i) the proposed movement network (roads, public transport and pedestrian and cyclist facilities).

(5) Applicants must have regard for plans for trunk infrastructure and desired standards of service identified in the local government infrastructure plan.

(6) Mapping should be provided at a maximum scale of 1:2,000 and include a bar scale and north point.

(7) Where the site or the proposal entail complex issues or involves a large site with multiple precincts and land use, community and stakeholder consultation is encouraged to assist in the preparation of a structure plan.

Figure 1 - Example Structure Plan



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6.0 ENVIRONMENTAL EMISSIONS

6.1 RELATIONSHIP WITH THE PLANNING SCHEME

(1) The purpose of this policy is to set out the requirements for the preparation and submission of development applications, including technical reports, for sites that have the potential to emit, or be impacted adversely from, environmental emissions such as air or noise.

(2) This part sets out:

(i) information council may request to demonstrate compliance with the performance outcomes of the code. These are contained in the following subsections:
- 6.2.1.1 Air quality reports
- 6.3.1.1 Noise reports
- 6.3.1.2 Noise management plans

(ii) guidance for applicants on approaches to air quality and noise management. These are contained in the following subsections:
- 6.2.2.1 Air quality management
- 6.3.2.1 Noise impacts
- 6.3.2.2 Alternative noise criteria
- 6.3.2.3 Noise management and reduction
- 6.3.2.4 Noise barriers

Note: Where a development includes a devolved Environmentally Relevant Activity as defined under the Environmental Protection Act 1994, this part of the development is assessed for environmental impacts in accordance with the Environmental Protection Act 1994.

The Department of Environment and Heritage Protection has developed the following guidelines to support environmental authority applications with air and noise impacts:
- *Guideline - Environmental Protection Act 1994 - Application requirements for activities with impacts to air; and*
- *Guideline - Environmental Protection Act 1994 - Application requirements for activities with noise impacts.*

6.2 AIR QUALITY

6.2.1 Information Council May Request

6.2.1.1 Air Quality Reports

(1) An air quality report may be required for a proposed development that has the potential to emit air pollutants that could have an adverse impact on air quality due to the volume or type of emissions and/or the proximity of the development to a sensitive land use.

(2) An air quality report is required to determine potential air quality impacts and matters that must be addressed to ensure the proposal meets the air quality requirements of the relevant codes.

(3) The report must describe the existing air environment, the predicted air quality and any health risk impacts and assess these impacts in comparison to the applicable air quality objectives.

(4) Air quality reports must be prepared by a suitably qualified person who has demonstrated practical and theoretical knowledge of air quality assessments.

(5) An air quality report must contain the following –

(a) A detailed site plan showing the layout of the site including main emission sources and the surrounding environment including local industries, sensitive receptors and topography;

(b) A detailed description of site activities including:
(i) the type of emissions, such as stack, area/volume, fugitive;
(ii) the operational parameters of all emission sources, including information such as variations to emission rates due to "peak" or "average" emissions, or upset conditions;
(iii) a description of the processes conducted at site, including operational hours;
(iv) the technology and design required to achieve best practice environmental management;

(c) A discussion of the prevailing meteorology based on on-site data (where available) or the closest monitoring information representative of the proposed site. This should include wind roses and an analysis of wind characteristics that are important to the dispersion of pollutants;

Note: The Queensland Department of Environment and Heritage Protection's Air Quality Sampling Manual provides guidance on measuring meteorological parameters when completing air dispersion modelling.

(d) An estimation of emissions. Emissions can be estimated using various methods such as -
(i) National Pollutant Inventory Emissions Estimation Technique Manuals;
(ii) USEPA AP 42 Emissions estimations handbooks;
(iii) from monitoring or stack testing;
(iv) industry specific best practice guidelines;

(e) An assessment of the existing air quality including a description of the surrounding land uses that may affect ambient air quality. Where available, air quality information from nearby monitoring stations should be included. The Queensland Department of Environment and Heritage Protection has accepted the use of the 99th percentile for determining background pollution concentrations;

(f) Dispersion Modelling (where undertaken) should consider the following:
(i) an appropriate dispersion model (e.g. CALPUFF) should be chosen in accordance with the New South Wales government's *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW;*
(ii) if the AERMOD model is selected, then the meteorological data file needs to be prepared in accordance with the Victorian Environmental Protection Agency document entitled: *Construction of input meteorological data files for Environmental Protection Agency Victoria Regulatory Air Pollution Model (AERMOD), Publication No. 1550, 2013*; meteorological data is site representative across all seasons over at least one year;
(iii) simulated meteorological files may be used provided the data is demonstrated to be generated using appropriate methodologies and is representative of conditions of the site;
(iv) building wake effects are included where there is an on-site or nearby building that may impact on plume dispersion;
(v) terrain effects are accounted for where terrain may affect emission impacts;
(vi) cumulative impacts are accounted for either in the model or in background monitoring data;
(vii) variation to operating conditions and worst case scenarios. Apart from the normal suite of emission data such as emission rate, temperature, exit velocity or stack dimensions, the variation in process characteristics that impact on

emissions need to be considered, such as hours of operation, upset conditions, different feedstocks and fuels, and changes in process controls;

(viii) the grid spacing of the receptor grid is chosen so that the predicted maximum concentration is not underestimated. Discrete or elevated receptors are included in the assessment in order to assess the impact where applicable;

(ix) pollution contours for all pollutants, and tables summarising the predicted ground-level concentrations at sensitive receptors, are included with comparisons against relevant air quality standards; and,

(g) where there is potential for odour impacts on sensitive receptors, the following additional information is required to determine the likelihood of adverse odour impacts:

(i) details of the modelled odour concentrations at the "most exposed existing or likely future off-site sensitive land uses" including a comparison with the odour criteria list in the relevant planning scheme code

(ii) recommendations to minimise as much as reasonably practicable the impact of odour emissions at sensitive land uses which may include the provision of adequate separation distances, edge/buffer treatments, waste minimisation and best practice control activities, refer to Table 1 of this policy for further information.

Note: For further guidance on odour impact assessment reports refer to the Queensland Department of Environment and Heritage Protection's Odour Impact Assessment from Development Guideline. For additional reference material for assessment and measurement of air quality refer to Australian Standard 4323.3:2001 Stationary Source Emissions - Determination of Odour Concentration by Dynamic Olfactory.

(h) recommendations to minimise the impact of air quality/odour emissions, including emission control technology and adequate setback distances where a sensitive land use may be affected.

6.2.2 Guidance for Applicants

6.2.2.1 Air quality management

(1) Applicants are encouraged to take opportunities to reduce air emissions through best practice management and the application of the management hierarchy for air emissions. This management hierarchy is based on; avoid, recycle, minimise and manage, as described in the *Environmental Protection (Air) Policy 2008*. Some examples of waste prevention and minimisation, cleaner production and best practice environmental management are provided in Table 1 below.

Table 1 – Methods to minimise impacts from air emissions

Design and operations management	Maintain adequate buffers between operations and nearest sensitive land use.
	Incorporate alternative attenuation measures into the development to reduce nuisance impacts at sensitive land use.
	Locate and design the buildings and infrastructure to reduce potential impacts on adjacent land uses, for example locate building openings, exhaust vents, stacks, and refuse storage areas furthest from sensitive land uses.
	Provide sealed areas on site for vehicle manoeuvring and access.
	Clean equipment, work and traffic areas regularly to minimise the sources of dust and clean spilt materials immediately.
	At sites which have potential organic vapour emissions such as bulk fuel storage facilities and service stations, where practicable, install vapour recovery systems. Vent pipes are located as far away as possible from sensitive land uses.

	Develop and implement an environmental management plan that details the procedures for air quality management and pollution prevention, staff training, role definition and responsibilities and monitoring of performance.
Dry materials/stockpile handling	Maintain exposed stockpiles of raw or processed material to prevent fugitive dust emissions.
	Maintain stockpiles with walls on three sides and use water sprays to keep material damp where practicable.
	Keep stockpile materials 0.5 metres below wall tops and 0.5 metres inside open ends of stockpile walls.
	Enclose conveyors and chutes to minimise wind-generated dust emissions and provide a belt scraper on each conveyor.
	Use water sprays at receival areas and transfer points to keep material damp. Minimise drop height between conveyors.
	Store materials which are of fine or small particle sizes in sealed containers where practical.
Surface cleaning and/or coating	Surface coating by spraying is conducted in spray booths fitted with adequate filters to catch overspray. Filters can be waterwash, fibre or baffle. A baffle filter is only acceptable for small paint rates where paint is applied electrostatically. Where practicable surface coating and cleaning are conducted inside of buildings or enclosures.
	Spray booths are fitted with a stack of adequate height to ensure there is sufficient dispersion of exhaust gases. Stack outlets should not be fitted with conical weather caps, spinning tops or the like which would interfere with the free vertical discharge of the exhaust gases.
	Where possible, use water-based coatings or those which produce low emissions.
	Replace lids or cover odorous materials promptly after use to minimise evaporation, off site impacts and wastage.
	For surface coating processes, train staff in proper application techniques of materials to improve drying times and minimise odour impacts.
	Surface finishing equipment using abrasive and water blasting, sanding and grinding should have dust collection devices fitted, such as an enclosed booth, unless the object is too large or too heavy to fit in the booth or a fixed structure. Outdoors blast cleaning should preferably be carried out using a blasting gun or an airless applicator which sucks away the blasting agent together with any dust generated to a dust collector. Outdoor abrasive blasting should also be avoided during high wind conditions. Where impractical, adequate buffer distances are provided with effective barriers or screens to prevent adverse particulate emissions.
Emission controls	Point source particulate and odour emissions are vented through a filter to minimise the discharge. Filters include devices such as: wet scrubber, cyclone, bag, electrostatic, paper, activated carbon, and fibre. Odour control equipment can include one or a combination of technologies including condenser, scrubber biofilter and/or afterburner.
	Use mechanical ventilation systems and activated carbon filters or scrubbers to prevent the release of any uncontrolled and objectionable odours from buildings or rooms.
	Fabric or bag filters are installed to vent silos. Silos should also include automatic level sensors, air tight inspection hatch and an alarm or shut off valve to prevent overfilling and a burst bag detector system with ducting to ground level near tanker filling point.
	Dust extraction systems exhausting through fabric filters may be an effective alternative to water sprays. Water spray systems are installed for outdoor operations with a high dust generating potential.
	Fuel burning should not be carried out under reducing conditions which has the potential to cause smoke nuisance.
	Where facilities include bulk storage facilities for organic liquids, such as petroleum, implement design features and install suitable controls to manage organic vapour emissions.

	Volatile liquids are pumped instead of poured.
Waste management	Putrid or tainted organic materials should be stored in enclosed containers and refrigerated until removed from premises.
	The transportation of odorous wastes including sewage effluents, food processing waste, offal, manure or carcasses is in covered vehicles or containers/bins to minimise odours or dust emissions.
	Wastes are recycled and reused where possible. No wastes are burned as a disposal method, except where it can be demonstrated it is a form of energy recovery.

6.3 NOISE

6.3.1 Information that may be requested

6.3.1.1 Noise Reports

(1) Where a proposed development may cause a noise impact on a sensitive land use, a noise report may be required to confirm the development will not adversely impact on the sensitive receiving environment.

(2) Noise reports must be prepared by a suitably qualified acoustic consultant who has demonstrated practical and theoretical knowledge of noise assessments.

(3) A noise report must include the following information as a minimum:

(a) A site analysis plan at a scale of 1:100 or 1:200 indicating the location of the development noise sources and sensitive land uses;

(b) Plans showing the orientation of buildings and facilities including:
- (i) the location of openings such as delivery areas, loading bay areas, car parking and refuse collection;
- (ii) the location of noise generating plant such as air conditioning, pumps, compressors and fans with respect to adjacent sensitive land uses;
- (iii) details of proposed noise attenuation devices;
- (iv) design and construction materials to be used;
- (v) sketch plans and elevations showing building design, building layout and materials;
- (vi) the façade noise level used as the basis for calculating building attenuation requirements at each location including reduction weightings (Rw) for the building;

(c) Proposed operations including a comprehensive description of -
- (i) the proposed operational hours, site operations and activities;
- (ii) plant and equipment to be used, including its location, time and period of operation, and frequency of use;
- (iii) the operating sound power level in dB(A) and frequency analysis for all proposed equipment and plant;
- (iv) an accurate description of any noise with annoying characteristics described in terms of the noise level, frequency and duration of occurrence;
- (v) details of the frequency of proposed transport to and from the site including deliveries;
- (vi) noise sources from surrounding businesses and activities including the location, nature and operational hours;

Note: If an exact description of equipment cannot be supplied, noise data from equivalent equipment operating at similar operating conditions may be accepted as a substitute. Ensure transport routes are located to cause minimum noise impact in surrounding areas and are identified on a suitable map.

(d) Noise issues - all noise issues associated with a proposed development must be clearly defined, preferably in a table or a list. Minor noise issues which do not justify a full analysis should still be identified and reasons given to explain their insignificance.

(e) Noise control strategy - a clear and concise statement and plan must be provided which sets out the proposed recommendations to deal with each of the identified noise issues. This may include a combination of-
- (i) source control - such as plant selection;
- (ii) source modification - such as acoustical treatments or management measures;
- (iii) propagation control - such as buffers and barriers;
- (iv) receptor modification - such as a dwelling upgrade;

(f) Provide details of the noise attenuation measure to be implemented to reduce noise levels to achieve the relevant noise criteria including the methods used to calculate this attenuation. Where acoustic barriers are recommended, associated landscaping plans are required demonstrating compliance with diagrams 1, 2 or 3 of Appendix A. For further information refer to section 6.5.5.3 Noise Reduction and Table 6 - Methods to minimise impacts from noise emissions.

(g) Noise monitoring/measurements (where required) must include:
- (i) a map showing the location of measurement positions, detailing microphone height and orientation, and including details of any obstructions or interference such as reductions in the angle of view;
- (ii) reflective surfaces and atypical barriers are avoided where possible when taking measurements;
- (iii) the type of sound being measured and the character of the sound field;
- (iv) the sound power levels obtained, including frequency analysis, where relevant;
- (v) the sound pressure levels measured at each monitoring location, including output data such as log files, traces, and charts from the noise monitoring equipment;
- (vi) The descriptors for all noise measurements for example L_{A10}, L_{Amax}, L_{A90}, L_{Aeq};
- (vii) frequency weighting and response time, fast/slow/impulsive, used for each measurement;
- (viii) duration of each measurement period. Measurement intervals shall not be less than 15 minutes;
- (ix) date and time at which each measurement was performed. It is important the monitoring is carried out at times and over periods that adequately characterise the noise under investigation and the local acoustic climate. Justification of times and periods selected should be included;
- (x) noise levels should represent normal day to day operations;
- (xi) relevant meteorological conditions and other site considerations during assessment. These include, for example, air temperature, relative humidity, barometric pressure, wind speed and direction, rain, aircraft noise, vehicle noise and insect/wildlife noise;
- (xii) A description of the nature of ground cover, for example, thick grass, shrubbery and dense vegetation between the proposed development site and the area likely to be influenced;
- (xiii) noise level or noise contour predictions in the locality both with and without noise attenuation;
- (xiv) the assessment should include an evaluation of a range of noise attenuation options and recommendations to mitigate potential noise nuisance;
- (xv) provide details and justification of the methodology used, including all assumptions made as part of the assessment;
- (xvi) name of manufacturer, type and serial numbers of all monitoring and calibration equipment;
- (xvii) last laboratory calibration date, internal reference check and external calibration results before and after measurement;
- (xviii) name of the person who conducted the assessment and the name of the report author, if different.

(h) Noise predictions and calculations provided must include:
  (i) a description of the modelling methods applied;
  (ii) details of noise measuring and modelling procedures, calculations and assumptions;
  (iii) name of the model used for the predictions;
  (iv) monitoring data which supports calculations resulting from modelling;
  (v) for any source noise that may have tonal or impulsive characteristics, provide details of the calculations for adjustments/corrections;
  (vi) where tonal components are expected to be present, one-third octave band predictions are required to adequately describe the contribution from these noise sources. The level and frequency of occurrence of impulsive noise, or noise with other annoying characteristics such as amplitude or frequency modulation or information content, should be provided;
  (vii) individually predicted components are combined to produce the predicted cumulative noise impact at each receptor site;
  (viii) calculations showing effectiveness of proposed noise attenuation measures such as distance attenuation and building attenuation;
  (ix) predicted noise levels are compared with acceptable levels and/or the acceptable solutions specified in the relevant codes. Exceedences are identified separately and the relevant degree of noise reduction required to achieve compliance with the appropriate criteria is specified.

Note: The noise assessment must comply with the Queensland Department of Environment and Heritage Protection's Noise Measurement Manual and Australian Standards.

6.3.1.2 Noise Management Plans

(1) A Noise Management Plan is required when potential noise nuisance can be effectively controlled through management measures.

(2) A Noise Management Plan allows an applicant to monitor and ameliorate potential noise nuisance through documented processes which can be regularly reviewed and amended as per site requirements.

(3) A Noise Management Plan must include:
  (i) the intended noise reduction measures and their anticipated performance;
  (ii) management measures include all noise control actions which rely on people to behave in a particular way. For example requiring staff to restrict certain activities to certain times or to intervene by closing doors or re-directing activities;
  (iii) performance indicators, a review schedule and indicate the responsible person(s) for achieving the aim of the plan;

6.3.2 Guidance for applicants

6.3.2.1 Noise Impacts

(1) Noise is assessed as part of the development application to enhance or protect acoustic environmental values in a manner consistent with the objectives in the *Environmental Protection (Noise) Policy 2008*. This policy identifies environmental values to be enhanced or protected, these being qualities of the acoustic environment that are conducive to:
  (a) The wellbeing of the community of a part of the community, including its amenity;
  (b) The wellbeing of an individual, including the individual's opportunity to have sleep, relaxation and conversations without unreasonable interference from intrusive noise.

(2) Noise can be defined as unwanted sound that unreasonably intrudes into our daily activities and can cause varying degrees of nuisance and annoyance. Noise that occurs at night is more likely to disturb a community than noise that occurs during the day. Noise may contain annoying characteristics, such as -
(1) tonality - "humming" and "whining";
(2) modulation - regular changes in level or pitch such as a siren;
(3) impulsiveness - "hammering".

6.3.2.2 Alternative Noise Criteria

(1) Where noise criteria cannot be achieved the comparison of like parameters can be applied. Table 3 can also be used to provide a qualitative description in relation to changes in sound pressure level at sensitive receptors.

Table 3 - Subjective Effects of Changes in Audible Sound Pressure

Change in Sound Pressure Level (dB)	Change in Apparent Loudness
+3 dB	Just perceptible
+5 dB	Clearly noticeable
+10 dB	Twice as loud
Reference: Bies D.A. & Hansen C.H. (1996) Engineering Noise Control Theory and Practice, Second Edition; Department of Mechanical Engineering, University of Adelaide: South Australia.	

6.3.2.3 Noise Management and Reduction

(1) Applicants are encouraged to take opportunities to reduce noise emissions through the best practice environmental management measures. Such measures include noise minimisation technology, construction, design, location, form, environmental performance, management considerations and alternatives. Examples are given in Table 4.

Table 4 – Methods to minimise impacts from noise emissions

Siting and design	Select an appropriate site for the use considering the proximity to sensitive land uses and the local meteorological conditions
	Design site layout to ensure building openings, roads, parking areas and other major activities and operational areas are located away from current or future sensitive land uses
	Where possible use the layout of the buildings, site infrastructure and natural topography as noise barriers
	Where possible confine noisy processes to areas protected by enclosures or barriers
	Locate noisy processes such as loading bays and entrances/exits away from sensitive land uses
	Locate noise sources such as air compressors, pumps and similar in areas furthest from sensitive land uses, provide effective noise barriers or enclosures, and keep doors on enclosures closed when operating
Construction standards	Vehicle traffic areas are paved, have low gradients and are maintained in good condition
	Install double-glazing to windows and sound locks to doors facing sensitive land uses
	Buildings housing noisy operations, activities or equipment are constructed of suitable materials to reduce noise transmission such as ceilings and walls lined with sound absorbing material
	Reduce structure-borne noise and vibration by mounting equipment on appropriate isolation systems designed by a specialist in this field
Operation standards	Install noise suppression devices to equipment according to the manufacturer's specifications and ensure the efficiency of these devices is maintained

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	Design and maintain adequate noise buffers between noise sources and sensitive land uses. In particular, install noise barriers such as screens around noisy equipment, operations and activities
	Fit all diesel engines and noisy vehicles with efficient exhaust mufflers
	Avoid installing machinery that may have humming or whirring components or impulses, or annoying tonal or hammering noises. If such machinery is installed, noise suppression devices are applied to mitigate potential nuisance
	Fit effective inlet and exhaust silencers to air compressors and ensure that air pressure operated controls and air operated valves on silos and hoppers are equipped with silencers
	Where possible, substitute equipment with an equivalent quieter/lower sound power level piece of equipment, for example, electric rather than diesel or air powered
	Where possible replace alarms, horns and telephone bells with visual signs, mobile phones or pagers
	Where blasting of rock or hard ground is involved, use technologies that minimise air blast overpressure and ground vibration
Noise management measures	Ensure that openings including windows and roller-doors facing sensitive land uses are kept closed and all unnecessary openings are sealed. Install signage to alert staff and/or visitors to their responsibilities to minimise the generation and propagation of unnecessary noise
	Limit noisy routine operations to standard working hours of 7am to 6pm Monday to Friday, and 7am to 1pm Saturday. Noisy work should not be carried out on Sundays or public holidays, except where approved as part of the land use or another approval such as an activity under the *Environmental Protection Act (as amended)*
	Conduct noisy activities at times when the likelihood for nuisance is minimised, for example, the middle of the day
	Work outside of standard working hours is limited to quiet "finishing off" work and generally conducted within buildings
	Limit vehicle movements, especially deliveries and truck movements, to standard working hours
	Where possible, activities such as concrete pours are restricted to standard working hours. If activities are required to occur outside of these hours, affected premises are notified of the duration and times in advance of the event
	Employ regular inspection and maintenance programs to ensure noise control fittings such as seals, doors and exhaust systems are in good working order and prompt attention is given to loose or rattling covers, worn bearings and broken equipment
	Develop and implement an Environmental Management Plan including procedures for - (i) noise management; (ii) pollution prevention; (iii) staff training; (iv) customer education where applicable; (v) definition of roles and responsibilities; (vi) monitoring of performance; (vii) contingency actions.

6.3.2.4 Noise Barriers

(1) The use of barriers for noise attenuation is the least preferred option, however, the following should be considered during the design of the development where noise attenuation measures in the form of barriers, fences and vegetated buffers are required.

(a) The design of these noise attenuation measures should not -
(i) compromise the ability to protect property from crime and vandalism;
(ii) obstruct or reduce passage by pedestrians to public transport nor contribute to deterioration of accessibility to public transport;

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(iii) create sterile areas that are unusable, unsafe and negatively affect the streetscape;
(iv) result in continuous barrier fencing along roadways which have both visual impacts and also impacts on people and wildlife movement;
(v) obstruct the overland flow of stormwater or cause increased flooding or ponding of stormwater;
(vi) compromise the requirements of State Planning Policy – state interest guideline - Biodiversity;
(vii) compromise the Redland City Council's Koala Conservation Agreement Program.

(b) Noise attenuation measures for dwellings or building façades should be designed as architectural features including the stepping of buildings, angling wall alignments, and roof line variation to add interest to the form and enhance the appearance to the street frontage.

(c) Noise attenuation measures are designed to facilitate wildlife movement while maintaining noise attenuation effectiveness by ensuring -
(i) vegetated earth mounds are considered in preference to fences or barriers;
(ii) suitable vegetation is provided adjacent to noise attenuation mounds, barriers and fences to facilitate wildlife movement;
(iii) attenuation barriers and fencing incorporate wildlife movement measures that are suitable to the species expected to use the area;
(iv) vegetation species selected are locally native species.

(d) Continuous barrier fencing is avoided along trunk collector and sub-arterial roads so as to not create sterile traffic corridors.

(e) Views are retained where possible by using appropriate buffer distances, height, orientation and materials.

(f) Where fencing is used it is articulated, landscaped and incorporates multiple access points for pedestrians and cyclists.

(g) Acoustic fencing is of low maintenance design.

(h) It should be demonstrated that other attenuation measures have been considered first as alternatives to structural barriers. For example, at the design phase of a development, consideration should be given to the use of land between the source and receiver which can increase buffers and assist in attenuation. Such land uses could be minor roads and/or parks.

13.6 MULTIPLE DWELLING DESIGN GUIDE

Objective Reference:

Authorising Officer: **Louise Rusan, General Manager Community & Customer Services**

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

Report Author: **Isabel Lockwood, Strategic Planner**

Attachments:
1. **Multiple Dwelling Design Guide**
2. **Submission Report for Draft Multiple Dwelling Design Guide Consultation**

PURPOSE

The purpose of this report is to seek Council approval to adopt the Multiple Dwelling Design Guide (MDDG). The guide will assist in delivering high quality urban design outcomes for multiple dwelling developments within the City. Recognising the MDDG is intended to accompany the Redland City Plan (City Plan) it will only become applicable following commencement of the planning scheme.

BACKGROUND

The Wise Planning and Design theme in the Corporate Plan 2015-2020 recognises that Council will seek to enhance the character, amenity and liveability of the city.

On 4 October 2017 the Draft MDDG was presented to Council (General Meeting Agenda item 11.2.6). Council resolved to endorse the draft MDDG for the purposes of Public Consultation, which occurred between 5 October – 3 November 2017. The MDDG seeks to complement the City Plan by identifying the critical design elements which contribute positively to the creation of attractive and liveable urban spaces reflective of Redland's character identity and lifestyle. The MDDG will provide important guidance in achieving high quality multiple dwelling design outcomes in the City.

The Draft MDDG was advertised in the following way:

- email to industry stakeholders
- RCC Your say website
- advertisement in the newspaper
- social media (Facebook and Linkedin)

Analysis of the consultation responses on the website indicated:

- 272 visits to the Draft MDDG on the RCC Your say website
- 57 document downloads
- 2 respondents completed the survey
- 2 submitted responses separately

ISSUES

- The attached Submission Report sets out the matters which were raised during Public Consultation, Council officers responses to the submissions and proposed amendments to the draft MDDG. The main issues identified in submissions can be summarised as follows:
- Whether additional multiple dwellings should be accommodated in the City

- Further clarify the relationship between the MDDG, Redland City Plan and the development assessment process
- Review terminology
- Further articulate Redland's character
- Provide more detail on technical matters
- Include more textual and illustrative information for greater clarity
- Consider incentivizing good design

Future regular reviews of the MDDG

The MDDG is intended to be a living document. Regular monitoring of the effectiveness of the MDDG will be undertaken to inform improvements and changes to both the document and potentially the City Plan if required.

STRATEGIC IMPLICATIONS

Legislative Requirements

There are no legislative requirements to prepare the MDDG. However, the MDDG will assist applicants and assessors in addressing Performance Outcomes in the City Plan, particularly in relation to vibrant and attractive streetscapes, sub-tropical and climatically responsive design and safe and liveable environments.

Risk Management

There are no opportunities or risks for Council resulting from this report.

Financial

There are no implications impacting Council as a result of this report.

People

Consultation and a Design Training Program will continue via existing internal staff resources and external resources as appropriate.

Environmental

The MDDG will provide guidance in ensuring multiple dwelling developments contribute positively to Redlands character, identity and lifestyle.

Alignment with Council's Policy and Plans

This report supports Council's Corporate Plan 2015-2020 outcomes area of Wise Planning and Design in enhancing the Redland City's character and liveability and delivering an effective and efficient development assessment process that is consistent with legislation and community expectations.

CONSULTATION

The draft MDDG was placed on Public Consultation from the 5 October to the 3 November 2017. Consultation has occurred internally within the City Planning and Assessment Group and technical stakeholders, with the ongoing implementation of improvements to the pre-lodgement meeting procedure and the commencement of an ongoing Urban Design Training program.

It is recommended that the operation of the MDDG aligns with the commencement of the Redland City Plan and the MDDG will be incorporated into the communications strategy for the City Plan to ensure public awareness and availability of the document.

OPTIONS

Option One

That Council resolves to:

1. adopt the Multiple Dwelling Design Guide; and
2. commence the operation of the MDDG on 8 October 2018 to align with the commencement of the Redland City Plan.

Option Two

That Council resolves to adopt the Multiple Dwelling Design Guide with amendments and/or with an alternative commencement date.

Option Three

That Council resolves to not adopt the Multiple Dwelling Design Guide.

OFFICER'S RECOMMENDATION

That Council resolves to:

1. **adopt the Multiple Dwelling Design Guide; and**
2. **commence the operation of the MDDG on 8 October 2018 to align with the commencement of the Redland City Plan.**

Redland CITY COUNCIL

MULTIPLE DWELLING DESIGN GUIDE





MAYOR'S FOREWORD

On Redlands Coast we cherish our character, identity and lifestyle – all shaped by our enviable location, adjoining Moreton Bay and regionally significant areas of high environmental and visual quality.

As our city continues to grow and more people call Redlands Coast home, achieving good design will be critical to maintaining the quality of life and amenity currently enjoyed by our residents and visitors alike.

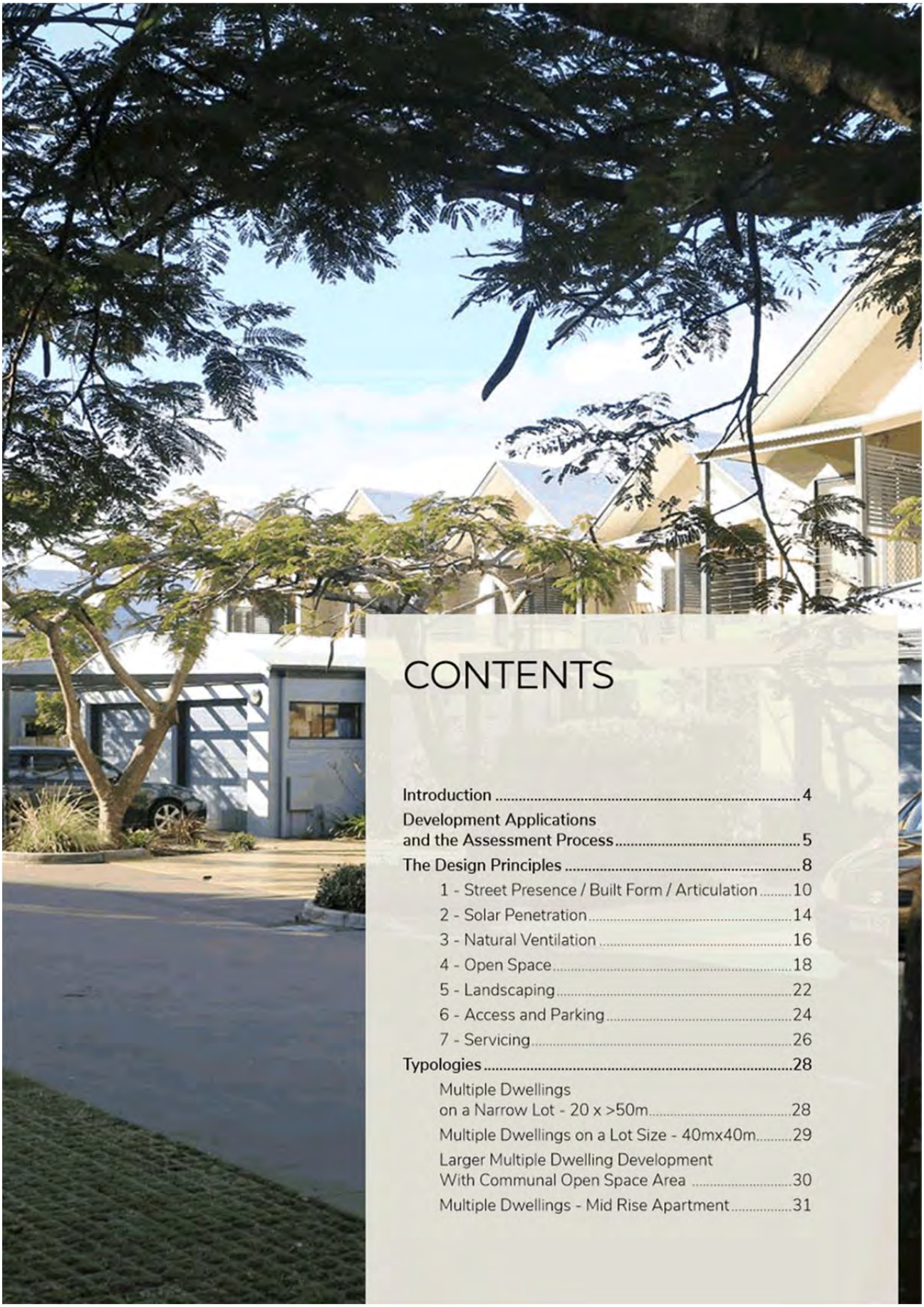
Our Redland City Plan provides an important blueprint for managing how our city will grow, managing expected population growth while at the same time responding to demographic changes and lifestyle trends.

These changes will require greater diversity in our housing options and an increasingly important role for multiple dwellings strategically located throughout the city close to our centres and public transport.

The Multiple Dwelling Design Guide will complement the City Plan by identifying critical design elements which respond to our sub-tropical climate and reflect the identity of Redlands Coast.

We also hope the design guide will promote dialogue between designers, planners, developers and the broader community as we plan for the naturally wonderful growth of our city.

Cr Karen Williams
Redland City Mayor



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Introduction

The aim of the Multiple Dwelling Design Guide (MDDG) is to achieve high standard design outcomes for multiple dwellings within Redland City.

The Redland City Plan (RCP) encourages housing diversity and affordability for residents though a choice of housing product and location. This guide intends to help to provide a vibrant, safe and attractive built environment in a landscape setting to address the housing needs of changing demographics into the future. This guide provides design advice across a range of housing products.

The guide:

- Explains the relationship to the statutory approval process;
- Provides residential design guidance consisting of a set of principles that are aligned with the Redland City Plan, supplemented by images, diagrams and explanatory text; and
- Outlines information that will ensure a well made proposal when preparing and submitting a development application for approval.

RELATIONSHIP WITH THE REDLAND CITY PLAN

This Design Guide will be used as a reference document to guide good design outcomes to support the criteria for assessable development contained within the RCP.

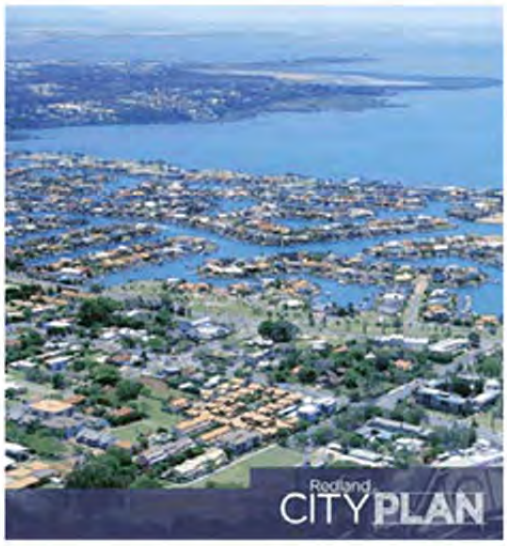
The RCP Strategic Framework identifies the various characteristics which make up a series of residential and separate centres zones which provide opportunities for development of various lot sizes, a range of densities and resulting diversity in housing design.

The Design Guide principally applies to development of multiple dwellings within the Low Medium Density Residential (LMDR) and the Medium Density Residential (MDR) Zones.

Definitions:

The terms used in the MDDG are defined in Schedule 1 of the RCP – Definitions.

For clarification a Multiple Dwelling is defined as a premises containing three or more dwellings for separate households. It includes apartments, flats, units, townhouses, row housing and triplex.



Development Applications and the Assessment Process

PRE-LODGEMENT PROCEDURES

RCC has a Pre-lodgement procedure. This guide provides a resource for pre-lodgement discussions. The guide advocates meeting early in the design and planning process to focus on how to achieve the best design outcome for each development site. This is the key to an efficient assessment process.

It is recommended that consideration is given to the provision of information such as a Concept Design Proposal for the Pre-lodgement meeting.

Design is a process, not just an end result.

A Concept Design Proposal is intended to explain the analysis, the design evolution and principles on which a development proposal is based.

This should be a combination of diagrams, illustrations, photographs and information. This is usually information which will have been collated by the designer through the design process and therefore should not be onerous.

An initial Concept Design Proposal can be submitted for a Pre-lodgement meeting. This would enable the assessment manager to provide an informed initial response to the main issues raised by the proposal.



WHAT IS A CONCEPT DESIGN PROPOSAL?

The Planning Act sets out the mandatory supporting information for Development Applications.

This MDDG recommends that consideration is given to the provision of additional information such as a Concept Design Proposal principally based on diagrams, illustrations and photographs.

It is recommended that a Concept Design Proposal consists of three parts:

1 A site and neighourhood analysis

2 Opportunities and constraints analysis and initial design parameters: a summary of the analysis, highlighting the main elements that will inform the initial design parameters.

3 Design testing and response:
Present the development proposal, outline how it responds to the site and surrounding area, how various design concepts have been tested and an explanation of the design rationale in the context of the RCP

HOW DOES A CONCEPT DESIGN PROPOSAL ADD VALUE TO MY APPLICATION AND DEVELOPMENT?

A Concept Design Proposal is a non-mandatory document but a well prepared one may reduce the need for officers to ask for further information during the application process as it can clearly present the rationale for why design decisions have been made. It can also help to avoid costly amendments to the proposal at later stages and facilitate an expedited assessment process. Furthermore, it can be used as a useful tool for engagement and explanation to residents who may otherwise raise concerns and submissions.

DESIGN PROCESS



The Design Principles

SUBTROPICAL DESIGN

CONTEXT

South East Queensland is Australia's only sub-tropical metropolitan region. Residents of Redlan City enjoy the character and lifestyle provided by its bayside location, parklands and urban and rur settings. As a result, the multiple dwellings withi the Redlands should have climatically responsive designs, creating attractive streetscapes within s and liveable environments.

Development in Redlands takes full advantage of the subtropical climate and prevailing coastal breezes through creative and responsive design and orientation. Good sub tropical design practices and solutions can minimise energy use and environmental impacts.

In the RCP subtropical and climatically responsive design character is described as the use of deep verandahs, decks, and eaves and the integration of buildings within landscape planting.

Trees are a valuable urban asset and a key component of the landscape setting within Redlands, contributing to the visual amenity plus providing environmental benefits. These need to be planned and managed alongside other urban infrastructure.

Materials commonly used in vernacular styles are corrugated metal sheet, timber weatherboards. Many more contemporary designs and residential building forms have incorporated timber and light weight materials which complement traditional materials.

OUR CLIMATE



The hours of sunlight that can be expected in mid winter are directly related to the orientation of the façade. This diagram shows the optimal orientation for habitable rooms and balconies.

THE TRADITIONAL CHARACTER OF THE REDLANDS

The Design Principles have evolved to guide a contemporary response to the local climate, and traditional built form and characteristics in the Redlands as displayed in the examples on this page.

Typical traditional characteristics of Redlands streetscape and residential design

- Mature street trees
- Buildings orientated to the street
- Dwellings with direct pedestrian access to the street
- Lightweight materials
- Climate responsive design
- Indoor/Outdoor living
- Pitched roof form
- Modulation of facades
- Articulation of entrances and openings



Addresses both street frontages. Multiple roof pitches and varying heights. Projections and recesses in facade. Outdoor living - wrap around covered balcony.



First floor projection. Operable windows maximize natural ventilation and prevailing bay breezes. Chamfer board wall cladding.



Direct pedestrian access to the street. Pitched roof with articulated entrance. Parking under house or behind building frontage. House set back from road frontage with landscaping/trees contributing to streetscape.



Bull nose roof on verandah. Timber picket fence. Light with materials, timber frame and corrugated iron. Articulated entrance with Timber arbor. Landscape strip along frontage.

FORM & SCALE

Good design achieves a scale, bulk and height appropriate to the existing or desired future character
of the street and surrounding buildings.

An appropriate built form for a site should have regard to building alignments, proportions, building type and articulation.

BUILDING ENVELOPES

A building envelope is a three dimensional volume that defines the outermost part of a site that the building can occupy.

Building envelopes set the appropriate scale of future development in terms of bulk and height relative to the streetscape, public and private open spaces, and block sizes in a particular location.

Built form provisions are set out in the RCP. Each of the residential zone codes in the Planning Scheme sets out the related Performance Outcomes and Acceptable Outcomes particularly relating to

- Site cover
- Building height
- Building setbacks

In addition the context and characteristics of each site will influence the building envelope.

The Planning Scheme Polices within the City Plan provide additional information and guidance on local planning matters including: technical standards for Infrastructure Works (PSP2). This includes guidance on Landscaping and Waste Management.

The design guide therefore does not duplicate these City Plan code requirements and Planning Scheme Policies but provides supplementary advice.

THE 7 DESIGN PRINCIPLES

The 7 design principles set out in this Design Guide contain the elements that contribute to climatic responsive designs, with the creation of attractive streetscapes with a sense of Redlands identity and liveable and safe environments.

The design principles are directly related to Performance Outcomes in the relevant zones in the RCP.

These principles are applicable to all forms of multiple dwellings. Examples are provided for a range of residential lot sizes/configurations and a variety of built forms.

The Design Principles are:
1 - Street Presence/Built Form/Articulation
2 - Solar Penetration
3 - Natural Ventilation
4 - Open Space
5 - Landscaping
6 - Access and Parking
7 - Servicing

1 - STREET PRESENCE/BUILT FORM/ ARTICULATION

INTRODUCTION

Streetscapes are defined by a combination of public elements (carriageways, kerbs and footpaths) and private elements (street setbacks, fences and building facade). These elements should work together to create attractive streets and public spaces.

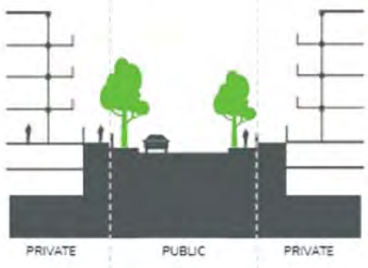
The interaction of a building at ground level is critical to delivering successful streetscapes.

Building façades provide visual interest along the street while respecting, complementing and adding to the character of the local area.

The roof is an important element in the overall composition and design of a building. Quality roof design provides a positive addition to the character of an area and can form an important part of the skyline.

DESIGN CONSIDERATIONS

- Provide good interaction with streets and public spaces by locating habitable rooms at ground floor level. Upper levels contain terraces and balconies to support passive surveillance
- Allow for casual surveillance of main pedestrian entrances and communal open space without compromising privacy of dwellings
- Break up the appearance of large buildings by incorporating design elements such as roof form, projections and recesses, that reflect the existing streetscape rhythm and scale
- Buildings should be articulated to complement the character of the street by using similar proportioned roof forms, doors, windows or verandahs
- Entrances should be visible and obvious from the street or public thoroughfare
- Key corners are given prominence through a change in articulation, materials or colour, roof expression or changes in height
- Develop a colour and materials palette to ensure the look and feel of elements such as letter boxes fences, balustrades, screens and pergolas integrate with the overall appearance of the building
- A palette of textures, materials, detail and colour that are proportional and arranged in patterns
- Public art or treatments to exterior blank walls
- Avoid lengths of unarticulated blank walls and monotonous building materials and colour



Streetscapes are defined by a combination of public elements (carriageways, kerbs, verges and footpaths) and private elements (street setbacks, fences and building facades).



A mixed use building that creates a street presence, with an open aspect which invites access to the commercial floor whilst the residential units have a layered articulation with a palette of materials



Units address the street with direct pedestrian access which balances openness with privacy

01 STREET LIFE

For townhouse and low rise multiple dwellings front gardens should orientate towards streets and public spaces, preferably with front doors and/or direct pedestrian access to these.

Balconies should face onto and overlook streets and public spaces. Balconies, fence height and transparency allow passive surveillance to the street.

The repetition of a simple design can often create a rhythm to the streetscape.

Pedestrian and vehicular entrances should be separate, car access and garages should not dominate the streetscape. Higher density housing forms should be developed with rear vehicle access, where possible or at least screened from the street to achieve high quality streetscapes.



Buildings address the street. Entrances at both ground floor and above are clearly visible.



This apartment block contributes to the streetscape with projecting balconies and also provides direct pedestrian access for each of the ground floor units.

02 CORNERS COUNT

Careful attention to the design of key corners can make a significant contribution to the character of area. The colour and design can create a distinct façade for both front and side elevations on a key corner.

The continuity of the simple materials and colour palette, together with the design of townhouses can flow around the corner.

The use of bold design features adds prominence to the corner.

Key corners may extend to street edges, with taller, more vertical facade treatments.



The continuity of the simple materials and colour palette, together with the design of the townhouses flows around the corner.

03 FRONT DOORS & OPENINGS

Pedestrian entries should be positively reinforced, integrated and transparent. Front entries of buildings should be expressed as feature elements of the building and be obvious without the need for signage. Entrances should have a high degree of passive surveillance and definition.



Front doors addressing the street

04 FACADE DETAIL

Building articulation such as balconies and variation in depth of window reveals provide visual interest to the façade.

Visual interest can be enhanced with a variety of balustrading expressions with solid, glazed, angled, or curved treatments.

Contrasting materials and colours on facades create visual interest, a vertical emphasis and visually reduce the bulk of taller buildings



Balconies can still add outdoor living space and visual feathering at key corners, with a textured and articulated facade to a west facing elevation

05 CASUAL SURVEILLANCE

The orientation of living areas and active frontages towards streets and public places increases the level of casual surveillance. This requires a balance between building and landscape design in order to provide adequate levels of privacy while ensuring casual surveillance of public spaces



Building articulation, casual surveillance and direct entry to the street, all contribute to the streetscape



Pedestrian entrance with good visibility and definition

06 ROOFS

- Larger buildings should have a distinct roof that:
  - breaks down the scale of the building
  - relates to the street
  - maximises solar access during winter and provides shade during summer



Articulated roofs throughout the design

07 FENCING & WALLS

Front fences and walls along street frontages should use visually permeable materials and treatments.

Where fencing is used, ensure a mixture of building materials are used which complement the design of the buildings. Vegetation screening and planter boxes can also be incorporated into the design to soften the visual impacts of large fence lines.



Pitched roof form and articulation breaks down the scale of an apartment building



Railings with landscaping provide transparency to the street, the raised aspect provides an amount of privacy



Fencing materials allow for casual surveillance whilst also maintaining privacy for residents

2 - SOLAR PENETRATION

INTRODUCTION

Solar and daylight access reduces reliance on artificial lighting and heating, as well as improving energy efficiency and residential amenity. The aim is to maximise solar access and natural light to habitable rooms, primary windows and private open space.

In South East Queensland, sun entry is desirable from mid-April to mid-October. A moveable shade device should be used on north-facing openings to exclude sun entry from mid-October to mid-April.

Good solar access into a building can reduce the need for artificial lighting. Good orientation and exposure to natural light through the use of glass and windows, optimises light while minimising heat load.

The use of light wells, atriums and skylights to allow the penetration of natural light to common areas of buildings is important in creating attractive and welcoming spaces especially where access to natural daylight is restricted or difficult to achieve for privacy or other reasons.

DESIGN CONSIDERATIONS

- Maximise northern aspect dwellings
- Orientate all habitable room windows, private secluded open space and balconies and courtyards to the north whenever possible
- Living areas are best located to the north and service areas to the south and west
- Minimise the number of single aspect south facing apartments
- Consider shallow apartment layouts, two storey and mezzanine level apartments which maximise daylight penetration
- Design common corridors and lift lobbies with natural light
- Building setbacks and separation distances seek to ensure daylight penetrates all sides of a building
- Generous floor to ceiling heights along with permeable façades allow natural light to penetrate further into buildings



Common corridors and stairwell designed to be naturally lit



North facing balconies and living areas maximise nature light

01 ORIENTATION

The hours of sunlight that can be expected in mid winter are directly related to the orientation of the facade. The diagram on pg7 shows the optimal orientation for habitable rooms and balconies.

Lot and block layout design should facilitate good housing orientation optimising solar access to inner courtyards during cooler months and the shading potential during the summer months.



Variation in vertical and horizontal screening

02 WINDOWS & ROOFS

Solar access to apartments can be maximised by angling roofs to the north and east. Hoods and overhangs shade walls and windows from the summer sun.

03 LOUVERS & SCREENS

Screens and louvers are effective elements to assist in sun protection, adjustable screens allow for solar penetration in winter months and block sun during summer months.

Vertical blinds and window hoods are effective for sun management and add aesthetic interest and depth to the facade.



Dwellings with east facing aspects can also benefit from angled roofs, overhanging eaves and screens.



Variation in building depth, hoods, projections and screening provides solar access and effective shading.



This apartment block has a north eastern aspect. The artistic screening provides a distinct identity and gives vertical emphasis to break up the long facade.

3 - NATURAL VENTILATION

INTRODUCTION

Natural ventilation responds to the local climate and reduces the need for mechanical ventilation and air conditioning thereby increasing energy efficiency, environmental performance and ongoing savings on household energy bills.

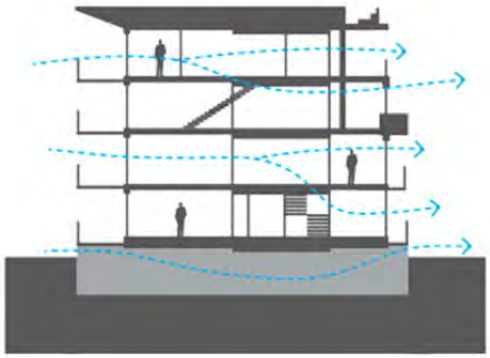
The subtropical climate encourages structures which can be adjusted to suit the weather.

Incorporating operable elements into the building design and layout, such as windows, doors and movable walls, into the façades provides occupants greater control over the internal environment while allowing interaction with life and activity on the street.

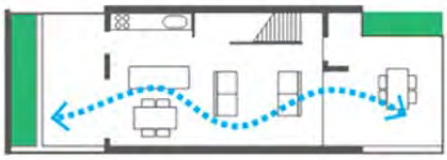
The constant movement of fresh air through buildings and spaces increases indoor health while saving on capital and ongoing costs for mechanically ventilated spaces.

DESIGN CONSIDERATIONS

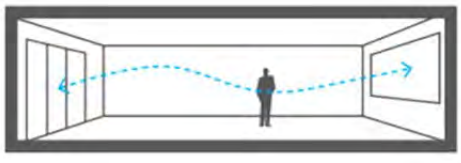
- Habitable rooms with dual orientation are encouraged to facilitate good cross-ventilation
- Consider shallow apartment layouts, two storey and mezzanine level apartments
- Minimise the number of single aspect south facing apartments
- Design common corridors and lift lobbies with natural light



Habitable rooms with dual orientation are encouraged to facilitate good cross-ventilation



Cross ventilation in a dwelling



Higher density apartment blocks may have a narrow floor plan to maximise north facing apartments and cross ventilation

01 CROSS VENTILATION

Habitable rooms with dual orientation are encouraged to facilitate good cross-ventilation. For multiple dwellings such as apartment blocks a narrow floor plan can maximise north facing apartments and allow cross ventilation. Dual aspect apartments, with doors and windows that can be opened maximise natural ventilation.

02 WINDOWS & ROOFS

Operable windows and openings in façades are oriented towards cooling breezes providing cross-ventilation and allow the passage of daylight while reducing unwanted heat transfer.

The placement of these needs to be considered in the context of building setbacks, privacy and adjoining structures to allow the penetration of light and air through buildings and spaces.

03 LOUVRES & SCREENS

Screens and louvres help to layer façades providing variety and detail. These elements also allow the flow of breezes through buildings. Larger operable elements such as moveable screens, doors and windows operate to control light, air and privacy and allow seamless transition between indoor and outdoor spaces.



Dual aspects apartments, with doors and windows that can be opened maximise natural ventilation opportunities. Common lift areas have natural light



Shallow apartment block with narrow floor plan maximises cross ventilation



Elevated eaves creates shading and captures cooling breeze plus breeze filtered through screens at entrance and circulation points between the dwelling units

4 - OPEN SPACE

INTRODUCTION

Private open spaces are outdoor spaces, including gardens, courtyards, terraces and balconies. Because of the important indoor-outdoor connections in a sub-tropical climate, the design, orientation and usability of these spaces are critical. Versatile outdoor living space in multi-residential buildings is vital in a sub-tropical climate, as found in South-East Queensland.

Communal open space allows for casual social interaction for larger multiple dwelling developments. It provides opportunities for internal recreation, landscape and visual relief plus it can provide opportunities for deep planting which can help create pleasant micro climates within large development sites. Communal space also provides opportunities to retain larger trees on development sites.

DESIGN CONSIDERATIONS

- All dwelling units which have access at ground level should have ground floor private terraces/garden areas.
- Orientation of private open spaces and balconies should predominately face north or east in order to improve access to warmth and light during the cooler months.
- Primary open space and balconies should be orientated with the longer side facing outwards or be open to the sky to optimise daylight access into adjacent rooms
- Noisy locations may necessitate different solutions such as enclosed wintergardens, balconies with openable walls, bay windows or Juliet balconies
- Communal open space should be positioned in an accessible location which can be on roof tops, on podiums or at ground, with passive surveillance. Important design considerations include safety, amenity and durability.

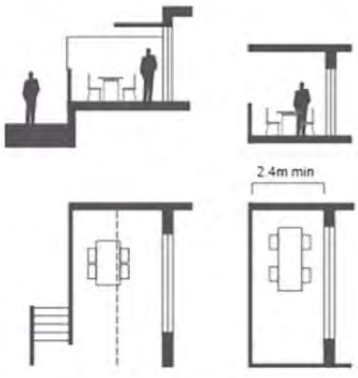
01 PRIVATE SPACE & BALCONIES

Maximum privacy of internal spaces and outdoor areas is highly desirable. Direct overlooking and overshadowing, particularly in the case of two storey buildings, of neighbouring buildings and their private outdoor spaces can be minimised by considering building layout and location, design of windows and balconies, screening devices and landscaping.

Appropriate building and landscape measures such as sensitive window location and avoidance of verandahs of adjoining dwellings facing each other, use of privacy screens and shade devices and screen planting should be utilised to improve visual privacy.



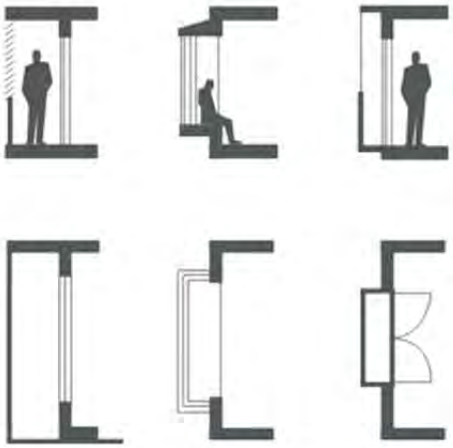
These units benefit from two balconies. The depth of each balcony is sized to suit its function.



At ground floor, private terraces may be appropriate. The depth of balconies should allow for table and seating to be accommodated.

To achieve privacy the following should be considered:

- Staggering windows to avoid direct outlook to neighbours private open space, bedrooms and living rooms.
- Avoid decks and balconies of adjoining properties facing each other across side boundaries. If they do overlook they must incorporate privacy measures such as sliding panels, louvres or battening.
- In dwellings two storey and above, , sill heights of at least 1.5 metres above floor level or fixed translucent glazing in any part of the window below 1.5 metres.



Noisy locations may necessitate different solutions such as enclosed, wintergarden balconies with operable walls, bay windows or juliet balconies

Balconies are essential to all multi storey residential development. As a key expression of the built form they serve a public function as part of the visual expression of a building. They provide opportunities to articulate the facade helping break up long lengths of wall planes and can assist in providing shade to façades to reduce heat load.

Most importantly balconies create private outdoor space for recreation and enjoyment plus they provide access to natural light, air, views and landscape. Balconies also provide opportunity for interaction and surveillance of street and public space and so provide a public expression of the internal function of buildings.

Balconies can vary in shape and size but they need to be of sufficient depth to be useable.

Air conditioning units and other equipment should ideally be located on roofs, in basements, or fully integrated into the building design so as to not detract from private open space.



Balconies enhance the amenity and indoor/outdoor lifestyle of residents. Building articulation such as balconies and deeper window reveals provide visual interest to the facade



Balconies provide open living areas, sun and breeze is filtered naturally by street trees

02 COMMUNAL OPEN SPACE

Facilities should be provided within communal open spaces and common spaces for a range of age groups. These may incorporate some of the following elements:

- Seating for individuals or groups;
- Barbecue areas;
- Play equipment or play areas; and
- Swimming pools, gyms, tennis courts or common rooms.

Pedestrian connectivity to key locations is essential to integration with the existing urban fabric. Pedestrian routes need to be safe, well lit and with passive surveillance.



Communal open space with good passive surveillance from surrounding dwellings



Public open space with facilities in a central and visible position

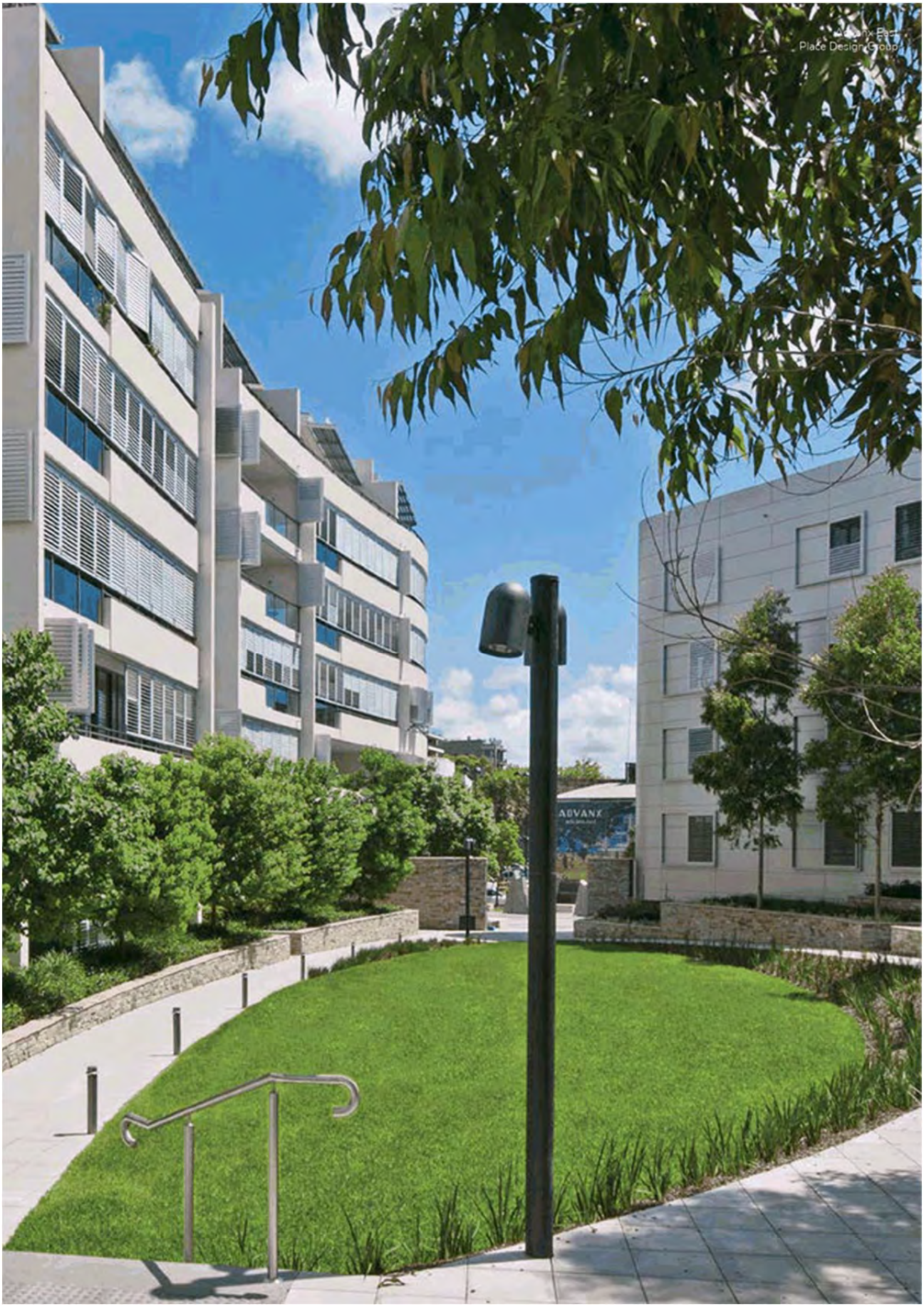


Communal open space raised above a drainage area. Whilst this is not central a well lit footpath route runs past the bbq area, which allows for passive surveillance



Communal open space in central, visible position




Place Design Group

5 - LANDSCAPING

INTRODUCTION

Landscaping is a key characteristic of Redland City. Appropriate landscaping reinforces the sense of being in a landscape setting.

Hard landscapes to describe the construction materials used, while soft landscapes refer to ecological components such as grass, shrubs and trees. Both hard and soft landscape design contributes to the building setting.

Landscaped gardens can reflect the sub-tropical environment in which the buildings will stand. The South East Queensland sub-tropical environment is home to a vast array of lush foliage and vibrant plant life.

The street interface is critical both in terms of contribution to the landscaping and in crime prevention through environmental design.

Further detail is provided in *Planning Scheme Policy 2 Infrastructure Works*.

DESIGN CONSIDERATIONS

- The design needs to be coordinated with other disciplines to ensure the building design and service locations complement the landscape and public domain.
- Retain and incorporate existing trees/ significant vegetation where possible
- Retain street trees and allow additional planting with appropriate species
- Landscaped areas should take advantage of existing site conditions such as changes in level and views
- Allow for establishment of deep rooted trees and mature perimeter planting by providing adequate space between site boundaries and building, car park, basement structure and along common driveways
- Incorporate landscaping, particularly canopy trees, into the design of developments to provide an outlook; privacy, shade and contribution to a landscape character and positive amenity outcomes
- Tree species and size should respond to orientation
- Avoid narrow landscaping strips on boundaries which are unable to accommodate significant plants due to their restricted dimensions
- Consider permeable ground surfaces that allow rainwater to penetrate the soil to support the healthy growth of trees, protect tree root zones, and treat/reduce stormwater run-off
- Co-locate outdoor building services to maximise the opportunity for substantial landscaping
- Where appropriate building designs should incorporate opportunities for planting on structures. Design solutions may include green walls or green roofs, particularly where roofs are visible from the public domain.



Varied hard and soft landscaping with mature planting within the site add character and provide shade



Existing trees retained on frontage contribute to cooler pathways for breezes entering the dwellings

01 EXISTING STREET TREES

Existing street trees are a critical part of the urban landscape character of Redland City. Priority should be given to the retention of these trees. They contribute to the visual amenity, provide shade and can filter cooling breezes.



Poincianas are a notable part of the character of the Redlands

02 USE NATIVE SPECIES

The preference is to use local native species in landscaping, which will also provide habitat and food resources for local fauna species.

03 PLANTING FOR SHADE

Vegetation provides shade, reducing the urban heat island effect and cooling our public spaces. It contributes significant visual amenity and interaction with the natural environment, which has been proven to calm anxiety and contribute to overall health. Large shade trees and landscaping promote cool pathways for breezes entering buildings and contribute to the energy efficiency of buildings especially on western elevations.



Deep planting in front setback assists with shade and cooling environment for the apartments

04 DEEP PLANTING

Deep planting within the development should be provided at both the front and rear of development. This assists with privacy and separation of buildings. Semi and underground basements need to be setback from front and rear boundaries to allow the growth of canopy trees over time.

Similarly, planting adjacent to any retaining walls will assist in softening the visual impact of these walls.



Extensive landscaped areas both facing the frontage plus within the site

23

6 - ACCESS & PARKING

INTRODUCTION

Managing the location of car parking is important for a positive impact on streetscape character, pedestrian access and amenity. The location, type and design of vehicle access points can have significant impact on the streetscape, the site layout and the building façade design.

High quality materials should be used for hard surfaces, particularly for main accesses and key spaces, to maximise the lifespan of the materials and minimise maintenance costs. Materials can be used to indicate different functions and activities – for example paving slabs to pedestrian areas and blocks/sets to shared surfaces and carriageways.

DESIGN CONSIDERATIONS

- For apartments, at grade and semi-basement car parks should be sleeved (hidden) behind ground floor units.
- When designing car parking basement areas, provide adequate ground level site boundary setbacks to allow substantial landscaping such as canopy trees with deep roots
- Hard standing areas (including for visitors) for parking should not be provided forward of the building line
- Varied materials for access road can punctuate and visually shorten the length of the access road
- Change in surface materials can also act as a traffic calming device
- Bicycle storage and visitor car parks need to be practical, safe and easily accessible from the main public thoroughfare
- Visitor parking should be legible and identifiable from the vehicular entrance

01 ACTIVE TRANSPORT

A key way to influence behaviour is to integrate active transport facilities, such as cycle centres and 'end of trip facilities' into the fabric of our towns and its buildings. Their addition contributes to active, healthy lifestyles and can improve occupant productivity all while reducing carbon emissions and traffic congestion.

Bicycle parking should be secure and easy to access from common areas, for example near entry/exit points of a site to make it convenient for users.



Shared surface clearly delineated by materials and markings



Parking integrated into the building design. Varied materials for access road punctuates and visually shortens the length of the access road. Change in materials can act as a traffic calming device

02 ACCESS & DRIVEWAYS

In general access-ways should not visually dominate the form of development.

Access driveways should have limited views by placement of building, staggered road alignment, planting and landscape treatment and varied materials. These elements can visually shorten the length of the access road.

A change in materials and the use of consistent materials for pedestrian and vehicular spaces can act as a traffic calming device.

For apartments, the impact of vehicle access points can be minimised by locating them on secondary/rear frontages.



Shared access with garages set back beneath housing helps to reduce the footprint of car parking at ground level and visual impact.

03 ONSITE PARKING

For apartments, basement and semi basements are the preferred treatment for car parking areas. These should be contained within the building line to enable deep planting areas to occur in setback areas. Natural ventilation must be provided to basement and sub basement car parking areas. Ventilation grills or screening devices for car parking openings should be integrated into the façade and landscape design.



For apartments, the impact of vehicle access points can be minimised by locating them on secondary/rear frontages.



At grade car parking is behind the building line and does not dominate the streetscape.



Staggered building alignment and landscaping reduces the visual impact of the internal road.

7 - SERVICING

INTRODUCTION

Multiple dwellings have intensive servicing requirements (energy, boosters, pumps, waste, water, telecommunications, basement ventilation, etc). Servicing requirements need to be considered as an integral part of the initial design to produce effective outcomes.

Waste areas and services should be screened to ensure they do not dominate the streetscape. Common waste collection facilities should be located in areas easily accessible by both residents and municipal waste collection vehicles. Storage areas can be co-located in garages, allocated car parking areas or incorporated into the building design.

Early liaison with RedWaste will assist in achieving site specific solutions for waste collection in order to limit the need for HRV's to enter the site. Service and vehicle entries are best located off secondary side streets.

For larger developments where a waste collection vehicle needs to access internal streets or basement car parking, use the smallest waste vehicle possible to reduce heights and space required for turning paths.

Further detail on waste collection is provided in Planning Scheme Policy 2 Infrastructure Works.

DESIGN CONSIDERATIONS

- Waste collection, loading and servicing areas should be screened.
- For larger developments where a waste collection vehicle needs to access internal streets or basement car parking use the smallest waste vehicle possible to reduce heights and space required for turning paths
- Visual impact of services should be minimised, including location of ventilation duct outlets from basement car parks, electrical substations and detention tanks
- Integrate lift wells and other building services into the overall design
- Services and plant need to be easily accessible for maintenance but can be designed to blend in with overall design

01 REFUSE STORAGE

Waste storage and services should be screened and use similar materials to the overall design. Storage areas should be well ventilated.

Their design and location should be visually consistent with the finishes and materials of the rest of the development.

Screened enclosures are preferably not within front setback.



Waste storage and services are screened and use of similar materials to the fencing to help blend with overall design



Services and plant discreetly housed near mail boxes



Services and plant need to be easily accessible for maintenance but can be designed to blend in with overall design and simple palette



The service boxes visually blend with the colour palette and the landscaping will mature to soften the appearance of the services



Plant and services screened but still allow for easy access for maintenance and inspection. Services screened to blend in with overall design and simple palette of colours of building



Service boxes integrated into the colour palette of the scheme



Multiple services screened within the design



Refuse storage located within the site and with screening and good ventilation.

Typologies

EXAMPLES OF SITE SOLUTIONS

The following are examples of site configurations for multiple dwellings within Redland City Council.

These examples provide illustrations of how elements from the Design Principles can be incorporated to address the particular constraints that each format of site commonly raises. These are not intended as templates for each configuration as each site should respond to its context.

1. MULTIPLE DWELLINGS ON A NARROW LOT – LOT SIZE 20M X OVER 50M (MDR ZONE)





Figure 1 The access road has been positioned to the west of the buildings so that the private side alfresco/courtyards and living spaces for the units can benefit from natural light and ventilation from the north and east



Figure 2 Building facade articulation, varied skillion roof form and mixed material fencing provide interest to the street. The complementary material and colour palette of the built structures are softened by vegetated landscaping. The street interface could be improved by lower or increased transparency in the fencing.



Figure 3 Landscape scheme softens the appearance of the gun barrel access plus the placement of the end units act as visual stop point

2. MULTIPLE DWELLINGS ON LOT SIZE – LOT SIZE 40M X 40M (MDR ZONE)

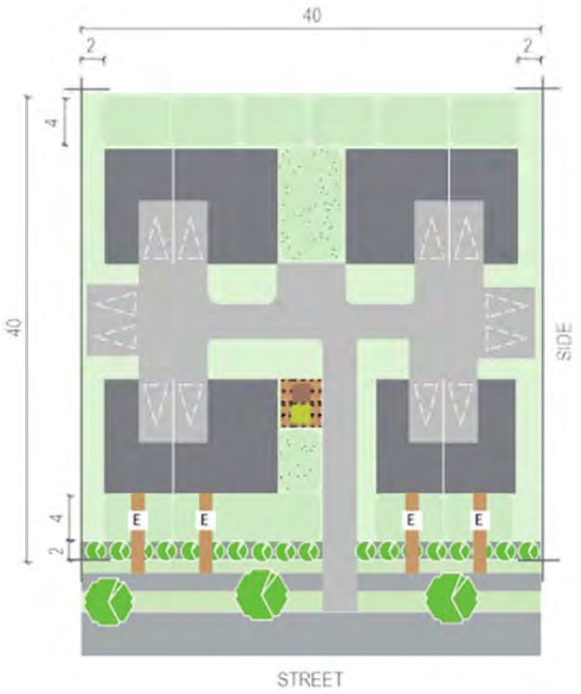






Figure 5 Each frontage unit has direct pedestrian access to the street. Combination of timber fencing and metal railing allows for privacy to courtyards plus transparency for access



Figure 4 Varied depth of facade and articulation of roof line together with the cohesive palette of brick, render and light weight cladding creates an interesting streetscape.



Figure 6 Parking, bin storage and services are discretely located behind the building to improve the visual appearance of the development from the street.

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3. LARGER MULTIPLE DWELLING DEVELOPMENT (20 UNITS) WITH COMMUNAL OPEN SPACE AREA (LMDR ZONE)





Figure 8 Entrance to site has a strong landscape setting. The varied paving materials throughout the site defines the shared surface and encourage a low speed traffic environment.



Figure 7 The site is arranged in a rectangular format, the house patterns display a variety of projections and articulation, and the garages are generally recessed so as not to dominate the street.



Figure 9 Communal open space offers privacy but also benefits from passive surveillance. There are 3 areas of communal space in this development to cater for differing settings.

4. MULTIPLE DWELLINGS - MID RISE APARTMENT BLOCK 6 STOREYS (MDR ZONE)

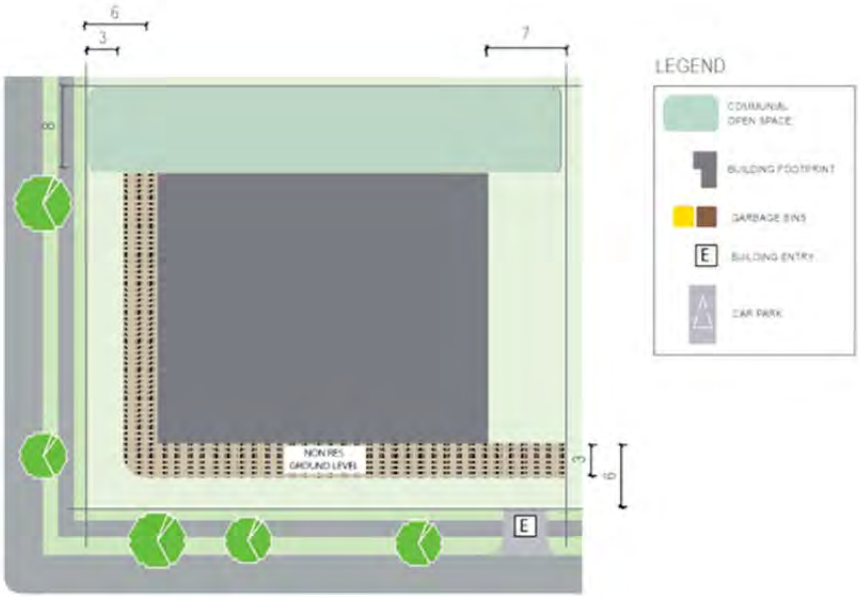




Figure 10 Design includes lattice operable screens, prominent vertical columns, composite timber cladding to the wallls and exposed eaves. All units have private open space that achieveves natural light. Each unit has dual aspect to promote cross ventilation.



Figure 11 Vehicular access is provided off the secondary road frontage. Car parking is mostly within the basement, with visitor parking in undercroft. Services are screened and incorporated into the overall design.



Figure 12 Both the ground floor residential and commercial spaces activate the streetscape. The frontages are articulated and the variation of materials, colour and textures create an attractive façade.

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REFERENCES AND RESOURCES

Council of Mayors (SEQ) Revision 2 – May 2012, Model Planning Scheme code, Queensland

Council of Mayors (SEQ) 2011, Next Generation Planning, Queensland

CONTACT US

Council's City Planning and Assessment team is here to help you.

Redland City Council

PO Box 21, Cleveland QLD 4163

Phone 07 3829 8999

Fax 07 3829 8765

Email rcc@redland.qld.gov.au

Information on applying for planning and building permits, including checklists and forms are available at www.redland.qld.gov.au

DISCLAIMER

1. This brochure is not a statutory document. It has been prepared to help improve the quality, design and sustainability of residential development.

2. The examples/illustrations used in this brochure are sourced from inside and outside of Redlands City Council municipal area for the purpose of illustration only.

3. If you submit a Development Application, copying or recreating any design from the examples illustrations in this brochure does not guarantee approval of the application. Each proposal is assessed on an individual basis.


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Multiple Dwelling Design Guide Submission Report: Summary Table of Submissions and Responses

Issue	Submission Comment	RCC response & action	Change to MDDG
Questioning the need for more multiple dwellings in the City	Locating multiple dwellings together can result in social and amenity issues.	Zones supporting multiple dwellings are generally focussed around public transport nodes and on larger lots. Providing a range of housing types and densities is essential in offering housing diversity, choice and affordability, to accommodate the City's projected growth to 2041. Well designed and well located multiple dwellings are an essential element in delivering this outcome. The MDDG will support the City Plan in ensuring multiple dwellings are well designed and contribute positively to the streetscape. **Action: No change**	No change
Relationship with Redland City Plan	The document will cause confusion and delay in the Development Assessment process. It is not well linked to the draft planning scheme provisions. The guidance should be anchored in the Performance Outcomes.	The MDDG is intended as a guide that will assist in achieving key specific outcomes in the relevant zone codes which address primarily building design and interface and contribution to the streetscape. For improved clarity it is proposed to incorporate an Editor's note in the City Plan to highlight the role of the MDDG. The City Plan also contains Planning Scheme Policy 2 - Infrastructure Works which provides relevant guidance on Landscaping and Waste Collection. **Action: Add text to cross reference to Planning Scheme Policy 2 Infrastructure Works**	Amend
	Provide clarity regarding design arrangements for duplexes (dual occupancies).	The proposed guideline provides design criteria for multiple dwelling developments. It is not intended to address design criteria for dual occupancies. This form of development is expected to satisfy the requirements of MP1.3 of the Queensland Development Code.	No change

Multiple Dwelling Design Guide Submission Report: Summary Table of Submissions and Responses

		Action: No change	
	Provide illustrations to assist in defining the relevant development types.	The photographs and illustrations throughout the document illustrate the various development types.	No change
Sub-tropical design	Provide more detail on sub-tropical design.	Additional text has been included in the MDDG to provide further advice and clarity in regards to what is meant by sub-tropical design. **Action: Additional text included in MDDG to better address sub-tropical design.**	Amend
Redlands character and identity	More articulation of Redlands identity.	Additional text and illustrations have been included in the MDDG to provide further advice and clarity in regards to Redlands traditional built character. **Action: Additional text included in the MDDG to incorporate additional details of the traditional Redlands built character.**	Amend
Development Assessment	Alter terminology from "Planning Statement" to "Concept Design Proposal".	Design Statement is a common terminology e.g. in New Zealand and UK practice for similar documents. However to avoid potential confusion the term has been replaced by Concept Design Proposal. **Action: MDDG amended to remove references to Design Statements. This term has been replaced with Concept Design Proposal**	Amend
	Link pre-lodgement process and design process to quicker assessment timeframes and/or reduced assessment fees where a development application is lodged generally in accordance with design outcomes, agreed through a pre-lodgement process	Ensuring good urban design outcomes are addressed at the Pre-lodgement stage in accordance with the MDDG is expected to reduce the likelihood of further Information Requests and expedite assessment timeframes. **Action: No change**	No change
	Could good design be encouraged through incentives, such as increased height?	Achieving good design is a key outcome of the development assessment process. This should not require incentivisation.	No change

Multiple Dwelling Design Guide Submission Report: Summary Table of Submissions and Responses

		Action: No change	
	Amend Design Process flow chart.	To improve clarity minor changes are proposed to the Design Process Flow Chart in the MDDG. **Action: Amend the Design Process Flow Chart in the MDDG**	Amend
	Expand considerations under 'building envelopes', include diagram on building envelopes.	A number of key parameters such as building height, site coverage and setbacks are addressed in the City Plan. These parameters in combination inform building envelopes. It is not the purpose of the MDDG to amend these provisions. The MDDG is intended to ensure proposed multiple dwelling developments duly address key design parameters and contribute positively to the streetscape. **Action: No change**	No change
	Include illustrations for form and scale.	The relevant Codes within the City Plan already address this matter. **Action: No change**	No change
	Provide examples of how applicants might deal with the intentions to transition building height in MDR code.	The City Plan contains a revised diagram which shows how this transition can be addressed. **Action: No change**	No change
Design Principles	Combine design principles- solar penetration and natural ventilation, Open space and landscaping.	The guide is intended to provide reference for each of these elements and so they have been separated. **Action: No change**	No change
Street presence	Consistency of terminology for corners.	**Action: Amend references to ensure consistent reference to 'key' corners**	Amend
	More detail on the degree of articulation e.g. maximum length of a wall and to corners.	This must be determined on a case by case based on the location and context of the proposed development.	No change

Multiple Dwelling Design Guide Submission Report: Summary Table of Submissions and Responses

		Action: No change	
	Reference to colour and materials palette could also include letterboxes.	Agree **Action: Insert letterboxes into text**	
	Include reference to separation between pedestrians and vehicular entries.	Front doors and openings **Action: Amended text insert 'Pedestrian and vehicular entrances should be separate'**	Amend
	More emphasis should be placed on avoiding garages that dominate the street, rear vehicle access is not always possible.	There are already several references within the MDDG which refer to need to ensure that garages and parking areas do not dominate the streetscape. Accept that rear vehicular access is not always possible. **Action: Amend text insert 'where possible or at least screened from the street'**	Amend
	Rooves should hide mechanical plant and lift overruns, reference to roof vents is too restrictive	Amend text Remove reference to roof vents Insert text: 'hides mechanical plant and lift overruns' **Action: Remove reference to roof vents** **Insert text: 'hides mechanical plant and lift overruns'**	Amend
	Review images for Front Doors and Openings	**Action: Images amended**	Amend
	Include guidelines for fencing	Fencing detail provided in the City Plan (LMRZ & MDRZ) **Action: No change**	No change
Open Space	Illustration to guide orientation of open space and balconies. The MDDG provides guidance which states that the orientation of space and balconies should 'predominantly face north or east'. South facing courtyards can also be appropriate is some	This must be determined on a case by case based on the location and context of the proposed development **Action: No change**	No change

	circumstances.		
	Communal open space should primarily be usable and suggesting it has to be central and at ground level doesn't necessarily achieve this	**Action: Amend text: Communal open space should be positioned in an accessible location which can be on roof tops, on podiums or at ground, with passive surveillance**	Amend
Landscaping	More detail and reference to existing guides relating to green walls and green roofs.	Discussions with professional green roof, wall and façade installers, landscape architects, structural engineers and a review of relevant research would need to decide on a case by case basis. **Action: No change**	No change
	Broaden preferred species to include species which grow well and non- native, reference to challenges of landscaping and services.	Guidance on Landscaping is provided in Planning Scheme Policy 2 Infrastructure Works. **Action: Amend to refer to Planning Scheme Policy 2 - Infrastructure Works**	Amend
Access and parking	Basement parking is not always feasible, provide examples of at grade parking.	The City Plan has been amended to clarify that vehicle parking structures are to be located behind the front building alignment, not behind the building itself.	No change
	Clarify that visitor parking should be legible and identifiable from the street.	**Action: Current text is hard standing areas for parking should not be provided forward of the building line- for clarity insert 'including for visitors'** **Add bullet point: Visitor parking should be legible and identifiable from the street.**	Amend
Servicing	Provide more detail on waste collection.	Details on waste collection are contained in the Planning Scheme Policy 2 - Infrastructure Works. **Action: Amend to refer to Planning Scheme Policy 2 Infrastructure Works**	Amend
Typologies	The typologies would be more useful if they directly related to built form intentions for the relevant zones and precincts.	**Action: Reference to zones added to diagrams illustrating different typologies**	Amend

Multiple Dwelling Design Guide Submission Report: Summary Table of Submissions and Responses

	Include more details in the typologies.	The typologies are broad illustrative guides to broadly support the design principles. **Action: No change**	No change
Incentivisation of good design	Could good design be encouraged through incentives, such as increased height?	The City Plan identifies maximum height for multiple dwellings in the assessment tables of the relevant zone codes. In circumstances where proposed building heights exceed the height limits identified in the relevant assessment tables, the level of assessment for a proposed multiple dwelling development is generally elevated to impact which requires public notification. Achieving good urban design outcomes is a key goal of the development assessment process and should not require development incentives. **Action: No change**	No change
Podium design	There is no reference to good podium design.	Podiums are principally in mixed use developments which are most likely to be contained within Cleveland and Capalaba. Both of these centres have Master plans which include built form and design guidance which address podium design. These provisions have been incorporated into the City Plan. **Action: No change**	No change
Flexible designs	Flexible designs should consider 'aging in place'.	Outside the scope of this guide however it should be noted that the Economic Sustainability and Major Projects Group is preparing an Age Friendly Cities Strategy. Once finalized this strategy may inform potential amendments to the City Plan. **Action: No change**	No change

13.7 TRANSPORT NOISE CORRIDOR PROJECT

Objective Reference:

Authorising Officer: **Louise Rusan, General Manager Community & Customer Services**

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

Report Author: **Dean Butcher, Strategic Planner**

Attachments:

1. **Report - Transport Noise Corridors for Redland City's Designated Roads**
2. **Review of DTMR Modelling**
3. **Roads with 3000+ vpd**
4. **Roads with 5000+ vpd**
5. **Ambient Pty Ltd - TNC Mapping**
6. **DTMR - Preliminary TNC Mapping**

PURPOSE

- The purpose of this report is to:

1. provide a summary of the process for designating local roads within Redland City as Transport Noise Corridors (TNCs) under the *Building Act 1975* (BA);
2. provide information on the revised TNC modelling information generated by Ambient Pty Ltd; and
3. seek Council's approval to designate TNCs along relevant sections of the City's local road network where traffic volumes exceed 3,000 vehicles per day.

BACKGROUND

Current Redlands Planning Scheme 2006 Approach

When introduced in 2006, the Redlands Planning Scheme incorporated a Road and Rail Noise Impacts Overlay and associated overlay code to manage the impacts of transport noise on development adjoining State Railway Lines, State Roads, haulage routes associated with extractive resource areas and a number of local roads throughout the City. The overlay triggered uses such as dwelling houses and dual occupancies for code assessment, requiring the lodgement of a development application and in many cases the provision of an associated acoustic report. In July 2014, in an effort to reduce duplication, stream line assessment and reduce development costs, Council resolved to remove a range of residential uses[5] from the Overlay. This decision was taken to ensure the impact of traffic noise on certain types of residential development such as dwelling houses and dual occupancies were assessed at the building application stage through new provisions included in the Queensland Development Code (QDC).

In adopting this approach, Council were aware that the new QDC provisions would only be triggered in circumstances where the proposed residential development adjoined a state controlled road designated as a TNC under the BA. For an interim period the potential impacts of traffic noise generated from local roads would not be addressed but would be considered through further planning investigation. A Council Report on 25 June 2014 duly noted:

[5] The range of residential uses included: Bed and Breakfast, Caretakers Dwelling, Display Dwelling, Dual Occupancy, Dwelling House and Home Business.

> *'Through the New Planning Scheme there is an opportunity for further consideration of traffic volumes on local roads to determine whether noise attenuation measures are necessary. This analysis would need to include a review of traffic volumes, traffic speed, road surface types, topography etc. Once completed, Council would be in an informed position to determine if there are parts of the local road network where specific noise provisions are required. If this is the case, Council may choose to designate parts of the local road network as 'transport noise corridors' in accordance with the Building Act 1975. This would have the effect of requiring dwelling houses and dual occupancies to comply with the Queensland Development Code (QDC) Mandatory Part (MP) 4.4 'Buildings in transport noise corridors'.'*

About QDC MP4.4

The purpose of the QDC MP4.4 is to '*ensure habitable rooms of Class 1, 2, 3 and 4 buildings located in a TNC are designed and constructed to reduce transport noise to an acceptable level.'* In practice, an applicant can demonstrate compliance with the code by incorporating appropriate building materials to the building's external envelope (e.g. windows, walls roof, floors and entry doors) or commissioning an acoustic report to demonstrate that transport noise levels in habitable rooms will not exceed thresholds deemed to adversely impact on human health and amenity.

Draft Redland City Plan Approach

Through the City Plan drafting process it was determined not to include measures to address traffic noise generated from local roads. Instead, the draft Redland City Plan incorporates a Transport Noise Corridor Overlay map for information purposes only – it does not contain an associated overlay code. This approach ensures certain forms of residential development adjacent to State controlled roads continue to address traffic noise as part of the building application. In this way, all residential development located within a gazetted TNC will be checked and certified at building approval stage by a building certifier against the *Queensland Development Code Mandatory Part 4.4* (QDC MP4.4).

At present, only State-controlled roads in Redland City are designated as TNCs. Nevertheless, State legislation establishes a process that also enables local governments to designate local roads as TNCs where they meet certain criteria. This provided the rationale for undertaking the TNC Project and is explained in further detail below.

Legislation

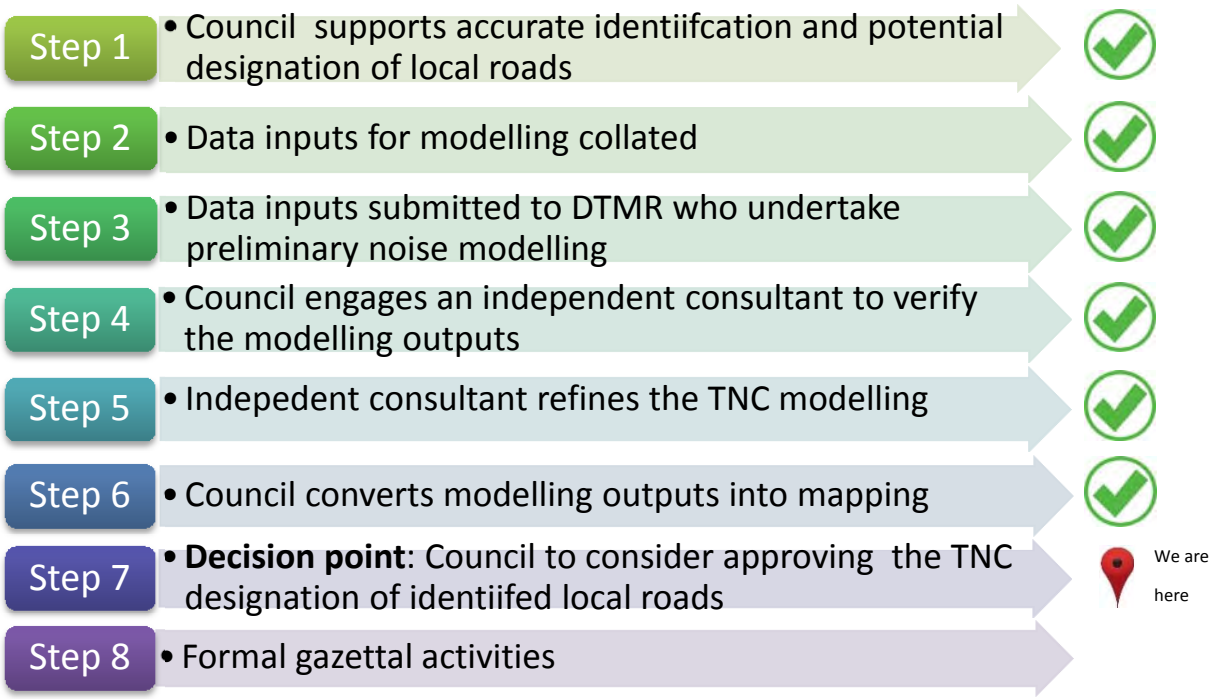
The BA provides for the designation of land as TNCs by State and local governments for the purpose of supporting the noise reduction requirements for residential dwellings under the Queensland Development Code Mandatory Part 4.4 – Buildings in a Transport Noise Corridor (QDC 4.4).

Under section 246X of the BA, a local government may seek to designate land as a TNC if it is within:

1. 100m of a road under its control; or
2. a distance of more than 100m but not more than 200m of a road under its control, if the noise level caused by traffic on the road at the distance has been measured, in a way approved by the chief executive, to be at least 58db(A); and
3. the road has an Average Annual Daily Traffic (AADT) of at least 3000 vehicles.

Transport Noise Corridor Project

As the City's population continues to grow more residential development is expected to be located in close proximity to major transport routes. To ensure the impacts of transport noise are duly addressed during the construction of residential dwelling units adjacent to local roads the TNC Project has been undertaken. Completion of this project will ensure local roads with an AADT of at least 3,000 vehicles are accurately identified and designated as TNCs under the BA. The process followed to date is outlined in the diagram below:



As noted above, Council has recently engaged a consultant to refine the TNC modelling and produce updated mapping (refer to report at Appendix A) verified in accordance with the BA. If Council approves the TNC designation, the mapping will be ready for formal gazettal under the BA.

DISCUSSION

How was the mapping created?

The TNC mapping has been developed and verified by an independent acoustic consultancy, Ambient Pty Ltd, using the following data sources:

- road surface type and speed limits datasets provided by the City Infrastructure Group (CIG);
- traffic volumes and the percentage of heavy vehicles based upon forecasts produced by Veitch Lister Consulting which has been utilised to inform the preparation of the Local Government Infrastructure Plan (LGIP);
- noise barrier information captured via site surveys and reviewed against barrier design within third party road traffic noise assessments;
- terrain based on light detection and ranging (LiDAR) information sourced through Geoscience Australia; and
- building information, including the location, footprint and height of all buildings within the Redlands LGA sourced from the PSMA Australia Geoscape© dataset.

The road traffic noise model was created in the SoundPLAN (Version 8) noise propagation modelling software.

What are the advantages of the new approach?

Completion of the TNC project will:

- ensure local roads which have an AADT of at least 3,000 vehicles are designated as TNCs under the BA*;*
- ensure new residential development adjoining a local road designated as a TNC is designed to address traffic noise as part of the building application process through the QDC;
- ensure additional provisions are not required to be reinstated into the new Redland City Plan to address transport noise impacts on residential development originating from local roads;
- enable the TNC map and information to be made available through the Department of State Development, Manufacturing, Infrastructure & Planning (DSDMIP) website; and
- retain the ability for an owner/developer to obtain a site specific acoustic report which would override the noise mapping.

What are the disadvantages of the new approach?

There is potentially a higher development cost associated with undertaking new development in designated Transport Noise Corridors. This is because the following components of the building envelope in new habitable rooms of Class 1, 2, 3 and 4 buildings must be designed to a higher specification than minimum construction standards, in order to effectively attenuate the predicted higher noise levels in those areas. This may affect the following aspects of building design:

- glazing
- external walls
- roof
- floors
- entry doors

ISSUES

Preliminary noise modelling undertaken by the Department of Transport and Main Roads (DTMR)

Council was required to commission an independent consultant to perform a review of the preliminary noise modelling undertaken by DTMR to validate the accuracy of outputs. Although the consultant engaged by Council (Ambient Pty Ltd) determined that the approach undertaken was 'fit for purpose' and in accordance with the requirements of section 246X of the *Building Act 1975,* it was noted in the preliminary review (refer to Attachment 2) that a number of improvements could be pursued to improve the accuracy and robustness of the modelling. These included:

- recalculating the contours using SoundPLAN, instead of GIS, to give a more accurate depiction of noise levels around intersections (as per section 2.3.1);
- generating noise categories as 'bands', rather than 'layers', to ensure that multiple noise category values are not returned when site enquiries are conducted (as per section 2.3.3);
- recalculating the calculated general terrain using a more refined technique to give a more accurate reflection of the actual road pavement (as per section 2.2.3); and
- accounting for the noise attenuation impacts of terrain, buildings and acoustic barriers (as per section 1.2).

These actions were performed by the consultant in generating the refined mapping that is now being proposed to form the basis of the TNC designation.

Comparison of preliminary DTMR modelling vs. refined Ambient Pty Ltd modelling

A key goal of commissioning the refined modelling undertaken by Ambient Pty Ltd was to improve the accuracy of the calculated noise levels and subsequently, reduce the number of buildings within higher noise categories. The following table provides an overview of the differences in property numbers captured by preliminary DTMR modelling and the detailed noise modelling undertaken by Ambient Pty Ltd.

Table 2 –Setback distances versus modelled TNC's – differences in building numbers

Transport Nosie Category	Number of Buildings		Percentage Drop
	With Setback Distances	Modelled TNC's	
Category 4	29	0	100 %
Category 3	749	167	78 %
Category 2	3,658	1,716	53 %
Category 1	5,447	2,757	49 %

As a result of the modelling:

- the number of buildings within noise category 4 have been eliminated from local roads in the City;
- the number of buildings within noise category 3 has been reduced by 78%; and
- the number of buildings within noise categories 1 and 2 has almost halved.

In total and throughout the Redlands, the number of properties within all categories has been reduced by approximately 58%. Furthermore, as noted in the consultant report:

> *'From experience, a home owner/builder/developer will not consider additional noise abatement treatments to a property, nor complete a review or assessment of noise impacts if the property already falls within a TNC of 0 or 1. This is because the recommended construction requirements - such as minimum window glazing and wall construction material - for these categories typically match minimal construction standards.'*

The reduction is displayed graphically in the image below, which depicts the extent of DTMR mapping (pastel lines) versus Ambient Pty Ltd mapping (semi-transparent colouration).

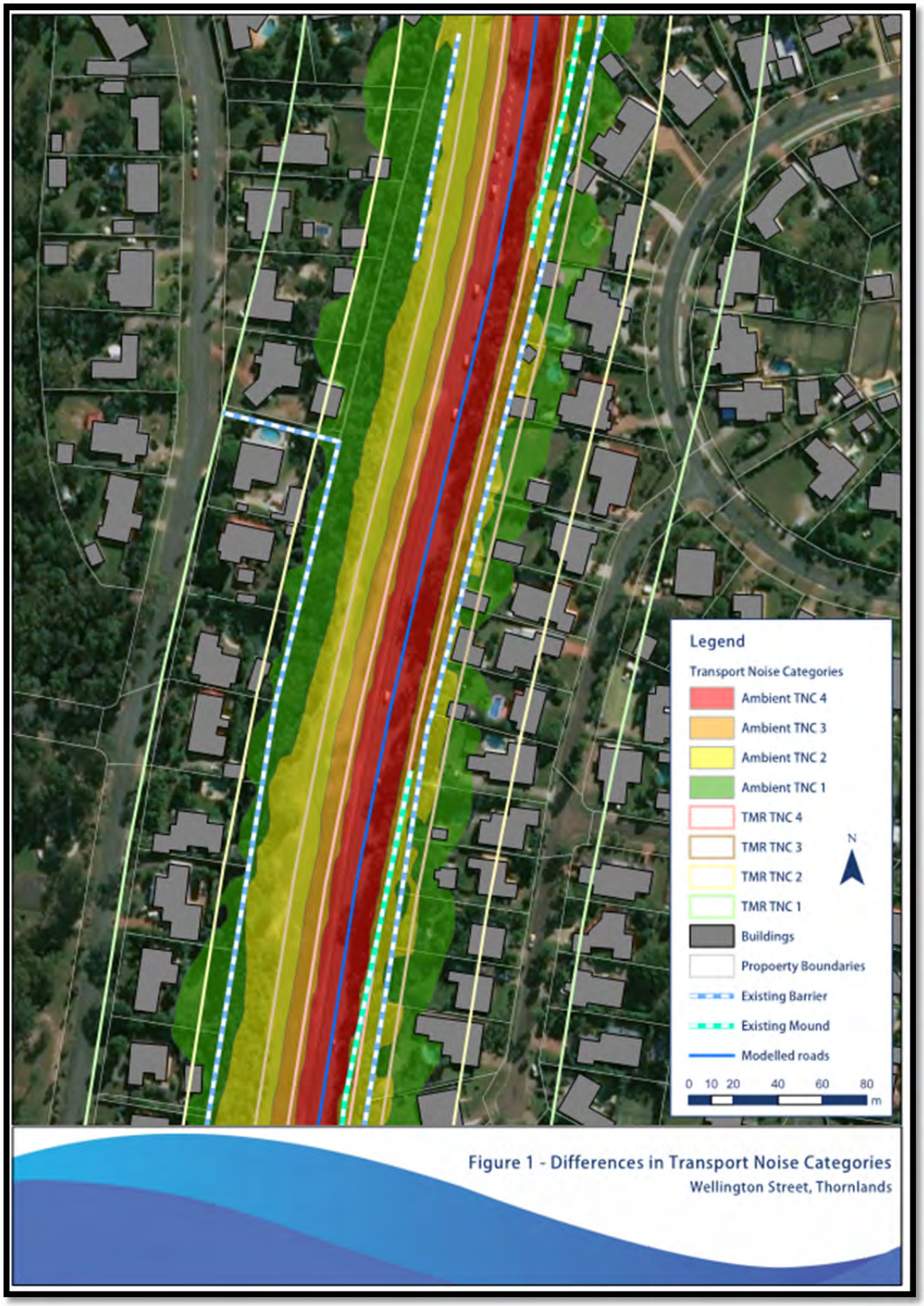


Figure 1 - Differences in Transport Noise Categories
Wellington Street, Thornlands

Traffic volume thresholds

As stated previously, the BA enables Council to designate local roads as TNCs where the land is within 100m from a road under its control and the road achieves Annual Average Daily Traffic (AADT) of at least 3,000 vehicles per day. Despite this, Council may at its discretion establish an alternative higher traffic volume threshold if it has valid reasons to do so. For example, in a previous Councillor workshop on 17 October 2017, officers indicated that Council may choose to set traffic volume thresholds at 5,000 or 10,000 vehicles per day.

In this regard, advice from the Environmental Health Team based on a review of previous acoustic reports, supports the 3,000 vehicles per day threshold recommended by DTMR. Similarly, recognising the revised noise modelling undertaken by Ambient Pty Ltd (Attachment 5) addresses anomalies and provides a far more accurate depiction of noise levels than the modelling undertaken by DTMR (Attachment 6), 3,000 vpd as recommended by the DTMR Planning Guideline is considered the most appropriate traffic threshold to utilise for the identification of local roads as TNCs.

Setting a gazettal date

It is proposed that the gazettal date for undertaking the designation occur at the same as commencement of the new Redland City Plan. This is necessary because the new approach (i.e. under the Redland City Plan) regulates traffic noise impacts 'outside' the planning scheme through the QDC, whereas traffic noise impacts under the current Redlands Planning Scheme 2006 are regulated 'within' the planning scheme via the Road and Rail Noise Impacts Overlay.

STRATEGIC IMPLICATIONS

Legislative Requirements

The proposed designation will be undertaken in accordance with the process established under the *Building Act 1975.*

Risk Management

Gazettal of eligible local roads as TNCs will ensure that appropriate noise attenuation measures are incorporated into newly constructed and upgraded sensitive developments. This is likely to reduce the number of future noise complaints handled by Council's Environmental Health Team and adverse social impacts (e.g. loss of sleep) experienced by residents.

The risk of not proceeding with the designation is that such impacts will only be addressed in areas where relevant residential development adjoins state-controlled roads.

Financial

A $14,500 budget was allocated to undertake the TNC Project. This money has been expended to pay Ambient Pty Ltd for the services provided in undertaking the preliminary review and producing refined TNC modelling. Additional funding associated with formal gazettal activities, including placing a notice in the government gazette, can be funded as part of the operating budget of the City Planning and Assessment Group.

People

The staff resourcing requirements to undertake the TNC designation will be primarily drawn from the Strategic Planning Unit within the City Planning and Assessment Group and the Business Information Systems Unit within the Information Management Group.

Environmental

This project addresses the relevant state environmental interests including protecting residents from adverse impacts of transport noise pollution.

Social

The designation of TNCs on the local road network will create a streamlined assessment process for new residential development. Furthermore, it will be consistent with the approach used to address noise impacts for relevant residential development adjoining State controlled roads. Gazettal of the proposed TNCs on local roads will also address many of the adverse social impacts of unregulated traffic noise such as stress and loss of sleep etc. experienced by residents.

Alignment with Council's Policy and Plans

The proposed amendments aligns with the Wise Planning and Design goals contained in the Redlands 2030 Community Plan and with Council's commitments in the Corporate Plan 2015 - 2020 to improve efficiencies in the Redlands Planning Scheme.

CONSULTATION

Consultation has taken place with relevant officers including from the City Planning and Assessment Group, Environment and Regulation Group and Information Management Group. Throughout the project, Council officers have worked in partnership with officers from the Department of Transport and Main Roads; the department responsible for developing the State's TNC mapping.

OPTIONS

Option One

That Council resolves to:

1. designate Transport Noise Corridor along relevant sections of the City's local road network, as identified in Attachment 3, under the *Building Act 1975;*
2. use 3,000vpd as the minimum traffic threshold;
3. complete the mandatory steps involved in formalising the Transport Noise Corridor designation, including giving written notice to the chief executive of the Department of Housing and Public Works, as outlined in the *Building Act 1975;* and
4. undertake the designation following the commencement of the Redland City Plan.

Option Two

That Council resolves to:

1. designate Transport Noise Corridor along relevant sections of the City's local road network, as identified in Attachment 4, under the *Building Act 1975;*
2. determine a greater traffic volume than 3,000 vpd as the minimum traffic threshold;

3. complete the mandatory steps involved in formalising the Transport Noise Corridor designation, including giving written notice to the chief executive of the Department of Housing and Public Works, as outlined in the *Building Act 1975;* and
4. undertake the designation following the commencement of the Redland City Plan.

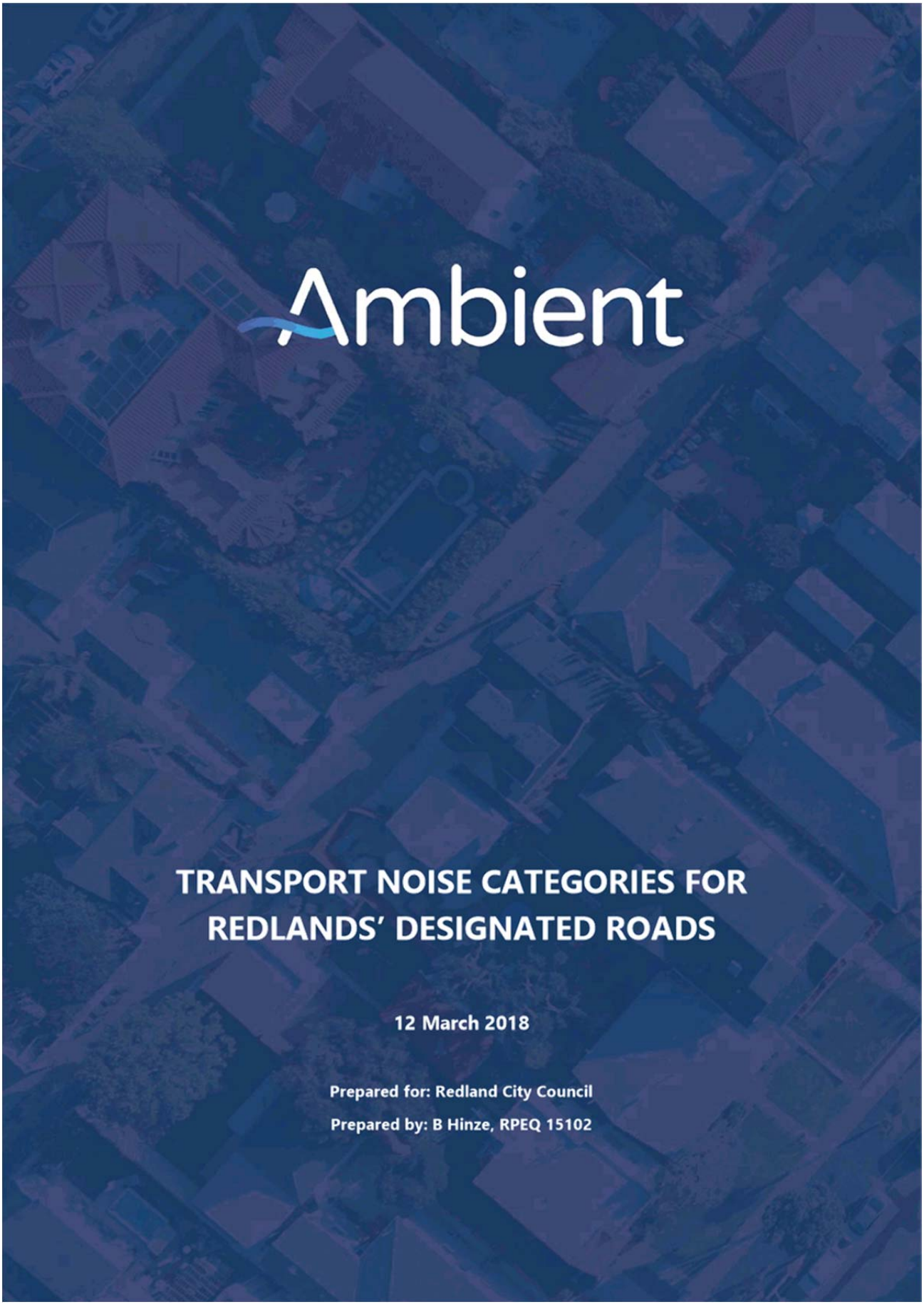
Option Three

That Council resolve to not proceed with the Transport Noise Corridor designation at this time.

OFFICER'S RECOMMENDATION

That Council resolves to:

1. **designate Transport Noise Corridor along relevant sections of the City's local road network, as identified in Attachment 3, under the *Building Act 1975;***
2. **use 3,000vpd as the minimum traffic threshold;**
3. **complete the mandatory steps involved in formalising the Transport Noise Corridor designation, including giving written notice to the chief executive of the Department of Housing and Public Works, as outlined in the *Building Act 1975;* and**
4. **undertake the designation following the commencement of the Redland City Plan.**


Ambient
TRANSPORT NOISE CATEGORIES FOR REDLANDS' DESIGNATED ROADS
12 March 2018
Prepared for: Redland City Council
Prepared by: B Hinze, RPEQ 15102

12 March 2018

0300RCC-LTR02-R1 Modelling of TNCs Rev1.docx

Redland City Council
Cnr Bloomfield and Middle Streets
Cleveland Qld 4163

Attention: Dean Butcher

Transport Noise Corridor Modelling for Redlands' Designated Roads

Dear Dean,

Please refer to the enclosed information which provides the methodology report, results and discussion for transport noise corridor modelling for Redlands' designated roads.

This report has focused on providing a step-by-step guide for the importation, processing and review of the data provided, to create the noise model and subsequent transport noise categories across the Redland local government area. The project outline is presented in such a way as to:

- provide a clear methodology for Redland City Council (RCC) to understand the project and assist in responses from stakeholders and the general public
- allow RCC to review the proposed methodology and results to identify concerns and/or issues for the implementation of the proposed noise categories.

If you have any questions or comments, please do not hesitate to call.

Yours Sincerely,

Ben Hinze
Director

1 INTRODUCTION TO TRANSPORT NOISE CATEGORIES – QDC MP4.4

In September 2010, the Queensland Department of Housing and Public Works (QDPW) released the policy Queensland Development Code Mandatory Part 4.4 – Buildings in Transport Noise Corridors (QDC MP4.4). The purpose of this policy was to ensure that new residential buildings located near roads and railways are constructed in a way that attenuates any adverse noise impacts for building users/occupiers.

The policy focuses on land designated as a 'transport noise corridor' (TNC) under the Queensland Building Act, for QDC MP4.4. Transport noise corridors were declared for all State-controlled roads in Queensland in September 2010. Under the Building Act, land can be designated as a TNC if it is within 100 m of a State -controlled road or railway (or up to 250 m where the level of noise emissions exceeds certain thresholds stipulated in the Building Act).

Previously, building applications for the construction of residential buildings on properties near State-controlled roads generally required an on-site noise assessment and a supplementary State Government approval. This approval was often conditional to certain noise reduction measures, such as specific building materials being included in the building's design and construction. The QDC MP4.4 provides a more consistent standard across the state and reduces the time and costs involved in gaining final building approvals. It also continues to minimise the effects of transport noise on the building occupant's health and acoustic amenity from major transport corridors.

To complement the transport noise corridors for the State-controlled road network, Ambient Maps Pty Ltd (Ambient) was engaged by RCC to develop a 3-D road traffic noise model to define TNC's from RCC's designated roads (i.e. roads, other than State-controlled roads, with a forecast Year 2027 daily volume in excess of 3000 vehicles per day (vpd)).

This report summarises:

- the methodology in creating the road traffic noise models required to provide the noise levels used to create the noise categories,
- the review of these noise models, and
- the approach taken to create the noise categories from the raw noise level data.

2 PROJECT EXTENTS

The local road network for Redlands with forecast Year 2027 daily volume in excess of 3000 vpd was provided by RCC. This road network defines the project extents, with the noise modelling investigation area extending 1000 m each side of each local road. In total, approximately 118.4 km of road network was provided by RCC, with an investigation area exceeding 184 km^2. Figure 1 overleaf maps the modelled road network used to define the TNC's.

3 RAW DATA AND BUILDING OF NOISE MODELS

The road traffic noise model was created in the SoundPLAN (Version 8) noise propagation modelling software. SoundPLAN enables compilation of a sophisticated computer model comprising a 3-D ground map containing ground contours, the 3-D road alignment (including gradients), building locations, traffic volumes, mix and speed, road pavement surface characteristics and noise barriers.

Traffic data was provided by RCC, whereas buildings and terrain were collated from commercial and government data providers. The location and height of existing noise barriers was captured via site surveys and reviewed against barrier design within third party road traffic noise assessments provided by RCC.

As confirmed with RCC, no State-controlled roads or infrastructure has been considered within this assessment.

The sections below provide additional detail regarding the collation and use of the noise model datasets.

3.1 Terrain

A terrain model based on light detection and ranging (LiDAR) was sourced through Geoscience Australia (GA). This bald earth digital elevation model (DEM) is dated 2009 with a resolution around 5 m. It is understood that a 2014 DEM exists, however was not available for this study due to commercial restrictions.

The GA DEM was converted from a raster into a comma separate value (CSV) file format, with each line within the CSV file identifying a height point at a specific coordinate location. The CSV file was imported as elevation points, allowing SoundPLAN's triangulation algorithms to generate a digital ground model (DGM). The DGM allows a base to firstly place the road and barrier footprints on, but secondly it improves the accuracy of calculations for the transmission of noise over the ground surface.

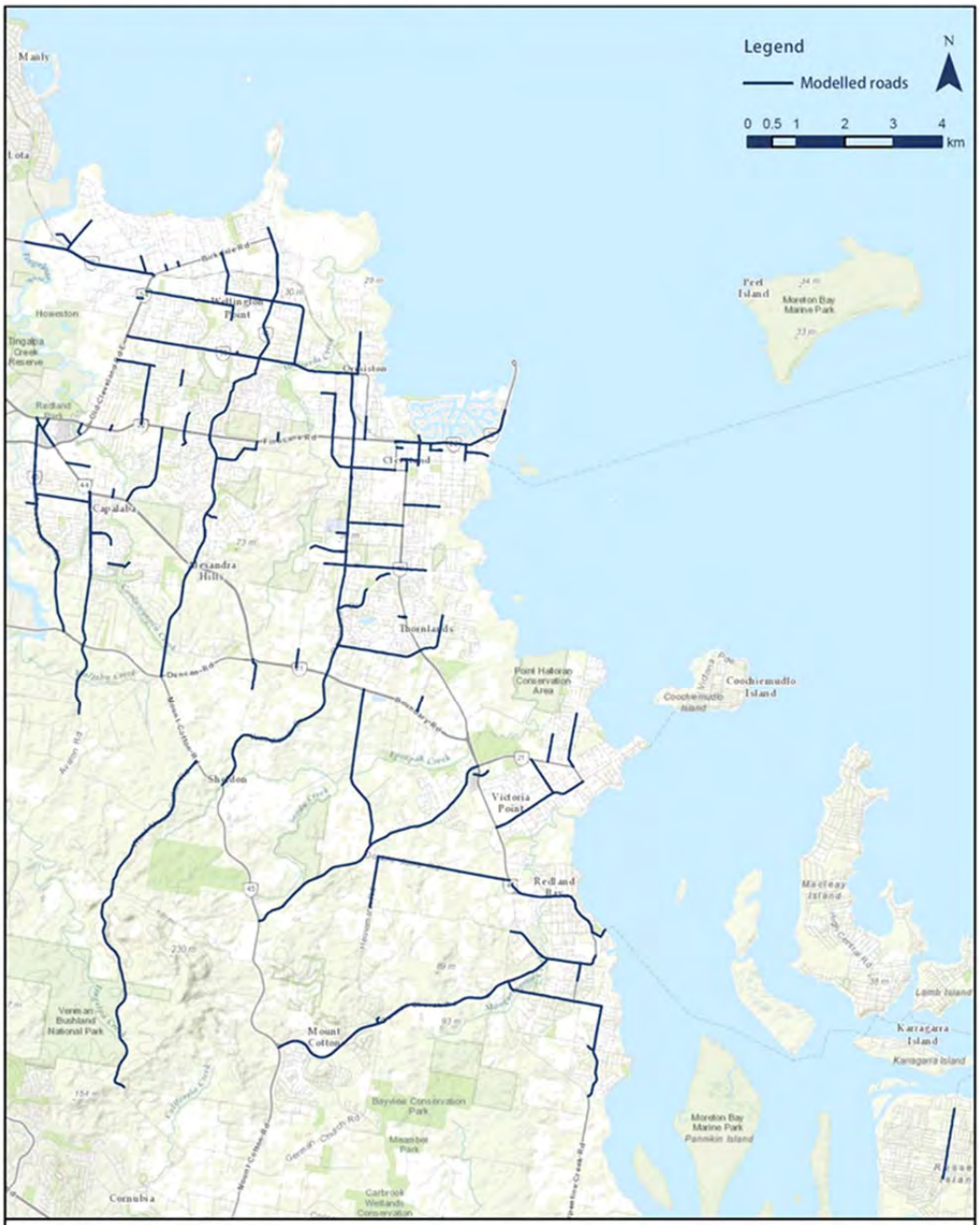


Figure 1 - Modelled road network - Redlands

3.2 Buildings

The location, footprint and height of all buildings within the Redlands LGA were sourced from PSMA Australia GeoScape© dataset. Over 61,000 buildings within 1,000 m of the designated road network were imported into the SoundPLAN model and set to the underlying DGM detailed in Section 3.1.

3.3 Noise Barriers

A noise barrier survey was completed throughout the road network for roads with a daily volume in excess of 3000 vpd. The survey identified the existing noise barrier network, and an approximate height along the length of each barrier was assigned.

For a noise barrier to be considered within the model, its appearance needed to meet the follow requirements:

- The fence/noise barrier was relatively airtight, meaning there were no gaps between palings.
- The fence/noise barrier appeared to be built for the primary purpose of noise attenuation. Generally, this means that a fence is to span more than a single property and often follows a common construction method of overlapping timber palings. Individual property fences were typically excluded.

The results of the noise barrier survey were compared against 28 noise impact assessments provided by RCC. These reports outlined noise barrier recommendations for proposed developments. Table 1 provides a comparison between the noise attenuation recommended within each of the 28 documents to the attenuation noted on site.

Table 1 – Recommended noise attenuation versus noise attenuation documented on site

Report File Name	Comments
212 Colburn Avenue VP - Acoustic Barrier DTMR.pdf	On site barriers match recommended barriers within the acoustic report.
232 Birkdale Road Birkdale.pdf	Birkdale Road is State-controlled, under the control of the Queensland Department of Transport and Main Roads (DTMR). No consideration as been made for the noise intrusion of this road, or the noise barrier infrastructure.
396-398 Boundary Road Thornlands Noise Report.pdf	Boundary Road is State-controlled, under the control of DTMR. No consideration as been made for the noise intrusion of this road, or the noise barrier infrastructure.
417-427 Boundary Road Thornlands.pdf	Boundary Road is State-controlled, under the control of DTMR. No consideration as been made for the noise intrusion of this road, or the noise barrier infrastructure.
580 Main Road wellington point.pdf	Please refer to comments for report: Noise Report 12 - Wellington Point.pdf; as it's the same report.
69-71 Quarry Road .pdf	Please refer to comments for report: Noise Report 11 - Birkdale Thorneside - Quarry Road.pdf; as it's the same report.

Report File Name	Comments
75 Gordon Road Redland Bay - Acoustic Barrier.pdf	Two 1.8 m noise barriers were recommended within the acoustic report. Additional noise barriers/acoustically solid fences, have also been constructed above what was recommended within the report.
Cleveland Redland Bay Road & Boundary Road Thornlands.pdf	Both Cleveland Redland Bay Road and Boundary Road are State-controlled roads under the control of DTMR. No consideration as been made for the noise intrusion of these roads, or the noise barrier infrastructure.
Esperance - Cleveland Redland Bay Road and Boundary Road Thornlands - Thornlands.pdf	This report is a 'certification of construction of barrier', which does not map the barrier extents. In addition, both Cleveland Redland Bay Road and Boundary Road are State-controlled roads under the control of DTMR. No consideration has been made for the noise intrusion of these roads, or the noise barrier infrastructure.
Noise Report 2 - Redland Bay.pdf	Noise barriers 1.8 m in height were recommended within the acoustic report. The extent and height (within some sections) is equal to, or greater than what was recommended on site and realigned based on the development's final construction.
Noise Report 3 - Sheldon.pdf	The barrier survey did not extend to 706 Mount Cotton Road, as the road segments provided by RCC do not consider this road.
Noise Report 4 - Thornlands Panorama & Boundary.pdf	A 2.4 m barrier on the north-eastern property boundary is recommended within the report. Neither the development nor the noise barrier has been constructed to date.
Noise Report 5 - Cleveland fitzroy st.pdf	No noise barriers fronting Fitzroy or Shore Street West were recommended within the acoustic report. No noise barriers were documented on site.
Noise Report 6 - Wellington Point.pdf	No noise barriers were recommended within the acoustic report. No noise barriers were documented on site.
Noise Report 7 - Thornlands Kinross.pdf	The barrier survey did not extend to 70/64 Kinross Road, as the road segments provided by RCC cease approximately 480 m south of the development.
Noise Report 8 - Thornlands Woodlands Drive.pdf	No noise barriers for road traffic noise are proposed within the acoustic report (rather setback distances are recommended). A noise barrier is recommended for the Equestrian Centre, however neither the barrier, nor the Equestrian Centre, has been constructed.
Noise Report 9 - Mount Cotton (old report) Valley Way.pdf	On site barriers match recommended barriers within the acoustic report.
Noise Report 10 - Mount Cotton Business Park - German Church Road .pdf	No noise barriers were recommended within the acoustic report. No noise barriers were documented on site.
Noise Report 11 - Birkdale Thorneside - Quarry Road.pdf	On site barriers match recommended barriers within the acoustic report.
Noise Report 12 - Birkdale Collingwood road.pdf	No noise barriers were recommended within the acoustic report, however acoustically solid walls (approximately 2 m in height) were documented on site.
Noise Report 12 - Wellington Point.pdf	On site barriers match recommended barriers within the acoustic report.
Noise Report 13 - Ormiston Sturgeon Street.pdf	No noise barriers were recommended within the acoustic report. No noise barriers were documented on site.
Noise Report 14 - Ormiston Sturgeon 2nd location.pdf	No noise barriers were recommended within the acoustic report. No noise barriers were documented on site.
Noise Report 15 - Redland Bay Weinam St.pdf	Two 1.8 m noise barriers were recommended within the acoustic report. The extent and height (within some sections) is greater than what was recommended on site.
ROL006166 - Double Jump Road - Noise Impact Assessment Report- (DA not approved).pdf	A 2 m barrier on the western property boundary is recommended within the report. Neither the development nor the noise barrier has been constructed to date.

Report File Name	Comments
SB004850.docx	The document provides no address for the fence. A search for the estate website returned that the Silkwood Mt Cotton servers IP address could not be found.
Serpentine Creek Road - Redland Bay.pdf	No barriers were noted on site, as the development is yet to be constructed. The report offers multiple barrier options. It is unknown which option will be adopted.

The identified noise barriers were imported into the noise model, with the barriers footprint matched to the DGM underneath. The height embedded as an attribute for each noise barrier provided the height for that section of noise wall.

3.4 Roads

As briefly mentioned earlier, the designated road network was provided by RCC. This road dataset provides the physical location of each section of road and holds, as attributes, the required parameters needed to feed into the noise calculation algorithms to determine the noise emission a sound power level for each segment of road. These attributes included:

- traffic volume
- posted speed
- percentage of heavy vehicles
- road pavement surface types to determine noise corrections.

The pavement surface of all designated roads is classified asphalt except for a small, 200 m section of road treated with a skid resistance layer. For the purposes of noise modelling, all roads were defined as having a dense graded asphalt surface. No corrections for pavement surface were applied, following guidance within the DTMR Road Traffic Noise Management: Code of Practice.

These roads were imported into SoundPLAN with their attributes appropriately defined. The geometry of each road was then matched to the underlying calculated DGM.

3.5 Calculation Parameters and Assumptions

The Calculation of Road Traffic Noise (CoRTN) 1988 prediction technique was utilised within SoundPLAN to calculate and predict the relevant road traffic noise levels. These calculations account for the intervening topography, buildings and noise barriers. CoRTN is the recommended road traffic noise calculation and prediction technique in the DTMR Code of Practice.

Soft ground was considered throughout, except for the width of the road, as defined within the modelled roads themselves, which was modelled as hard ground. All road source lines were deemed to have a width of 3.5 m either side of the central line.

In calculating the noise level at a specific point, any road noise sources within 1,000 m were considered. Noise could reflect off one surface up to 200 m away from the point the noise was assessed at, or up to 50 m from any noise source. In generating the noise contours, the noise level was calculated every 5 m.

Noise levels were calculated with a tolerance of ± 0.1 dB. All noise predictions include a +2.5 dBA facade correction and a -1.7 dBA Australia Road Research Board (ARRB) correction (in accordance with DTMR's Code of Practice).

4 REVIEW OF COMPLETED NOISE MODELS

Sections 4.1 to 4.2 outline the quality assurance checks completed when reviewing the road traffic noise model.

4.1 Road Geometry

After the road network was imported into the model, the vertical heights of the road network were set to the DGM below. As discussed in Section 3.1, the DGM is representative of the bald earth – i.e. the DGM excludes man-made structures such as bridges, culverts and other elevated road sections.

Road polylines within the noise model are not curved; rather each road portion is straight, with smaller, straight sections used to allow a road to follow the terrain below. To ensure the road accurately reflects the undulating terrain, no road line segment has a distance that exceeds 30 m.

The DGM does not reflect the elevation of a road for bridges, overpasses and culverts. Where a road is elevated to pass over a river, or another road or rail line, the DGM (and thus the road alignment when originally assigned to the DGM), drops to the geometry of the earth below the structure. This sudden drop and subsequent increase in elevation artificially increases the gradient correction of that section of road, creating a significant (and incorrect) increase in noise level.

Instances where an elevated section of road incorrectly snaps to the underlying terrain were identified using SoundPLAN's side, front and 3D views of the model and manually corrected.

4.2 Placement of Buildings and Noise Barrier Footings

Noise barriers throughout the project were captured by site inspections, aerial photography and the digital cadastral (property boundaries). A review of the noise barrier network was completed against the DGM to ensure noise barriers were not placed at the base of a retaining wall or near steep changes in terrain height, typically due to mounding or a road cutting.

Buildings were imported from a commercial dataset. No review was made regarding the accuracy of the data provided from this 3rd party. A review of the buildings layer against the DGM was completed to ensure that no buildings were incorrectly located within the road corridor, and to identify and correct if required, any building heights that were clearly incorrect when compared to the surrounding structures.

5 GENERATION OF TRANSPORT NOISE CATEGORIES

Calculated grid noise maps throughout the project are reclassified into five distinct LA10 (18h) noise level ranges in line with the TNC's stipulated in QDC MP4.4.; specifically:

- Category 0: Below 58 dBA
- Category 1: 58 dBA to 62 dBA
- Category 2: 63 dBA to 67 dBA
- Category 3: 68 dBA to 72 dBA
- Category 4: 73 dBA or above.

TNC's for both the ground and first floors were calculated. The nominated ground floor height is 1.8 m, where a height of 4.6 m above the local ground level provides the TNC's for the first floor.

The TNC's are expected to the hosted through an online planning scheme. Due to the data requirements to host the TNC's, the noise categories need to take the form of polygons to allow a user to select a point within the noise category and for that noise category value to be returned. Noise contours are provided as both "areas" and "bands" for both the ground and first floor TNC's to ensure suitability for the hosting web platform.

6 COMPARISON OF MODELLED TNC's VERSUS SETBACK DISTANCES

The goal of generating TNC's through detailed modelling opposed to the use of setback distances is to improve the accuracy of the calculated noise level. As such, it is expected that the number of properties within the higher noise categories typically reduced, as the noise model considers the screen benefits of noise barriers and buildings.

In 2017, DTMR created TNC's based on setback distances, a process following the original methodology adopted by DTMR for the original release of TNC for the State controlled road network. The number of buildings within each TNC were counted within both the DTMR TNC's and TNC's from detailed modelling, to understand the differences between the two approaches. These differences are summarised in Table 2.

Table 2 –Setback distances versus modelled TNC's – differences in building numbers

Transport Nosie Category	Number of Buildings		Percentage Drop
	With Setback Distances	Modelled TNC's	
Category 4	29	0	100 %
Category 3	749	167	78 %
Category 2	3,658	1,716	53 %
Category 1	5,447	2,757	49 %

As a result of noise modelling, the number of buildings within noise category 4 have been eliminated throughout the LGA and the number of buildings within noise category 3 reduced by 78%. The number of buildings in noise categories 2 and 1 were also halved, despite an expected increase from dwellings previously within higher categories dropping to the lower.

From experience, a home owner/builder/developer will not consider additional noise abatement treatments to a property, nor complete a review or assessment of noise impacts if the property already falls within a TNC of 0 or 1. This is because the recommended construction requirements - such as minimum window glazing and wall construction material - for these categories typically match minimal construction standards.

Throughout Redlands, the number of residential properties with a TNC above Category 1, and thus, the reduction in unnecessary costs to the home owner or builder, has been lowered through the use of noise modelling by approximately 58%.

7 CONCLUSIONS

Ambient was engaged by Redland City Council to undertake road traffic noise modelling for councils designated road network – road with a daily volume in exceed of 3000 vpd. The purposed of the modelling was to define transport noise categories used to assist in defining noise attenuation measures for the construction of new, or the upgrade of existing sensitive developments

Approximately 118.4 km of the local road network was modelled, with an investigation area exceeding 184 km^2. Topographical data was either provided by council, collected through site inspections or from 3rd party commercial parties and brought into the SoundPLAN noise modelling suite. The data was reviewed and corrected where necessary prior to the calculation of road traffic noise levels throughout the study area. The calculated noise levels were used to create noise contours in ranges to reflect the predefined ranges in determining the transport noise categories.

Noise modelling as opposed to assigned setback distances from identified roads increases the accuracy of the calculated noise levels and subsequent noise categories. As a result, the footprint of each noise category has been reduced with the introduction of the influence of terrain and noise barriers to the propagation of noise levels.

On average, the number of properties located above noise categories 1 has been reduced by 58% throughout the Redlands Local Government Area, reducing the requirement for home owners to consider a noise assessment or require further building noise attenuation treatments in the construction of a new, or upgrade to an existing dwelling.

Ambient

3 November 2017

0300RCC-LTR01-R1_TNCs.docx

Redland City Council
Cnr Bloomfield and Middle Streets
Cleveland Qld 4163

Attention: Dean Butcher

Dear Dean

Transport Noise Corridor Modelling Review

Thank you for the opportunity to offer a review of the noise modelling completed through the combined efforts of the Redland City Council (RCC) and the Queensland Department of Transport and Main Roads (DTMR). Having recently completed all modelling to generate Queensland's State-wide noise contours and subsequent transport noise categories (TNCs) for both the State-controlled road network (over 35,000 km) and rail network (over 5,000 km), I have intimate knowledge of the various modelling components of your project.

This letter provides a review of the work completed by RCC and DTMR, as detailed in the request for tender (RfT) issued October 23, 2017. The review offers my understanding on the input data used, the methodology and subsequent results based from the information provided within the RfT.

Within the review I have provided some options for RCC to consider in either retaining their QDC MP4.4 noise category datasets, or revising them. Depending on the option(s) preferred, this work may be completed either internally or through DTMR. Ambient are happy to offer our services if required.

It could be stated that there is a conflict of interest in this review, as Ambient are currently in the process of creating a city noise model for the Redland local government area. Negative points made in this review of the works completed by RCC and DTMR may (incorrectly) be seen to encourage a preference in the Ambient dataset. In addition to my professional reassurances as an RPEQ that this review is unbiased, it is my opinion such an underhanded approach is unlikely to build trust, nor encourage longevity in the business we are trying to create.

But furthermore may I offer the following statement about the data RCC have

"The approach adopted by RCC in determining the transport noise categories is 'fit for purpose' for designating local roads as transport noise corridors in Redland City – as per the requirements of 246X of the Building Act 1975".

Nevertheless there are concerning limitations to the dataset as it currently stands, detailed within this letter. I trust this review provides sufficient detail for your requirements. If you have any questions, please do not hesitate to contact me on 0416 635 841 or at bhinze@naqmap.com.au

Yours Sincerely,



Ben Hinze (RPEQ No 15102)
Director

1 Overview

1.1 Background

A review of the input data, methodology reports and output data presented within the RfT was completed to validate the transport noise corridor modelling undertaken by DTMR for the Redland City local road network. It is understood this modelling was completed to create TNCs for the local government area; and that the primary purpose of this was to ensure all Class 1-4 buildings on local roads identified as a TNC will be constructed to the desired standards as outlined in the *'Queensland Development Code Mandatory Part 4.4: Buildings in a Transport Noise Corridor'* (QDC MP4.4).

The datasets reviewed within this letter include:

- the raw data, generated by RCC in conjunction with DTMR, used to create the TNCs
- the TNC noise categories themselves, provided as ESRI ArcGIS shapefiles with a separate shapefile for each noise category, named according to the lower noise level of each category.

The review considers the background information provided through correspondence with DTMR and through guidance provided within the RfT.

1.2 Review summary

The approach adopted by RCC in determining the TNCs is considered fit for purpose for designating local roads as transport noise corridors in Redland City – as per the requirements of 246X of the Building Act 1975. The process is transparent and logical, following the methodology adopted by DTMR for the original TNCs for the State-controlled road network in 2011.

The noise categories for the Redland local road network also appear logical and, with the correct symbology, should be simple for the layperson to understand provided clear separation of the TNCs is achieved in the online portal (discussed further in Section 2.3.3).

A high level review of the traffic volumes, heavy vehicles percentages and speeds suggests there are no major ambiguities in these values from one road segment to the next. For example, there are no instances where the traffic volumes change significantly from one road section to the adjoining, without the presence of another road.

Comparisons of the setback distances generated by DTMR are generally comparable both to hand calculations following the algorithms presented in the guideline *'Calculation of Road Traffic Noise'* (Department of Transport – Welsh Office, 1988, herein referred to as CoRTN), and to equivalent noise categories calculated through the noise modelling package SoundPLAN Version 7.4.

Deviations from this is the combined noise impact of adjoining roads; and the inclusions of a noise category for roads where the predicted noise levels are unlikely to be high enough to substantiate this category (discussed further in Section 2.2). **It is recommended that noise category 4 areas for roads that do not have calculated noise levels to warrant a noise category 4 be discarded.**

In addition, RCC is likely to encounter some objection to the dataset due to its simplicity, in particular due to the absence of buildings and noise barriers. It is acknowledged RCC has not accounted for the impacts of acoustic barriers, including purpose built structures and/or existing development due to a perception that insufficient budget is available. Nevertheless, this limitation can have a considerable impact on many of the more than 9,000 properties that currently fall within noise category 2 or higher with the existing TNCs proposed to be published.

The impacts of a simplified dataset and are discussed further in Section 2.1. A case study in Section 2.1.1 highlights the reduction in noise categories between buffers and a noise model, reducing the number of development applications surrounding noise to RCC by more than half.

The sections to follow provide further detail regarding the review. This includes concerns and recommended changes for RCC's consideration in the modelling methodology, data inputs and outputs of the calculated noise levels and subsequent TNCs.

2 Review of modelling inputs and methodology

2.1 Data inputs that have been excluded

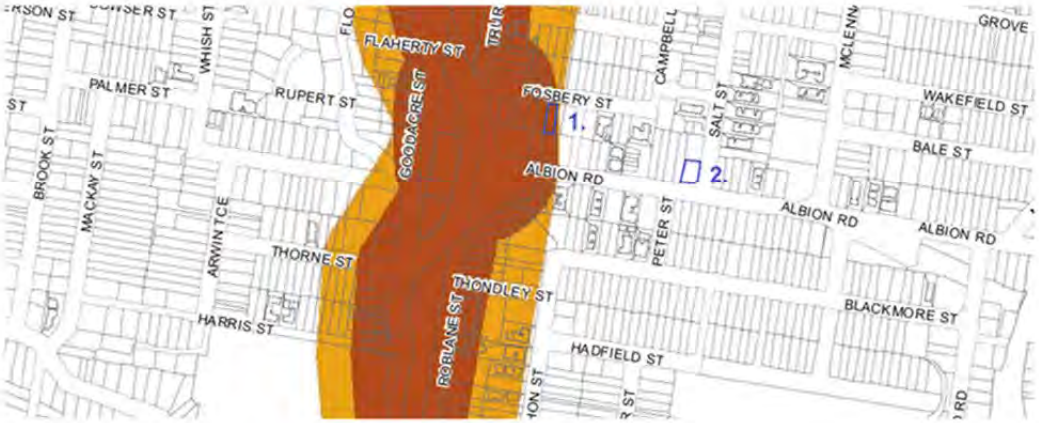
2.1.1 Buildings and noise barriers

As mentioned in Section 1.2, the methodology for the project follows the approach taken by DMTR for the original release of the QDC MP4.4 TNCs for the State-controlled road network.

Over the past 2 years, I have been working with DTMR on the revision of the QDC MP4.4 noise categories for the State-controlled road and rail networks. The revision of the TNCs was driven by the need to address community complaints and to offer a more reliable product. These issues stemmed from the use of calculated setback distances from the road network (i.e. buffers) in lieu of noise modelling – the same approach the RCC is looking to adopt for their local road network.

The two highlighted properties (blue) in Figure 1 help demonstrate some of the frustration experienced by the community regarding the use of buffers, as opposed to calculated noise levels. Figure 1 presents QDC MP4.4 noise categories for the Brisbane City Council (BCC) designated road network in Windsor, and the neighbouring cadastral boundaries.

Figure 1 QDC MP4.4 noise categories in Brisbane's inner north



Should a new development be proposed at site 1, the BCC online portal indicates this dwelling is in transport noise category 3 – requiring significant construction requirements including double glazing (costs ranging from $800 per square metre up to $1,500 per square metre installed). However, on site, it's clear the property is separated from the major road by three dwellings and a retaining wall. As such, the actual noise levels at this property are likely to represent transport noise category 1 - requiring typical construction methods and materials only. Typically if a property falls within noise category 1 or 0, no acoustic assessment is completed by a home owner or builder, as the potential for reducing construction costs is limited.

To avoid the substantial cost of upgrades to the building envelope that are needed to meet the requirements for transport noise category 3, a noise assessment is required by a suitably qualified engineer. These assessment reports typically cost up to around $2,000 – a significant cost when viewed by home owners as unnecessary. The alternative, which is to adopt the construction requirements for noise category 3, is substantially more expensive. Additionally, if the development was one property east of site 1, there would be no need for any noise abatement or noise assessment at all as the TNCs abruptly cease.

At site 2 (Figure 1), there are no noise TNCs for Albion Road despite it being a four-lane thoroughfare linking the major roads – Sandgate and Lutwyche Road. The transport noise levels at properties fronting Albion Road (e.g. site 2) are likely to be significantly higher than at site 1, yet there is no obligation to provide noise abatement for these residents.

Other councils have also encountered this issue. Brisbane City Council currently use buffers to publish their noise categories. Logan City Council (LCC) used noise modelling to calculate noise categories, with the addition of terrain only. Currently, neither council have included structures that screen the road traffic noise levels; however both are currently looking to do so.

Figure 2 provides a comparison between calculated noise levels with increasing datasets. The top image shows the noise levels using roads only without the benefit of terrain. These contours are an improvement on the noise categories currently considered by RCC and published by BCC.

The centre image shows the noise levels using road and terrain (the approach adopted by LCC) with the bottom image presenting noise levels using road, terrain, noise barriers and buildings.

I have been in discussions with Alex Marchuk (BCC Senior Program Officer) and Anthony Wallis (LCC Principal Environmental Officer) regarding revision of their noise models and TNCs to include noise barriers, buildings and terrain. Additionally Dan Savill, Environmental Scientist for the Toowoomba Regional Council (TRC), is currently evaluating the Ambient TNCs for the Toowoomba local road network. The TRC noise model includes terrain, noise barriers and buildings for the greater Toowoomba region. From discussions with various Queensland councils, it seems inevitable that all noise categories will soon need to include terrain and represent the screening benefit of buildings and barriers.



Figure 2 Noise levels changes with source data

Case example – Samford Road, Brisbane

In 2015 a small sensitivity comparison was completed on the Brisbane TNC buffers. This was to understand the difference in the number of dwellings needing development application approval, comparing the number of impacted properties if the TNCs remain as buffers, compared to modelled contours that include terrain, barriers and buildings. A map of the study area is presented in Figure 3 overleaf with the original noise categories. For reference, the entire corridor is currently made up of TNC 2 or higher.

A comparison of the change in the number of dwellings within each category moving from buffers to a strategic noise model returned the following results:

- With the original noise corridors (buffers), the number of buildings that had a noise category 2 or greater was 609.
- With the remodelled noise corridors including buildings and barriers, the number of buildings that had a noise category 2 or greater was 216.

The focus on category 2 is that general building construction is typically acceptable to achieve the performance outcomes of category 1 or 0. Typically the hope for all home owners is to have a dwelling with a TNC below 2 to avoid significant additions to construction costs. If a property falls in TNC 0 or 1, the QDC MP4.4 are generally accepted, avoiding the consideration of an acoustic assessment.

Figure 3 Brisbane TNC buffers – Samford Road



This case study suggests that remodelling using terrain, buildings and barriers will more than *halve* the number of acoustic assessments for developments, depending on the original noise levels of the road.

Rather than publishing a coarse dataset with a revision at a later date, it may be in RCC's best interests to publish an accurate, detailed dataset from the beginning. This approach would help to avoid potential adverse comment. It would also make any future updates easier if they are required at any point to account for changes to noise barriers or buildings, if improved terrain data becomes available, or if significant changes to traffic movements occur.

2.1.2 Roads with a lower traffic volume

The RCC imposes a cut-off where QDC MP4.4 is no longer considered. The cut-off is local roads with a daily traffic volume of less than 3,000 vehicles. This hard floor creates isolated roads, resulting in noise categories that are not connected to any others. This means that while one section of a road may require noise abatement, connecting sections of road may not – this may cause confusion within the community.

To avoid what appear to be random TNC patches, RCC may consider creating *voluntary* noise categories that link mandatory sections of roads, considering roads that have a traffic volume of between 2,000 and 3,000 vpd. The DTMR State-wide noise categories consider voluntary noise categories for sections of road with predicted noise levels below a nominated limit. Figure 4 provides an example of mandatory (orange/brown/red shading) and voluntary (green shading) noise categories.

Figure 4 Mandatory and voluntary noise categories



The introduction of voluntary noise categories can connect isolated mandatary roads where QDC MP4 4 is applicable. These additional roads can be included into the RCC TNCs through the GIS algorithms used to generate the original buffers, or included in a noise model where mandatory and voluntary sections are then clipped and separated within a GIS process.

2.2 Road source strings

All attribute data embedded within the road strings has been reviewed, providing the following comments.

2.2.1 Road pavement surfaces

All road pavement surfaces in the RCC dataset are considered to be dense graded asphalt (DGA), with the exception of a small section of Allenby Road which is defined as a skid-treated resistant surface.

The geographical extents of the skid resistant surface do not match with the change in pavement surface (as noted in aerial photography). However a review of the noise categories either side of this section of road suggest that the pavement surface correction for the skid resistant pavement does not differ from the correction applied for asphalt. As such this inconsistency provides a negligible impact. It is considered acceptable to assume that all roads in the Redlands region have a DGA pavement surface.

2.2.2 Speeds

A cursory review of the posted speeds used for modelling highlights no obvious ambiguities when compared to the methodology notes for the speeds allocated to each section of road. The use of the maximum posted speed provides a conservative value for the noise categories. However actual speeds may also be considered if available, taking into account congestion.

The impact of congestion can be significant to the road traffic noise levels. In 2010/11, I completed a detailed assessment for the highway and motorway network of greater Melbourne. This project included a comparison of noise levels within the model against over 200 measurements. Highways heavily impacted by congestion resulted in the noise model over predicting the measured noise levels by up to 9 dBA, or by a factor of almost two TNCs.

Actual speeds are available for use throughout the road network and may be considered for the TNCs, either through revisions in the buffers or through noise modelling.

2.2.3 Standard deviation

The following points of concern are noted in the assignment of the standard deviation value, used to define a CGT value and subsequent noise correction for gradient.

- Firstly, a generic value to represent a long section of road contributes to the simplicity of the calculated values. There is the risk of under predicting noise levels in localised areas where dwellings are located next to a steep incline. It is understood however these instances may likely to be limited and hence this is considered to be an acceptable risk across the wider project.
- There is a concern regarding how the standard deviation was applied. By expanding the calculation area of interest out to 15 m each side of the road centreline, calculation of the standard deviation will consider changes in the terrain elevation to the side of the road in addition to within the road corridor. This means that any drains or retaining walls adjacent to the road corridor will contribute to a higher standard deviation which may skew the result.
- The calculation of the standard deviation has been based on a digital elevation model (DEM) that represents height values across the bald earth. One issue with this is that, as an example, a road that passes over a river will remain flat due to a bridge; however the DEM will return values that drop to accommodate the river. This variance in elevation levels will contribute to the standard deviation despite the road remaining flat. If there are a number of bridges or culverts in a 500 m section, a road gradient of 'rolling' may be returned using the methodology currently imposed for a relatively flat ground. This incorrectly increases noise levels for the RCC TNCs.

There are two solutions recommend to rectify the standard deviation:

1. The process is repeated using a digital surface model (DSM) in lieu of a DEM, with road sections broken into 50 m segments, rather than 500 m. A DSM considers the presence of bridges and can be manipulated to exclude buildings and can be extracted from the LiDAR survey. The corridor width should be limited to approximately 2 m each side of the road centreline. These changes combined will ensure that the standard deviation reflects the actual road pavement and not the surrounding terrain.
2. Revision of the TNCs through noise modelling.

2.2.4 CGT

There are no concerns in the corrections for these gradients. A cursory review of a +3.75 dBA correction roughly correlates to a road gradient of 23%. Road gradients around this percentage are common in mountainous areas of the State-controlled network throughout Queensland.

2.2.5 Traffic volumes

A cursory review of the traffic volumes used for modelling highlights no obvious ambiguities, provided the State-controlled road network is also overlayed. There are some minor variances that appear to be unclear for the change in volume. For example, the traffic volume at the southern end of Mt Cotton Road reduces from 7,442 vpd to 7,231 vpd as the road approaches the State-controlled Mt Cotton – Broadwater Road, where a slight increase in volume is expected. Nevertheless these variations are considered negligible in calculating the noise level from the road.

The use of the AWDT traffic volume instead of the 18-hour volume from 6am to 12 midnight is again conservative, however by a factor considered negligible in terms of changes in noise level.

2.2.6 Heavy vehicles

A cursory review of the traffic volumes used for modelling highlights no obvious ambiguities in the distribution of heavy vehicles throughout the local road network.

2.2.7 x58 x63 x68 x73 (distances for noise categories)

The DTMR buffers were compared against noise contours for the same dBA noise levels generated by SoundPLAN noise modelling. The SoundPAN model was a flat earth noise model that considered the noise impact from all roads within a search radius of 1,000m. Isolated sections of straight road returned SoundPLAN noise contours that correlated closely with the DTMR buffers, suggesting the tabulated x58 to x73 setback distances are accurate. Further discussion on the appearance of the buffers is provided in Section 2.3.1.

A second review compared the setback distances against predicted noise levels calculated using the CoRTN equations. There is confidence that the CoRTN algorithms have been calculated in accordance with the standard, however has not been verified without understanding the level of ground absorption adopted throughout the project (assumed to be 100% soft ground).

All roads within the RCC dataset have been assigned a corresponding noise category 4 buffer which is not recommended as the attributes for some roads strongly suggest that they have a calculated sound power level below the noise level needed to justify a noise category 4. The minimum value within the roads dataset for setback distance for noise category 4 for these roads is 3.5 m, when it's clear that noise levels to warrant this classification do no occur.

It is strongly recommended that for any sections of road where the distance for noise category 4 is below 7.5 m, all reference to a noise category 4 is removed. Placing a noise category 4 buffer for these roads will be questioned by the community and consultants, which may then create a loss of confidence for the remainder of the project.

This would be a straight forward task for DTMR or RCC to complete, allowing the opportunity to address other concerns raised within this review concurrently. Alternatively, re-running the noise contours in SoundPLAN is again likely to remove this error (refer Section 2.3.1).

2.3 Modelling outputs

The noise categories appear to be calculated buffer distances from the road source lines. The distance for each buffer has been calculated according to the CoRTN algorithms, with the buffer of each road segment dissolved to create continuous polygons throughout the road network. It appears as though the noise categories have correctly been façade corrected.

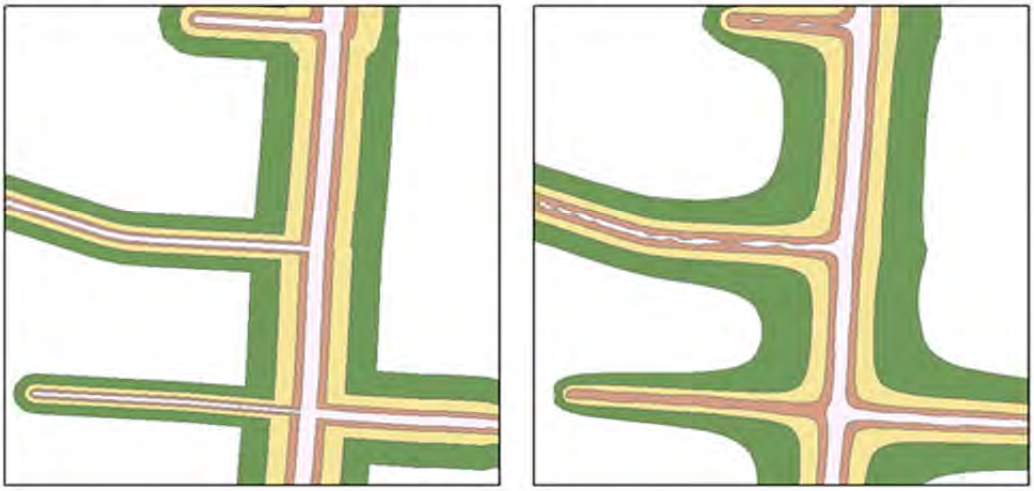
The sections below provide a review of the outputs and alterative options that may be considered by RCC for the calculation and post processing of this dataset.

2.3.1 Consideration 1: Recalculation of the contours using SoundPLAN, instead of GIS

As a test run, the State-controlled road network and the RCC road network were brought into SoundPLAN and populated with the traffic data available. All roads we set to a flat earth digital ground model (DGM) and noise levels were calculated throughout the Redland LGA at a resolution of 10 m.

The GIS contours (buffers created by DMTR) where compared against the SoundPLAN contours. An example of this comparison is presented in **Figure 5**.

Figure 5 GIS (left) versus SoundPLAN (right) contours



It is noted that for TNCs along straight sections of relatively flat road, both datasets appear similar. This is very positive as it demonstrates that the CoRTN algorithms used by DTMR to generate the buffers are accurate when compared to the contours created within the noise modelling package.

One limitation of the GIS buffers is where roads merge. Within SoundPLAN, the collective noise level from the two (or more) roads at an intersection is calculated, pushing the noise levels (and subsequent categories) away from the road corridor. The GIS buffers do not combine the noise levels. This results in the noise levels near intersections being lower than what would be expected on site.

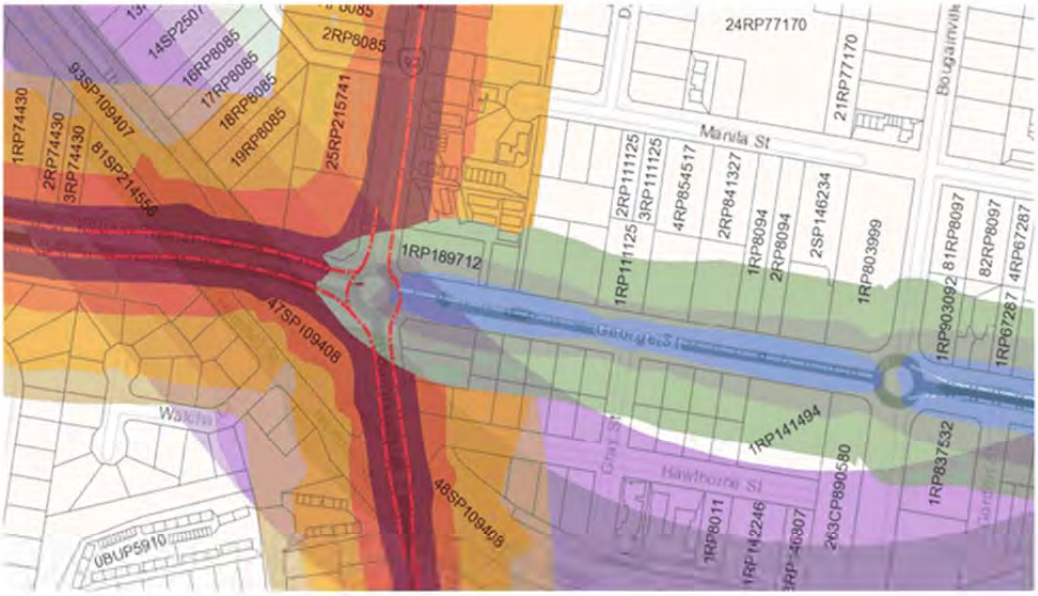
Due to the modelling methodology there is no consideration of the screening benefit of buildings, barriers, or terrain. As such generally the noise contours are expected to be overly conservative, mitigating this risk of under prediction at intersections and interchanges. Nevertheless the result of this method is that the TNCs appear over simplified.

Recalculation of the roads in an established model, with no other elements such as barriers, buildings or terrain can be calculated internally by DTMR if RCC do not have access to a SoundPLAN licence. Alternatively Ambient are happy to re-run the calculation for RCC if desired.

2.3.2 Consideration 2: Merging of all noise categories

Figure 6 below is an extract from an area of land within Logan City. Logan City has basic noise categories for their designated road network, calculated in noise modelling software through the combination of roads and terrain only. In Figure 6 the local road (blues), State-controlled road (reds/browns) and rail noise categories (purple) are all displayed.

Figure 6 State-controlled road, local road and rail noise categories



Experience with many end users of these noise categories, including the general public and builders, suggests that numerous overlays are confusing. In the image above, a property can fall into noise category 2 for State-controlled roads, noise category 3 for rail and noise category 1 for the local road network. If the highest noise category overrules all others regardless of the source, and if the construction requirements don't differ, it seems redundant to the community to have to check against all three.

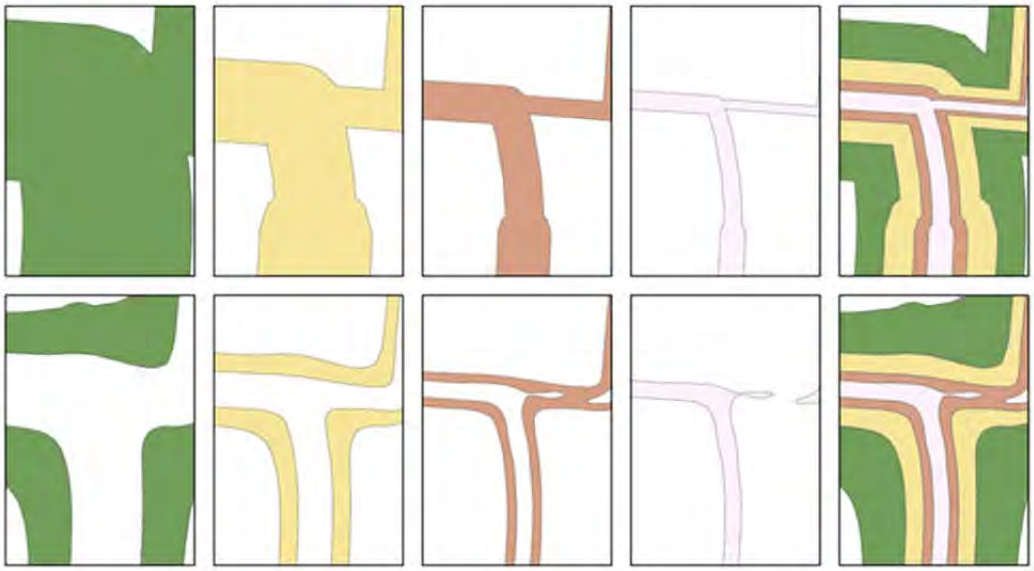
When further assessment is required by an acoustic consultant for a proposed development, the noise source distinction is paramount. However as a screening tool, which is an aim of the QDC MP4.4 noise categories, there may be benefit in a singular layer that incorporates all three sources.

This task can again be completed through RCC's or DTMR's GIS team. Alternatively Ambient are happy to assist. If the noise categories are recalculated through SoundPLAN for the road network, the State-controlled and local roads can be combined (pending approval and delivery of the State-controlled road and rail datasets). This would create a merged dataset for roads instantly when the noise categories are exported.

2.3.3 Consideration 3: Noise categories as 'bands', rather than 'areas'

In exporting the calculated noise levels as noise contours, consideration may be made to generate the noise categories as 'bands' rather than 'areas'. The distinction between the two is presented in Figure 7.

Figure 7 Noise categories as areas (top), and as bands (bottom)



When noise contours are exported as areas (top row), as is the case for the RCC dataset, the extents of the polygon can pass over adjoining areas. For example, the extents of noise category 4 (light pink) in the top row sit over categories 3 (red), 2 (yellow) and 1 (green), creating a layered dataset when they are all combined (top right). Visually this is not an issue, however (depending on the RCC online portal requirements), if a user clicks in an area defined as category 3, they also click within the extents for category 2 and again for category 1, which may not return a single, accurate value.

The second row presents the same noise categories, however as bands. This ensures that in any given location, only one value is available.

Again this task can be completed through RCC's or DTMR's GIS team. Alternatively Ambient are happy to assist. If the noise categories are recalculated through SoundPLAN for the road network, the State-controlled and local roads can be combined, creating a merged dataset for roads instantly when the noise categories are exported – and exported directly into bands.

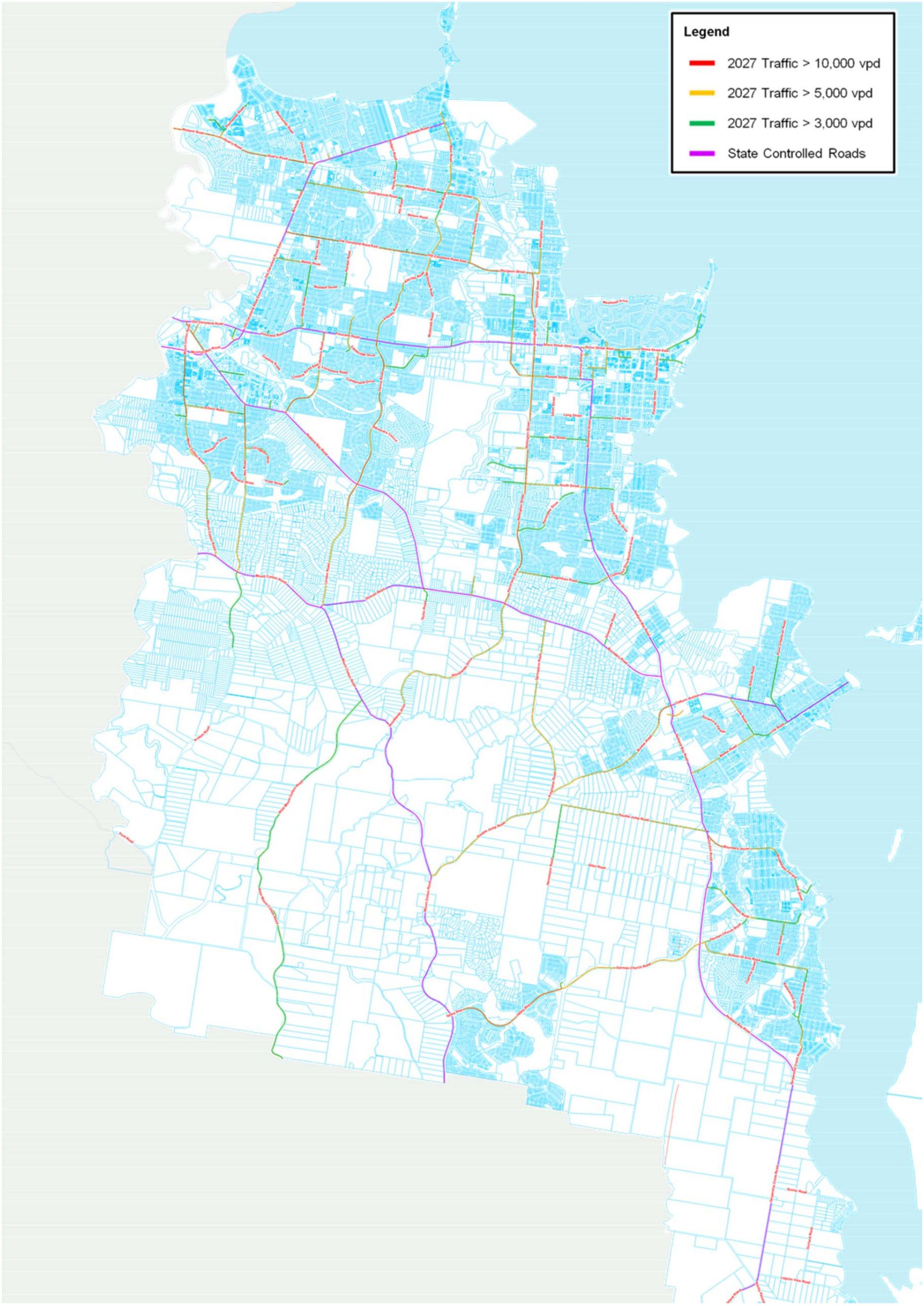
3 Conclusion

Herein completes Ambient's review of the inputs, methodology and outputs of the TNCs developed for the RCC local government area. This review is relatively high level and if required, a more thorough review can be completed at RCC's request.

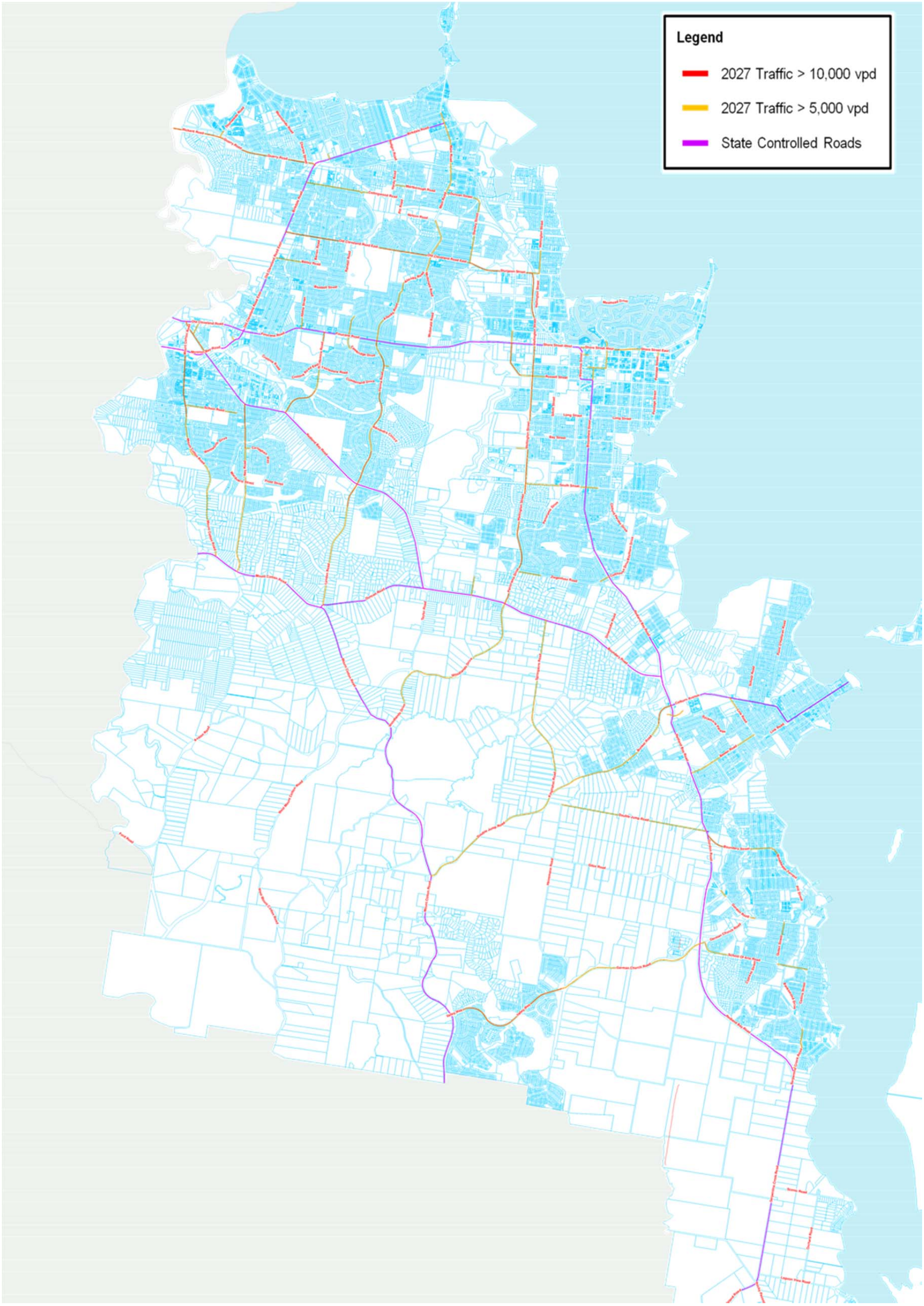
The approach adopted by RCC in determining the transport noise categories is 'fit for purpose' for designating local roads as transport noise corridors in Redland City – as per the requirements of 246X of the Building Act 1975".

Nevertheless review has highlighted a number of concerns and improvements that RCC may wish to consider improving the accuracy of the TNCs and limit adverse comment from the community. Many improvements can be addressed through construction of a strategic noise model for the Redland local government area.

Looking beyond the delivery of TNCs only, a city noise map would enable noise levels to be calculated at all floors to consider noise impacts above the ground floor. Industrial noise can also be included to consider the impacts of new industry or requests for changes to current operations. The model can also be used to create an air quality overlay to assist in development, in the same manner as the TNCs, and a noise map can provide council with a reference when address noise complaints.


Legend
2027 Traffic > 10,000 vpd
2027 Traffic > 5,000 vpd
2027 Traffic > 3,000 vpd
State Controlled Roads


Russell Island
Legend
2027 Traffic > 10,000 vpd
2027 Traffic > 5,000 vpd
2027 Traffic > 3,000 vpd
State Controlled Roads
Canaipa Road
Note: High Street on Russell Island is the only local road on the Southern Moreton Bay Islands and North Stradbroke Island that is predicted to have an average traffic volume of 3,000 vehicles per day by 2027.
0 165 330 660 Meters


Legend
2027 Traffic > 10,000 vpd
2027 Traffic > 5,000 vpd
State Controlled Roads


Legend
TNC - Category 4
TNC - Category 3
TNC - Category 2
TNC - Category 1
State Controlled Roads


Legend
TNC - Category 4
TNC - Category 3
TNC - Category 2
TNC - Category 1
State Controlled Roads

13.8 CITY PLAN FUTURE AMENDMENTS TO FEES & CHARGES

Objective Reference:

Authorising Officer: **Louise Rusan, General Manager Community & Customer Services**

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

Report Author: **Jessica Cameron, Principal Advisor Business Planning & Implementation**

Attachments: **1. City Plan Future Amendments to Fees & Charges**

PURPOSE

The purpose of this report is to seek Council approval to amend the 2018/2019 Fees and Charges Schedule as detailed.

BACKGROUND

The 2018/2019 Fees and Charges Schedule was approved by Council on the 25 June 2018. Due to the implementation of City Plan, amendments to the approved fees and charges descriptions and structure are required. New fees are included for assessment under the *Environmental Offsets Act 2014* and there are also some minor administrative matters included in the report for consideration.

ISSUES

There are 55 minor amendments proposed to the approved 2018/2019 Fees and Charges Schedule as follows:

- City Plan implementation has resulted in the descriptions and final charges to be amended
- New fee required for assessment under the *Environmental Offsets Act 2014*
- Unit description amended for clarity
- Removal of fees from City Planning and Assessment fee register due to City Plan implementation
- Charge amounts increased to align with general fees.

STRATEGIC IMPLICATIONS

Legislative Requirements

S.97 of the *Local Government Act 2009* (the Act) allows a cost recovery fee to be levied. The proposed amendments to the fees and charges schedule are in accordance with the Act.

Risk Management

No risks identified.

Financial

The proposed fees and charges amendments will have an impact on the City Planning and Assessment Group 2018/2019 predicted revenue.

People

No impacts identified.

Environmental

There are no known impacts to the environment.

Social

No impacts identified.

Alignment with Council's Policy and Plans

This report supports Council's Corporate Plan 2015-2020 outcome area of Wise Planning and Design in delivering an effective and efficient development assessment process that is consistent with legislation and community expectations.

CONSULTATION

Financial Services Group has been consulted on the amendments and supports the recommendation of this report.

OPTIONS

Option One
That Council resolves to approve the amendments to the 2018/2019 Fees and Charges Schedule to commence on 8 October 2018 as per Attachment 1.

Option Two
That Council resolves to not approve the amendments to the 2018/2019 Fees and Charges Schedule.

OFFICER'S RECOMMENDATION

That Council resolves to approve the amendments to the 2018/2019 Fees and Charges Schedule to commence on 8 October 2018 as per Attachment 1.

Attachment 1 – City Plan future amendments to fees & charges

	Current fee description	New fee description	Current charge amount ($)	New charge amount ($)	Reason for change
	PLANNING ASSESSMENT				
1.	For all standard prelodgement meetings Note: Where the site is located within the Cleveland CBD Incentives Area, or is a declared Priority Development Area no charge will apply.	For all standard prelodgement meetings Note: Where the site is a declared Priority Development Area no charge will apply	$259.00	NA – no change	Fee description has been amended for clarity
2.	Changing of an approval, or referral agency response, where the change of approval is minor (Planning Act 2016 s81) - Single Dwelling Units, Ancillary uses and Home based business	NA – no change	$349.00	$350.00	Charge amounts increased by $1 to bring in line with the same fee listed under 'Operational Works General Fees'
3.	Changing of an approval, or referral agency response, where the change of approval is minor (Planning Act 2016 s81) - Other uses	NA – no change	$875.00	$876.00	
4.	Commercial – Material Change of Use – Category 2 - Commercial office, display and sale activity, garden centre, bulky goods showroom, hotel, nightclub, refreshment establishment, retail warehouse, shop, veterinary surgery, drive through restaurant, funeral parlour, car wash facility	Commercial – Material Change of Use – Category 2 - Office, outdoor sales, garden centre, showroom, hotel, nightclub, entertainment facility, food and drink outlet, shop, veterinary services, funeral parlour, car wash, adult store, bar, club, crematorium, hardware and trade supplies, market, wholesale nursery, winery	$5482.00 + $649.00 per 100m^2 of GFA above 500m^2	NA – no change	Fee description updated to bring in line with City Plan

	Current fee description	New fee description	Current charge amount ($)	New charge amount ($)	Reason for change
5.	Commercial – Material Change of Use – Category 3 - Service station	Commercial – Material Change of Use – Category 3 - Service station, shopping centre	$8081.00 + $632.00 per 100m^2 of GFA above 500m^2	NA – no change	Fee description updated to bring in line with City Plan
6.	Community – Material Change of Use – Category 1 - Place of worship, community facility, emergency services	Community – Material Change of Use – Category 1 - Place of worship, community use, emergency services, environmental facility, outstation	$1530.00	NA – no change	Fee description updated to bring in line with City Plan
7.	Community – Material Change of Use – Category 2 - Child care centre, cemetery, educational facility, hospital, institution, health care services	Community – Material Change of Use – Category 2 - Child care centre, cemetery, educational establishment, hospital, health care services, community care centre, detention facility	$5482.00 + $649 per 100m^2 of GFA above 500m^2	NA – no change	Fee description updated to bring in line with City Plan
8.	Industrial – Material Change of Use – Category 1 - Vehicle parking station	Industrial – Material Change of Use – Category 1 - Parking station	$2859.00 + $130.00 per car space	NA – no change	Fee description updated to bring in line with City Plan
9.	Industrial – Material Change of Use – Category 2 - Landscape supply depot, marine services	Industrial – Material Change of Use – Category 2 - Bulk landscape supplies, marine industry	$5487.00	NA – no change	Fee description updated to bring in line with City Plan
10.	Industrial – Material Change of Use – Category 3 - General industry, heavy industry, service industry, vehicle depot, vehicle repair premises, low impact industry, warehouse, high impact industry	Industrial – Material Change of Use – Category 3 - Low, medium and high impact industry, service industry, transport depot, warehouse, special industry	$5482.00 + $649.00 500m^2 of GFA above 500m^2	NA – no change	Fee description updated to bring in line with City Plan
11.	Infrastructure – Material Change of Use – Category 2 - Airport air services (includes helipad), passenger terminal, utility installation	Infrastructure – Material Change of Use – Category 2 - Air services (includes helipad), port services, utility installation, major electricity infrastructure,	$5482.00 + $649.00 500m^2 of GFA above 500m^2 if non GFA associated	NA – no change	Fee description updated to bring in line with City Plan

	Current fee description	New fee description	Current charge amount ($)	New charge amount ($)	Reason for change
		renewable energy facility, substation	with use then 649.00 per ha (>1 ha)		
12.	Other - Advertising device (operational works)	NA – fee to be removed from register	$531.00 + $204 per sign where more than 1	NA	Sign applications will be assessed under Subordinate Local Law 1.4 (Installation of Advertising Devices 2015)
13.	Other - Temporary use	NA – fee to be removed from register	$1480.00	NA	Temporary use will be exempt under City Plan, therefore no application/fee required
14.	Residential – Building Works – Category 1 - Communications structure, retaining wall, private tennis court, private swimming pool	Residential – Building Works – Category 1 - Private tennis court, private swimming pool	$520.00	NA – no change	Fee description updated to bring in line with City Plan
15.	Residential – Material Change of Use and Building Works – Category 2 - Building Works - domestic outbuilding, Building Works - on-site raising and re-location, Building Works - community residence, Home based business, Estate Sales office, Bed and breakfast, Domestic Additions.	Residential – Material Change of Use and Building Works – Category 2 - Building Works - domestic outbuilding, Building Works - on-site raising and re-location, building works - secondary dwelling, Building Works - community residence, Home based business, Estate Sales office, Domestic Additions.	$1317.00	NA – no change	Fee description updated to bring in line with City Plan
16.	Residential – Material Change of Use – Category 3 - Caretakers dwelling, display dwelling, community residence	Residential – Material Change of Use – Category 3 - Caretakers accommodation, sales office, dwelling house (including secondary dwelling), community residence, rural worker's accommodation	$1973.00	NA – no change	Fee description updated to bring in line with City Plan
17.	Residential – Material Change of Use – Category 4 - Dual occupancy	Residential – Material Change of Use – Category 4 - Dual occupancy, nature based tourism, non-resident workforce	$3175.00	NA – no change	Fee description updated to bring in line with City Plan

	Current fee description	New fee description	Current charge amount ($)	New charge amount ($)	Reason for change
		accommodation			
	Current fee description	**New fee description**	**Current charge amount ($)**	**New charge amount ($)**	**Reason for change**
18.	Residential – Material Change of Use – Category 4 - Aged persons and special needs housing (comprising units), mobile home park, apartment building, tourist accommodation, tourist park	Residential – Material Change of Use – Category 4 - Retirement facility and residential care facility (comprising units), relocatable home park, multiple dwelling, short term accommodation, tourist park, rooming accommodation, resort complex	$5249.00 + $310.00 per unit over 5 units	NA – no change	Fee description updated to bring in line with City Plan
19.	Residential – Material Change of Use – Category 4 - Aged persons and special needs housing (comprising beds)	Residential – Material Change of Use – Category 4 - Residential care facility (comprising beds)	$5249.00 + $155.00 per bed over 5 beds	NA – no change	Fee description updated to bring in line with City Plan
20.	Rural – Material Change of Use – Category 1 - Agriculture, roadside stall, forestry	Rural – Material Change of Use – Category 1 - Animal husbandry, Roadside stall, cropping, permanent plantation	$1531.00	NA – no change	Fee description updated to bring in line with City Plan
21.	Rural – Material Change of Use – Category 2 - Animal keeping, intensive agriculture, rural enterprise, produce store	Rural – Material Change of Use – Category 2 - Animal keeping, Intensive animal industry, Rural industry, agricultural supplies store, aquaculture, intensive horticulture	$5482.00 + $649 per 100m^2 of GFA above 500m^2	NA – no change	Fee description updated to bring in line with City Plan
22.	Sport & Recreation – Material Change of Use – Category 1 - Indoor recreation facility	Sport & Recreation – Material Change of Use – Category 1 - Indoor sport and recreation, function facility, theatre	$5482.00 + $649 per 100m^2 of GFA above 500m^2	NA – no change	Fee description updated to bring in line with City Plan
23.	Sport & Recreation – Material Change of Use – Category 2 - Outdoor recreation facility	Sport & Recreation – Material Change of Use – Category 2 - Outdoor sport and recreation	$5482.00 + $649 per ha (>1ha)	NA – no change	Fee description updated to bring in line with City Plan
24.	NA – new fee to be added to register	Sport & Recreation – Material Change of Use – Category 3	-	10,964.00 plus 1,298 per ha (>1	New material change of use category for Sport and Recreation

	Current fee description	New fee description	Current charge amount ($)	New charge amount ($)	Reason for change
		- Major sport, recreation and entertainment facility, motor sport facility, tourist attraction		ha)	added. Charge was benchmarked against Category 2 Sport and Recreation fee and then doubled
25.	Planning and Development Certificates - Urgent standard search	NA – fee to be removed from register	$950.00	NA	This service is no longer offered as it takes the same amount of time to process an urgent standard search as it does for just a standard search. Customer shouldn't be charged more when the processing time is the same for both services
26.	Reconfiguration - Overlay Assessment (where 2 to 49 lots applied for) - Acid Sulfate Soils	NA – fee to be removed from register	$539.00	NA	City Plan does not have an Acid Sulfate Soils overlay.
27.	Reconfiguration - Overlay Assessment (where 2 to 49 lots applied for) - Bushfire hazard, electricity infrastructure, heritage place and character precinct, protection of the poultry industry, canal and lakeside structures	Reconfiguration - Overlay Assessment (where 2 to 49 lots applied for) - Bushfire hazard, regional infrastructure corridors and substations, Heritage	$1077.00	NA – no change	Fee description updated to bring in line with City Plan
28.	Reconfiguration - Overlay Assessment (where 2 to 49 lots applied for) - Road and rail noise, water supply catchments, waterways, wetlands and Moreton	Reconfiguration - Overlay Assessment (where 2 to 49 lots applied for) - Transport noise corridor, water resource catchments, waterway corridors and wetlands, coastal protection (erosion prone areas), landslide hazard	$2153.00	NA – no change	Fee description updated to bring in line with City Plan
29.	Reconfiguration - Overlay Assessment (where 2 to 49 lots applied for) - Extractive resources, flood prone, storm tide & drainage constrained land, habitat protection, landslide hazard	Reconfiguration - Overlay Assessment (where 2 to 49 lots applied for) - Extractive resources, Flood and storm tide hazard, environmental significance	$3768.00	NA – no change	Fee description updated to bring in line with City Plan

	Current fee description	New fee description	Current charge amount ($)	New charge amount ($)	Reason for change
	ENGINEERING & ENVIRONMENT				
30.	NA – new fee to be added to register	Operational work involving clearing of native vegetation within an area - Urban area (as defined in the Redland City Plan Part 1.7.3)	-	$388.00 per application	New fee to be added to register as City Plan requirement. Charge has been benchmarked against Ipswich City Council, Sunshine Coast Council and Moreton Bay Regional Council and averaged out between $75 - $2,1000
31.	NA – new fee to be added to register	Operational work involving clearing of native vegetation within an area - Non-urban area (as defined in the Redland City Plan Part 1.7.3)	-	$1,260.00 per application	
32.	NA – new fee to be added to register	Offsets Assessment (in accordance with the Environmental Offsets Act 2014) - Where area of impact is less than 2,500m²	-	$1,157.00 per application	New fees to be added to register
33.	NA – new fee to be added to register	Offsets Assessment (in accordance with the Environmental Offsets Act 2014) - Where area of impact is between 2,500m² - 9,999m²	-	$1,809.00 per application	
34.	NA – new fee to be added to register	Offsets Assessment (in accordance with the Environmental Offsets Act 2014) - Where area of impact is 1 hectare or greater	-	$2,361.00 per application	
35.	Landscaping Assessment - Commercial, community and other uses (includes 2 inspections)	NA – no change	$1,038 (base fee) plus $24 per 100m² of GFA above 500m² plus $24 per 500m² of non GFA associated with the use above 500m² or part thereof	$1,038 plus $0.50 per m² of GFA above 500m² plus 1 per m² of non GFA associated with the use above 500m²	There has been confusion in the past over how to calculate this charge. Charge description has been amended for clarity

	Current fee description	New fee description	Current charge amount ($)	New charge amount ($)	Reason for change
36.	Landscaping Assessment - Industrial and infrastructure uses (includes 2 inspections)	NA – no change	$1,038 (base fee) plus $24 per 100m² of GFA above 500m² plus $24 per 500m² of non GFA associated with the use above 500m²	$1,038 plus $0.50 per m² of GFA above 500m² plus $1 per m² of non GFA associated with the use above 500m²	There has been confusion in the past over how to calculate this charge. Charge description has been amended for clarity
37.	Operational Works associated with Material Change of Use - Commercial, community and other uses (includes 2 inspections)	NA – no change	$2,112 (base fee) plus $90 per 100m² of GFA above 100m² plus $115 per 1,000m² of non GFA associated with the use above 1,000m²	$2,112 plus $0.90 per m² of GFA above 100m² plus $2 per m² of non GFA associated with the use above 1,000m²	There has been confusion in the past over how to calculate this charge. Charge description has been amended for clarity
38.	Operational Works associated with Material Change of Use - Industrial and infrastructure uses (includes 2 inspections)	NA – no change	$2,519 (base fee) plus $90 per 100m² of GFA above 100m² plus $115 per 1,000m² of non GFA associated with the use above 1,000m²	$2,519 plus $0.90 per m² of GFA above 100m² plus $2 per m² of non GFA associated with the use above 1,000m²	There has been confusion in the past over how to calculate this charge. Charge description has been amended for clarity
39.	Operational Works General Fees - External infrastructure where not associated with reconfiguration of lots	Operational Works General Fees External infrastructure (including sewer, water supply, stormwater and roads)	$1,023.00 per 100m	$1,023 plus $15 per metre over 100m	There has been confusion in the past over how to calculate this charge. Charge description has been amended for clarity
40.	Operational Works General Fees	NA – fee to be removed from register	$1023.00	NA	Charge to be removed from

	Current fee description	New fee description	Current charge amount ($)	New charge amount ($)	Reason for change
	- External infrastructure (including sewer, water supply, stormwater and roads)				register as it is already covered in the above charge description
41.	Bulk Earthworks - Bulk earthworks (where reconfiguration approval granted)	NA – no change	$3,943 plus $661 per ha (> 1 ha)	$3,943 plus $0.70 per m² over 1,000m²	There has been confusion in the past over how to calculate this charge. Charge description has been amended for clarity
42.	Excavation, Fill and/or Retaining Walls - Minor – operational works involving either of the following: Filling and/or excavation up to 100 cubic metres; or retaining structure between 1-1.5 metres	Excavation, Fill and/or Retaining Walls/Fencing - Minor – operational works involving either of the following: Filling and/or excavation up to 100 cubic metres; or retaining structure between 1-1.5 metres; or fencing proposed within 9 metres of a revetment wall	$854.00	NA – no change	Charge description amended to include fencing and allows clarity
43.	Negotiated Decision Request - Negotiated decision request – dwelling house and ancillary uses – minor	NA – no change	$343.00 per application	$349.00 per application	Charge amount increased by $6 to bring in line with the same fee listed under 'City Planning and Assessment General Fees'
44.	Negotiated Decision Request - Negotiated decision request – other uses – minor	NA – no change	$836.00 per application	$852.00 per application	Charge amount increased by $16 to bring in line with the same fee listed under 'City Planning and Assessment General Fees'
45.	Negotiated Decision Request - Negotiated decision request – other uses (where the negotiated request is not minor)	NA – no change	20% of current application fee or $836 whichever is greater	20% of current application fee or $852 whichever is greater	Charge amount increased by $16 to bring in line with the same fee listed under 'City Planning and Assessment General Fees'
46.	Negotiated Decision Request - Representations received in regard to an Action Notice (as per s412 of the repealed Sustainable Planning Act 2009)	NA – no change	$836 per application	$852.00 per application	Charge amount increased by $16 to bring in line with the same fee listed under 'City Planning and Assessment General Fees'
47.	Processing Bond Fees	NA – no change	$394.00	$394.00	Unit description amended for

	Current fee description	New fee description	Current charge amount ($)	New charge amount ($)	Reason for change
	- Co-ordination of uncompleted works or As Constructed bonds for works $10,000 or less		per bond	per separate bond payment	clarity
48.	Processing Bond Fees - Co-ordination of uncompleted works or As Constructed bonds for works more than $10,000	NA – no change	$919.00 per bond	$919.00 per separate bond payment	Unit description amended for clarity
49.	Processing Bond Fees - Exchange, reduction and/or transfer of existing bonds with a bond of equal or lesser amount	NA – no change	$604.00 per bond	$604.00 per separate bond payment	Unit description amended for clarity
50.	Residential Crossover - Domestic driveway crossover (assessable against the Redland Planning Scheme). (Includes one inspection)	Residential Crossover - Domestic driveway crossover – where not self-assessable (Assessable against the Redland City Plan 2018). (Includes one inspection)	$328.00	NA – no change	Charge description amended for better customer clarity and include City Plan instead of RPS
51.	Plan Sealing - Deed of agreement for Uncompleted Works Bond	NA – fee to be removed from register	$655.00	NA	Charge to be deleted – no longer required
	GROUP SUPPORT				
52.	Property Search - Domestic Conveyance Property Search	NA – no change	$313.00	$308.50	CPI increase was calculated incorrectly
	DEVELOPMENT CONTROL				
53.	Advanced Technology Sign	Temporary Advanced Technology Sign	*High impact 4m^2 and over* Single display period up to 7 days $735.00 Multiple display period $1029.00 *Low impact less than 4m^2*	NA – no change	Administrative change to differentiate between temporary and permanent signs.

	Current fee description	New fee description	Current charge amount ($)	New charge amount ($)	Reason for change
			Single display period up to 7 days $417.90 Multiple display period $670.95		
54.	Advertising Signage	Advertising Signage Application for signage: advertising sign that includes permanent advanced technology sign	$531.00 + $204 per sign where more than 1 (City Planning and Assessment fee, as this was assessed under the RPS where there was no differentiation between advanced technology signs)	$1029 per sign plus $214.20 per additional advanced technology sign	Currently no fee for permanent advanced technology (LED) signs as these were assessed under the RPS. These types of signs attract a higher assessment fee than 'standard' sign types because they require a more rigorous assessment due to possible amenity and road safety impacts.
55.	NA – new fee to be added to register	Copy of Approval (includes Plans and Approval Letter)	NA – no current fee	$66.00	Administrative fee for council to provide a copy an Advertising Device approval. Fee is consistent with fee to provide a copy of a Decision Notice.

14 REPORTS FROM INFRASTRUCTURE & OPERATIONS

14.1 DRINKING WATER QUALITY MANAGEMENT PLAN ANNUAL REPORT

Objective Reference:

Authorising Officer: **Andrew Ross, Acting General Manager Infrastructure & Operations**

Responsible Officer: **Bradley Taylor, Group Manager Water & Waste Infrastructure**

Report Author: **Daniela Simon, Service Manager Water Quality and Environmental Compliance**

Attachments: **1. Redland Water DWQMP Annual Report 2017/18**

PURPOSE

The purpose of this report is to seek approval for the attached Redland Water Drinking Water Quality Management Plan (DWQMP) Annual Report.

The *DWQMP annual report* documents the performance of Redland Water's drinking water service with respect to water quality and performance in implementing the actions detailed in the DWQMP as required under sections 141 and 142 of the *Water Supply (Safety and Reliability) Act 2008* (the *Act*).

BACKGROUND

The *Act* requires Redland Water (RW) to submit its DWQMP annual report to the Queensland Water Supply Regulator (Department of Natural Resources, Mines & Energy (DNRME)) within 120 business days following the end of the financial year to which it relates. This report was prepared according to the "Water Quality and Reporting Guideline for a Drinking Water Service – September 2010" published by the Queensland Water Supply Regulator on the template provided.

The annual report states that drinking water supplied by Redland City Council (RCC) achieved 100% compliance with the Australian Drinking Water Guidelines for the parameters that were tested.

ISSUES

The purpose of the DWQMP annual report is to:

- report on the performance of RW's drinking water service with respect to water quality;
- report on the performance in implementing the actions detailed in the DWQMP;
- assist the water supply regulator to determine whether the approved DWQMP and any approved conditions have been complied with; and
- provide a mechanism for RW to report publicly on their performance in managing drinking water quality.

STRATEGIC IMPLICATIONS

Legislative Requirements

The *Act* requires RW to submit the DWQMP annual report. The updated DWQMP was submitted to the regulator on 14 June 2018 and the plan was approved by the regulator.

Risk Management

The DWQMP incorporates risk management. The water quality risk is listed in the risk register as "RWW-2" – Health effects from adverse water quality.

Financial

There is no direct impact on the budget from the adoption of the annual report; however future annual reports might be used to develop future budgets.

People

Key RW staff that improved the DWQMP are identified in Appendix B of the annual report.

Environmental

There are no known environmental implications.

Social

The annual report will demonstrate a direction for the RW business that aims to support transparency, accountability and to build confidence in the quality of drinking water supplied to the Redland community.

Alignment with Council's Policy and Plans

The annual report supports Council's corporate plan in respect to providing essential physical infrastructure that supports community well-being and manages Council's existing infrastructure assets to ensure current service standards are maintained or improved.

The DWQMP has to be consistent with other RCC strategic documents such as the corporate plan, Redland Water annual performance plan and the Redland Water Netserv plan.

CONSULTATION

The Business Partnering team was consulted in the preparation of this report.

OPTIONS

Option One

That Council resolves to endorse the Drinking Water Quality Management Plan Annual Report 2017/18 as attached.

Option Two

That Council resolves to not endorse the Drinking Water Quality Management Plan Annual Report 2017-18.

OFFICER'S RECOMMENDATION

That Council resolves to endorse the Drinking Water Quality Management Plan Annual Report 2017/18 as attached.

REDLAND WATER

SPID: 541

Drinking Water Quality Management Plan (DWQMP) – Annual Report

2017/18

REDLAND CITY COUNCIL
REDLAND WATER
PO BOX 21 CLEVELAND QLD 4163
07 3829 8999
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Redland WATER

Redland CITY COUNCIL

ADWG 2004	Australian Drinking Water Guidelines (2004). Published by the National Health and Medical Research Council of Australia
ADWG 2011	Australian Drinking Water Guidelines (2011). Published by the National Health and Medical Research Council of Australia
E. coli	Escherichia coli, a bacterium which is considered to indicate the presence of faecal contamination and therefore potential health risk
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
ALS	ALS Laboratory Group
CFU/100mL	Colony forming units per 100 millilitres
<	Less than
>	Greater than
QUU SAS	Queensland Urban Utilities Scientific Analytical Services

1. Introduction

This report documents the performance of Redland Water's drinking water service with respect to water quality and performance in implementing the actions detailed in the DWQMP as required under the *Water Supply (Safety and Reliability) Act 2008* (the Act).

The report assists the Regulator to determine whether the approved DWQMP and any approval conditions have been complied with and provides a mechanism for providers to report publicly on their performance in managing drinking water quality.

It has been prepared in accordance with the *Guideline for Service Provider Annual Reports, July 2013* published by the Department of Natural Resource, Mines and Energy, Queensland, accessible at www.dnrme.qld.gov.au.

2. Overview of operations

Redland City Council covers an area of approximately 537 square kilometers and has a population of approximately 150,000 people. Redland Water provides drinking water to Redland City residents through four water supply schemes:

- Redland City and Southern Moreton Bay Islands Supply Scheme
- Dunwich Supply Scheme
- Amity Point Supply Scheme
- Point Lookout Supply Scheme

Redland Water is responsible for receiving bulk water from Seqwater and delivering it to residents through its distribution network. This is done whilst ensuring that the water meets the Australian Drinking Water Guidelines (ADWG).

Redland Water manages drinking water quality through an approved Drinking Water Quality Management Plan (DWQMP) which protects public health by ensuring the provision of a safe water supply.

Redland Water manages, operates and maintains pumping stations and mains as part of its distribution network. Redland Water manages, operates and maintains reservoirs in each of the North Stradbroke Island (NSI) township schemes. Seqwater owns and operates all mainland reservoirs. Redland Water does not operate any re-chlorination facilities in its network.

3. Notifications to the Regulator under sections 102 and 102A of the Act

This financial year there was no instance where the Regulator was notified under sections 102 or 102A of the Act.

3.1 Non-compliances with the water quality criteria and corrective and preventive actions undertaken

100% compliance with the water quality criteria was achieved in all four water supply schemes.

3.2 Prescribed incidents or events reported to the Regulator and corrective and preventive actions undertaken

Incident description: No incident was reported.

Corrective and preventative actions: Nil

4. Actions taken to implement the DWQMP

4.1 Progress in implementing the risk management improvement program

Refer to Appendix B for a summary of progress in implementing each of the Improvement Program actions.

4.2 Revisions made to the operational monitoring program to assist in maintaining compliance with the water quality criteria[1] in verification monitoring

Verification monitoring is the only available option to monitor drinking water quality in the Redland City Council area. Seqwater owns, operates and monitors all chlorine dosing systems at the treatment plants and reservoirs and is responsible for operational monitoring of the system.

4.3 Amendments made to the DWQMP

DWQMP was reviewed on 4 June 2018 and was submitted for approval to the Regulator on 14 June 2018.

5. Customer complaints related to water quality

Redland Water is required to report on the number of complaints, general details of complaints, and the responses undertaken.

Throughout the year the following complaints about water quality were received.

Table 1 – complaints about water quality, (including per 1000 connections)

Water Supply Scheme	*Suspected Illness*	*Discoloured Water*	*Taste and Odour*	*Total*
Redland City Mainland Water Supply Scheme	0.03	2.02	0.48	2.54
Dunwich Water Supply Scheme	0.00	2.16	0.00	2.16
Point Lookout Water Supply Scheme	0.00	0.84	1.67	2.51
Amity Point Water Supply Scheme	0.00	2.49	0.00	2.49
Total	0.03	2.01	0.50	2.53

[1] Refer to *Water Quality and Reporting Guideline for a Drinking Water Service* for the water quality criteria for drinking water

5.1 Suspected illness

Complaints are sometimes received from customers who suspect their water may be associated with an illness they are experiencing. Redland Water investigates each complaint relating to alleged illness from our water supply, typically by taking samples at the customer's water meter and closest verification sampling point and testing them for the presence of *E. coli, Total coliforms* and free chlorine concentration.

During 2017/18 there were no confirmed cases of illness arising from the water supply system.

As a response to any suspected illness customer complaint, samples were taken and tested for E.coli, Total coliforms and free Chlorine.

All samples tested complied with ADWG for parameters tested. Investigation of each complaint found no public health risks.

5.2 Discoloured water

As a response to any discoloured water customer complaints, various water mains were flushed in the vicinity of the complaint.

A regular mains flush program is in place to address this issue.

Dirty water complaints were related to dead-end mains and distribution system areas with low consumption. Associated areas were flushed to remove the dirty water and to increase chlorine residual.

5.3 Taste and odour

As a response to any taste and odour customer complaints, samples were collected and tested for taste and odour and free chlorine concentration test.

All samples tested complied with ADWG for parameter tested.

Field staff explained to all customers the importance of free chlorine in drinking water.

The taste and odour complaints received are usually related to the taste of chlorine in the water supply. Investigation of each complaint found no public health risks.

Redland Water has also set up an internal water taste and odour panel to assist in determining the veracity of customer complaints.

6. Outcome of the review of the DWQMP and how issues raised have been addressed

The review of DWQMP included an update of demand projections, network information and verification monitoring water quality data. The information related to current use of EPI was updated. There were no changes made to risk rating. Please refer the Appendix B in regard to the required actions to be closed out.

The next internal review of the DWQMP is due before 1 July 2020.

6.1 Hazards and hazardous events that affected the quality of drinking water during the year and which were not addressed in the DWQMP

There were no new hazards or hazardous events identified during the year that were not addressed in the approved DWQMP

7. Findings and recommendations of the DWQMP auditor

There was no external DWQMP audit carried out in 2017/18 Next external DWQMP audit is due by 1 July 2020.

Appendix A – Summary of compliance with water quality criteria

The results from the verification monitoring program have been compared against the levels of the water quality criteria specified by the Regulator in the *Water Quality and Reporting Guideline for a Drinking Water Service*.

The reported statistics do not include results derived from repeat samples, or from emergency or investigative samples undertaken in response to an elevated result

Table 2 – Chemical verification monitoring results

Table 3 – Reticulation E.coli verification monitoring results

Table 2 - Verification Monitoring Redland City and Southern Moreton Bay Islands Supply Scheme July 2017 - June 2018

Parameter	Laboratory Name	Unit of Measure	Limit of Reporting	Frequency of Sampling	Total No of Samples Taken	No of Samples in which Parameter Detected	No of Samples Exceeding Health Guidelines Value	Min Value	Max value	Average value
Alkalinity	Redland Laboratory	mg/L	1	Quarterly	20	20	~	30	69	51
Aluminium	QUU SAS	mg/L	0.001	Quarterly	20	20	~	0.02	0.06	0.04
Arsenic	QUU SAS	mg/L	0.001	Quarterly	20	0	0	<0.001	<0.001	0
Boron	QUU SAS	mg/L	0.001	Quarterly	20	20	0	0.011	0.030	0.018
Cadmium	QUU SAS	mg/L	0.001	Quarterly	20	0	0	<0.001	<0.001	0
Calcium	QUU SAS	mg/L	0.1	Quarterly	20	20	~	18.0	24.0	21.3
Chloride	QUU SAS	mg/L	1	Quarterly	20	20	~	20	60	34
Chlorine free	Redland Laboratory	mg/L	0.1	Weekly	2295	2240	0	<0.1	2.2	0.8
Chromium	QUU SAS	mg/L	0.001	Quarterly	20	7	0	<0.001	0.001	0
Colour true	QUU SAS	Pt/Co U	0.5	Quarterly	20	10	~	<0.5	0.9	0
Conductivity	Redland Laboratory	uS/cm	1	Quarterly	20	20	~	180	380	256
Copper	QUU SAS	mg/L	0.001	Quarterly	20	20	0	0.003	0.032	0.009
Cyanide	ALS	mg/L	0.004	Quarterly	20	0	0	<0.004	<0.004	0
Fluoride	Redland Laboratory	mg/L	0.1	Weekly	191	191	0	0.2	1.0	0.6
Hardness	Redland Laboratory	mg/L	1	Quarterly	20	20	~	39	82	62
Iron	QUU SAS	mg/L	0.001	Quarterly	20	20	~	0.005	0.033	0.012
Lead	QUU SAS	mg/L	0.001	Quarterly	20	2	0	<0.001	0.001	0
Mercury	QUU SAS	mg/L	0.0001	Quarterly	20	0	0	<0.0001	<0.0001	0
Magnesium	QUU SAS	mg/L	0.01	Quarterly	20	20	~	1.2	7.0	3.6
Manganese	QUU SAS	mg/L	0.001	Quarterly	20	20	0	0.002	0.014	0.004
Molybdenum	QUU SAS	mg/L	0.001	Quarterly	20	0	0	<0.001	<0.001	0
Nickel	QUU SAS	mg/L	0.001	Quarterly	20	0	0	<0.001	<0.001	0
Nitrate	QUU SAS	mg/L	0.001	Quarterly	20	20	0	0.120	0.300	0.237
pH	Redland Laboratory	pH Units	0.1	Weekly	1896	1896	~	7.00	8.1	7.4
Potassium	QUU SAS	mg/L	0.01	Quarterly	20	20	~	0.53	2.60	1.30
Selenium	QUU SAS	mg/L	0.001	Quarterly	20	0	0	<0.001	<0.001	0
Silica	QUU SAS	mg/L	0.1	Quarterly	20	20	~	4.8	11.0	8.7
Sodium	QUU SAS	mg/L	1	Quarterly	20	20	~	12	35	20
Sulphate	Redland Laboratory	mg/L	1	Quarterly	20	20	0	1	43	14
Total Dissolved Solids	Redland Laboratory	mg/L	5	Quarterly	20	20	~	84	220	156
Total THMs	QUU SAS	ug/L	<10	Monthly	97	95	0	<10	220	85
Turbidity	Redland Laboratory	NTU	0.1	Weekly	901	901	~	<0.1	3.9	0.2
Zinc	QUU SAS	mg/L	0.001	Quarterly	20	17	0	<0.001	0.014	0.005

Table 2 -Verification Monitoring Amity Point Water Supply Scheme July 2017- June 2018

Parameter	Laboratory Name	Unit of Measure	Limit of Reporting	Frequency of Sampling	Total No of Samples Taken	No of Samples in which Parameter Detected	No of Samples Exceeding Health Guidelines Value	Min Value	Max value	Average value
Alkalinity	Redland Laboratory	mg/L	1	Quarterly	4	4	~	29	34	32
Aluminium	QUU SAS	mg/L	0.001	Quarterly	4	4	~	0.038	0.048	0.042
Arsenic	QUU SAS	mg/L	0.001	Quarterly	4	0	0	<0.001	<0.001	0
Boron	QUU SAS	mg/L	0.001	Quarterly	4	4	0	0.038	0.048	0.042
Cadmium	QUU SAS	mg/L	0.001	Quarterly	4	0	0	<0.001	<0.001	0
Calcium	QUU SAS	mg/L	0.1	Quarterly	4	4	~	8.9	9.3	9.1
Chloride	QUU SAS	mg/L	1	Quarterly	4	4	~	36	44	40
Chlorine free	Redland Laboratory	mg/L	0.1	Weekly	133	133	0	0.2	1.6	0.9
Chromium	QUU SAS	mg/L	0.001	Quarterly	4	0	0	<0.001	<0.001	0
Colour true	QUU SAS	Pt/Co U	0.5	Quarterly	4	2	~	<0.5	0.8	0
Conductivity	Redland Laboratory	µS/cm	1	Quarterly	4	4	~	180	220	203
Copper	QUU SAS	mg/L	0.001	Quarterly	4	4	0	0.003	0.030	0.011
Cyanide	ALS	mg/L	0.004	Quarterly	4	0	0	<0.004	<0.004	0
Fluoride	Redland Laboratory	mg/L	0.1	Weekly	55	55	0	0.2	0.9	0.8
Hardness	Redland Laboratory	mg/L	1	Quarterly	4	4	~	0.2	36	33
Iron	QUU SAS	mg/L	0.001	Quarterly	4	4	~	0.014	0.024	0.020
Lead	QUU SAS	mg/L	0.001	Quarterly	4	0	0	<0.001	<0.001	0
Mercury	QUU SAS	mg/L	0.0001	Quarterly	4	0	0	<0.0001	<0.0001	0
Magnesium	QUU SAS	mg/L	0.01	Quarterly	4	4	~	1.9	2.3	2.1
Manganese	QUU SAS	mg/L	0.001	Quarterly	4	0	0	<0.001	<0.001	0
Molybdenum	QUU SAS	mg/L	0.001	Quarterly	4	0	0	<0.001	<0.001	0
Nickel	QUU SAS	mg/L	0.001	Quarterly	4	0	0	<0.001	<0.001	0
Nitrate	QUU SAS	mg/L	0.001	Quarterly	4	4	0	0.220	0.300	0.260
pH	Redland Laboratory	pH Units	0.1	Weekly	104	104	~	7.5	8.0	7.6
Potassium	QUU SAS	mg/L	0.01	Quarterly	4	4	~	0.66	0.74	0.70
Selenium	QUU SAS	mg/L	0.001	Quarterly	4	0	0	<0.001	<0.001	0
Silica	QUU SAS	mg/L	0.1	Quarterly	4	4	~	7.0	8.4	7.6
Sodium	QUU SAS	mg/L	1	Quarterly	4	4	~	21	26	24
Sulphate	Redland Laboratory	mg/L	1	Quarterly	4	4	0	2	5	4
Total Dissolved Solids	Redland Laboratory	mg/L	5	Quarterly	4	4	~	110	120	115
Total THMs	QUU SAS	µg/L	<10	Monthly	12	12	0	14	49	33
Turbidity	Redland Laboratory	NTU	0.1	Weekly	55	55	~	0.2	1.6	0.2
Zinc	QUU SAS	mg/L	0.001	Quarterly	4	3	0	<0.001	0.004	0.002

Table 2 -Verification Monitoring Dunwich Water Supply Scheme July 2017 - June 2018

Parameter	Laboratory Name	Unit of Measure	Limit of Reporting	Frequency of Sampling	Total No of Samples Taken	No of Samples in which Parameter Detected	No of Samples Exceeding Health Guidelines Value	Min Value	Max value	Average value
Alkalinity	Redland Laboratory	mg/L	1	Quarterly	4	4	~	20	24	22
Aluminium	QUU SAS	mg/L	0.001	Quarterly	4	4	~	0.005	0.010	0.008
Arsenic	QUU SAS	mg/L	0.001	Quarterly	4	0	0	<0.001	<0.001	0
Boron	QUU SAS	mg/L	0.001	Quarterly	4	4	0	0.010	0.011	0.011
Cadmium	QUU SAS	mg/L	0.001	Quarterly	4	0	0	<0.001	<0.001	0
Calcium	QUU SAS	mg/L	0.1	Quarterly	4	4	~	8.7	9.9	9.1
Chloride	QUU SAS	mg/L	1	Quarterly	4	4	~	21	23	22
Chlorine free	Redland Laboratory	mg/L	0.1	Weekly	132	132	0	0.2	1.8	0.9
Chromium	QUU SAS	mg/L	0.001	Quarterly	4	0	0	<0.001	<0.001	0
Colour true	QUU SAS	Pt/Co U	0.5	Quarterly	4	1	~	<0.5	0.7	0
Conductivity	Redland Laboratory	µS/cm	1	Quarterly	4	4	~	120	130	128
Copper	QUU SAS	mg/L	0.001	Quarterly	4	4	0	0.009	0.026	0.016
Cyanide	ALS	mg/L	0.004	Quarterly	4	0	0	<0.004	<0.004	0
Fluoride	Redland Laboratory	mg/L	0.1	Weekly	55	55	0	0.3	0.9	0.9
Hardness	Redland Laboratory	mg/L	1	Quarterly	4	4	~	27	30	28
Iron	QUU SAS	mg/L	0.001	Quarterly	4	4	~	0.016	0.040	0.025
Lead	QUU SAS	mg/L	0.001	Quarterly	4	0	0	<0.001	<0.001	0
Mercury	QUU SAS	mg/L	0.0001	Quarterly	4	0	0	<0.0001	<0.0001	0
Magnesium	QUU SAS	mg/L	0.01	Quarterly	4	4	~	0.82	1.00	0.92
Manganese	QUU SAS	mg/L	0.001	Quarterly	4	0	0	<0.001	<0.001	0
Molybdenum	QUU SAS	mg/L	0.001	Quarterly	4	0	0	<0.001	<0.001	0
Nickel	QUU SAS	mg/L	0.001	Quarterly	4	0	0	<0.001	<0.001	0
Nitrate	QUU SAS	mg/L	0.001	Quarterly	4	4	0	0.075	0.090	0.082
pH	Redland Laboratory	pH Units	0.1	Weekly	104	104	~	6.9	7.9	7.4
Potassium	QUU SAS	mg/L	0.01	Quarterly	4	4	~	0.38	0.41	0.39
Selenium	QUU SAS	mg/L	0.001	Quarterly	4	0	0	<0.001	<0.001	0
Silica	QUU SAS	mg/L	0.1	Quarterly	4	4	~	9.0	10.3	9.7
Sodium	QUU SAS	mg/L	1	Quarterly	4	4	~	12	13	13
Sulphate	Redland Laboratory	mg/L	1	Quarterly	4	4	0	1	2	2
Total Dissolved Solids	Redland Laboratory	mg/L	5	Quarterly	4	4	~	68	80	77
Total THMs	QUU SAS	µg/L	<10	Monthly	12	10	0	<10	30	14
Turbidity	Redland Laboratory	NTU	0.1	Weekly	55	55	~	<0.1	0.4	0.2
Zinc	QUU SAS	mg/L	0.001	Quarterly	4	2	0	<0.001	0.002	0.001

Table 2 -Verification Monitoring Point Lookout Water Supply Scheme July 2017 - June 2018

Parameter	Laboratory Name	Unit of Measure	Limit of Reporting	Frequency of Sampling	Total No of Samples Taken	No of Samples in which Parameter Detected	No of Samples Exceeding Health Guidelines Value	Min Value	Max value	Average value
Alkalinity	Redland Laboratory	mg/L	1	Quarterly	4	4	~	14	19	16
Aluminium	QUU SAS	mg/L	0.001	Quarterly	4	4	~	0.020	0.026	0.022
Arsenic	QUU SAS	mg/L	0.001	Quarterly	4	0	0	<0.001	<0.001	0
Boron	QUU SAS	mg/L	0.001	Quarterly	4	4	0	0.017	0.018	0.018
Cadmium	QUU SAS	mg/L	0.001	Quarterly	4	0	0	<0.001	<0.001	0
Calcium	QUU SAS	mg/L	0.1	Quarterly	4	4	~	1.0	1.1	1.0
Chloride	QUU SAS	mg/L	1	Quarterly	4	4	~	47	48	48
Chlorine free	Redland Laboratory	mg/L	0.1	Weekly	136	136	0	0.2	1.5	1.0
Chromium	QUU SAS	mg/L	0.001	Quarterly	4	1	0	<0.001	0.001	0
Colour true	QUU SAS	Pt/Co U	0.5	Quarterly	4	1	~	<0.5	0.7	0
Conductivity	Redland Laboratory	µS/cm	1	Quarterly	4	4	~	210	210	210
Copper	QUU SAS	mg/L	0.001	Quarterly	4	4	0	0.012	0.020	0.017
Cyanide	ALS	mg/L	0.004	Quarterly	4	0	0	<0.004	<0.004	0
Fluoride	Redland Laboratory	mg/L	0.1	Weekly	55	55	0	0.6	1.0	0.8
Hardness	Redland Laboratory	mg/L	1	Quarterly	4	4	~	28	31	29
Iron	QUU SAS	mg/L	0.001	Quarterly	4	4	~	0.009	0.013	0.011
Lead	QUU SAS	mg/L	0.001	Quarterly	4	0	0	<0.001	<0.001	0
Mercury	QUU SAS	mg/L	0.0001	Quarterly	4	0	0	<0.0001	<0.0001	0
Magnesium	QUU SAS	mg/L	0.01	Quarterly	4	4	~	2.6	2.8	2.7
Manganese	QUU SAS	mg/L	0.001	Quarterly	4	4	0	0.001	0.002	0.002
Molybdenum	QUU SAS	mg/L	0.001	Quarterly	4	0	0	<0.001	<0.001	0
Nickel	QUU SAS	mg/L	0.001	Quarterly	4	0	0	<0.001	<0.001	0
Nitrate	QUU SAS	mg/L	0.001	Quarterly	4	4	0	0.058	0.070	0.064
pH	Redland Laboratory	pH Units	0.1	Weekly	106	106	~	7.5	8.3	7.6
Potassium	QUU SAS	mg/L	0.01	Quarterly	4	4	~	0.97	1.10	1.02
Selenium	QUU SAS	mg/L	0.001	Quarterly	4	0	0	<0.001	<0.001	0
Silica	QUU SAS	mg/L	0.1	Quarterly	4	4	~	9.2	9.9	9.7
Sodium	QUU SAS	mg/L	1	Quarterly	4	4	~	26	28	27
Sulphate	Redland Laboratory	mg/L	1	Quarterly	4	4	0	3	6.3	5
Total Dissolved Solids	Redland Laboratory	mg/L	5	Quarterly	4	4	~	110	140	125
Total THMs	QUU SAS	µg/L	<10	Monthly	12	4	0	<10	14	0
Turbidity	Redland Laboratory	NTU	0.1	Weekly	55	55	~	<0.1	0.6	0.1
Zinc	QUU SAS	mg/L	0.001	Quarterly	4	4	0	0.008	0.010	0.009

Table 3 - Reticulation *E. coli* verification monitoring

Drinking water scheme: Redland City and SMBI Water Supply Scheme

Year	*2017*											
Month	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*June*	*July*	*Aug*	*Sept*	*Oct*	*Nov*	*Dec*
No. of samples collected	71	56	56	48	70	56	63	59	52	70	56	30
No. of samples collected in which *E. coli* is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period	735	735	732	717	724	721	714	717	713	713	713	687
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Drinking water scheme: Redland City and SMBI Water Supply Scheme

Year	*2018*											
Month	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*June*	*July*	*Aug*	*Sept*	*Oct*	*Nov*	*Dec*
No. of samples collected	50	44	41	46	50	45						
No. of samples collected in which *E. coli* is detected (i.e. a failure)	0	0	0	0	0	0						
No. of samples collected in previous 12 month period	714	702	684	667	654	640	570	514	458	388	332	276
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Drinking water scheme: Dunwich Water Supply Scheme

Year	*2017*											
Month	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*June*	*July*	*Aug*	*Sept*	*Oct*	*Nov*	*Dec*
No. of samples collected	10	8	8	8	10	8	10	8	8	10	8	6
No. of samples collected in which *E. coli* is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period	104	104	104	102	104	104	104	104	104	104	104	102
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Drinking water scheme: Dunwich Water Supply Scheme

Year	*2018*											
Month	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*June*	*July*	*Aug*	*Sept*	*Oct*	*Nov*	*Dec*
No. of samples collected	10	8	8	10	8	8						
No. of samples collected in which *E. coli* is detected (i.e. a failure)	0	0	0	0	0	0						
No. of samples collected in previous 12 month period	104	104	104	104	104	104	94	86	78	68	60	52
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Drinking water scheme: Point Lookout Water Supply Scheme

Year	*2017*											
Month	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*June*	*July*	*Aug*	*Sept*	*Oct*	*Nov*	*Dec*
No. of samples collected	10	8	8	8	10	8	10	8	8	10	8	6
No. of samples collected in which *E. coli* is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period	104	104	104	102	104	104	104	104	104	104	104	102
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Drinking water scheme: Point Lookout Water Supply Scheme

Year	*2018*											
Month	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*June*	*July*	*Aug*	*Sept*	*Oct*	*Nov*	*Dec*
No. of samples collected	10	8	8	10	8	8						
No. of samples collected in which *E. coli* is detected (i.e. a failure)	0	0	0	0	0	0						
No. of samples collected in previous 12 month period	104	104	104	104	104	104	94	86	78	68	60	52
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Drinking water scheme: Amity Point Water Supply Scheme

Year	*2017*											
Month	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*June*	*July*	*Aug*	*Sept*	*Oct*	*Nov*	*Dec*
No. of samples collected	10	8	8	8	10	8	10	8	8	10	8	6
No. of samples collected in which *E. coli* is detected (i.e. a failure)	0	0	0	0	0	0	0	0	0	0	0	0
No. of samples collected in previous 12 month period	104	104	104	102	104	104	104	104	104	104	104	102
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Drinking water scheme: Amity Point Water Supply Scheme

Year	*2018*											
Month	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*June*	*July*	*Aug*	*Sept*	*Oct*	*Nov*	*Dec*
No. of samples collected	10	8	8	10	8	8						
No. of samples collected in which *E. coli* is detected (i.e. a failure)	0	0	0	0	0	0						
No. of samples collected in previous 12 month period	104	104	104	104	104	104	94	86	78	68	60	52
No. of failures for previous 12 month period	0	0	0	0	0	0	0	0	0	0	0	0
% of samples that comply	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Compliance with 98% annual value	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Appendix B – Implementation of the DWQMP Risk Management Improvement Program

Risk Management Improvement Program – General Improvements – Update and Completed Works

No.	Risk Type	Management Measure / Requirement	Proposed Action/s	Priority	Responsibility	Due Date	Status	Date Reviewed	Review Comments	New Close out Date	Status
RMP- GI8	General Improvement	Need to develop a system so O & M staff can more effectively provide asset condition feedback for use in asset management and planning.	Develop a system so O & M staff can more effectively provide asset condition feedback for use in asset management and planning.	2	Kevin McGuire	30/06/2013	Underway	27/05/2014	*RCC commenced a project to replace its current maintenance management system. This project should provide better systems for asset condition feedback & recording.*	30/06/2019	Underway
RMP-G18	General Improvement	Manage water quality trends better	Procure database software solution integrated with RCC's BI	3	Daniela Simon	30/06/2019	Underway		*Database purchased, data transfer being implemented.*		
RMP-G19	General Improvement	Review ERP & Develop training and testing modules	Complete review of ERP including training examples	2	Kevin McGuire	30/06/2018	Completed		*Training done annually with DWQMP review and the co-ordinated region-wide Operation Hydra.*		
RMP-G20	General Improvement	Development of the maintenance hygiene procedure	Finalise draft procedure	3	Kevin McGuire	30/06/2019	Completed		*Separate procedure not required as issue is covered in the procedure for the disinfection and testing of new mains.*		
RMP-G21	General Improvement	Ensure all procedures are reviewed within the appropriate timeframe. The operational procedures around managing the distribution network should be reviewed as priority.	Develop review schedule	3	Daniela Simon	30/06/2018	Completed		*Reviewed in 2016 and next scheduled review due in 2020.*	30/06/2020	
RMP-G22	General Improvement	Investigate the RCC Plumbing & Drainage department processes and records for annual certification of backflow prevension devices	Develop review schedule	3	Bradley Taylor	30/06/2017	Completed		*RCC Development Control Group will develop audit schedule following internal audit review of processes.*		
RMP-G23	General Improvement	New health based requirements based on change from long-term to acute health risk for	Develop procedure	3	Daniela Simon	31/07/2020					

14.2 SOLE SUPPLIER

Objective Reference:

Authorising Officer: **Andrew Ross, Acting General Manager Infrastructure & Operations**

Responsible Officer: **Kevin McGuire, Group Manager Water & Waste Operations**

Report Author: **Katie Thomas, Group Support Officer**

Attachments: **1. Infrastructure and Operations Sole Supplier**

PURPOSE

The purpose of this report is to seek resolution from Council to enter into a contractual arrangement with various suppliers (suppliers) without first inviting written quotes or tenders for a period of 12 months, pursuant to section 235 of the *Local Government Regulation 2012 (LGR2012)*. This is a continuation of previous sole supplier arrangements entered into at this time each year, with relevant additions and deletions.

Section 235 provides a number of exceptions to inviting written quotes or tenders in relation to medium-sized ($15,000 or more but less than $200,000 in a financial year) and large-sized ($200,000 or more in a financial year) contractual arrangements, however many of the goods and services that may be procured from the suppliers during the relevant period will be worth less than these threshold amounts.

The relevant exceptions in section 235 are where Council resolves:

it is satisfied that there is only one supplier who is reasonably available (s235(a)); or because of the specialised nature of the services that are sought, it would be impractical or disadvantageous for Council to invite quotes or tenders (s235(b)).

BACKGROUND

Council's Infrastructure & Operations Department (I&O) uses specialised equipment and materials manufactured, supplied and installed by the suppliers, or that can only be reasonably serviced and maintained by the supplier. Water & Waste Operations (WWO) requires goods and services from the suppliers due to, in most circumstances, there being only one supplier that is reasonably available and, in one other circumstance, the specialised nature of the maintenance works to be performed at council's various wastewater treatment plants (WWTPs).

In most cases, the proprietary nature of this specialised equipment means that servicing and maintenance can only be provided by the supplier, or parts can only be supplied by the supplier. Further, these goods and services are not reasonably available from other suppliers, either because there is only one supplier, or because the supply from alternative suppliers will not result in a value for money procurement. In particular:

- Council's Water & Waste Infrastructure and Water & Waste Operations groups uses various equipment that requires ongoing servicing, maintenance, renewal and repair;
- the use of non-original or non-proprietary products often results in reduced reliability or failure, and the resulting cost implications;
- the cost benefit of using the suppliers to supply the goods and services;

- the consequences of failure result is an unacceptable risk to council, including the unavailability of council's water and wastewater infrastructure, environmental impact, environmental protection obligations and safety;
- the increased costs, reduced reliability and risk of failure associated with servicing and maintenance carried out by suppliers not familiar with the original or proprietary equipment or products, or from the use of non-original or non-proprietary parts during servicing and maintenance;
- Council's requirements in having repairs carried out reliably and without delay, and the unacceptable risk of the unavailability of Council's water and wastewater infrastructure, environmental impact, environmental protection obligations and safety; and
- the impact on the community in the event of any interruption to Council's water and wastewater operations.

Council's Roads Drainage & Marine Unit (RDM) uses a small number of specialised products that are not available from other suppliers due to patents and licensing arrangements. Alternative products that purport to fulfil a similar function have been either trialled or investigated and found to be inferior in all cases.

Facilities Services Unit (FSU) uses a small number of specialised products for partitions and building management systems.

ISSUES

Sound contracting principles

In considering this procurement plan, the establishment of this arrangement and the attached list of suppliers, Infrastructure & Operations' staff had regard to Council's sound contracting principles. In doing so, the principles of value for money and environmental protection were given more consideration, noting that there is only one supplier who is reasonably available for each of the goods and services required and in some cases, there are no comparable products available from other suppliers.

It should also be noted that despite the resolution, if made, and the establishment of this arrangement, consideration will be given to the sound contracting principles throughout the period of the arrangement and on each occasion that goods or services are procured. In particular:

- Infrastructure & Operations will continuously monitor the performance of the suppliers, and the value for money achieved from the suppliers, throughout the period of the arrangement; and
- where appropriate and practical, a written quote will be sought from a supplier before goods or services are procured.

STRATEGIC IMPLICATIONS

Legislative Requirements

In accordance with Section 235(a) and (b) of *LGR2012*, a local government may enter into a medium-sized contractual arrangement or large-sized contractual arrangement without first inviting written quotes or tenders if:

a) the local government resolves it is satisfied that there is only one supplier who is reasonably available; or

b) the local government resolves that, because of the specialised or confidential nature of the services that are sought, it would be impractical or disadvantageous for the local government to invite written quotes or tenders.

Risk Management

The resolution, if made, and the establishment of this arrangement, will assist in the management of the following identified risks:

- reduced reliability or failure, and the resulting cost implications resulting from the use of non-original or non-proprietary products;
- the consequences of failure, including the unavailability of council's water and waste infrastructure, environmental impact, environmental protection obligations and safety;
- the increased costs, reduced reliability and risk of failure associated with servicing and maintenance carried out by suppliers not familiar with the original or proprietary equipment or products, or from the use of non-original or non-proprietary parts during servicing and maintenance;
- Council's requirements in having repairs carried out reliably and without delay, and the unacceptable risk of the unavailability of Council's water and waste infrastructure, environmental impact, environmental protection obligations and safety; and
- the impact on the community in the event of any interruption to Council's water and waste operations.

Financial

There are no financial implications.

People

There are no people implications.

Environmental

Environmental issues and potential impact have been considered, including Council's EPA and relevant licence obligations, general environmental considerations and staff and public safety. As noted above, various suppliers have been identified to assist with meeting Council's obligations, including the selection of suppliers to:

- meet Council's EPA and WWTP licence requirements;
- ensure reliability of equipment, maintenance, servicing, parts and products;
- ensure the supply of equipment, chemicals and consumables to monitor and control odour; and
- ensure repairs are carried out reliably and without delay to avoid the unavailability of Council's water and waste infrastructure, environmental impact and breaches of safety obligations.

Social

There are no social implications.

Alignment with Council's Policy and Plans

This report is consistent with Council's procurement policy and legislative requirements.

CONSULTATION

Consultation in establishing this process has included the following:

- General Manager Infrastructure & Operations
- Group Manager Water & Waste Operations
- Group Manager Water & Waste Infrastructure
- Acting Group Manager City Infrastructure
- Group Manager City Spaces
- Group Manager Project Delivery
- Service Manager Operations Maintenance
- Service Manager Roads, Drainage and Maintenance
- Service Manager Facilities Services Unit
- Procurement Transformation Manager
- Concrete Institute of Australia was consulted as to other products that may be available for this type of usage
- Business Partnering Unit

OPTIONS

Option One

That Council resolves to approve the suppliers listed in the attachment as the only suppliers reasonably available to supply the goods or services required by Council.

Option Two

That Council resolves not to approve the suppliers listed in the attachment as the only suppliers reasonably available to supply the goods or services required by Council. This would result in the delay and/or inability to reasonably acquire goods and services to deliver projects, impacting negatively on council operations and service delivery.

OFFICER'S RECOMMENDATION

That Council resolves to approve the suppliers listed in the attachment as the only suppliers reasonably available to supply the goods or services required by Council.

SOLE SUPPLIERS - INFRASTRUCTURE & OPERATIONS

In accordance with Section 235(a) and (b) of the *Local Government Regulation 2012*, Redland City Council is satisfied that the suppliers numbered 1 to 53 are the only suppliers reasonably available to supply the goods or services required by Council:

1. Air Met Scientific Pty Ltd – ABN 73 006 849 949
Provides maintenance and renewal of Council's existing gas detection equipment and parts. The existing equipment was manufactured and supplied by the supplier and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts.

2. Alldos Oceania Pty Ltd – ABN 53 106 582 665
Supply and maintenance of existing dosing pumps and equipment renewal. The existing equipment was manufactured and supplied by the supplier and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts.

3. Biolab Australia Pty Ltd – ABN 17 005 878 017
Services for online analysers of ammonia and nitrate as well as chemical cassettes for odour detection. It provides unique chemicals to support all their instrumentation equipment. Biolab is the only supplier of these chemical cassettes and is the supplier of the compatible components required for the cassettes to work.

4. Bioremedy Pty Ltd - ABN 49 027 112 101
Supplies calcium nitrate chemical for odour control. Only some chemicals work in certain of Council's catchments to reduce odour in particular circumstances and this is the only supplier of this chemical.

5. Burkitt Pty Ltd – ABN 98 087 732 116
Provides maintenance and renewal of existing (liquid) process control valves. The existing equipment was manufactured and supplied by the supplier and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts.

6. Cleantec International – ABN 43 105 668 951
Provides maintenance and renewal of existing odour control chemicals and equipment at sewer pumping stations and wastewater treatment plants (WWTPs). The existing equipment was manufactured and supplied by this supplier, and the maintenance and renewal is carried out by the supplier using trained tradespeople and proprietary equipment and parts.

7. Danfoss Australia P/L – ABN 93 004 385 997
Provides maintenance and renewal of existing variable speed drives. The existing equipment was manufactured and supplied by the supplier and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts.

8. DHI Water & Environment Pty Ltd – ABN 69 086 137 911
Australian supplier of hydraulic software modules used by Council for network analysis of water supply and wastewater network systems and flood watch software. Modification of the software can only be undertaken by the supplier because of the software licence and licence renewal, upgrades and support must be provided by the supplier. This software is required to undertake water supply and wastewater network analysis.

9. Ecotox Services Australasia Pty Ltd – ABN 45 094 714 904
The only laboratory in Australia that can provide the services (sample analysis in relation to toxicity) needed to meet Environmental Protection Agency (EPA) and WWTP licence requirements.

10. Flottweg Australia – ABN 89 147 749 095

SOLE SUPPLIERS - INFRASTRUCTURE & OPERATIONS

Parts and maintenance for the Capalaba WWTP centrifuge. The existing equipment was manufactured and supplied by the supplier and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts.

11. Grundfos Pumps Pty Ltd – ABN 90 007 920 765
Supplies and maintains existing dosing pumps and equipment renewal. The existing equipment was manufactured and supplied by the supplier and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts.

12. Hach Pacific Pty Ltd – ABN 45 114 408 838
Provides maintenance and replacements for water network pressure loggers. The existing equipment was manufactured and supplied by the supplier and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts.

13. HMA Group – ABN 48 010 489 086
Provides maintenance and renewal of existing valves and non-return valves. The existing equipment was manufactured and supplied by the supplier and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts.

14. Xylem Water Solutions Australia Ltd – ABN 28 000 832 922
Custom-made manufacturing of pumps, mixers and other mechanical equipment for sewer pumping stations and WWTPs. This company provides a range of standard and custom-made pumps and other equipment for the treatment of wastewater within Redland City. Pumps are manufactured to meet Council's performance requirements and to fit well sizes as necessary for the location. The company is required to undertake OEM parts supply, maintenance, servicing and renewals as required using qualified tradespeople and the supplier's proprietary parts and equipment.

15. KSB Australia – ABN 29 006 414 642
Manufactures submersible pumps for wet wells. KSB has custom built pumps to fit dry wells at Council's pump stations and WWTPs. The company is required to manufacture custom-made pump parts for critical spares and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts.

16. Magytec International Pty Ltd – ABN 96 003 490 006
The only agent for the manufacturer of Council's specialist belt filter press equipment and the only supplier that can supply the proprietary parts and has the expertise to perform the service and maintenance on the equipment.

17. Mann's Logan Crane Hire– ABN 95 879 142 306
The only local supplier with the proven ability to respond in planned and emergent timeframes, and is also the only local supplier of Franna (light mobile cranes). When Council requires these services, they are often required urgently to avoid environmental impact and comply with environmental and licence obligations, e.g. from overflow. The cost and time implications of engaging a non-local supplier will not satisfy Council's requirements.

It is also noted that Council has established an approved contractor list under section 231 of the *Local Government Regulation 2012*, however there are no local suppliers on the list that supply Franna plant.

18. MEP Instruments – ABN 93 081 861 645
Australian agent for Metrohm pH meters used in Council's laboratory and WWTPs. The existing equipment was manufactured and supplied by the supplier and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment, parts and consumables.

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19. Merck Pty Ltd – ABN 80 001 239 818
Manufacturer of laboratory deioniser. Sole supplier of parts, consumables and servicing. The existing equipment was manufactured and supplied by the supplier and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment, parts and consumables.

20. Miele Australia Pty Ltd – ABN 96 005 635 398
Manufacturer of laboratory dishwasher. This existing equipment was manufactured and supplied by the supplier and the maintenance and servicing is carried out by the supplier using the supplier's proprietary equipment and parts.

21. Mono Pumps Australia – ABN 77 004 449 478
Manufactured and supplied Council's sludge handling pumps, dosing pumps and critical spares for pumps already custom fitted in Council's reticulation systems. The maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts.

22. Multitrode Pty Ltd – ABN 43 010 679 419
Manufactures critical backup system components required for pump stations and reservoir level sensors. Critical spares and sensors are needed to contain appropriate water levels at the pump stations. The maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts.

23. Perten Instruments Australia P/L - ABN 98 002 954 243
Australian agent for Gerhart instruments, being the existing instruments, and the maintenance and renewal is required to be carried out by the supplier using the proprietary equipment and parts.

24. Prominent Fluid Control – ABN 83 080 688 795
Manufactures dosing pumps that have been customised for critical dosing applications at Dunwich and Point Lookout WWTPs. The existing equipment was manufactured and supplied by the supplier and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts.

25. Schneider Electric – ABN 42 004 969 304
Distributor for Clear SCADA software, and the supply of licensing and annual support for Clear SCADA software used in water and sewerage telemetry licences. Schneider also provides services to maintain licences for control of SCADA systems to several WWTPs.

26. SEW Eurodrive – ABN 27 006 076 053
Supplies gearboxes and motors for WWTPs and is used for repair and replacement of several motors and gearboxes installed in several of Council's WWTPs. The existing equipment was manufactured and supplied by the supplier and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts.

27. Sibelco Australia Limited – ABN 20 000 971 844
Supplies hydrated lime used at Council's WWTPs and the only supplier in Australia for this product. The market was tested by conducting a tender (T-1571-11/12-RDW Provision of a Preferred Supplier/s Arrangement for the Supply, Delivery and Unloading of Chemicals for Redland Water WWTPs). The results from this tender showed that no other tendering company was able to supply hydrated lime to Council. Hydrated lime is a vital chemical that is used in the treatment of wastewater at several WWTPs.

28. Siemens Ltd – ABN 98 004 347 880
Supplies PLC hardware, specialised activated carbon for odour control facilities and chlorine residual analyser equipment. The existing equipment was manufactured and

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supplied by the supplier and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts.

29. SMC Pneumatics Aust Pty Ltd– ABN 64 000 543 519
Provides maintenance and renewal of existing (pneumatic) process control valves. The existing equipment was manufactured and supplied by the supplier and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts.

30. Spirac Pty Ltd – ABN 69 119 874 038
Manufactures dewatering equipment for screw wash presses and grit collection bins and is used for the replacement of liners for existing screw conveyors, and designed template wear plates. The existing equipment was manufactured and supplied by the supplier and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts.

31. Thermo Fischer Scientific P/L – ABN 52 058 390 917
Provides maintenance and renewal of existing auto samplers. The existing equipment was manufactured and supplied by the supplier and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts. The supplier is the sole supplier of the equipment and parts.

32. Vega Australia – ABN 55 003 346 905
Manufactures level control systems in reticulation systems. This supplier is used for repair of existing equipment in several WWTPs and pump stations. The existing equipment was manufactured and supplied by the supplier and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts.

33. Wallace & Tiernan Pty Ltd – ABN 82 000 130 414
Manufactures chlorine monitoring equipment in reticulation systems and used to repair and replace existing equipment at the Dunwich and Point Lookout WWTPs. The existing equipment was manufactured and supplied by the supplier and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts.

34. Wilo Australia Pty Ltd - 87 150 449 540
Manufactures submersible pumps for wet wells. The supplier has custom built pumps to fit dry wells at Council's pump stations and WWTPs. The company is required to manufacture custom made pump parts for critical spares and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts.

35. Weir Services Australia Pty Ltd – ABN 53 000 114 910
Manufactures aerator gearboxes for WWTPs. These gearboxes are critical assets for Council's WWTPs. The existing equipment was manufactured and supplied by the supplier and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts.

36. WestWater Enterprises – ABN 26 101 692 504
Provides maintenance and equipment for the recently supplied proprietary chlorine shutdown and metering system installed at Cleveland, Victoria Point, Capalaba and Thorneside WWTPs. WestWater also provides critical spares and specialised servicing as required.

37. YSI Australia Pty Ltd – ABN 14 128 153 168
Sole supplier of dissolved oxygen meter parts and consumables used in laboratories and WWTPs. The existing equipment was manufactured and supplied by the supplier and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts.

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38. Abberfield Industries – ABN 61 000 112 569
Provides specialist water dispensing units utilising credit card, stored value or account card accessibility, for the supply of potable and non-potable water to Redland City industries and customers. The company is required to manufacture custom made water filling stations and the maintenance and renewal is carried out by the supplier using the supplier's proprietary equipment and parts.

39. Eneraque Pty Ltd – ABN 81 605 908 549
Required to provide OEM parts supply, maintenance, servicing and renewals to Eneraque generators using qualified tradespeople and the suppliers proprietary equipment and parts.

40. PR Power Pty Ltd – ABN 25 124 009 614
Required to provide OEM parts supply, maintenance, servicing and renewals to PR Power generators using qualified tradespeople and the suppliers' proprietary equipment and parts.

41. CAPS Australia – ABN 79 008 877 790
Specialist supplier of compressors and blowers used in WWTPs. The company provides service, support and spare parts for compressors, with industry leading knowledge of rotary screw type compressors and pressure vessels.

42. Ecotech Environmental Monitoring Solutions – ABN 32 005 752 081
Provides specialist service, maintenance and repair of automatic water samplers used in RCC's WWTPs.

43. Hidrostal Australia Pty Ltd – ABN 64 607 570 534
Supply, maintenance and renewal of existing centrifugal impellor pumps in WWTPs and sewer pumping stations. The existing equipment was manufactured and supplied by this company with maintenance and renewal being carried out by the supplier's skilled staff, using proprietary parts and equipment.

44. MAK Water – ABN 32 134 829 280
Specialist provider of sand filtration equipment, media, spare parts and servicing for RCC's existing sand filters at Capalaba, Point Lookout and Dunwich WWTPs.

45. AC Hargreaves Pty Ltd – ABN 36 139 017 360
Provides specialist condition monitoring, vibration analysis and reporting on aerators, gearboxes and large motors.

46. R & D Technology Pty Ltd – ABN 79 002 145 324
Provides specialist automation and integration services to RCC's WWTPs and sewer pumping stations. This company has an intimate knowledge of Council's telemetry and SCADA systems, and undertakes routine system maintenance, equipment upgrades and day to day troubleshooting.

47. Ixom – ABN 51 600 546 512
Supplies chlorine gas for disinfection of effluent at RCC's WWTPs. Ixom is the only supplier of this chemical.

48. Tripstop Pty Ltd – ABN 45 099 500 384
Provides a concrete joint product called "Tristop" which is unique in the market and creates a hinge at concrete joints allowing the adjoining concrete slabs to rotate without displacing vertically across the joint. This function is particularly useful on concrete footpaths where tree root uplift is a problem. There are many other construction jointing products available on the market but none that allows the joint to remain functional while

being lifted by tree roots (sometimes in excess of 50mm). Tristop has been successfully used by RCC since 2007 and is only available from Tristop Pty Ltd.

49. The Britstop – ABN 16 044 541 688

Provides "Viafix", a bagged asphaltic material for use in pothole repairs. RCC has used many cold asphaltic products for pothole repairs over the years with varying degrees of success. With the exception of Viafix, all have demonstrated average to poor durability, resulting in rework and complaints from the public. Viafix is more expensive than other products used, in some cases, substantially more expensive but the whole-of-life benefits provided by longevity of repair and lack of rework more than compensate for the additional initial cost of the product. Since first using Viafix six years ago, pothole repair failures have been limited to extreme circumstances such as ongoing road pavement failure adjacent to the pothole. Viafix is an imported product and is only available through Britstop.

50. Leading Edge – ABN 39 058 251 906

Maintains the Building Management System (BMS) mechanical services controls (air conditioning systems software). Leading Edge Automation (LEA) are part of Alerton Australia, LEA are the sole authorised dealer of the Alerton range of products in Queensland. The RCC Heating Ventilation and Air Conditioning systems (HVAC) are operated by a series of field devices (controllers located throughout our plant rooms) which are in turn controlled by Alerton software network. Due to the proprietary nature of the Alerton system, it would be cost prohibitive, operationally onerous with limited vendors in this specialist field.

51. UCI – ABN 37 604 540 700

Provides the latest type of screen partitions that we use in our office fit outs. UCI manufactures the screens in South Australia and holds the patent. It would be cost deficient to purchase these through another company. In saying that, this year, FSU will be meeting with other screen partition suppliers to see what innovations have been introduced over the last several years so we may move away from UCI depending on what benefits there are to Council.

15 MAYORAL MINUTE

In accordance with s.22 of POL-3127 Council Meeting Standing Orders, the Mayor may put to the meeting a written motion called a 'Mayoral Minute', on any matter. Such motion may be put to the meeting without being seconded, may be put at that stage in the meeting considered appropriate by the Mayor and once passed becomes a resolution of Council.

16 NOTICES OF MOTION TO REPEAL OR AMEND A RESOLUTION

In accordance with *s.262 Local Government Regulation 2012.*

17 NOTICES OF MOTION

In accordance with s.3(4) POL-3127 Council Meeting Standing Orders.

18 URGENT BUSINESS WITHOUT NOTICE

In accordance with s.26 of POL-3127 Council Meeting Standing Orders, a Councillor may bring forward an item of urgent business if the meeting resolves that the matter is urgent.

Urgent Business Checklist	**YES**	**NO**
To achieve an outcome, does this matter have to be dealt with at a general meeting of Council?		
Does this matter require a decision that only Council make?		
Can the matter wait to be placed on the agenda for the next Council Meeting?		
Is it in the public interest to raise this matter at this meeting?		
Can the matter be dealt with administravely?		
If the matter relates to a request for information, has the request been made to the CEO or a General Manager Previously?		

19 CONFIDENTIAL ITEMS

Nil

20 MEETING CLOSURE