Redland
CITY COUNCIL

AGENDA

GENERAL MEETING

Wednesday, 10 MAY 2017
commencing at 9.30am

The Council Chambers
35 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 RECOGNITION OF ACHIEVEMENT

Mayor to present any recognition of achievement items.

5 RECEIPT AND CONFIRMATION OF MINUTES

5.1 GENERAL MEETING MINUTES 19 APRIL 2017

Motion is required to confirm the Minutes of the General Meeting of Council held on 19 April 2017.

6 MATTERS OUTSTANDING FROM PREVIOUS COUNCIL MEETING MINUTES

There are no matters outstanding.

7 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.

8 PETITIONS AND PRESENTATIONS

Councillors may present petitions or make presentations under this section.

9 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.

10 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 sections 172 and 173 of the *Local Government Act 2009*). In summary:

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

The Councillor must—

- *inform the meeting of the Councillor's material personal interest in the matter; and*
- *leave the meeting room (including any area set aside for the public), and stay out of the meeting room while the matter is being discussed and voted on.*

The following information must be recorded in the minutes of the meeting, and on the local government's website—

- *the name of the Councillor who has the material personal interest, or possible material personal interest, in a matter;*
- *the nature of the material personal interest, or possible material personal interest, as described by the Councillor.*

A Councillor has a ***material personal interest*** in the matter if any of the following persons stands to gain a benefit, or suffer a loss, (either directly or indirectly) depending on the outcome of the consideration of the matter at the meeting—

(a) the Councillor;
(b) a spouse of the Councillor;
(c) a parent, child or sibling of the Councillor;

(d) a partner of the Councillor;
(e) an employer (other than a government entity) of the Councillor;
(f) an entity (other than a government entity) of which the Councillor is a member;
(g) another person prescribed under a regulation.

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—

- *deal with the real conflict of interest or perceived conflict of interest in a transparent and accountable way.*
- *Inform the meeting of—*
  - *(a) the Councillor's personal interests in the matter; and*
  - *(b) if the Councillor participates in the meeting in relation to the matter, how the Councillor intends to deal with the real or perceived conflict of interest.*

The following must be recorded in the minutes of the meeting, and on the local government's website—

(a) the name of the Councillor who has the real or perceived conflict of interest;
(b) the nature of the personal interest, as described by the Councillor;
(c) how the Councillor dealt with the real or perceived conflict of interest;
(d) if the Councillor voted on the matter—how the Councillor voted on the matter;
(e) how the majority of persons who were entitled to vote at the meeting voted on the matter.

*A **conflict of interest** is a conflict between—*

(a) a Councillor's personal interests (including personal interests arising from the Councillor's relationships, for example); and
(b) the public interest;

that might lead to a decision that is contrary to the public interest.

11 REPORTS TO COUNCIL

11.1 OFFICE OF CEO

11.1.1 POL-3013 INVESTMENT POLICY 2017-2018

Objective Reference: **A2291506**

Attachment: **POL-3013 - Investment Policy 2017-2018**

Authorising/Responsible Officer:

Deborah Corbett-Hall
Chief Financial Officer

Report Author: **Matthew O'Connor**
Finance Manager, Financial Planning

PURPOSE

The purpose is to present the Investment Policy for 2017-2018. Section 104(5) of the *Local Government Act 2009* requires a Local Government to have an Investment Policy as part of its financial management system.

BACKGROUND

Council annually reviews its Investment Policy as part of the budget development process. Council reviewed its Investment Policy on 2 February 2017 as part of a budget development workshop for the 2017-2018 annual budget. At the workshop, Councillors voted unanimously to retain the current policy without change.

ISSUES

Council discussed the attached Investment Policy as part of its 2017-2018 annual budget development process. The policy intent remains unchanged.

STRATEGIC IMPLICATIONS

Council's Investment Policy outlines its risk appetite for investment of surplus funds. Surplus funds can either be invested or utilised to accelerate debt reduction (with associated early repayment penalties) or a combination of the two approaches.

Legislative Requirements

Section 104(5) of the *Local Government Act 2009* requires a Local Government to have an Investment Policy as part of its financial management system. The policy must be regularly reviewed and updated as necessary and Council reviews and updates its key financial policies at least annually.

Risk Management

Council's Long Term Financial Strategy contains risks, issues and mitigation strategies aligned to the investment of surplus funds. These risks are reviewed at least annually and no material risks are currently identified with respect to managing Council's investments.

Financial

There are no direct financial impacts to Council resulting from this report. The 2017-2018 Investment Policy continues to include options for investing in commercial opportunities, joint ventures, associates and subsidiaries in the future. Prior to investment, a comprehensive analysis will be undertaken to ensure the benefits of the investment outweigh the risks and costs. The analysis will ensure any proposal for investment outside a financial institution/fund manager will maintain or improve all relevant financial ratios and measures of sustainability within adopted Financial Strategy targets. Any investment outside of a financial institution/fund manager must also be consistent with the principles and objectives contained in Council's Revenue and Dividend Policies.

People

Nil impact expected as the scope of the attached policy is investment of surplus funds.

Environmental

Nil impact expected as the scope of the attached policy is investment of surplus funds.

Social

Nil impact expected as the scope of the attached policy is investment of surplus funds.

Alignment with Council's Policy and Plans

The review of POL-3013 Investment Policy aligns to Council's Corporate Plan 2015-2020 key outcome 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 visions and goals.

CONSULTATION

Council's Long Term Financial Strategy was reviewed between October 2016 and December 2016, outlining Council's investment policy position as well as potential risks, issues and opportunities. Council reviewed the draft 2017-2018 Investment Policy during a budget workshop on 2 February 2017 where it was approved in principle.

OPTIONS

Option 1

That Council resolves to adopt the attached 2017-2018 Investment Policy.

Option 2

That Council requests additional information or amends the attached policy prior to adoption.

OFFICER'S RECOMMENDATION

That Council resolves to adopt the attached 2017-2018 POL – 3013 Investment Policy.

Investment Policy

Version Information

Head of Power

Section 104 of the *Local Government Act 2009* (the Act) requires a local government to produce an Investment Policy as part of its financial management system. The Act also defines Council as a statutory body and subsequently Council must also consider the *Statutory Bodies Financial Arrangements Act 1982.*

This policy applies to Council's investment in wholly owned subsidiaries.

Policy Objective

To maximise earnings from authorised financial investments of surplus funds after assessing and minimising all associated risks in accordance with the annually revised and adopted Long-Term Financial Strategy (Financial Strategy).

Policy Statement

1. Council's philosophy for investments is to protect the capital value of investments with the goal of maximising returns through an active investment strategy within this overall risk philosophy.
2. Council is committed to achieving this goal by:

    - Investing only in investments as authorised under current legislation;
    - Investing only with approved institutions;
    - Investing to facilitate diversification and minimise portfolio risk;
    - Investing to protect the capital value of investments (balancing risk with return opportunities);
    - Investing to facilitate working capital requirements;
    - Reporting on the performance of its investments on a monthly basis as part of the monthly financial reports to Council;
    - Conducting an annual review of all investments and associated returns as part of the annual review of the Long-Term Financial Strategy; and
    - Ensuring no more than 30% of Council's investments are held with one financial institution, or one fund manager for investments outside of the Queensland Treasury Corporation (QTC) or the Queensland Investment Corporation (QIC) cash funds or Bond Mutual Funds.
3. Council will follow an active investments management strategy over the next ten financial years in order to maximise the returns generated from investing cash balances.

4. Council's investment objectives are to exceed the benchmark of the Bloomberg AusBond Bank Bill Index.

5. Council may also consider investing in commercial opportunities, joint ventures, associates and subsidiaries in the future. Prior to investment, a comprehensive analysis will be undertaken to ensure the benefits of the investment outweigh the risks and costs. The analysis will ensure any proposal for investment outside a financial institution/fund manager will maintain or improve all relevant financial ratios and measures of sustainability within adopted Financial Strategy targets. Any investment outside of a financial institution/fund manager must also be consistent with the principles and objectives contained in Council's Revenue and Dividend Policies.

Version Information

Version Number	Date	Key Changes
6	February 2014	• Minor updates as part of budget development process and additionally including annual review and monthly financial reporting of investments
7	January 2015	• Updated for Budget 2015/2016 process • Replaced 'guarantee' with 'protect' for capital value of investments to align to Financial Strategy adopted 17/12/14
8	April 2016	• Updated for Budget 2016/2017 process (only approval, effective and review dates changed)
9	April 2017	• Updated for Budget 2017/2018 process (only approval, effective and review dates changed) • Updated Head of Power to add sentence regarding application to subsidiaries. • Changed 'UBS Bank Bill Index' to 'Bloomberg AusBond Bank Bill index'

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11.1.2 POL-3010 CONSTRAINED CASH RESERVES POLICY 2017-2018

Objective Reference: **A2291707**

Attachment: **POL-3010 - Constrained Cash Reserves Policy 2017-2018**

Authorising/Responsible Officer:

Deborah Corbett-Hall
Chief Financial Officer

Report Author: **Matthew O'Connor**
Finance Manager, Financial Planning

PURPOSE

The purpose is to present the Constrained Cash Reserves Policy for 2017-2018. Council continues to document its policy position on constrained cash reserves to demonstrate accountability and transparency to the community on cash balances that are constrained for particular purposes.

BACKGROUND

The requirements of constrained cash reserves were previously outlined in the *Local Government Act 2009*. Whilst there is no longer the legislative requirement to gain council resolutions for establishment, utilisation and closure of reserves, Council's reserves are reconciled and reported on a monthly basis.

Additionally, the Queensland Audit Office and Department of Infrastructure, Local Government and Planning expect annual financial statements to demonstrate that reserves are a subset of cash balances at year-end.

Council annually reviews the Constrained Cash Reserves Policy as part of the budget development process. Council reviewed this policy on 2 February 2017 as part of a budget development workshop for the 2017-2018 annual budget. At the workshop, Councillors voted unanimously to retain the current policy without change.

ISSUES

Council discussed the attached Constrained Cash Reserves Policy as part of its 2017-2018 annual budget development process. The policy intent remains unchanged.

STRATEGIC IMPLICATIONS

Council's long-term financial strategy incorporates the utilisation of existing reserves.

Legislative Requirements

Section 104 of the *Local Government Act 2009* requires that a local government establishes a system of financial management to ensure financial sustainability. A local government is financially sustainable if the local government is able to maintain its financial capital and infrastructure capital over the long-term.

Risk Management

Council's Long-Term Financial Strategy contains risks, issues and mitigation strategies aligned to revenues, expenditures and cash balances which influence the reserve balances and associated movements in reserves.

Council reports full details of its reserve balances and movements on a monthly basis to monitor reserve usage and also provide the community with transparency over constrained funds.

Financial

There are no direct financial impacts to Council resulting from this report. No future financial impacts are expected as reserve movements are transfers in community equity and only constrain cash for particular works that feature in annual or long term operational or capital programmes.

People

Nil impact expected as the scope of the attached policy is constrained cash reserves.

Environmental

Nil impact expected as the scope of the attached policy is constrained cash reserves.

Social

Nil impact expected as the scope of the attached policy is constrained cash reserves.

Alignment with Council's Policy and Plans

The review of POL-3010 Constrained Cash Reserves Policy aligns to Council's Corporate Plan 2015-2020 key outcome 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 visions and goals.

CONSULTATION

Council's Long Term Financial Strategy was reviewed between October 2016 and December 2016, outlining Council's constrained cash reserves policy position as well as potential risks, issues and opportunities.

Council reviewed the draft 2017-2018 Constrained Cash Reserves Policy during a budget workshop on 2 February 2017 where it was approved in principle.

OPTIONS

Option 1

That Council resolves to adopt the attached 2017-2018 Constrained Cash Reserves Policy.

Option 2

That Council requests additional information or amends the attached policy prior to adoption.

OFFICER'S RECOMMENDATION

That Council resolves to adopt the attached 2017-2018 POL-3010 – Constrained Cash Reserves Policy.

Constrained Cash Reserves Policy

Version Information

Head of Power

Section 104 of the *Local Government Act 2009* requires that a local government establishes a system of financial management to ensure financial sustainability. A local government is financially sustainable if the local government is able to maintain its financial capital and infrastructure capital over the long-term.

Policy Objective

To ensure Council's constrained cash reserves

- are only restricting funds for current or future planned expenditure; and
- do not exceed cash balances at the end of the financial year, to align with the disclosure requirements of the Department of Infrastructure, Local Government and Planning (DILGP) and the Queensland Audit Office (QAO).

Policy Statement

1. Council's philosophy is to ensure funds held in constrained cash reserves are restricted to deliverables consistent with the Long-Term Financial Strategy, Long-Term Asset Management Plan, Corporate Plan and Annual Operational Plan and Budget.

2. Council is committed to achieving this goal by:
   - Reporting on constrained cash reserves on a monthly basis as part of the monthly financial reports to General Meeting;
   - Reporting constrained cash reserves as a subset of cash balances in annual statutory reporting;
   - Ensuring constrained cash reserves do not exceed cash balances at the end of the financial year;
   - Conducting an annual review of all constrained cash reserves for relevance and future requirements in accordance with the Long-Term Financial Strategy and other appropriate strategies and plans;
   - Reviewing forecast reserve movements as an integral part of the annual budget development process; and
   - Transferring funds from constrained cash reserves back to retained earnings when the purpose of the reserve is no longer valid or required or when the funds have been expended on planned works.

Version Information

Version Number	Date	Key Changes
1	February 2014	New Policy
2	January 2015	• Updated for Budget 2015/2016 process • Included at the end of the financial year, to align with the disclosure requirements of the Department of Local Government, Community Recovery and Resilience (DLGCRR) and the Queensland Audit Office (QAO) for clarity and further explanation of our statutory reporting.
3	May 2016	• Updated for Budget 2016/2017 process • Updated with new State Government Department name • Changed committee to General Meeting for clarity
4	April 2017	• Updated for Budget 2017/2018 process

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11.1.3 POL-3117 APPLICATION OF DIVIDENDS AND TAX EQUIVALENT PAYMENTS

Objective Reference: **A2292046**

Attachment: **POL-3117 - Application of Dividends and Tax Equivalent Payments 2017-2018**

Authorising / Responsible Officer:

Deborah Corbett-Hall
Chief Financial Officer

Report Author: **Matthew O'Connor**
Finance Manager, Financial Planning

PURPOSE

The purpose is to present the Application of Dividends and Tax Equivalents Payments Policy for 2017-2018.

BACKGROUND

The Application of Dividends and Tax Equivalent Payments Policy was created to capture the utilisation of returns from Council's commercial business activities and other commercial opportunities including subsidiaries and associates of council.

Council annually reviews the Application of Dividends and Tax Equivalent Payments Policy as part of the budget development process. Council reviewed this policy on 2 February 2017 as part of a budget development workshop for the 2017-2018 annual budget. At the workshop, Councillors voted unanimously to retain the current policy without change.

ISSUES

Council discussed the attached Application of Dividends and Tax Equivalent Payments as part of its 2017-2018 annual budget development process. The policy intent remains unchanged.

STRATEGIC IMPLICATIONS

Legislative Requirements

Section 104 of the *Local Government Act 2009* requires that a local government establishes a system of financial management to ensure financial sustainability.

A local government is financially sustainable if the local government is able to maintain its financial capital and infrastructure capital over the long term.

Risk Management

Council receives revenue streams from its commercial business activities in accordance with the Local Government Tax Equivalent Regime and may also receive

dividends and other returns from investments in associates, subordinates or other entities.

The attached policy will also apply to Council's wholly owned subsidiary, Redland Investment Corporation.

Financial

There are no direct financial implications relating to the adoption of the attached report, it provides a policy position for current and future revenue streams.

People

Nil impact expected as the scope of the attached policy is dividends and tax equivalent payments.

Environmental

Nil impact expected as the scope of the attached policy is dividends and tax equivalent payments.

Social

Nil impact expected as the scope of the attached policy is dividends and tax equivalent payments.

Alignment with Council's Policy and Plans

The review of Policy POL-3117 Application of Dividends and Tax Equivalent Payment aligns to Council's Corporate Plan 2015-2020 key outcome 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 visions and goals.

CONSULTATION

Council reviewed and developed the attached 2017-2018 Application of Tax Equivalent Payments Policy during a budget workshop on 2 February 2017 where it was approved in principle.

OPTIONS

Option 1

That Council resolves to adopt the 2017-2018 Application of Dividends and Tax Equivalent Payments Policy.

Option 2

That Council requests additional information or amends the attached policy prior to adoption.

OFFICER'S RECOMMENDATION

That Council resolves to adopt the 2017-2018 Application of Dividends and Tax Equivalent Payments Policy.

policy document

Redland CITY COUNCIL

POL-3117

Application of Dividends and Tax Equivalent Payments

Version Information

Head of Power

The establishment of this policy is consistent with *the Local Government Act 2009*, *Local Government Regulation 2012* and also the Local Government Tax Equivalent Regime (LGTER).

Policy Objective

The objective is to clarify Council's intention for its use of financial returns received from commercialised or corporatised business activities and any subsidiaries or associates.

Policy Statement

Council

- currently receives dividends and tax equivalent payments from its commercialised business activities; and
- will look to receive dividends and tax equivalent payments from any corporatised business activities, subsidiaries or associates in the future.

Council is committed to:

1. transparently accounting, reconciling and reporting the receipt of such financial returns in accordance with the Australian Accounting Standards and LGTER; and
2. applying all financial returns to the provision of community benefit.

Associated Documents

- Financial Strategy
- Annual Budget
- Annual Report
- Dividend Policy – Significant and Prescribed Business Activities (POL-0019)

Version Information

Version No.	Date	Key Changes
1	January 2015	Assigned to Financial Services for ownership. Updated legislation; removed references to Allconnex Water and included references to subsidiaries and associates. Included references to Local Government Tax Equivalent Regime. Included references to Annual Report and Annual Budget. Updated document control to CFO approval and not CEO.
2	April 2015	Combined the commitments statements, reducing from three to two.
3	April 2016	Updated for Budget 2016-2017 process (only approval, effective and review dates changed)
4	April 2017	• Updated for Budget 2017-2018 process (only approval, effective and review dates changed) • Document control section deleted

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11.1.4 2016-17 FINAL BUDGET REVIEW

This report is being finalised

11.2 COMMUNITY & CUSTOMER SERVICES

11.2.1 DECISIONS MADE UNDER DELEGATED AUTHORITY FOR CATEGORY 1, 2 & 3 DEVELOPMENT

Objective Reference:	**A2315595** **Reports and Attachments (Archives)**
Attachment:	**Decisions Made Under Delegated Authority 02.04.2017 to 22.04.2017**
Authorising Officer:	 **Louise Rusan** **General Manager Community & Customer Services**
Responsible Officer:	**David Jeanes** **Group Manager City Planning & Assessment**
Report Author:	**Debra Weeks** **Senior Business Support Officer**

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.

This information is provided for public interest.

BACKGROUND

At the General Meeting of 27 July, 2011, Council resolved that development assessments be classified into the following four Categories:

Category 1 – Minor Complying Code Assessments and Compliance Assessments and associated administrative matters, including correspondence associated with the routine management of all development applications;

Category 2 – Complying Code Assessments and Compliance Assessments and Minor Impact Assessments;

Category 3 – Moderately Complex Code & Impact Assessments; and

Category 4 – Major and Significant Assessments

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

- Category 1 criteria - defined as complying code and compliance assessable applications, including building works assessable against the planning scheme, and other applications of a minor nature, including all accelerated applications.
- Category 2 criteria - defined as complying code assessable and compliance assessable applications, including operational works, and Impact Assessable applications without submissions of objection. Also includes a number of process related delegations, including issuing planning certificates, approval of

works on and off maintenance and the release of bonds, and all other delegations not otherwise listed.

- Category 3 criteria that are defined as applications of a moderately complex nature, generally mainstream impact assessable applications and code assessable applications of a higher level of complexity. Impact applications may involve submissions objecting to the proposal readily addressable by reasonable and relevant conditions. Both may have minor level aspects outside a stated policy position that are subject to discretionary provisions of the Planning Scheme. Applications seeking approval of a plan of survey are included in this category. Applications can be referred to General Meeting for a decision.

OFFICER'S RECOMMENDATION

That Council resolves to note this report.

Decisions Made Under Delegated Authority 02.04.2017 to 08.04.2017

CATEGORY 1

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
BWP004140	Design and Siting - Dwelling	Professional Certification Group Pty Ltd	50 Burrum Street Thornlands QLD 4164	Concurrence Agency Referral	06/04/2017	NA	Approved	3
BWP004160	Design and Siting - Dwelling	Suncoast Building Approvals	40 Majestic Circuit Thornlands QLD 4164	Concurrence Agency Referral	06/04/2017	NA	Approved	3
MCU013948	Home Business	Carol Ann ROBERTS	155 Smith Street Cleveland QLD 4163	Code Assessment	04/04/2017	NA	Development Permit	3
BWP004168	Design & Siting - Dwelling House	Applied Building Approvals	45 Canaipa Point Drive Russell Island QLD 4184	Concurrence Agency Referral	03/04/2017	NA	Approved	5
MCU013922	New Dwelling	Bay Island Designs	5 Cliff Terrace Macleay Island QLD 4184	Code Assessment	03/04/2017	NA	Development Permit	5
MCU013953	Dwelling House	Development Solutions Qld	6 Pandora Court Macleay Island QLD 4184	Code Assessment	06/04/2017	NA	Development Permit	5
BWP004074	Outbuilding (garage)	Building Code Approval Group Pty Ltd	68-78 Wallaby Road Redland Bay QLD 4165	Code Assessment	06/04/2017	NA	Development Permit	6
BWP004138	Design and Siting - Patio Roof and Deck	The Certifier Pty Ltd	26 Sapium Road Redland Bay QLD 4165	Concurrence Agency Referral	05/04/2017	NA	Approved	6
BWP004158	Design and Siting - Gazebo	Glenn Murrant Building Certification	27 Bouquet Street Mount Cotton QLD 4165	Concurrence Agency Referral	03/04/2017	NA	Approved	6
BWP004164	Design and Siting - Garage	All Approvals Pty Ltd	39 Helicia Circuit Mount Cotton QLD 4165	Concurrence Agency Referral	03/04/2017	NA	Approved	6
BWP004169	Design and Siting - Shed	All Approvals Pty Ltd	39 Papaya Street Mount Cotton QLD 4165	Concurrence Agency Referral	05/04/2017	NA	Approved	6

Decisions Made Under Delegated Authority 02.04.2017 to 08.04.2017

CATEGORY 1

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
BWP004151	Design and Siting - Carport	Pacific Approvals Pty Ltd	83 Sallows Street Alexandra Hills QLD 4161	Concurrence Agency Referral	07/04/2017	NA	Approved	7
BWP004147	Domestic Outbuilding	Titan Enterprises (Qld) Pty Ltd	17 Stanley Street Capalaba QLD 4157	Concurrence Agency Referral	06/04/2017	NA	Development Permit	9
BWP004172	Building over of near relevant infrastructure (sewer)	Richmond & Ross	203-215 Old Cleveland Road Capalaba QLD 4157	ConRef 20 Day Referral	04/04/2017	NA	Approved	9
BWP003804	Retaining Wall Exceeding 1m and Swimming Pool	Apex Certification & Consulting	9 Seaside Close Thorneside QLD 4158	Code Assessment	23/09/2016	6/04/17	Development Permit	10
BWP004177	Design & Siting - Carport & Patio	Building Code Approval Group Pty Ltd	7 Rofail Court Thorneside QLD 4158	Concurrence Agency Referral	03/04/2017	NA	Approved	10

Decisions Made Under Delegated Authority 02.04.2017 to 08.04.2017

CATEGORY 2

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
OPW002159	Operational Works - Multiple Dwelling x 5	Curtin Developments Pty Ltd Mahey Pty Ltd As Trustee	5 Yarrow Court Cleveland QLD 4163	SPA - 15 Day Compliance Assessment	05/04/2017	NA	Compliance Certificate Approved	2
OPW002172	Landscaping works - Multiple Dwelling x 7	Greg Williams Constructions Pty Ltd	113-117 Broadwater Terrace Redland Bay QLD 4165	SPA - 15 Day Compliance Assessment	03/04/2017	NA	Compliance Certificate Approved	5
MCU013622	Aged Care Facility - 12 Units	R & G Walker Pty Ltd As Trustee	168 Mount Cotton Road Capalaba QLD 4157	Impact Assessment	09/05/2016	3/04/17	Development Permit	9

Decisions Made Under Delegated Authority 09.04.2017 to 15.04.2017

CATEGORY 1

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
BWP004183	Combined - Design & Siting and Build over or near relevant infrastructure - Carport	The Certifier Pty Ltd	5 Kerby Place Wellington Point QLD 4160	Concurrence Agency Referral	12/04/2017	NA	Approved	1
BWP004174	Design and Siting - Dwelling	Bartley Burns Certifiers & Planners	32 Booran Street Point Lookout QLD 4183	Concurrence Agency Referral	11/04/2017	NA	Approved	2
BWP004179	Design and Siting - Swimming Pool and Fence	Bartley Burns Certifiers & Planners	52 Waterline Boulevard Thornlands QLD 4164	Concurrence Agency Referral	11/04/2017	NA	Approved	3
MCU013942	Dwelling House	Bruce Benedict EVANS	36 Leichhardt Terrace Russell Island QLD 4184	Code Assessment	12/04/2017	NA	Development Permit	5
BWP004171	Design and Siting - Dwelling House	Building Code Approval Group Pty Ltd	24 Kubler Crescent Redland Bay QLD 4165	Concurrence Agency Referral	10/04/2017	NA	Approved	6
BWP004149	Design and Siting - Carport	All Approvals Pty Ltd	39 Hilltop Crescent Alexandra Hills QLD 4161	Concurrence Agency Referral	10/04/2017	NA	Approved	7
BWP004187	Design and Siting - Dwelling	Clarendon Homes Qld Pty Ltd	18 McPherson Street Thornlands QLD 4164	Concurrence Agency Referral	13/04/2017	NA	Approved	7
BWP004192	Design and Siting - Carport	All Approvals Pty Ltd	7 Bower Street Birkdale QLD 4159	Concurrence Agency Referral	13/04/2017	NA	Approved	8
BWP004145	Domestic Outbuilding (shed)	Total Span Capalaba	56-60 Greenfield Road Capalaba QLD 4157	Code Assessment	11/04/2017	NA	Development Permit	9
BWP004147	Design and Siting - Domestic Outbuilding	Titan Enterprises (Qld) Pty Ltd	17 Stanley Street Capalaba QLD 4157	Concurrence Agency Referral	10/04/2017	NA	Approved	9

Decisions Made Under Delegated Authority 09.04.2017 to 15.04.2017

CATEGORY 1

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
BWP004077	Design and Siting and Build over or near Infrastructure - Outbuilding (shed) and Rainwater Tank	Bartley Burns Certifiers & Planners	12-14 Maud Street Birkdale QLD 4159	Concurrence Agency Referral	11/04/2017	NA	Approved	10

CATEGORY 2

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
OPW002157	Operational Works - ROL 1 into 4	Projects And Designs Pty Ltd	90-100 Main Road Wellington Point QLD 4160	Code Assessment	12/04/2017	NA	Development Permit	1
OPW001813	Operational Works for Reconfiguration, Realignment of boundaries 2 into 2 (SmartEda)	Harridan Pty Ltd	232 Shore Street North Cleveland QLD 4163	Code Assessment	20/03/2015	10/04/17	Development Permit	2
MCU013928	Refreshment Establishment	Milestone (Aust) Pty Limited	Bay Village Shopping Centre 2-8 Stradbroke Street Redland Bay QLD 4165	Code Assessment	10/04/2017	NA	Development Permit	5
OPW002173	Operational Work - Filling of land	Christina BOLLENBACH	31 Attunga Street Macleay Island QLD 4184	Code Assessment	12/04/2017	NA	Development Permit	5
BWP004153	Building over of near relevant infrastructure (sewer)	McVeigh Consulting Engineers	687-689 Old Cleveland Road East Wellington Point QLD 4160	ConRef 20 Day Referral	11/04/2017	NA	Approved	8
OPW002166	Operational Works - MCU - Medical Centre Building - Bulk Earthworks	McVeigh Consulting Engineers	687-689 Old Cleveland Road East Wellington Point QLD 4160	SPA - 15 Day Compliance Assessment	13/04/2017	NA	Compliance Certificate Approved	8

Decisions Made Under Delegated Authority 09.04.2017 to 15.04.2017

CATEGORY2

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
MCU013661	Apartment Building	Javica Pty Ltd	16 Wharf Street Cleveland QLD 4163	Impact Assessment	06/09/2016	10/04/17	Development Permit	2
MCU013793	Secondary Dwelling	The Certifier Pty Ltd	1 Casuarina Court Capalaba QLD 4157	Code Assessment	12/04/2017	NA	Development Permit	9
OPW002142	16 Space Church Car Park	The Uniting Church In Australia (Capalaba)	30-32 Ney Road Capalaba QLD 4157	Code Assessment	12/04/2017	NA	Development Permit	9

Decisions Made Under Delegated Authority 16.04.2017 to 22.04.2017

CATEGORY 1

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
BWP004110	Design and Siting - Alterations and Additions to existing Dwelling	Bartley Burns Certifiers & Planners	16 Aleon Crescent Ormiston QLD 4160	Concurrence Agency Referral	18/04/2017	NA	Approved	1
BWP004175	Building over infrastructure - (Sewer) - Pergola	Applied Building Approvals	48-50 Gordon Street Ormiston QLD 4160	ConRef 20 Day Referral	21/04/2017	NA	Approved	1
BWP004186	Design and Siting - Domestic Outbuilding	Heather Dawn DECORSO	26 Whepstead Avenue Wellington Point QLD 4160	Concurrence Agency Referral	18/04/2017	NA	Approved	1
BWP004196	Design and Siting - Fence and Dwelling Extension	Mitchell Mark O'BRIEN	28 Hilliard Street Ormiston QLD 4160	Concurrence Agency Referral	20/04/2017	NA	Approved	1
MCU013539	Multiple Dwelling x 4	Michell Town Planning & Development	309 Main Road Wellington Point QLD 4160	Code Assessment	08/09/2015	19/04/17	Development Permit	1
BWP004195	Design and Siting - Dwelling	Henley Properties (Qld) Pty Ltd	150 Bay Street Cleveland QLD 4163	Concurrence Agency Referral	18/04/2017	NA	Approved	2
ROL006162	Reconfiguring a Lot - Standard Format - 1 into 2 lots	Cassie Margaret PADDOCK Steven Ryan PADDOCK	3 Tanderra Street Cleveland QLD 4163	Code Assessment	19/04/2017	NA	Development Permit	2
BWP004184	Design and Siting - Shed	Roxanne Aprille Elysia MIDGLEY	9 Melville Street Thornlands QLD 4164	Concurrence Agency Referral	18/04/2017	NA	Approved	3

Decisions Made Under Delegated Authority 16.04.2017 to 22.04.2017

CATEGORY 1

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
BWP004203	Design and Siting - Dwelling	Dixon Homes Pty Ltd (Sherwood)	8 Weir Street Thornlands QLD 4164	Concurrence Agency Referral	20/04/2017	NA	Approved	3
OPW002162	Advertising Device	Geocal Constructions Pty Ltd	PELICANS NEST 149 Colburn Avenue Victoria Point QLD 4165	Code Assessment	19/04/2017	NA	Development Permit	4
MCU013958	Dwelling House	Michael JONES	99 Perulpa Drive Lamb Island QLD 4184	Code Assessment	19/04/2017	NA	Development Permit	5
OPW002170	Advertising Device Works	Milestone (Aust) Pty Limited	Bay Village Shopping Centre 2-8 Stradbroke Street Redland Bay QLD 4165	Code Assessment	19/04/2017	NA	Development Permit	5
ROL006163	Rearranging Boundaries - 2 into 2 Lots	Wolter Consulting Group	C-Scape 502/20 Salisbury Street Redland Bay QLD 4165	Code Assessment	19/04/2017	NA	Development Permit	5
BWP003977	Shed, Carport and Dwelling Alteration and Extension	Bartley Burns Certifiers & Planners	24-26 Vine Street Redland Bay QLD 4165	Code Assessment	14/12/2016	18/04/17	Development Permit	6
BWP004120	Domestic Outbuilding (carport)	Ronin Town Planning	48-50 Pioneer Road Sheldon QLD 4157	Code Assessment	21/04/2017	NA	Development Permit	6
BWP004181	Design and Siting - Outbuilding (shed)	Bartley Burns Certifiers & Planners	80-84 Avalon Road Sheldon QLD 4157	Concurrence Agency Referral	20/04/2017	NA	Approved	6

Decisions Made Under Delegated Authority 16.04.2017 to 22.04.2017

CATEGORY 1

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
BWP004194	Design and Siting - Dwelling	Henley Properties (Qld) Pty Ltd	8 Vanstone Way Redland Bay QLD 4165	Concurrence Agency Referral	19/04/2017	NA	Approved	6
BWP004197	Design and Siting - Pergola	Paula Margaret THOMPSON Scott Ramon THOMPSON	46 Capella Drive Redland Bay QLD 4165	Concurrence Agency Referral	20/04/2017	NA	Approved	6
BWP004200	Design and Siting - Carport	Michael Victor IRVING	26 Randwick Street Capalaba QLD 4157	Concurrence Agency Referral	18/04/2017	NA	Approved	7
BWP004207	Design & Siting - Shed	The Certifier Pty Ltd	14 Randall Road Birkdale QLD 4159	Concurrence Agency Referral	20/04/2017	NA	Approved	8
BWP004212	Design and Siting - Dwelling	Suncoast Building Approvals	22 Pitt Road Birkdale QLD 4159	Concurrence Agency Referral	21/04/2017	NA	Approved	8
OPW002073	Advertising Device - Upgrade to existing Device on site	Espin Capital Pty Ltd	80-82 Finucane Road Alexandra Hills QLD 4161	Code Assessment	24/10/2016	21/04/17	Development Permit	8
ROL006080	Standard Format: 1 into 2 Lots	Bmj Designs East Coast Surveys Pty Ltd	3 Lawn Terrace Capalaba QLD 4157	Impact Assessment	22/12/2016	18/04/17	Development Permit	9
BWP004202	Design and Siting - Carport and Shed	All Approvals Pty Ltd	12 Pecan Court Birkdale QLD 4159	Concurrence Agency Referral	19/04/2017	NA	Approved	10

Decisions Made Under Delegated Authority 16.04.2017 to 22.04.2017

CATEGORY 1

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
BWP004206	Design & Siting - Dwelling House	Building Code Approval Group Pty Ltd	14 Alma Street Thorneside QLD 4158	Concurrence Agency Referral	19/04/2017	NA	Approved	10

CATEGORY 2

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
C2015	Conv- RETIREMENT VILLAGE	Jensen Bowers Group RPS Australia East Pty Ltd – Brisbane Office The Certifier Pty Ltd	Cleveland Manor Retirement Village 11-21 Grant Street Cleveland QLD 4163	@Application For Consent	18/08/2015	20/04/17	Development Permit	2
OPW002159	Operational Works - Multiple Dwelling x 5	Curtin Developments Pty Ltd Mahey Pty Ltd As Trustee	5 Yarrow Court Cleveland QLD 4163	SPA - 15 Day Compliance Assessment	05/04/2017	21/04/17	Development Permit	2
OPW002164	Operational Works - Multiple Dwelling x 4 - Civil Only	Ausmalay Pty Ltd	17-19 Longland Street Cleveland QLD 4163	SPA - 15 Day Compliance Assessment	20/04/2017	NA	Compliance Certificate Approved	2
OPW002151	Operational Works - Multiple Dwelling x 6 - Combined Civil and Landscaping	Jaxl Holdings Pty Ltd	12 Mary Street Birkdale QLD 4159	SPA - 15 Day Compliance Assessment	18/04/2017	NA	Compliance Certificate Approved	10

Decisions Made Under Delegated Authority 16.04.2017 to 22.04.2017

CATEGORY 2

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
SB004898	Combined MCU Rezoning (RA) & Standard Format Reconfiguration - 2 lots into 16 - ASG FILE (Bay Rise Estate)	Jones Flint & Pike Pty Ltd - Engineers (JF&P)	33-37 Hardy Road Wellington Point QLD 4160	@Reconfiguration of Lots Assessed Under IPA	14/12/2004	18/04/17	Development Permit	1

CATEGORY 3

Application Id	Application Full Details	Applicant	Associated Property Address	Primary Category	Decision Date	Negotiated Decision Date	Decision Description	Division
MCU013735	Tourist Accommodation - Tourism Accommodation Incentive Package	Susan Marie PANUCCIO Trevor Gerald PENSON	315-355 West Mount Cotton Road Mount Cotton QLD 4165	Impact Assessment	20/04/2017	NA	Development Permit	6

11.2.2 PLANNING AND ENVIRONMENT COURT MATTERS LIST CURRENT AT 21 APRIL 2017

Objective Reference: **A2317057**
Reports and Attachments (Archives)

Authorising Officer:

Louise Rusan
General Manager Community and Customer Services

Responsible Officer: **David Jeanes**
Group Manager City Planning and Assessment

Report Author: **Kim Peeti**
Acting Service Manager Planning Assessment
Damien Jolley
Acting Service Manager Development Control

PURPOSE

The purpose of this report is for Council to note the current appeals and other matters/proceedings in the Planning and Environment Court.

BACKGROUND

Information on these matters 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/esearching/party.asp

b) Judgements 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. Department of Infrastructure, Local Government and Planning (DILGP)

The DILGP provides a Database of Appeals (http://www.dlg.qld.gov.au/resources/tools/planning-and-environment-court-appeals-database.html) that may be searched for past appeals and declarations heard by the Planning and Environment Court.

The database contains:

- 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.
- Information about the appeal or declaration, including the appeal number, name and year, the site address and local government.

APPEALS

1.	**File Number:**	Appeal 3641 of 2015 (MCU012812)
Applicant:		**King of Gifts Pty Ltd and HTC Consulting Pty Ltd**
Application Details:		Material Change of Use for Combined Service Station (including car wash) and Drive Through Restaurant 604-612 Redland Bay, Road, Alexandra Hills
Appeal Details:		Applicant appeal against refusal.
Current Status:		Appeal filed in Court on 16 September 2015. Without Prejudice meeting held December 2015. Hearing set down for July 2017.

2.	**File Number:**	Appeals 4940 of 2015, 2 of 2016 and 44 of 2016 (MCU013296)
Applicant:		**Lipoma Pty Ltd, Lanrex Pty Ltd and Victoria Point Lakeside Pty Ltd**
Application Details:		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
Appeal Details:		Submitter appeals against approval.
Current Status:		Appeals filed in Court on 18 December 2015, 4 January 2016 and 6 January 2016. Directions orders obtained 19 February 2016. Trial held 27-30 September 2016. Final submissions 7 October 2016. Awaiting Judgment.

3.	**File Number:**	Appeal 4004 of 2016 (BD155692)
Applicant:		**Michelle Maree Webb**
Application Details:		Dwelling House at 236-246 Queen Street, Cleveland Building works (deemed material change of use in accordance with s265 of the *Sustainable Planning Act 2009*)
Appeal Details:		Applicant appeal against Council refusal.
Current Status:		Appeal filed 5 October 2016. No action taken.

4.	**File Number:**	Appeal 4807 of 2016 (MCU013719)

Applicant:	**IVL Group Pty Ltd and Lanrex Pty Ltd**
Application Details:	Car Park at 32A Teak Lane, Victoria Point (Lot 12 on SP147233)
Appeal Details:	Applicant appeal against Council refusal.
Current Status:	Appeal filed 6 December 2016. Experts being briefed. Court review scheduled for 17 May 2017.

5.	**File Number:**	Appeal BD617 of 2017 (MCU013477)
Applicant:		**Roycorp Pty Ltd**
Application Details:		Multiple Dwelling (x 141) at 11 Rachow Street, Thornlands (Lot 8 on RP84253)
Appeal Details:		Applicant appeal against Council refusal.
Current Status:		Appeal filed 20 February 2017. Experts being briefed. Mediation scheduled for 8 May 2017.

6.	**File Number:**	1085 of 2017 (MCU012368)
Applicant:		**Ponda Developments Pty Ltd**
Application Details:		Multiple Dwelling (x 87) and 900m^2 commercial office or shops at 219-221 Bloomfield Street, Cleveland (Lot 2 on RP212525)
Appeal Details:		Originating application to revive a lapsed approval.
Current Status:		Application filed 24 March 2017. Review scheduled for 3 May 2017.

OTHER PLANNING & ENVIRONMENT COURT MATTERS/PROCEEDINGS

7.	**File Number:**	2771, 2772 and 2774 of 2016
Applicant:		**KFA Investments Pty Ltd**
Development:		Unlawful filling at 91-101, 91-141 and 115 Rocky Passage Road, Redland Bay (Lot 1, Lot 2 and Lot 4 on SP117632)
Appeal Details:		Appeals against Enforcement Notices.
Current Status:		Appeals 2772 and 2771 were discontinued by the Appellant on 16 February 2017. Appeal 2774 is to be reviewed on 18 May 2017.

8.	**File Number:**	3075 of 2016

Applicant:	**Michelle Maree Webb**
Development:	Dwelling House at 236-246 Queen Street, Cleveland (Lot 20 on SP175602)
Proceeding Details:	Council application for declarations that the Building Works approval (BD155692) be set aside, a Material Change of Use be applied for, the premises be revegetated and associated orders.
Current Status:	Proceedings filed in Court on 5 August 2016. Court ordered mediation held on 27 March 2017. Matter set down for review on 26 April 2017.

OFFICER'S RECOMMENDATION

That Council resolves to note this report.

11.2.3 ROL006091 & ROL006094 SHORELINE STAGE 1A-C

Objective Reference: **A2175896**

Reports and Attachments (Archives)

Attachments:
Attachment 1 – Shoreline Precinct Plan
Attachment 2 – Stage 1a Proposal Plan
Attachment 3 – Stage 1b Proposal Plan
Attachment 4 – Stage 1c Proposal Plan
Attachment 5 – Shoreline Master Plan
Attachment 6 – Other Approved Plans

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

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

Report Author: **Brendan Mitchell**
Senior Planner

PURPOSE

Council has received two (2) applications seeking Development Permits for Reconfiguring a Lot over three (3) stages on land at 218-236, 238-258 & 275-385 Serpentine Creek Road, Redland Bay as follows:

- Stage 1a – two (2) into 87 lots, new road, four (4) management lots and a public use lot;
- Stage 1b – one (1) into 52 lots, new road, three (3) public use lots and two (2) balance lots; and
- Stage 1c – one (1) into 205 lots, new roads, one (1) public use lot and one (1) management lot.

In accordance with the Shoreline Plan of Development Version G, the application is code assessable as per the tables of assessment for the Shoreline Town Centre Frame Precinct and Residential Precinct.

The application was referred to the State due to the proximity of the site to a State controlled road (Sustainable Planning Regulations Schedule 7 Table 2 Item 2) and the proposal exceeding the thresholds identified in the Sustainable Planning Regulations Schedule 7 Table 3 Item 2.

The key issues identified in the assessment are:

- Wallum Froglet habitat
- Acoustic barrier screening
- Lot sizes – Town Centre Frame Precinct (TCF1)
- Poultry Overlay

- Tankering of waste water
- Road design
- Retaining Structures.

The application has been assessed against the Shoreline Plan of Development, the Infrastructure Agreement and relevant State legislation and it is recommended that a Development Permit be given for Stage 1c. The issue of the poultry buffer over Stages 1a and 1b has not been adequately addressed and therefore it is recommended that a Preliminary Approval only be given for these stages.

BACKGROUND

Preliminary Approval (2014)

The subject site was part of several lots within the Investigation Zone to which a Material Change of Use - Preliminary Approval (PA) (MCU013287) under s242 of SPA was granted on 18 November 2015. The approval established a number of precincts (residential, town centre and open space – see Attachment 1) and a suite of codes to form a Plan of Development (POD) to override Version 6.2 of the Redlands Planning Scheme. The current application is made over the site in accordance with the approved Shoreline POD Version G.

The conditions of the PA require several items to be provided for approval prior to the lodgement of any subsequent development applications over the land. These items were requested as part of the Information Request for this application and responses to these items have been received.

Conditions 4, 6, 8, 10, 12 and 14 all required amendments to a number of documents and plans as outlined in the appendices of the PA conditions and are considered to comply.

Condition 16, 18, 21 (part b), 22 and 23 required plans and documents to be provided to Council and approved. This has occurred and the approved plans and documents have formed part of the assessment criteria for these applications as provided throughout this report.

Permissible Changes

The applicant has requested a number of permissible changes to the PA and the State's conditions to the PA including a:

- Change to the table of assessment for the Open Space Precinct in the POD to allow code assessment of subdivision of Open Space land (approved).
- Change to Condition 24 of the PA to require only partial dedication of the designated Conservation lot to accommodate a sewerage treatment facility (still to be decided).
- Request under Division 9 of the Koala SPRP to have the State's mapping amended over the Open Space lot to accommodate a sewerage treatment facility (still to be decided).
- Change to the State's conditions to align the construction of the acoustic barriers to the staging of the Serpentine Creek Road upgrades and a change to the timing of other intersection upgrades throughout the City (approved).

Utility Installation

A Material Change of Use - Utility Installation for a sewerage treatment facility has been lodged within the Shoreline master plan area and is currently in the information and referral stage.

There are no further previous planning approvals over the site relevant to the assessment of this application.

ISSUES

Development Proposal & Site Description

Proposal

Stage 1a
Stage 1a involves the subdivision of Lots 71 and 72 to the east of Serpentine Creek Road into 87 lots across two (2) sub stages (1a.1 & 1a.2) as shown in Attachment 3. The lots within this stage range from 405m^2- 645m^2.

Two (2) balance lots are formed along Serpentine Creek road for future higher density uses and a further management lot is created within the Open Space Precinct along the foreshore for a future display home use. This lot and the display home will eventually be converted into a community centre and dedicated to Council in accordance with the Infrastructure Agreement. The remaining Open Space Precinct land along the foreshore is also dedicated to Council and becomes part of the Community Destination and Recreation Park.

Stages 1b and 1c
It is proposed to subdivide the subject site into 257 residential lots, three (3) open space lots, a buffer lot and a balance lot as well as new roads. The lots are proposed over the Shoreline Town Centre Frame and Residential Precincts over two stages with lot sizes ranging from 375m^2 – 671m^2. The application also involves the surrender of Easement A on SP268704 which currently provides access to the internal Rural-zoned Lot 12 to the north of the site. This is replaced with the creation of a new easement which links a proposed new road to Lot 12.

Stage 1b (see Attachment 2) comprises 52 residential lots, the dedication of two (2) open space lots (including a neighbourhood recreation park) as well as a buffer lot which effectively acts as an access restriction strip to the proposed trunk collector road.

Stage 1c (see Attachment 3) comprises 205 residential lots and the dedication of one (1) open space lot (neighbourhood recreation park) which forms part of the east west open space corridor. This subdivision also includes six (6) sub-stages.

Site description

Lot 71 & 72 on S31102 (Stage 1a)

The site comprises two (2) lots over a total area of 16.4Ha along the Moreton Bay foreshore and is currently used for cropping as well as associated residential uses. The land slopes toward the foreshore and is quite steep along the embankment.

The site is generally cleared of vegetation with the exception of some exotic tree species around the curtilage of the dwelling on the southern lot and some native and exotic species along the southern boundary.

Lot 11 on SP268704 (Stages 1b and 1c)

The site comprises a 101Ha parcel of land with an access easement traversing the site to a property to the north. It is currently used for agricultural purposes and contains a dwelling house fronting Serpentine Creek Road. A number of poultry sheds are positioned to the east of the site though are currently not operational. Generally the site can be described as open paddock.

The site has sparse vegetation aside from a stand of exotic and native trees surrounding the dwelling house. A farm dam is located to the north east of the site, which represents a low point of the topography. Generally the site is undulating with other low lying areas to the south west of the site that receive some inundation during flood events.

Application Assessment

Sustainable Planning Act 2009

The application has been made in accordance with the *Sustainable Planning Act 2009* Chapter 6 – Integrated Development Assessment System (IDAS) and constitutes an application for Reconfiguring a Lot under the approved Shoreline POD and the associated Infrastructure Agreement (IA).

SEQ Regional Plan 2009-2031

Urban Footprint

The site is not located within the Urban Footprint in the SEQ Regional Plan 2009-2031 and instead forms part of the Regional Landscape and Rural Production Area. Division 3.1 Table 3A of the SEQ Regional Plan State Regulatory Planning Provisions outlines a number of circumstances by which a subdivision is allowed within the Regional Landscape and Rural Production Area, which includes:

(7) The subdivision is consistent with a development approval for a material change of use of premises that has not lapsed, where—

a) the application for the development approval was properly made before 31 October 2006; or
b) the material change of use was assessed by a referral agency against Division 2 of the applicable State planning regulatory provisions; or
c) the material change of use is identified in Division 2, Table 2B, Column 2.

In accordance with (b) the application was referred to the State for assessment against Table 2E Column 2 and was subsequently supported. As such it is considered that the proposed development is consistent with the SEQ Regional Plan in this regard.

Wallum Froglet Habitat

The assessment of the PA identified that under the SEQ Regional Plan, Desired Regional Outcome 2: Natural Environment, Policies 2.1.1 – 2.1.5: the impacts (including offsite impacts) on areas with significant biodiversity value should be avoided or, where it is unavoidable, the impacts should be offset in accordance with the Queensland Government Environmental Offsets Policy. Additionally, ecological connectivity should be improved with an emphasis on rehabilitating degraded areas. A condition of the PA required a detailed assessment of the proposed open space corridor and how any stormwater management / treatment facilities would affect the vulnerable Wallum Froglet. The applicant's response to the condition has been assessed and approved by Council.

A 2016 survey by BAAM (Wallum Froglet Habitat Assessment Shoreline Stage 1B, 1C – Lot 11 SP268704 dated 08/11/2016) addressed current habitat values in the context of the ultimate Shoreline layout. Figure 1 below outlines the areas identified as Wallum Froglet habitat which represent low lying areas of the site that hold water following rain events. This mapping was derived from a previous report (Systematic Survey for Vertebrate Fauna and Ecological Assessments and Survey for Evidence of Koala Activity) by the Australian Koala Foundation (AKF) as part of the

aforementioned master planned community proposal over the site undertaken in 2005 and has been referenced by BAAM in their response. The original report by AKF found that whilst the area was not ideal habitat, there were recorded observations of the species on the subject site in degraded areas lacking in vegetation because of agriculture.

Figure 1: Areas surveyed for Wallum Froglet habitat

The latest BAAM report however concluded that the areas shown in purple do not represent suitable habitat and that the vegetated areas to the south are more important habitat areas. This is therefore at odds with the previous study over the site which was referenced in the BAAM report.

The areas shown in purple above are proposed for stormwater infrastructure to service Stage 1c as well as revegetation as part of subsequent works within the open space corridor required by the approval. Whilst the BAAM report states that revegetation works may improve potential habitats, Council's Environmental Assessment Team has outlined concerns that discharge to these stormwater facilities from developed areas may impact upon the preferred acidic water in which the Wallum Froglet thrives.

As such, a condition is recommended requiring further information on the implications for the species as a result of stormwater runoff and treatment for Stage 1c and other future stages discharging to the watercourses in the south-west of Lot 11. This information will inform future revegetation works as well as detailed stormwater design characteristics.

State Planning Policies & Regulatory Provisions

SEQ Koala Conservation SPRP

The site is within a Priority Koala Assessable Development Area under the SEQ Koala Conservation SPRP. Due to the s242 PA over the site, the proposal is assessed against Division 2 of the regulatory provisions as committed development. The proposal is required to comply with the following provisions:

1. Wherever practicable within the scope of the relevant approval, structure plan or master plan, site design provides safe koala movement opportunities as appropriate to the development type and habitat connectivity values of the site determined through Schedule 2.

   Response: the proposal allows for safe koala movement through the site with the dedication of an open space corridor running east to west through the site.

Furthermore, there will be significant areas of land left undeveloped at this stage of the development to allow for koala movement.

2. Native vegetation clearing is undertaken as sequential clearing and under the guidance of a koala spotter where the native vegetation is a non-juvenile koala habitat tree.

   Response: there is limited native vegetation over the site and therefore limited clearing required. A standard condition requiring a koala spotter will be included in the future Operational Works approvals. Furthermore, a standard advice clause is included recommending that an accurate inspection of all potential wildlife habitats be undertaken prior to removal of any vegetation on site.

3. During construction phases:
   a) measures are incorporated into construction practices to not increase the risk of death or injury to koalas; and
   b) native vegetation that is cleared and in an area intended to be retained for safe koala movement opportunities is progressively restored and rehabilitated.

   Response: as per the response to item (2), standard conditions for future Operational Works approvals will be included to ensure compliance with these requirements.

SPRP (Adopted Charges)

The proposed development is subject to an Infrastructure Agreement (IA) and is not in accordance with the SPRP for adopted charges. More details of the applicable charges are outlined in the 'Infrastructure Charges' section of this report.

State Planning Policy July 2014

- *Fire Hazard*
  The site is identified as being in a Medium and High Potential Bushfire Intensity area as well as a Potential Impact Buffer on the State Planning Policy (SPP) mapping as shown in Figure 2 below.

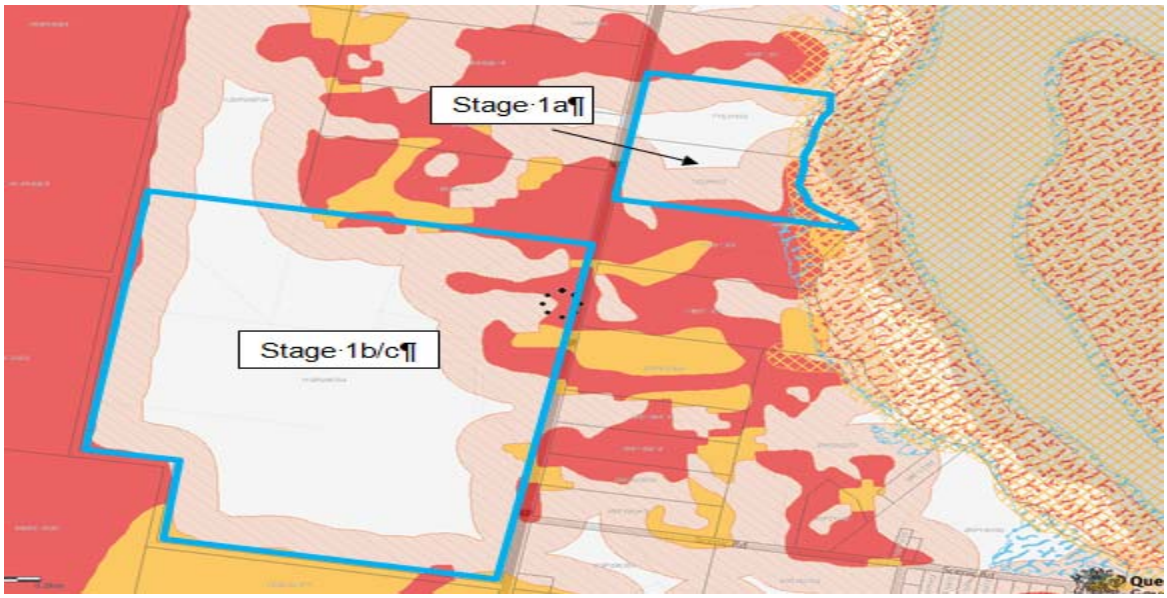


Figure 2: State Planning Scheme Fire Hazard Mapping

The corresponding State Interest Part E states that development:

(1) avoids natural hazard areas or mitigates the risks of the natural hazard to an acceptable or tolerable level, and
(2) supports, and does not unduly burden, disaster management response or recovery capacity and capabilities, and
(3) directly, indirectly and cumulatively avoids an increase in the severity of the natural hazard and the potential for damage on the site or to other properties, and
(4) avoids risks to public safety and the environment from the location of hazardous materials and the release of these materials as a result of a natural hazard, and
(5) maintains or enhances natural processes and the protective function of landforms and vegetation that can mitigate risks associated with the natural hazard.

Under the original assessment of the PA, the Fire Management Strategy for Shoreline Redland Shoreline Project prepared by The Consultancy Bureau was developed to address the bushfire hazards identified through both the State's mapping and the Redlands Planning Scheme (RPS) and has been previously endorsed by Council. In accordance with the Shoreline POD, the Fire Management Strategy replaces the Bushfire Hazard Overlay Code.

Stage 1a is affected only by the Potential Impact Buffer whilst Stage 1b is affected by Medium and High Potential Bushfire Intensity areas. The management strategy recommends the development of a 20m gazetted road adjoining hazard areas for access and to provide for separation. A 15m road reserve has been proposed along the northern boundary of both stages with a further 5m buffer provided for within the balance area in Stage 1b. Fire hydrants are a standard requirement of the SEQ Design and Construction Code and will be provided along road reserves which further demonstrate compliance with the SPP. Additionally, the requirements of AS3959-2009 for future dwellings within 100m of the hazard further safeguard residences from fire risk. These measures are considered to address the SPP and are in accordance with the Fire Management Strategy.

Stage 1c is not identified in either the SPP mapping or Council's Bushfire Hazard Overlay.

- *Matters of State Environmental Significance*

  Under the SPP mapping, Lot 11 has areas identified as Matters of State Environmental Significance (MSES) as shown in Figure 3 below and includes:

  - Two (2) small areas along the northern boundary identified as wildlife habitat; and several water courses identified as regulated vegetation (intersecting a water course).

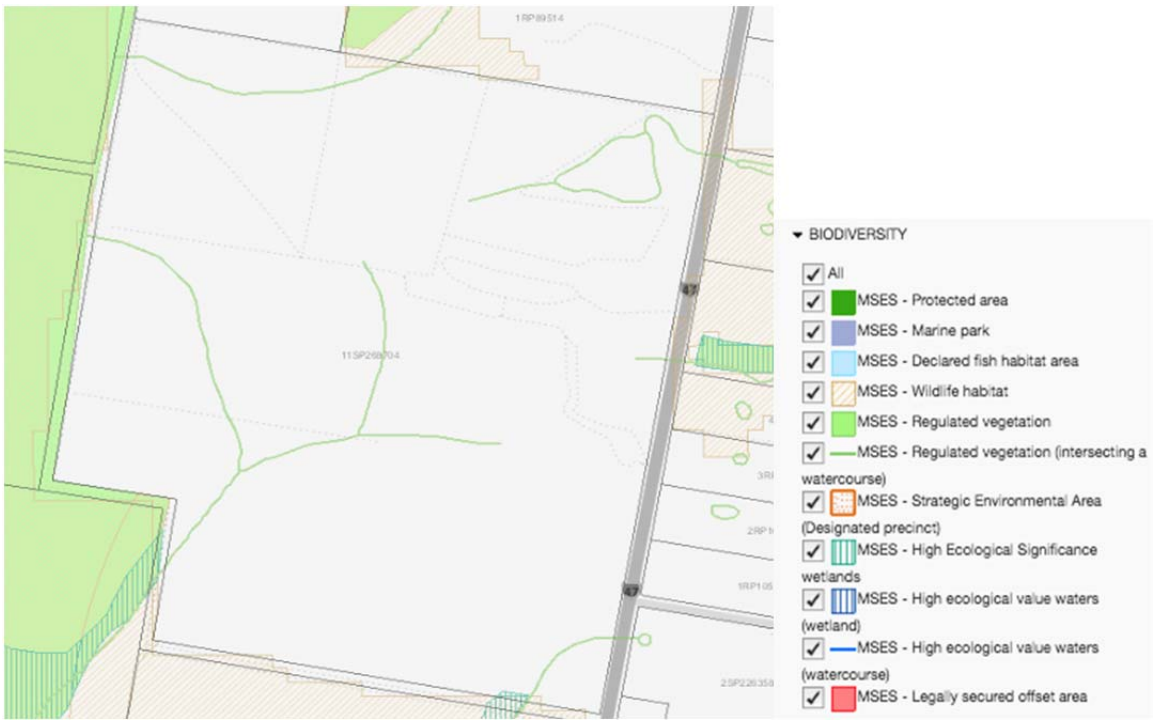


Figure 3 – SPP biodiversity mapping

The policy requires that development:

(1) Enhances matters of State environmental significance where possible;
(2) Identifies any potential significant adverse environmental impacts on matters of State environmental significance; and
(3) Manages the significant adverse environmental impacts on matters of State environmental significance by protecting the matters of State environmental significance from, or otherwise mitigating, those impacts.

In terms of the wildlife habitat areas, these areas are completely void of vegetation and the coarse mapping resolution is considered to have picked up these areas due to their proximity to the adjoining site which is heavily vegetated. In considering the broader open space corridors proposed as part of the development, it is apparent there will be a net benefit to the site in the long term.

In regards to the regulated vegetation intersecting a watercourse, the proposed open space corridor will retain these watercourses and in accordance with the Shoreline Open Space and Landscape Strategy will rehabilitate these areas that are currently void of vegetation.

It is considered that the proposed development complies with the SPP in this regard.

- *Water Quality*
  The applicant has provided a stormwater report over both stages – Shoreline, Redlands Water Sensitive Urban Design (Preliminary Design) that outlines its water quality objectives in accordance with the SPP including:

  - TSS 80% reduction in post development load
  - TP 60% reduction in post development load
  - TN 45% reduction in post development load
  - Gross pollutants 90% reduction in post development load.

These are proposed to be achieved through a number of measures including sediment and bio retention basins as well as wetlands (eastern catchment only). Further detail on how these water quality objectives will be achieved is required to be provided at the Operational Works stage and is conditioned accordingly to ensure compliance with the SPP.

- *Transport Noise Corridor*

  It is noted that Serpentine Creek Road has an associated noise corridor for the entire length adjoining the site. There are no related policies in the SPP to be considered as part of this assessment. Further, Serpentine Creek Road is a State controlled road and the concurrence agency response from SARA included a condition requiring the construction of 3m high acoustic fencing along the road frontage of the site where adjoining sensitive uses. The scale of the acoustic fence required by the concurrence agency condition is likely to cause unacceptable impacts to the streetscape along Serpentine Creek Road.

  In response, the applicant has proposed a combination of mounding and landscaping with a 1.8m fence to lessen the visual impact, which is currently being reviewed by the State as a permissible change request. The specific outcomes for the Town Centre Frame, Residential and Open Space precincts require appropriate design and landscaping to reduce its visual impact and state that:

  Acoustic barriers along Serpentine Creek Road –

  a) Are of a high visual quality, incorporating physical and visual breaks and articulation to create visual interest and break up the bulk of the structure, reducing its dominance in the streetscape; and
  b) Are designed for longevity; and
  c) Are provided with maintenance access; and
  d) Provide for pedestrian and fauna permeability and protection; and
  e) Comprise a mix of vegetated earth mounds, acoustic screens and acoustic treatments incorporated into building design; and
  f) Are screened from the road carriageway by a landscaping buffer no less than 5m in depth, that comprises screen planting to minimise the visual impact of the barrier, enhance visual amenity and create visual interest.

  The applicant has sought a reduced landscaping buffer where a mound and 1.8m fence is proposed as it is argued that less screening is needed when compared to a 3m fence scenario. The applicant is proposing a landscape buffer of 3.4m that incorporates a 1.2m high batter with a combination of small shrubs and trees. Whilst it is acknowledged that the proposed mounding is a better outcome than a 3m high acoustic fence, Council's Landscape Architects have outlined concerns regarding the lack of buffer width in terms of providing adequate screening as well as maintenance issues associated with a 'cluttered' road verge. It is recommended that a condition requiring a full 5m landscape buffer be included on any approval to improve the overall streetscape and provide the space required for adequate plantings and maintenance. Furthermore, as the proposed mounding is not yet approved by the State, a full 5m buffer should be conditioned in the event that the mounding is not accepted.

Shoreline Plan of Development

The application has been assessed under the Shoreline POD Version G in conjunction with Version 6.2 of the RPS.

As a code assessable application, the proposal is assessed against the following:

- Town Centre Frame Precinct Code;
- Residential Precinct Code;
- Open Space Precinct Code;
- Reconfiguration Code;
- Development Near Underground Infrastructure Code;
- Excavation and Fill Code;
- Infrastructure Works Code; and
- Stormwater Management Code.

The following overlays also apply to the site:

- Acid Sulfate Soils Overlay;
- Flood Prone, Storm Tide and Drainage Constrained Land Overlay; and
- Protection of the Poultry Industry Overlay.

Stage 1c is considered to generally comply with the Shoreline POD and the RPS however there are a number of items pertinent to the assessment of the application that are outlined below.

In terms of Stage 1a & 1b, whilst predominantly complying, assessment has identified a conflict with the Protection of the Poultry Industry Overlay, which is discussed below.

Town Centre Frame Precinct intent (Stages 1b and 1c)

Stage 1b is located entirely within the Town Centre Frame Sub-precinct (TCF1) whilst Stage 1c is located within both TCF1 and the Residential Precinct as shown below in Figures 4 & 5. The TCF1 is a reduced density sub-precinct and varies from the main Town Centre Frame Precinct in that it contains predominately low-rise housing (as opposed to mid-rise) in the form of dwelling houses and dual occupancies, which are identified as self-assessable and code assessable respectively in the tables of the assessment. The Overall Outcomes for the Town Centre Frame state that:

> 'where located in the Town Centre Frame (Reduced Density) Sub-precinct form a "Transition Area" between the adjoining conventional residential areas and the higher density Town Centre Frame and Town Centre Core precincts. The Town Centre Frame (Reduced Density) Sub-precinct will have larger portions of detached housing than other areas in the Town Centre Frame which are higher density and predominantly attached housing and commercial uses.'

When considering the proposed subdivision plan and the likely land uses, it is considered that the proposal is consistent with the intent of the precinct.

Similarly the Residential Precinct provides for predominantly low-rise detached houses on individual lots of various sizes and makes dwelling houses self-assessable. In both the TCF1 and Residential Precinct Codes, a maximum density of one (1) dwelling unit per 400m^2 is outlined in the Probable Solutions. With the exception of three (3) 375m^2 lots in the TCF1 portion of Stage 1c, the aforementioned density is achieved. These 375m^2 lots are considered to still achieve a suitable lot size for a dwelling house without adversely affecting the existing streetscape significantly, thereby demonstrating compliance with Specific Outcome S2.4(2)(a) of the Town Centre Frame Precinct Code.

Figure 4 - Stage 1b precinct map

Figure 5 - Stage 1c precinct map

Poultry Overlay

The Shoreline POD has maintained the Protection of the Poultry Industry Overlay over the site and includes Overall Outcomes that seek to protect the ongoing operation of the poultry industry from uses that are sensitive to its operations; and to ensure uses and other development are sited and designed to ameliorate odour impacts generated by poultry industry. Two (2) such poultry farms are within the vicinity of the site (shown in yellow in Figure 6 below) including:

- The farm on Lots 2 and 3 RP89514 north of the subject site; and
- The farm on Lot 11 of the subject site.

The farm on the subject site is an abandoned use, which has been confirmed by the applicant on behalf of the land owner (Edgarange). Therefore, the poultry buffer is not applicable over the majority of the site. The northern portion of Lot 11 and nearly all of Lots 71 and 72 however are affected by the buffer from the poultry farm located on Lots 2 and 3 shown in Figure 6 below. It is evident that all of Stage 1a and most of Stage 1b is affected by the buffer when measuring a 500m radius from the southernmost part of the poultry sheds.

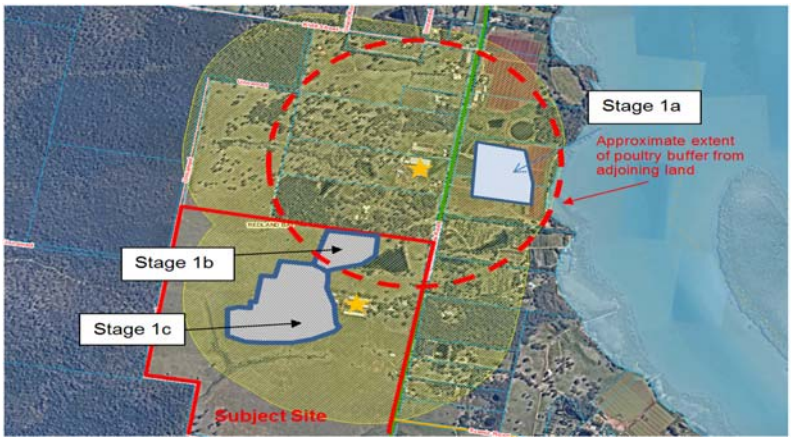


Figure 6 - Poultry Buffers

In support of the application, the applicant provided an economic report that outlined a number of factors contributing to the decline in the poultry industry within Redlands. The analysis concluded:

- The poultry industry planning protection measures in the Redlands City Plan reflect the past situation not the current realities of Redland City nor the likely future trends;
- Changes within the industry are expected to continue driving the increase in size of chicken meat production farms and it is not feasible that the existing derelict poultry farm would be resurrected as a cost competitive and efficient operation for chicken meat production;
- The small scale of egg production in Redland City, the increasingly integrated nature of the industry, the change in consumer preferences to free range eggs requiring more space and the transport economics make the operation unfeasible;
- The specialty sector for products such as ducks, quail, geese, and the like is small and not operating in Redland City, which makes it extremely unlikely that the existing poultry farm can be converted to some other niche bird raising activity; and
- These changes in industry conditions have overtaken the provisions in the Plan and the Poultry Industry Overlay in this location should be reviewed.

Whilst the findings of the report have merit in terms of the market forces and factors influencing the poultry industry generally, the owner of the operation still has existing use rights and whilst production appears to have stalled, there is nothing preventing the reestablishment of the operation at any time.

As such an information request was made requesting the applicant provide:

- A signed affidavit from the owner and operator of the poultry farm confirming that the use has been abandoned and that there is no intention to recommence the use;
- Proof that the ERA licence required to operate the farm has expired or been surrendered; or
- A reverse amenity assessment that demonstrates compliance with the overlay code.

In response to these items, the applicant believes the poultry buffer should be removed completely, or at least amended, over the site for two (2) reasons:

1. The applicant argues the poultry farm over Lots 2 and 3 is abandoned and has provided a legal argument to support this view based upon the perceived state of disrepair that the farm is in and the fact that the farm has not been used for eight (8) years or more. The applicant therefore does not see a conflict with part (a) of the Overall Outcome as there is no 'ongoing operation' of the use.

   Officer Comment

   In evaluating this advice from the applicant, a number of points are considered:

   - The evidence provided in support of the claim that the use has been abandoned is circumstantial and is not supported by any documented evidence;
   - The farmer still has an active ERA licence to operate the use, though it is acknowledged that it has been suspended but not cancelled;
   - The farmer has not verified the claim that the use is abandoned.

In the absence of any support from the owner of the farm in relation to this claim, Council officers do not accept the assertion that the use is abandoned, especially considering there is a financial interest for the developer and the implications upon the farmer in terms of loss of livelihood.

2. The applicant has provided a reverse amenity report based upon 12,000 birds that demonstrates that odour from the farm will not affect Stage 1b.

   Officer Comment

   The owner of the farm has an ERA licence that allows the holder between 1,000 and 199,999 birds. There is no approval that limits the farmer to 12,000 birds and therefore it can be concluded that the farm could be expanded to accommodate a significant number of extra birds. This means that the assumptions underpinning the reverse amenity report are erroneous and therefore should not be relied upon to determine the extent of the odour issue associated with the poultry farm. For these reasons it is considered there is a conflict with the Shoreline POD and therefore the development of Stages 1a and 1b (or a large portion of it) cannot be supported at this stage.

   As such it is recommended that in accordance with s324(4)(a) of SPA, a Preliminary Approval be given for Stages 1a and 1b, with a condition of the approval stating that a Development Permit may be issued upon receipt of:

   a) A signed affidavit from the owner and operator of the relevant poultry farm confirming that the poultry farm use has been abandoned and there is no intention to recommence the use.
   b) Proof that the Environmental Authority to operate the relevant poultry farm has expired or been surrendered.
   c) A reverse amenity report based upon up to 200,000 birds that clearly demonstrates the odour impact associated with the poultry use is acceptable.

Wastewater/Tankering Facility

The PA approved the master planned community at a conceptual level and as such the details of how the site would be sewered was left to a more detailed design phase. It was anticipated at the time however that any sewer system would be a closed system as conveying sewerage to the Mount Cotton or Victoria Point sewerage treatment facilities had not been adequately demonstrated in terms of capacity or logistics. A Material Change of Use (Utility Installation) for a privately-owned sewerage treatment facility is currently being assessed by Council to satisfy the requirements of the IA and the Shoreline POD.

As part of the conceptual planning for the future servicing of the site, the IA allowed for the tankering of sewerage until the ultimate sewer treatment system is approved and implemented. The proposed sewer system (MCU013824) uses a pressurised sewer as a method of collecting wastewater from households to be sent for treatment. The sewerage is collected in a wastewater collection tank and grinder pump located within the frontage of the future dwellings and then conveyed to either the tankering facility or the ultimate facility depending on when the lots are constructed.

It is noted that the collection tank and grinder pump as well as the pipe to the main on the road will remain the property of the service provider. Under s36 of the *Water Supply (Safety and Reliability) Act 2008*, a registered service provider is allowed access to a property for the purposes of carrying out maintenance and repairs, which means that easements over this infrastructure will not be required.

The IA outlines that tankering can occur for the first 200 lots until such time as the ultimate sewer treatment facility is approved and operational. Additionally, before the first survey plan can be approved by Council, the IA requires the design and construction of the sewerage collection, treatment and disposal system to be agreed to the reasonable satisfaction of the General Manager of Infrastructure and Operations of the Council. Consequently, the ultimate facility will need to be constructed prior to approval of the survey plan for the 200th lot. As such, any approval of the tankering system at this stage is conceptual and will be dependent on Council's approval of the system generally, including the administration and legal considerations around a privately-run sewer system. These issues are being addressed in consultation with the Department of Energy and Water Supply as part of the Material Change of Use application currently being assessed by Council.

The proposed tankering facility, as shown in Figure 7 below, comprises two (2) above-ground tanks approximately 16m in length and will require an area of around 240m^2. The tanks are proposed to be located on the subject site to the east of Stage 1c as shown in Figure 8 below.

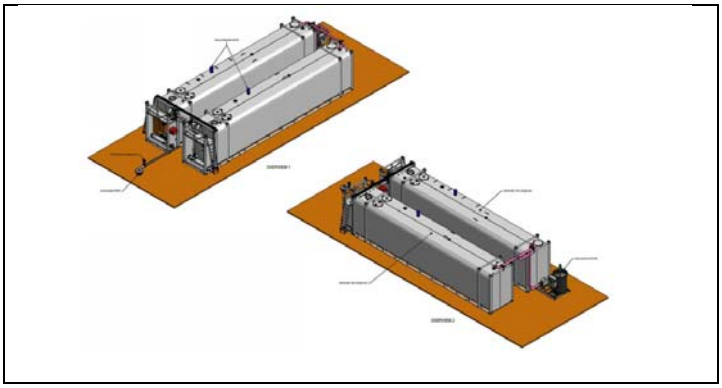


Figure 7 - Tankering Facility

Figure 8 - Location of Tankering Facility

In relation to the tankering facility, Schedule 3 of the IA requires the developer to provide:

- Item 1.1: A tankering facility in accordance with a tankering management plan;
- Item 1.2: An easement of the tankering facility for access and sewerage purposes;
- Item 1.3: An Environmental Authority (ERA57); and
- Item 1.4: Decommissioning of the tankering facility.

To ensure compliance with the IA, Council has reviewed the tankering management plan which sought to locate the tankering facility on the Conservation Park lot (Lot 1 RP133830) on the eastern side of Serpentine Creek Road. This was not supported due to a condition of the PA requiring dedication of this lot to Council. As a privately run tankering facility, this was not supported and therefore the applicant proposed an alternative location. A Temporary Tankering Facility location plan was subsequently received by Council and locates the facility on private land with access via the proposed roundabout within Stage 1a. This is considered to be a more favourable outcome as access for tankering trucks will be safer at the prescribed T-intersection with Serpentine Creek Road. A condition requiring an easement in favour of Council and the service provider over the access, the facility and its curtilage (including turning areas for trucks) is recommended in accordance with the IA.

The Tankering Management Plan provided in response to Council's information request for this application outlines that at full capacity (i.e. 200 lots) the facility will generate as many as four (4) trips per day. Therefore it is considered that the access will need to be sealed to avoid dust and to provide an appropriate standard to accommodate anticipated usage. A condition is recommended requiring all-weather access as well as limiting the number of truck movements through the site to four (4). This will ensure development is in accordance with Specific Outcome 3.10(1) of the Town Centre Frame Precinct code, which requires traffic movements compatible with that experienced in a residential environment.

Further approvals requiring an Environmental Authority for the tankering facility will form part of the decision notice for any approval given over the site. Additionally, a condition requiring the retention of vegetation and/or screening adjacent to the tankering facility is recommended to ensure compliance with Specific Outcome S1 of the Landscape Code which requires landscaping to assist with blending uses and other development with the streetscape or landscape setting.

In conclusion, it is considered that the conceptual Temporary Tankering Facility location plan and the Tanker Management Plan provides for an appropriate framework for the sewering of the site. As previously mentioned the ultimate wastewater solution is still the subject of a detailed assessment by Council and is yet to be decided however, it is considered that the interim solution is consistent with the IA and the Shoreline POD. Access/Road Reserve

Heinemann Road

The conditions of the PA required that prior to the lodgement of a development application over the land, the applicant needed to submit to Council, and have approved, a design for an upgraded signalised intersection at Heinemann Road and Double Jump Road.

In response, the applicant provided an alternative intersection design, which is not signalised however is considered to comply with the intent of the condition. It is noted that the current road reserve widths and truncations are such that providing full

signalisation would include land resumption and significant vegetation removal as demonstrated by a preliminary design for a signalised intersection. Furthermore the PIP and LGIP provide for a future by-pass which would result in the eventual removal of the intersection in its current location. Instead, the applicant has proposed an additional through lane and other treatments in accordance with HTC report 14S07.45.SAH – Shoreline Redlands Project: Proposed Stages 1a, 1b and 1c: Assessment of impacts at the Heinemann Road/Double Jump Road intersection, dated 9 September 2016. In assessing the proposal, Council referred the report to an external consultant (MRCagney) who indicated that the signalisation of the intersection is not needed and that the proposed un-signalised upgrade is adequate to service the additional traffic generated by the Shoreline Development up to 2031. In this regard it is considered that the proposed un-signalised intersection is generally in accordance with the condition and adequately addresses any increases in traffic associated with the development in a timely manner. The proposal is approved pursuant to the PA conditionand the intersection design forms a recommended condition of this approval.

Road and Cycleway Plan

The PA required provision of a detailed road and cycleway plan for the various road catchments. The applicant has provided a road and cycleway plan for Catchments A & B as shown in Figure 9 and 10 below. The plan includes a number of road types that differ from those outlined in Council's standard drawing and are summarised below.

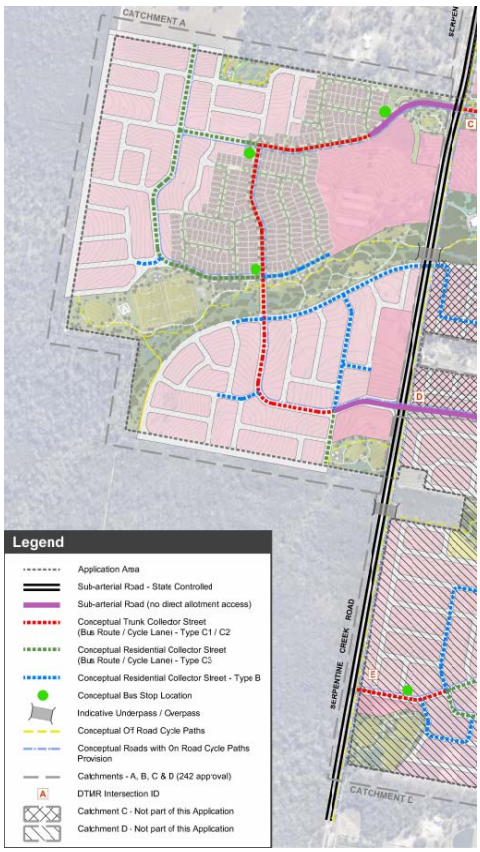


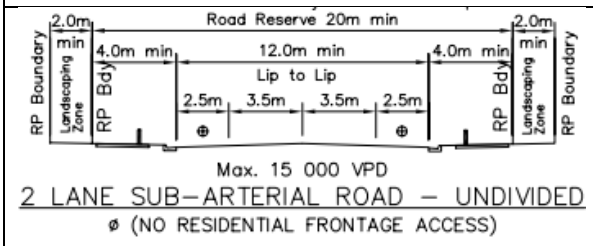
Figure 9 – Catchment A

Figure 10 – Catchment B

The road and cycleway plan proposed by the applicant is considered to be generally in accordance with the approved Cycleway and Path Network Plan and the Shoreline Masterplan as required by the condition in terms of the layout of paths and cycle ways.

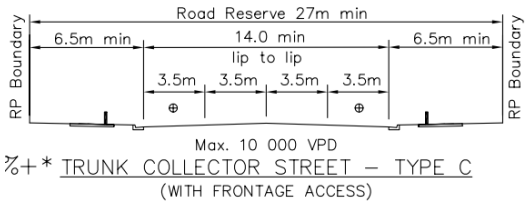
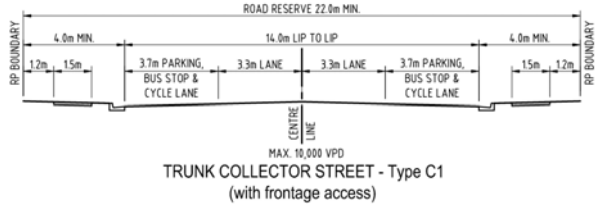
The submission was supported by an RPEQ report which provided an analysis of the demand upon the network and corresponding road types required to service the development. Below are comparisons between what the developer has proposed and what Council's standard drawings prescribe along with Council Officer's response to the proposed cross sections.

- ***Sub-arterial road (no direct allotment access)*** - from the intersection of Serpentine Creek Road to the first intersection (shown in purple in Figure 9).

Council's Standard Drawing	**Proposed by the applicant**
	Cross section not provided.

Response: Detailed design for this section of the road has not yet been provided as the road has multiple sections which vary significantly (e.g. pedestrian crossing, roundabout and the multiple lane section adjacent to the intersection), however generally a 22m road reserve has been provided and is considered adequate. A condition requiring a minimum 2.5m wide footpath on the southern side and a 2m wide footpath on the northern side has been recommended as it is envisaged that the southern side will accommodate the most pedestrian movements.

- ***Trunk collector street (bus route/cycle lane)*** – type C1 with road access which extends from the sub-arterial road and then runs south through the 'spine' of the development dissecting the open space corridor. The C2 type runs the length of the foreshore open space area.

Council's Standard Drawing	**Proposed by the applicant**
	

Response: it is noted that whilst the pavement width proposed by the applicant is wider than Council's standard, the verge width was initially proposed at 4m which reduced the total road reserve width considerably.

The verges are designed to accommodate street embellishments and under/above ground infrastructure including street power poles, lights and electrical pillars or 'green boys' for individual houses. They are also used as a break out space between the road and the real property boundary, serving at least two separate functions – town planning (aesthetics, noise barrier) and engineering (traffic – providing enough room for a car to pull in to an individual driveway without disrupting traffic flow within the road pavement corridor). It is

estimated that an approximately 1.5m wide space is required between the edge of a footpath and back of kerb for the street trees and light poles to allow for sufficient gap between the tree and the road and/or path. A further space of 2.5-3m is required for a shared use path and an additional 1.5m is needed for the electrical pillar including a safety gap. In total, it is estimated that the approximate minimum verge width should be 1.5+2.5-3.0+1.5m = 6m. It is noted that if measured to the lip of kerb, the minimum verge width would increase by the width of kerb to about 6.5m, which is in line with the provisions of the Redlands Planning Scheme.

Interestingly, the Sunshine Coast, which deals with similar greenfield development and has a relatively recent Planning Scheme (2014), also prescribes 6.5m wide verges for their District Collector Street types (up to 5,000vpd) along with 5.5m wide verge, depending on the widths of shared paths – 2m or 3m.

During the assessment, it was officers considered that a 2m wide shared use path would be appropriate instead of 2.5-3m wide path, because there is a dedicated cycle lane provided on road for Trunk Collector type roads. As a result of a reduced path width (2m), the verge width could be calculated as 1.5+2.0+1.5m = 5m, which is considered a reasonable outcome based on the examples discussed and practicality of the solution. It was determined that it would be reasonable to align the verge width with the draft City Plan policy which stipulates a 5.5m verge when measured to the lip of kerb as per Figure 11 below. A condition reflecting the road cross section below is recommended.

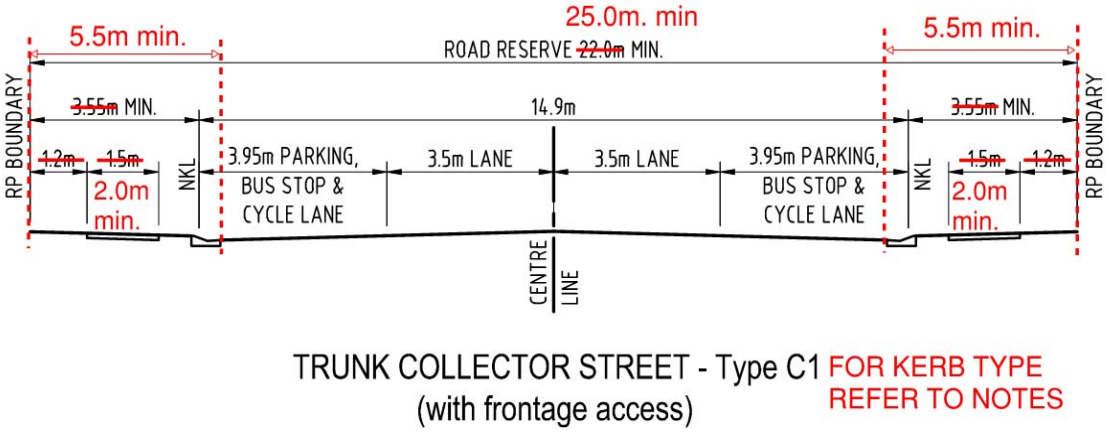


Figure 11 - Recommended Trunk Collect Street

- ***Esplanade Trunk Collector – Type C2***

  Council does not have the equivalent road type in its Standard Drawing however the proposed Esplanade Trunk Collector will be the same as the C1 Trunk Collector but it has a reduced verge width on the side adjoining an open space area. It is considered a reduced verge width is acceptable given the open space and cycleways proposed within the foreshore area. In accordance with the C1-type, the verge on one side is conditioned to be 5.5m as shown in Figure 12 below.

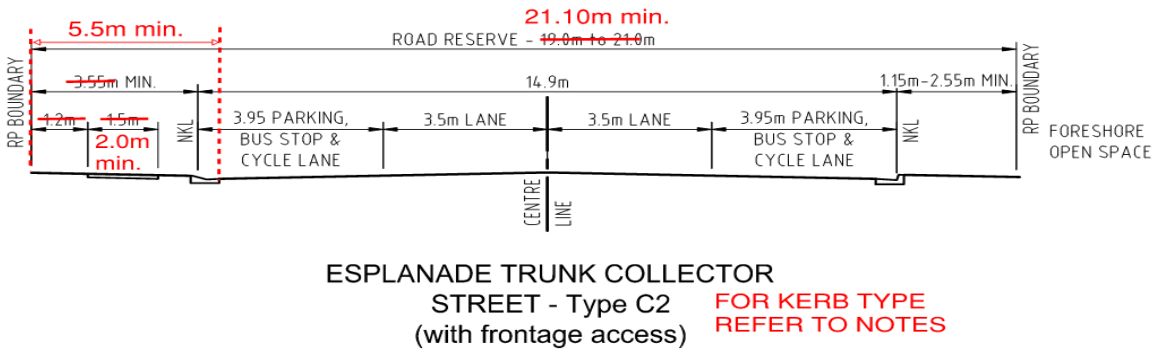
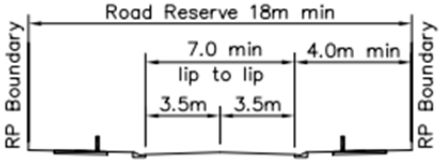


Figure 12 – Esplanade Trunk Collector Street

- ***Residential collector street* – type C3** (cycle lane) adjoining the open space corridors (western portion) and extending to the north western corner of the site.

Council's Standard Drawing	**Proposed by the applicant**
 Max. 3000 VPD RESIDENTIAL COLLECTOR STREET – TYPE B	 RESIDENTIAL COLLECTOR STREET - Type C3 ~~Bus Route~~ (with frontage access)

Response: The applicant is proposing a road reserve width of 19m which is wider than Council's Residential Collector Street initially to allow for a bus route. When looking at the road and cycleway layout approved by the State, no bus stops are approved on residential collector streets and it is considered unlikely that buses would be required for public transport uses on these roads as there is adequate accessibility to the trunk collector network where a bus route is approved. Despite this Council agreed to retain parking lanes along Residential Collector Streets subject to an increase in the verge width to 4.5m in order to balance the hard/soft surface ratio and accommodate a footpath.

A note has been added to the amended section for this road type to ensure that streets are furnished with a 2m wide footpath where accessing schools (see Figure 13).

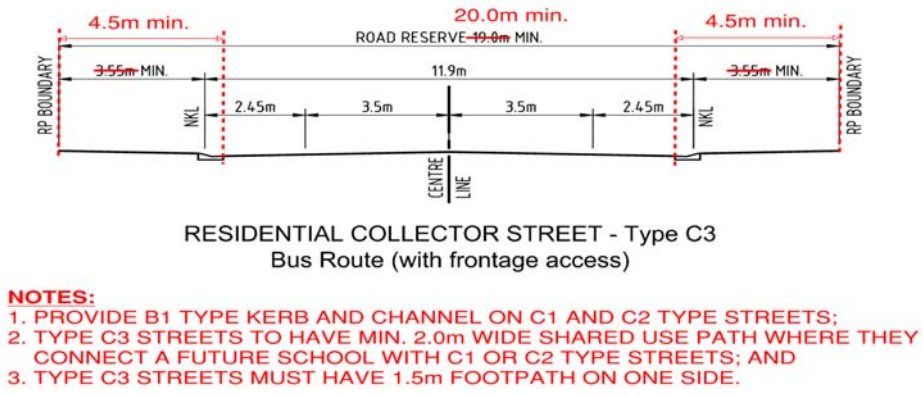
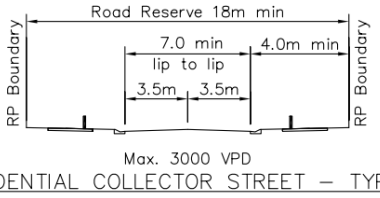
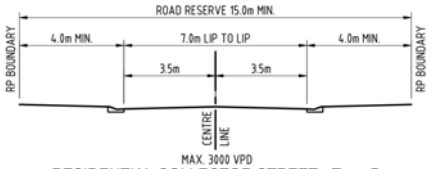


Figure 13 – Recommended Residential Collector Street

Residential collector street – type B (no bus stop or cycle lane) also adjoining the open space corridor but not part of the public transport network.

Council's Standard Drawing	Proposed by the applicant
	

Response: The applicant's proposed Residential Collector Street – Type B also varies from Council's Standard Drawing in that the total road reserve width is 15m in width in leiu of the prescribed 18m. The proposed cross section does not allow for an widened verge to accommodate a footpath. In accordance with Council's Standard Drawing in terms of the total road reserve width, as well as Council's draft City Plan Policy (as endorsed by Council for consultation), it is recommended that a verge width of 5.5m with a 1.5m footpath on one side be conditioned as part of this approval in accordance with Figure 14 below.

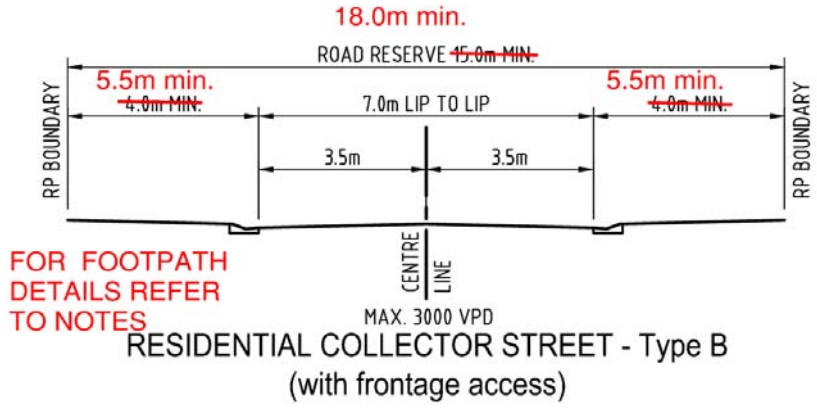
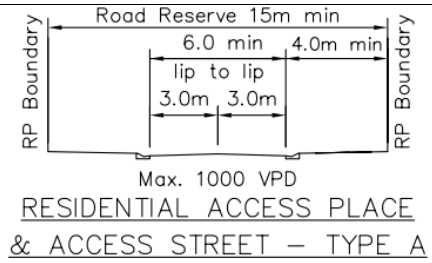


Figure 14 – Recommended Residential Collector Street (Type B)

- **Residential access street – type A** for all other internal roads.

Council's Standard Drawing	Proposed by the applicant
	

Response: The applicant's cross section for the street type is consistent with the Shoreline POD.

In accordance with the Infrastructure Works Code Specific Outcome 7(1) it is considered that the proposed road reserves maintain the safe and efficient operation of roads when considering functional classification of the road from which it gains access. The recommended amendments as endorsed by Council also demonstrate compliance with the condition of the Preliminary Approval.

Access to park (Stage 1b)

It is noted that access to the Neighbourhood Recreation Park proposed as part of Stage 1b is located on the southern side of the proposed main access road (trunk collector street). Concerns were raised through the assessment by City Spaces about how the main residential catchment would safely access the park when considering the traffic volumes and the difficulties for people to anticipate driver behaviour on the roundabout. As such it is recommended that this road be provided with a two-stage pedestrian refuge (fenced area within the road median) as well as other traffic treatments to ensure that pedestrians can cross the street and access the park safely.

This is considered to satisfy Specific Outcome S7(1)(c) of the Reconfiguration Code, which requires new public roads to facilitate safety by providing pedestrian and cyclist crossings at intersections or where required to access high activity nodes (in this case the local park).

Retaining Structures

The subject site is relatively undulating and significant excavation and fill is required across the site. The Conceptual Earthworks Layout Plans for Stages 1b and 1c shows retaining walls required to a maximum height of approximately 1.8m in some instances along the main north-south spines of the proposed lots in order to provide for a level building platform for future houses and allow for drainage to the road reserve (see Figures 15 and 16 below). The majority of the proposed retaining walls are 1.2m or lower where adjoining a road reserve.

Figure 15 - Stage 1b retaining walls over 1.5m in height

Figure 16 - Stage 1c retaining walls over 1.5m in height

Probable Solutions P1(1)(a)(iii)(b) and (c) of the Excavation and Fill Code require retaining walls or structures to:

a) be setback at least half the height of the wall from any boundary of the site;
b) not exceed 2.5 metres in height; and
c) be stepped or terraced 0.75 metres for every 1.5 metres in height to incorporate landscaping.

In addressing the Probable Solution, the applicant made changes to the initial earthworks plan to reduce walls from 2.4m in height to a maximum of 1.8m in height through re-grading and other modifications. The applicant has expressed concern about the requirement for stepping of these 1.8m retaining walls due to the considerable cost associated with the method of retaining as well as the maintenance burden on the future landowner required to access the stepped section. The applicant has outlined that the walls would be of a stamped-concrete or similar articulated style.

The Excavation and Fill Code Specific Outcome S1 seeks to ensure excavation and fill does not reduce the amenity of adjoining properties through the –

(i) loss of solar access or privacy;
(ii) intrusion of negative visual or overbearing impacts;
(iii) ensuring retaining walls or structures –

a. are constructed of materials that are of a high quality appearance;
b. incorporate landscaping or other features to assist reducing their visual bulk and length;
c. do not dominate over, and are of an appropriate scale to buildings / structures and land uses in the locality.

In addressing (i) it is important to note that the proposed 1.8m retaining walls are likely to have 1.8m fences on top of the wall. The walls that exceed the 1.5m Probable Solution however are all along the rear boundaries of the properties. As such it is considered that an exceedance of 300mm will have a negligible impact on solar access. The areas affected by any overshadowing are likely to be within a private open space area and not close to habitable rooms or living areas. No privacy issues are noted in relation to the matter as the walls will have fencing on top which will screen private open space areas. For these reasons the proposed walls are considered to comply.

In terms of (ii) it is considered that a 1.8m high structure is still of a human scale and is common place across the urban landscape. Furthermore, the structures will not face the street and therefore will only affect purchasers of these properties who will consequently be aware of the structures.

In response to (iii)(a) and (b) a condition of the approval will ensure the walls are of stamped concrete, boulder or similar articulated construction to avoid any negative visual aesthetic. Also as previously mentioned, retaining walls in excess of 1.5m will be internal to the lots only. In addressing (c), a 1.8m retaining wall is considered to be of a scale commensurate to a single storey dwelling and whilst there are currently no urban structures in the area, is similar to those used throughout recently constructed residential subdivisions.

For the reasons outlined above, it is considered that the proposed 1.8m retaining structures comply with the Excavation and Fill Code and the requirement for stepping is not warranted in this instance.

Open Space and Recreation Layout

The IA outlines in item 5.1-5.7 that park infrastructure is to be provided in accordance with an approved sport and recreation layout plan. Accordingly, a condition of the PA required the applicant to submit and have approved a sport and recreation layout plan prior to lodgement of the first development application. The applicant's submitted layout is considered to comply with the condition and has been approved with a minor amendment seeking further details for the proposed 'round dam' to the north of the site. A summary of the sport and recreation layout plan is provided as follows:

Community and Destination Recreation Parks (in accordance with IA):

- Total area approx. 18.4 Ha (12.79Ha required);
- Width is generally more than 100m though parts as narrow as 70m;
- Levels generally above 2.4m AHD though some areas below. The total areas are sufficient to account for these areas;
- Beach access is not provided but not considered to be appropriate as there are no beaches along the foreshore;
- Road perimeter approx. 50%;
- Land not on the contaminated land register;
- Not considered to be near noxious or noisy activities once developed.

Other requirements of the IA are either shown on the plans or form conditions of this approval.

District Sports Parks (in accordance with the IA):

- Total area approx. 14.9Ha (14.555 Ha required);
- Total of two areas provided are between 5 and 10Ha each;
- At least 100m in width each;

- Western park overland drainage function approx. 21%;
- Eastern park overland drainage function not provided however appears less than 20%;
- Majority above Q100;
- All above 2.4m AHD;
- Roads to approx. 50% perimeter of open space land;
- Land not on the contaminated land register;
- Not considered to be near noxious or noisy activities once developed.

Other requirements of the IA are either shown on the plans or form conditions of this approval.

Neighbourhood Recreation Parks (in accordance with the IA):

- Total area of 16.33Ha provided (10.585Ha required) across eight parks, though NRP08 (5.4Ha) will eventually form part of Community Destination and Recreation Park (CDRP) – therefore approx. 11Ha;
- Parks that are not part of the CDRP network or an open space corridor are between 0.5 and 2Ha;
- Where detailed Q100 information is available the majority of the park is above this level;
- All above 2.4m AHD expect NRP08 part of which is below however the total areas are sufficient to account for these areas;
- Land not on the contaminated land register;
- Not considered to be near noxious or noisy activities once developed; and
- Accessibility considered to comply.

A staging plan has been provided which dedicates parks in accordance with the IA in terms of sizes and accessibility.

It is noted also that Condition 21 of the PA requires the applicant to submit to Council, and have approved, an Open Space Layout Plan for each open space corridor and the foreshore open space identified on the approved Master Plan with lodgement of the first application over a lot containing the corridor. The plan is also required to include:

i. The vegetation areas that will be retained;
ii. The areas of vegetation that will be cleared;
iii. The plans for rehabilitation and revegetation (weed removal and planting);
iv. Compliance with the following approved documents:
    1. Shoreline Open Space Landscape Strategy (0345-003 Version 3);
    2. Shoreline Biting Insect Management Plan (140906v); and
    3. Stormwater Management Plan for each catchment; and
v. A detailed staging plan for the dedication of the open space corridors and foreshore open space.

The subject land for Stage 1b/c is essentially cleared of vegetation and therefore plans for clearing have not been provided. Areas to be revegetated are outlined in the open space and recreation layout plans and further details of rehabilitation is a recommended condition of this approval. The plans provided also outline the staging for dedication of the open space corridor. It is considered that the proposal complies with this condition of the PA.

Stormwater

The Stormwater Quantity Management Plan prepared by Design Flow demonstrates that there will be no additional discharge from the development once all of the

detention measures are constructed. This is achieved by mitigation of runoff using detention for each catchment.

Stage 1a comprises two (2) catchments that flow to the north east and south east of the site and ultimately to the bay. Two (2) bio retention facilities are proposed at the bottom of each catchment to treat runoff to the required standards before any discharge to the bay.

The comprising Stages 1b and 1c is separated into two (2) catchments; the eastern catchment incorporates Stage 1b and part of 1c whilst the western catchment includes the western portion of Stage 1c.

The eastern catchment will flow to a bio retention area within the open space land adjoining Serpentine Creek Road and then under the road to a rehabilitated wetland area before being discharged to Moreton Bay.

It is noted that the existing dam adjacent to lots in Stage 1b will eventually be decommissioned in accordance with the PA conditions. In the interim however the dam will be modified to perform a stormwater treatment function whilst providing a water source for the ongoing agricultural uses in the area. A condition is recommended requesting details on the dewatering, removal and rehabilitation of these facilities.

For the western catchment, stormwater facilities will form part of the open space corridor and will include a series of bio retention basins and a regional flood detention basin.

No worsening (erosion and the like) will need to be demonstrated during the design phase at the Operational Works stage. It is not necessary to approve the stormwater management plan as part of the conditions at this stage; rather plans are referenced in the conditions to ensure stormwater management is carried out in accordance with the plans.

Under Condition 19 of the Preliminary Approval, the applicant was required to submit and have approved a Stormwater Management Plan for each catchment as part of lodgement of the first development application for each application. The plan is required to comply with other approved documents approved and/or amended by the PA and referenced in the condition as follows:

- The Stormwater Quantity Management Plan (SQMP) for Stages 1a-c prepared by Design Flow is considered to be generally in accordance with the Redlands Water Sensitive Urban Design Strategy and proposes the same water quality objects and treatments as per the strategy;
- It is considered to be generally in accordance with the amended Stormwater Management code within the Shoreline POD;
- It is generally in accordance with the Shoreline Biting Insect Management Plan and further conditions ensure that future stormwater devices are designed accordingly;
- The Stormwater Quantity Management Plan for Stages 1a-c prepared by Design Flow is generally in accordance with the Shoreline Open Space Landscape Strategy including the locations of stormwater treatment devices being consistent with the ‘Location of Management Areas and Stormwater Network. Further conditions ensure that future stormwater devices are designed accordingly as part of Operational Works;

- Conditions of the subsequent ROL applications ensure that stormwater infrastructure is designed in accordance with the policy;
- It is generally in accordance with the Technical Design Guidelines for SEQ however the majority of the requirements under this guideline are too detailed for the ROL stage and will be addressed at the subsequent OPW stages.

Details of the easements for stormwater conveyance form part of the recommended conditions of this approval in accordance with the PA condition.

High Tide Roosts

The conditions of the PA required the applicant to submit to Council, and have approved, a detailed environmental assessment of high tide roosts and low tide feeding areas for listed species of migratory shorebirds, undertaken by a suitably qualified professional prior to lodgement of the first development application. If any roosts or low tide feeding areas are identified, the assessment must consider the likely impact of potential development on these areas, and provide a recommended strategy to address these impacts.

The applicant's response detailed there would be no direct impacts associated with the development as there is no disturbance of the habitats. The study included sufficient additional detail to demonstrate that future parkland, recreational open space and paths in Stage 1a are unlikely to be close enough to shorebird roosting and feeding areas to generate disturbance. It did however note the potential for indirect impacts from humans and pets, which may infiltrate the habitat areas. The steep terrain and contiguous band of mangrove vegetation is considered to provide adequate separation from these impacts. Nevertheless, conditions of future approvals over land along the foreshore will prohibit dog-off-leash, with signage to raise awareness and lighting specifications to limit light spill into these areas.

The measures outlined above have been approved..

Overlays

- **Acid Sulfate Soils –** Parts of the site are under 20m AHD which is the upper level that could trigger the overlay code. Those parts are well above the investigation threshold level of 5m AHD. No impact is expected and no further investigation is required.
- **Habitat Protection –** Under Section 5.5.1 of the approved POD, this Overlay does not apply to the lots that are the subject of this application. The equivalent document to be used for habitat protection, civil engineering and landscaping design is the Open Space Landscape Strategy Version 3 dated 08/11/2016.
- **Waterways, Wetlands and Moreton Bay –** Under Section 5.9 of the approved POD, this Overlay does not apply to any part of the Shoreline development.

Infrastructure Agreement

- Wastewater

  As discussed in further detail above, the developer proposes a closed wastewater system to service the development and therefore no charges are applicable in this regard. Prior to the sealing of the first lot, the wastewater treatment system must be approved and the ultimate wastewater treatment facility must be completed prior to the sealing of the 200th lot.

  Note – The developer is required to make a financial contribution of $1,884,475 towards the whole of life cost of transportation and maintenance of the sewerage

collection, treatment and disposal system to service the proposed development prior to approval of the plan of subdivision or commencement of a use of a developed lot for the 200th dwelling if the system is located more than one (1) kilometre from the subject site.

- Roads

  As per Schedule 3.1 of the IA, works contribution for local road infrastructure, being the major collector road, must be made prior to the approval of a plan of subdivision or commencement of a use of the first developed lot. The infrastructure is to comprise the design and construction of a trunk collector street type 'C' along the alignment generally shown as 'Conceptual Major Collector Road (trunk road) on the Master Plan (see Attachment 5).

  The general road requirements include:

  - Trunk collector street type 'C' (PSP9 RSC Std Dwg 15) of two (2) through lanes with road reserve width of 27m if road property access is to be provided; or
  - Trunk collector street type 'C' (PSP9 RSC Std Dwg 15) of two (2) through lanes with road reserve width of 19m if road property access is not to be provided. Note: the provision of the 2m landscaping zones are dependent upon streetscape and noise management conditions and may not be required;
  - The road verge adjoining open space land on one side can be reduced to a minimum of 1m to manage utility requirements. The in-verge shared pathway can be redistributed to the open space land;
  - The verge within the town centre can be adjusted to consider any additional streetscape requirements such as outdoor dining as generally complying with Council's laws and policies;
  - The land contribution is to be provided as land dedicated as road to accommodate the work contribution.

  Note – Under Schedule 1 – Special Conditions (c)(ii) a financial contribution under the infrastructure charging instrument for the proposed development for local road infrastructure is applicable, other than the first 406 developed lots ($9,800 per lot). Therefore road network infrastructure charges will not be triggered for this stage however will be levied after the 406th lot.

  Consequently, aside from the construction of the major collector road, no infrastructure charges are applicable for roads for these stages of the development.

- Cycleways/Footpaths

  <u>On-road</u>

  Item 4.1 of the IA deals with the provision of on-road cycleways along Scenic, Orchard and Lagoon View Roads however this condition does not need to be met until the 1,000th lot (Scenic Road), 1,200th lot (Orchard Road) and 1,400th lot (Lagoon View Road) are sealed, and is therefore not required as part of this current application.

Off-road

Items 4.2 to 4.3 of the IA deal with the provision of off-road shared cycleway and pedestrian paths that require the development of a cycleway along Serpentine Creek Road at the same time as that road is being upgraded in accordance with Concurrence Agency conditions. At this stage, the upgrade to Serpentine Creek Road adjacent to the site will accommodate a 2.5m shared footpath along the eastern side of the road in addition to the on-road cycleway. The pathways are required to be constructed and approved before plan sealing of the first lot and must be designed in accordance with Condition 18 of the PA (see Appendix 2- Preliminary Approval Compliance Report). Infrastructure charges for cycleways and footpaths will not be applicable until the 1,407th developed lot and the 34th lot over Lot 2 on RP140163 (Scenic Road adjoining the foreshore park).

Consequently no infrastructure charges are applicable for on-road or off-road cycle or pathway infrastructure for this stage of the development.

- Parks and Open Space

  At this stage of the development only Neighbourhood Recreation Parks are proposed in accordance with the IA.

  Neighbourhood Recreation Parks

  Item 5.5 of the IA requires the development of Neighbourhood Recreation Parks (land contribution and embellishments) in accordance with an approved Sport and Recreation Layout Plan as per Condition 22 of the s242 PA (see Appendix 2 - Preliminary Approval Compliance Report).

  There are two neighbourhood parks (NRP01, NRP03) proposed for Stage 1b and 1c respectively. These parks are required to be dedicated to Council and embellished in accordance with the IA before plan sealing can occur. As per the IA, the land contribution must be provided:

  (a) at no cost to Council;
  (b) as land dedicated as park;
  (c) in stages with a total area of 10,585 hectares;
  (d) with each local recreation park being between 0.5 and 2 hectares in size;
  (e) in locations required for parks in accordance with an approved sport and recreation layout plan as required by the Development Approval;
  (f) so that;
    (1) the width is generally greater than 40 metres wide;
    (2) the overland drainage functionality of the park is minimal;
    (3) the majority of the park sits above the Q100;
    (4) the levels are about 2.4 metres AHD;
    (5) the gradient is less than 20% (recreation parks);
    (6) for foreshore areas (where it is appropriate) beach access to the water is provided;
    (7) the road frontage is greater than 50% of the perimeter;
    (8) there is minimal to no contaminated land;
    (9) its location is not adjacent or close to noxious or noisy activities;
    (10) accessibility to park is no more than a 5 to 7 minute walk for 90% of residents within 500m of the park along local footpaths or other formed walkable routes;

(g) within the Application Land and may be included in the open space corridors shown on the Master Plan provided there is compliance with the above specification.

The proposed neighbourhood recreation park proposed as are of Stage 1c is considered to be in accordance with these requirements in terms of land characteristics and conditions have been included to require further details of the embellishments (in accordance with the IA) at the Operational Works stage. The design is also required to be in accordance with the Biting Insect Management Plan, which is an approved document under the PA that provides for buffering and planting requirements for open space areas to reduce the incidence of biting insects. In line with the Shoreline Open Space Landscape Strategy also, the park proposed in the open space corridor is a minimum of 100m in width and landscaping conditions will ensure compliance with other detailed requirements of the strategy.

- Stormwater
  Items 7.1 to 7.2 of the IA require the design and construction of stormwater infrastructure and land contributions as required for drainage purposes prior to the registration of a lot which is serviced by this infrastructure. For Stages 1a to 1c, Council has received Stormwater Management Plans in accordance with the PA conditions, which are discussed in Appendix 2 - Preliminary Approval Compliance Report. The infrastructure is to be maintained by the developer for a period of five (5) years until being transferred to Council.

  No infrastructure charges are applicable for stormwater across the development.

- Marine Infrastructure
  Items 8.2 and 8.3 of the IA require a kayak launch point for the 200th and 1,000th dwelling respectively. The kayak launch point must be operational before the 200th lot is sealed however there is a clause that allows the developer to pay a contribution of $150,000 in lieu of constructing these launch points. At this stage no application to Council has been made.

- Water Supply
  The proposed development will connect to Council's water supply and therefore is subject to infrastructure charges for each lot. Furthermore, in accordance with the IA, Items 2.1 to 2.3 require the design and construction of a 375mm nominal diameter water main to service the development, though it does not need to be operational until the 1,200th lot is sealed and the existing water connection on Serpentine Creek Road is adequate in servicing the site.

  Under Schedule 1 – Special Conditions (b)(ii) of the IA, a financial contribution under the Infrastructure Charging Instrument for the Proposed Development for water supply infrastructure is applicable. An amount of $849.30 per lot will be payable by the developer. At this time, only Stage 1c is recommended for a development permit and therefore charges are calculated for these lots in sub-stages as follows:

INFRASTRUCTURE CHARGES

Stage 1C.1

The proposed development is subject to infrastructure charges in accordance with the IA. The total charge applicable to this development is:

Total charge: **$11,890.20**

This charge has been calculated as follows in accordance with the IA.

Notice #001607

Residential Component	
14 X 3 bedroom residential dwellings X $849.30 (water supply)	$11,890.20
Demand Credit	
N/A	
Total Council Charge:	$11,890.20

Stage 1C.2

The proposed development is subject to infrastructure charges in accordance with the IA. The total charge applicable to this development is:

Total charge: $34,821.30

This charge has been calculated as follows in accordance with the IA.

Notice #001608

Residential Component	
41 X 3 bedroom residential dwellings X $849.30 (water supply)	$34,821.30
Demand Credit	
N/A	
Total Council Charge:	**$34,821.30**

Stage 1C.3

The proposed development is subject to infrastructure charges in accordance with the IA. The total charge applicable to this development is:

Total charge: $33,122.70

This charge has been calculated as follows in accordance with the IA.

Notice #001609

Residential Component	
39 X 3 bedroom residential dwellings X $849.30 (water supply)	$33,122.70

Demand Credit	
N/A	
Total Council Charge:	**$33,122.70**

Stage 1C.4

The proposed development is subject to infrastructure charges in accordance with the IA. The total charge applicable to this development is:

Total charge: $29,725.50

This charge has been calculated as follows in accordance with the IA.

Notice #001610

Residential Component	
35 X 3 bedroom residential dwellings X $849.30 (water supply)	$29,725.50
Demand Credit	
N/A	
Total Council Charge:	**$29,725.50**

Stage 1C.5

The proposed development is subject to infrastructure charges in accordance with the IA. The total charge applicable to this development is:

Total charge: $30,574.80

This charge has been calculated as follows in accordance with the IA.

Notice #001611

Residential Component	
36 X 3 bedroom residential dwellings X $849.30 (water supply)	$30,574.80
Demand Credit	
N/A	
Total Council Charge:	**$30,574.80**

Stage 1C.6

The proposed development is subject to infrastructure charges in accordance with the IA. The total charge applicable to this development is:

Total charge: $33,972.00

This charge has been calculated as follows in accordance with the IA.

Notice #001612

Residential Component	
40 X 3 bedroom residential dwellings X $849.30 (water supply)	$33,972.00
Demand Credit	
N/A	
Total Council Charge:	$33,972.00

STATE REFERRALS

- **State Assessment & Referral Agency (SARA)**

  SARA provided a referral agency response dated 20 January 2017 (SDA-0916-033507) in relation to stormwater and road works. Conditions relating to road upgrades and acoustic treatments carried over from the PA are also applicable to these stages of the development.

- **Energex**

  In accordance with Section 256 of the *Sustainable Planning Act 2009*, Council requested third party advice from Energex. The service provider has outlined a number of recommendations in relation to development in close proximity to their infrastructure.

PUBLIC CONSULTATION

The proposed development is Code assessable and did not require public notification. Therefore no submissions were received.

STRATEGIC IMPLICATIONS

Legislative Requirements

In accordance with the *Sustainable Planning Act 2009* this development application has been assessed against the Shoreline POD, the Infrastructure Agreement and other relevant planning instruments.

Risk Management

Standard development application risks apply. In accordance with the *Sustainable Planning Act 2009* the applicant may appeal to the Planning and Environment Court against a condition of approval or against a decision to refuse.

Financial

If the development is refused, there is potential that an appeal will be lodged and subsequent legal costs may apply.

If approved, Council will collect infrastructure contributions and/or constructed assets in accordance with the Infrastructure Agreement.

People

Not applicable. There are no implications for staff.

Environmental

Environmental implications are detailed within the assessment in the "issues" section of this report.

Social

Social implications are detailed within the assessment in the "issues" section of this report.

Alignment with Council's Policy and Plans

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

CONSULTATION

The assessment manager has consulted with other internal assessment teams where appropriate. Advice has been received from relevant officers and forms part of the assessment of the application. Officers have also consulted with the relevant asset owners in City Spaces, City Infrastructure and Redland Water.

OPTIONS

The development application has been assessed against the Shoreline POD, the IA and relevant State planning instruments. Stage 1c of the development is considered to comply with the instruments and it is therefore recommended that the application for Stage 1c be approved subject to conditions. Stages 1a and 1b currently conflict with the Shoreline POD and therefore a Preliminary Approval only is recommended for these stages of the development.

Council's options are to:

1. Adopt the officer's recommendation to grant a development permit for Stage 1c, subject to conditions, and grant a Preliminary Approval for Stages 1a and 1b subject to conditions.

2. Resolve to approve the applications, without conditions or subject to different or amended conditions.

3. Resolve to refuse the applications.

OFFICER'S RECOMMENDATION

That Council resolves that a Preliminary Approval be issued for Shoreline Stages 1a (reconfiguring a lot for 2 into 87 lots) and 1b (reconfiguring a lot for 1 into 52 lots) and a Development Permit Approval be issued for Shoreline Stage 1c (reconfiguring a lot for 1 into 205 lots) on land described as Lot 11 on

SP268704 and situated at 275-385 Serpentine Creek Road, Redland Bay, subject to the following conditions:

Stage 1a – Preliminary Approval

The following conditions are required to be met prior to the issue of a Development Permit:

ASSESSMENT MANAGER CONDITIONS	TIMING
1. Demonstrate that the poultry farm use located on Lots 2 and 3 on RP89514 has been abandoned by providing either: a) A signed affidavit from the owner and operator of the relevant poultry farm confirming that the poultry farm use has been abandoned and there is no intention to recommence the use. b) Proof that the Environmental Authority to operate the relevant poultry farm has expired or been surrendered. c) A reverse amenity report based upon up to 200,000 birds that clearly demonstrates that the odour impact associated with the poultry use is acceptable.	As part of the application for a Development Permit for Stage 1a.
Relevant Period	
2. This preliminary approval for Reconfiguring a Lot for Stage 1a will remain current for a period of ten (10) years starting the day the approval takes effect, as per s341 of the *Sustainable Planning Act 2009*.	Ongoing.

Stage 1b – Preliminary Approval

The following conditions are required to be met prior to the issue of a Development Permit:

ASSESSMENT MANAGER CONDITIONS	TIMING
1. Demonstrate that the poultry farm use located on Lots 2 and 3 on RP89514 has been abandoned by providing either: a) A signed affidavit from the owner and operator of the relevant poultry farm confirming that the poultry farm use has been abandoned and there is no intention to recommence the use. b) Proof that the Environmental Authority to operate the relevant poultry farm has expired or been surrendered. c) A reverse amenity report based upon up to 200,000 birds that clearly demonstrates that the odour impact associated with the poultry use is acceptable.	As part of the application for a Development Permit for Stage 1b.
Relevant Period	
2. This preliminary approval for Reconfiguring a Lot for Stage 1b will remain current for a period of ten (10) years starting the day the approval takes effect, as per s340 of the *Sustainable Planning Act 2009*.	Ongoing.

Stage 1c – Development Permit

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

Plan/Document Title	Reference Number	Prepared By	Plan/Doc. Date
Stage 1c – Proposed Reconfiguration	UD-7558-018-C	Jensen Bowers	19/01/2017
Sports, Recreation & Open Space Plan Conceptual NRP03 Plan	UD-7558-036-A	Jensen Bowers	30/11/2016
Biting Insect Management Plan	140906v	FRC Environmental	November 2016
Conceptual Road & Cycle Hierarchy Plan	UD-7558-025-D	Jensen Bowers	30/11/2016
Shoreline Redlands Proposed Typical Cross Sections (as marked in red)	CD13-053-TC1J	Civil Dimensions	22/12/2017
Temporary Tankering Facility (as marked in red)	SR-TFF-01A	Jensen Bowers	22/03/2017
Tankering Management Plan (as marked in red)	SL-WAT-QLD-PL-OPS-0001 Rev 1	Flow Systems	21/11/2016

Table 1: Approved Plans and Documents

2. Submit to Council a Survey Plan for Compliance Certificate approval, in accordance with the approved plans, following compliance with all relevant conditions and requirements of this approval.	Prior to expiry of the relevant period for the approved development.

3.	Comply with the Infrastructure Agreement relating to the subject land.	Ongoing.
Existing Structures		
4.	Demolish or relocate/remove or obtain the relevant approvals for all existing structures on site, including all slabs and footings, in accordance with the approved plan(s) and cap all services prior to demolition commencing.	Prior to Council approval of the Survey Plan.
5.	Remove any existing fences and/or incidental works that straddle the new boundaries, or alter to realign with the new property boundaries or to be wholly contained within one of the new properties.	Prior to Council approval of the Survey Plan.
Utility Services		
6.	Pay the cost of any alterations to existing public utility mains, services or installations due to building and works in relation to the proposed development, or any works required by conditions of this approval. Any cost incurred by Council must be paid in accordance with the terms of any cost estimate provided to perform the works.	At the time the works occur, or prior to Council approval of the Survey Plan, whichever is the sooner.
7.	Design and install underground electricity and telecommunication conduits to service all lots generally in accordance with the requirements of the relevant service providers and the Redlands Planning Scheme Infrastructure Works Code and Planning Scheme Policy 9 – Infrastructure Works, in conjunction with the *Proposed Service Corridor Sections* drawing CD16-054 DA01/3 dated 29/11/2016. Provide Council with written confirmation of the service provider agreements to the supply of electricity and telecommunication services.	Prior to Council approval of the Survey Plan.
8.	Design and install reticulated water, recycled water and sewer services generally in accordance with the *Proposed Service Corridor Sections* drawing CD16-054 DA01-3, dated 29/11/2016.	Prior to on maintenance or Council approval of the Survey Plan, whichever is the sooner.

9.	Design and install water utility services located at Serpentine Creek Road generally in accordance with the *Conceptual Services Layout Plan* Sheet 1 of 2 and 2 of 2, drawing number 8367-T/1, prepared by Sheehy and Partners, dated November 2016.	Prior to on maintenance or Council approval of the Survey Plan, whichever is the sooner.
10.	Design all road layouts and adopt a road hierarchy generally in accordance with the *Shoreline Redlands Proposed Typical Cross Sections (as marked in red)*, drawing CD13-053-TC1J, prepared by Civil Dimensions, dated 22/12/2016, except where agreed otherwise by Council. The road corridor width for proposed 'Road 7' must be in accordance with the *Shoreline Redlands Roundabout Roads 7/27 General Dimensions – General Dimensions* prepared by Civil Dimensions and dated 01/03/2017.	Prior to on maintenance or Council approval of the Survey Plan, whichever is the sooner.
11.	Design and construct roundabout road infrastructure, generally in accordance with the drawing *Shoreline Redlands Roundabout Roads 7/27 General Dimensions – General Dimensions* prepared by Civil Dimensions and dated 01/03/2017.	Prior to on maintenance or Council approval of the Survey Plan, whichever is the sooner.
12.	Design and construct a two-stage pedestrian crossing facility on road 'Road 7', generally in accordance with the *Concept Intersection Detail Plan*, drawing CD16-056-DA03/3 prepared by Civil Dimensions, dated 01/03/17. The pedestrian crossing must be designed to safely accommodate pedestrians with bikes and include necessary fencing barriers, pavement treatment, signage and a refuge zone.	Prior to on maintenance or Council approval of the Survey Plan, whichever is the sooner.
13.	Design and construct a pedestrian crossing treatment located to the south of the future roundabout in stage 1b (across the 'stub' road, to be extended in the future) in order to facilitate pedestrian movement across the road. The treatment should include all necessary signage and pavement marking as required.	Prior to on maintenance or Council approval of the Survey Plan, whichever is the sooner.
14.	Design and construct road infrastructure at the intersection of Serpentine Creek Road (also named 'Intersection C') generally in accordance with the following: a) *Serpentine Creek Road – Stage 1 Conceptual Functional Layout Plan* drawing 8367-Q/4 prepared by Sheehy and Partners, dated 08/12/2016; b) *Intersection C Conceptual Functional Layout Plan*, drawing 8367-F/2 prepared by Sheehy and Partners, dated November 2016.	Prior to on maintenance or Council approval of the Survey Plan, whichever is the sooner.

Land Dedication and Design		
15.	Dedicate land to the State with Council as Trustee for the relevant stages (excluding balance lots) for the following purposes: a) Park/open space; b) Ultimate stormwater drainage infrastructure; and c) Road.	Prior to Council approval of the Survey Plan.
16.	Grant easements for the following and submit the relevant easement documentation to Council for approval. Once approved by Council, register the easements on the property title: a) Stormwater drainage purposes for all stormwater drainage infrastructure constructed to QUDM Level III and above, in order to preserve the rights of upstream properties, as required, in favour of upstream properties. b) Access, construction and maintenance of utility services over the proposed Balance Lot 4006 in accordance with the *Temporary Tankering Facility* plan SR_TTF_01/A, dated 22/03/2017 (amended in red by Council) in favour of Redland City Council and its agents. Include the following: • Access easement connecting future roundabout and tankering facility must be a minimum of 10m wide; • Infrastructure facility/access easement over the holding tanks, including all auxiliary structures and provision for a heavy vehicle turnaround. c) Access purposes over proposed Balance Lot 4006 in favour of Lot 12 on SP268704. The easement must have the same dimensions as existing access 'Easement A' on SP268704 (to be surrendered). d) Turning areas for refuse service vehicle turn-around over Balance Lot 4006 on the western side of Lots 312 and 217, and 148 and 161, where such area is located over private property, in favour of Redland City Council and its agents.	As part of the request for compliance assessment of the Survey Plan.
Split Valuation		
17.	Pay a contribution to Council for the purposes of paying the State Government Split Valuation Fees. The current value of the contribution is $35.25 per allotment (2016/2017 Financial Year). The amount of contribution must be paid at the rate applicable at the time of payment. A Split Valuation Fee is required for each allotment	Prior to Council approval of the Survey Plan.

	contained on the Plan(s) of Survey, including balance lots.	
Biting Insects		
18.	Implement Section 7 of the Biting Insect Management Plan, reference no. 140906v, prepared by FRC Environmental, dated November 2016.	Ongoing.
Access and Roadworks		
19.	Design all roads in accordance with the provisions of Complete Streets, the Redlands Planning Scheme V6.2 Infrastructure Works Code, Planning Scheme Policy 9 – Infrastructure Works and Schedule 6 – Movement Network and Road Design, unless otherwise stated as part of a specific condition of this approval.	Prior to Council approval of the Survey Plan.
20.	Design and construct the necessary upgrade of the intersection at Heinemann Road and Double Jump Road, generally in accordance with the HTC Shoreline Redland Project advice 14S07.45.SAH, dated 09/11/2016, Redlands Planning Scheme and applicable Australian standards and guidelines.	Prior to on maintenance or Council approval of the Survey Plan for the 1st lot, whichever is the sooner.
21.	Submit to Council, and receive Operational Works approval for the design and construction of all road and drainage infrastructure including intersection upgrades created as part of the development and in accordance with the requirements of Complete Streets and the Redlands Planning Scheme, Policy 9 – Infrastructure Works, and as follows: • Provide traffic calming in accordance with the Part 6 of HTC: Road Hierarchy Plan Assessment, reference no. 14S07.52.SAH, dated 30/11/2016; and • Install speed platforms in accordance with the BCC Standard Drawing UMS941/D.	Prior to on maintenance or Council approval of the Survey Plan, whichever is the sooner.
22.	Construct concrete path infrastructure in accordance with the Redlands Planning Scheme along all new roads as follows: a) Minimum 2.0m wide shared use paths on both sides of the road verge on all roads identified as "Conceptual Trunk Collector Street Type C1/C2" drawing reference UD-7558-025-D, prepared by Jensen Bowers, dated 24/03/2017.	Prior to on maintenance or Council approval of the Survey Plan, whichever is the sooner.

	b) Minimum 1.5m wide footpath on both sides of the road verge on all roads identified as "Conceptual Residential Collector Street Type C3", except for the parts of road that connect "Conceptual Trunk Collector Street Type C1/C2" and future school locations as per the plan "Conceptual Trunk Collector Street Type C1/C2" drawing reference UD-7558-025-D, prepared by Jensen Bowers, dated 24/03/2017, where a 2.0m wide path must be provided instead of a 1.5m path on either side of the road. c) Minimum 2.5m wide shared use path in verge on at least one side of Sub-arterial Roads, with a 2.0m wide path on the other side.	
23.	Design and construct an all-weather access track connecting future road from the roundabout and proposed tankering facility, as shown on *Temporary Tankering Facility* plan SR_TTF_01/A prepared by Jensen Bowers, dated 22/03/2017 (amended in red by Council). The access track must meet the following minimum requirements: a) 4m wide (minimum 3m pavement width plus 0.5m min shoulders); b) engineered and constructed in accordance with the requirements of the Redlands Planning Scheme Part 11 –Policy 9 – Infrastructure Works, Chapter 5 – Road and Path Design; c) one coat bitumen seal; d) must be fully maintained during its use.	Prior to Council approval of the Survey Plan
24.	Design and construct a turnaround facility for refuse service vehicle turn-around over Balance Lot 4006 on the western side of Lots 312 and 217, and 148 and 161. The turnaround area must be constructed with compacted gravel (minimum 95% compaction) and covered using one coat bitumen seal or similar.	Prior to on maintenance or Council approval of the Survey Plan, whichever is the sooner.
25.	Ensure the access easement for private property access to Lot 12 on SP268074, is clear of any obstructions	Prior to Council approval of the Survey Plan
26.	Limit the number of tankering truck movements through the site to a maximum of four (4) trips per day.	Ongoing.

27.	Submit to Council, and gain approval for, a road naming plan, in accordance with Council's road naming guidelines, detailing specific road names and designations for all existing and proposed new public roads within the site. Use original road names on all new roads to avoid duplication of any existing road names in the City.	Prior to preparing your Survey Plan.
Stormwater Management		
28.	Convey roof water and surface water in accordance with the Redlands Planning Scheme V6.2 Policy 9 Chapter 6 – Stormwater Management to: • A lawful point of discharge as identified in the *Shoreline Stage 1A, B, C & Serpentine Creek Road – Stormwater Quantity Management Plan Version 2*, prepared by Design Flow and dated December 2016.	Prior to on maintenance or Council approval of the Survey Plan, whichever is the sooner. Ongoing condition.
29.	Manage stormwater discharge from the site in accordance with the Redlands Planning Scheme V6.2 Policy 9 Chapter 6 – Stormwater Management, so as to not cause an actionable nuisance to adjoining properties.	Prior to on maintenance or Council approval of the Survey Plan, whichever is the sooner. Ongoing condition.
30.	Submit to Council, and receive Operational Works approval for a stage-based Stormwater Management Plan (SMP) that is generally in accordance with: • *Shoreline Stage 1A, B, C & Serpentine Creek Road – Stormwater Quantity Management Plan Version 2*, prepared by Design Flow and dated December 2016; • *Shoreline Stage 1B, 1C & Serpentine Creek Road – Stormwater Quality Management Plan Version 2*, prepared by Design Flow and dated August 2016. SMP must addresses both quality and quantity in accordance with the Redlands Planning Scheme V6.2 Policy 9 Chapter 6 – Stormwater Management, including the following: a) Design of allotment drainage;	As part of the application for Operational Works or prior to Council approval of the Survey Plan, whichever is the sooner.

	b) Detailed drawings of the proposed stormwater quantity and quality treatment systems and any associated works. The drawings must include longitudinal and cross sections as well as details of treatment media and any associated vegetation; c) An electronic copy of the MUSIC model; d) A maintenance plan including estimates of asset and maintenance costs; e) Demonstrate that all stormwater discharged from each stage meets the water quality objectives of the *State Planning Policy 2016;* f) Details of public utility easements for stormwater drainage purposes in accordance with Condition 19 of the Preliminary Approval; and g) Detailed documentation about temporary use and ultimate decommissioning of the existing dam in the north-east of Lot 11 and in Lot 73 S31102 as well as the expected timing of the works.	
31.	Design and construct stormwater infrastructure so it is capable of facilitating the orderly and efficient extension of infrastructure in order for the development of subsequent stages to occur.	Prior to on maintenance or Council approval of the Survey Plan, whichever is the sooner.
32.	Demonstrate that detailed designs including flow velocities in flood events for Stage 1c stormwater treatment facilities are in accordance with the Healthy Waterways WSUD Technical Design Guideline (2006), and that inundation times will be less than two (2) hours and have no impact on the function of the treatment systems.	As part of the application for Operational Works or prior to Council approval of the Survey Plan, whichever is the sooner.
Waste Management		
33.	Provide two bin service bays for placement of waste and recycling bins for the purpose of emptying bins only (not for storage of bins) to service future Lots 280 and 281. Construct each bin bay of stamped concrete, exposed aggregate or coloured concrete in accordance with the following: • 2m long x 1m wide on the road frontage adjacent to each lot; • Located in the verge adjacent to Lot 282 so that the length is parallel to the road edge without impeding any drainage or future driveways; • Marked 'bin service bay' in letters of 200mm height.	Prior to Council approval of the Survey Plan.
Water and Wastewater		

34.	Connect all lots to the reticulated sewerage and reticulated water systems in accordance with the Infrastructure Agreement. Submit to Council for approval an application for Operational Works showing the proposed works are in accordance with the *SEQ Water Supply and Sewerage Design and Construction Code* and the Redlands Planning Scheme V6.2 Policy 9 – Infrastructure Works, or other standard as agreed to by Council.	Prior to Council approval of the Survey Plan.
35.	Submit to Council, and obtain approval for, an application for Operational Works for construction of a tankering facility in accordance with the *Temporary Tankering Facility* plan SR_TTF_01/A, dated 22/03/2017 (amended in red by Council), SEQ Water Supply and Sewerage Design and Construction Code and the Redlands Planning Scheme V6.2, Policy 9 – Infrastructure Works as noted within the Infrastructure Agreement.	Prior to Council approval of the Survey Plan.
36.	Design and construct water and sewerage reticulation infrastructure sufficient to service all subsequent development stages of the Shoreline development located on adjacent land (Shoreline balance lots), provide necessary connections at the boundaries of the development for future extension of services.	Prior to on maintenance or Council approval of the Survey Plan, whichever is the sooner.
37.	Make provision for new sewerage and water connections and services to the boundary of newly created balance lots.	Prior to Council approval of the Survey Plan.
Excavation and Fill		
38.	Apply to Council and obtain Operational Works approval for all earthworks associated with the reconfiguration, generally in accordance with the *Concept Earthworks Layout Plan* drawing DA04/4 and DA08/3-DA10/3, prepared by Civil Dimensions, dated 13/03/17 and 27/03/2017 respectively. Design and construct all retaining structures in accordance with Australian Standard 4678-2002 Earth-retaining Structures, in particular the minimum 60 year design life requirements.	As part of the application for Operational Works.
Sediment and Erosion Control		
39.	Install erosion and sediment control measures to minimise the export of silts, sediment, soils and associated pollutants from the site. Design, install and maintain the above measures in accordance with the Redlands Planning Scheme V6.2 Policy 9 – Infrastructure Works, Chapter 4 and the Institute of Engineers' Erosion and Sediment Control Guidelines.	Prior to commencement of civil works, earthworks and construction phases of the development.

Survey Control Information		
40.	Include connections on the survey plan to at least two separate corners from two control marks with a valid DNRM Order or Horizontal Positional Uncertainty. These marks must be shown on the face of the Survey Plan within the Reference Mark or Permanent Survey Mark Tables. The mark number and coordinates should be listed in the cover letter.	As part of the request for compliance assessment of the Survey Plan.
41.	Survey and present all asset infrastructure in accordance with the Redlands Planning Scheme Part 11 Policy 9. The horizontal datum for all work must be MGA and the vertical datum must be Australian Height Datum (AHD).	As part of the request for compliance assessment of the As-Constructed.
42.	Place five (5) new Permanent Survey Marks (PSMs) in the locations detailed below in accordance with Stage 1c – Proposed Reconfiguration, drawing reference UD-7558-018-C prepared by Jensen Bowers, dated 19/01/2017: a) Stage 1c.1 in the road adjoining Lot 148 b) Stage 1c.2 in the road adjoining Lot 181 c) Stage 1c.3 in the road adjoining Lot 241 d) Stage 1c.5 in the road adjoining Lot 304 e) Stage 1c.6 in the road adjoining Lot 314 The exact locations are to be determined by the applicant, with the sites being secure from works and suitable for GPS observations. The PSMs placed shall be a standard brass plaque set in concrete to a minimum depth of 600mm. Each PSM placed is to be levelled to a minimum 4th Order standard.	As part of the request for compliance assessment of the Survey Plan.
43.	Supply a completed Form 6 (Permanent Survey Mark Sketch and Data Sheet) with the Survey Plan for any new PSMs placed. Where new PSMs are placed the requirements of the Redlands Planning Scheme Part 11 Policy 9 (with particular reference to 9.2.7.2 and 9.2.7.4) must be met. Ensure the Form 6 includes: • the mark's AHD Reduced Level (RL); • the vertical origin mark number; • the RL of the vertical origin mark adopted; • the mark's MGA coordinates (easting and northing); • the horizontal and vertical accuracy to which the mark has been fixed; and • the method by which the mark has been fixed in height and position.	As part of the request for compliance assessment of the Survey Plan.

44.	Comply with the requirements of the *Survey and Mapping Infrastructure Act 2003*.	As part of the request for compliance assessment of the Survey Plan.
Environmental Management		
45.	Submit as part of the Operational Works application to Council for stormwater works, an assessment of the implications in relation to *Crinia tinnula* as a result of stormwater runoff and treatment of the Stage 1c development and other future stages discharging to the watercourses in the south-west of Lot 11. Note: In relation to *Crinia tinnula*, review and re-address Sections 4.3, 4.4, 6.0, 6.2 and Figure 6 Constraints Zones Threatened Species Habitats of the *Systematic Survey for Vertebrate Fauna and Ecological Assessments (Medallist) February 2005, AKF*, as referred to in the *BAAM Wallum Froglet Habitat Assessment State 1B & 1C (Lot 11 SP268704) November 2016*.	As part of the application for Operational Works.
Landscaping Works		
46.	Remove all weed species, as identified in Part B of Council's Pest Management Plan 2012-2016.	Prior to Council approval of the Survey Plan.
47.	Obtain operational works approval from Council for a Landscape Plan in accordance with the Redlands Planning Scheme Version 6.2 - Policy 9 – Infrastructure Works Chapters 2, 10 and 11, the Shoreline Biting Insect Management Plan, the Shoreline Open Space and Landscape Strategy and the Infrastructure Agreement dated 17 November 2015. The Landscape Plan must include the following items in addition to the requirements of the Policy: a) Designs that are generally in accordance with the Sports, Recreation & Open Space – Conceptual Masterplan and Stage 1b & c Proposed Reconfiguration Plans by Jensen Bowers; b) Provide a minimum 5.0m wide planted landscaped buffer, wholly within the property boundary, to any proposed fencing to Serpentine Creek Road in accordance with Shoreline Town Centre Frame Precinct and Shoreline Residential Precinct Code S3-11; c) Details of landscaped buffer planting to any proposed fencing; d) Details of street tree planting in accordance with the Redlands	As part of the application for Operational Works.

	Planning Scheme – Part 8 – Division 8 - Landscape Code with species selected from Schedule 9 of the Redlands Planning Scheme Version 6.2, unless otherwise approved as part of the Operational Works. e) Details of cycle/pedestrian paths throughout the whole site; f) Details of treatment and embellishments to the recreation and teenage hangout areas of the open space in accordance with the Infrastructure Agreement; g) Details of water bubbler/fountain; h) Details of any proposed entry statements; i) Details of all rehabilitation planting in the open space areas; j) Details of stormwater facilities. k) Details of bollards and/or kerb treatments provided along all roads that adjoin parkland, plus folding bollard/metal slide rail in the vicinity of Recreation/Open Space/Stormwater Facilities to allow access for maintenance vehicles. l) Details of screen planting around the tankering facility including the retention of existing vegetation and a landscaped strip of at least 2m in width with vegetation a minimum of 2m in height at the time of planting with a spread of at least 2m in width and spaced a maximum of 2m apart.	
48.	Design Open Space Corridors in accordance with Section 2.2 of the Shoreline Open Space Landscape Strategy - Strategies a) to i).	As part of the application for Operational Works.

ADDITIONAL APPROVALS

The following further Development Permits and/or Compliance Permits are necessary to allow the development to be carried out.

- Environmental Authority for an Environmentally Relevant Activity (Tankering Facility).

- Operational Works approval is required for the following works as detailed in the conditions of this approval:

  - Stormwater Management
  - Roadworks and associated drainage works including turn around areas and pedestrian road crossings
  - Earthworks
  - Landscaping
  - Construction of sewer tankering facility and associated access
  - Sewer reticulation and water supply services.

- Building works – demolition:

  - Provide evidence to Council that a Demolition Permit has been issued for structures that are required to be removed and/or demolished from the site in association with this

development. Referral Agency Assessment through Redland City Council is required to undertake the removal works.

Further approvals, other than a Development Permit or Compliance Permit, are also required for your development. This includes, but is not limited to, the following:

- Road Opening Permit – for any works proposed within an existing road reserve.

REFERRAL AGENCY CONDITIONS AND ADVICE

- **Queensland Department of Infrastructure, Local Government and Planning (DILGP)**
  Refer to the attached correspondence from the Department dated 20 January 2017 (DSDIP reference SDA-0916-033507).

- **Energex Limited (advice)**
  Refer to the attached correspondence from the Energex dated 21 October 2016 (Energex reference: HBD 5358221 346060).

ASSESSMENT MANAGER ADVICE

- **Building Design to Reduce the Incidence of Biting Insects**
  Careful attention to elements of both conceptual and detailed design can significantly lessen the potential for mosquitoes (and biting midges) to enter buildings. It is recommended you consider the following design elements:

  - Outdoor entertaining areas are encouraged to be equipped with insect screens with a mesh aperture of not more than 1mm to minimise mosquito entry to the area.

  - Insect screens specifically designed to prevent the entry of smaller insects such as biting midge are recommended to be incorporated to minimise biting midge entry to the building.

  - Locate the majority of windows on the windward side of the building to pressurise the building and reduce opportunities for biting insects to enter the preferred leeward side of the building.

  - Ceiling fans and other air circulation devices are encouraged to increase airflow indoors and outdoors to minimise the ability for mosquitoes to travel inside the building.

  - Outdoor lighting is encouraged to be directed towards the ground to minimise the attraction of biting insects. Mosquitoes will travel significant distance towards lit up areas.

- **Infrastructure Charges**
  Infrastructure charges apply to the development in accordance with the Infrastructure Agreement. The infrastructure charges are contained in the attached Redland City Council Infrastructure Charges Notice.

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

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

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

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

- **Performance Bonding**
  Security bonds may be required in accordance with the Redlands Planning Scheme Policy 3 Chapter 4 – Security Bonding. Bond amounts are determined as part of an Operational Works approvals and will be required to be paid prior to the pre-start meeting or the development works commencing, whichever is the sooner.

- **Survey and As-constructed Information**
  Redland City Council will be transitioning to ADAC XML submissions for all asset infrastructure once the Redlands draft City Plan has been adopted. While current Redland Planning Scheme Policies do not mandate its use, RCC encourages the utilisation of this methodology for submissions.

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

- **Fire Ants**
  Areas within Redland City have been identified as having an infestation of the Red Imported Fire Ant (RIFA). It is recommended that you seek advice from the Department of Agriculture, Fisheries and Forestry (DAFF) RIFA Movement Controls in regards to the movement of extracted or waste soil, retaining soil, turf, pot plants, plant material, baled hay/straw, mulch or green waste/fuel into, within and/or out of the City from a property inside a restricted area. Further information can be obtained from the DAFF website www.daff.qld.gov.au

- **Cultural Heritage**
  Should any aboriginal, archaeological or historic sites, items or places be identified, located or exposed during the course or construction or operation of the development, the *Aboriginal and Cultural Heritage Act 2003* requires all activities to cease. For indigenous cultural heritage, contact the Department of Aboriginal and Torres Strait Islander Partnerships.

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

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

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

shoreline

live · work · play

SERPENTINE CREEK ROAD

ST CLAIR ISLAND

SCENIC ROAD

SERPENTINE CREEK ROAD

- Application Area
- Town Centre Core Precinct
- Town Centre Frame Precinct
- Town Centre Frame Subprecinct
- Residential Precinct
- Open Space Precinct
- Sub Area 1
- Foreshore Open Space Subprecinct
- Tourism / Recreation Activity Area
- Service Centre
- Subarterial Road - State Controlled
- Conceptual Major Collector road (trunk road)
- Conceptual Minor Collector road
- Indicative Underpass / Overpass
- Conceptual Bus Stop Location
- Development Free Buffer

1:10000 @ A3

0 250 500 750 1000m

Precinct Plan. Shoreline

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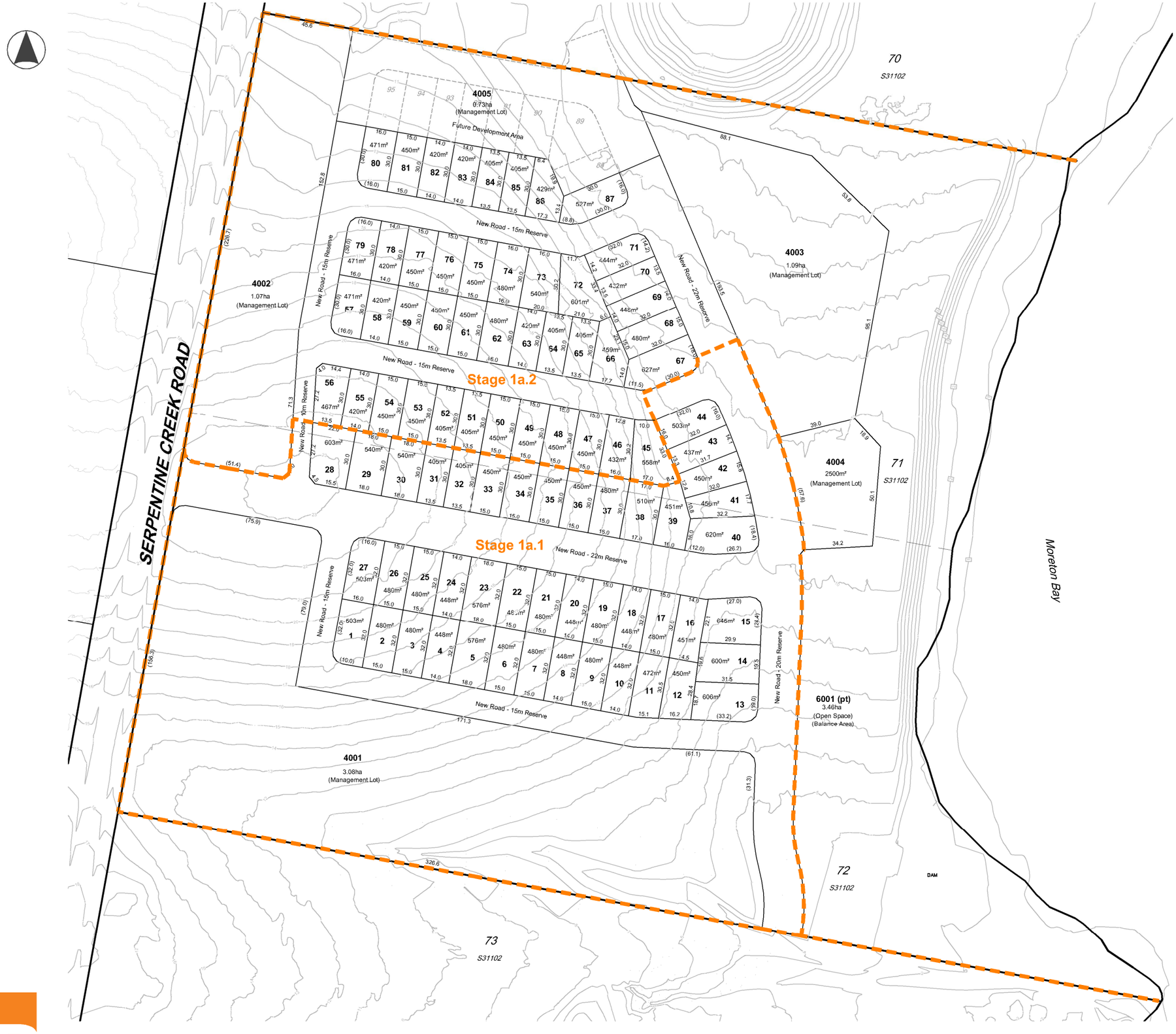


Development Summary

	Stage 1a.1	Stage 1a.2	Total
Residential Lots	44	43	87
Open Space Lots	0	1	1
Management Lots	1	4	5
Total Lots	45	48	93
Length of New Road	950m	540m	1,490m
Area of New Road	1.799ha	0.899ha	2.698ha
Open Space Area	N/A	3.46ha	3.46ha
Stage Area	7.036ha	9.455ha	16.491ha

Notes

RP Description: Lots 71 & 72 on S31102
Local Authority: Redland City Council
Contour interval: 1.0m

Design subject to Council approvals and detailed design. Areas and dimensions are approximate only and are subject to final survey.

Proposed lots 1-87 are intended for residential purposes. Lots 4001-4005 are intended for management purposes and Lot 6001 is intended as Open Space.

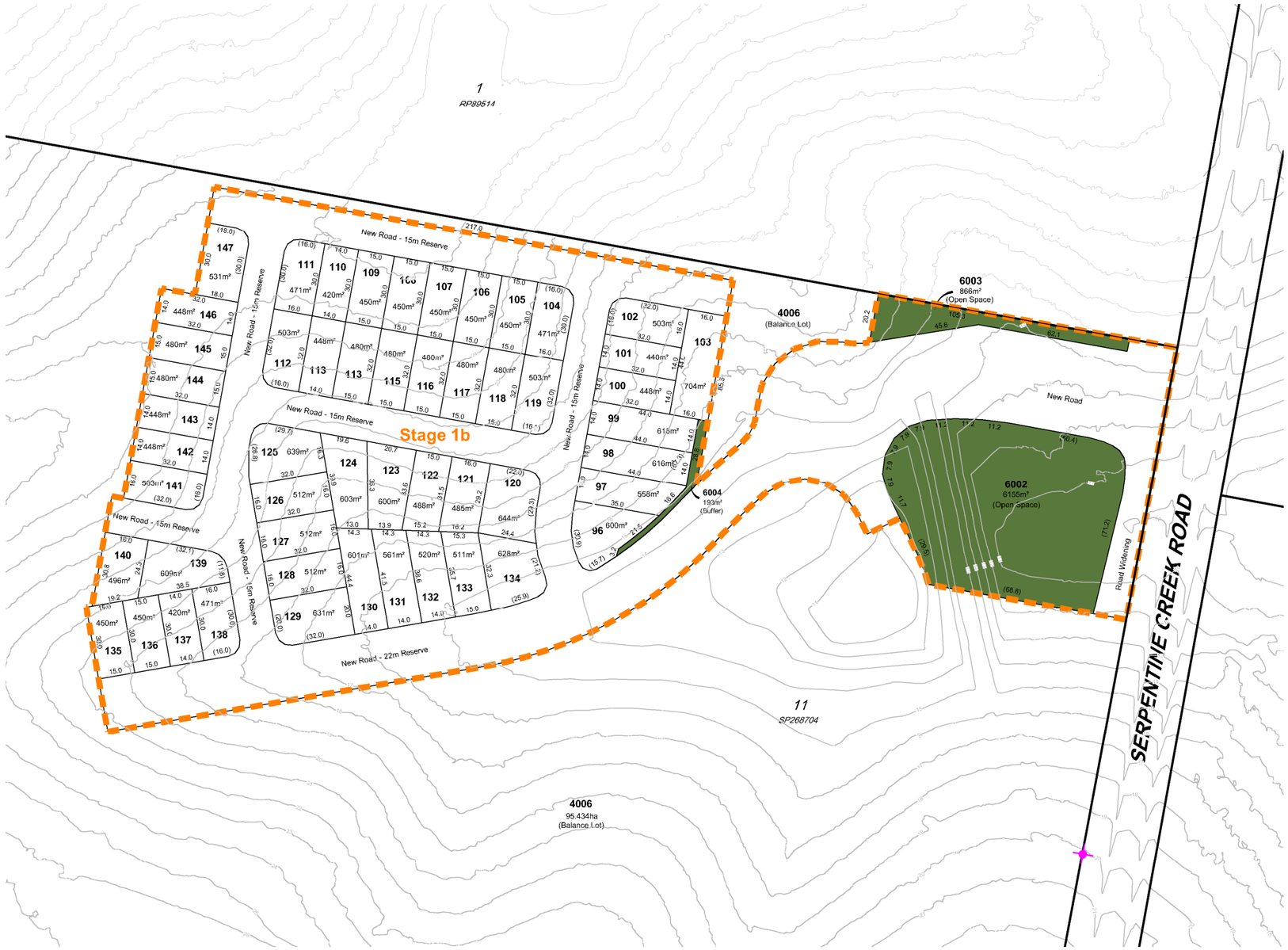
JENSEN BOWERS
SURVEYORS | PLANNERS | DEVELOPMENT ADVISORS
jensenbowers.com.au
72 Costin Street, Fortitude Valley, Qld. 4006 | PO Box 799, Spring Hill, Qld. 4004 T (07) 3852 1771

Drawing Ref: UD-7558-011-F
Date: 19/01/2017
Scale: 1:2,000 @ A3

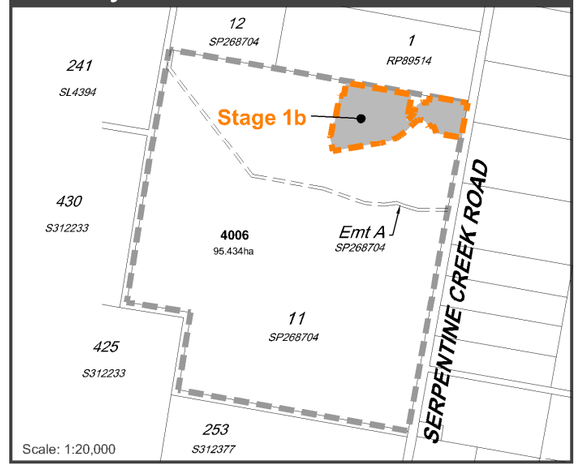
0 20 40 60 80m

Stage 1A - Proposed Reconfiguration

Shoreline
for Shoreline Redlands Pty Ltd



Locality



Development Summary

Residential Lots	52
Open Space Lots	3
Balance Lots	1
Total New Lots	56
Length of New Road	790m
Area of New Road	2.565ha
Open Space / Buffer Area	0.721ha
Stage Area	5.950ha
Balance Area	95.434ha
Total Site Area	101.384ha

Notes

RP Description: Lot 11 on SP268704
Local Authority: Redland City Council
Contour interval: 1.0m

Design subject to Council approvals and detailed design. Areas and dimensions are approximate only and are subject to final survey.

Proposed lots 96-147 are intended for residential purposes. Lot 6002-6004 are intended as Open Space and Lot 4006 is a balance lot.

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JENSEN BOWERS

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Drawing Ref: UD-7558-014-B
Date: 19/01/2017
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0 20 40 60 80m

Stage 1B - Proposed Reconfiguration

Shoreline
for Shoreline Redlands Pty Ltd

shoreline

live · work · play

SERPENTINE CREEK ROAD

ST CLAIR ISLAND

SCENIC ROAD

SERPENTINE CREEK ROAD

- Application Area
- Town Centre Core Precinct
- Town Centre Frame Precinct
- Town Centre Frame Subprecinct
- Residential Precinct
- Open Space Precinct
- Sub Area 1
- Foreshore Open Space Subprecinct
- Tourism / Recreation Activity Area
- Service Centre
- Subarterial Road - State Controlled
- Conceptual Major Collector road (trunk road)
- Conceptual Minor Collector road
- Indicative Underpass / Overpass
- Conceptual Bus Stop Location
- Development Free Buffer

1:10000 @ A3

0 250 500 750 1000m

Precinct Plan. Shoreline

20.October.2016 . 14009_SK015 [21]

lat27

shoreline
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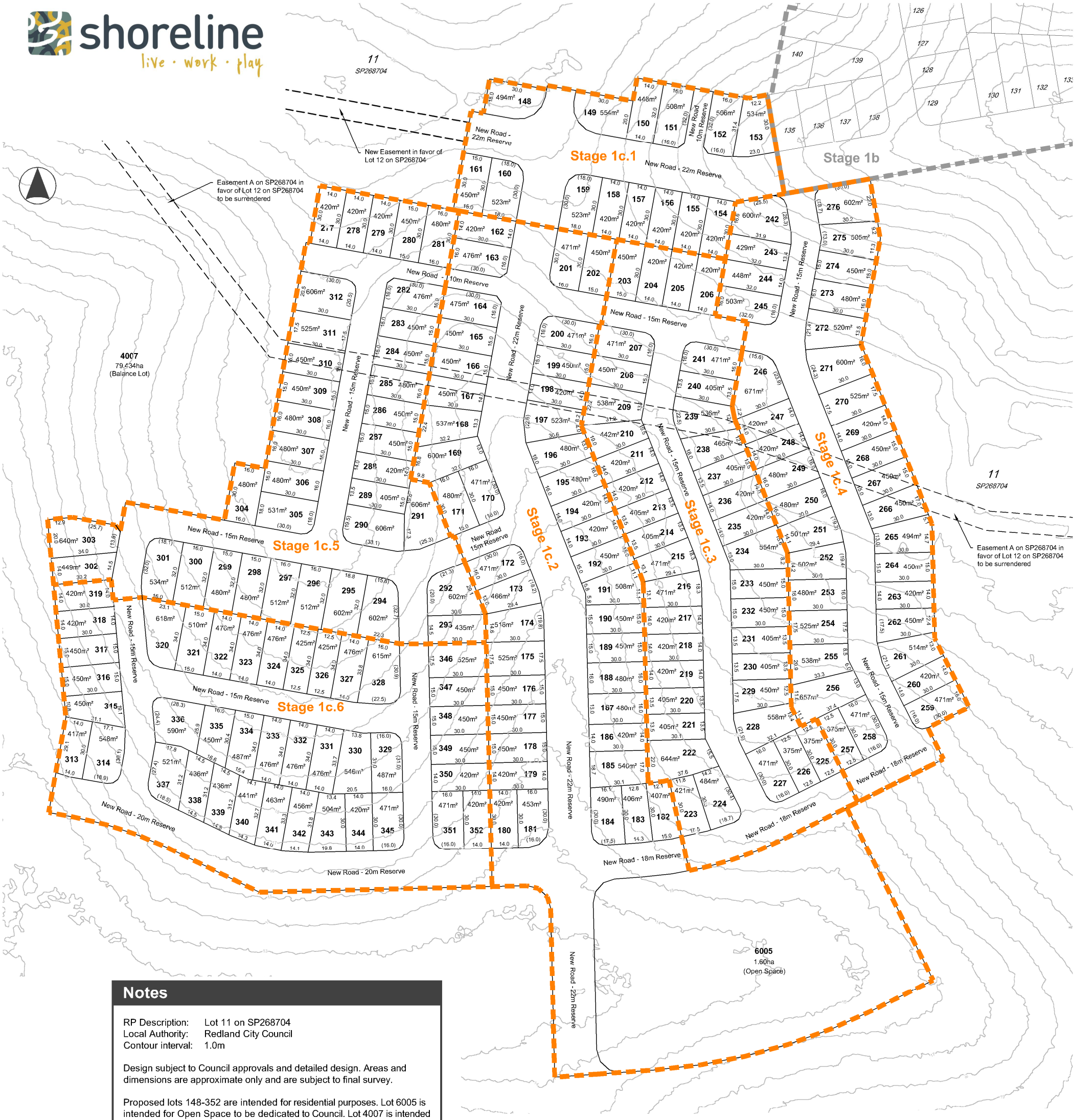

Notes

RP Description: Lot 11 on SP268704
Local Authority: Redland City Council
Contour interval: 1.0m

Design subject to Council approvals and detailed design. Areas and dimensions are approximate only and are subject to final survey.

Proposed lots 148-352 are intended for residential purposes. Lot 6005 is intended for Open Space to be dedicated to Council. Lot 4007 is intended as a balance lot.

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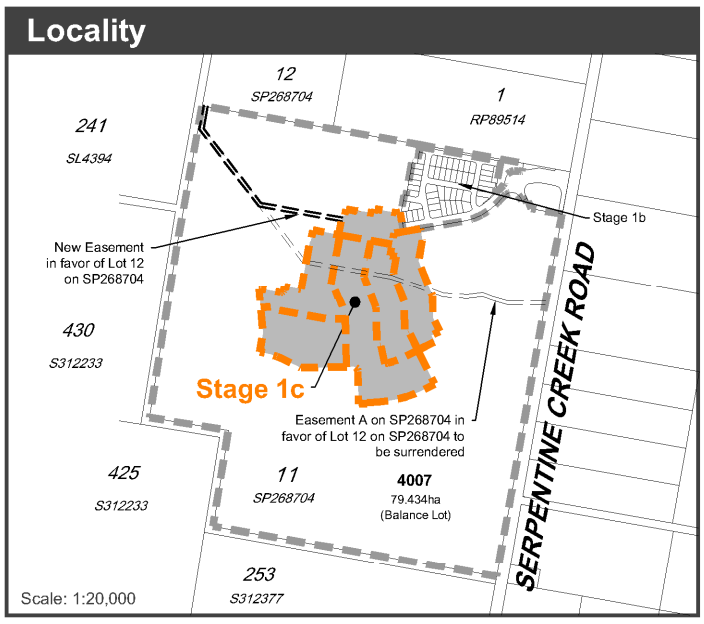
Development Summary

Stage	1c.1	1c.2	1c.3	1c.4	1c.5	1c.6	Total
Residential Lots	14	41	39	35	36	40	205
Open Space Lots	-	1	-	-	-	-	1
Balance Lots	-	-	-	-	-	1	1
Total New Lots	14	42	39	35	36	41	207
Length of New Road	210m	590m	430m	390m	480m	570m	2670m
Area of New Road	0.505ha	1.277ha	0.668ha	0.567ha	0.673ha	0.995ha	4.681ha
Area Open Space	-	1.60ha	-	-	-	-	1.60ha
Stage 1c Area	1.168ha	3.186ha	2.411ha	2.284ha	2.459ha	2.892ha	16.0ha
Stage 1b Area							5.95ha
Balance Area							79.434ha
Total Site Area							101.384ha

Locality



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Stage 1C - Proposed Reconfiguration

Shoreline
for Shoreline Redlands Pty Ltd

shoreline

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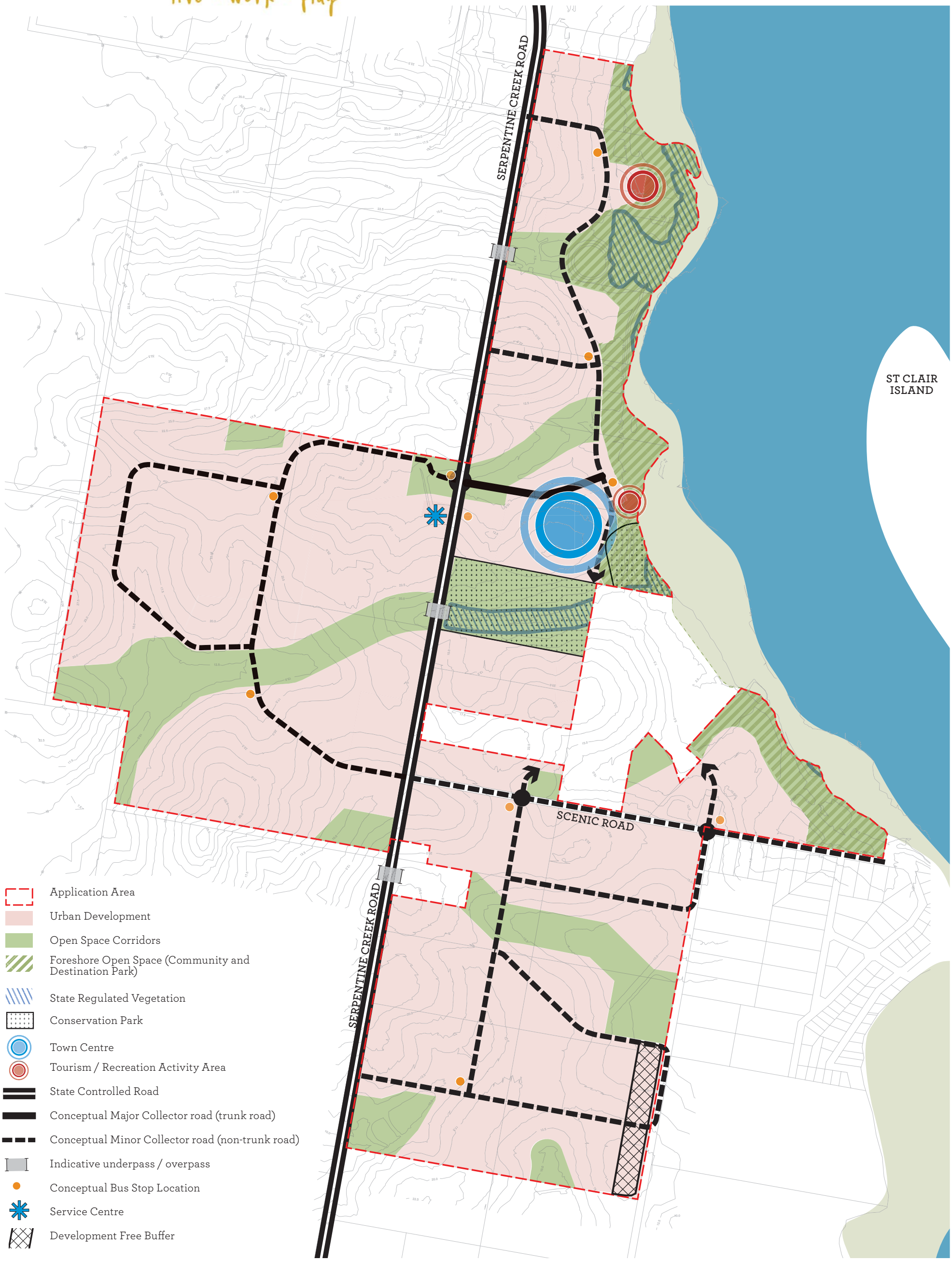

Master Plan. Shoreline

20.October.2016 . 14009_SK013 [24]

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shoreline
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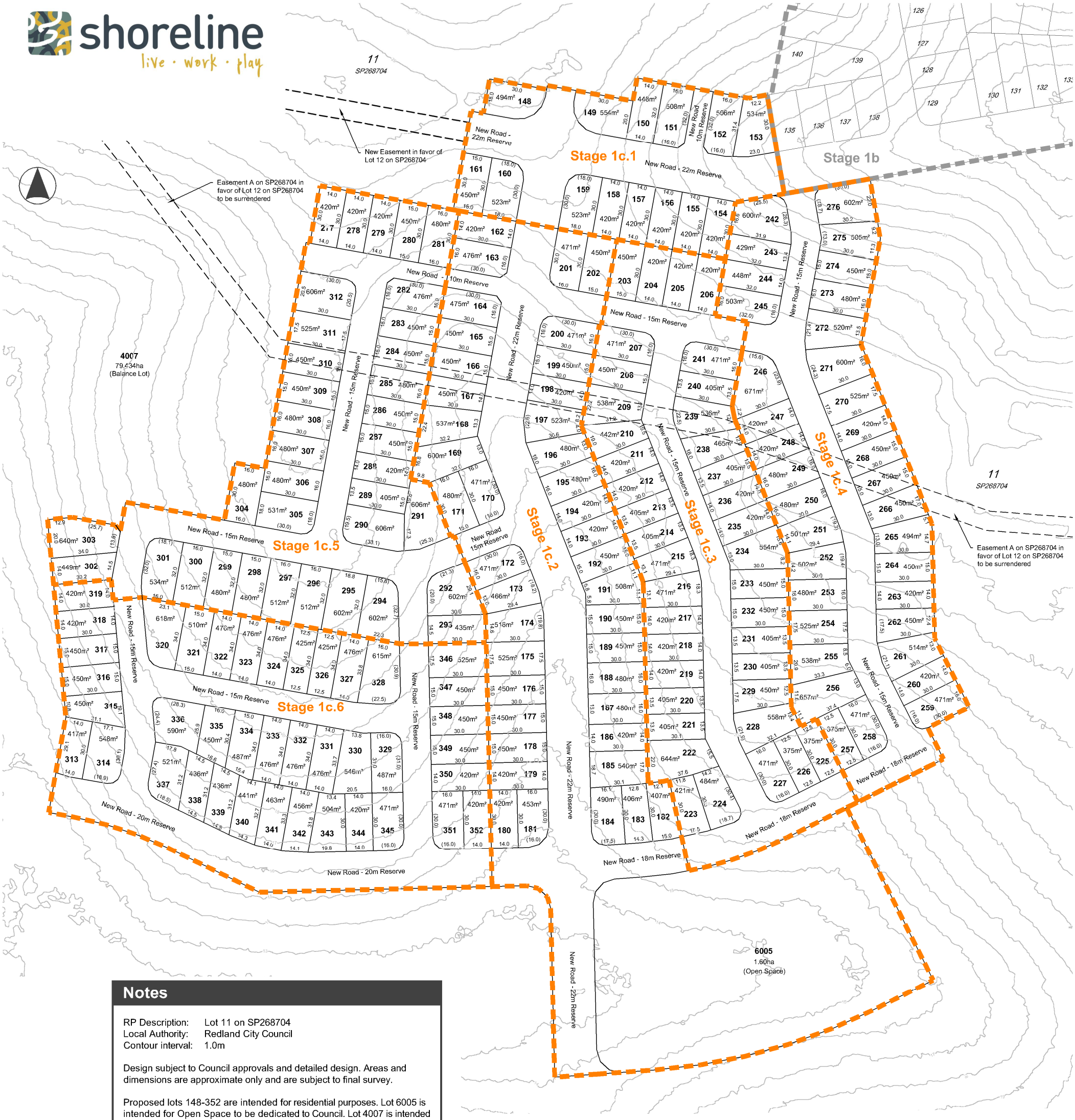

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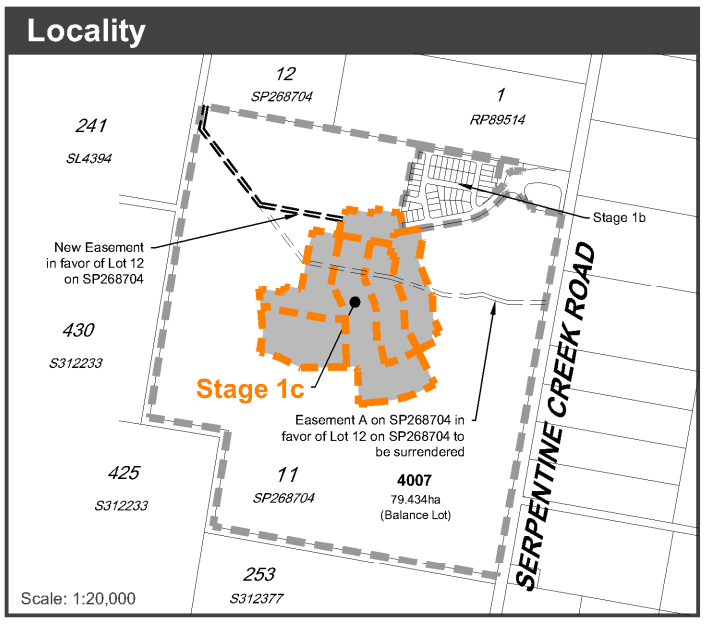

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0 20 40 60 80m

Stage 1C - Proposed Reconfiguration

Shoreline
for Shoreline Redlands Pty Ltd

shoreline
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Key Map

Neighbourhood Recreation Park - Location 3

Park Name: Outlook

Conceptual Park Embellishments as per Infrastructure Agreement

Legend

01	Play Area
02	Teenage hangout places
03	Outdoor fitness equipment
04	Kickabout area
05	Seating
06	WSUD Bioretention
07	Footpath Network
	Conceptual Q100 Flood Line

Miseellaneous Taps, drink fountains, fencing, bollards and signage. These items to be located in the detailed design phase.

Area:	Approximately 2.16ha
Flood effected area:	Approximately 0.35ha (16%)

Note:Total area delivered across multiple Neighbourhood Recreation Parks will be at least 10.585ha in accordance with the Infrastructure Agreement (see UD-7558-031-A). Final areas subject to detailed design.

Sports & Recreation areas, in response to RCC Decision Notice 25.11.2015 Item 22, to comply with the following approved documents:

- Shoreline Open Space Landscape Strategy
- Shoreline Biting Insect Management Plan
- Shoreline Infrastructure Agreement
- Open Space Layout Plan

Design is conceptual only and subject to detailed design and Council approvals for each relevant stage. Areas and dimensions are approximate only and are subject to final survey.

Sports, Recreation & Open Space

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Date: 30/11/2016
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0 10 20 30 40m

Conceptual NRP03 Plan

Shoreline - Redland Bay

for Redland Bay Southpark Corporation Pty Ltd & Sutgold Pty Ltd

Shoreline

Biting Insect Management Plan

Prepared for:

Shoreline Redlands Pty Ltd

frc environmental

PO Box 2363, Wellington Point QLD 4160
Telephone: + 61 3286 3850
Facsimile: + 61 3821 7936

frc reference: 140906v

freshwater estuarine marine

Document Control Summary

Project No.:	140906
Status:	For Implementation
Project Director:	John Thorogood
Project Manager:	John Thorogood
Title:	Shoreline – Biting Insect Management Plan
Project Team:	Dr Christoph Braun, Cameron Forward, Lauren Pratt, Dr John Thorogood
Client:	Shoreline Redlands Pty Ltd
Client Contact:	Garry Hargrave, Chris Barnes
Date:	March 2017
Edition:	140906v
Checked by:	Carol Conacher _____
Issued by:	John Thorogood _____

Distribution Record

Shoreline Redlands Pty Ltd: electronically as Word and PDF

Contents

Tables

Figures

1 Introduction

1.1 Purpose of this Management Plan

This Biting Insect Management Plan has been developed to support the development of Shoreline, a new community at Redland Bay. The Plan informs the planning, design, construction and operational phases of the development, providing recommendations for the management of mosquito and biting midge breeding and roosting.

The Plan has been informed by the Biting Insect Management Strategy developed for Shoreline by Mosquito Consulting Services Pty Ltd (2014). The Strategy concluded that 'with implementation of (these) general control and design strategies the risks associated with biting insect can be suitably mitigated to a level suitable for urban development'.

1.2 Structure of this Management Plan

The Biting Insect Management Plan *per se* is presented in Section 7.

Sections 1 – 5 provide context to the Plan in respect of:

- the location of the site and regulatory framework (Section 1);
- the incidence of mosquitoes and biting midge (Section 2);
- the incidence of arboviruses (Section 3);
- the likely impact of development (Section 4) and the impact of mosquitoes and biting midge on residents and visitors (Section 5).

Section 6 provides a framework for management.

1.3 Shoreline, its Location and Context

Shoreline is a 310 ha development site located to the south of Redland Bay, straddling Serpentine Creek Road and with an extensive frontage to Moreton Bay (Figure 1). The line of Highest Astronomical Tide (HAT) separates the site from the Moreton Bay Marine Park. The site has been extensively cleared and is currently predominantly used for market gardening, horticulture and grazing.

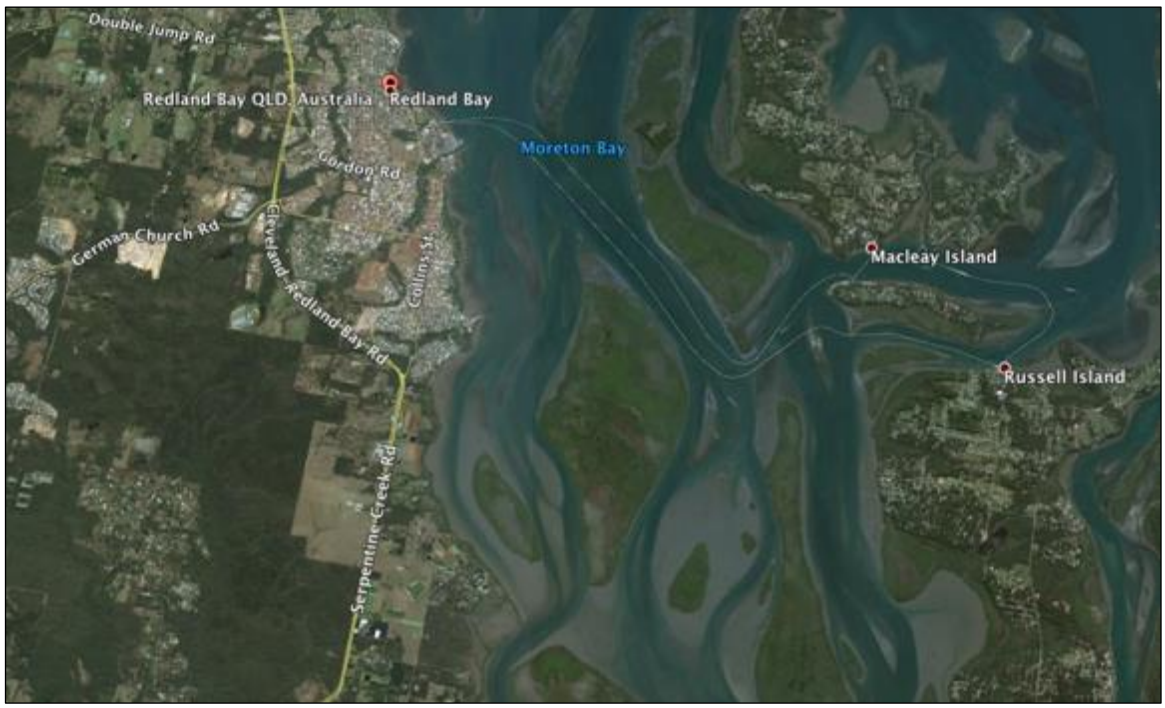

Figure 1.1 Shoreline, located to the south of Redland Bay (see also Figure 1.2).

The site rises steeply from the coast to an elevation of approximately 35 m, with a predominant north-south ridge contributing to minor catchments flowing east and west. The waterways are ephemeral, with small pools persisting after significant rainfall. A number of man-made dams serve the agricultural land use.

Figure 1.2 Contours across the Shoreline site (Shoreline 2014).

Extensive areas of mangrove, saltmarsh / claypan and unvegetated sediment characterise the intertidal flats adjoining the site. Shoreline recognises the conservation significance of these marine plant communities, providing a buffer of approximately 100 m width between proposed development and HAT.

Two isolated pockets of remnant vegetation occur on the foreshore and will be retained (Figure 1.3). Predominantly regrowth vegetation follows some of the more significant waterways, whilst to the west areas of Crown land support extensive bushland.

Shoreline seeks to re-introduce a traditional development pattern, structured around a series of well designed neighbourhoods serviced by a local village centre . This structure both fundamentally acknowledges the need for, and provides the basis for effective management of mosquito and biting midge. A population of approximately 10,000 is anticipated to develop by 2030.

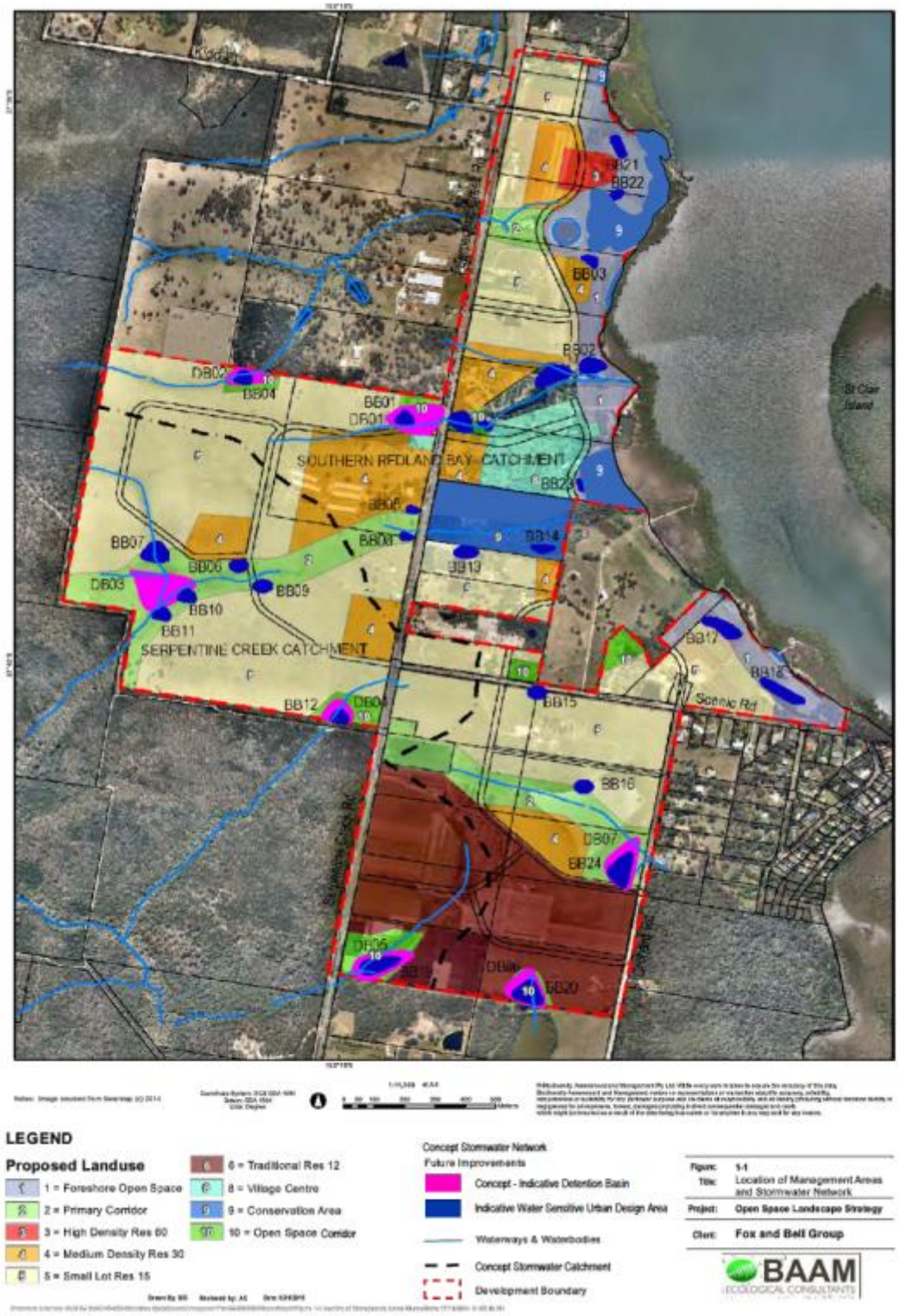

Figure 1.3 Proposed land use, including areas for conservation of remnant vegetation and open space – as identified by BAAM (2014a).

1.4 Legislative and Regulatory Framework

The Strategy upon which this plan is based, provides a comprehensive discussion of relevant legislative and regulatory requirements for and of biting insect management in Queensland.

In summary, this Plan responds to all relevant requirements of the:

- Public Health Act 2005 and Public Health Regulation 2005
- Sustainable Planning Act 2009
- Environmental Protection Act 1994
- Nature Conservation Act 1992 and Nature Conservation (Wildlife Management) Regulation 2006
- Marine Parks Act 2004
- Fisheries Act 1994 and Regulation 2008
- Agricultural Chemicals Distribution Control Act 1966; and
- Chemical Usage (Agricultural and Veterinary) Control Act 1998.

This Plan is also consistent with, and has been informed by, the :

- Mosquito Management Code of Practice, 2012
- Guidelines to Minimise Mosquito and Biting Midge Problems in New Developments, 2002
- Australian Mosquito Control Manual, 1998 (revised 2009); and
- Redland City Council's
    - Mosquito Management Policy;
    - Mosquito Management Plan 2012 – 2017; and
    - Corporate Plan.

2 Incidence of Mosquitoes and Biting Midge

2.1 Approach

Integrated Mosquito Management relies on an understanding of the distribution and abundance of mosquitoes to support the development of suite of appropriate management responses. Often a site-based survey of adult and larval occurrence is required to achieve this. However, the location and characteristics of the Shoreline site are such that both the distribution and abundance of key pest species (mosquito and biting midge) may be readily and reliably inferred. Further, the high level of inter- and intra-annual variation (see Table 2.1) that characterises both larval and adult mosquito abundance and distribution significantly limit the usefulness of data collected from a single season.

Council's monitoring of adult mosquito distribution and abundance, and of larval abundance across key breeding sites serves to provide a robust basis for the assessment of risk. Whilst Queensland Health's monitoring of arbovirus incidence across the Redlands serves to illustrate the need for effective mosquito management.

This approach also recognises that the development of the site will significantly alter its characteristics, including the presence and relative proximities of existing on-site breeding and roosting habitat.

2.2 Breeding and Roosting Habitat, Dominant Species and Pest Range

Within the Redlands, a variety of species of mosquito and biting midge occur in association with marine, brackish and fresh waters. Marine and brackish water species are commonly associated with both a higher incidence of 'nuisance' complaints, and arbovirus infection, and consequently have been the primary focus for both research and control efforts throughout south-east Queensland.

Each of the individual species of mosquito and biting midge occurring within the region have specific breeding habitat requirements, dispersal capabilities, patterns of activity, and ability to act as vectors for diseases affecting humans and domestic animals.

Mosquitoes

The Shoreline site adjoins small pockets of saltmarsh breeding habit, and lies adjacent to low-lying, uninhabited islands that support extensive marine and brackish water breeding habitat. A number of ephemeral (fresh) waterways run through the site, characterised by

small residual pools. A number of freshwater dams have been constructed to support agriculture.

Within the Redlands, mosquito management focuses primarily on 'saltmarsh' mosquitoes common to the region (frc environmental, 2011; 2008; 1997). Analysis of adult mosquito distribution in the Redlands (based on the identification of over 500,000 mosquitoes collected over 1194 trap nights) shows that adult mosquito abundance varies significantly between years (for example mosquitoes were almost 7 times as abundant in 2001 than in 2000 (Ryan, Lyons, Alsemgeest, Thomas and Kay, 2004). *Aedes vigilax* is the dominant species, commonly representing over 40% of individuals collected in light traps, whilst *Culex annulirostris, Coquillettidia linealis, Coquillettidia xanthogaster, Culex sitiens, Aedes notoscriptus, Aedes procax, Aedes vittiger* and *Verrallina funerea* are also common (Peter Dobson, Team Leader, RCC Pest Management Unit pers. comm. 16th October 2014; Ryan, et al, 2004) (Table 2.1).

Table 2.1 Relative adult abundance (%) data from Redland City Council (light trap) monitoring of salt water breeding mosquitoes.

Species	**2012**	**2013**	**2014**
Aedes alternans	–	0.1	2.0
Aedes vigiliax	10.0	39.6	41.1
Aedes vittiger	5.9	–	–
Aedes kochi	–	–	0.4
Aedes multiplex	–	0.2	–
Aedes notoscriptus	29.4	2.5	5.6
Aedes procax	3.9	–	–
Anopheles annulipes	3.9	0.5	–
Culex sitiens	10.0	56.0	46.6
Culex orbostiensis	–	–	3.4
Coquillettidia xanthogaster	17.6	0.8	–

(Peter Dobson, pers. comm. 16th October 2014)

The Redlands provides over 800 ha of salt marsh mosquito breeding habitat (Redland City Council, 2014), and there are a number of major salt marsh breeding sites within relatively close proximity to the proposed development (Mosquito Consulting Services Pty Ltd, 2014) (Figure 2.1). Marine and brackish water breeding sites also exist to the north, east and south of the Shoreline site.

Aedes vigilax is the most common and wide-spread (Ryan, et al., 2004) mosquito encountered within the region close to the coast, breeding prolifically within pooled water of intertidal lands: *Aedes vigilax* is the predominant larvae recorded by Council from salt marsh breeding habitat within 5 km of Shoreline, from its long-term larval monitoring program (Peter Dobson, pers. comm. 16th October 2014). *Culex sitiens* and *Aedes alternans* also breed in temporary brackish pools and salt marshes filled by spring tides, and have been recorded from saltmarsh breeding habitat within a 5 km radius of Shoreline (Peter Dobson, pers. comm. 16th October 2014). The small pockets of brackish water breeding habitat adjoining the site are also likely to be used by these species. *Verrallina funerea*, which breeds in ponded areas under the cover of mangroves, melaleuca and emergent vegetation, is also likely to breed adjoining the site and on adjacent islands.

Council's long-term larval monitoring program shows significant inter-annual variation in average larval density: between 2001 and 2013, average *Aedes vigilax* larval density per standard dip ranged between approximately 12 and 20 (Peter Dobson, pers. comm. 16th October 2014).

These mosquito species have been widely implicated in the transmission of the debilitating disease Ross River virus (epidemic polyarthritis). *Aedes vigilax* is the most important vector of arboviruses in south east Queensland (Webb 2004), also being a suspected carrier of Barmah Forest virus and dog heart-worm. Laboratory trials indicate it may also be a carrier of Murray Valley encephalitis.

The adults of *Aedes vigilax* and *Culex sitiens* are capable of travelling over 30 km from breeding sites, often assisted by prevailing winds. Consequently, the entire Shoreline site is likely to be subject to these species from time to time.

Figure 2.1 Marine and brackish water breeding sites (yellow) adjacent to the Shoreline site (from Mosquito Consulting Services Pty Ltd, 2014).

Other common marine and brackish water breeders include: *Aedes alternans* (the Scotch grey), which breeds in both tidal pools and rain filled depressions; and *Anopheles annulipes*, which breeds in fresh or slightly brackish pools. Each of these species are also capable of travelling several kilometres from their breeding sites, and are potential vectors of Ross River virus.

Species that breed in freshwaters will use senescing pools and farm dams as well as rock pools, pot plant saucers, fallen palm fronds and discarded car tyres within domestic surroundings. *Aedes procax, Aedes notoscriptus, Aedes vittiger, Culex annulirostris, Coquillettidia xanthogaster and Coquillettidia linealis* are all commonly associated with freshwater breeding habitat in south-east Queensland. The distribution and abundance of these freshwater breeders are known to vary significantly between years (by a factor of at least 10), influenced by rainfall (Ryan, et al., 2004).

During breeding, the eggs are laid by the female of each species, in mud or on vegetation associated with pooled water, and hatch when water levels rise (with the incidence of tidal inundation or heavy rainfall). The larval and pupal stages together require approximately six days to develop in mid-summer (longer during cooler weather). The adults of each species rest amongst dense foliage, and bite (man, mammals and birds) during both the day and night: dawn and dusk are favoured by *Aedes vigilax*, whilst *Culex sitiens* and *Culex annulirostris* bite predominantly at night.

Biting Midge

At least five species of biting midge are considered common within the region and are likely to occur in proximity to the Shoreline site. (Table 2.2). No species of biting midge is currently considered a vector of human disease in Australia, although some have been linked to the transmission of veterinary arboviruses such as 'bluetongue' and 'akabane'.

Table 2.2 Characteristics of biting midge recorded in south east Queensland.

Biting Midge Species	Breeding Habitat	Distance Travelled
Culcoides ornatus	Within a narrow band surrounding MHWS where there is no strong wave or current action.	Up to 16 km.
C. marmoratus	Algal covered mud in saltmarshes or below mangroves. Breeding area must remain moist.	Peak emergence is up to 10 days prior to spring tides and the range of this species is believed to be in excess of 15 km.
C. molestus	Prefers relatively clean sand along open beaches or inlets (light mangrove cover tolerated), will also inhabit sandy canal developments. Lives between MHWS & ML.	Adults emerge around spring tides & will travel up to 1.5 km from large breeding grounds.
C. subimmaculatus	Breeds in estuarine sand to sandy mud between the MHWS & MHWN, sheltered from wave action with sparse vegetation or open forest.	May travel up to 500 m from breeding sites.
Lasiohelea townsvillensis	Decaying vegetation & moist conditions of rainforests preferred, but will happily inhabit well watered & mulched tropical gardens.	

MHWS Mean High Water Spring
MHWN Mean High Water Neaps
ML Mean Tide Level

(FRC Coastal Resource and Environmental 1997; Gold Coast City Council n.d.; Queensland Health 2002a, Watson and Watson, 1982).

Culicoides lay their eggs within well-aerated wet areas commonly associated with the upper half of the intertidal zone in either fresh or saline conditions, depending on the species. As breeding is commonly dependant upon monthly tidal inundation, the emergence of adults and the incidence of biting activity are commonly synchronous with

phases of the moon (Rust-PPK 1995). Apart from around the breeding site itself, *Culicoides* attack vertebrates (including man) primarily around sunset and sunrise, and infestations are usually the result of a number of species rather than an individual species (Marks & Reye 1982). *Culicoides ornatus* is a widespread species, commonly associated with significant pest problems along Queensland's east coast (Shivas & Whelan 2001, cited in Warchot 2004).

Lasiohelia townsvillensis breeds prolifically in leaf litter and well-watered urban gardens of the tropics and sub-tropics. It may be also be present (or become established post-development) at the Shoreline site following prolonged rain or excessive watering. This species is known to bite all day.

3 Incidence of Arboviruses

Two arboviral infections are commonly contracted within the Redlands: Barmah Forest virus and Ross River virus. *Aedes vigilax* and *Culex annulirostris* are considered to be the most significant vectors of these diseases in the Redlands, although *Coquillettidia linealis* may also be a significant vector associated with the bay islands (Ryan, et al., 2004).

Ross River virus (epidemic polyarthritis) is the most common human disease transmitted by mosquitoes in Queensland (Rust-PPK 1995). Symptoms of the disease include polyarthritis, muscle tenderness, lethargy and fatigue. The disease is not fatal, but has no cure. The length of incapacity varies from 1 to 24 weeks, and symptoms may persist for up to 40 weeks (Rust-PPK 1995). The disease usually occurs in seasonal outbreaks, due to increased mosquito breeding during periods of high rainfall or high tides (Queensland Health 2001). Therefore, the number of reported cases of Ross River virus varies widely from year to year, and probably from area to area (frc environmental, 2008).

Barmah Forest virus may have similar symptoms to Ross River virus, although they are believed to be of a shorter duration (Queensland Health 2002a). The incidence of this disease appears to have increased across the state since the 1990's. Whilst 2013 saw a spike in reported infections from the Redlands (positively correlated with above average rainfall), this increase was not considered significant. There is also a lack of evidence to correlate reported incidence of disease with the location at which the disease was contracted (Kerr, 2014).

Whilst both diseases are transmitted throughout the year, infection rates are highest between January and June, with a peak in March – April. Whilst reported cases of both Ross River Fever virus and Barmah Forest virus are likely to significantly under-estimate actual infection rates, as not all people that are infected show symptoms (Queensland Health 2001; 2002b), the incidence of Ross River virus and Barmah Forest virus in the Metro South region (that region of Queensland Health's arbovirus monitoring program encompassing the Redlands) is amongst the lowest in the state (Dr Brad McCall, quoted in the Redland City Bulleting, October 15th 2014).

Lower rates of Ross River virus are consistently lower in in local government areas that implement mosquito control programs that pre-empt mosquito outbreaks using routine surveillance and then reduce mosquito abundance using mosquito control (Tomerini, 2007).

4 The Impact of Development

4.1 On Breeding Habitat

Development of the Shoreline site will alter the site's capacity to support mosquito and biting midge breeding and roosting, whilst having no impact on adjoining and adjacent marine and brackish water breeding habitat.

A reduction in the number of dams on site and the more deliberate management of those remaining (or that may be created) will likely result in a reduction in the extent of mosquito breeding habitat on site.

Engineering works required to profile and shape the site in preparation for residential subdivision, roadways, storm water works and open spaces will permanently diminish the current opportunity for ground pool breeding mosquitoes. Breeding habitat in the form of residual pools (vehicle ruts, etc.) will be reduced in extent. Stormwater drains and rainwater collected in man-made containers may provide breeding sites for a number of species of mosquito, notably *Culex anulirostris*. Seepage, surface runoff, and silt inputs from stormwater can all enhance or create breeding habitat (Rust - PPK 1995).

The biting midge *Lasiohelia townsvillensis*, which breeds prolifically in leaf litter and well-watered urban gardens of the tropics and sub-tropics, is likely to establish populations within some gardens over summer. The use of sub-surface watering and drip lines in the gardens (as opposed to using mists and sprinklers) is likely to reduce the presence of biting midges in these areas.

4.2 On Roosting Habitat

The site is currently subject to a range of agricultural landuses: market gardening, horticulture and grazing. A weed-infested patch of *Melaleuca quinquenervia, Lophostemon suaveolens* and sub-dominants (RE 12.3.6) is mapped in the centre of the site, whilst *Eucalyptus tereticornis* and *Melaleuca quinquenervia* with a weedy understory are mapped on the site's northern coast (BAAM, 2014b). These patches of remnant vegetation will be retained and enhanced. Management of the weedy understorey will reduce roosting habitat for both mosquitoes and biting midge.

Development of the site will displace current market gardening and horticultural land uses, and remove much of the non-remnant regrowth and weed communities (including along the foreshore), whilst development of Foreshore Open Space and Open Space Corridors

will provide a mosaic of treed and mown grasslands (Figure 1.3) (BAAM, 2014a). Foreshore Open Space will provide a nominal 100 m wide sparsely vegetated buffer between the shore and residential and community precincts.

Each Open Space Corridor is comprised of a core of riparian vegetation flanked by margins that are 25 m wide of lightly treed low-maintenance grassland. A 20 m road reserve augmented by a 6 m building setback provides additional setback to properties. In aggregate, each Open Space Corridor will provide a 75 m setback between properties and freshwater mosquito breeding habitat, and a 50 m setback to roosting habitat (Figure 4.1).

Figure 4.1 Indicative schematic depicting vegetation management strategies for Open Space Corridors.

The additional Open Space Linkages (Figure 1.3) will neither support or are directly connected to mosquito (or biting midge) breeding habitat, and are characterized by lightly treed (managed) grassland providing minimal roosting habitat. All Open Space Linkages are set back several hundred meters from the foreshore (and potential marine / brackish breeding habitat).

Development of these environmental corridors, road reserves and set-backs will both reduce available roosting habitat on site, and increase the wind-assisted dispersal of biting insects from coastal breeding habitat to the more elevated bushland to the west of the site. Open eucalypt forests and banksia woodlands are poor habitats for mosquitoes and biting midges.

Rehabilitation of foreshore vegetation will reduce the density of existing understory (weed) vegetation. Retained and planted trees and shrubs within corridors will be well separated, with an understorey of maintained low grasses (BAAM, 2014b).

5 The Impact of Mosquitoes and Biting Midge on Residents and Visitors

5.1 Mosquitoes

Development on the coast inevitably brings humans into contact with mosquitoes and biting midges. A variety of species of mosquito may breed in freshwater habitats of the site, and may be carried to the site by prevailing winds, having bred within nearby estuarine wetlands.

Guidelines prepared by the Queensland Department of Heath (Queensland Health 2002b) provide a quantitative (though imprecise) assessment of the likely impacts due to mosquitoes:

- 15 – 20 km from breeding sites. This distance is greater than the flight range of most species of mosquito, *Aedes vigilax* being a notable exception. Pest problems will be sporadic and not severe.
- 10 – 15 km from breeding sites. *Aedes vigilax* is likely to be the only species encountered in moderate number, causing some discomfort. Monitoring should be undertaken, and control measures may be required.
- 2 – 10 km from breeding sites. Pest impact from mosquitoes, particularly *Aedes vigilax, Verrallina funereus* and *Culex sitiens* will be noticeable, with the intensity and frequency of attacks increasing as distance from the breeding site decreases. Regular monitoring and control measures will be required.

Within the Redlands, the majority of mosquito-associated problems are related to 'saltmarsh' mosquitoes, that breed within the estuarine wetlands of Moreton. Shoreline's proximity to known breeding habitat infers that the entire site is likely to be subject to a noticeable presence of mosquitoes over the warmer months of the year. Regular monitoring and active management of particularly mosquito breeding on adjacent islands will be the cornerstone of any mosquito management program. Regular monitoring and active control of mosquito breeding on adjacent islands is currently undertaken by Council.

The limited extent of suitable on-site breeding habitat, and the incorporation of open-space buffers between these breeding areas and residential and community precincts, makes it unlikely that extensive on-site mosquito control will be required for the developed site

5.2 Biting Midge

The coastal nature of the Shoreline site is likely to result in the presence of a number of species of biting midge from time to time. *Culcoides* spp. may travel to the site from estuarine breeding areas under the right conditions (Queensland Health, 2002a). The biting midge *Lasiohelea townsvillensis* breeds in freshwater environments, and is likely to breed in well-watered landscaped areas on site.

Whilst midges in Australia are not vectors of human disease, their bites can irritate the skin. In abundance, midges can significantly reduce the amenity of outdoor areas.

6 Management of Mosquitoes and Biting Midge

Opportunities exist to minimise both the breeding of mosquitoes and biting midge on site, and the impact of mosquitoes and biting midges breeding on adjacent lands, through appropriate site planning, engineering design, building design and on-going site management.

Optimal management of biting insects at Shoreline will be achieved where proponent-initiated measures for on-site management support Council's off-site (local government area-wide) management of mosquitoes.

6.1 Current Monitoring of Mosquitoes and Biting Midge

Mosquitoes

Redland City Council's Pest Management Unit monitors the abundance of both larvae and adult mosquitoes throughout the city. This has provided a substantive understanding of the patterns of both larval and adult distribution and abundance (Ryan, et al., 2004). Larval populations are typically monitored using dip net samples, with the results of monitoring used to determine whether chemical treatment of a breeding site is necessary. Adults are monitored using CO^2-baited light traps.

Midges

Redland City Council does not monitor the distribution or abundance of biting midge.

6.2 Current Control Measures within the Redlands

Mosquitoes

Council's Corporate Plan commits to the delivery of year-round mosquito management services to support strong, healthy communities, whilst its Mosquito Management Operational Plan 2012 – 2015 seeks to balance the cost of mosquito management against public health benefits and potential environmental harm. Council's Pest Management Unit operates as a member of a Contiguous Local Authority Group, recognising commonalities in both the distribution of pest species and required management methods.

Proximity of the Shoreline site to known and extensive marine and brackish water breeding habitat (on Crown land) underlines the importance of Council's aerial and ground-based mosquito control program. Council currently treats approximately 420 ha of salt marsh breeding habitat and a significantly lesser area of fresh water breeding habitat, within a 5 km radius of Shoreline. Treatment is by a combination of aerial and ground-based application.

Located to the immediate south of the township of Redland Bay, the Shoreline site likely benefits substantially from the Contiguous Local Authorities' (of which both Redland City Council and Gold Coast City Council are members) current mosquito control program.

Most (90+%) of Council's control efforts are focussed on saltmarsh mosquitoes, with only minor control activities undertaken in freshwater breeding habitat.

The mosquito control program uses two larvicides; s-methoprene as a growth hormone regulator and Bti (*Bacillus thuringiensis israelensis*) as a targeted biological control. These are distributed in spray or briquette form from helicopters after king tides or heavy rainfall. Peak breeding occurs between September and March, and ground investigations of larval abundance are conducted to determine when applications will have the greatest impact on larval mosquitoes. Adults can emerge in 4 – 5 days in warm climates (NSW Health 2004), so monitoring and treatment must occur within 2 – 3 days of high tides or significant rainfall events.

s-methoprene and Bti are also used to control freshwater mosquitoes, typically distributed by hand or by motorised backpack sprayers.

Midges

Redland City Council does not control biting midge (Redlands City Council, 2014a).

6.3 A Framework for Management

Whilst the Redlands Planning Scheme does not include a Biting Insect Code, a practical framework for mosquito and biting midge management at Shoreline is provided by the outcomes sought by the Biting Insect Code of the superseded Caloundra City Plan.

6.3.1 Siting and Design

Desired Outcome

Development is sited and designed to minimise the risk to public health from insect-borne arboviruses and nuisance caused by biting insects.

Considerations

Careful attention to elements of both conceptual and detailed design can significantly lessen the potential for mosquitoes and biting midges to breed and roost on site. The following guidelines have been adapted from: Queensland Health, 2002a; Easton, 1993; and Wheelan 1988, cited in Rust-PPK, 1995.

Siting of Sensitive Uses

Sensitive uses such as childcare and aged care facilities should be located distant from breeding and roosting sites.

Buffers

Dense vegetation corridors between mosquito / biting midge breeding sites and residential areas provide a dispersal conduit for the insects (Queensland Health 2002a). Dense vegetation adjoining known breeding sites, residential areas and public open space can provide roosting (resting) habitat for mosquitoes and biting midge. Consequently, the incidence of mosquitoes and biting midges within residential areas can be minimised by providing sparsely vegetated buffer zones between known breeding sites and residential areas. Choosing trees and shrubs with light foliage minimises the 'conduit' effect of vegetation corridors (Queensland Health 2002a). The duration of nuisance infestations will be lessened under conditions that cause the pest population to disperse widely: breezeways across known breeding sites and around residential areas should be incorporated *where practical*.

A significant reduction in the abundance of *Aedes vigilax* (the common salt marsh mosquito) and likely other species can be achieved with buffer distances ranging from 20 – 100 m (McGinn, 2014); whilst a buffer of 25 m may very significantly reduce the incidence of other common coastal species (McGinn, 2006).

Lower activity areas, daytime recreation areas and 'hi-rise' may be located closest to breeding sites, providing a buffer for residential and night time activity areas. Well-lit, sealed areas (such as roads and car parks) can also be used as buffers for activity areas, especially adjacent to biting midge breeding sites.

Engineering and Landscape Design

The extent of suitable breeding habitat can be minimised through landscaping and drainage that minimises ponding. This is particularly applicable to open grassed areas. All site drainage should be designed and installed such that sediment cannot accumulate and water cannot pond (Queensland Health 2002a). Elements of stormwater infrastructure, including sedimentation basins, bio-retention and detention basins, should be designed and managed to drain within 48 hours. Where possible, drains should discharge into a flowing waterway with healthy ecological processes that may assist to control mosquito numbers (Queensland Health 2002a).

Increase drainage and access for larvivorous fish to adjoining marine and brackish water breeding habitat may be achieved through runneling (permit required under the Fisheries Act 1994).

Re-profiling of the site should not impede the drainage of land up-slope, and vehicle access should be provided to potential breeding sites (eg. stormwater infrastructure).

Landscaping of public open space and residential gardens, that involves heavy mulching and watering, may encourage the breeding of the biting midge *Lasiohelea townsvillensis*. Heavy mulching and watering should be avoided to reduce this risk.

Breaks in vegetation corridors should be provided between breeding sites and high activity areas. Minimising vegetation density near residential and evening activity areas will also reduce roosting of mosquitoes and midges near populated areas. Avoiding the use of heavy foliage plants and those that require frequent watering will also discourage mosquito and midge roosting and midge breeding. Trees with high canopies providing for good air circulation at ground level offer an obvious benefit.

Building Design

More open window area on the windward side of buildings, rather than the leeward, can be used to passively ‘pressurise’ the building, and reduce opportunities for biting insects to enter from the preferred leeward side. Furthermore, buildings should be fully screened to prevent insect entry. Ceiling fans and similar circulation devices can be incorporated to increase airflow.

Outdoor areas close to breeding grounds should incorporate screening.

Outdoor lighting directed towards the ground and the minimal use of lighting on balconies and near windows will likely minimise the attraction of a range of insects.

To minimise mosquito problems associated with rainwater tanks, WHO recommends that all tanks have screens or other devices to prevent adult mosquitoes from emerging (WHO 1997). All inlets, overflows and other openings should be covered with closely fitted, removable, mosquito-proof mesh to prevent access by adult mosquitoes, and if larvae are present, to prevent the escape of adult mosquitoes (Enhealth, 2004). Queensland Regulations (1996) specify that screens should be brass, copper, aluminium or stainless steel gauze with mesh not coarser than 1 mm. Rainwater should not be allowed to pond in containers or on surfaces below tank outlets or taps, as this can also provide a breeding site.

Shoreline's Response

Sensitive Uses

Shoreline will locate sensitive uses such as schools, childcare and aged care facilities remote from potential mosquito and biting midge breeding and roosting habitat.

Buffers

Integral to the urban design of Shoreline is the approximately 100 m wide cleared open-space foreshore buffer between the shore (HAT) and residential and community precincts (Figures 1.3 and 6.1). A 20 –100 m, open-space buffer has been reported to significantly reduce the abundance of both mosquitoes (and in particular *Aedes vigiliax*) and biting midge (Mosquito Consulting Services, 2014).

The foreshore buffer is constrained at two locations towards the north of the site (Figure 6.1). Densely wooded Conservation Areas reduces the open-space buffer to approximately 10 m and 40 m wide The establishment of Sub-area 1 in the Shoreline Plan of Development (Figure 6.2) will ensure that development within 100 m of potential roosting habitat must comply with the building design code attached at Appendix A.

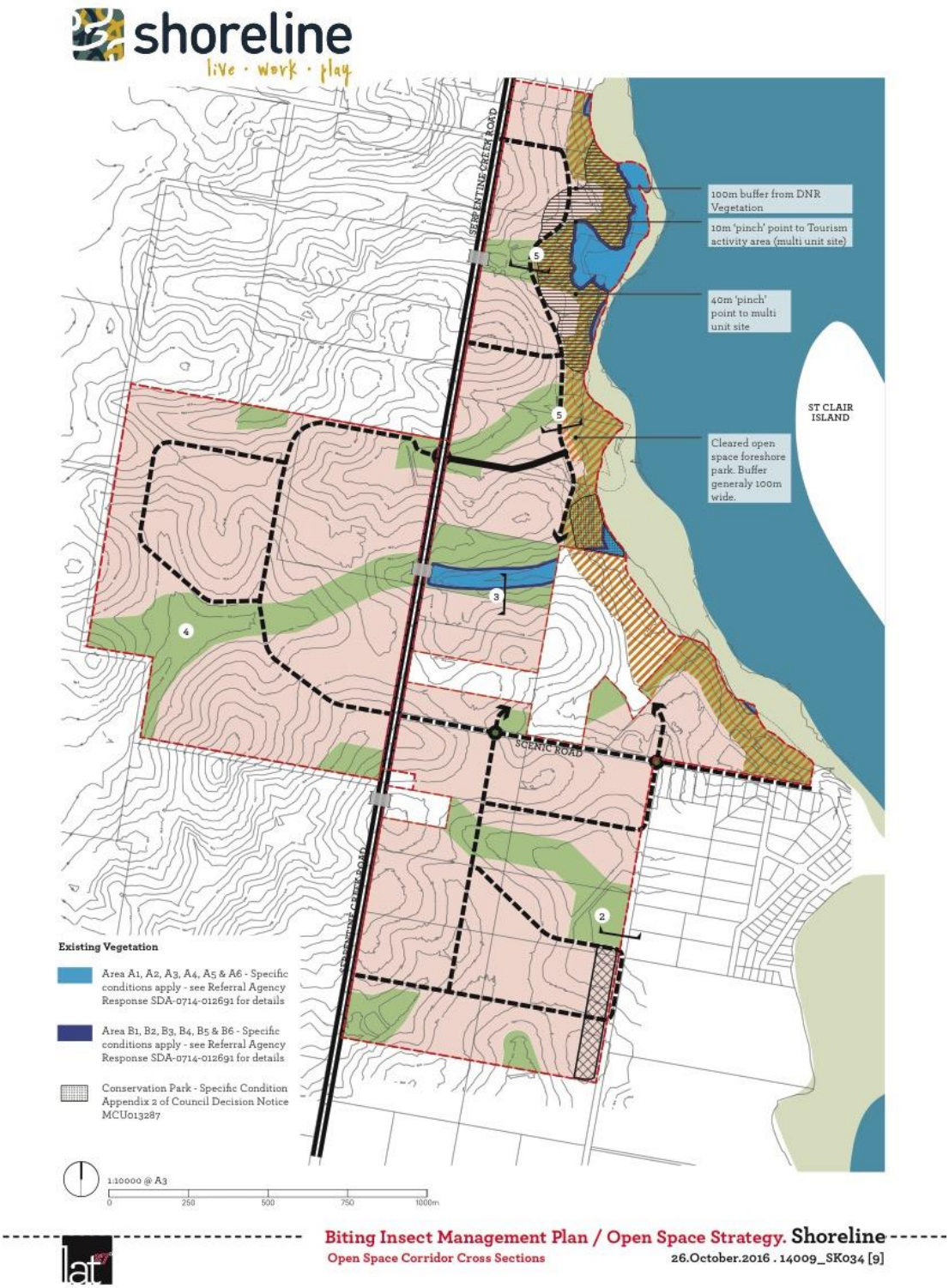

Figure 6.1 Proposed set-backs to mitigate the proximity to biting insect breeding and roosting habitat.

Open Space Corridors and Linkages will be no less than 100 m wide, comprised of a 50 m wide (or as otherwise agreed by Council) core of riparian vegetation and 25 m wide margins of lightly treed low-maintenance grassland, augmented by esplanade roads (road reserve 20 m wide) and building setbacks (6 m) (see Figures 4.1, 6.2 and 6.3).

In aggregate, each corridor and linkage will provide approximately a 75 m setback between freshwater mosquito breeding habitat and properties and 50 m from dense roosting habitat (sufficient to minimise the movement of mosquitoes such as *Aedes procax* and *Verrallina funereal;* McGinn (2013) recommends a 30 m wide buffer as sufficient to manage these species). These corridors will also serve as breezeways that discourage roosting of other species of mosquitoes and biting midge.

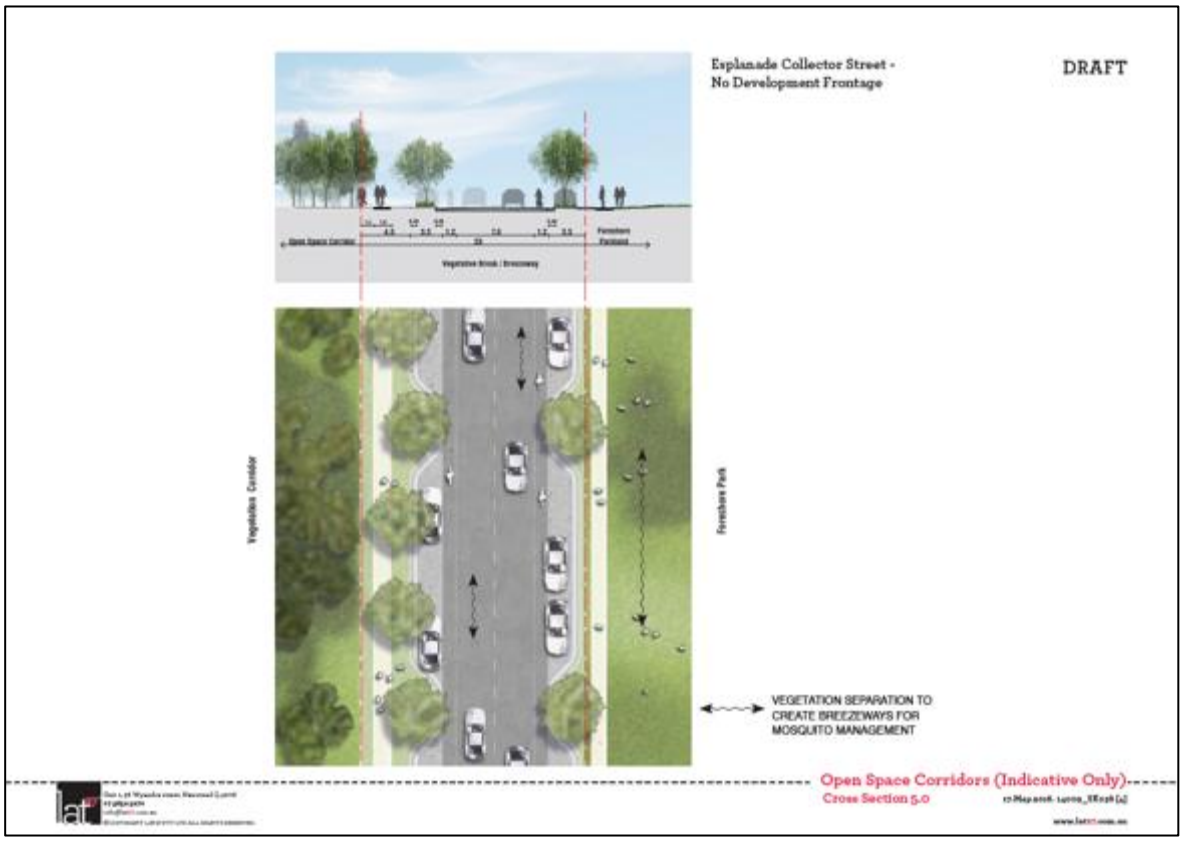

Figure 6.2 Proposed set-backs for Open Space Corridors.

Figure 6.3a Proposed set-backs for Multipurpose Corridors.

(Note, the location of sports facilities does not form part of this approval.)

Figure 6.3b Proposed set-backs for Multipurpose Corridors.

(Note, the location of sports facilities does not form part of this approval).

Supplemental Open Space Linkages will have no direct connectivity with mosquito (or biting midge) breeding habitat and be characterized by lightly treed (managed) grassland providing minimal roosting habitat.

The south-east of the site (Lots 86 and 247 on S312432) will incorporate an 80 m development-free buffer, which with the 20 m wide road reserve (Orchard Road) will provide a 100 m clearance to development on lots 80 and 81 on S31102. These lots are densely vegetated and extend to saltmarsh habitat on the coastline, and as such have the potential to harbour pestiferous numbers of mosquitoes.

Development of these environmental corridors, road reserves and set-backs will both reduce available roosting habitat on site, and increase the wind-assisted funnelling of biting insects from coastal breeding habitat to the more elevated bushland to the west of the site.

Engineering and Landscape Design

The extent of breeding habitat will be minimised through landscaping and drainage that minimises ponding and opportunity for roosting. Re-profiling of the site will designed and managed to not impeded drainage. Stormwater infrastructure, including sedimentation basins, bio-retention and detention basins, will be designed to be free draining in accordance with the guidelines provided by Water by Design (2010). Where practical, drains will discharge into a flowing waterway.

Landscape planting will minimise the use of groundcovers, shrubs and small trees that may serve as roosting areas. Through careful selection of planting palettes, the use of organic mulch combined with the need for heavy watering will also be minimised to reduce breeding of biting midge.

Vegetation density near residential and evening activity areas will also be reduced to discourage roosting of mosquitoes and midges.

Vehicle access will be provided to potential breeding sites (e.g. stormwater infrastructure).

Building Design

Careful attention to elements of both conceptual and detailed design can significantly lessen the potential for mosquitoes (and biting midges) to enter buildings.

Outdoor entertaining areas are encouraged to be equipped with insect screens with a mesh aperture of not more than 1mm to minimise mosquito entry to the area.

Insect screens specifically designed to prevent the entry of smaller insects such as biting midge are recommended to be incorporated to minimise biting midge entry to the building.

Locate the majority of windows on the windward side of the building to pressurise the building and reduce opportunities for biting insects to enter the preferred leeward side of the building.

Ceiling fans and other air circulation devices are encouraged to increase airflow indoors and outdoors to minimise the ability for mosquitoes to travel inside the building.

Outdoor lighting is encouraged to be directed towards the ground to minimise the attraction of biting insects. Mosquitoes will travel significant distance towards lit up areas.

Elements of the the building design code dealing with biting insects, embedded within an extract of Shoreline's Plan of Development are presented at Appendix A.

6.3.2 On-site Works

Desired Outcome

Development does not intensify the presence of or expand breeding sites for mosquito larvae.

Considerations

Engineering works required to affect development of the site may permanently reduce the extent of breeding and roosting habitat on site.

Access roads should be fitted with culverts to prevent pooling of water.

Excavation, vehicle ruts, and temporary sediment control basins all have the potential to support mosquito breeding. Site-monitoring and prompt corrective action (such as filling ruts and draining or treating sediment control basins) should be undertaken as required. Application of larvicides should be undertaken only by a licenced pest controller.

Shoreline's Response

Engineering works required to affect development of the site will permanently reduce the extent of breeding and roosting habitat on site.

Access roads will be fitted with culverts to prevent pooling of water.

Excavation, vehicle ruts, and temporary sediment control basins will be monitored. Prompt corrective action (filling ruts and draining or treating sediment control basins, etc) will be undertaken as required. Application of larvicides will be undertaken only by a licenced pest controller.

6.3.3 Design and Use of Wetlands and Waterways

Desired Outcome

New waterbodies or stormwater treatment wetlands / detention basins are designed to minimise the potential breeding opportunities for biting insects.

Considerations

Wetland Design and Operation

Mosquito breeding within dams, retention basins and water features can be minimised by reducing the 'soft' edges around ponds, and by ensuring that the edges are steep and free of dense emergent vegetation (whether planted or invasive), which supports mosquito breeding (Queensland Health 2002a). Increased bed depth (>3 m) and 1:3 batters effectively restrict the distribution of most emergent reeds and rushes around dam margins, minimising mosquito breeding habitat. The use of concrete revetment would reduce opportunities for mosquitoes and biting midge to breed. The suitability of breeding habitat can also be reduced by preventing water from stagnating with adequate circulation and the use of fountains.

Fluctuating water levels may both directly and indirectly influence mosquito and midge breeding. Depending on timing and periodicity, fluctuating water levels may either create or destroy favourable breeding habitat for both mosquitoes and biting midges. For example, falling water levels may expose suitable moist substrate and leave shallow pools free from predators. Rising water levels may inundate drying substrate and both trigger hatching and provide habitat suitable for larval development. Fluctuating water levels commonly encourage the expansion of fringing macrophyte beds, indirectly providing increased habitat suitable for mosquito breeding. The use of concrete and rock revetments largely mitigates the effects of fluctuating water level.

Opportunities to increase the exposure lakes and wetlands to prevailing winds should be sought, as mosquito larvae require contact with a stable surface film for respiration.

Restricting aquatic macrophytes (either floating or emergent forms) to less than 60% of shallow waters (<500 mm), and clumping of plants with open space between will allow greater wind disturbance of the water surface.

While the initial design of water bodies may adhere to these requirements, the ongoing growth of vegetation, bank slumping, physical disturbance, accumulation of rubbish and debris, sedimentation, water quality deterioration, water management problems and general climatic conditions will all influence the production of mosquitoes (Webb and Russell, 2011; Russell, 2001).

Stormwater treatment wetlands by design will be shallow and densely planted. For these purpose-specific water bodies, a greater reliance must be placed on managing emerging larvae (see Native Fish as Control Agents below).

Shoreline's Response

Development of the site will retain a number of existing wetlands, dams and waterways. Shoreline's WSUD Strategy (2014) incorporates planted wetlands and bioretetion basins. Whilst natural waterways will be unmodified, they will be set-back from residential and community precincts by a minimum of 20 – 30 m. Wetlands and dams will be designed / modified such that:

Wetland Design and Operation

For dams and lakes, breeding habitat will be minimised by the use of steep edges, maintaining water depths in excess of 600 mm, the judicious use of edge plantings and the orientation and exposure afforded all retained water bodies. Water quality, bank integrity and the distribution of aquatic plants will be managed to retain the integrity of the initial design(s).

Elements of Water Sensitive Urban Design including swales and bio-retention basins will be designed to minimise ponding (in accordance with Australian design guidelines), whilst planted wetlands will incorporate features to promote the effectiveness of larvivorous fish in controlling emerging larvae (Design Flow, 2104).

6.3.4 Biting Insect Control Measures

Considerations

Native Fish as Control Agents

Native larvivorous fish can be stocked in (fresh) waterbodies to contribute to mosquito control. The Queensland Department of Primary Industries & Fisheries list a number of species that are native to the region and likely to assist with mosquito control (DPI&F, 2006). Recent work by Hurst et al. (2004) has found that of the species recommended, the crimson-spotted rainbowfish (*Melanotaenia duboulayi*) and the firetail gudgeon (*Hypseleotris galii*) are likely to be the most effective at controlling mosquito populations in freshwater lakes. Studies have shown that these species also prey on tadpoles (Hurst, T. [Queensland Institute of Medical Research], pers. comm. 2004, 12 October; Hurst, Brown and Kay, 2004). These fish can be obtained from some aquariums and from registered fish hatcheries (DPI 2004); other species listed in Table 6.1 can also be stocked in the lake to enhance species diversity.

Native fish from commercial suppliers typically cost $200 – $400 per 100 fish (frc environmental 2002). Previous studies have suggested that fish stocking densities of around 1 fish per m^2 of potential breeding habitat (i.e. the approximately 2m of shallow habitat around the margin of the lake that may support aquatic macrophytes) should be sufficient to control mosquito populations (frc environmental 2002).

In order for stocked fishes to effectively control mosquito breeding, the fish must be allowed to develop sufficiently abundant populations, and must be able to get to locations used by mosquitoes for breeding. In effect, this requires permanent and relatively stable water (quality), and sufficient depth of water to allow the fish access to potential breeding habitats.

Table 6.1 Native freshwater fish species recommended by QDPI for stocking to assist with mosquito control.

Species	Com. Name	Status	Key Characteristics
Chandidae			
Ambassi agassizi	olive perchlet	LC	Often reaches 60 mm in length; inhabits flowing and still water bodies; eats microcrustaceans and insects (larvae and adult.)
Melanotaeniidae			
Melanotaenia duboulayi	Duboulay's rainbow fish	LC	Reaches 75 – 90 mm in length; inhabit ponds, streams and reservoirs, diet includes insects (adult and larvae), microcrustaceans and algae.
Eleotridae			
Hypseleotris compressa	empire gudgeon	LC	Reaches 100 mm in length; found in lower reaches of rivers; diet includes aquatic invertebrates – primarily cladocerans and insect larvae, algae and detritus.
Hypseleotris galii	firetail gudgeon	LC	Reaches 40 – 55 mm in length; occurs in coastal streams, rarely in lower reaches; feeds on aquatic invertebrates.
Mogurnda adspersa	southern purple – spotted gudgeon	LC	Commonly reaches 100 mm in length, inhabits clear and turbid environments; feeds on aquatic insects and crustaceans.

Species	Com. Name	Status	Key Characteristics
Atherinidae			
Craterocephalus stercusmuscarum fulvus	fly-specked hardyhead	LC	Reaches 100 mm in length; found in still or slow flowing water; diet includes mosquito larvae, aquatic insects and crustaceans.
Pseudomugilidae			
Pseudomugil signifer	Pacific blue eye	LC	Reaches 62 – 88 mm in length; widespread in fresh and brackish coastal waters; diet includes mosquito larvae and other insects.

LC – Declared as 'Least Concern' wildlife under the Queensland Nature Conservation (Wildlife) Regulation 2006.

(DPI 2004; 2006; Merrick & Schmida 1984; McDowall 1996)

Shoreline's Response

Shoreline will stock retained water-bodies with native larvivorous fishes in accordance with Fisheries Queensland guidelines.

7 Biting Insect Management Plan

7.1 Objective

This Biting Insect Management Plan has been developed to support the development of Shoreline, located on the shores of Moreton Bay and consequently subject to mosquito and biting midge incidence, in a manner that balances the health and amenity of residents, visitors and neighbours, with cost and environmental harm.

Its purpose at each stage of development is summarised in Table 7.1

Table 7.1 Purpose of this plan, for each stage of development.

Stage	Purpose
Pre-Development	Inform the refinement of site layout, engineering and landscape design, and of water-body and building design.
Development	Inform the planning and conduct of on-site works; and of the monitoring and management of on-site mosquito breeding.
Operational	Inform on-going monitoring and management of mosquitoes both on- and off-site.

7.2 Goals

This Biting Insect Management Plan is designed to:

- support the development of the site in a manner that does not increase the abundance of mosquitoes and biting midge, or the extent of breeding habitat;
- support the development of the site such that residents and visitors alike can enjoy the amenity of the site and not be unduly subjected to arboviruses;
- describe the responsibilities of the Proponent;
- identify appropriate on-site monitoring procedures, triggers for treatment and environmental safeguards;
- comply with the Mosquito Management Code of Practice; and
- support compliance with legislative and regulatory requirements.

7.3 Performance Indicators

The effectiveness of this Biting Insect Management Plan will ultimately be assessed against:

- the frequency of residents' complaints;
- the incidence of mosquito borne disease; and
- environmental harm.

Larval and adult abundance may also be used to provide a measure of the success of this management plan.

7.4 Responsibilities

The Proponent is responsible for developing site layout, and for engineering, landscape and water-body design. The Proponent may be responsible for the design of some buildings.

In general terms, the Proponent will be responsible for the management of mosquitoes and biting midge on land it owns.

7.5 Design Refinement

Site layout, engineering, landscape and water body design will be refined in accordance with Section 6 of this Plan, as summarised in Table 7.2.

Table 7.2 Summary of factors influencing design refinement.

Issue	Key considerations to minimise the prevalence of mosquitoes and biting midge
Siting and Engineering, Landscape and Building Design	Open-space buffers to separate off-site and on-site breeding habitat from residential and community precincts.
	Landscaping and drainage to minimise on-site breeding and roosting habitat.
	Building design to exclude biting insects.
Waterways and Wetlands	Open-space buffers to separate breeding habitat from residential and community precincts.
	Orientation to encourage wind exposure.
	Breeding habitat minimised through minimum depths, edge treatments and plantings.

7.6 During Development of the Site

The site will be progressively developed. Monitoring and management of mosquito and biting midge on site will be the responsibility of the Proponent's Site Development Manager. It will be the Site Development Manager's responsibility to:

- ensure all employees, contractors and sub-contractors are aware of their responsibilities regarding mosquito and biting midge management;
- implement routine monitoring of the site generally (pot holes, wheel ruts, temporary water storages and erosion control measures), and of temporary and permanent water bodies in particular. Monitoring of mosquito and biting midge breeding will be undertaken at least weekly over the period September – April. Records will be maintained digitally.
- implement and document corrective actions;
- recommend improvements to the Biting Insect Management Plan based on acquired experience and evolving best practice.

On-site Monitoring

Monitoring of adult mosquito incidence within the development footprint (recognising the site will be developed in stages) will be undertaken following significant rainfall events likely to lead to senescing waters.

On-site larval monitoring (of waterways and dams), will be conducted where the results of adult monitoring indicate that freshwater species are a significant component of the mosquitoes recorded on-site.

The objectives of monitoring are to:

- determine the incidence of freshwater-breeding mosquitoes, to trigger (and assess the effectiveness of) treatment (or other management response) of on-site waterbodies; and
- provide an indication of the effectiveness of both on- and off-site (brackish water) larval management programs.

Larval monitoring will be conducted where it is assessed that freshwater species are a significant component of the adult mosquitoes caught by the light traps. Where larval monitoring triggers on-site treatment by the Proponent, monitoring will be continued to confirm the effectiveness of treatment. Treatment will be designed and effected by a licenced pest controller. A treatment register will be maintained and include:

- areas treated;
- date and time of treatment;
- treatment used (inc. dose, batch number, etc); and
- results of follow-up monitoring.

Table 7.3 Summary of On-site Mosquito Management during Development.

Issue	KPIs	Routine Responsibilities	Responsible Entity	Required Outcomes	Corrective Actions
On-site breeding and roosting habitat (and breeding) is not increased	Extent of breeding habitat. Larval density.	Use of culverts to avoid pooling of water. Maintenance of the site, including: · regular mowing of grassed areas · monthly maintenance of gross pollution traps · weekly surveillance of the site (may include larval monitoring).	The Proponent	The timely remediation of breeding habitat and prevention of adult emergence.	Filling of ruts, draining of detention basins, etc as appropriate to reduce breeding habitat and prevent emergence of adults. Treatment of breeding habitat that is unable to be remediated. Improved site management.
Education and Awareness	Published material	Broad-based community awareness.	Qld Health currently performs this role	Broad-based community awareness.	
	Site induction manual	Site-based awareness and education.	The Proponent	Awareness of staff and contractors.	Improvement of induction manual / process.
Record Keeping, Reporting and Review	Records and Reports	Maintenance of records (site maintenance, breeding habitat surveillance, larval monitoring and corrective actions).	The Proponent	Demonstrated diligence.	

7.7 Of the Developed Site

The Proponent will undertake mosquito monitoring and management appropriate to infrastructure within its ownership and control (as per Table 7.1).

Where practical, on-site mosquito management will be co-ordinated with Council's off-site program.

7.8 Training and Awareness

The Proponent will provide appropriate training to its staff, contractors and sub-contractors such that they are aware of the risks to human health posed by mosquitoes and biting midge, what constitutes suitable breeding and roosting habitat, and as required by their individual responsibilities, how they are expected to contribute to on-site mosquito and biting midge management. Environmental and health risks associated with mosquito and biting midge control will be highlighted. A register of training will be maintained.

Council, together with Queensland Health currently develop, publish and promulgate material that serves to educate the community (and particularly those moving to the Redlands) as to the need for individuals to manage their exposure to mosquitoes and biting midge (see: Redland City Council 2014, 2014a, 2014b, 2014c).

7.9 Record Keeping and Continual Improvement

This Biting Insect Management Plan will be reviewed annually from the commencement of development of the site for the duration of development. Amendments will be made to reflect best practice. Where the Proponent retains elements of the site post-development, element-specific management plans will take on any required residual responsibility for biting insect management.

All Proponent-initiated activities will be documented, with records maintained by the Proponent. During the development phase, an annual summary of mosquito and biting midge management will be prepared by the Proponent and made available to relevant stakeholders.

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Appendix A Building Design to Reduce Exposure to Mosquitoes - extract from Shoreline's Plan of Development (pp116-117)

Appendix B Shoreline Plans, current March 2017

shoreline

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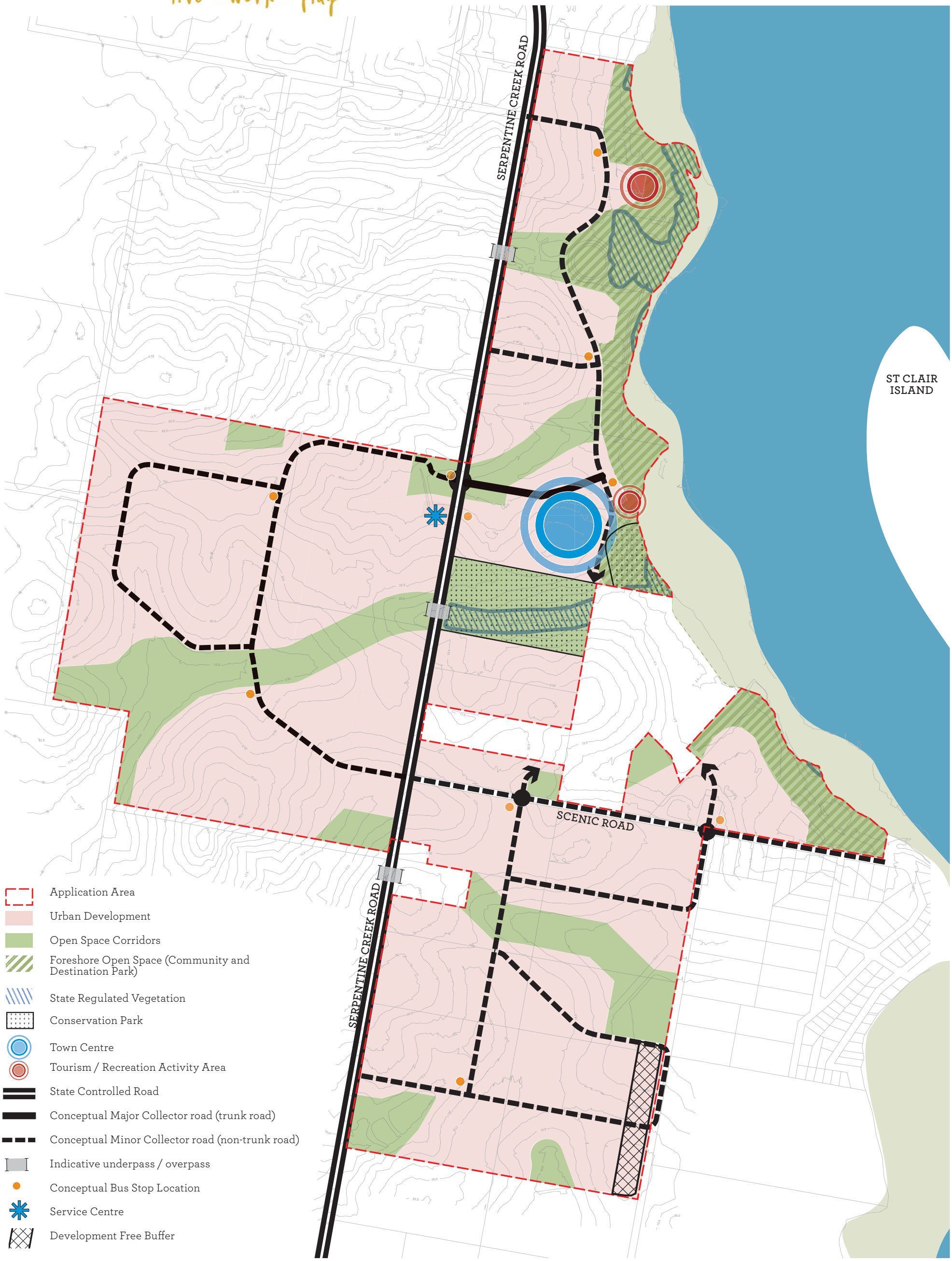
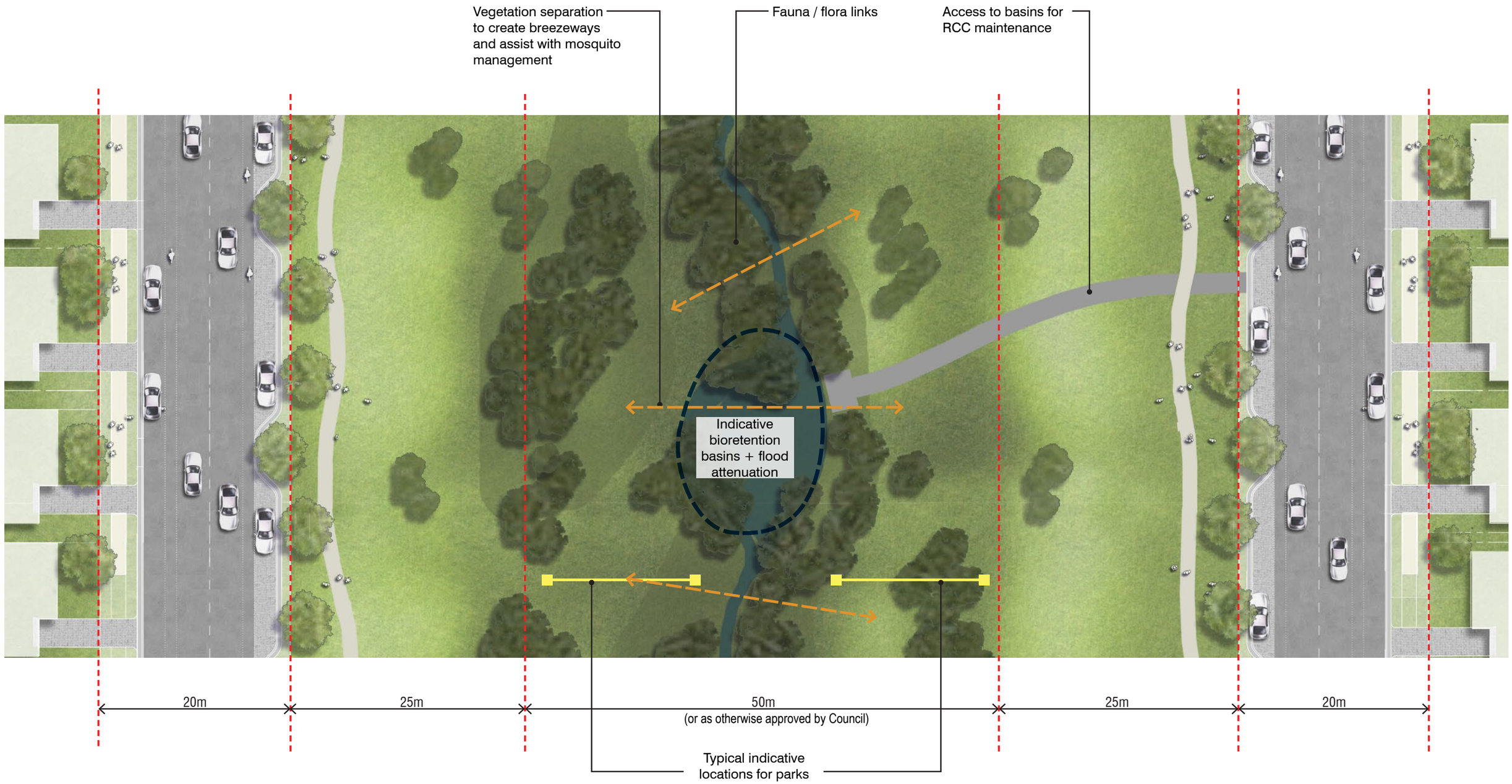


Master Plan. Shoreline

20.October.2016 . 14009_SK013 [24]

lat27

DRAFT



Open Space Corridors With Parks (Indicative Only). Shoreline

Unit 1, 36 Wyandra street, Newstead Q 4006
07 3852 5270
info@lat27.com.au

28.October.2016 . 14009_SK030 [8]

DRAFT

0 10 20 30 40 50 100m

NOTE: The location of the sports facilities does not form part of this approval.

VEGETATION SEPARATION TO CREATE BREEZEWAYS FOR MOSQUITO MANAGEMENT

Open Space Multipurpose Corridor (Indicative Only).

Cross Section 4

26.October.2016 . 14009.01. SK032. [5]

Unit 1, 36 Wyandra street, Newstead Q 4006
07 3852 5270
info@lat27.com.au

www.lat27.com.au

shoreline
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SERPENTINE CREEK ROAD

SCENIC ROAD

ST CLAIR ISLAND

100m buffer from DNR Vegetation

10m 'pinch' point to Tourism activity area (multi unit site)

40m 'pinch' point to multi unit site

Cleared open space foreshore park. Buffer generaly 100m wide.

5

5

3

4

2

Existing Vegetation

Area A1, A2, A3, A4, A5 & A6 - Specific conditions apply - see Referral Agency Response SDA-0714-012691 for details

Area B1, B2, B3, B4, B5 & B6 - Specific conditions apply - see Referral Agency Response SDA-0714-012691 for details

Conservation Park - Specific Condition Appendix 2 of Council Decision Notice MCU013287

1:10000 @ A3

0 250 500 750 1000m

lat27

Biting Insect Management Plan / Open Space Strategy. Shoreline

Open Space Corridor Cross Sections

26.October.2016 . 14009_SK034 [9]

VEGETATION SEPARATION TO CREATE
BREEZEWAYS FOR MOSQUITO MANAGEMENT

NOTE: The location of the sports facilities does not form part of this approval.

0 10 20 30 40 50 100m

Open Space Multipurpose Corridor (Indicative Only).

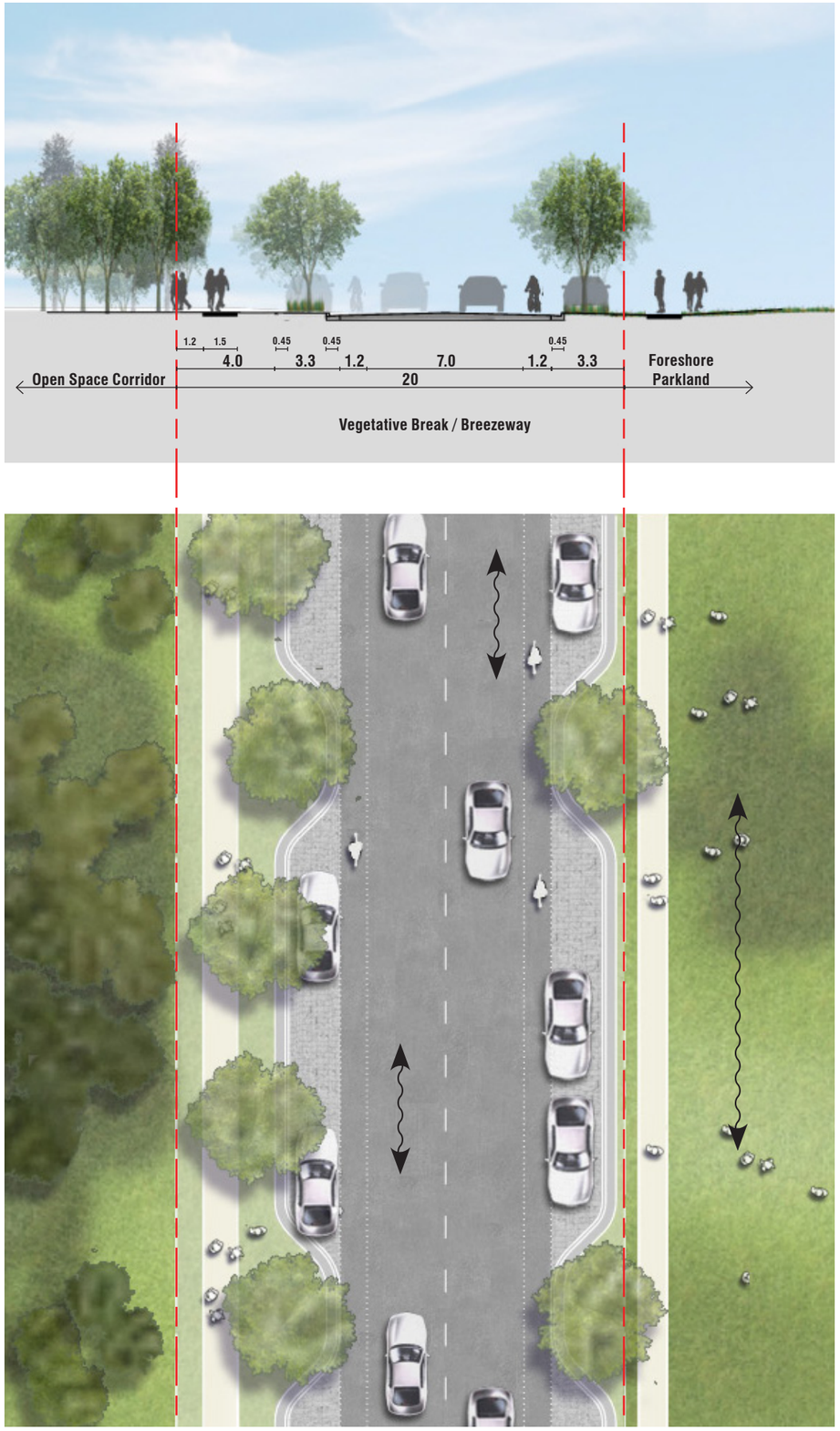
Cross Section 2

26.October.2016 . 14009.01. Sk036 [5]

Unit 1, 36 Wyandra street, Newstead Q 4006
07 3852 5270
info@lat27.com.au

DRAFT

Esplanade Collector Street - No Development Frontage



VEGETATION SEPARATION TO CREATE BREEZEWAYS FOR MOSQUITO MANAGEMENT

Open Space Corridors (Indicative Only)

Cross Section 5.0

12.June.2015 . 14009_SK038 [3]

Unit 1, 36 Wyandra street, Newstead Q 4006
07 3852 5270
info@lat27.com.au

www.lat27.com.au

20 | Average 50m (varies) | 10 | 50

Residential | Road Reserve | Mown areas with retention of non juvenille Koala Habitat Trees | B5 | A5

VEGETATION SEPARATION TO CREATE BREEZEWAYS FOR MOSQUITO MANAGEMENT

Development Adjacent to Conservation Park (Indicative Only)

Cross Section 3.0

12.June.2015 . 14009_SK039 [3]

Unit 1, 36 Wyandra street, Newstead Q 4006
07 3852 5270
info@lat27.com.au

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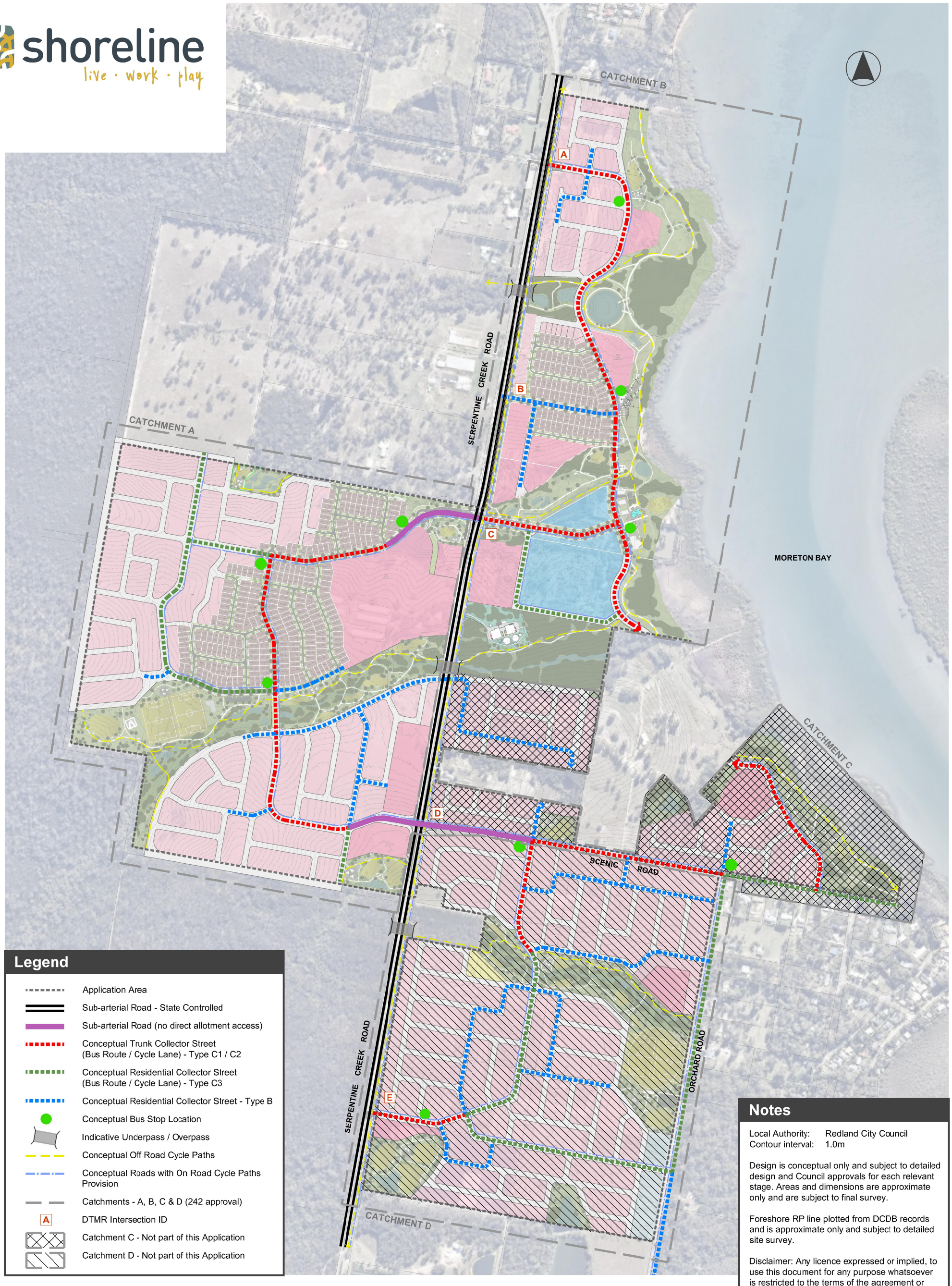

Legend

- Application Area
- Sub-arterial Road - State Controlled
- Sub-arterial Road (no direct allotment access)
- Conceptual Trunk Collector Street (Bus Route / Cycle Lane) - Type C1 / C2
- Conceptual Residential Collector Street (Bus Route / Cycle Lane) - Type C3
- Conceptual Residential Collector Street - Type B
- Conceptual Bus Stop Location
- Indicative Underpass / Overpass
- Conceptual Off Road Cycle Paths
- Conceptual Roads with On Road Cycle Paths Provision
- Catchments - A, B, C & D (242 approval)
- A — DTMR Intersection ID
- Catchment C - Not part of this Application
- Catchment D - Not part of this Application

Notes

Local Authority: Redland City Council
Contour interval: 1.0m

Design is conceptual only and subject to detailed design and Council approvals for each relevant stage. Areas and dimensions are approximate only and are subject to final survey.

Foreshore RP line plotted from DCDB records and is approximate only and subject to detailed site survey.

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Drawing Ref: UD-7558-025-E
Date: 11/04/2017
Scale: 1:10,000 @ A3 - 1:5,000 @ A1

0 100 200 300 400m

Conceptual Road & Cycle Hierarchy Plan Catcment A & B

Shoreline - Redland Bay

for Redland Bay Southpark Corporation Pty Ltd & Sutgold Pty Ltd

shoreline
live · work · play

AMENDED IN RED BY RCC 31/03/2017

TEMPORARY TANKERING FACILITY

SR_TTF_01 Rev A
22-03-2017

Notes

Local Authority: Redland City Council
Contour interval: 1.0m

Design is conceptual only and subject to detailed design and Council approvals for each relevant stage. Areas and dimensions are approximate only and are subject to final survey.

Foreshore RP line plotted from DCDB records and is approximate only and subject to detailed site survey.

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Drawing Ref: UD-7558-047-A
Date: 30/11/2016
Scale: 1:2,000 @ A3 - 1:1,000 @ A1

0 20 40 60 80m

Landscape Concept Plan - Stage 1a-c & Town Centre

Shoreline - Redland Bay

for Redland Bay Southpark Corporation Pty Ltd & Sutgold Pty Ltd

flow systems

Shoreline Tankering Management Plan (Tankering MP)

As amended in red by Council

Revision 1

Document Issue Record

Revision	Issue Date	Issue	Prepared By	Approved By
0	29-11-16	First Issue	MN	DW
1	30-11-16	Minor Details Updated	MN	DW

1 Overview

1.1 Purpose of the Tankering Management Plan

This document sets out the plan for the vacuum suction and offsite tanker truck transport and disposal of wastewater from the Shoreline development by Flow Systems.

It describes how the tankered wastewater generated on site is to be collected, transported and disposed from the development ahead of the construction of a permanent wastewater recycling facility (local water centre, LWC). It ensures the effective management of tankered sewage in a manner that meets health, ecological and waste disposal requirements.

This document covers the following scenarios of when tankering would be relied upon:

- After occupation of first premises while the interim sewer servicing tank facility (ISST) is operational

This document is closely related to the Flow Systems Sewage Management Plan and the Shoreline Scheme Management Plan and needs to be read in conjunction with it. It is also suggested that the following additional Flow management plans for the Scheme are read as applicable:

- Recycled Water Quality Plan
- Drinking Water Quality Plan
- Infrastructure Operating Plan
- Asset Management Plan
- Incident Management Plan
- Operations Environmental Management Plan

1.2 Tankering MP Policies and Strategies

Flow makes the following commitment to the responsible management of tankering operations. Flow will:

- Involve agencies and relevant stakeholders to ensure the protection of public and environmental health
- Identify and document all relevant regulatory and formal requirements
- Ensure the requirement and responsibilities are understood by all parties involved in tankering operations
- Periodically review the requirements, to ensure any changes are reflected in the Tankering MP
- Ensure the effective partnerships and the engagement of all stakeholders as necessary or where this will support the successful management of tankering operations
- Ensure the design, management and regulation of any interim tankering operations is undertaken by agencies and operators with sufficient experience
- Ensure operations team have read and understood the Tankering MP requirements before starting work on any of the infrastructure

1.3 Contingency and Operations Continuity

Flow has a Business Continuity Strategy (BCS) relating to operational management. This BCS was developed following an assessment of key business risks, as well as an assessment of operational management risks. As a result, Flow has a number of key suppliers, as well as alternatives, that they can engage to maintain continuity of operation.

In the context of tinkering operations, Flow is cogniscent of the need to consider multiple tankering contractors and assign fall-back operators. This is especially critical in ensuring that the operations continue regardless of the schedule or available resources of one contractor.

Scheme Summary Details		
Location:	**Region**	**State**
Redland	South East Queensland	QLD
Ultimate Residential	**Ultimate size**	
4,050	Up to 2,000kL/day biological treatment capacity	
Development Type:	**Development Precinct**	**Development Marketing Name**
Housing Supply	-	Shoreline
Utility Name	**Network Operator**	**Retailer**
TBD	Flow Systems Operations	Flow Systems
WICA NOL No.	**WICA RSL No.**	
N/A	N/A	
Services	☐ Drinking water ☒ Sewage services ☒ Recycled water ☐ Electricity ☐ Hot water ☐ Gas	

Table 1: Scheme Summary Details

Contents

Tables

Figures

2 Introduction

2.1 General

Flow Systems (Flow) is a water utility providing drinking water, recycled water and sewage management services to greenfield and urban infill communities. Flow's vision is to be a leader in local utility services valued by communities across Australia.

Flow will achieve this vision by providing high quality drinking water, recycled water, sewerage and customer services, in compliance with legal requirements, the Australian Drinking Water Guidelines (ADWG) and the Australian Guidelines for Water Recycling (AGWR).

This document is the Shoreline Tankering Management Plan (Tankering MP) which outlines scheme-specific details referenced by the Flow Sewage Management Plan, Shoreline Scheme Management Plan and others. It therefore forms part of Flow's Business Management System and its overall management plan framework for the provision of sewage, drinking and recycled water services.

2.1.1 Flow Business Management System (BMS)

Flow operates to a Business Management System (BMS) certified by a JAS-ANZ accredited independent certifying body to the following international and Australian management standards:

- AS/NZS ISO 9001 Quality Management Systems.
- AS/NZS ISO 14001 Environmental Management System.
- AS/NZS 4801 Work Health and Safety Management Systems.
- OHSAS 18001:2007 Occupational Health and Safety Management Systems.

The BMS is an integrated management system and also addresses the requirements of:

- AS/NZS ISO 31000 Risk Management - Principles and Guidelines
- AS 3806 Compliance Programs
- PAS 55 Asset Management
- NSW Guidelines for Drinking Water Management Systems (2013)
- Interim NSW Guidelines for Management of Private Recycled Water Schemes (2008)
- Australian Drinking Water Guidelines (ADWG)
- Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1) and Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 2) Stormwater Harvesting and Reuse (collectively referred to as AGWR)
- NSW Health Drinking Water Monitoring Program (2005).

This Tankering MP forms part of this system as shown in

Figure 1. For further information regarding the Flow BMS refer to the Flow Business Management Plan (BMP).

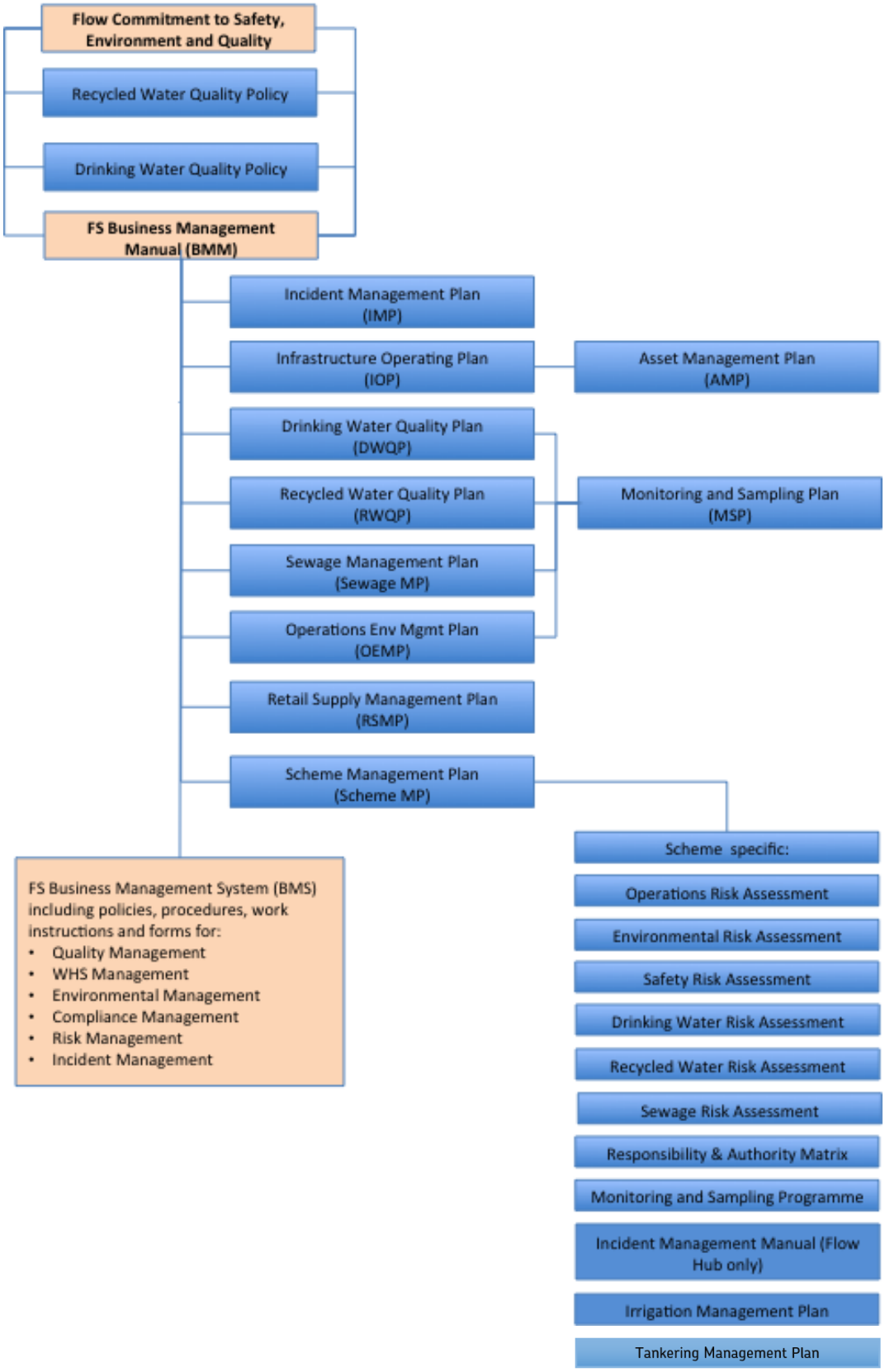


Figure 1: Document Map

2.1.2 Scope

This document applies to Flow and its wholly-owned subsidiaries and infrastructure owned and/or operated subsidiaries. Infrastructure that is wholly owned and operated by Owners' Corporations or the Public Water Utilities is not included in the scope of this Tankering MP.

2.1.3 Document Control and Review

This document is owned by the Executive Manager, Operations and will be reviewed when necessitated by changes in tankering approach or methodology.

2.1.4 Supporting Documents

This Tankering MP must be read in conjunction with the following supporting documents. In the past these documents have been provided as attachments, however these documents are now controlled and provided separately. Hyperlinks are provided for internal readers (click on the title to open the document).

Document	Document Reference / Document ID
Flow Sewage Management Plan	Sewage Management Plan
Shoreline Scheme Management Plan	Not yet complete

Table 2: Supporting Documents

2.1.5 References

This document should be read in conjunction with the following external references listed in Table 3:

Document	Document Reference
Shoreline ISST O&M Manual	9274

Table 3: External Reference Documents

2.2 Flow Schemes

Flow typically provides drinking water, recycled water and sewage management services to its communities.

Flow operates two types of schemes:

- Land and Housing (LH)
- High Rise (HR)

LH schemes service new land release projects where residential and often retail and commercial entities are on separate Torrens title and the reticulation is predominantly in public streets dedicated as part of the subdivision's land registration. The local water centre (LWC) that treats the sewage and produce recycled water in LH schemes are typically free-standing buildings on separate Torrens title.

HR schemes service a number of buildings that comprise residential, retail and commercial entities often on strata title. In this case, most of the reticulation assets remain the ownership of the bodies corporate for the buildings but will often include some assets owned by Flow to connect the buildings to each other and to the LWC. The LWC in HR schemes may be either a free-standing building on separate title or may be formed by equipping part of the basement of one of the buildings in the development.

For a more detailed overview refer to the IOP and for a full scheme-specific description refer to the relevant Scheme Management Plan (Scheme MP).

2.3 Scheme Description

2.3.1 Location

Shoreline is a land and housing development located in Redland LGA in South East Queensland as per the figure below.

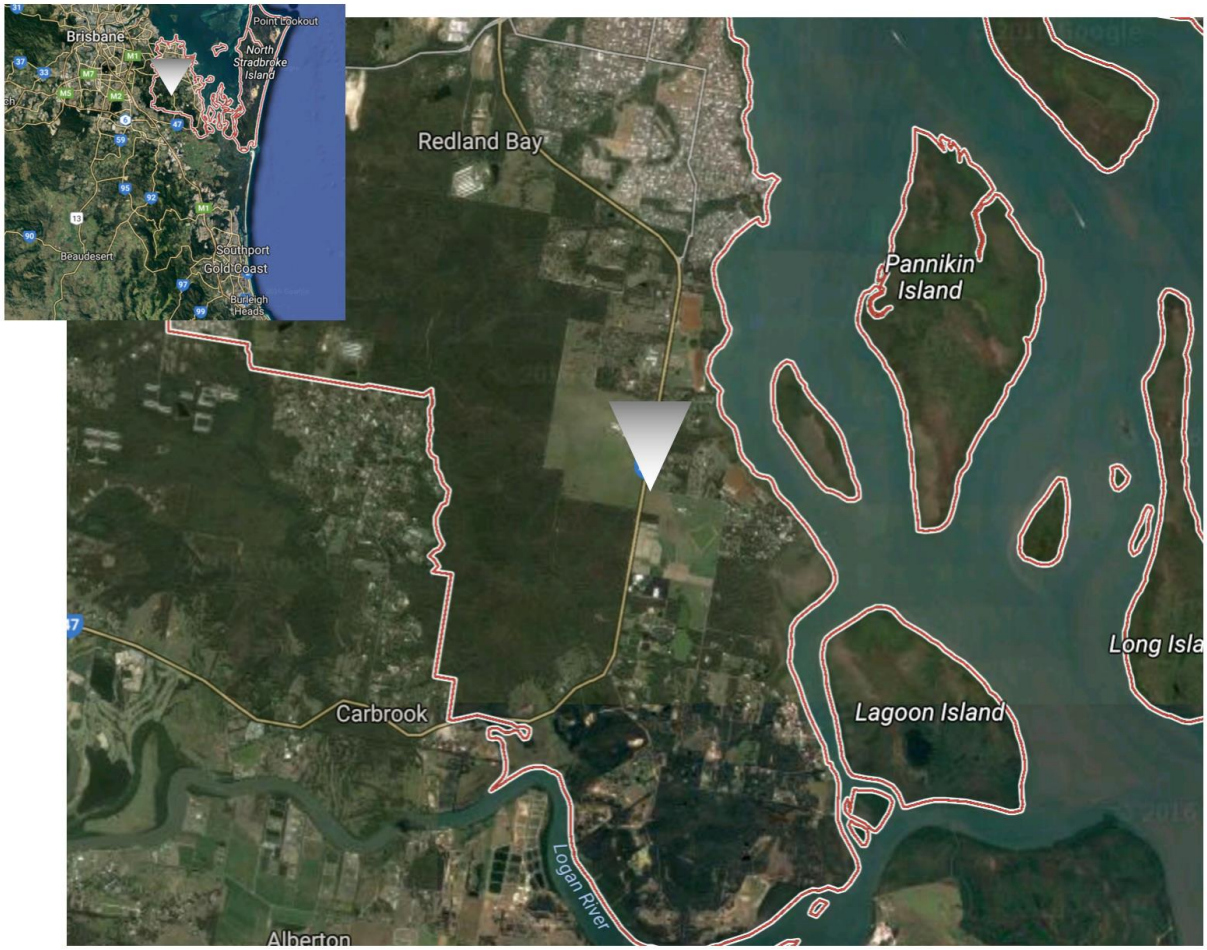


Figure 2: Location of Shoreline

2.3.2 Development

The Shoreline development is a master-planned community catering for 4,050 residential lots, 15,000 m2 of retail, commercial and community floor space and a school. See Shoreline development masterplan in below figure 3.

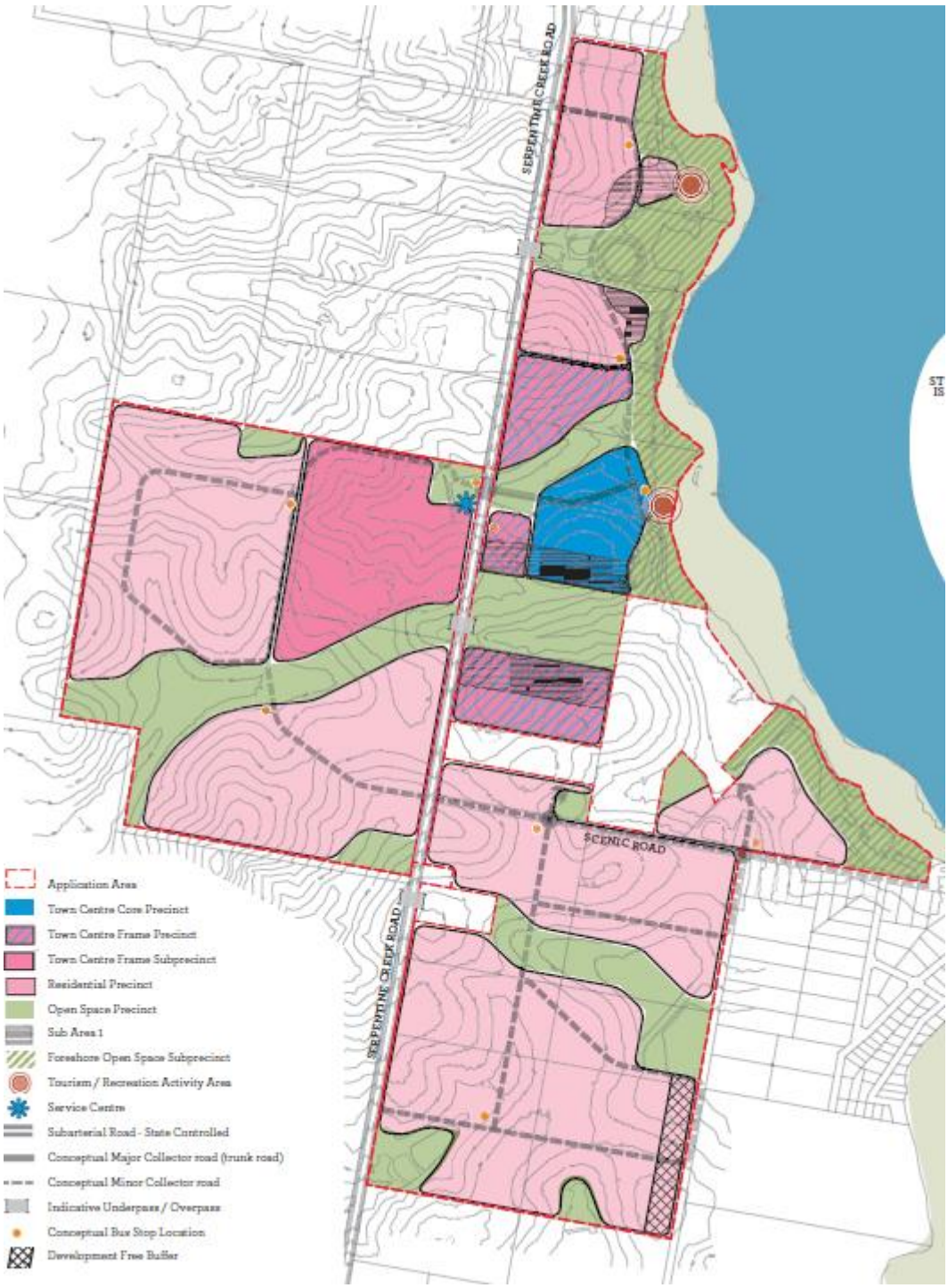


Figure 3: Shoreline Development Masterplan

2.3.3 Development Staging

The Shoreline development is split into multiple precincts.

The Developer will first construct and release the first stage (Stage 1A) which comprises 87 residential lots. Following stage 1B is 52 lots and stage 1C 205 lots.

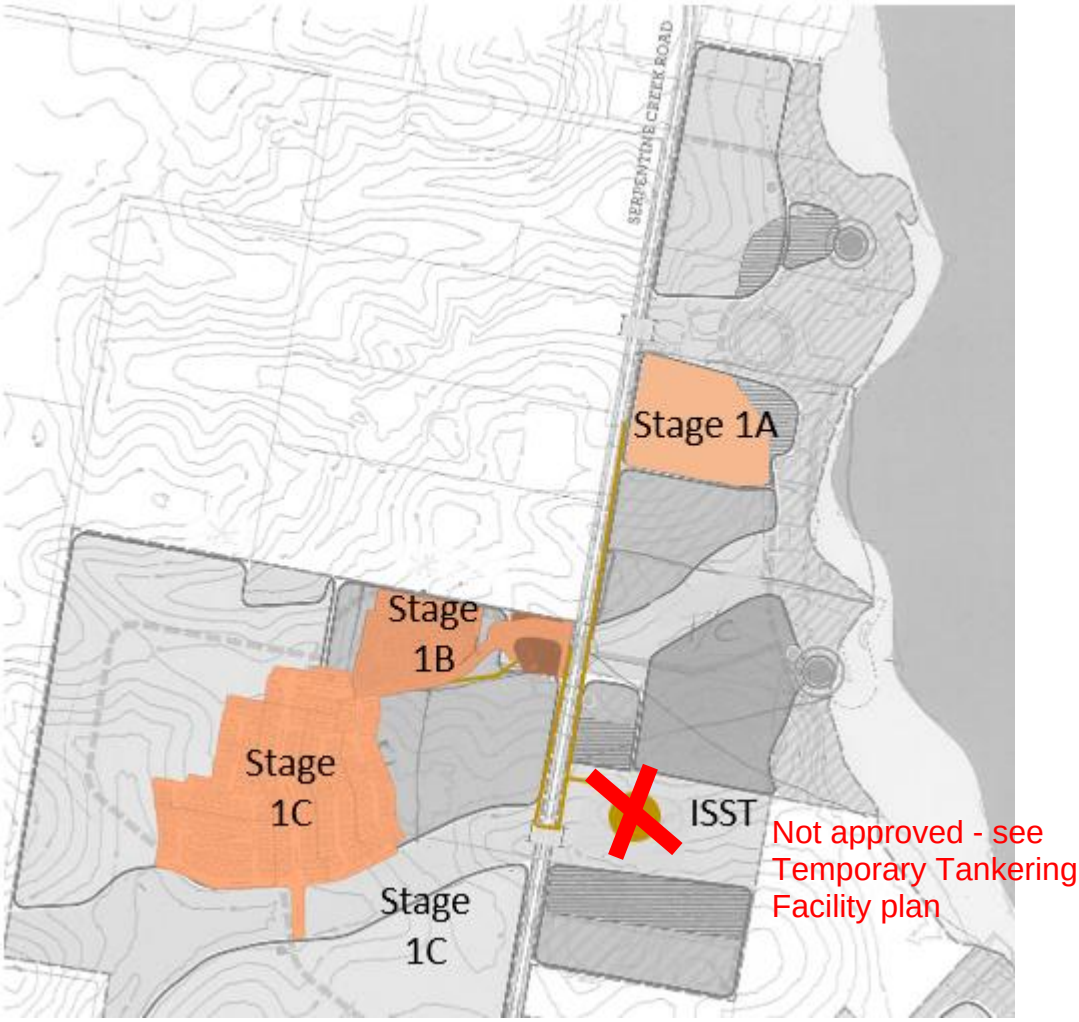


Figure 4: Shoreline Development Initial Stages

3 Pressure Sewer Reticulation

Pressure sewer is a method of collecting wastewater from households to send it for treatment. It uses proven technology and engineering. The diagram below shows how pressure sewer is linked to homes in relation to other water services.

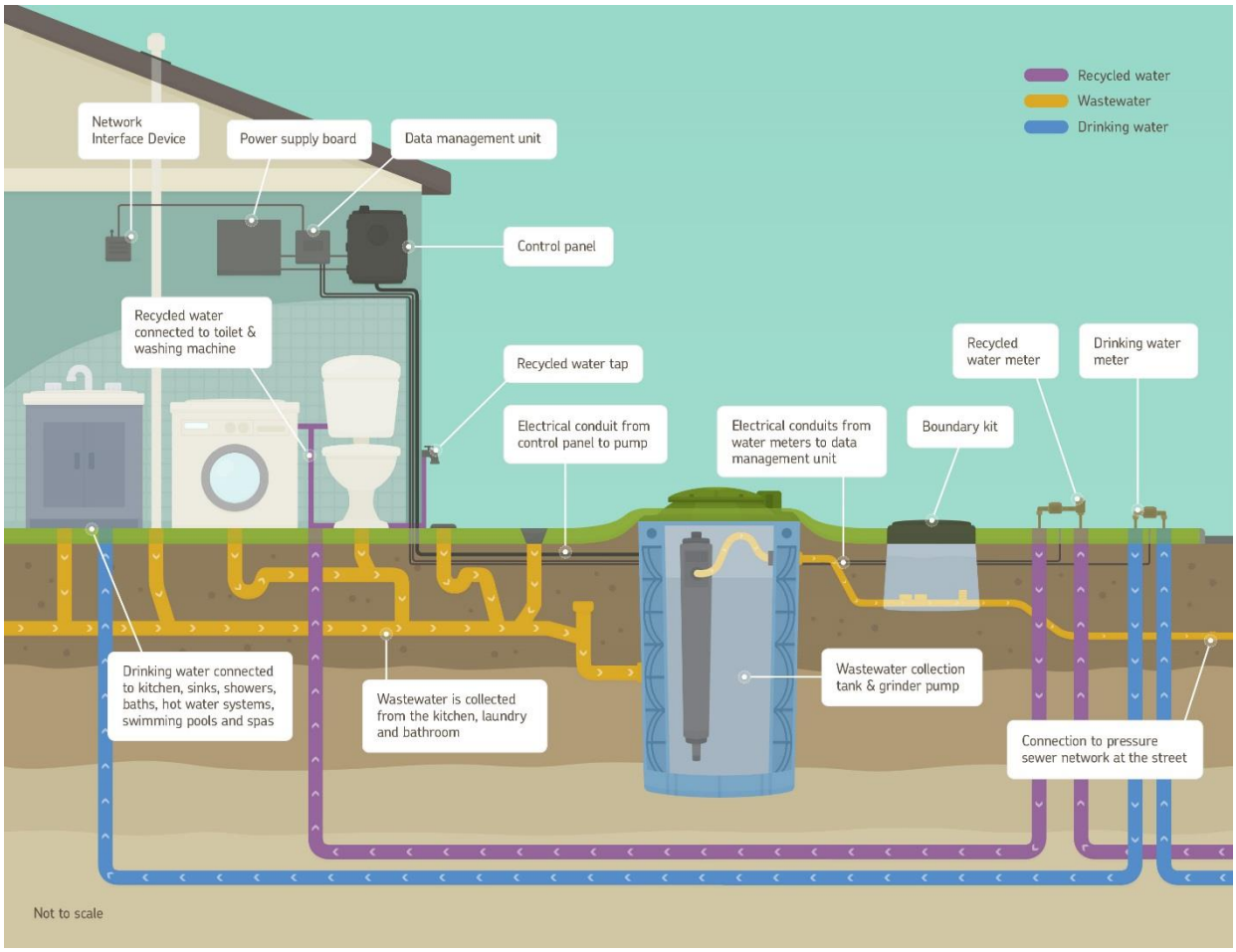


Figure 5: Typical Flow Systems On-Lot infrastructure

4 Interim Sewer Servicing Tanks (ISST)

4.1 Facility Design

Approximately 6-9 months after the reconfiguration of lots in the first development stage, the first houses are anticipated to be built and will require connection to the sewerage network. Initially, sewage will be collected in a centralised location after being pumped from respective on-lot pressure sewer systems. This catalyst infrastructure is known as the interim sewage servicing tank (ISST) facility. The ISST collects and stores sewage in tanks until it can be transferred to a tanker truck for subsequent disposal at a municipal facility. It comprises the following components:

- Sewage tanks complete with valves and service manifolds
- Odour control unit and extraction piping system
- Monitoring, circulation and aeration equipment (as necessary)

The ISST is necessary to ensure development is not delayed on account of servicing provision. The upfront connection to a LWC is often not possible given the construction and commissioning lead times from the receipt of all approvals to the first home occupation. In any case initial sewage flows from the first stage alone will not be sufficient to sustain the biomass operation of the bioreactor tanks.

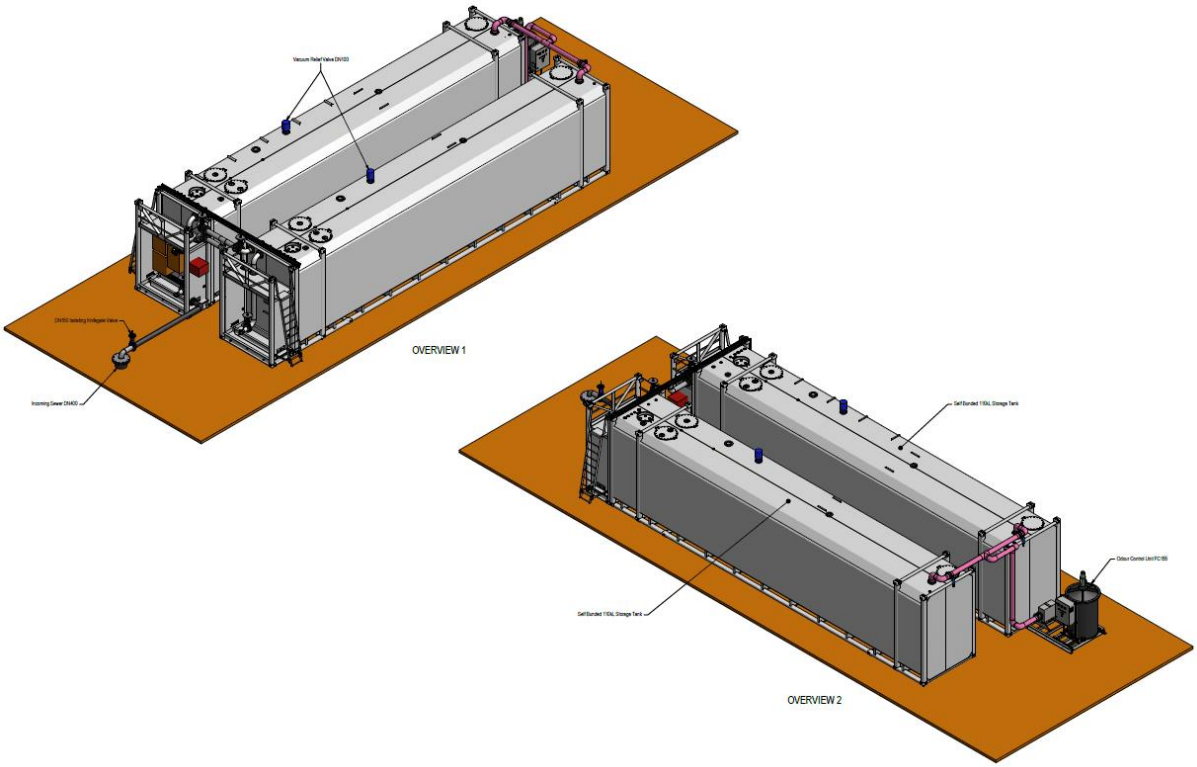


Figure 6: Example ISST Facility - Orthogonal

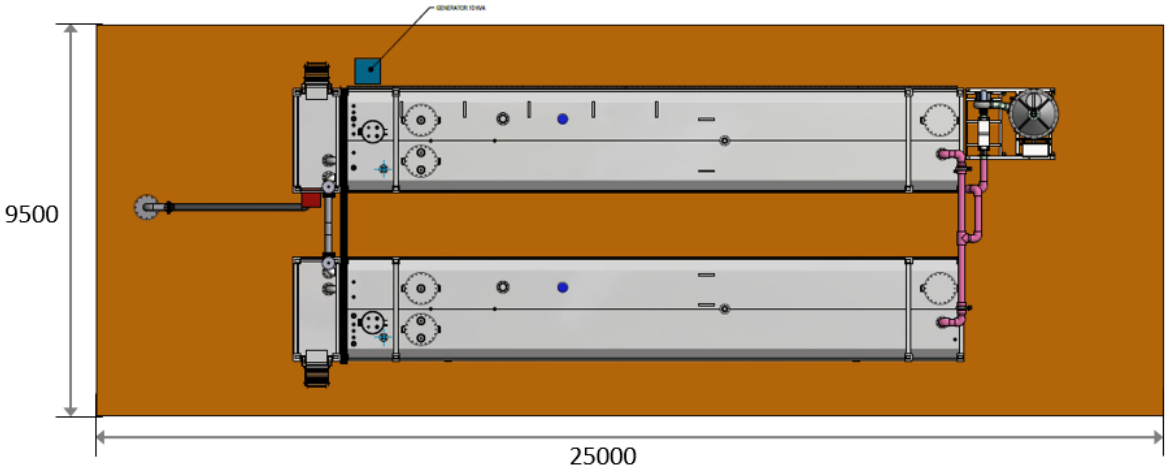


Figure 7: Example ISST Facility – Plan View

Once a pressure sewer mains connection is established from the first development stage to the ISST, authorised sewage collection tankers will periodically extract sewage from these tanks and dispose of it at an appropriately licensed facility or connection point.

The ISST includes:

- 2 x 105kL self-bunded tanks to store the sewage compete with level sensors
- Odour control unit
- Concrete hardstand and bunding for the tanker loading area including isolation valve and sump pump
- All-weather access
- High-level alarms
- Safety shower
- CCTV
- Area Lighting (Directional into premises only)
- Security fencing

The ISST will only be required until the successful commissioning of the first LWC.

Figure 8: Photo of ISST

4.2 Facility Location

With reference to the below drawing it is proposed that the ISST is located in proximity to the occupation area of the first LWC.

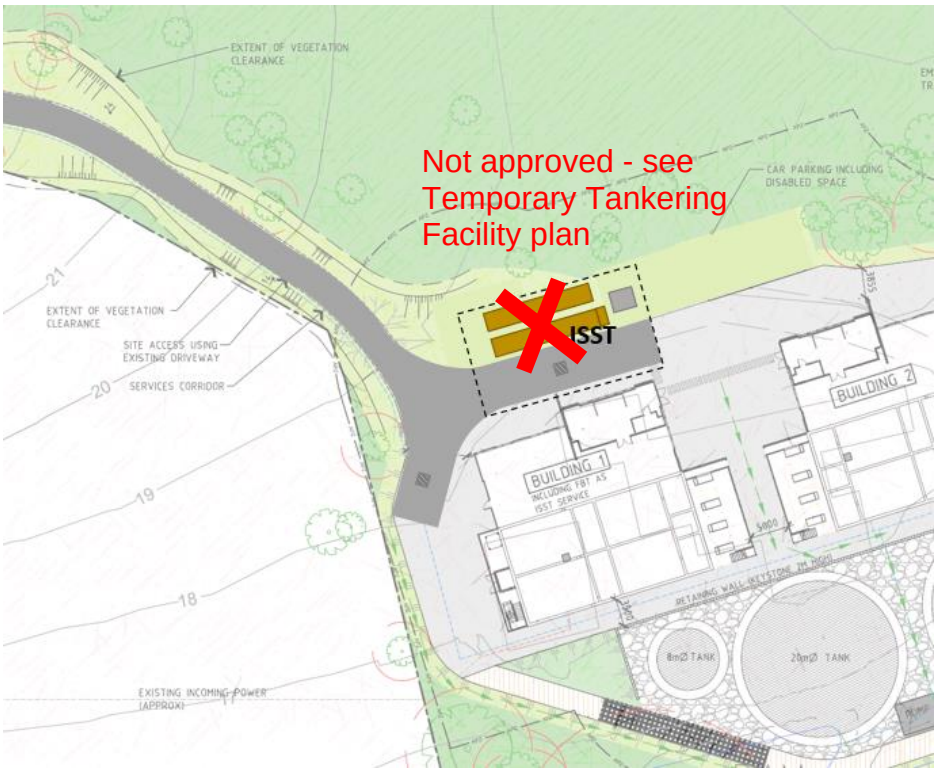


Figure 9: Indicative ISST Location

This indicative location map shows a tanker truck reversing area to facilitate ease of operations. The above also shows the extent of lead in access road that will be constructed initially as well as the structure for the ISST showing the maximum footprint design of two tanks and adjacent odour control unit to the east. This road will be extended trailing construction of the first LWC within an approximate timeframe of a year and possibly extended a third time for the construction of the second LWC in a number of years if not prior.

4.3 Capacity

The ISST incorporates 2 x 105kL tanks which means it has a nominal storage capacity of around 210kL. Actual volume storage capacity with two tanks is lowered to the order of 180kL and accounts for minimum pump out and maximum fill tank levels.

The ISST facility is typically designed to serve a maximum capacity of between 150 and 200 homes with tanker servicing at a frequency of less than 48 hours. With average daily sewage production of 450L/dwelling/day the ISST has a maximum average resonance time of between 24 to 36 hours. In other words, while operating at maximum design capacity the ISST would be full after 36 hours of no tanker truck pump out and would need to back up into the 24-48 hours storage available within the wastewater collection tank on each lot. The capacity of the ISST is sufficient to service the development within the maximum infrastructure capacity (ie maximum 150 to 200 homes).

4.4 Facility Features

The important features of the ISST from section 4.1 have been expanded as follows:

Tanks – The 105kL self-bunded tanks collect and store the sewage until it can be pumped out. For an ISST there are typically two of these tanks. The mainly PVC piped connections and manifolding to the tanks are well sealed and designed to reduce possibility of any blockage. As the contents are already macerated by the pressure sewer pumps on each property there are typically no issues with blockage caused by debris.

Odour control unit – This key piece of equipment extracts the pungent air from the tanks and processes it so that it doesn't pose a nuisance to the newly commenced development or existing surrounds. It incorporates a multistage air treatment process that constantly operates while the ISST is operational. The odour control unit has plumbed connections to the tanks and flexible connections at the tanker truck connection points to extract the maximum odour during operations.

Concrete hardstand – A slab is typically constructed adjacent to the bunded tanks with fall to a central sump isolated from the stormwater system by an isolation valve. This ensures that any drippage or spillage in the transfer process is captured and responsibly managed. This also enables the washing down of the tanker truck in situ after it has been filled. Similar to all of the drainage in and around the ISST it is isolated from the stormwater system to ensure or wastewater is managed responsibly.

5 Tankering Operations

5.1 Tankering scenario

There is overarching progression of tankering scenarios which are detailed as below with prerequisites and trigger points. The aim is to progress to the more permanent infrastructure when able to do so.

Scenario	Prerequisite	Trigger for operation
Tankering from centralised interim sewer servicing tanks	Pressure sewer connection from initial stages to centralised sewer tanks (ISST) Commissioning of the ISST	Occupation of first home
Direct tankering from individual on-lot tanks (fall-back option only)	(Tankering Agreement)	Occupation of first home
Tankering from partially commissioned LWC	Commissioning of front end of LWC	Occupation of first home onwards
Treatment and recycling of sewer at the LWC	Sufficient biological load to sustain MBR biomass Commissioning of the LWC	Connection of 150th home (+/-)

Table 4: Tankering Scenarios

Direct tankering from individual 900L on-lot tanks involves the establishment of a tanker truck on a street to service up to 10 lots at a time with individual systems. The on-lot macerator pump is momentarily turned off by the tanker contractor, the tank lid is accessed, sewage is sucked out and the on-lot system is reinstated. This approach is generally only used as a fall-back option when the ISST is not operational or there is a problem with the system at large (ie power outage at the homes). It is important to note there is up to 48 hours storage capacity of the on-lot wastewater collection tanks before they are likely to overflow. The pressure transducer as part of the on-lot module constantly monitors these local tank levels.

Tankering from the ISST involves connecting to a common manifold tank piping and pumping down tanks until the tanker truck is full. As the pressure sewer is automatically pumped from the development to the centralised storage facility it is not necessary for tanker trucks to drive around the development, only the storage facility. Odour and spillage issues are all dealt with by the system design.

Treatment of the sewage at the LWC involves its processing and treatment into recycled water. Once treated it is stored on site for supply to the dual reticulation system. Sewage is seldom stored for long periods of time at the LWC as the treatment process is primarily triggered by flow balance tank levels. It is worth noting the flow balance tanks are designed with a tanker truck connection point should it ever be required.

5.2 Tankering Loads & Schedule

Determining a schedule for the tankering operations is governed by integrating the below equation with respect to time:

$I - n*V_T = V_S$

Where I = Inflow from the development

n = number of tanker trips

V_T = Volume of tanker truck

V_S = Volume stored (V_S < tank capacity)

However the inflow volumes are expected to change across the day according to a typical diurnal production rate. A normalised load profile is shown below at the home level.

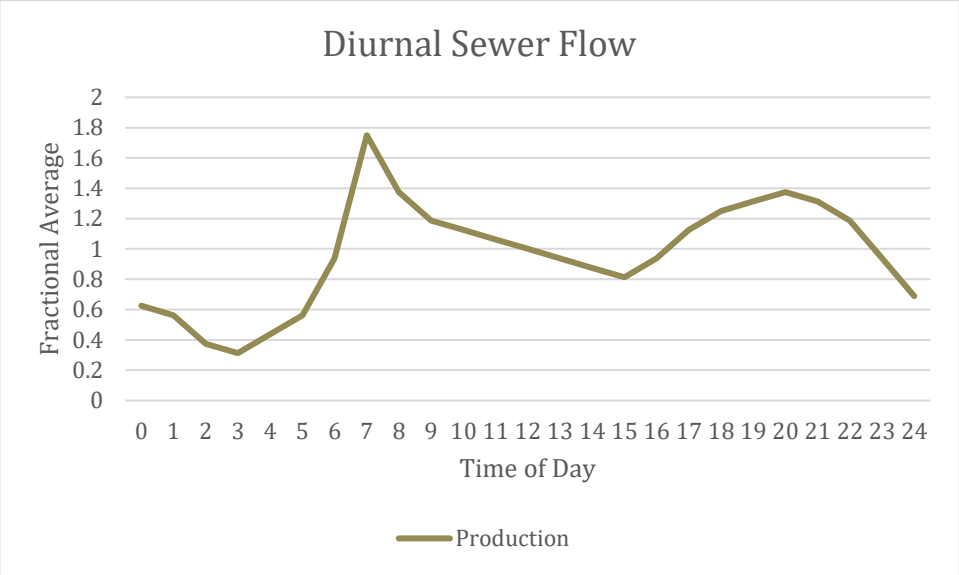


Figure 10: Typical Fractional Diurnal Domestic Sewer Flow

Further, there is storage capacity available in the on-lot wastewater collection tanks that form part of the pressure sewer system. The on-lot tanks work on a draw down basis but with a minimum start pumping level.

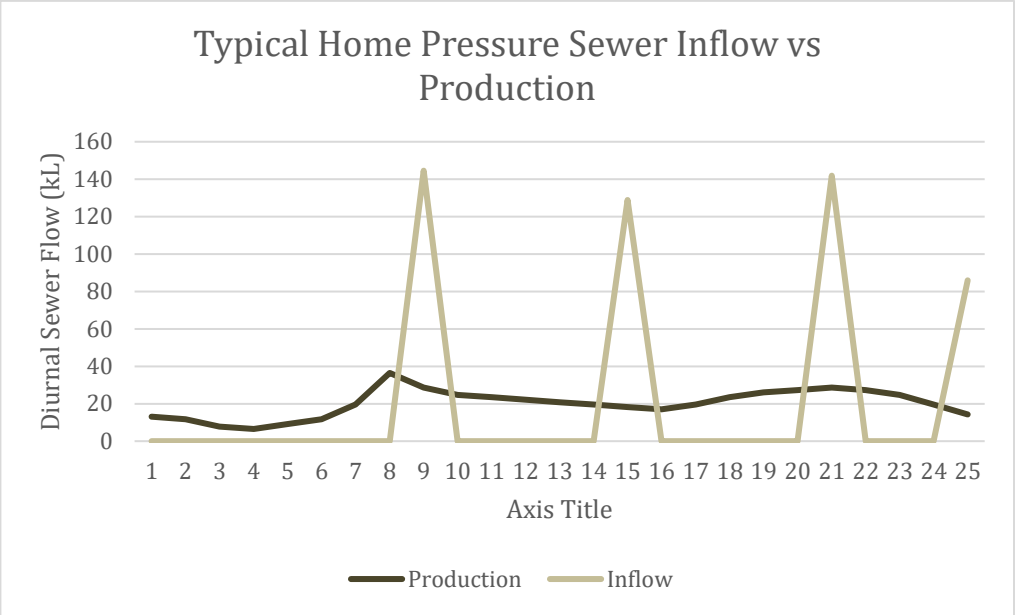


Figure 11: Example On-Lot Sewer Pump Operation

It is observed for a typical home that the pressure sewer system may kick in around four times a day to deliver sewer to the ISST. When this is averaged over the sum of the total homes connected the spikes are balanced out as no two homes have the same profiles. To simplify, this has the effect of delaying the inflow of sewage to the centralised tanks shifting the above curve to the right by a matter of hours.

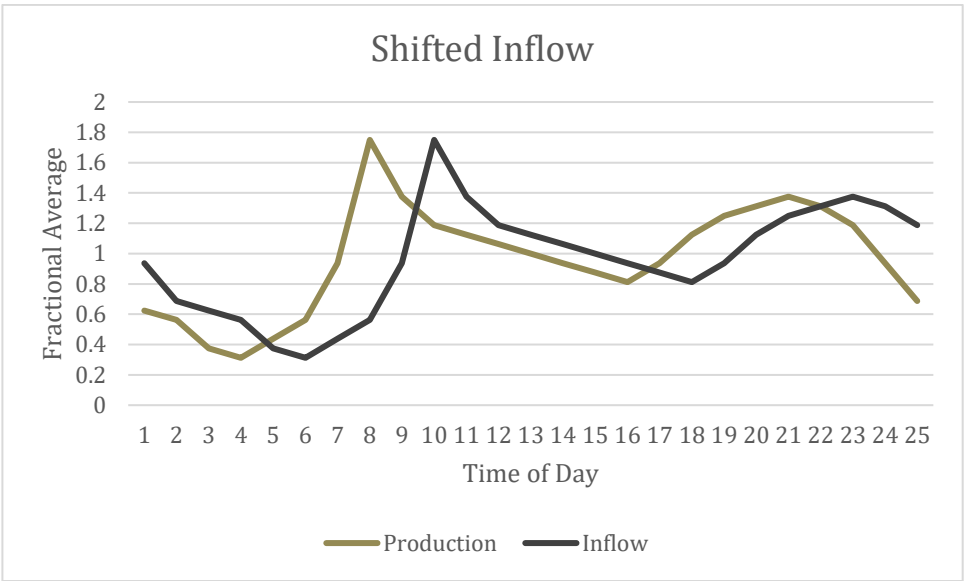


Figure 12: Delayed Inflow to ISST

This shows that maximum inflow into the ISST is in the mid-morning which generally coincides with when the first tanker truck visit is expected.

At an average sewage production rate of 450 litres / lot / day and an anticipated sales rate of 15 lots coming online per month a graph of the average daily sewer flows at the commencement of the development have been illustrated below.

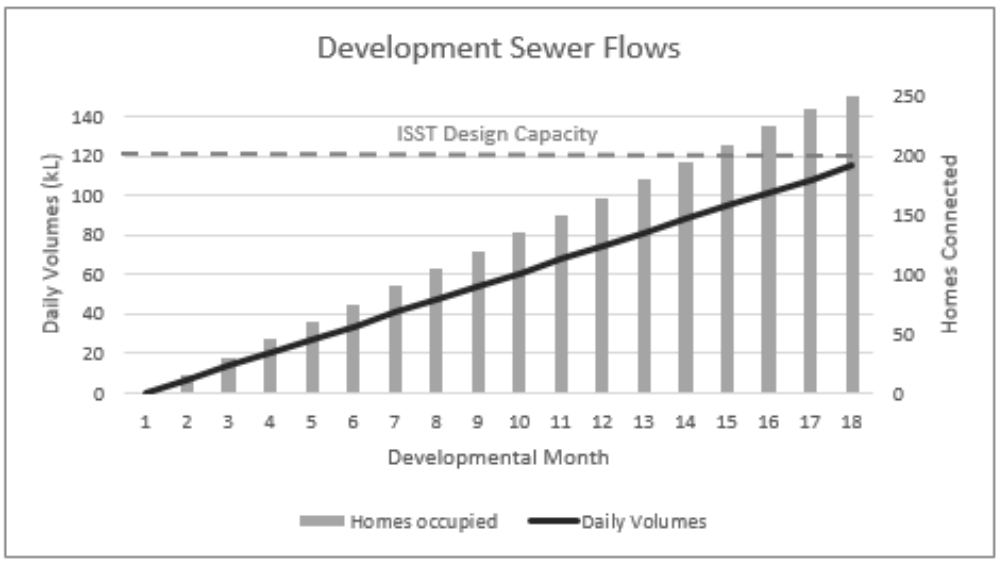


Figure 13: Anticipated Developmental Sewer Flows

A schedule of tanker truck visits has been developed at different snapshots across the expanding development based on a 20kL tanker truck and shown in **Appendix A.2**.

The capacity of the tanker trucks varies between and within companies and so this will be more clearly defined at the point of engagement with tanker operators.

This shows that for a 20kL semi at the nominal maximum design capacity (ie 200 homes) 4 and at maximum 5 trips a day are required to ensure sewer flows are adequately tankered from the ISST. Different size tanker trucks result in a different frequency of trips. However, given the ISST is generally sized to 150 homes it is unlikely the tanker trips would exceed 3 trips a day for a 20kL truck.

The indicative trip timings at different capacities have been summarised in the below graph. As there is considerable excess storage in the facility it should be noted there is leeway in terms of actual tanker trip timings to better coincide with times of low traffic volumes.

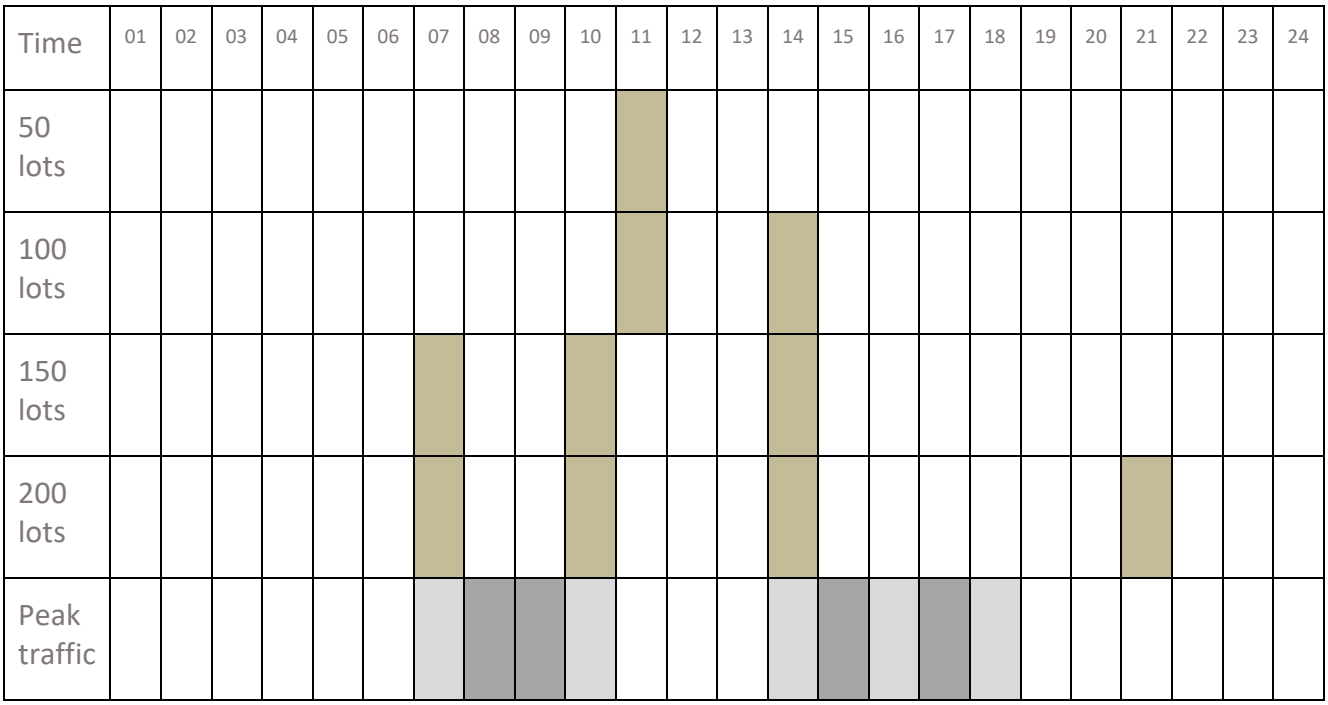


Figure 14: Indicative Tankering Schedule

5.3 Tanker Transport & Disposal

Flow uses waste hierarchy principles including:

1. Waste avoidance
2. Waste minimisation
3. Reuse and recycling
4. Disposal.

Where waste is required to be handled and stored on site prior to on site reuse or off site reuse, recycling or disposal, the following measures apply:

- Liquid wastes are to be stored in appropriate containers in bunded areas until transported off site.
- Hazardous waste will be managed by appropriately qualified and licensed contractors, in accordance with the requirements of applicable legislation.
- All other recyclable or non-recyclable wastes are to be stored in appropriate covered receptacles (e.g. bins or skips) in appropriate locations on site and contractors commissioned to regularly remove/empty the bins to approved disposal or recycling facilities.

Waste disposal will be in accordance with applicable legislation. Wastes that are unable to be reused or recycled will be disposed of off-site to an approved waste management facility.

Flow will dispose of waste from each scheme:

- in a manner which ensures that environmental and public health risks are managed appropriately
- in accordance with applicable legislation
- if applicable, at a waste facility lawfully authorised to dispose of the waste.

The following records will be kept for each load of waste transported from a scheme:

- time and date of departure from the scheme
- volume or weight of each load transported
- classification of waste
- transport company
- reuse/disposal locations

In terms of disposal, tankered waste falls under two categories of disposal. First is disposal at the nearest PWU facility such as a council connection and the second is at a private facility operated by the tankering company. Depending on the location of the disposal facility the route and traffic impact will vary. The approximate locations of the interim sewer servicing tanks located at 304-324 Serpentine Rd, Redland Bay to the selected Public Waste water Treatment plants are summarised in the below table.

As the exit from the ISST onto Serpentine Creek Rd is proposed to be a left turn only exit, it is necessary for the laden tanker truck to drive south to rocky passage road and turn around in order to go north (a six-kilometre / seven-minute round trip).

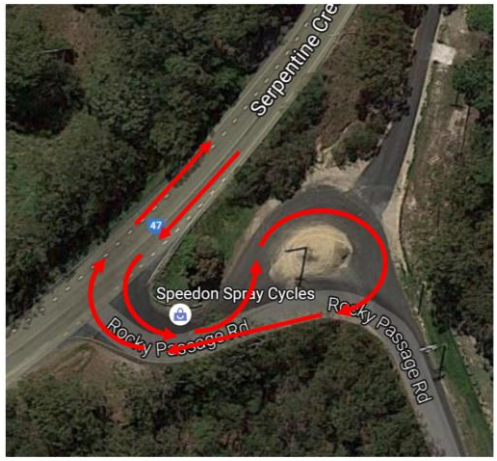


Figure 15: Southern Turnaround

The additional time and distance for northbound trips has been reflected in the below table in brackets.

Municipal Facility	Location	Design EP	Distance from ISST	Travel time from ISST
1. Mount Cotton WWTP	341 German Church Rd, Mount Cotton	10,000 - 50,000	20 km	20-25 minutes
2. Victoria Point WWTP	Link Rd, Victoria Point	10,000 - 50,000	10 km (+ 6km)	10-15 minutes (+ 7 minutes)

Table 5: Municipal Disposal Options

A route diagram is shown below with two options for disposal to the selected municipal WW treatment facilities. Note, there are various additional disposal options beyond this that can be considered in emergencies with some five other treatment plant sin relative proximity.

Figure 16 Disposal Route Options

There are vacuum excavation and tanker truck contractors available for liquid waste removal in the area as outlined in the table below. The larger companies such as Cleanaway and Toxfree may have a variety of options for disposal of liquid waste.

Similar to the northbound journey leaving the ISST, if the ISST is a left turn in only and travelling to the facility from the south, it is necessary to overshoot the destination, turn around at the nearest major roundabout where Serpentine Creek Rd meets Oakland Ave and proceed south (a four-kilometre / six-minute round trip). This is illustrated in the below diagram.

Figure 17 Northern Turnaround

Again, the additional time and distance for trips from the south has been reflected in the below table in brackets.

Company	Fleet Size	Distance to/from ISST	Travel time to/from ISST
Aussie HydroVac Services	Medium	13 km (+ 4km)	15-20 minutes (+ 6 minutes)
Vac it	Small	16 km	15-20 minutes
Lee's Liquid Waste Services	Small	14 km	15-20 minutes
Cleanaway Industrial Services	Large	34 km (+ 4km)	30-40 minutes (+ 6 minutes)
Toxfree	Large	37 km	30-40 minutes

Table 6: Tankering Truck Operator Options

Traffic impact from tanker operations is minor as traffic routes are primarily confined to major roads. The biggest identified impact is the potential slowing down of some traffic as a laden tanker truck accelerates leaving the ISST facility and continuing to drive on Serpentine Creek Rd at a cruising speed lower than the speed limit. However, this is not expected to appreciably affect traffic flows.

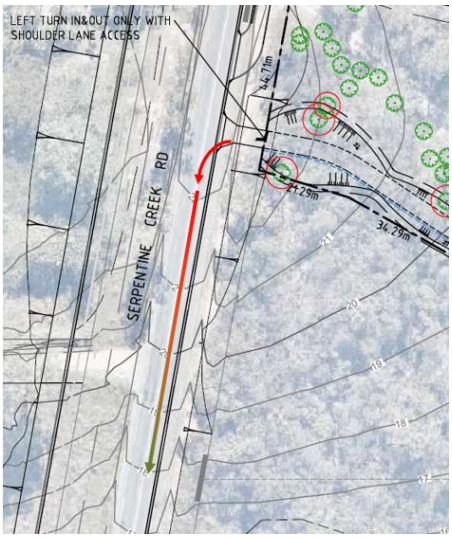


Figure 18 Tanker Truck Exit Acceleration

5.4 Safety in Tanker Operations

Safety of tankering operations is aided by safety in design of the ISST facility. Some safety features include:

Emergency Eyewash – The ISST is provided with a combination unit safety eyewash and shower located at the appropriate location per Australian Standards to ensure that operator safety is maintained in the event of sewer splashing or spraying onto an operator. This operates from the potable water supply.

Bollards – another feature that prevents tanker truck collision with the infrastructure is the provision of bright yellow safety bollards. This ensure no damage to infrastructure and safety of operators from a rare crushing injury from a vehicle against the bund wall.

Road studs – Road studs are to be provided on the tanker parking area and incoming access road to aid the contractor when reversing at night times or in inclement weather or poor visibility.

Lighting – The provision of adequate area lighting assists in maintaining a safe work environment for operators. The effectiveness and replacement of lights can easily be observed with inspection of CCTV footage.

All weather access – The ISST is designed to be operable in all weather conditions. It is recommended the early provision of a sealed access driveway will aid the safe access to the site. This becomes more important as the number of serviced homes increases and hence the frequency of tanker trips also increases with higher probability of nightime trips.

CCTV – the security monitoring of the ISST facility not only assists in security related matters but also bolsters safety by enablement of remote visual monitoring. This can assist in troubleshooting any problems in real time and also monitor the actions of any tankering contractors to ensure compliance with safety procedures and processes.

Monitoring & Control – Flow has multiple pre-programed alarms that assist in the detection and ongoing monitoring of the ISST facility. Alarms are sent immediately to the Flow operation team over multiple communication channels. This ensures that if there is a major problem or incident with the equipment that Flow is aware and can manage any incident effectively in collaboration with the tankering operator.

Emergency egress – The proposed emergency egress track to the north east of the site is to be free from obstruction to allow multiple escape routes in the event of a local fire.

After all engineering controls have been implemented in the design of the ISST, in terms of safety of operations this is largely provided at the administration control level for contracting companies as well as contractual stipulations on minimum PPE requirements for individuals.

Safety of operations starts at the contractor selection criteria process at initial engagement. The selection of an appropriate and reputable tankering contractor that is ISO accredited where possible and has verifiable track record of safety in operations is paramount. Further

to this at the administrative level, Flow provides training on the correct operation of the ISST.

The combination of design safety features and operational safety provisions and stipulations enable a lone worker at the ISST to safely carry out operations.

In terms of tankering operations within developments it is required that established trucks demarcate the operations area by putting out traffic cones and signage to warn residents of the operations in progress. At no time should the vacuum truck hosing cross and block a road without the appropriate traffic control and preagreed safety procedures in place. This procedure is to be captured in the contractor's safety management system which is reviewed and approved by Flow ahead of time.

5.5 Response Times & Emergency Procedures

The response time for a callout involves the following factors:

- Typical distance of the tanker truck (ie dispatch centre) to the storage facility
- Time of day (ie traffic)

It is necessary to allow contingency in the storage capacity of the tanks to allow for the worst case scenario in terms of tankering truck availability and transit time to the facility. It is also desirable to avoid the requirement to travel in peak traffic times across the day to limit any traffic impacts.

With reference to section 4.3 it is evident there is an abundance of tanker truck contractors in the Redlands area and various possibilities for the disposal at municipal facilities and even private treatment and disposal. It is recommended that business relationships are established with more than one tanker contractor to enable options in the event of unavailability.

The maximum timeframe from dispatch of a tanker truck to the site appears to be around 30-40 minutes. Therefore, depending on availability it is not expected that a tanker truck would be unavailable for more than a few hours. At maximum design capacity (ie 200 homes connected) and at maximum inflow rates the ISST fills at around 10kL per hour which is around 6% of the storage capacity. As the tanks are operated so that there is contingency between high level (at which point an alarm is triggered) and overflow level, it is very unlikely that an overflow can occur so long as suitable long standing contractor arrangements are made in advance.

Detailed contingency plans in the event of infrastructure failure are contained in the Flow Infrastructure Operating Plan and Flow Recycled Water Quality Plan and include such measures as:

- Minimisation of sewage production through customer notifications;
- Rapid response to infrastructure failure; and
- Trucking of sewage off-site via an approved waste management contractor

6 Tankering Environmental Considerations

6.1 Environmentally Conscious Design

The ISST contains the following design features to ensure that initial and ongoing impacts to the environment are minimised. Reference is also made to the Koala-sensitive Design Guideline (QLD Govt) in consideration of design of interim and permanent infrastructure.

Bunding – The two tanks are self-bunded which means that overflows have a storage capacity of 110% of the design storage volume of the tanks. In the event of an overflow the capacity of the bunds more than matches the capacity of the tanks themselves.

Sump Drainage – It is proposed a centralised sump with isolation valve is provided on the tanker parking area and the turning area to capture any minor tanker leaks. The surrounding road is designed with fall to these sumps so that any rain or sewer in this area can be captured. These are anticipated to be fit out with buried pipe so that sump pumps can be connected. This means that stormwater management considerations are reduced for the interim infrastructure. Minor washdown flows around the ISST are directed to sumps which then can be vacuumed out or pumped back into the storage tanks.

Odour Control Unit – A typical carbon filter is installed in close proximity to the sewer tanks to substantially remove H2S and VOC levels. This runs constantly and has plumbed connections to each vacuum ventilated sewer tank as well as flexible suction points near the tanker truck connections. This ensures that while emptying tanks the odour is captured minimising any odour release to the environment.

Fence – A perimeter fence around the ISST provides site security from humans and fauna. This is typically constructed from chain link but a green colour bond fence can be erected if artificial night lighting and movement is an issue.

Lighting – directional lighting is achieved by shielding to reduce the splay angle and focus light on the ISST only. This is necessary to ensure it is operable 24 hours a day but can be designed to reduce impacts to any fauna in the vicinity. Proximity sensors are envisaged to reduce permanent lighting and switch on additional lighting when movement is detected.

Noise – Noise and vibration on the ISST is minimal apart from times when the tanker truck is on site. Any alarms can be modified to better suit the environment and the equipment itself including the monitoring and control system and odour control system which have minimal breakout noise.

All weather access – The ISST is enabled for 24/7 operations and all weather operation to allow continuity of operation.

Tap access – Access to potable water is available at the ISST. This is plumbed to the eyewash facility and may also be used for washdown and cleaning of tanker truck interfaces including camlock fittings, valves, tank pipe manifold, suction hose as well as truck washdown where necessary. This ensures that no sewer remains on exposed surfaces where it can be accessed by insects, animals and personnel. The residual chlorine content in the water helps to destroy pathogens in the sewer.

6.2 Environmentally Responsible Tankering Operations

One consideration of tankering operations is the transport back and forth along the access road.

The access road connecting Serpentine Creek Road to the ISST site will be sealed as soon as practical and all batter slopes appropriately restabilised with vegetation or other engineering solutions to ensure minimal ongoing impact due to transport. This will also facilitate tanker driver safety by clear markings and removing any chance of potholes or unseen fauna on the access way.

This will assist in minimising or eliminating issues associated with a poorly managed compacted dirt access road such as:

- increased dust and airborne particles which may cause some disruption to the habitat of any wildlife in the area
- erosion issues which may impact the local environment by redirecting surface water flows, lead to Also with heavy loads over time
- road corrugations and bumps can form which increase ground vibrations from repeated heavy overland vehicle movement

Traffic speed on the access road is to be limited to ensure impact is kept to a minimum and probability of fauna collision is reduced.

7 Tankering Transition

7.1 Transition from Tankering to LWC

A tee connection with isolation valves on the main pressure sewer line is typically installed during the construction of the ISST to allow sewer to flow to the ISST and then switch over to the permanent LWC once constructed or else flow to both as required. It is anticipated this changeover will occur at a period of minimal sewer inflows and will ensure no interruptions to the pressure sewer reticulation network.

After the front end of the LWC is constructed and commissioned it is possible to start using the flow balance tank of the LWC in addition to or in lieu of the ISST for storage capacity as the number of connected homes continue to rise ahead of full LWC operation. If the flow balance tanks are considered for use ahead of time in this way, it is necessary for the permanent odour control system to also be fully operational ahead of time.

7.2 Decommissioning of ISST

The ISST can start to be decommissioned once the LWC is fully functioning and its operation validated. The ISST tanks, once disconnected, can be loaded on to trucks and removed from site.

Once ISST is fully decommissioned the odour control system can be disconnected and removed from site along with the rest of the related interim infrastructure.

It is proposed that the tanker truck bund is designed such that the majority can be re-purposed for part of the driveway integral to the permanent LWC infrastructure.

All temporary power and piping connections will also be removed as necessary.

8 Incident Response

8.1 Incident Reporting

In case of changes to the sewerage system the Sewage MP and Tankering MP will be updated accordingly. Flow will provide an audit report on the adequacy of the updated Tankering MP to accommodate the change. The following are triggers for notification and update of the Tankering MP:

- New interim management infrastructure, including additional connections
- Changes in the operation of the sewerage infrastructure
- Changes in the agreement with the Public Water Utility (PWU) to accept sewage from Flow
- New customers not currently covered in the Tankering MP
- Changes in the risk assessment based on updated information.

Notifications are also required in the event of an incident or emergency. These requirements are documented in the Incident Management Plan (IMP).

8.2 Environmental Incident Response

An environmental response plan is necessary to follow an incident involving tankering or the interim sewer servicing tanks. It is possible a situation may arise where there is a single or multiple failure of a system or process leading to an undesirable outcome with detrimental effect on the nearby environment. In order of severity, possible scenarios are identified in the list below related to tankering:

- Major spill, storage failure or overflow of untreated sewer in the area of operations
- Minor spill or overflow of untreated sewer in the area of operations
- Notable release of odour plume from the interim sewer storage tanks facility (ISST)

In such a case the following remedies are proposed to respond to a situation over and above the design and procedural measures to prevent these situations in the first place:

Identify – gather all easily available information about the incident including monitoring of remote control outputs, visual observation on the ground and local personnel available.

Assess – Swiftly assess the severity, extent and if possible the cause of the leak or spill. Estimate the rate of leak until local contractors or personnel can respond to the situation.

Notify – Where necessary notify any relevant third parties including Government agencies or community stakeholders (ie neighbours) of the incident and its possible immediate impacts.

Remedy – adopt a remedy strategy to fix the problem where safe to do so. This may include a short term solution (ie sucking up overflow sewage) as well as a long term solution (isolate leaking tank fitting and replace).

Report – write up an incident response detailing what the problem was, what was done and detail steps that will be implemented to ensure it doesn't occur in the future. Engage third party subject matter experts where warranted to confirm the impacts on the environment including flora, fauna, disease vectors, human impact and any ground or waterbody contamination.

9 Operations Environmental Management

9.1 ISO 14001 Certified Business Management System

Management of Flow schemes is centralised, therefore environmental management processes are centralised and applied uniformly across Flow schemes. The elements of the BMS which are integrated and apply to all elements of the system (i.e. Quality, safety and environment) are described in the Business Management Manual (BMM) and include:

- Leadership
- Business planning
- Corporate governance (including internal audit)
- Risk management
- Compliance management
- Incident management
- Communication (including environmental communication).

The BMS Matrix in Appendix 1 of the BMM lists the BMS documents that describe compliance to the requirements of ISO 14001.

The Flow OEMP describes operations environmental management at Flow and describes the environmental specific elements of the BMS including:

- Commitment to environmental management
- Environmental management system and plans
- Environmental aspects and impacts
- Environmental objectives, targets and programmes
- Environmental monitoring
- Environmental management programmes.

A Scheme Management Plan (SMP) is documented for each of Flow's schemes which describes how the scheme is managed to meet Flow's quality, environmental, WHS, risk and compliance management objectives. The SMP is also the Site Environmental Management Plan (SEMP) for the scheme.

The Scheme Management Plan describes the application of the Operation Environmental Management Plan (OEMP) and the BMM for a particular scheme and addresses anything that varies significantly from the norm. The SMP also provides an entry point to the BMS and provides direction to readers to the relevant documents within the BMS relevant to the Scheme.

This Tankering Management Plan is a scheme-specific subset of the Scheme Management Plan.

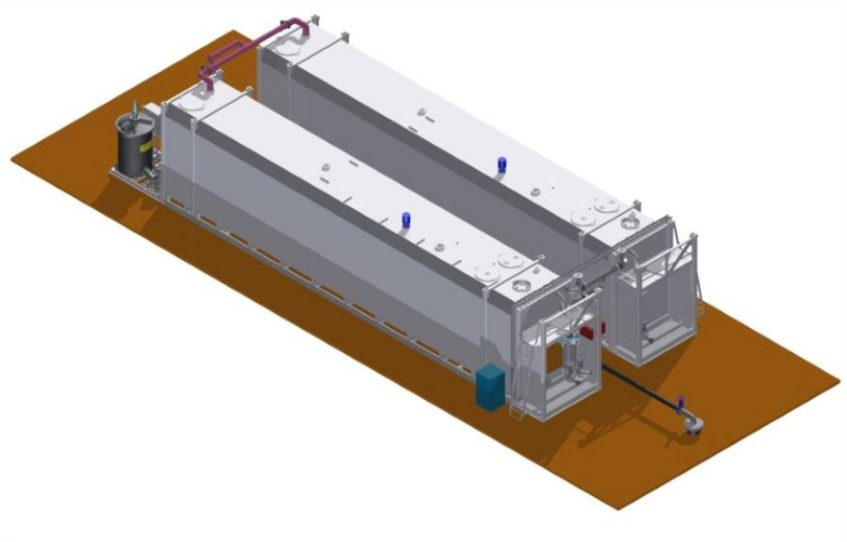
10 Appendices

A.1 Shoreline ISST O&M Manual

OPERATION AND MAINTENANCE MANUAL

For

Interim Sewage Storage Plant



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November 2016 9274 Rev 3

Table of Contents

1.0 Distribution & Amendments

Revision No.	Issue Description	Date of Issue	Written By	Checked By
0	Preliminary Issue	03/11/2016	JA	MD
1	Updated after Audit Review	15/11/2016	JA	MD
2	Updated after further review	17/11/2016	JA	MD
3	Modified for Shoreline	29/11/2016	MN	-
4				
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7				
8				
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10				

2.0 Contact Details

For any operation and maintenance assistance, contact Flow Systems Constructors as specified below:

Flow Systems Constructors	
Office Location:	18/828 High Street, Kew East, Victoria, 3102
Telephone:	(03) 9854 0900
Website:	http://flowsystems.com.au/

Emergency Contact	
Contact Name:	Ralph Wardell
Contact Number:	0419 150 939

3.0 System Description

Intermediate Sewage Storage Tanks (ISST) are used to provide sewage services to the Shoreline development in its very early stages.

Each house has its own pressure sewer pump well. Each pump well within the development is connected to a central pressurized sewer network which discharges at the ISST.

The ISST consists of an incoming sewer flowmeter, an actuated feed valve, two 110 kL self-bunded intermediate storage tanks (ISST) with level transmitters and backup switches, and a proprietary odour treatment device.

Raw sewage is pumped through the incoming flow meter and discharges into the two storage tanks. When the tanks fill to a pre-set level a warning alarm message is generated and sent to operations to allow for the timely arrangement for tank pump-out.

If the tank fills past the warning level and reaches High Level - Tank Fill Stop the feed valve closes. The critical alarm level indicates that the tanks are OUT OF SERVICE.

To remove liquid from the ISST, a sucker truck must be scheduled to attend to connect to a permanent camlock connection, one for each tank. The truck connects the suction hose to the trucks vacuum vessel and the sewage is drawn from the connected tank. When the tank liquid level reaches Low Level, the suction point is isolated and the hose is disconnected from the first tank, the second tank is then emptied.

When the liquid level in the second tank drops below the tank fill start level, the feed valve will open again and sewage is allowed be pumped into the tank. When the tank is fully drained the level sensor will indicate it is empty and the truck will disconnect from the camlock and take the raw sewage to a suitable disposal point.

4.0 Equipment Operating Instructions

4.1 Screen Display & Conventions

All drives, pumps, actuated valves etc. are shown within the various control screens on the HMI. The following functions apply across all aspects of the plant unless noted otherwise, and hence are not included within each operational description.

Clicking on the appropriate symbol on the screen opens a dialogue box allowing control of the following options:

Primary Option	Secondary Option	Action
AUTO		Places the equipment into automatic control
MANUAL		Opens options below
	START	Manually starts the equipment, and over-rides all other controls
	STOP	Manually stops the equipment
	OUT OF SERVICE	Places the equipment out of service. Alarm every 24 hours for any unit placed out of service.

The equipment symbol displays its status as follows:

Status	Symbol Display
STOP	Red, Steady
START	Green, Flashing
AUTO and in standby	Yellow, Steady
AUTO and in operation	Green, Steady
OUT OF SERVICE	Red and Yellow, Alternate Flashing

4.2 Manual Operation

When an item of equipment is placed into MANUAL it can be operated manually using the START or STOP buttons.

When placed in START, it will be energised, and over-rides all other automatic system controls. START mode should only be used for commissioning and/or maintenance operations, and only when the consequences of using it are fully understood.

MANUAL/START mode should only be used for commissioning and/or maintenance operations, and only when the consequences of using it are fully understood.

The plant should not be left unattended with any item in MANUAL/START mode.

4.3 Automatic Operation

When an item of equipment is placed into AUTO mode, it will operate in accordance with its programmed logic. The equipment will commence operation when all the programmed conditions are satisfied, and revert to stand-by when required.

There may be a number of system variables associated with the equipment, which will be adjustable, within pre-set ranges, from the HMI. Adjustment of the numerous variables allows optimization of the performance of the various systems within the overall plant, and allows the plant operation to adjust to changes in operating conditions.

4.4 Emergency Stop

4.4.1 Main Emergency Stop

If the Emergency Stop pushbutton on the main electrical control panel is pressed, the plant enters the EMERGENCY STOP state.

The Feed Valve wil automatically close, and the odour control unit fan will stop.

The Emergency Stop pushbutton must be released before this alarm condition can be reset.

The Emergency Stop Button is located at the front of the main control panel.

When operated (pressed in), all items of equipment will be immediately stopped however the touch screen and PLC will remain active for approximately 20mins.

When the Emergency Stop is reset the plant will be re-energised with the same valve/pump etc conditions as before the Emergency Stop was activated.

4.4.2 Odour Control Unit Emergency Stop

The Odour Control Unit Control Panel is equipped with an Emergency Stop pushbutton on the door of the enclosure.

Pressing the Emergency Stop (E-Stop) pushbutton will remove power to the outputs in the PLC, stopping the operation of the fan.

An output from the OCU PLC will provide an alarm to the HMI.

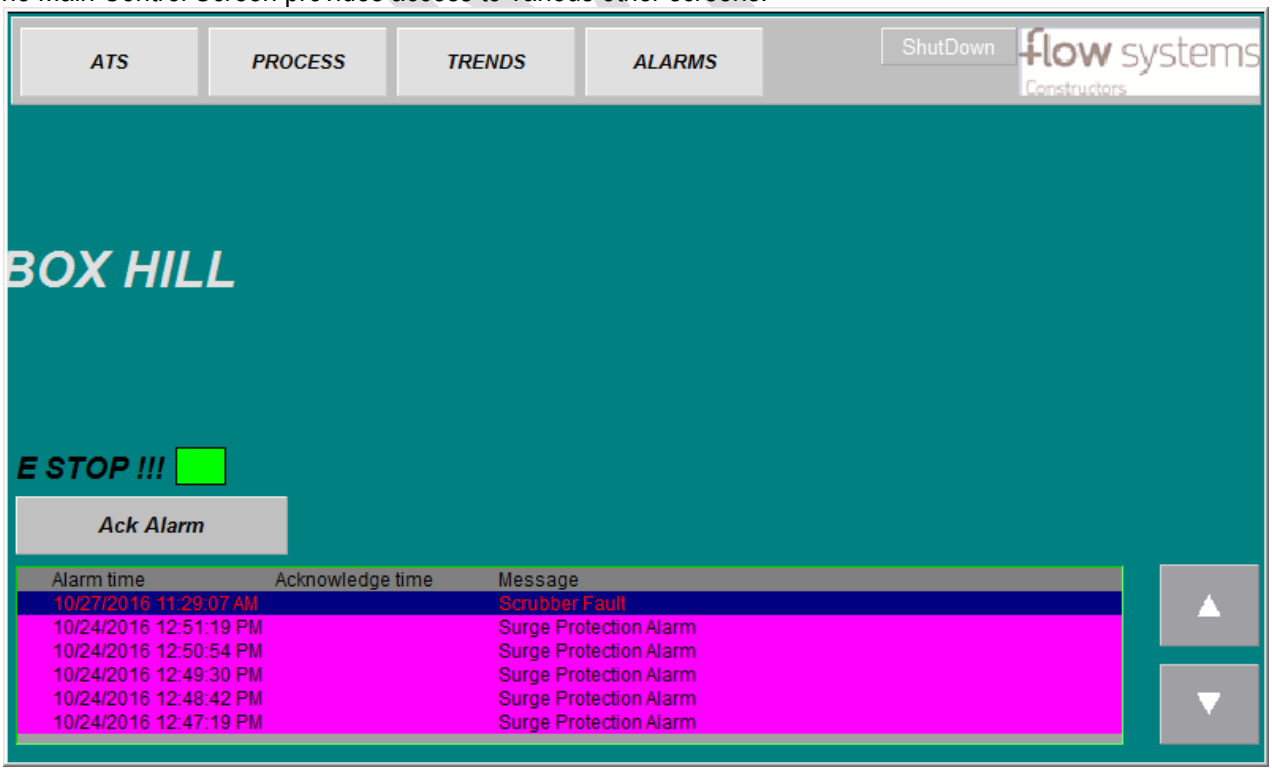
The Emergency Stop pushbutton must be released before this alarm condition can be reset.

4.5 Main Control Screen

A Touch Screen has been mounted at the front of the Control Panel (as shown below) to control the operation of the plant and equipment.

This is the Human Machine Interface (HMI) which allows the operator to interact with the Programmable Logic Controller (PLC) to control the operation of the plant and equipment.

The Main Control Screen provides access to various other screens.



By touching the appropriate “button” of the screen, the HMI will scroll to the next detail screen.

The Main Control Screen also displays details of any alarms or faults detected by the PLC, including date and time, plus description of the alarm.

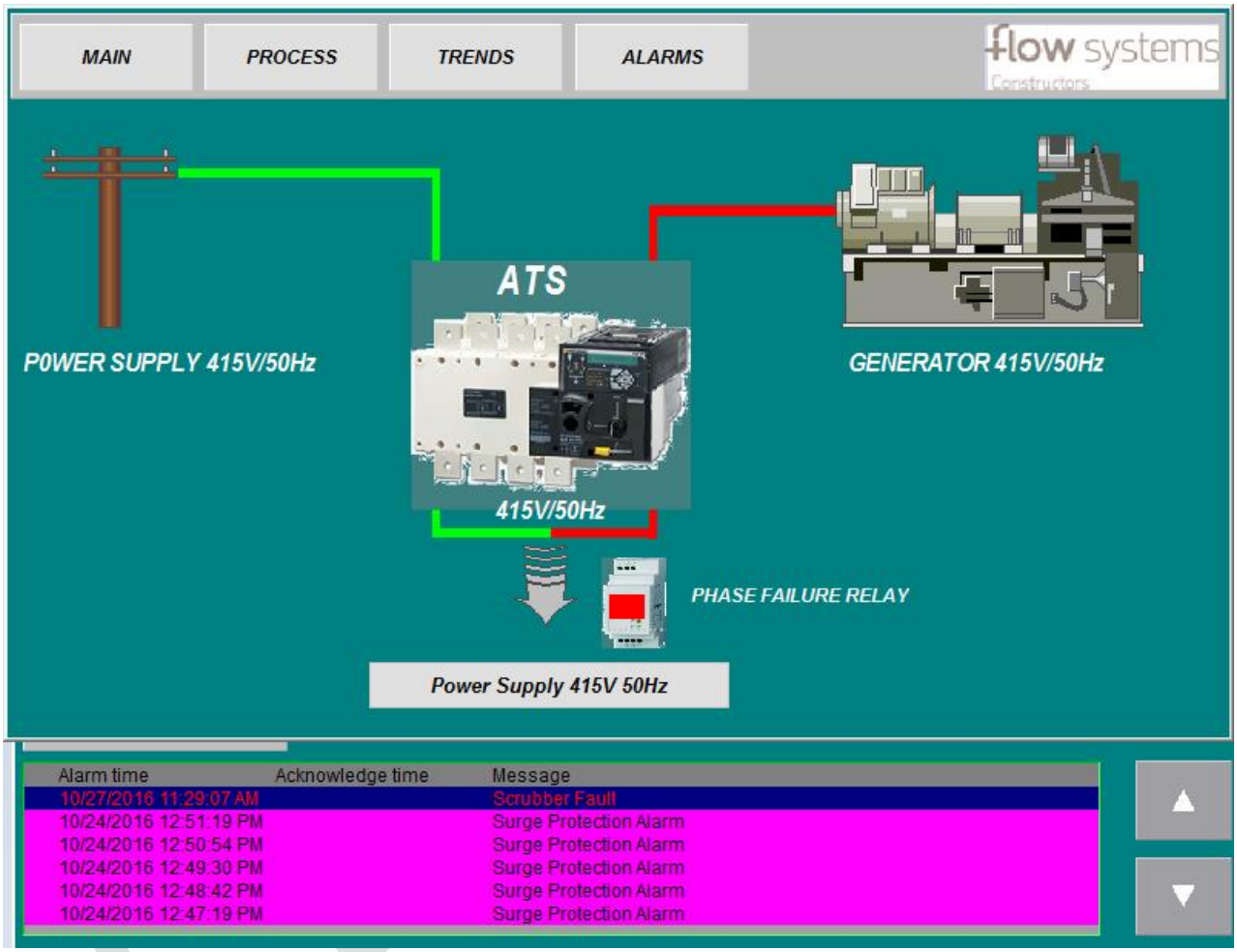
After a new alarm has displayed pressing the ACKNOWLEDGE button will acknowledge that the alarm advice has been observed by the operator.

Once the alarm condition has been rectified, or no longer exists, the alarm advice will no longer be displayed.

NOTE: When an alarm has been flagged it must be acknowledged. Failure to acknowledge an alarm may prevent the plant from returning to normal operation.

4.6 Automatic Transfer Switch (ATS) Screen

By pressing the ATS button from the Navigation Bar, the following will be displayed:

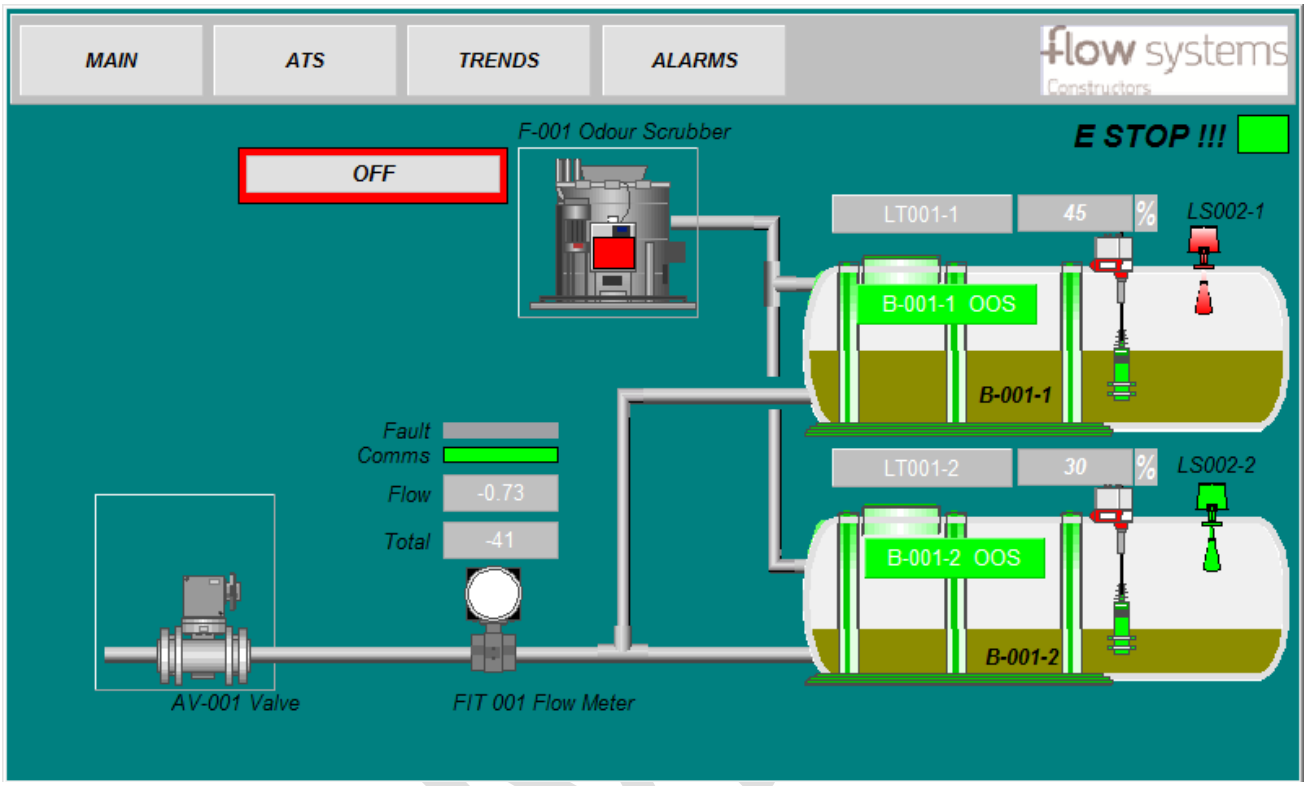


This screen allows the operator to:

- View the current source of incoming power for the plant
- View the status of the Phase Failure Relay

4.7 Process Screen

By pressing the PROCESS button from the Navigation Bar, the following will be displayed:

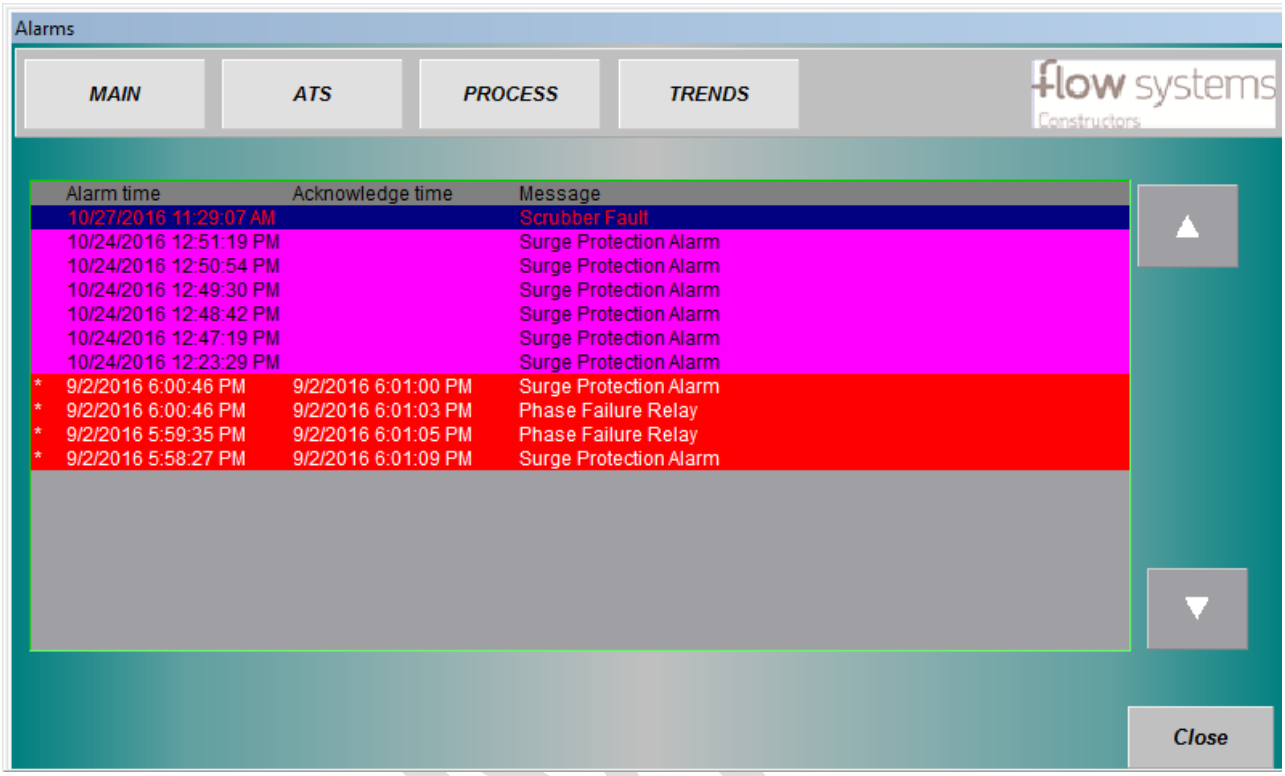


This screen allows the operator to:

- Set Odour Control Unit from AUTO or MANUAL (Start or Stop) modes
- Set Feed Valve from AUTO or MANUAL (Start or Stop) modes
- Set controlling levels for the Sewage Storage Tanks
- Set the status of the Sewage Storage Tank (i.e in service or out of service)
- View current water level within the Sewage Storage Tanks
- View the flow rate of the incoming sewer when operating
- View E-Stop status

4.8 Alarms Screen

By pressing the ALARMS button from the Navigation Bar, the following will be displayed:

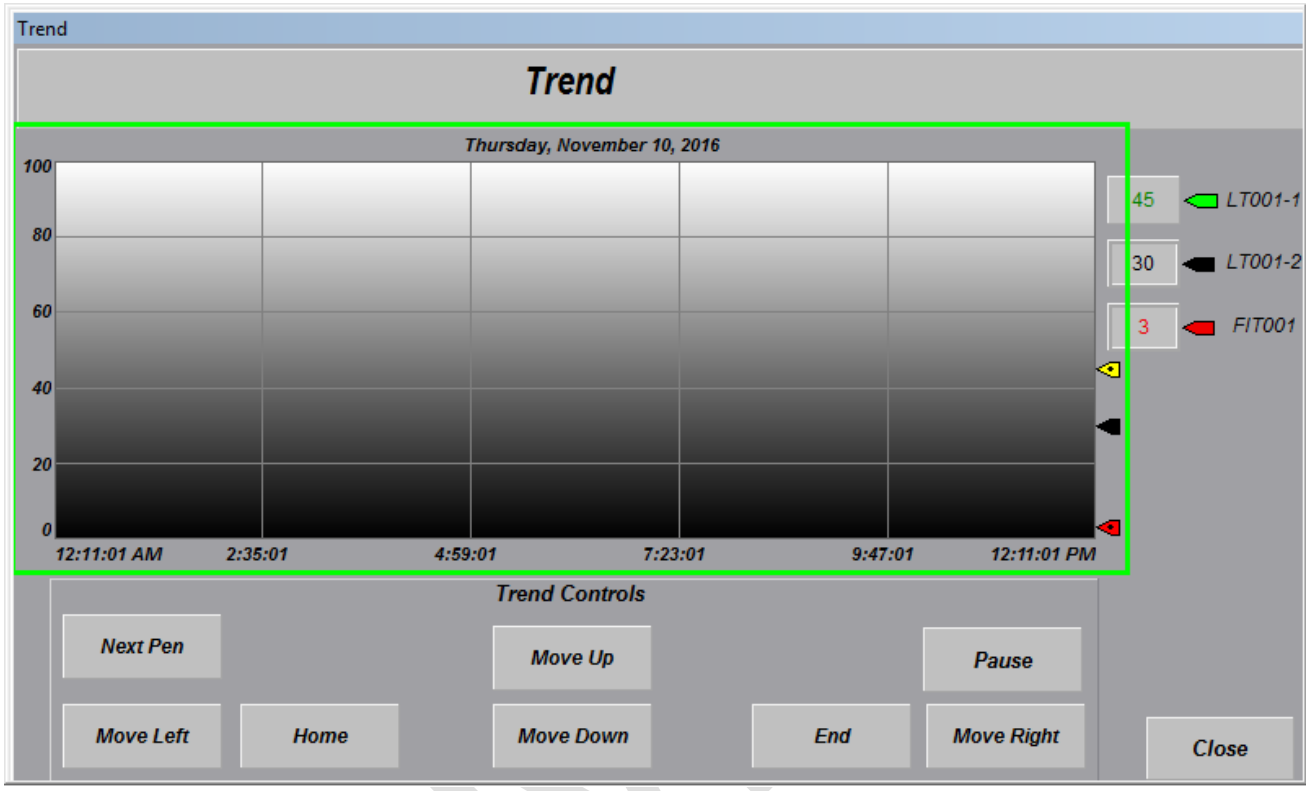


This screen allows the operator to:

- View all alarms logged into the systems, including alarm time, when acknowledged, and alarm description

4.9 Trending Screen

By pressing the TRENDS button from the Navigation Bar, the following will be displayed:



This screen allows the operator to view the following:

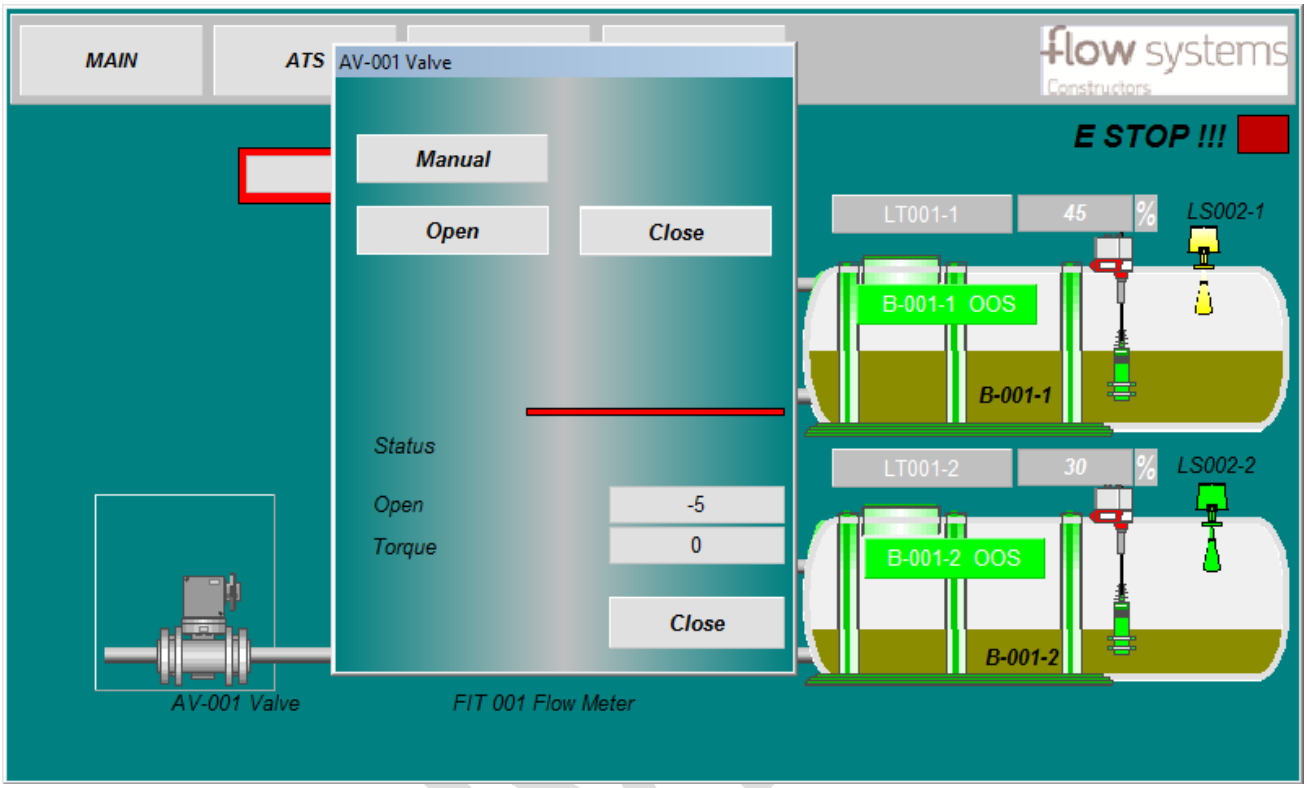
- LT001-1 trending graphs
- LT001-2 trending graphs
- FIT-001 trending graphs

The various push buttons across the bottom of the graph allow the operator to scroll backwards and forwards in time to review the recorded information, select different graphs (pens) etc.

The CLOSE button is used to return to the MAIN Screen.

4.10 To Control Actuated Valves

By touching the actuated valve symbol on the touch screen a dialogue box for the valve will be displayed.



The dialogue box is labelled with the valve identification reference, and has two available options:

- AUTO - which will energise the valve and allow its positioning to be controlled automatically as required by the control processes via the PLC
- MANUAL – which will over-ride all automatic control and will allow the operator to either open or close valve. While opening or closing the valve manually, the operator needs to keep pressing the relevant button.

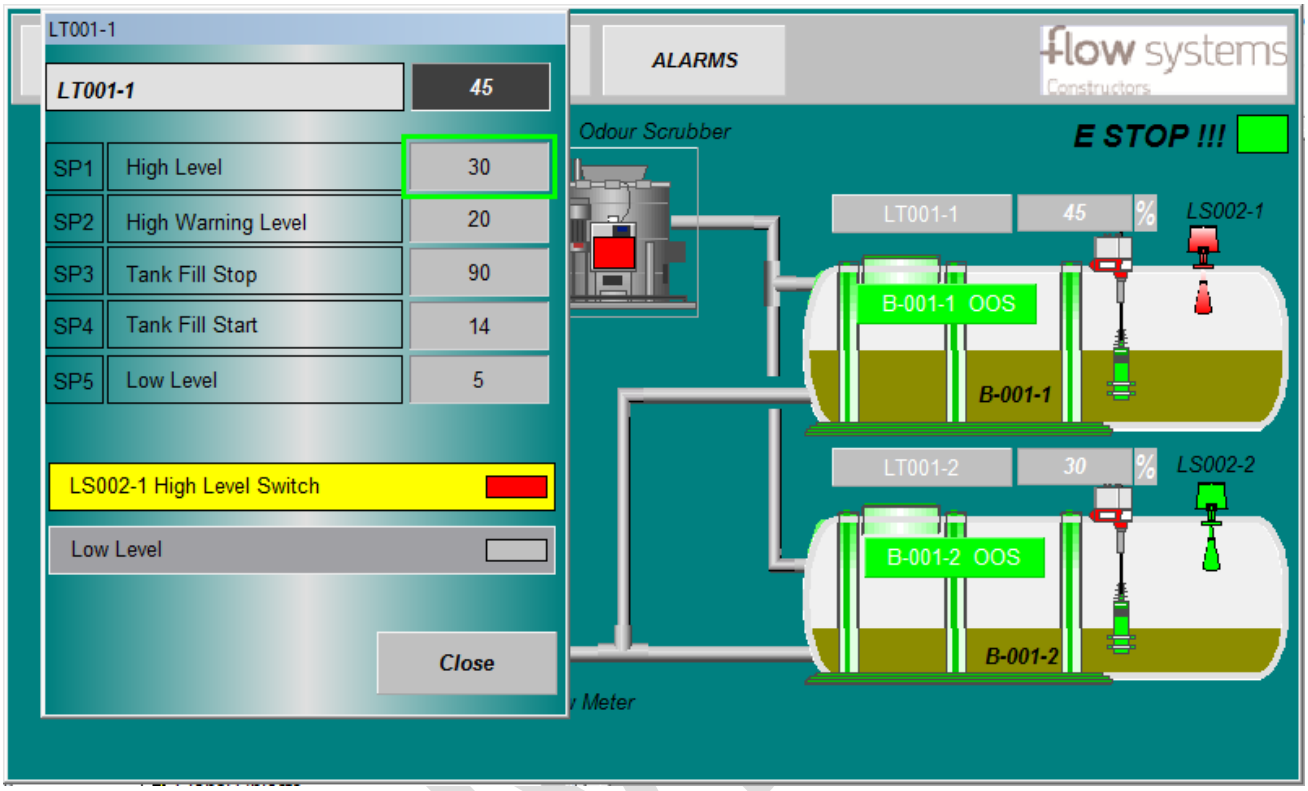
The Status bar provides confirmation of the current status of the valve

Touching the CLOSE button will close the dialogue box

MANUAL mode should only be used for commissioning and/or maintenance operations, and only when the consequences of using it are fully understood. MANUAL mode over-rides all automatic control of the selected item. The plant should not be left unattended with any item in MANUAL mode.

4.11 Tank Level Settings

By touching a level transmitter button on the touch screen a detailed settings box for the tank will be displayed.



This screen allows the operator to view the following:

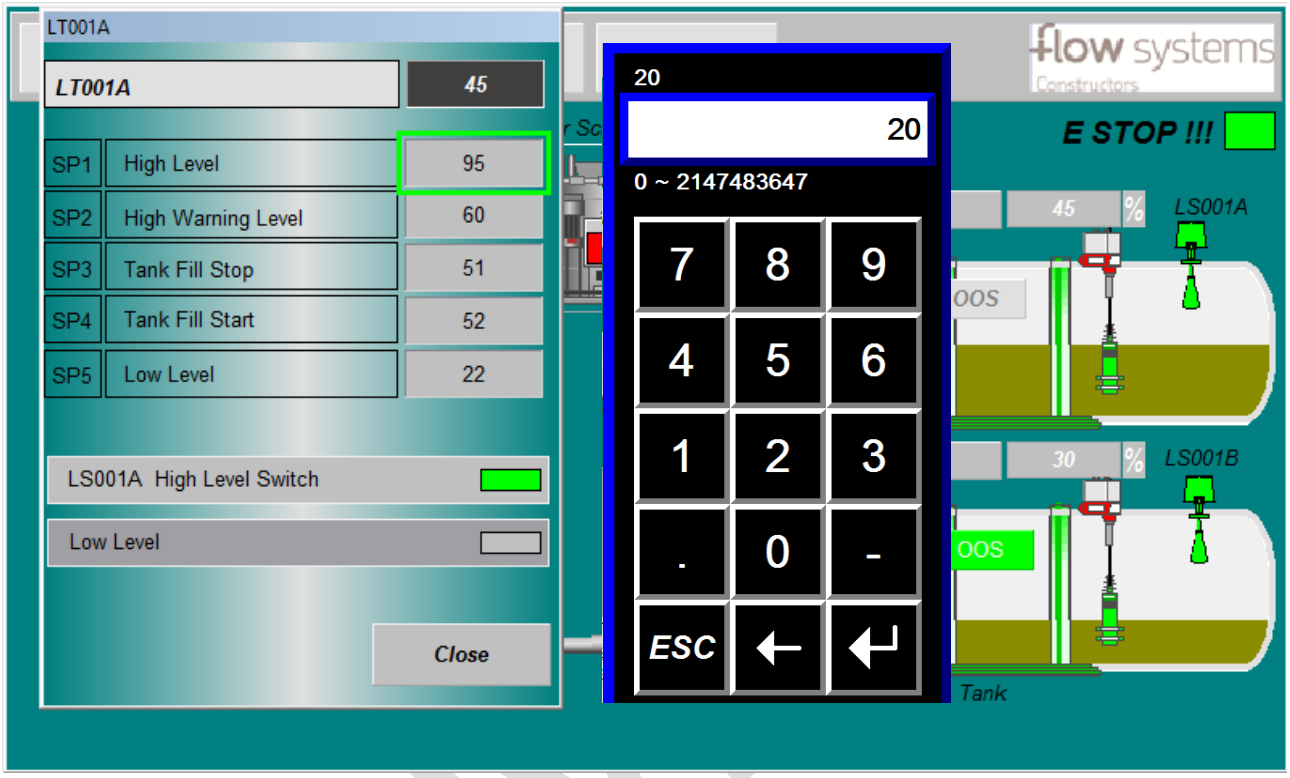
- Current level within the tank (displayed at top right of dialogue box)
- Current set-point values
- Status of High Level Switch
- Indicator for when tank is at low level, and
- Change settings if required

The settings can be adjusted to provide different alarm options i.e.

- If High Level set-point is > Tank Fill Stop, high level alarm would indicate that the tank fill valve has failed to close
- I If High Level set-point is < Tank Fill Stop, high level alarm would be initiated before the tank fill valve will be closed, indicating that urgent action is required

Set-points can be changed by the operator as required to suit the process and application.

Pressing on the set-point will open a keypad to allow the value to be changed



Touching the CLOSE button will close the dialogue box

4.12 Start Up Pre-requisites

It is assumed all control panels are energised, that instruments and flow devices have been appropriately calibrated, and all equipment controls on touch screen have been set to MANUAL/OUT OF SERVICE.

It is assumed all local isolators are in the OFF position and valves are in the CLOSED position.

In the following sections:

- ❑ Represents a touch screen operation
- • Represents a field operation

4.13 To Start Up ISST System

This is the first system that needs to be set in operation to bring the plant-online:

- • Check that manual valves on ISST pump-out lines are closed i.e.MV-003-1 and MV-003-2
- • Check that manual valves on ISST vents are open i.e. MV-006-1 and MV-006-2
- • Open manual inlet valve MV-001
- • Open manual tank inlet valves i.e. MV-002-1 and MV-002-2
- ❑ Check that settings for ISST tank levels have been entered
- ❑ Toggle Odour Scrubber button to AUTO
- ❑ Toggle Feed Valve AV-001 to AUTO

Note: If only one tank is required to be placed into service, close the appropriate tank inlet feed valve and vent valve, and ensure that the selected tank is set to OUT OF SERVICE on the Process Screen.

4.14 To Start Up Odour Control Unit

- Switch Main Isolator on control panel to the ON position
- Press all indicator lights on the control panel to check they are functional
- Start fan at Control Panel by turning fan control switch from OFF to ON or REMOTE ….If ON selected, fan will immediately run, if REMOTE selected, fan will run when called to from the mian control peanel i.e. selected via HMI
- Identify the fan is operating
- Check positions of all valves on the OCU
    i. BFV1 – Open
    ii. BV01 – Closed
    iii. BV02 – Closed
    iv. BV03 – Closed
    v. BV04 – Closed
    vi. BV05 - Closed

4.15 Emergency Responses

The plant is programmed to revert to a safe state in the event of any failure, and to provide alarm messaging to the operator..

A small number of other potential emergency situations could arise that require prompt responses.

It is expected that these potentialities will have been considered in the overall site management plan, and that appropriate procedures, controls and responses will have been implemented therein.

4.15.1 Biological Hazard

A biological hazard may arise from a number of events i.e.

- Pipe or tank rupture
- Screenings spillage when servicing drum screen
- Human error – sample point left open etc

Clean up requirements will depend on where the spill has occurred, and the extent of the spill.

A safety shower and eyewash unit is located adjacent to the ISST, to provide emergency wash facilities in the event of human contact.

Appropriate measures including the use of PPE and effective washing/hygiene should be implemented when dealing with any biological waste.

4.15.2 Electrical Hazard

An electrical hazard may arise from a number of events i.e.

- Unauthorised access to control panels
- Improper work methods when undertaking electrical work

All switchboards are fitted with Emergency Stop buttons, which will immediately isolate power to all equipment supplied from that panel when pressed in.

In the event of an emergency, immediate isolation of the power by the most readily available method must be carried out.

5.0 Maintenance Schedule

The ISST is a simple plant needing little maintenance, other than the regular tankering from site of sewage, the frequency of which will need to be determined based upon operational experience, and will also be directly affected by the number of connected dwellings on line.

Regular monitoring can help to identify potential problems, and allow corrective actions to be initiated before the plant needs to suspend operation.

5.1 Weekly Maintenance

The following tasks should be undertaken weekly:

- Check there are no fault lights on the OCU control panel
- Check OCU fan operating, and inlet/outlet piping for any obvious leaks or the presence of fugitive odours
- Check OCU pressure gauge is in operating range (400-800 kPa)
- Open drain ball valves on OCU pre-filter and carbon filter vessel to drain any accumulated condensate
- Check and clean OCU pre-filter
- Check OCU extraction fan for excessive vibration or unusual noise
- Check temperature of motor on OCU extraction fan

5.2 Monthly Maintenance

In addition to the weekly checks the following tasks should be undertaken monthly:

- Check the operational lights are operating on OCU control panel
- Open drain valve on OCU ventilation fan and drain any condensation
- Check dip-sticks on ISST Tanks for leakage into the interstitial space

5.3 Annual Maintenance

In addition to the weekly and monthly checks the following tasks should be undertaken annually:

- Check OCU for slumping of the media
- Undertake H_2S testing of OCU

5.4 ISST Pump-Out

Pumping out of the Interim Sewage Storage Tanks must be undertaken by an approved waste removal contractor.

The two tanks are not inter-connected, and must be pumped out individually.

The tank to be pumped out is taken out of service by closing the appropriate inlet and vent valves, and changing tank status on the HMI.

The tanker, when positioned for pump-out, will be located in a bunded area adjacent to the tanks.

This bunded area normally drains to a swale via a grated pit, and a valved drain pipe.

Before commencing any pump-out, the valve on the bund drain line must be closed.

This is to contain any accidental spill during the pump-out operation to be contained for proper clean-up as required.

The tanker operator connects pump-out line from truck to the camlock connection on the pump-out line from the tank, opens the isolation valve, and commences to pump out tank contents.

When pumping to the tanker is completed, the valve on the pump-out line is closed.

The valve on the bund drain line must be re-opened, allowing any future rain or stormwater to be drained from the area.

It may require the removal of multiple loads depending upon the volume of waste to be removed.

When sufficient waste has been removed from the tank, it can be placed back into service, with the process repeated for the second tank.

Sample details of the WHS procedures and SWMS's from the approved waste removal contractor, Premier Pumpouts, are provided in Appendix 1

5.5 Spills and Spill Containment

The ISST tanks are double skinned i.e. self-bunded.

The suction lines for waste removal draw from the top of the tank, and hence the tanks cannot drain even with the suction drain valve is left open.

Each tank is fitted with a dip-stick, allowing the interstitial space between the inner and outer tank skins to be checked for leakage.

If a leak is detected, the tank should be taken out of service, and have its contents removed by pump-out, and the tank manufacturer contacted to initiate appropriate remedial action to repair the tank.

Any spills into the tanker pump-out bund area should be cleaned up by the pump-out contractor using a spill containment kit.

5.6 Activated Carbon Replacement

It is not possible to determine with any precision how often the activated carbon bed within the OCU needs to be replaced.

However, to facilitate management of the filter, the unit is equipped with three break-through indicators.

These draw air from the activated carbon bed at varying levels (25%, 50% and 75%) which passes across white media, that is visible through sight glasses in the piping.

When H_2S is present in the air stream the media will change colour.

This visual indication will help determine how effective the activated carbon bed is.

The media bed will progressively exhaust, initially at the lowest level, and then progressively up through the media bed depth.

Refer to the manufacturer's literature for more details on replacing the activated carbon.

5.7 Alarms

Tag No.	Type of Instrument	Type of Alarms
LS-002-1	Level Switch – Sewer Storage Tank 1	AAHH
LS-002-2	Level Switch – Sewer Storage Tank 2	AAHH
LT-001-1	Level Transmitter – Sewer Storage Tank 1	AAH, AH, AL
LT-001-2	Level Transmitter – Sewer Storage Tank 2	AAH, AH, AL

The abbreviations for the different types of alarms used in the table above are:

AAHH – Alarm Acted High High
AAH – Alarm Acted High
AH – Alarm High
AL – Alarm Low

Alarms in green flag a warning on the HMI but do not stop the plant from its normal operation.

Alarms in red will initiate closing of the actuated feed valve until the alarm condition is resolved.

5.8 On-going Instrument Calibration

All on-line instrumentation or portable analysers are to be calibrated or verified as per manufacturer's requirements as a minimum requirement.

A calibration program is to be detailed, filled out and kept on-site for reference. On completion of the verification process the calibration schedules are to be copied and filed for auditing purposes.

PROCESS	ELEMENT TAG	ANALYSER TAG	CALIBRATION FREQUENCY
Incoming Sewer flow meter	FIT-001	FIT-001	Annually

6.0 Equipment Schedules

6.1 Major Equipment Schedule

Tag No.	Description	Model	Supplier
F-001	Odour Control Unit	FC 155	Bioaction
B-001-1	Self Bunded Storage Tank 110kL	LFT110L	Liquip Victoria
B-001-2	Self Bunded Storage Tank 110kL	LFT110L	Liquip Victoria

6.2 Instrumentation Schedule

Tag No.	Description	Model	Supplier
FIT-001	Magflow Meter – Incoming Sewer	Promag W 400	Endress+Hauser
LS-002-1	Level Switch – Sewer Storage Tank 1	FTS 20	Endress+Hauser
LS-002-1	Level Switch – Sewer Storage Tank 2	FTS 20	Endress+Hauser
LT-001-1	Level Transmitter – Sewer Storage Tank 1	FMX 21	Endress+Hauser
LT-001-2	Level Transmitter – Sewer Storage Tank 2	FMX 21	Endress+Hauser

6.3 Valve Schedule

Tag No	Description	Model	Supplier
MV-001	DN150 Knifegate	KGV 99.150	Challenger Valves
MV-002-1			
MV-002-2			
MV-003-1			
MV-003-2			
MV-006-1	DN150 Butterfly Valve	BFLEED40150H	
MV-006-2			
AV-001	DN150 Knifegate with Motorised Actuator	KGV99.150/SAC07.6	
VB-001-1	DN100 Vacuum Breaker	Vent-o-Mat RBXbv	
VB-001-2			

6.4 Manufacturer's Contact Details

Company	Address	Contact Details
Endress & Hauser	Unit 12, 277 Lane Cove Road, Macquarie Park, NSW, 3149	Ph: 02 8877 7000 Fax: 02 8877 7099
Bioaction	12 Mildon Road, Tuggerah, NSW, 2259	Ph: 02 4353 4822 Fax: -
Liquip Victoria	48 Vella Drive, Sunshine West, VIC, 3020	Ph: 03 9311 7822 Fax: 03 9311 8784
Challenger Valves	4/10 Pavilion Place, Cardiff, NSW 2285	Ph: 02 4956 8518 Fax: 02 4954 5052

7.0 Manufacturer's Literature

7.1 Sewage Storage Tanks Liquip Victoria (B-001-1 & B-001-2)

7.2 Odour Control Unit Bioaction (F-001)

7.3 Magflow Meter Endress+Hauser (FIT-001)

7.4 Level Switch Endress+Hauser (LS-002-1 & LS-002-2)

7.5 Level Transmitters (LT-001-1 & LT-001-2)

7.6 Knife Gate Valves – Challenger

7.7 Motorised Valve Actuator – Auma

7.8 Butterfly Valves – Challenger

7.9 Vacuum Breakers – Vent-o-Mat

8.0 As Built Documentation

8.1 P&ID Drawing

8.2 General Arrangement Drawings

8.3 Electrical Drawings

9.0 Appendix 1 – Pump Out Contractor WHS Information

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DOCUMENT REFERENCE NUMBER: SWS SHS 01	REVISION NUMBER: 3

Staples

SAFE WORK STEPS STATEMENT

Work Task:	**Operation of Sullage Tanker " Start Up "**

Staff Authorised to Perform task:	Only staff members who have the appropriate equipment and training.
Number of Staff Required:	One (1)
Equipment Required:	* Appropriate PPE including eye and sun protection. * Gloves, High Visibility Clothing and Boots. * Necessary documentation
Skill / Knowledge Required:	Training in the safe operation of a Vaccum Tanker. Knowledge of Vaccum Tanker Procedure Manual SOP8. Appropriate class of Licence Training in spill management

THESE SAFE WORK STEPS ARE TO BE USED IN CONJUCTION WITH SAFE WORK METHOD STATEMENT SHS 01 & Sullage Safe Operating Procedures (SOP8)

Routine Before Leaving Depot:

1. This task must not be attempted without the equipment and training as stated above.
2. Make a thorough examination of the vehicle to ensure all vents, hatches and caps are closed and that hoses and externally fixed equipment is securely fastened.
3. Inspect tyres for wear and inflation and hydraulic and water hoses for any leaks.
4. Check oil and water levels are to manufacturer's specifications
5. Enter cabin correctly using steps and grab handles provided.
6. Adjust seat to provide a comfortable position allowing access to all controls.
7. Adjust mirrors to allow clear view on either side of vehicle, adjust TV monitor if fitted.
8. Check lights, indicators, beacons gauges and brake pressure indicators.
9. Stow all equipment and ensure that no heavy items are loose within the cab.
10. Check pump and PTO operation before leaving depot.

Review Required:	YES	Date Review completed: Next Review by:	8/04/2016 30/06/2018
Date SWMS Completed:	8/04/2013	Person Responsible for Implementation of SWMS:	

SWMS REVIEWED BY:	Name: Chris Howell	Signature:	Chris Howell

DOCUMENT REFERENCE NUMBER: SWMS HOS 04	REVISION NUMBER: 1

Staples

SAFE WORK METHOD STATEMENT
HAZARD ASSESSMENT

Work / Task/s: Safe Unloading Sullage Tankers	Date Safe Work Method Statement Completed:

Work Location and Details: Unloading Sullage Tanker at Leighton Place Depot

PERSONS UNDERTAKING WORK TASK/S

1. Toby Windros
2. Mark Gai
3. Ben Staples
4. Dave Lett
5. John Nugent
6. Dave Wallace

WORK TASK/S SUPERVISOR: SULLAGE SUPERVISOR

WORK STEP	HAZARDS IDENTIFIED	RISK LEVEL	CONTROLS TO BE IMPLEMENTED	PERSON RESPONSIBLE
Sight Tube reading taken before entering Depot	Potential for Operators to be injured through slipping or falling off plant while taking sight tube readings.	3	Handrails and steps fitted to allow safe access to sight tubes. Non skid material fitted to ladders and steps	Operator
Manoeuvring Tanker within Depot	Potential for persons to be injured / crushed by vehicle while manoeuvring and reversing within the Depot and to the outlet point.	2	Correct adjustment of rear view mirrors. Fitment of reversing "beepers" on vehicles. Operator Training and Awareness.	Operator / Supervisor
Open Outlet Hatch Cover	Potential for Operator to injure back, knee or foot when sliding metal hatch cover open on outlet point.	4	Stand square on to cover and only move your leg without twisting your body. Operator Training.	Operator / Supervisor
Connecting and Dissconnecting Discharge Hose	Potential for Operators to be injured from slipping on smooth and / or wet metal drain covers.	4	Non skid welding on metal drain covers. Operator Awareness.	Operator
	Potential for Operators to be injured while lifting heavy disscharge hose from Depot wall.	3	Grasp hose in the centre between supporting hooks and lift it up and out without twisting your back. Lower ends to ground and lay hose down. Bend your knees.	Operator

WORK STEP	HAZARDS IDENTIFIED	RISK LEVEL	CONTROLS TO BE IMPLEMENTED	PERSON RESPONSIBLE
Connecting and Dissconnecting Discharge Hose	Potential for Operators to be injured while lifting and manoeuvring heavy discharge hoses.	3	Operator Training and awareness in correct manual handling tecniques. Bend your knees not your back. Do not twist while lifting. Take most of the weight with your legs when lifting. Where possible walk forwards not backwards. When moving discharge hose grasp both ends and drag hose, do not drag fittings across concrete.	Operator
	Potential for Operators to be exposed to pollutants when connecting discharge hose.	2	Make sure truck outlet valve is turned off before removing valve cap. Wear correct PPE. Stand aside when removing valve cap.	Operator
	Potential for Operators or the public to be exposed to pollutants if discharge hose comes adrift from ground outlet point.	3	Connect 90 deg swivel end of hose to ground outlet making sure spring locking levers are securely closed. Arrange hose so that it has a relaxed loop and connect free end of hose to camlock fitting on tanker outlet. Support middle of hose with approprite height stand. Open valve slowly and stand aside.	Operator
	Potential for Operators to be exposed to pollutants dissconnecting discharge hose from tanker and ground outlet point.	3	Turn off discharge valve on tanker. Release spring clamps on 90 deg swivel end, but leave end in outlet pit to drain the remove hose stand. Undo camlock fitting at tanker end of hose and remove hose, lift hose and until contents has drained. Cap off tanker valve and replace hose on wall mounts. Replace cover on ground outlet point.	Operator
General Unloading Operations	Potential for Operatiors to be injured by slipping or falling from plant when opening vents.	4	Automatic venting system fitted to tankers. Auxilliary venting system operated from ground level	Operator
	Potential for Operatiors to be injured by exposure to chemicals used to treat effluent.	4	Dosing agent is stored in secure area that is not accessable to unauthorised personnel. Dosing agent is administered in a closed environment that Operators are not exposed to. Operator Awareness and Training in correct use of PPE. Eye Bath is located on Amenities Building wall.	Operator / Supervisor

WORKSTEP	HAZARDS IDENTIFIED	RISK LEVEL	CONTROLS TO BE IMPLEMENTED	PERSON RESPONSIBLE
General Unloading Operations	Possibility of Operators contracting illness from contact with pollutants.	2	Operator Awareness and Training in correct use of PPE. Washing and showering facilities located in amenities block.	Operator / Depot Supervisor
	Possibility of Persons being exposed to pollutants through escape of liquid from the Depot due to failure of equipment.	3	Operator Awareness and Training in the correct monitoring of the emergency warning system.	Operator / Depot Supervisor
	Possibility of Operators slipping or falling when climbing up or down narrow stairs to Amenities block.	3	Operator Awareness and Training. Area to be kept tidy and free of clutter. Area to be well lit.	Operator / Depot Supervisor
Leaving the Depot	Possibility of Operators and the Public being injured through an accident while exiting the Depot.		Operator Awareness and Training.	Operator

Review Required: YES	Date Review to be Complete: 30/07/2017
ADDITIONAL COMMENTS:	
Date SWMS Completed: 30/07/2016	Person Responsible for Implementation of SWMS: T Windross
SAFE WORK METHOD STATEMENT DEVELOPED BY:	Name: T Windross / Signature:

5. OPERATIONS ON THE RUN

5.1 Loading the Tanker

Check again that all hatches are closed, but with air vent caps open, and that the discharge valve is closed and capped. Always wear protective gloves when handling hoses and fittings.

Pickups on steep grades should be done at the beginning of the load and the load finished on the flat where possible. When the tanker fills on sloping ground the fluid level must be monitored carefully to prevent overflow at the low end of the tank, and hatch covers must be capped down in succession as the fluid level rises in each compartment.

The PTO must be engaged to commence pumping. The best time to engage the PTO is when you stop at the pumping site with the motor still going with the clutch depressed, switch on PTO then shift into neutral before raising clutch. If the truck is already stopped and in the neutral position, then depress clutch for approx 10 seconds before switching PTO on.

Connect suction pipe to customer's outlet pipe (camlock fitting), making sure it is a tight fit. Always handle hose connections carefully and never drop them as they may distort and leak or be hard to connect in the future.

Take sight gauge reading if sent and back for reference.

Start pump and observe suction hose for emergence of liquid.

When the hose has a full head of liquid, zero, or turn on flow meter depending on model.

Observe hose for any air in line, if air is present check all connections and hose for leaks, tighten as necessary. If air appears to be within the customers system report this to the office for referral to council.

Maintain a visual check throughout the loading process for leaks, and never leave the vehicle while loading.

When the client tank empties before the tanker is full, turn off flow meter, open camlock fitting at the property end to relieve suction and allow the hose to empty, turn off pump, disconnect suction hose, cap and replace hose on tanker. **Fill out docket and initial that the tank has *been* emptied**, fill out other run and load sheets.

Where the tanker is going to be full before the client's storage tank is empty, turn off pump, turn off flow meter, open camlock fitting to reduce vacuum, turn pump back on and empty suction hose, cap and replace hose on tanker. **Initial the docket that the**

tank has *not been* emptied, and approximate when you will return i.e: next load or next day.

Where the client's storage tank is above the level of the tanker, the valve at the tank needs to be closed off before the tanker is fully loaded, as the liquid in the hose still has to be accepted into the tanker, always anticipate this additional fluid.

5.2 Operational procedures for Sight Tubes

1. The tanker should preferably be on level ground to obtain accurate readings.
2. Readings must be taken at eye level.
3. Take front and back readings before starting each pumpout. Add the two readings together then divide by two (2) to obtain volume. Take note of this amount.
4. After completing pumpout take new readings and the two readings together and divide by two to obtain the new volume.
5. By subtracting the new volume from the old volume the amount of the pumpout is obtained.
6. Complete the table for sight tube readings on the docket.

5.3 Operational Procedure for Electronic Flow Meters

1. Make sure suction hose has been turned off water before turning on flow meter.
2. Make sure meter is reading zero at the beginning of the pumpout.
3. Under certain circumstances meter readings may become inaccurate, mainly due to poor plumbing allowing air into the system or ineffective lift pumps. In the following situations meter readings should be checked against sight tubes.
   - If there is a constant amount of more than 25% air in the suction pipe.
   - If the pumping volume drops below 120 litres per minute.
   - If the percentage of maximum pumping volume drops below 25%.
4. When there is a discrepancy, the lower amount should be used.
5. Reset meter and obtain printout before starting next pumpout.

5.4 Leaving the Site

Make sure all paperwork is complete, (initialled as to whether the tank has been emptied), and that the customer's copy of the removal docket has been left at the premises.

Examine the tanker again for any sign of leakage, and that all hoses are correctly stowed on board and that the valve caps and top hatch vent caps are in place.

Turn off PTO.

Between the client and the disposal site, do not park where the public may have

access to the tanker, particularly where someone may tamper with it or steal it.

Remember that at all times the Company and its drivers must be able to show due diligence and have a Duty of Care while in control of a potential pollutant.

While an articulated tanker is loaded, never disconnect the prime-mover.

6. LEAKAGES

It is an offence to allow waste to escape into the environment. It may also be very dangerous to the driver and the public.

Offences involving wilfulness or negligence under the Protection of the Environment Operations (General) Regulation 2009 (replaced & replaced the Environmental Offences and Penalties Act 1989) have severe penalties for individuals and/or imprisonment. The only defence allowed is "no control" over the commission of the offence and "due diligence". EPA letter attached.

Care and caution are essential in the handling and transportation of this material.

All spills must be reported to your supervisor, who will in turn inform Council.

Disinfectant should be applied to the leakage and the area washed as required, where it is safe to do so.

Leakages, if they occur, are most likely to involve, hoses, couplings or valves.

6.1 Leaking Hose or Coupling During Loading

1. Turn off the lift pump if there is one.
2. Unclip the camlock fitting with the pump still running.
3. When the suction hose is clear of liquid carefully remove the hose.
4. Shut off pump and replace faulty camlock seal or temporarily tape up hose.
5. A temporarily taped up hose must not be used again.

By adopting this procedure little leakage should result as the pump will clear the hose.

6.2 Leaking discharge valve

1. May be minimised by connecting the suction hose to the discharge valve by way of reducers until such time as the truck can be unloaded and the valve repaired.
2. The valve must be repaired or replaced before the tanker is used again.

If it is not possible to eliminate a leak, the driver must contact the supervisor or office immediately.

6.3 Spillage Through Overloading

Due diligence must be maintained to prevent overflowing the tanker. If the tanker is overloaded and overflows, the following steps must be undertaken:

1. Immediately turn off pump and reverse if possible.
2. Turn off lift pump if fitted.
3. When the overflow has been controlled, disconnect the area of the spill.
4. Inform your Supervisor or the office.
5. Wait with the vehicle to assist in pumping excess into another tanker and in whatever cleanup is necessary.

A.2 Tanker Frequency

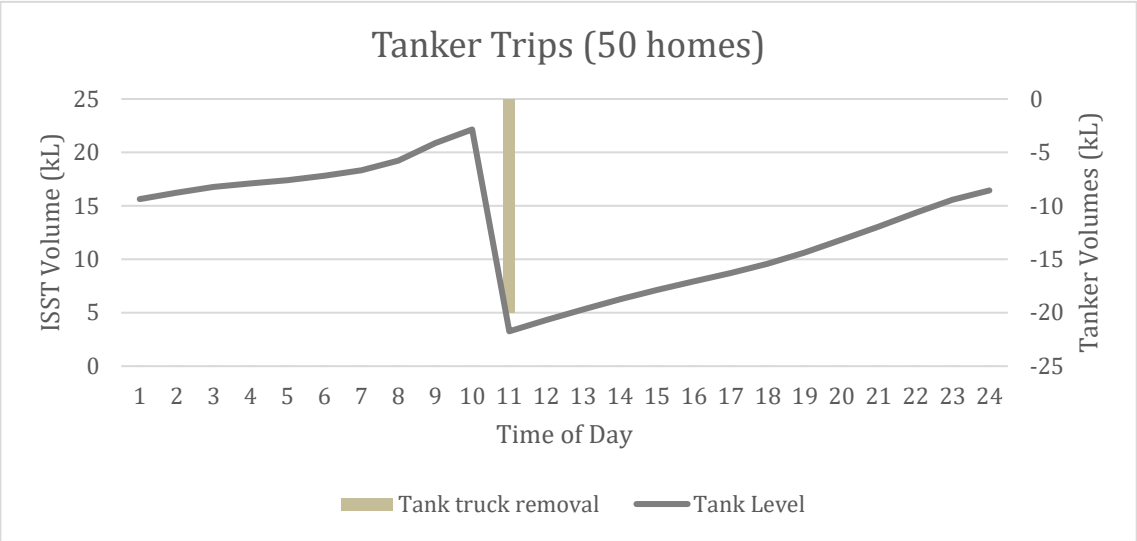


Figure 19 Tanker Graph – 50 Homes

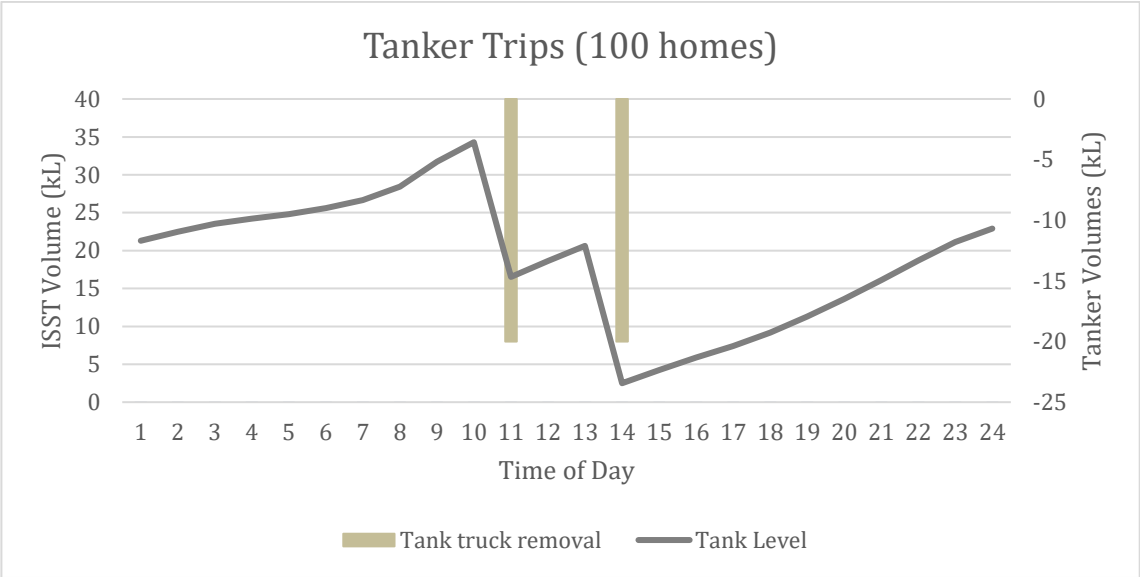


Figure 20 Tanker Graph – 100 Homes

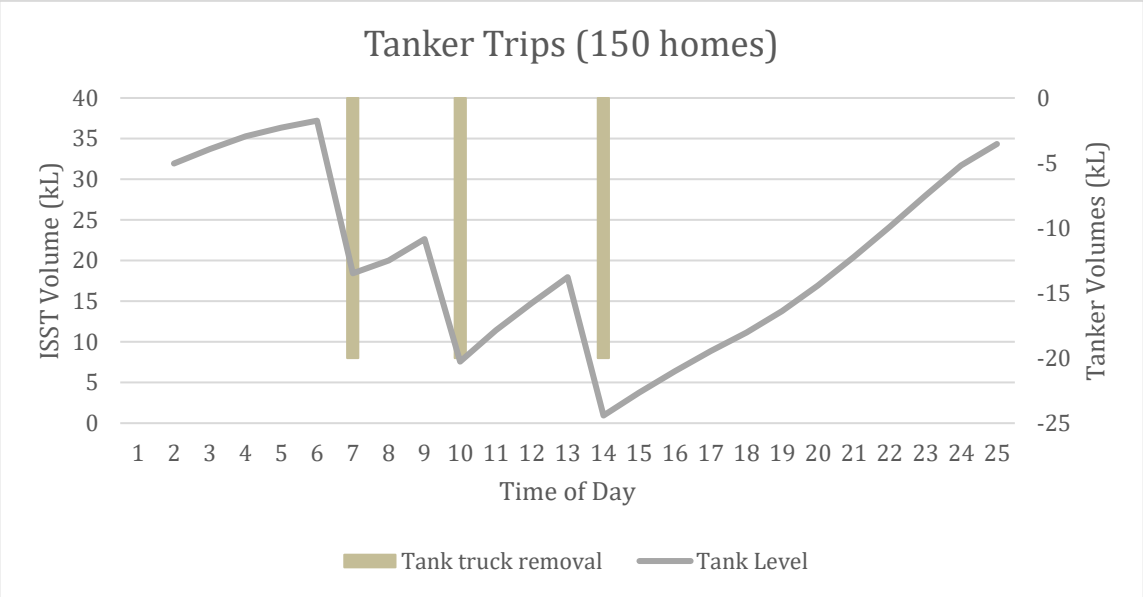


Figure 21 Tanker Graph – 150 Homes

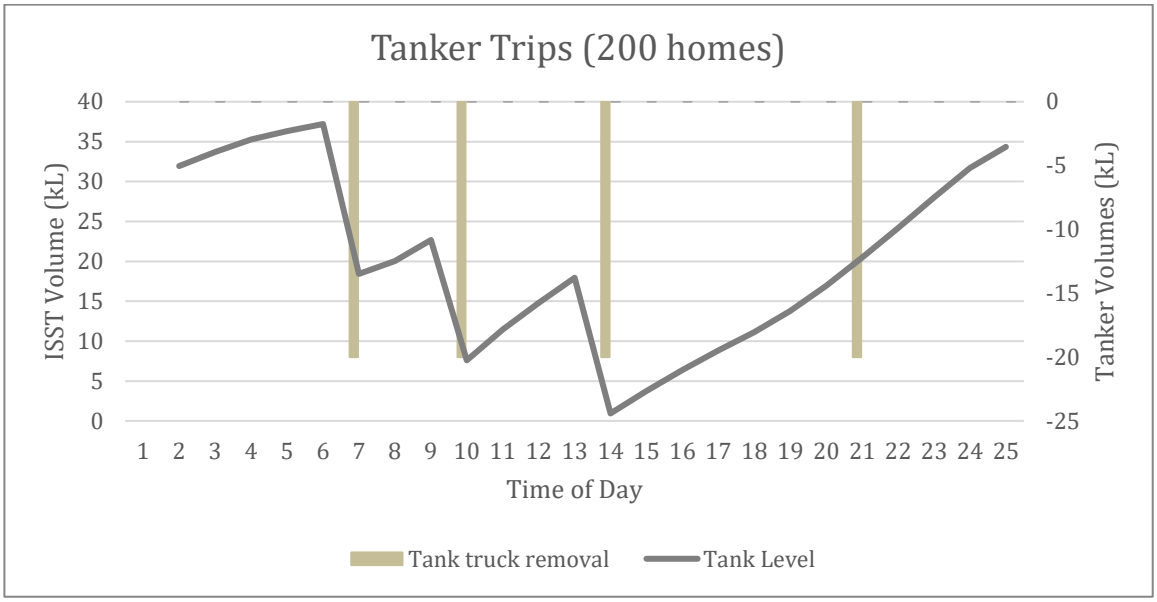
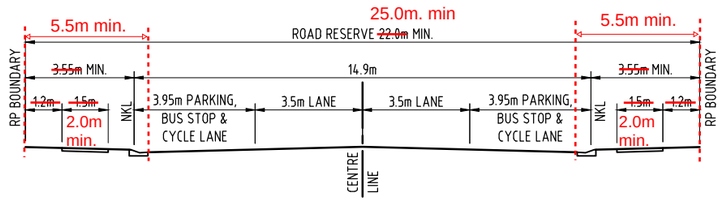
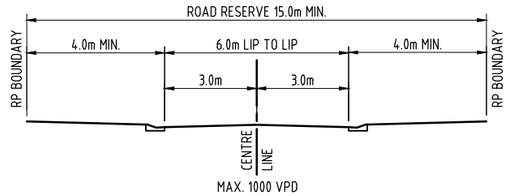


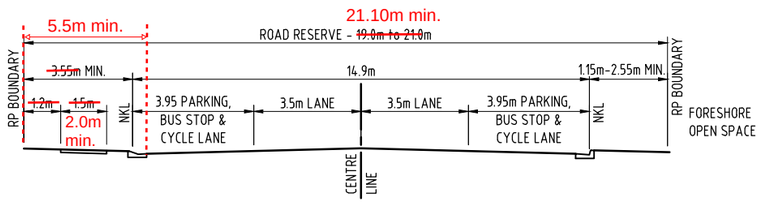
Figure 22 Tanker Graph – 200 Homes



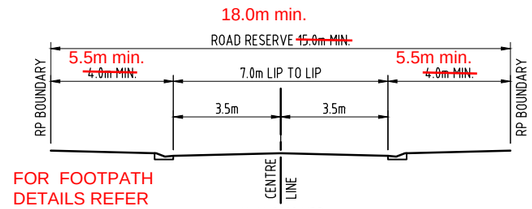
TRUNK COLLECTOR STREET - Type C1 FOR KERB TYPE REFER TO NOTES
(with frontage access)



MAX. 1000 VPD
RESIDENTIAL ACCESS STREET - Type A

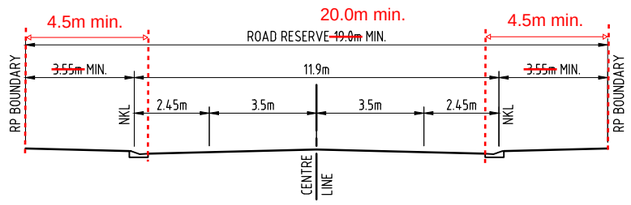


ESPLANADE TRUNK COLLECTOR STREET - Type C2 FOR KERB TYPE REFER TO NOTES
(with frontage access)



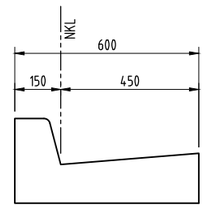
FOR FOOTPATH DETAILS REFER TO NOTES

MAX. 3000 VPD
RESIDENTIAL COLLECTOR STREET - Type B
(with frontage access)

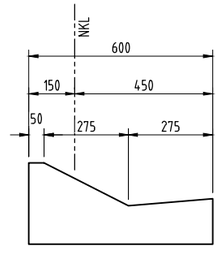


RESIDENTIAL COLLECTOR STREET - Type C3
Bus Route (with frontage access)

NOTE
'NKL' DENOTES:- NOMINAL KERB LINE
(REFER KERB & CHANNEL DETAILS).



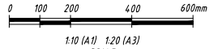
TYPE B1 KERB & CHANNEL



TYPE M1 KERB & CHANNEL

KERB & CHANNEL DETAILS

NOTE DIMENSIONS ARE IN MILLIMETRES



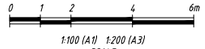
NOTES:
1. PROVIDE B1 TYPE KERB AND CHANNEL ON C1 AND C2 TYPE STREETS;
2. TYPE C3 STREETS TO HAVE MIN. 2.0m WIDE SHARED USE PATH WHERE THEY CONNECT A FUTURE SCHOOL WITH C1 OR C2 TYPE STREETS; AND
3. TYPE C3 STREETS MUST HAVE 1.5m FOOTPATH ON ONE SIDE.
4. RESIDENTIAL COLLECTOR - TYPE B MUST HAVE MIN 1.5M FOOTPATH ON ONE SIDE OF THE VERGE

AMENDED IN RED BY RCC 31/03/2017

DRAFT

Civil Dimensions Pty Ltd
Consulting Engineers
ACN: 103 198 527
Unit 8, 51 Freda St Upper Mt Gravatt Qld 4122 Tel: 3422 2020
mail@civildimensions.com.au Fax: 3422 2021

Drawing No.
CD13-053-TC1J
Date
22nd December 2016



SHORELINE REDLANDS PROPOSED TYPICAL CROSS SECTIONS

			H	Trunk Collector Town Centre removed	29/11/16
			G	Bus Stop noted on sections	21/07/16
			F	Sections amended	28/06/16
			E	Sections amended	09/06/16
			D	Verge width Section C4 amended	06/06/16
			C	Section C4 title amended	01/06/16
			B	Titles amended and additional section added	27/05/16
J	Collectors Types C1, C2, & C3 amended	22/12/16	A	Original Issue	16/04/14
Rev	Amendment Details	Date	Rev	Amendment Details	Date

11.3 INFRASTRUCTURE & OPERATIONS

11.3.1 ALEXANDRA HILLS MEN'S SHED – NEW LEASE

Objective Reference: **A1888243**
Reports and Attachments (Archives)

Attachment: **Alexandra Hills Men's Shed**

Authorising Officer: **Peter Best**
General Manager Infrastructure & Operations

Responsible Officer: **Lex Smith**
Group Manager City Spaces

Report Author: **Laura Twining**
Acting Senior Leasing Officer

PURPOSE

The purpose of this report is to seek Council approval for a new trustee lease to Alexandra Hills Men's Shed on part of Lot 139 SP188041, described as 539-553 Old Cleveland Road East, Birkdale.

BACKGROUND

Council hold Lot 139 SP188041, described as 539-553 Old Cleveland Road East, Birkdale, under trusteeship from the State.

Alexandra Hills Men's Shed has occupied the premises on this site since 16 August 2013 under a Permit to Occupy (PTO) agreement. The premises is used for regular meets, men's shed and social activities.

The men's shed provides a safe and secure facility where men can exchange ideas, discuss any issues, engage in manual or social activities, and pass on lifelong knowledge and work skills to others. A happy and busy environment with an atmosphere of old fashioned mateship is provided to members of all ages, supporting good health and wellbeing.

The Alexandra Hills Men's Shed was established in 2011, has approximately 98 members and is financially sound. Throughout the term of the PTO the group has proven its sustainability and dedication to community support.

The group would like to secure their future with a 10-year trustee lease. Given the history of their occupation of the premises, ongoing commitment to maintenance and site improvements, Council recommends this.

The use of the premises is consistent with the purpose of reserve R3980 being Park and Recreation. Approval of the proposed trustee lease is provided by the Department of Natural Resources & Mines (DNRM) under the Minister's Written Authority signed in May 2015.

ISSUES

Approval of a new lease to Alexandra Hills Men's Shed will give the group more viability to continue their current community support.

The lease would comply with Council's policy in respect to issuing standard leases for a term of up to 10 years.

STRATEGIC IMPLICATIONS

Legislative Requirements

The *Local Government Regulation 2012 s*.236(1)(b)(ii) requires that Council agree by resolution that it is appropriate to dispose of an interest in land to a community organisation, other than by tender or auction. Alexandra Hills Men's Shed meets the definition of a community organisation, s.236(1)(b)(ii) applies and allows this lease of Council land.

Risk Management

The group's current permit to occupy and new lease requires building and public liability insurance to be maintained by the group.

Facility Services will conduct inspections to ensure compliance with occupant safety and building conditions, and there are clauses under the lease to address any non-compliance to these.

Financial

Council will not incur any expenses as lease preparation costs, survey and registration in the Titles Office will be met by the group and they are aware of this.

People

This recommendation does not have Council staff implications.

Environmental

The Alexandra Hills Men's Shed has invested volunteer time and funding to maintain the building and has kept it free of litter and graffiti, ensuring the area looks neat and tidy and reducing maintenance costs for Redland City Council (RCC).

Social

Men's Sheds play a valuable part in community infrastructure. Granting a new lease to Alexandra Hills Men's Shed will provide support to the group which is community-focussed within the Redlands area.

Alignment with Council's Policy and Plans

Council Policy POL-3071 Leasing of Council Land & Facilities supports leases to not-for-profit community organisations.

The Redland City Council Corporate Plan 2015-2020 is supported by this proposal, particularly:

7. Strong and connected communities

7.2 Council maximises community benefit from the use of its parklands and facilities by improving access to, and the quality of shared use of, public spaces and facilities by groups for sporting, recreational and community activities.

CONSULTATION

The Acting Senior Leasing Officer has consulted with:

- Community Land & Facilities Panel;
- Acting Coordinator Community Development;
- Acting Service Manager Strengthening Communities;

- Service Manager City Sport & Venues;
- Business Partnering Unit, Financial Services; and
- Group Manager City Spaces.

OPTIONS

Option 1

That Council resolves to:

1. Make, vary or discharge a new lease to Alexandra Hills Men's Shed over Lot 139 SP188041 situated at 539-553 Old Cleveland Rd East, Birkdale as shown on the attached site plan, for a term of 10 years;
2. Agree in accordance with s.236(2) of the *Local Government Regulation 2012* that s.236(1)(b)(ii) of the *Local Government Regulation 2012* applies allowing the proposed lease to a community organisation, other than by tender or auction;
3. Delegate authority to the Chief Executive Officer under s.257(1)(b) of the *Local Government Act 2009* to sign all documents in regard to this matter.
4. Agree to costs for lease preparation to be paid by the lessee.

Option 2

That Council does not approve a new lease to Alexandra Hills Men's Shed and investigates alternative arrangements.

OFFICER'S RECOMMENDATION

That Council resolves to:

1. **Make, vary or discharge a new lease to Alexandra Hills Men's Shed over Lot 139 SP188041 situated at 539-553 Old Cleveland Rd East, Birkdale as shown on the attached site plan, for a term of 10 years;**
2. **Agree in accordance with s.236(2) of the *Local Government Regulation 2012* that s.236(1)(b)(ii) of the *Local Government Regulation 2012* applies allowing the proposed lease to a community organisation, other than by tender or auction;**
3. **Delegate authority to the Chief Executive Officer under s.257(1)(b) of the *Local Government Act 2009* to sign all documents in regard to this matter.**
4. **Agree to costs for lease preparation to be paid by the lessee.**

Attachment 1

Alexandra Hills Men's Shed – Lease area outline in red

11.3.2 CEO DELEGATED AUTHORITY TO SIGN CONTRACT FOR THE CLEANING OF COUNCIL BUILDINGS OVER $2,000,000

Objective Reference:	**A2099133**
Authorising Officer:	**Peter Best** **General Manager Infrastructure & Operations**
Responsible Officer:	**Lex Smith** **Group Manager City Spaces**
Report Author:	**Chris Nash** **Service Manager Facilities Services - Acting**

PURPOSE

The purpose of this report is to seek resolution from Council to delegate authority to the Chief Executive Officer (CEO) to accept the tender and make, vary and discharge a contract for services to clean council buildings from June 2017 to June 2022. The expected value of the purchase is over $2,000,000.

The commencement date for the new arrangement is 1 July 2017 with a transition period of one month as well as allowing sufficient time for the new incumbent to prepare for the commencement of the arrangement. To allow the transition period to occur, the new contract must be awarded by May 2017.

BACKGROUND

The current tender for the cleaning of council buildings will expire on 30 June 2017 with no option to extend this arrangement. Facility Services Unit (FSU), in conjunction with Procurement Services Unit, is undertaking a new procurement process for the provision of cleaning of council buildings. Council buildings include buildings and public amenities on the mainland, North Stradbroke Island (NSI), Coochiemudlo Island, the Southern Moreton Bay Islands (SMBI), wastewater treatment plants, community halls, waste transfer stations and the German Church Rd Quarry.

ISSUES

Approving this delegated authority will assist in the awarding of the contract by the required date and reduces the need to seek alternative methods in the event of the current contract expiry. The alternative is for council officers to evaluate the tender responses received and present a recommendation to Council for approval for the awarding of the cleaning contract and to obtain the associated delegation.

In addition to requesting delegation be granted to the CEO to accept the tender and make, vary and discharge a contract , FSU also requests sub-delegation be granted to the Group Manager City Spaces, to vary and discharge any changes to the contract for the duration of the contract term.

STRATEGIC IMPLICATIONS

Legislative Requirements

Delegated authority and obligations of Council under s.257(1)(b) of the *Local Government Act 2009* legislative requirements are that Council may, by resolution, delegate authority to the CEO to accept the tenders and make, vary and discharge a contract over $500,000.

The total cost of the contract for the 5 years will be approximately $8.5 million dollars which exceeds the CEO's delegation which is currently $2,000,000.

Risk Management

Approving this delegation early mitigates the risk of the current contract expiring and rolling over to a month-by-month service. This may have a significant effect on cleaning costs and Council's reputation.

Financial

Based on historical annual contract expenditure including increases in the consumer price index (CPI), the estimated contract value for the full 5-year term is $8.5 million dollars.

People

Not applicable.

Environmental

Not applicable.

Social

Not applicable**.**

Alignment with Council's Policy and Plans

This report and ensuing actions align with council's policies and plans.

CONSULTATION

The following stakeholders have been consulted in the preparation of this report and are supportive of the recommendation.

- General Manager Infrastructure & Operations;
- Group Manager City Spaces;
- Senior Procurement Officer;
- Business Partnering Unit, Financial Services.

OPTIONS

Option 1

To delegate authority to the Chief Executive Officer (under s.257(1)(b) of the *Local Government Act 2009*) as follows:

1. To accept the tenders and , make, vary and discharge a contract, for the cleaning of council buildings from June 2017 to June 2022, with an estimated value of $8.5 million over the full term of the contract;
2. To sign all relevant documentation.

Option 2

To not delegate this authority to the Chief Executive Officer, and accept the risk of the current cleaning contract expiring.

OFFICER'S RECOMMENDATION

That Council resolves to delegate authority to the Chief Executive Officer (under s.257(1)(b) of the *Local Government Act 2009*) as follows:

3. **To accept the tenders and , make, vary and discharge a contract, for the cleaning of council buildings from June 2017 to June 2022, with an estimated value of $8.5 million over the full term of the contract;**
4. **To sign all relevant documentation.**

12 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.

13 NOTICES OF MOTION TO REPEAL OR AMEND RESOLUTIONS

In accordance with s.262 *Local Government Regulation 2012*.

14 NOTICES OF MOTION

In accordance with s.3(4) of POL-3127 *Council Meeting Standing Orders*

15 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 can 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 administratively?		
If the matter relates to a request for information, has the request been made to the CEO or to a General Manager previously?		

16 CLOSED SESSION

16.1 COMMUNITY & CUSTOMER SERVICES 16.1.1

APPEAL 4807/16 - MCU013719

Objective Reference:	**A124439** **Reports and Attachments (Archives)**
Authorising Officer:	 **Louise Rusan** **General Manager Community and Customer Services**
Responsible Officer:	**David Jeanes** **Group Manager City Planning and Assessment**
Report Author:	**Emma Martin** **Senior Planner**

EXECUTIVE SUMMARY

Council or Committee has a broad power under Section 275(1) of the Local Government Regulation 2012 to close a meeting to the public where there are genuine reasons why the discussion on a matter should be kept confidential.

OFFICER'S RECOMMENDATION

That the meeting be closed to the public to discuss this matter pursuant to Section 275(1) of the *Local Government Regulation 2012*.

The reason that is applicable in this instance is as follows:

(f) starting or defending legal proceedings involving the local government.

17 MEETING CLOSURE