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CIVIL STRUCTURAL ENVIRONMENTAL
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The General Manager
Byron Shire Council
PO Box 219
MULLUMBIMBY 2482

24.7.21

Dear Sir,

RE: S4.55 APPLICATION TO MODIFY DA 10 2010.547.1 - 111 BANGALOW RD BYRON BAY PROPOSED CHANGES AND JUSTIFICATIONS

1. INTRODUCTION

Since the approval of this DA in 2011 there have been a number of critical planning changes which have affected this approval. These include:

- Introduction of E Zones and a more detailed mapping of existing vegetation.
- Changes to Land Use Zoning which have impacted on the effluent system proposed.
- Subdivision of the Byron Bay Golf Club, Lot 6 DP 593474, to create the current lot & DP for this property. This subdivision was approved after the subject DA was approved by DA 10.2011.469.1. See plan of subdivision in **Appendix F**

As well as the above, there was inadequate detail in the approved plans to fully describe the proposed development.

2. DEVELOPMENT PROGRAM

The proposed development is substantially the same as the approval and varies in the following ways:

- The R5 land zoning prevents the connection of the new lots to Councils sewerage system and instead an On Site Effluent treatment & disposal model has been adopted
- The lot sizes have changed with a reduction of around 10% to allow for space on Lot 1 outside the E2 environmental zone on the property.

Council does not allow R5 zoned rural residential land to be connected to its sewerage network and in any event the proposed construction of three very long rising lines across the golf course was unrealistic and not sustainable in the long term. In order to ensure a comprehensive long term management of the proposed effluent system we have chosen the Neighbourhood Association to be responsible for its construction, commissioning, management and maintenance as well as ongoing reporting thru Councils license to operate program.

Details of the proposed effluent system are shown in the attached Effluent Management Report from Truewater Australia in **Appendix C**

3. MODIFICATION TO CONDITIONS OF CONSENT

The following modifications to the DA are proposed:

Land to be Developed

Changes requested

DELETE	LOT 6 DP 593474	62 Broken Head Rd Byron Bay
ADD	**LOT 10 DP 1200712**	**111 Bangalow Rd Byron Bay**

Justification
DA 10.2011.469.1 has been approved and the land referred to in the subject DA has been subdivided from the original property and has a new Lot & DP and street address. This change is required to avoid future confusion during the Subdivision Certificate stage of the project as the Lot & DP noted no longer exist.

Condition 1 - Development in accordance with approved plans

Changes requested

DELETE	Plan 3.1 CT development proposal			
ADD	**C1A**	**Site plan**	**by Philip Wallace Consulting Engineers**	**06/21**
	C2A	**Lot layout**	**by Philip Wallace Consulting Engineers**	**06/21**
	C3A	**Site entry**	**by Philip Wallace Consulting Engineers**	**06/21**
	C4A	**Trees to go**	**by Philip Wallace Consulting Engineers**	**06/21**
	C5A	**road upgrade**	**by Philip Wallace Consulting Engineers**	**06/21**

Justification
The single plan approved is inadequate to fully describe and quantify the extent of work required to carry out a Community Title subdivision on this property in 2021, in relation to the very limited detail provided. The proposed plans better reflect the modified program discussed in Part 2 above and will form the basis of the Construction Certificate and the Subdivision Certificate. These plans also will form the basis of future buildings on the site and future site plans for house Development Applications.

Condition 3 - Internal road layout

Changes requested

DELETE	Preliminary Plan (ref P1 Rev F by NDC)
ADD	**Plan C2A dated 06/21 by Philip Wallace Consulting Engineers**

Justification
Condition is consistent with condition 1 plan changes. The internal road is in the same position as the approved road.

Condition 8 - Water & Sewerage - Section 68 approval required

Changes requested

DELETE	delete condition wording
ADD	Replace with wording requiring a S68 for an OSSM approval

Justification
Attached to this application is an Effluent Management Report from Truewater Australia who have designed an On Site Sewage Management System (OSSM) for this property to replace the 3 private pump stations shown in the original approval.

Condition 11 - Sewerage & Water mains

Changes requested
DELETE delete this condition
ADD Nil

Justification
This condition is a duplication of condition 9 and is not needed.

Condition 13 - Traffic Control Plan

Changes requested
DELETE Traffic Control Plan
ADD Traffic Management Plan

Justification
The work widening Bangalow Rd to comply with condition 10 requires substantial Traffic Management to ensure public and worker safety and a full TMP is considered necessary in for submission with the Construction Certificate.

Condition 36 - Golf ball hazard reduction measures

Changes requested
DELETE delete condition
ADD Nil

Justification
This work has been completed and was used to justify the substantial commencement of the DA, see Appendix B attached.

Condition 37 - Amelioration works to golf course design

Changes requested
DELETE delete condition
ADD Nil

Justification
This work has been completed and was used to justify the substantial commencement of the DA, see **Appendix B** attached.

Condition 39d - S88B instrument - Restriction on use

Changes requested
DELETE Delete reference to onsite sewerage pumping system to connect to councils sewerage system
ADD reference to connect to the Neighbourhood Associations OSSM system and to operate in accordance with Councils requirements and the Management Statement

Justification
To ensure compliance with S68 approval and effective long term management of OSSM

Condition 40 - Management statements

Changes requested
DELETE in part ii delete “and the individual pump stations”
ADD **add part iii to include by-laws for management and maintenance of the OSSM system by the Neighbourhood Association and compliance with the operational requirements by Lot owners.**

Justification
The on-going management and maintenance of the effluent system will be the responsibility of the Neighbourhood Association and this must be detailed in the Management Statement to ensure successful management of the effluent from the new dwellings.

Condition 53a - CCTV inspection report

Changes requested
DELETE delete part a, reference to sewerage reticulation
ADD **Nil**

Justification
CCTV records not necessary for the OSSM. There is only a pressure rising line between the treatment unit and the disposal field.

CONTRIBUTIONS - INDICATIVE CHARGES PURSUANT TO WATER MANAGEMENT ACT.

Changes requested
DELETE delete sewer charges for 3ET
ADD **Nil**

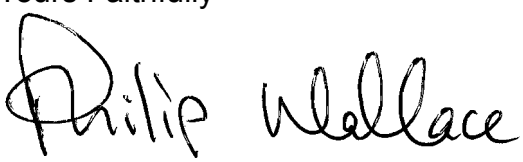
Justification
No connection to Councils sewerage system is proposed.

The following Appendices are attached to this submission:

APPENDIX 1	Current DA approval
APPENDIX 2	Substantial commencement letter
APPENDIX 3	Effluent Management Report from Truewater Australia
APPENDIX 4	E Zoning plan for the property
APPENDIX 5	Current Land Use Zoning for property
APPENDIX 6	Plan of subdivision from parent lot of Golf Course

Please call if you have any queries.

Yours Faithfully



Philip Wallace

NOTICE OF DETERMINATION OF A DEVELOPMENT APPLICATION

issued under the
Environmental Planning and Assessment Act, 1979 Section 81(1)(a)

Development Application No. 10.2010.547.1

SJ Connelly Pty Limited
PO Box 538
LENNOX HEAD NSW 2478

Land to be developed:	LOT: 6 DP: 593474 **62 Broken Head Road BYRON BAY**
Development	**Subdivision (Community Title) to create three (3) neighbourhood lots and one (1) neighbourhood property**
Determination	**Consent granted subject to the attached schedule of conditions**
Date determined:	23 September 2011
Consent to operate from	23 September 2011
Consent to lapse on:	23 September 2016
Other approvals:	Not applicable

IMPORTANT INFORMATION

It is the responsibility of the applicant, landowner, builder, and any other contractors or agents involved with the development to read and understand all conditions of consent prior to commencing work.

The Environmental Planning and Assessment Act 1979 requires you to:

1. Obtain a ***Construction Certificate*** prior to the commencement of any **building works** as required by conditions of this consent. An application may be lodged with Council, or you may apply to a private accredited certifier for a Construction Certificate. An accredited certifier **must obtain Council's approval** to certain conditions of this development consent, where indicated before issuing the Construction Certificate. Additional fees are payable for this application.
2. Nominate a ***Principal Certifying Authority*** (PCA) which may be either Council or an accredited certifier and notify Council of that appointment. You **cannot lawfully** commence works without complying with this requirement.
3. Give Council at least two days notice of your intention to commence the erection of a building **before** commencing construction works. You cannot lawfully commence works without complying with this requirement.
4. Obtain an ***Occupation Certificate*** before commencing occupation or commencing to use the building or on the completion of other works including the erection of a sign. You cannot lawfully commence occupation or the use of a building without complying with this requirement. Additional fees are payable for this application.

CONDITIONS OF CONSENT:

Parameters of this Consent

1) Development is to be in accordance with approved plans

The development is to be in accordance with plans listed below:

Plan No.	Description	Prepared by	Dated:
Plan 3.1	Community Title Development Proposal	S J Connelly Pty Ltd (Source Newton Deny Chapelle)	Revised May 2011

The development is also to be in accordance with any changes shown in red ink on the approved plans or conditions of consent.

The approved plans and related documents endorsed with the Council stamp and authorised signature must be kept on site at all times while work is being undertaken.

2) Integrated Development Approval

In accordance with Section 100B of the Rural Fires Act 1997 a Bush Fire Safety Authority has been issued by NSW Rural Fire Service subject to the following conditions:

(i) The amelioration works recommended on the edge of Fairway 16, north east of Lots 2 and 3, shall maintain a managed understorey.

Water and Utilities

(ii) Water, electricity and gas are to comply with section 4.1.3 of 'Planning for Bush Fire Protection 2006'.

Access

(iii) The internal access road shall comply with section 4.1.3(1) of 'Planning for Bush Fire Protection 2006'.

- A complying turning circle or suitably designed turning head is required at the end of the road.
- A through road is not required. A perimeter road is not required.

3) Internal road layout

The route of the internal road providing access to each of the neighbourhood lots is to be generally in accordance with route shown on the Preliminary Plan (Reference P1, Rev F dated 16/11/10) prepared by Newton Denny Chapelle.

4) Vegetation Management

Vegetation is to be managed in accordance with the approved Vegetation Management Plan.

5) Compliance with Building Code of Australia and insurance requirements under the Home Building Act 1989

(1) For the purposes of section 80A (11) of the Act, the following conditions are prescribed in relation to a development consent for development that involves any building work:

(a) that the work must be carried out in accordance with the requirements of the Building Code of Australia ,
(b) in the case of residential building work for which the Home Building Act 1989 requires there to be a contract of insurance in force in accordance with Part 6 of that Act, that such a contract of insurance is in force before any building work authorised to be carried out by the consent commences.

(2) This clause does not apply:
(a) to the extent to which an exemption is in force under clause 187 or 188, subject to the terms of any condition or requirement referred to in clause 187 (6) or 188 (4), or
(b) to the erection of a temporary building.

(3) In this clause, a reference to the Building Code of Australia is a reference to that Code as in force on the date the application for the relevant construction certificate is made.

6) Erection of signs

(1) For the purposes of section 80A (11) of the Act, the requirements of subclauses (2) and (3) are prescribed as conditions of a development consent for development that involves any building work, subdivision work or demolition work.

(2) A sign must be erected in a prominent position on any site on which building work, subdivision work or demolition work is being carried out:
(a) showing the name, address and telephone number of the principal certifying authority for the work, and
(b) showing the name of the principal contractor (if any) for any building work and a telephone number on which that person may be contacted outside working hours, and
(c) stating that unauthorised entry to the work site is prohibited.

(3) Any such sign is to be maintained while the building work, subdivision work or demolition work is being carried out, but must be removed when the work has been completed.

(4) This clause does not apply in relation to building work, subdivision work or demolition work that is carried out inside an existing building that does not affect the external walls of the building.

(5) This clause does not apply in relation to Crown building work that is certified, in accordance with section 116G of the Act, to comply with the technical provisions of the State's building laws.

(6) This clause applies to a development consent granted before 1 July 2004 only if the building work, subdivision work or demolition work involved had not been commenced by that date.

Note: Principal certifying authorities and principal contractors must also ensure that signs required by this clause are erected and maintained (see clause 227A which currently imposes a maximum penalty of $1,100).

The following conditions are to be complied with prior to issue of a Construction Certificate for subdivision works

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7) Vegetation Management Plan

Preparation of a detailed Vegetation Management Plan by a suitably qualified ecologist and submitted to Council's ecologist for approval. The plan must include but not be limited to:

a) A site plan showing the location of Lots, access road, proposed building envelopes and asset protection zones.
b) A site plan showing vegetation types, areas of major weed infestations and proposed management units.
c) Mapped details of trees to be removed and retained and measures for protecting retained vegetation during construction.
d) Baseline vegetation data from no less than 4 fixed point monitoring sites.
e) Weed control and regeneration techniques.
f) Measures to manage vegetation in asset protection zones throughout Lot 1.
g) Implementation program include details of primary weed control that is to occur prior to subdivision certificate.
h) Measurable performance indicators.
i) Monitoring and evaluation.
j) Requirement to report to council on progress after 1, 3 and 5 years.
k) Plant species list.
l) Monitoring proforma.

8) Water and Sewerage - Section 68 approval required

An **Approval** under Section 68 of the Local Government Act 1993 to carry out water supply work and sewerage work must be obtained.

9) Sewerage and Water Mains

An approval is to be obtained under Section 68 of the Local Government Act 1993 to carry out water supply and sewerage works. Sewerage and water mains are to be extended to service all residential allotments in the subdivision.

10) Engineering Construction Plans

Three (3) copies of engineering construction plans and specifications must accompany the construction certificate application. Such plans are to provide for the following works in accordance with Council's current Design and Construction Manuals and Specifications. The submission of the design plans must be accompanied by Northern Rivers Local Government Design and Construction Manual Design Checklist in accordance with Specification DQS:

Full Width Road Construction

Full width road and drainage construction for all proposed roads on the approved plan.

Intersection Works at Bangalow Road

Design of a type AUR intersection and line marking including localised widening on the western left turn out to provide a lay-by pull over area.

Driveways

Sealed driveways, in accordance with Council's rural driveway standards, from the edge of the bitumen to 3 metres within the property boundary to each of the proposed new allotments.

Service Conduits

Service conduits to each of the proposed new allotments laid in strict accordance with the service authorities' requirements.

Stripping and Stockpiling

Stripping and stockpiling of existing topsoil on site, prior to commencement of earthworks, and the subsequent re-spreading of this material together with a sufficient quantity of imported topsoil so as to provide a minimum thickness of 80mm over the allotments and footpaths and public reserves, upon completion of the development works.

11) Sewerage and Water Mains

An approval is to be obtained under Section 68 of the Local Government Act 1993 to carry out water supply and sewerage works. Sewerage and water mains are to be extended to service all residential allotments in the subdivision.

12) Erosion and Sedimentation Control Plan

The plans and specifications to accompany the construction certificate application are to include a sediment and erosion control plan to indicate the measures to be employed to control erosion and loss of sediment from the site. The sediment and erosion control plan is to be designed in accordance with the requirements of the *NSW Department of Housing Manual (1989), Managing Urban Stormwater, Soils and Construction.*

A suitably experienced person must prepare the sediment and erosion control plan. Suitably experienced people include those certified by:

- The Institution of Engineers, Australia, for engineering and hydrology matters.
- The International Erosion Control Association for soil conservation matters.
- The Australian Society of Soil Science for collection or analysis of soil data.

The plan must incorporate (without being limited to) information on general site management, material handling practices, soil stabilisation, water control, sediment control, wind erosion control and access measures.

13) Traffic Control Plan

The plans and specifications to accompany the construction certificate application are to include a traffic control plan to indicate the measures to be employed to control traffic during construction of the subdivision. The traffic control plan is to be designed in accordance with the requirements of the Roads and Traffic Authority's Manual (1998), *Traffic Control at Work Sites*, and Australian Standard 1742.3 - 1985, *Manual of Uniform Traffic Control Devices Part 3, 'Traffic Control Devices for Works on Roads'*.

The traffic control plan must be prepared by a suitably qualified and RTA accredited Work Site Traffic Controller.

14) Bond required to guarantee against damage to public land

A bond of **$5000** is to be paid to Council as guarantee against damage to surrounding public land and infrastructure during construction of the proposed development. Evidence is to be provided to Council indicating the pre development condition of the surrounding public land and infrastructure. Such evidence must include photographs. The proponent will be held responsible for the repair of any damage to roads, kerb and gutters, footpaths, driveway crossovers or other assets.

Such bond will be held until Council is satisfied that the infrastructure is maintained/repaired to pre development conditions and that no further work is to be carried out that may result in damage to Council's roads, footpaths etc.

The following conditions are to be complied with prior to commencement of subdivision works

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15) Erosion & sediment measures

Erosion and sedimentation controls are to be in place in accordance with the *Guidelines for Erosion & Sediment Control on Building Sites.* A summary of these guidelines is attached. A full copy may be downloaded from Council's web site at www.byron.nsw.gov.au.

16) Written Notification

Written notification of intention to commence works must be forwarded to the Council seven (7) days prior to work commencing. Notification is to include contact details of the supervising engineer and site contractor.

17) Public Liability Insurance

The developer and/or contractor must produce evidence to the Principal Certifying Authority of public liability insurance cover for a minimum of $10 million. Council is to be nominated as an interested party on the policy.

18) Erosion and sediment measures

Erosion and sedimentation controls are to be in place in accordance with the approved Erosion and Sediment Control Plan.

Additionally the enclosed sign, to promote the awareness of the importance of maintenance of sediment and erosion controls, is to be clearly displayed on the most prominent sediment fence or erosion control device for the duration of the project. No soil or fill material is to be placed within the dripline of a tree so as to cause changes in surface level by more than 50mm from the existing level and such soil is not to be compacted. Such soil fill must not be finer than that being covered in situ, e.g. clay must not be placed over loam soil.

Note: Council may impose on-the-spot fines for non-compliance with this condition.

19) Plumbing Standards and requirements.

All Plumbing, Water Supply and Sewerage Works shall be installed and operated in accordance with the Local Government Act 1993, the NSW Code of Practice for Plumbing and Drainage and AS/NZS 3500 Parts 0-5, the approved plans (any notations on those plans) and the approved specifications.

Your Plumber must obtain a **Plumbing Permit** at least **two (2) working days prior to commencing work.** Please forward the **enclosed** Application for a Plumbing Permit to your plumber to complete and to return to Council prior to commencement of work or Refer to http://www.byron.nsw.gov.au/files/Forms/Plumbing_Drainage_Permit.pdf.

The following INSPECTIONS are required:

a) Internal Drainage;
b) External Drainage;
c) Water Rough In;
d) Stackwork; (where applicable);
e) Final.

The following conditions are to be complied with during construction

20) Construction times

Construction works must not unreasonably interfere with the amenity of the neighbourhood. In particular construction noise, when audible on adjoining residential premises, can only occur:

a) Monday to Friday, from 7 am to 6 pm.
b) Saturday, from 8 am to 1 pm.
c) No construction work to take place on Sundays or Public Holidays.

21) Builders rubbish to be contained on site

All builders rubbish is to be contained on the site in a 'Builders Skips' or an enclosure. Footpaths, road reserves and public reserves are to be maintained clear of rubbish, building materials and all other items.

22) Maintenance of sediment and erosion control measures

Sediment and erosion control measures must be maintained at all times until the site has been stabilised by permanent vegetation cover or hard surface.

23) Prevention of water pollution

Only clean and unpolluted water is to be discharged to Council's stormwater drainage system or any watercourse to ensure compliance with the Protection of Environment Operations Act.

24) Construction noise

Construction noise is to be limited as follows:.

a) For construction periods of four (4) weeks and under, the L10 noise level measured over a period of not less than fifteen (15) minutes when the construction site is in operation must not exceed the background level by more than 20 dB(A).
b) For construction periods greater than four (4) weeks and not exceeding twenty-six (26) weeks, the L10 noise level measured over a period of not less than fifteen (15) minutes when the construction site is in operation must not exceed the background level by more than 10 dB(A).

25) Fencing to protect trees

Trees to be retained are to be protected by a fence so as to minimise disturbance to existing ground conditions within the dripline of the trees. The fence is to be constructed:

a) with a minimum height of 1.2 metres,
b) outside the dripline of the tree,
c) of steel star pickets at a maximum distance of 2metres between pickets,
d) using a minimum of 3 strands of steel wire,
e) to enclose the tree, and
f) with orange barrier mesh, or similar, attached to the outside of the fence and continuing around its perimeter

The fence is to be maintained for the duration of the site clearing, preparation and construction works.

26) Placement of services near trees

All care is to be taken to manually excavate around or under any lateral structural support roots of any tree so as minimum root disturbance where services are to be laid within the dripline of a tree.

27) No filling around trees

No soil or fill material is to be placed within the dripline of a tree so as to cause changes in surface level by more than 50mm from the existing level and such soil is not to be compacted. Such soil/fill must be finer than that being covered in situ, *e.g. clay must not be placed over loam soil.*

28) Public safety requirements

All care is to be taken to ensure the safety of the public in general, road users, pedestrians and adjoining property. Council is not held responsible for any negligence caused by the undertaking of the works.

29) Council Specification

All works to be constructed to at least the minimum requirements of the "Northern Rivers Local Government Design and Construction Manual"

30) Approved Plans to remain on site

A copy of the approved Construction Certificate including plans, details and specifications must remain at the site at all times during the construction of the subdivision.

The following conditions are to be complied with prior to issue of a Subdivision Certificate

31) Subdivision Certificate application required
An application for a Subdivision Certificate must be made on the approved form. The Subdivision Certificate fees, in accordance with Council's adopted schedule of fees and charges, must accompany such application.

32) Plan of Subdivision
An Administration Sheet (Original plus one copy) and four copies of the plan of subdivision, in accordance with the approved, are to be submitted with the application for a subdivision certificate. The location of all buildings and/or other permanent improvements including fences and internal access driveways/roads must be indicated on 1 of the copies.

33) Amended Acoustic Report
An amended acoustic report is required to recommend noise attenuation measures for any future dwelling/s on the subject allotments to ensure compliance with the internal noise criterion (AS/NZS 2107:2000 Acoustics – Recommended Design Sound Level and Reverberation Times for Building Interiors) can be achieved. An amended noise assessment is to be undertaken during the cooler months of the year when insect/cicada noise is less prominent and is to consider road traffic noise impacts from Bangalow Road and offsite commercial noise impacts from the Byron Bay Golf Club and Golf Course. The amended acoustic assessment prepared by a suitably qualified person is required to be completed and submitted to Council prior to issue of the Subdivision Certificate.

34) Recommended noise attenuation measures to be incorporated in the Neighbourhood Management Statement
The recommendations of the amended acoustic report are required to be included within Neighbourhood Management Statement to require any future Development Application or Complying Development Certificate application for a dwelling on the allotments is to incorporate the recommended acoustic measures.

35) Vegetation Management Plan
The primary weed control works on the neighbourhood lot (Lot 1) have been completed to Council's satisfaction and in accordance with the implementation schedule for Year 1 as detailed in the Vegetation Management Plan.

36) Golf ball hazard reduction measures
The recommended amelioration procedures contained within Section 4 of the report titled *'Report Re: Byron Bay Golf Club Ltd Lot 6 DP 593474 62 Broken Head Road Byron Bay. Prepared by T A Russell and G B Steel. Date: January 2011'* are to be implemented prior to issue of the Subdivision Certificate.

37) Amelioration works to golf course design
Prior to the issue of a subdivision certificate, changes to the golf course layout and amelioration works must be completed as described in the report titled *'Report Re Byron Bay Golf Club Ltd Lot 6 DP 593474 62 Broken Head Road Byron Bay. Prepared by T A Russell and G B Steel. January 2011'.*

38) Road Widening
The location of the existing road formation and fences in relation to the property boundaries are to be shown on a survey plan to be submitted to Council. Any encroachments onto the property are to be dedicated as "Road Widening" at no cost to Council.

39) Section 88B Instrument
A Section 88B Instrument and one (1) copy are to be submitted with the application for a subdivision certificate. The final plan of subdivision and accompanying Section 88B Instrument are to provide for:

a) **Dwelling Envelope**
Restrictions to limit the erection of dwellings to the nominated dwelling envelope.

b) **Sewer Easements**
The creation of easements for drainage of sewage over all sewage pipelines and structures located within the proposed allotments in accordance with Council's policy.

c) **Restricting Development – On-site Stormwater Detention**
Restricting residential development of proposed lots 2 to 4 until the proprietor has constructed or made provision for the construction of an on-site stormwater detention system for a minimum of 4000 litres to the requirements of Byron Shire Council.

d) **Restriction on use.**
A restriction on use on the title lots 2 to 4 pursuant to Section 88B of the Conveyancing Act 1919 that "No dwelling shall be erected or placed on the lot burdened unless the proprietor has first constructed or made provision for the construction of an onsite sewerage pumping system to connect to Council's sewerage system. The design, construction and/or provision of the system shall be to the requirements and satisfaction of Byron Shire Council".

40) **Management Statements**
The management and neighbourhood statements and a copy are to be submitted with the application for a subdivision certificate.

i) Statutory easements pursuant to s.36 Community Land Development Act 1989 must be created as necessary over the services (water, sewer, telephone, power, stormwater). The management statement must include by-laws for the maintenance of the private accessway and infrastructure.

ii) The management Statement must include by-laws for the maintenance of the private on site detention tanks and the individual sewer pump stations.

41) **Completion of All Works**
All roads, drainage and civil works, required by this development consent and Construction Certificate, are to be completed.

42) **Certificates for engineering works**
The submission of all test certificates, owners manuals, warranties and operating instructions for civil works, mechanical and/or electrical plant, together with a certificate from a suitably qualified engineer certifying that all works have been constructed in accordance with the approved plans and Council's current "Northern Rivers Local Government Design and Construction Manuals and Specifications".

43) **Works-As-Executed Plans**
Works-as-executed plans, being both hard copy and electronic format, certified by a suitably qualified engineer or a registered surveyor, are to be submitted with the application for a subdivision certificate. In the case where development involves filling of flood prone land, an additional copy of the works-as-executed plan relating to earthworks and final plan of subdivision must be submitted detailing the 1% flooding contour.

44) **Certificate for services within easements**
The submission of a certificate from a registered surveyor certifying that all pipelines, structures, access driveways and/or services are located wholly within the relevant easements.

45) Electricity Supply Certificate
Written evidence from an electricity supply authority is to be submitted with the application for a subdivision certificate stating that satisfactory arrangements have been made for the provision of underground electricity supply throughout the subdivision.

46) Telephone Supply Certificate
Written evidence from Telstra is to be submitted with the application for a subdivision certificate stating that satisfactory arrangements have been made for the provision of underground telephone supply throughout the subdivision.

47) Certificate of Compliance – Water Management Act 2000
Water and sewer services are to be provided to the land in accordance with an approval granted under Section 68 of the Local Government Act 1993.

Payment of developer charges to Byron Shire Council for water supply and sewerage.

A copy of the Certificate of Compliance under Section 307 of the Water Management Act 2000 is to be obtained from Byron Shire Council prior to the issue of a Subdivision Certificate.

Application forms are available from Council's administration building or online at http://www.byron.nsw.gov.au/files/Forms/Section_305_Certificate.pdf to be submitted for a Certificate of Compliance.

48) Certificate of Compliance - Water Management Act 2000
Obtain a Certificate of Compliance from Rous Water confirming that all money payable to Rous Water in respect to the load the development imposes on the Regional Bulk Water Supply has been paid.

Note: Byron Shire Council acts as Rous Water's agent in this matter and will issue a Certificate of Compliance on behalf of Rous Water upon payment of the Rous Water Development Servicing Charge to this Council. The charge is calculated as the Rous Water Development Servicing Charge per Equivalent Tenement current at the time of payment multiplied by the assessed number of ET's for the development for water supply purposes.

49) Geotechnical Report (Lot Classification)
A certificate from a practicing Geotechnical Engineer must be provided in conjunction with a Lot Classification Report prepared in accordance with Australian Standard AS2870.1. Such certificate must certify that all vacant allotments have a building site of adequate size and shape on each lot that is not subject to slip or subsidence.

50) Developer Contributions to be paid
Contributions set out in the attached Schedule are to be paid to Council. Contributions are levied in accordance with the Byron Shire Council Section 94 Development Contribution Plan 2005 dated June 2005 and Byron Shire Council Section 94 Development Contribution Plan 2005 Amendment No. 1 dated 20 July 2005 for Community Facilities, Open Space, Roads, Car Parking, Cycleways, Civic & Urban Improvements, Shire Support Facilities and Administration. The Plan may be viewed during office hours at the Council Offices located at Station Street, Mullumbimby.

The contributions payable will be adjusted in accordance with the relevant plan and the **amount payable will be calculated on the basis of the contribution rates that are applicable at the time of payment.**

Payments will only be accepted by cash or bank cheque.

51) Maintenance Bond

A maintenance bond of 5% **(minimum bond amount of $1,000.00)** of the value of the works constructed is to be lodged with Council. A copy of the contract construction cost of the subdivision works is to be submitted with the bond. The maintenance period is 6 months in accordance with Council's current Design & Construction Manuals and will commence from the date of issue of the **Subdivision Certificate**. The security may be provided, at the applicant's choice, by way of cash bond or a satisfactory bank guarantee. An application in writing for the release of the bond must be made at the satisfactory completion of the maintenance period.

52) Record of Infrastructure

A record of infrastructure coming into Council ownership, upon registration of the final plan of subdivision, is to be submitted to Council. The information is to be submitted in the form of Council's Standard Form titled "Asset Creation Record". This form is available from Council's Local Approvals Section.

53) CCTV Inspection and Report

A Closed Circuit T.V. ('CCTV') Inspection and Report, certified by a qualified engineer, is to be submitted with the application for a Subdivision Certificate for the following works:

a) Sewerage Reticulation.
b) Stormwater Drainage.

54) Compliance with bushfire conditions under Section 100B of Rural Fires Act 1997

Documentary evidence from a suitably qualified professional is to be submitted to the PCA demonstrating that the bushfire conditions as issued under Section 100B of the Rural Fires Act 1997 have been complied with.

Notes

General Advice - NSW Rural Fire Service

Any future development application lodged within this subdivision under section 79BA of the 'Environmental Planning & Assessment Act *1979'* will be subject to requirements as set out in 'Planning for Bush Fire Protection 2006'.

The proposed building envelopes, dwelling envelopes, and asset protection zones as shown on the plan of subdivision are not approved by this Bush Fire Safety Authority. A 20 metre minimum APZ will be required to the north, west and south west of any future dwelling within the subdivision.

Protection of the Environment Operations Act 1997:

It is an offence under the provisions of the Protection of the Environment Operations Act 1997 to act in a manner causing, or likely to cause, harm to the environment. Anyone allowing material to enter a waterway or leaving material where it can be washed off-site may be subject to a penalty infringement notice ("on-the-spot fine") or prosecution.

Construction Certificate required:

This development consent is issued under the Environmental Planning and Assessment Act 1979 and does not relate to structural aspects or specifications of the building under the Building Code of Australia. All buildings and alterations require the issue of a Construction Certificate prior to works commencing. Application forms are available from the customer services counter or Council's website www.byron.nsw.gov.au

Schedule of Development Contributions

The following contributions are current at the date of this consent. The contributions payable will be adjusted in accordance with the relevant plan and the **amount payable will be calculated on the basis of the contribution rates that are applicable at the time of payment.** The current

contribution rates are available from Council offices during office hours. **Payments will only be accepted by cash or bank cheque**.

RESIDENTIAL DEVELOPMENT

SCHEDULE OF CONTRIBUTIONS PURSUANT TO SECTION 94 OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

(Office Use Only)

Community and Cultural Facilities	(CF-BB)	3.00	SDU @	$995.99	=	$2,987.97
" - Shire Wide	(CF-SW)	3.00	SDU @	$526.29	=	$1,578.88
Open Space	(OS-BB)	3.00	SDU @	$6,267.75	=	$18,803.25
" - Shire Wide	(OS-SW)	3.00	SDU @	$2,651.44	=	$7,954.33
Roads	(R-BB)	27.00	trips @	$717.91	=	$19,383.65
Cycleways	(CW-BB)	3.00	SDU @	$771.20	=	$2,313.60
Civic & Urban Improvements	(IM-BB)	3.00	SDU @	$1,585.57	=	$4,756.71
Rural Fire Service	-				=	
Surf Lifesaving	(SL-BB)	3.00	SDU @	$25.81	=	$77.42
Administration	(OF-SW)	3.00	SDU @	$714.73	=	$2,144.18
				Total	=	**$60,000.00**

Certificate of Compliance – Water Management Act 2000

A Certificate of Compliance will be issued on completion of construction of water management works to serve the development and/or on payment of developer charges for water and sewer as calculated in accordance with Byron Shire Council and Rous Water Development Servicing Plans.

***Note**: Copies of the application forms for Certificates of Compliance are available on Council's website www.byron.nsw.gov.au or from Council's Administration Office. Copies of Byron Shire Council's Development Servicing Plans are available at Council's Administration Office.*

The following charges are indicative only. Developer charges will be calculated in accordance with the Development Servicing Plan applicable at the date of payment. A check must be made with Council to ascertain the current rates.

INDICATIVE CHARGES PURSUANT TO THE WATER MANAGEMENT ACT, 2000

Water	(S64W Other)	3.00	ET @	$1,283.78	=	$3,851.35
Bulk Water	(BW-BB)	3.00	ET @	$8,377.00	=	$25,131.00
Sewer	(S64S Other)	3.00	ET @	$9,732.66	=	$29,197.97
				Total	=	**$58,180.32**

Civil Works

The civil works shall be designed and constructed in accordance with Council's Engineering Standard current at the time of submission of Engineering Plans for approval by Council. Approval of Engineering Plans will be current for a period of two years after which time Council may require the alteration to the Engineering Design to comply with standard current at that date.

Reasons

- To comply with the provisions of Byron L.E.P. 1988.
- To preserve the environment and existing or likely future amenity of the neighbourhood.
- To protect the environment.
- To preserve the amenity of the area.
- To ensure adequacy of services to the development.
- To ensure public health and safety.
- To ensure compliance with Section 68 of the Local Government Act 1993.
- To comply with the requirements of the document Planning for Bushfire Protection 2006.

Are you dissatisfied with conditions of consent

If you are unhappy with conditions of consent discuss your concerns with the officer who dealt with your application. You may submit an application to Council to modify the consent under Section 96 of the Environmental Planning & Assessment Act, 1979.

You will need to provide reasons why the conditions should be changed or deleted. You may lodge a Section 96 application at any time after the notice of determination. If you are not happy with Council's decision on your request for modification, then you may appeal to the Land & Environment Council within six (6) months of the notification by Council.

Right of Review

You may request Council to review its decision under Section 82A of the Environmental Planning and Assessment Act, 1979. Such a request must be made within six (6) months of the date of the determination, or if there is an appeal to the Land and Environment Court, up to the time when the court hands down its decision. In reviewing its decision Council is able to consider alterations to the above plans, provided that the Development Application remains substantially the same as the one for which the consent was originally sought, and the changes are publicly notified.

NOTE: This clause does not relate to Integrated Development Applications, applications determined by the Joint Regional Planning Panel or applications previously considered under Section 82A of the Environmental Planning and Assessment Act 1979.

Right of Appeal

If you are dissatisfied with this decision, Section 97 of the *Environmental Planning and Assessment Act 1979* gives you the right to appeal to the Land and Environment Court within six (6) months after the date on which you receive this notice.

Signed on behalf of the Consent Authority

Yours faithfully

Paul Mills
Development Assessment Officer

Dated: 23 September 2011

DETAIL PLAN

LEGEND

Proposed building envelope

Existing contours

Dwelling house envelope potential

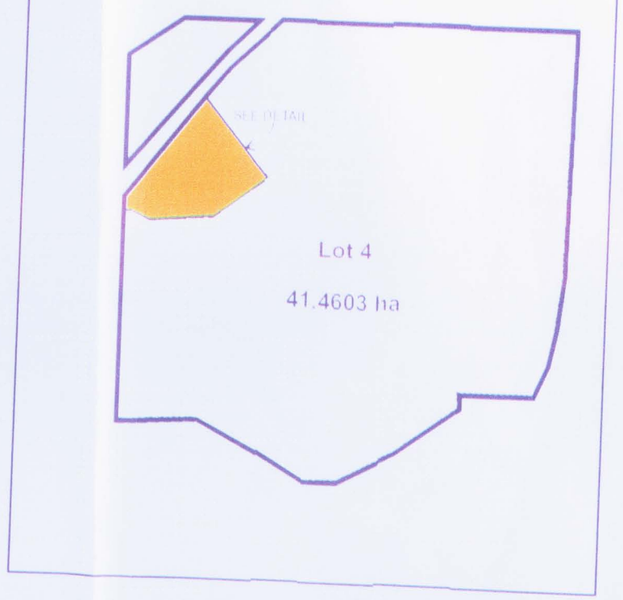
Asset Protection Zone

10 Bushfire APZ distances

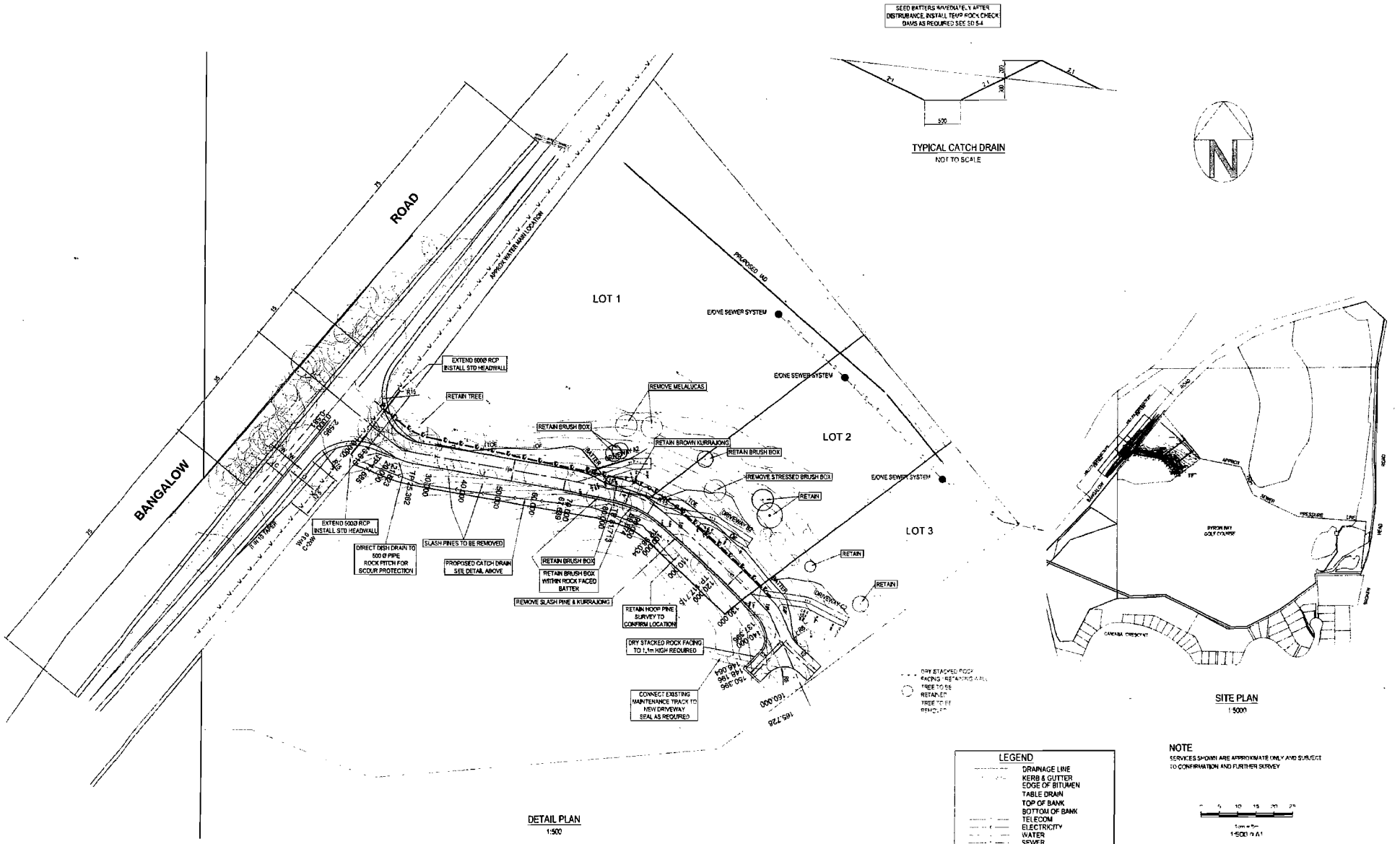
BYRON COUNCIL
DEVELOPMENT CONSENT
THIS IS THE PLAN ATTACHED TO
DEVELOPMENT CONSENT No: 10.2010.547.1
DATED: 23/9/2011

DEVELOPMENT OFFICER

SITE PLAN



COMMUNITY TITLE DEVELOPMENT PROPOSAL



Amendments	Notes:	Design: GPR	Date: APR 2010	Newton Denny Chapelle Surveyors Planners Engineers Email: office@newtondennychapelle.com.au	Client: Waterdale Living Pty Ltd	Project: PRELIMINARY PLAN LOT 6 DP 593474 BANGALOW ROAD - BYRON BAY	Ref No. 10183_GR-A0V10
12/05/10 - REV A 03/06/10 - REV B 08/06/10 - REV C 28/07/10 - REV D 06/10/10 - REV E 16/11/10 - REV F	AMEND INTERNAL LOT BDYS, LOT ACCESSES & SHIFT ENTRY 2m WEST RELOCATE HAMMERHEAD ADD BUILDING ENVELOPES, REALIGN SEWER PRESSURE LINE AMEND INTERNAL LOT BDYS, RELOCATE CATCH DRAIN, REMOVE BUILDING ENVELOPES AMEND LOT 3 BDY ADD LEGEND, LOT ACCESS DETAILS & RETAINING WALL DETAILS	Survey: CANTY'S Drawn: GPR Approved: MCW NOV2010 Datum: AHD	Scale: AS SHOWN	Lismore Suite 1 31 Carrington St, Lismore 2480 T: 66 221011 F: 66 224055 Casino 100 Barker St, Casino 2470 T & F: 66 623000			P1 REV F Sheet of Sheets

File No.:4200 / 10.2010.2551#E2017/535
Your Ref: B1021.Notice of Commencement

4 January 2017

Mr D Cope
49 Kingsley Lane
BYRON BAY NSW 2481

Email: doug@ppdc.com.au

Dear Mr Cope

CONFIRMATION OF PHYSICAL COMMENCEMENT OF DEVELOPMENT APPROVAL

Development Application:	**10.2010.547.1**
Proposed:	**Subdivision (Community Title) to create three (3) neighbourhood lots and one (1) neighbourhood property**
Parcel No:	**4200**
Property Description:	**LOT: 10 DP: 1200712** **62 Broken Head Road BYRON BAY**

I refer to your enquiry received by Council on 21 September 2016 requesting confirmation of physical commencement of the abovementioned Development Approval and apologise for the delay in responding.

It is noted that the Development Approval was determined by Byron Shire Council (BSC) on 23 September 2011 was due to lapse on 23 September 2016.

A review has been undertaken of the your letter regarding the engagement of Canty Surveyors to establish the 3 neighbourhood lot boundaries and to peg the boundary locations on site – as detailed in the letter from Canty Surveyors dated 20 September 2016. It was difficult to determine from this review alone that the Development Approval had physically commenced and as such Byron Shire Council carried out further investigation to assist in determining the status of the consent.

Another letter, from the applicant for the development application was received by BSC on the 6 September 2012. This indicated that plan preparation had been carried out to install protection works to be carried out in accordance with Conditions 36 and 37 of the consent.

Upon inspection of recent aerial photos of the subject lands and comparison with aerial photographs of the subject lands that were available at the time the application was made in 2010, it is clearly discernible that a large water hazard has been established adjacent the 16th Fairway to satisfy the Conditions of consent (36 &37) included to require minor adjustments to the layout of the golf course and the establishment of a vegetated buffer or water body to reduce the likelihood stray golf balls entering the residential allotments (in accordance with recommendations of the Report prepared by T.A. Russell and G.B. Steel dated January 2011).

It is clear from the aerial photos that the water body was established after on 23 September 2011 and prior to 23 September 2016.

Thus the findings of BSC; after this subsequent further investigation; is that the Development Approval has physically commenced and as such the development application would not have lapsed on 23 September 2016.

Should you require any further information in regard to the above, or for further information regarding compliance with the required conditions of Development Approval, please contact Council's Development Support Team on 6626 7025 or email dso@byron.nsw.gov.au.

Yours faithfully

Chris Larkin
Acting Manager Sustainable Development

Sustainable Environment & Economy

TRUEWATER
PEOPLE • WATER • ENVIRONMENT

EFFLUENT MANAGEMENT REPORT

111 Bangalow Road, Byron Bay

Community Title - Onsite Sewage Systems

Lot 1 - 4 Bedroom Dwelling
Lot 2 - 5 bedroom Dwelling
Lot 3 - 4 Bedroom Dwelling
Lot 4 - Common disposal area

June 2021

Prepared By:
David Foley
BSc. (Hons 1), PhD.

Report No.:
BSC21064

EFFLUENT MANAGEMENT REPORT

Site Address

111 Bangalow Road, Byron Bay
Lot 10 DP1200712

Clients:

David Smith / Belcon Constructions

True Water Australia

david@truewateraustralia.com

6B Ironbark Drive Townsend NSW 2463
PO Box 351 Maclean NSW 2463
02 6645 3377

Limitations

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Document Control

Version	Date Approved	Approved by	Description
BSC21064D	2nd June 2021	David Foley	Draft
BSC21064	3rd June 2021	James Mahoney	Final

Executive Summary

Development:	New 5 Bedroom & two x 4 Bedroom Dwellings (Community)
Site:	111 Bangalow Road, Byron Bay
Lot /DP:	Lot 10 DP1200712
Approval Authority:	Byron Shire Council
Owners/Developer:	David Smith / Belcon Constructions
Block size:	Lot 1 - 2066m², Lot 2 - 2188m², Lot 3 - 2732m², Lot 4 – 16.1178ha
Bedrooms / equivalent persons:	System 1 - 5 bedrooms x 1.5 = 7.5EP Systems 2 & 3 - 4 bedrooms x 1.5 = 6EP
Wastewater Load:	System 1 – 1 x 150l/p/d = 1125l/day System 2 & 3 – 6 x 150l/p/d = 900l/day
Soil Type /Structure:	Light clay / disturbed (conservative category 6)
Block Constraints:	Dam & gully, slope, vegetation, category 6 soil
LAA Constraints:	Dam & gully, vegetation, category 6 soil
Proposed Treatment Standard:	3 x Advanced Secondary (AS1546.3:2017)
Proposed Land Application:	1 x 140m² & 2 x 112m² Wisconsin mounds

111 Bangalow Road, Byron Bay is an irregularly shaped R5 Large Lot Residential and 1C2 Small Holding zoned lot bordered by Bangalow Road, Byron Bay Golf Course (RE2) and another R5 zoned lot. There is an existing approval for a community title subdivision for 3 neighbourhood lots in the R5 zoned area, and a neighbourhood property in the 1C2 zoned area of the lot. The owners propose to build two 4 bedroom dwellings and one 5 bedroom dwelling on the three neighbourhood lots. The lots have limited area and the subdivision approval conditioned a pumped sewage connection to Council's sewage system. A pumped connection to the nearest sewage main might not be practical or desirable for the owners, neighbouring golf course, or Council's sewage infrastructure and zoning objectives, hence the owner has engaged True Water Australia to prepare an effluent management report and community onsite sewage management system design to service the new developments.

The property has a divergent ridge side landform with slight to moderate slopes (5-20%) and a relatively level area towards the eastern boundary near the proposed building lots. There are no nearby waterways but there is a large dam on the boundary with the golf course, and a mapped gully running near Bangalow Road. The property is not subject to flooding. There are several groundwater bores around the golf course (<250m) but are not for domestic use. The lot is heavily vegetated, and tree areas are mapped as of high environmental value. The building lots and proposed disposal area are mostly cleared with good exposure and ground cover. The soil landscape is Billinudgel and disturbed area. The soil profile in the disposal area is a constraining light clay that should be conservatively classified as category 6 medium-heavy clay due to disturbance and potential fill.

To accommodate the limited area, clay soil and environmental sensitivity, advanced secondary treatment, as provided by a Fuji Clean ACE1200, is recommended for each dwelling. Constraints to land application on each building lot are limited area, sloping areas, proximity to a large dam, and clay soils. Suitable available areas on each lot are limited and within 20m of the dam. With a community title, a community disposal area on the larger neighbourhood lot is suggested. A cleared, slightly sloping area is available on the neighbourhood lot but is limited by the dam and gully and protected trees. A small footprint land application that provides ancillary treatment, such as a Wisconsin mound, would be most suitable. To provide flexibility and avoid removal of trees, a separate mound for each dwelling is recommended but maintenance for all mounds would be the responsibility of the community neighbourhood management entity.

Wisconsin mounds are suitable for smaller lot areas with low permeability soil constraints. The Wisconsin mound was originally developed to provide secondary treatment and disposal for community sewage schemes in constrained areas. The raised mound provides enhanced evaporation and rainfall runoff, while the sand media filters treated effluent under cyclic aerobic / anerobic conditions providing effective denitrification and pathogen reduction before treated water enters the soil profile.

Mounds have been successfully used for highly constrained lots in northern NSW in combination with secondary or advanced secondary treatment. In domestic situations with secondary treated effluent applied at a basal design loading rate of 8mm/day, effluent is usually contained and evaporated within the mound system. The proposed land application method for the community disposal area for the 5 bedroom dwellings is a 140m² (7m x 20m) Wisconsin mound with 112m² (7m x 16m) mounds for the two x four bedroom dwellings.

The proposed sewage management system for the community title dwellings is a Fuji Clean ACE1200 system for each dwelling with treated effluent each pumping to a two 112m² and one 140m² Wisconsin mounds.

Contents

1 Introduction

This report has been prepared to assist the appropriate authorities assess the application to install three onsite wastewater management systems and a community disposal area for three new dwellings, each on a community title lot at 111 Bangalow Road, Byron Bay.

All tests & evaluations have been completed in accordance with, and this report has been prepared under the guidelines and requirements of:

- AS/NZS1547:2012 Onsite Domestic Wastewater Management (2012)
- Byron Shire Council Design Guidelines for On-site Sewage Management for Single Households (2004).
- NSW DLG Onsite Sewage Management for Single Households (1996).

Results and recommendations within this report are based on directions and information provided by the client, and conditions present at the time of testing. Any changes that affect the proposed land application area or alternate land application area may require a review of this report.

2 Desktop Research

2.1 Site imagery & mapping

Figure 1 – Byron Shire Council mapping imagery, with preliminary lot layout

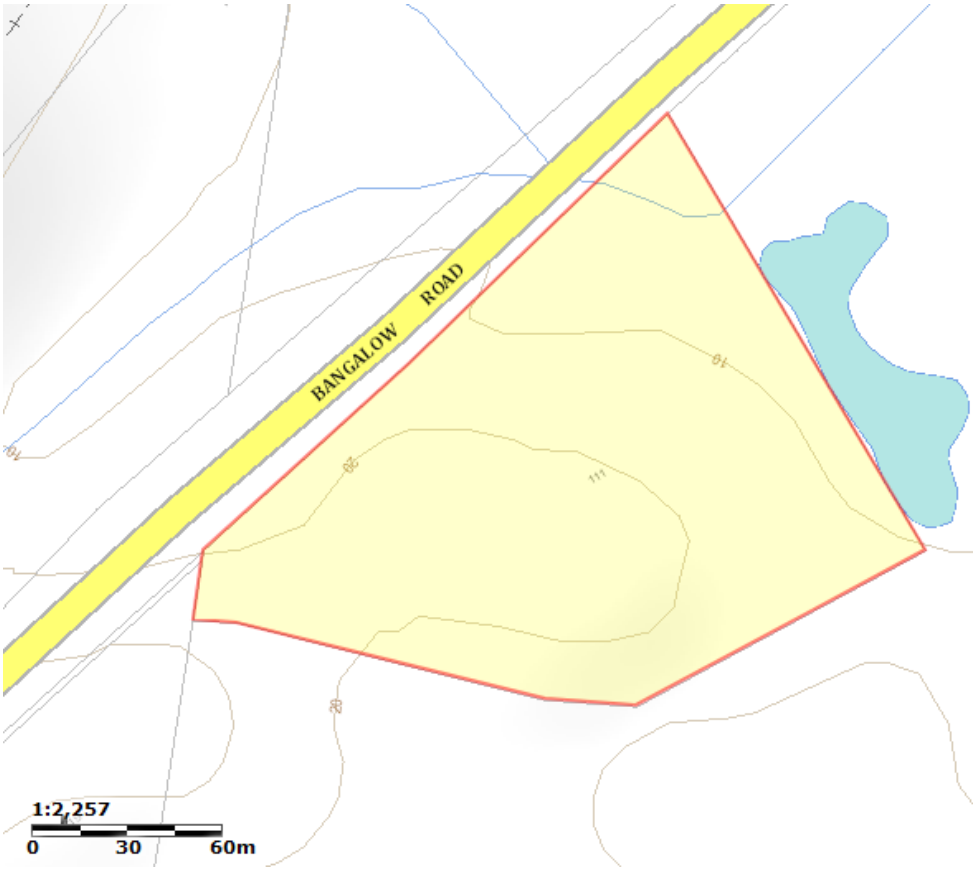


Figure 2 – NSW Six Maps Mapping of subject lot

2.2 Regional Climate Data

Table 1 - BOM Climate Data (Rainfall – Cape Byron AWS)

Climate	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean Rainfall (mm)	156.1	190.3	150.2	161.3	94.6	170.3	82.8	70.4	52.0	91.4	87.6	121.0	1422.1

2.3 Results of Desktop Research

Table 2 - Results of Desktop Research

Address	111 Bangalow Road, Byron Bay
Lot & DP	Lot 10 DP1200712
Owners	David Smith / Belcon Constructions
Location	-28.672156S, 153.605959E
Block Size	Lot 1 - 2066m², Lot 2 - 2188m², Lot 3 - 2732m², Lot 4 – 16.1178ha
Block Shape	Irregular
Land Use	R5 Large Lot Residential & 1C2 Small holding
Boundaries	Bangalow Road, RE2 and another R5 zoned lots
Geology	Bundamba Group
Soil information	Billinudgel & Disturbed Terrain (eSpade)
Climate Data (Bureau of Meteorology)	Rainfall 1422.1mm (Cape Byron), Evaporation 1640mm (CH MO) Mean temperatures: Max 18.9 – 28.0°C, Min 12.3 -21.3°C
Waterway / Gully	Waterways >100m, Dams on boundary<40m, Gully through NE corner
Registered Bores	Four bores <250m, not domestic
Acid Sulphate Soils	N/A
Potential for Flooding	Not subject to flooding
Existing Services	No services indicated
Limitations	Dam & gully <40m

Desktop research reveals an irregularly shaped R5 Large Lot Residential and 1C2 Small Holding zoned lot bordered by Bangalow Road, Byron Bay Golf Course (RE2) and another R5 zoned lot. The property has a divergent ridge side landform with slight to moderate slopes (5-20%) and a relatively level area towards the eastern boundary near the proposed building lots. There are no nearby waterways but there is a large dam on the boundary with the golf course, and a mapped gully running near Bangalow Road. The property is not subject to flooding. There are several groundwater bores around the golf course (<250m) not for domestic use. The lot is heavily vegetated, and tree areas are mapped as high environmental value. The soil landscape is Billinudgel with some disturbed areas.

2.4 Constraints Identified by Desktop Research

The building lots are constrained by size, sloping areas, mapped disturbed soil area, and proximity to a dam. The neighbourhood community lot is constrained by areas of moderate slope and high environmental value vegetation.

3 Site Investigation

3.1 Inspection details

A site inspection was undertaken on the 9th of April 2021. The weather on the day of inspection was overcast with some showers. Over 100mm of rainfall was recorded at Cape Byron during the previous week. The BOM AWRA water balance model reports a soil root zone moisture of 87.5% in the area for the day.

3.2 Lot Description

The property has heavily vegetated high relief areas, with cleared relatively level planar areas closer to the golf course and dam. The building lots have moderately sloping and relatively level areas with an easterly aspect. The level areas on the building lots are constrained by proximity to the dam.

3.3 Potential Land Application area

Even with potential terracing, there is little suitable area on each building lot due to slope or proximity to the dam. A potential land application area was identified on the neighbourhood lot with relatively level cleared area with a greater setback to the dam. With limited suitable area on each building lot, and a large community title lot, a community effluent disposal area is considered the most suitable solution for land applications.

Figure 3 Proposed community land application area

Figure 4 Typical borehole soil sample

3.4 Soil Sample Boreholes

Boreholes were excavated in potential land application and reserve areas and soil samples were collected for analysis. No groundwater or hard layer was encountered in boreholes to 900mm depth. Some stones were encountered in some boreholes, but there was no auger refusal, and no rock shelf was observed. To avoid duplication, reported soil properties and features are typical of collected samples rather than for specific boreholes.

3.5 Soil Profile / Borehole Log

Bore holes to 900mm revealed the soil profile to be consistent in structure and colour with depth and little difference between soil horizons was identified. Soil profiles were relatively dry, and no ground water was observed in boreholes to 900mm depth. Soil profiles were similar between boreholes.

3.6 Results of site investigation for potential land application areas

Table 3 - Results of Site Investigation

Landform	Mostly planar
Slope at LAA	<5%.
Aspect	Variable mostly flat
Vegetation	Established grasses, some trees
Exposure	Good, open to sun and wind
Surface Rock	None observed
Fill	None observed
Erosion	None observed
Upslope Seepage	Possible none observed
Drainage indicators	No signs of pooling or wet spots
Ground water	Not encountered in boreholes to 0.9m
Buffers & reserve area	Limited setback to dam. Limited reserve area available due to protected trees
Limitations	Limited setback to dam, protected trees

Desktop research and site inspection revealed limited suitable area on the flat level area due to proximity to the dam and protected trees.

4 Soil Assessment and Properties

Table 4 -Typical soil profile in LAA derived from boreholes

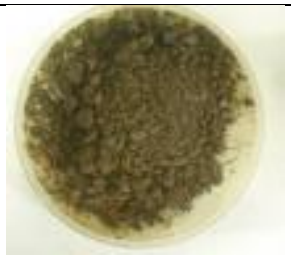
Field Texture	Ribbon Test	1:5 Solution (1hr)	Slake Test
0-300mm			
 Moderate structure	 Ribbon Length: 70-75mm	 Non-Dispersive	 Native peds – no slake Remoulds – no slake
600-900mm			
 Moderate structure	 Ribbon Length:70-75mm	 Non-Dispersive	 Native peds – no slake Remoulds – no slake

Table 5 - Soil Test Results – Typical for soil samples collected from multiple boreholes

Sample Dept (mm):	0 – 300	600-9000
pH (1:5):	6.2	6.2
EC (mS/cm):	0.13	0.13
Ribbon (mm):	70-75	70-75
Colour:	Light Brown	Light brown
Structure:	Moderate	Moderate
Soil Type:	Light clay	Light clay
Dispersive:	No	No
Air dry Peds (Emerson's):	No slake	No slake
Remould (Emerson's):	No slake	No slake
Gravel in soil (%):	Nil	Nil

Soil samples formed smooth hard boluses with moderate stain. Soil samples had a moderate structure. Ribbon lengths indicate samples as light clays. Soils are non-saline with pH within the range recommended for healthy plant and grass growth. Native peds and reworked peds showed little or no slaking. Solution testing (1:5) showed soils samples were not dispersive and fully flocculated after 30 minutes. Based on the most limiting layers, soils could be classified as category 5 light clays, but for design purposes, will be conservatively classified as moderately structured medium-heavy clays.

5 Site and Soil Constraints/ Risk Management

Combining the results of desktop research, site investigation and soil analysis, Table 6 lists and assesses the risk of each of the possible design constraints identified in AS/NZS 1547:2012 Appendix K.

Table 6- Site and Soil Constraint Assessment (AS/NZ1547:2012)

Site or Soil Constraint	Assessment of Possible Constraint	Risk
Small lot size	Lot size >1ha	Low
Steep slope	Slopes in LAA <5%	Low
Slope instability	None observed	Low
Shallow soil	Suitable soil depth >0.9m in proposed LAA	Low
Very shallow soil over bedrock	As above	Low
Seasonal waterlogging over perched water tables	No water in soils to 0.9m	Low
Shallow permanent water table	As above	Low
Ground water quality risk (cat. 1 & 2 soil)	Category 5 in absorbing layer	Low
Soils with low permeability (cat. 5 & 6)	Category 5 in absorbing layer	High
Dispersive or Sodic Soils	Negative	Low
Cold or Wet Climate	Temperate climate. Evaporation >1000mm per annum	Low
Hot or Dry Climate	Temperate climate. Mean rainfall >1000mm per annum	Low
Soil Salinity	Soil conductivity in normal range	Low
Susceptible ecological area or water bodies downslope	No nearby waterways (>100m), dams <40m. High ecological value tree areas	High
Periodic inundation /flooding	No flooding indicated	Low
Highly disturbed area or fill	Some disturbance indicated by mapping	High

With reference to AS/NZS1547:2012, a constraint to wastewater management for land application is the low permeability category 5 clay soil that with some past disturbance and the possibility of additional fill from internal road formation should be classified as category 6. Other constraints include potential proximity to a dam, and protected tree areas.

6 Design Flows

The proposed community development is for a five bedroom dwelling on Lot 2 and a four bedroom dwelling each on Lots 1 & 3. The system for the five bedroom dwelling on Lot 2 will be designated as system 1. The system for the four bedroom dwelling on Lot 1 will be designated as system 2, and the four bedroom dwelling on Lot 3 will be designated as system 3.

Town water is available to the site. AS/NZS1547:2012 recommends a design flow rate of 150 litres per person per day for dwellings with town water supplies. BSC has an equivalent person (EP) rate of number of bedrooms x 1.5.

Wastewater Load: **System 1**
5 bedrooms x 1.5 = 7.5EP
7.5 x 150l/p/d (tank water) = 1125l/day

The design flow for system 1 is 1125 litres per day.

Wastewater Load: **System 2 & 3**
4 bedrooms x 1.5 = 6EP
6 x 150l/p/d (tank water) = 900l/day

The design flow for systems 2 & 3 is 900 litres per day.

7 Treatment System

7.1 Primary Treatment

With potentially disturbed clay soil and available area limited by proximity to a dam and environmentally valuable native trees, higher level treatment is recommended.

7.2 Secondary Treatment

Standard secondary treatment might be suitable for development, but all currently accredited secondary treatment systems are required to meet the advanced secondary standard (AS1546.3:2017) by 31st December 2021 at which time their accreditation will expire. Due to high installation cost, poor medium term reliability and extreme customer dissatisfaction, True Water Australia does not recommend unaccredited subsurface wetland treatment systems for domestic sites.

7.3 Advanced Secondary Treatment

With clay soils and available area limited by proximity to a dam and environmentally valuable native trees, advanced secondary treatment with disinfection and nitrogen reduction as provided by a Fuji Clean ACE1200 is recommended. The high quality, nutrient reduced and disinfected effluent from the Fuji Clean ACE1200 will ensure long and reliable land application life. Each dwelling is to have a dedicated ACE1200 unit.

The following table lists the water quality parameter results from accreditation trials of the Fuji Clean ACE1200 tertiary treatment unit, using raw civic effluent at the Jimboomba wastewater treatment plant.

Table 7 AS1546.3:2017 Trial Results for Fuji Clean ACE1200 (Averages)

Parameter	Concentration
Biochemical Oxygen Demand (BOD)	<2 mg/l
Suspended Solids (SS)	2.9 mg/l
Total Nitrogen (TN)	14.79 mg/l
Total Phosphorus (TP)	10.33 mg/l
Faecal Coliforms [FC]	< 1 cfu/100ml

Extract of NSW Health accreditation for Fuji Clean ACE1200 – STS-AWTS042 (25th May 2020)

7. Reduction in Nutrient Levels

During the testing of the Fuji Clean ACE1200 AWTS the influent and treated effluent were tested for total Nitrogen (TN) and total Phosphorus (TP) concentrations.

AS1546.3:2017 requires a maximum Total Nitrogen of 15 mg/L and Total Phosphorous of 2 mg/L to pass the nutrient reduction test. While the Fuji Clean ACE 1200 passed TN it did not the TP result. The treatment process was found to:

- Reduce Total N by 79.05 %;
- Reduce Total P by 14.50 %.

The test report and test results should be consulted for further detailed information.

The recommended sewage treatment plant for systems 1, 2 and 3 is a Fuji Clean ACE1200.

8 Land Application System – Type and Size

Area on each building lot is limited by the lot size and building envelope, moderate to steep slope and or proximity to the downslope dam. The subdivision approval called for wastewater to be pumped from site to the Council's sewage system. A pumped connection to the nearest sewage main might not be practical or desirable for the owners, the neighbouring golf course, or Council's sewage infrastructure and zoning objectives.

With a community title and limited lot sizes in proximity to a dam, a community disposal area on the larger neighbourhood lot is suggested. The light clay / disturbed soil profile is a constraint that suggests subsurface drip irrigation. However, the irrigation area required would result in removal of environmentally valuable trees. A cleared, mostly level sloping area is available on the neighbourhood lot, but area is limited by the dam and gully and protected trees. A small footprint land application that provides ancillary treatment, such as a Wisconsin mound, would be most suitable. To provide flexibility and avoid removal of trees a separate mound for each dwelling is recommended but maintenance for all mounds would be the responsibility of the community neighbourhood management entity.

Wisconsin mounds are suitable for limited areas with low permeability soil constraints. The Wisconsin mound was originally developed to provide secondary treatment and disposal for community sewage schemes in constrained areas. The raised mound provides enhanced evaporation and rainfall runoff, while the sand media filters treated effluent under cyclic aerobic / anerobic conditions providing effective denitrification and pathogen reduction before treated water enters the soil profile.

Mounds have been successfully used for highly constrained lots in northern NSW in combination with secondary or advanced secondary treatment. In domestic situations with secondary treated effluent applied at a basal design loading rate of 8mm/day, effluent is usually contained and evaporated within the mound system.

8.1 Mound sizing

Mounds have an inclined profile that sheds most incident rainfall and prevents stormwater run-on from the soil absorption surface, along with enhanced capillary evaporation and vapour exchange, increased sun and wind exposure, internal temperature bio-generation and inherent robust wet weather storage independent of soil type, a typical subsoil water balance model, such as the Byron OSWM model cannot be applied to Wisconsin mound sizing.

For Wisconsin mounds, a design loading rate is used to determine the required area of the gravel distribution bed and the basal area required for the native soil below the mound. For the gravel distribution bed, the Design Loading Rate (DLR) for sand and gravel from AS/NZS1547:2012 Table 5.2 for secondary treated effluent of 50mm/day is used. For domestic situations in northern NSW a basal design loading rate of 8mm has proven successful for the most constraining soil profiles.

The following land application area (LAA) sizing equation for mounds is as provided by AS/NZS 1547:2012 for domestic situations.

A = Area of land application required in m^2
Q = Daily Design Flow Rate in litres/day
DLR = Design Loading Rate in mm/day

Distribution Bed Area

A = Q ÷ DLR

System 1

A = 1125L ÷ 50

A = 22.5m²

System 2 & 3

A = 900L ÷ 50 (DLR for gravel and sand from AS/NZS1547:2012 Table 5.2)

A = 18.0m²

Mound Basal Area

A = Q ÷ DLR

System 1

A = 1125L ÷ 8

A = 140.6m²

System 2 & 3

A = 900L ÷ 8

A = 112.5m²

The above calculation estimates mound basal areas of 140m² for system 1 and 112m² for systems 2 & 3. However, the final basal size of the mound can be limited by the size of the distribution bed. A 22.5m² distribution bed, 2m wide would have a length of 11.25m. To provide the 1 in 3 inclination requires side areas of 2.5m each to contain the 2m wide bed for a total width would be 7m. The total length to contain the bed would need to be at least 16.25m. To provide the basal area of 140m² for at 7m wide, the mound would be 20m long and the corresponding distribution bed would be 15m x 2m for a total area of 30m². The distribution bed area is not limiting to the mound basal area and effluent will be applied at lower than the standard distribution bed rate. The distribution beds for systems 2 & 3 will have an area of 11m x 2m = 22m².

The proposed land application for system 1 is a 140m² (20m x 7m) Wisconsin mound with a distribution bed area of 30m².

The proposed land application for systems 2 & 3 is a 112m² (16m x 7m) Wisconsin mound with a distribution bed area of 22m².

8.2 Nutrient Balances

With the Byron OSWM model not applicable to Wisconsin mound designs, it will be necessary to provide a nutrient area balance. With standards for advanced secondary treatment and nutrient reduction by treatment systems now recognised by AS1456:2017, a mass balance output to the receiving soil rather than the mass balance input into the treatment chain will be used. The proposed treatment unit for each dwelling is a Fuji Clean ACE1200 and accreditation results in Table 7 show an average nitrogen output concentration of 14.79mg/L and average phosphorus concentration of 10.33mg/l.

Most soil application systems can sustainably provide BOD and SS removal of greater than 90% and purification of faecal Coliforms and viruses of greater than 99.99% by filtration, sorption, and biodegradation processes (Siegrist et al. 2000)*. However, removal of nutrients including nitrogen and phosphorus is more dependent on conditions present within soil adsorption systems including soil saturation and retention time. Mounds are designed to provide ideal conditions for nutrient removal.

A 10-20% reduction of nitrogen can normally be achieved by a conventional soil adsorption system (Siegrist & Jenssen 1989, Westby et al. 1997, Converse 1999, cited by Siegrist et al. 2000)*. In soil systems designed for nutrient reduction, removal rates of over 50% can be normally achieved (Lance et al. 1976, Laak 1982; Seigrist & Jenssen 1989, Converse 1999, cited by Siegrist et al. 2000)*. Westby et al. (1997 cited by Siegrist et al. 2000)* found greater than 85% nitrogen removal for a dosed Wisconsin mound system. Blasing and Converse (2003)* found nitrogen reduction of at least 55% for Wisconsin mounds using AWTS treated effluent. Similar high nutrient reduction rates were reported for a recent Australian mound study at Port Stevens by Whitehead & Geary (2009)*. ** Referenced literature available on request.*

In a yet unpublished Australian study, under seasonal high load commercial conditions for a council caravan park, a Wisconsin mound has been found to reduce around 80% of nitrogen and phosphorus from secondary treated effluent. In local domestic situations it has not been possible to recover effluent samples for testing, as the conservative domestic sizing and enhanced evaporation and rainfall shedding features of the mound, prevents locating and collection of free water samples from within or below the base of the mound for testing. For the purposes of the nutrient balance the conservative removal rates for Wisconsin will be used.

Total Nitrogen

Byron Shire N limit = 10kg/year
The total daily wastewater design load = 1 x 1125L + 2 x 900L = 2925L/day
The total yearly wastewater design load =2925L x 365.25 days = 1,068,356.25 L/year
Average N output from Fuji Clean ACE1200 units = 14.79mg/l (NSW Health accreditation)
Yearly N load = 14.79mg x 1,068,356.25 L/year = 15,800,988.9mg = 15.801kg
Default N loss for disposal bed = 20% (from OSWM model)
Conservative N loss for Wisconsin Mound disposal = 55%
Total N load = 15.801kg – 55% = 7.1kg

N Plant uptake rate (from OSWM model) = 200/kg/ha/yr
Total mound area including 1m periphery = 522m² = 0.0522ha
N plant uptake = 0.0522ha x 200/kg/ha/year= 10.44kg
Total environmental N load = 7.1kg - 10.44kg (plant uptake) = - 3.34kg

Total Phosphorus

Yearly P load = 10.33mg x 1,068,356.25 L/year = 11,036,120.0mg = 11.036kg
Conservative P loss for Wisconsin Mound disposal = 55%
Total P load = 11.036kg/yr – 55% = 4.966kg/yr

P Plant uptake rate (from OSWM model) = 10/kg/ha/yr
Total mound area including 1m periphery = 522m² = 0.0522ha
P plant uptake = 0.0522ha x 10/kg/ha/year= 0.522kg/year
Remaining P Load 4.966 kg/yr – 0.522kg/yr = 4.444kg/yr
50 year P load = 50 x 4.444kg = 222.2kg

P sorption for Billinudgel soil landscape = 8,000kg/ha/m (from OSWM model)
Depth to bedrock / water table = 3m (from OSWM model)
Total P sorption = 24,000kg/ha
Total mound area including 1m periphery = 522m² = 0.0522ha
P sorption for mound area = 0.0522ha x 24,000kg/ha/m= 1252.8kg
50 year P load – P sorption = 222.2kg -1252.8kg = -1030.6kg
Remaining P sorption = 1030.6kg
Estimated P sorption life = 281.9 years

Assuming a conservative 55% nutrient removal rate by the proposed Wisconsin mounds, and using a mass balance modelling, nutrient is demonstrated not to be limiting to the land application sizing.

8.3 Setback Distances for Land Application Area

When locating the disposal area on the lot the following buffer distances will be used.

Table 8 - Site Feature Setback Distances

Site Feature	Land Application Area Offset Distance (m)
River or waterway	100
Dam, Water Course	20*
Down slope building or property boundary	6
Up or cross slope building or property boundary	3
Swimming Pools (downslope)	3
Adjacent Disposal Areas	2

*Reduced standard setback

The proposed design requires a reduced standard setback (<40m) to the golf course dam and an intermittent mapped as on the lot. The dam is used for golf course irrigation and the gully appears to have been diverted from the mapped position via a road culvert connecting with the dam and may no longer flow across the lot.

AS/NZS1547:2012 Table R2 offers guidance on reduced setbacks in relation to site constraints. Of the site constraints listed in the table R2 the variables that can be altered by design are the microbial quality of the effluent and the application method. The recommended design includes the highest available level of treatment with nutrient reduction and disinfection that reduces microbes to the lowest practical level (<1CFU/100ml), and a Wisconsin mound that further reduces pathogens and nutrients.

AS/NZS1547:2012 Tables R1 & R2 provide recommended setback ranges and a scale of constraints that can be used to determine an appropriate minimum setback to a building, boundary or sensitive feature. Table 9 evaluates the scale of constraints in Table R2 to justify the use of setbacks within the recommended range in Table R1.

Table 9 – Evaluation of design and site features in relation to setback distances

Site feature	**Constraint level**	**Mitigating factor**
A: Microbial quality of effluent	Low	Tertiary AWTS and ancillary mound treatment
B: Surface Water	Moderate	Surface water between 15m-100m
C: Ground water	Low	Non domestic bores, used for irrigation
D: Slope	Low	Slope <5%
E: Elevation within landscape	Low	Elevation similar to dam, Slope <5%
F: Drainage	Low	Category 6 soils, slow to drain
G: Flood potential	Low	Site above 1:100 year flood level
H: Geology and soils	Low	No bedrock in area
I: Landform	Low	Planar
J: Application method	Low	Above surface disposal

Of the constraints listed in AS/NZS1547 Table J2 the moderate setback distance to the dam is the nominated constraint and other design and landform features are at the lower end of on the constraint scale. The design of advanced secondary treatment and ancillary polishing and above ground disposal is specifically intended to accommodate the constraint. The setback to the dam is not less the 15m to surface water recommended by the standard.

8.4 Reserve Area

Reserve area is available on the large community lot but would require the removal of trees with high ecological value. The proposed treatment system is of the highest standard and the proposed land application is the most robust. Should reserve area be required for expansion, some area remains for extension of the mounds. In the unlikely case of failure, the existing mounds could be repaired or replaced with soil import if necessary. Should additional area be required, elsewhere on the lot, an ecologist should be consulted to determine the most suitable area at the time required after development. Reserve area is available but will not be allocated at this time.

8.5 Setback to Ground Water Bores

There are no domestic ground water bores within 250m of the proposed land application area.

8.6 Soil treatment and Vegetation

While soil pH is within the range suggested for healthy plant and grass growth, ripping and dressing the base of the proposed mound with lime and gypsum may promote plant growth and nutrient absorption. If additional plantings are desired, then care must be exercised in the selection and positioning of trees to ensure they do not shade disposal areas or clog piping systems with root networks.

9 Responsibilities of Developer / Owner / Resident

The design provided with this report is suitable for domestic wastewater flows but is not intended for commercial or trade waste or the acceptance of large flows of kitchen fats, oils or grease. Should influent flows exceed typical domestic flow rates or concentrations, it is owner's responsibility to arrange additional treatment and disposal infrastructure if necessary.

9.1 Required Maintenance

The following items need to be carried out in order to maintain optimum performance and prolong the life of the system's components:

9.1.1 Treatment System

- Ensure power supply to the unit is switched on
- Ensure system is serviced quarterly by a qualified service agent
- Operate system according to the specifications and user manual
- Clean grease trap (if installed) every two months
- Keep a record of maintenance and servicing
- Know the location of the system components
- Have the primary chamber pumped every three years or when solids build-up is excessive
- Ensure household products are suitable for disposal through the system
- Where possible use biodegradable liquid detergents with low phosphorus
- Ensure system is insect and vermin proof
- Conserve water
- Do not overload the system with bleaches and other unsuitable products
- Do not allow foreign matter (eg; nappies, sanitary napkins) to enter the system

9.1.2 Land Disposal Area

- Ensure roof water and runoff is directed away from disposal area
- Keep grasses regularly mowed and plant prescribed trees
- Fence disposal area where applicable
- Ensure appropriate warning signs are erected
- Do not erect any form of structure on the disposal area
- Do not plant large trees that will shade the area
- Do not use the wastewater for irrigation of food products
- Do not extract untreated groundwater for potable use
- Do not allow vehicles to traverse the application area

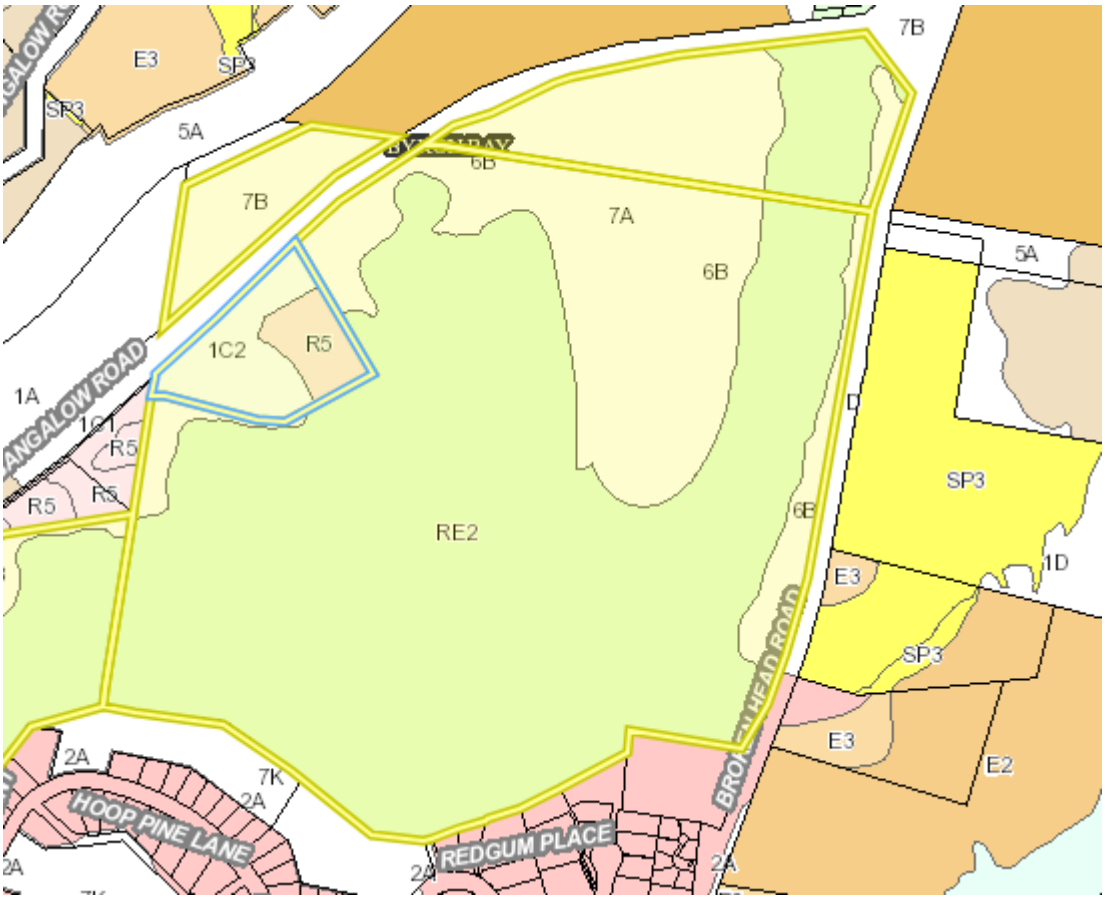
Inappropriate use and maintenance of on-site wastewater systems can have adverse impacts such as the spread of disease by bacteria, viruses, parasites, and other organisms. Wastewater can contaminate ground and surface water, cause odours and be dangerous to community health. NSW Health requires that all aerated treatment systems be serviced by a qualified service professional every three months.

PN 267455 111 Bangalow Rd Byron Bay Draft Map

0 25 50 Metres

1:919 @ A3 size

Date: 29/10/2019


E3
SP3
5A
7B
6B
7A
1C2
R5
1A
1C1
RE2
SP3
1D
E3
E2
2A
7K
HOOP PINE LANE
REDGUM PLACE

(A) EASEMENT FOR STORAGE & IRRIGATION OF RECLAIMED WATER VARIABLE WIDTH BY DP.1090857.
(B) EASEMENT FOR ELECTRICITY PURPOSES 1, 2 & 10 WIDE BY DP.1090857.
(C) EASEMENT FOR WATER SUPPLY 2.5, 5.03, 6 WIDE & VARIABLE WIDTH BY V9158l4 (DP.636798).
(D) EASEMENT FOR PIPELINE 5 WIDE BY V5l5456 (DP.632133).

PT II
(1.845ha DEDN)

7
D.P.264161

9° 15' 20" 149.125 DEDN (D.P.227606)

49° 37' 05" 246.265 (R33733 1603)

ROAD (VARIABLE WIDTH)

BANGALOW

RMGIP FD
251°37'50"
3.68
(D.P584847)

48° 08' 20" 87.94

20" 47.98

"V"
RMGIP FD
120°35'20" 0.585
(D.P.259591)

15' 22.44

"R"

273°05'05"
14

189° 122.795

284° 21' 30" 100.515 (E)(F)(H)

274° 27' 40" 29.4

RMGIP FD
189°08'20" 0.725
(D.P.227607)

DIAGRAM
RR 1:1000

BW FENCE 40 YRS OLD

46°

34' 113.875

25" 10.635

"T"

RMGIP
150°26'20"
6.09

149° 45' 25" 160.28

RMGIP
149°45'
1.66
"S"

SEE DIAGRAM A

332°06'45"
10

242° 06' 45" 103.94

10
2.3ha
(F)

10
2.3ha
(F)

332° 06' 45" 10.635 (E)(F)(H)

242° 06' 45" 103.94

(31)

(1.5) (G)

62°06'45"
1.5

152°06'45"
1.5

PT II
41.52ha DEDN
(39.67ha DEDN)

DIAGRAM A
RR 1:200

RAILWAY LAND

1 D.P.256829

(1) (2) (3)

PT II
(1.845ha)
DEDN

9°15'20" 149.125 (D.P.227606)

49°37'05" 246.265 (R33733 1603)

(VARIABLE 46°34'25" 113.875

48°08'20" 87.94

48°48'10" 52.487

55°

46°34'25"
10.635

35' WIDTH) 109.58

PEG &
RMGIP FD
279°25'50" 0.71
(D.P.39458)

35" 72°16'20" 32.7 45.627

64°28'20" 72.425

78°46' 128.452

"W"
RMGIP FD
83°50' 0.503
(R33733 1603)

ROAD

"Y"
PM74258 FD
(ESTABLISHED)

360
D.P.704247

365
D.P.704227

99° 06' 20" 469
(D.P.704227)

(A)
(C)

7
D.P.264161

SEE DIAGRAM

10
2.3ha
(F)

"V"
22.44

20" 15' 189° 122.795

1
D.P.259591

2

RMGIP FD
189°08'20" 0.725
(D.P.227607)

189°15'20"
40.295
(D.P.227606)

66°52'15" 1248.22 BY ME
66°52'15" 1248.222 G.DIST BY MGA

PT II
41.52ha DEDN
(39.67ha DEDN)

DIAGRAM

(A)(C)
10°20' 389.6
(D.P.243125)

190°43'21" 451.685 BY ME
190°43'33" 451.702 G.DIST BY MGA

HEAD ROAD

PM42274 FD
(ESTABLISHED)

267°29'48" 1064.865 BY ME
267°29'51" 1064.841 G.DIST BY MGA

"X"
PM74546 FD
(ESTABLISHED)

13
D.P.227607

189°08'20" 166.87 (D.P.227606)

96°54'20" 128.405 (D.P.227606)

125°41'20" 85.58 (D.P.227606)

128°39'20" 108.33 (D.P.227606)

(D)

31
D.P.1013623

CANIABA CRESCENT

7
D.P.1115281

TEAK CIRCUIT

97°52'20" 55.04 (D.P.227606)

71°32'20" 103.13 (D.P.593474)

62°37'30" 125.28 (D.P.593474)

4°59'50" 22.375 (D.P.593474)

98°57'50" 118.11 (D.P.593474)

S.P.67322

S.P.53922

D. P. 8 4 2 1 0 5

20 19 10 21

REDGUM PLACE

(A)(B)

15°55'20" 80.47 (D.P.243125)

21°00' 59.485 (D.P.243125)

31°43'20" 52.95 (D.P.243125)

BROKEN (VARIABLE WIDTH)

MGA

PM CONNECTIONS TO CORNERS

PM74546 - CORNER "R" 62°44'25" 394.44
PM42274 - CORNER "S" 287°51'05" 504.995
PM74258 - CORNER "T" 256°52'20" 662.77

(E) EASEMENT FOR GOLF BALL FLIGHT 10 WIDE.
(F) EASEMENT FOR NOISE VARIABLE WIDTH.
(G) RIGHT OF ACCESS 1.5 WIDE.
(H) RESTRICTION ON USE 10 WIDE.

SHORT BOUNDARIES

N°	BEARING	DIST	TAKEN FROM
1	63°54'50"	149.87	R4962 1759
2	99°06'20"	85.92	D.P.39458
3	54°40'40"	68.24	R3373 1603

COMPARISON

CORNER "V" TO CORNER "W"
58°58'27" 639.053 BY ME
49°43'37" 639.022 BY R33733 1603

SURVEYING & SPATIAL INFORMATION REGULATION 2012 CLAUSE 35(1)(b) & CLAUSE 61(2)

MARK	MGA EASTING	MGA NORTHING	CLASS	ORDER	METHOD	ORIGIN
PM42274	559742.462	6827965.603	B	2	FROM SCIMS	SCIMS
PM74258	559826.497	6828409.252	B	2	FROM SCIMS	SCIMS
PM74546	558679.027	6827919.124	C	3	FROM SCIMS	SCIMS

MGA Co-ordinates adopted from SCIMS as at 3RD APRIL 2014
COMBINED SCALE FACTOR = 0.999634 Zone 56.

Surveyor: SCOTT ANTHONY THOMPSON Date of Survey: 29TH APRIL 2014 Surveyor's Ref: 2712a CHECKLIST	PLAN OF SUBDIVISION LOT 6 D.P.593474	LGA: BYRON Locality: BYRON BAY Subdivision No: Lengths are in metres. Reduction Ratio 1:3000	Registered	

10 20 30 40 50 Table of mm 80 90 100 110 120 130 140