MATERIAL CHANGE OF USE – DUAL OCCUPANCY – 61 BARCLAY ROAD, BRINSMEAD – DIVISION 6

Claire Anderson | 8/8/1530 | #6169060

PROPOSAL: DUAL OCCUPANCY
LANDOWNER: K V MOXON & J V MOXON
APPLICANT: K V MOXON & J V MOXON
C/- T LAWSON
PO BOX 349
EDGE HILL QLD 4870

LOCATION OF SITE: 61 BARCLAY ROAD, BRINSMEAD

PROPERTY: LOT 4 ON SP177748

ZONE: ENVIRONMENTAL MANAGEMENT – PRECINCT 1 RESIDENTIAL

LOCAL PLAN: NONE

PLANNING SCHEME: CAIRNSPLAN 2016 V1.2

REFERRAL AGENCIES: NONE

NUMBER OF SUBMITTERS: THREE (3) PROPERLY MADE SUBMISSIONS, INCLUDING ONE (1) PETITION

STATUTORY ASSESSMENT DEADLINE: 30 AUGUST 2019

APPLICATION DATE: 5 FEBRUARY 2019

DIVISION: 6

APPENDIX: 1. APPROVED PLAN(S) & DOCUMENT(S) 2. NOTICE OF INTENTION TO COMMENCE USE 3. FNQROC STANDARD DRAWINGS 4. INFRASTRUCTURE CHARGES NOTICE 5. SUPPORTING INFORMATION
LOCALITY PLAN:

RECOMMENDATIONS:

A. That Council approves the Development Application for a Dual Occupancy over land described as Lot 4 on SP177748, located at 61 Barclay Road, Brinsmead, subject to the following:

APPROVED DRAWING(S) AND / OR DOCUMENT(S)

The term ‘approved drawing(s) and / or document(s)’ or other similar expressions means:

<table>
<thead>
<tr>
<th>Drawing Document</th>
<th>Reference</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>Site Plan</td>
<td>Lawson Design, Drawing No. CRC1p, Council Reference #6027668</td>
<td>20 December 2018</td>
</tr>
<tr>
<td>Elevations</td>
<td>Lawson Design, Drawing No. CRC5, Council Reference #6027668</td>
<td>20 December 2018</td>
</tr>
<tr>
<td>Landscaping Plan</td>
<td>Lawson Design, Drawing No. CRC4, Council Reference #6027668</td>
<td>20 December 2018</td>
</tr>
<tr>
<td>Drainage</td>
<td>Lawson Design, Drawing No. CRC3, Council Reference #6027668</td>
<td>20 December 2018</td>
</tr>
</tbody>
</table>
Assessment Manager Conditions

1. This approval, granted under the provisions of the *Planning Act 2016*, shall lapse six (6) years from the day the approval takes effect in accordance with the provisions of Section 85 of the *Planning Act 2016*.

2. Carry out the approved development generally in accordance with the approved drawing(s) and/or document(s), and in accordance with:-
   
a. The specifications, facts and circumstances as set out in the application submitted to Council;

b. The following conditions of approval and the requirements of Council’s Planning Scheme and the FNQROC Development Manual.

   Except where modified by these conditions of approval

Timing of Effect

3. The conditions of the Development Permit must be effected prior to Commencement of Use, except where specified otherwise in these conditions of approval.

Notice of Intention to Commence Use

4. Prior to commencement of the use on the site, written notice must be given to Council that the development fully complies with this Development Permit. Please return the attached “Notice of Intention to Commence Use” form when the use has commenced (Attached as Appendix 2).

Operational Works

5. A Development Permit for Operational Works is required for all internal earth works, driveway/access and drainage works, restoration and revegetation works, and landscaping works associated with the development.

   All such works must be completed to the satisfaction of the Chief Executive Officer prior to Commencement of Use or the Certificate of Classification, whichever occurs first.
Parking and Access

6. The amount of vehicle parking must be a minimum of two (2) spaces per dwelling, of which one (1) space per dwelling must be under cover.

The car parking, driveway and manoeuvring layout must comply with the Australian Standard AS2890.1 2004 Parking Facilities – off-street car parking and be constructed in accordance with Austroads and good engineering design. In addition:

a. Manoeuvring space must be provided to enable all vehicles to enter and exit the site in forward gear; and

b. All parking, driveway and vehicular manoeuvring areas must be imperviously sealed and drained and constructed generally in accordance with FNQROC Standard Drawing S1110E (refer Appendix 3).

All parking spaces must be available for use at the time of Commencement of Use.

Water Supply and Sewerage Works Internal

7. Undertake the following water supply and sewerage works internal to the subject land:

a. The development must be serviced by a single internal water and sewerage connection made clear of any buildings or structures; and

b. If insufficient pressure is available at the house pad the owner is to install a privately owned booster pump. Any pump required must be located within the property it serves and be supplied, installed and maintained at the owner’s expense.

All the above works must be designed and constructed in accordance with the FNQROC Development Manual.

All works must be carried out in accordance with the approved plans, to the requirements and satisfaction of the Chief Executive Officer prior to Commencement of Use.

Geotechnical Assessment

8. The Applicant/Owner/Developer must provide either:

a. A site specific Geotechnical Assessment, to determine the soil classification and inform the design of appropriate footings. The assessment must be certified by a Registered Professional Engineer Queensland (RPEQ).
Laboratory testing results supplied with the Geotechnical Assessment must be undertaken by a National Association of Testing Authority (NATA) certificated laboratory. All investigations, testing and design must be undertaken in accordance with industry practice and the provisions of relevant Australian Standards; or

b. Provide an Amended Certification from a Registered Professional Engineer Queensland (RPEQ) (Civil or Structural) that in their professional opinion the development as per the Approved Plans, in conjunction with the site conditions and constraints does not require a Geotechnical Assessment as detailed in Item 8(a).

A copy of the Geotechnical Assessment or Amended Certification must be provided to the Chief Executive Officer prior to the issue of a Development Permit for Building Work.

Retaining Structures – Design and Construction

9. All retaining structures must comply with the following:

a. Retaining structures and associated footings must be designed and constructed in accordance with the requirements of AS4678 – Earth-retaining Structures;

b. Retaining structures and associated footings must comply with the FNQROC Development Manual, including, but not limited to Section D2 – Site Regrading;

c. Retaining structures must be designed and constructed to take surcharge loadings, where applicable. Design drawings must indicate the point of discharge for surface stormwater and sub soil drainage that is collected behind the retaining structure;

d. Footings of retaining structures should be designed and sited such that they do not result in the erosion of a watercourse or drainage embankment; and

e. All retaining structures greater than 1.0m in height, regardless of their intended function, shall have structural certification provided by a Registered Professional Engineer Queensland (RPEQ).

Details of the above must be submitted as part of the Development Application for Operational Works.
Batter Treatment

10. All existing and proposed batters must be maintained and constructed in a manner that minimises the construction footprint and have the ability to be screened. In instances where batters exceed 1.8 metres in height, the following details must be submitted:

   a. Details of the specific means of supporting or retaining to be used. This must include a geotechnical report supporting each of the proposed treatment(s) at each location;

   b. Drawings (plans, longitudinal and cross sections) showing the extent of the proposed treatments at each location;

   c. Details of drainage structures above and/or below each batter; and

   d. Methods to be used to minimise the visual impact of the batter(s).

Details of the proposed construction methods to be used to achieve this must be submitted to Council in conjunction with a Development Application for Operational Works.

Electricity and Telecommunications

11. The Applicant must provide written evidence from the electricity and telecommunications authorities stating that underground services have or will be provided to each lot prior to Certificate of Classification or Commencement of Use, whichever occurs first.

   Such evidence from an electricity provider (Ergon Energy) must be in the form of a “Certificate of Supply”, or alternatively a receipt for the full payment of the amount detailed under an “Offer of Supply”.

   Such evidence from a telecommunications provider (NBN Co.) must be in the form of a receipt for the full payment of the NBN Co. “Development Application” or alternatively provide Council with a copy of the NBN Co. “Council Letter”.

Drainage Conditions

12. The Applicant/Owner/Developer must design and construct, at no cost to Council, all necessary stormwater management and drainage works (internal and external to the site) required to satisfactorily drain the subject land in accordance with the recommendations outlined in the Local Drainage Study prepared by Rodgers Consulting Engineers 16 July 2019, Council Reference #6135133. In particular, the additional measures as noted in the “Existing slab crossing of gully” and “Conclusion” sections of the Local Drainage Study must be implemented, being:
a. Upgrade of the existing slab crossing of the gully to provide Q100 immunity via the provision of a channel or culvert opening of 2600mm x 600mm;

b. Stabilisation of exposed earthworks and batters with hydro mulching or other vegetation;

c. Implementation of appropriate Erosion and Sediment Control measures during the course of the new construction;

d. Removal of logs, dead wood and other debris within the gully that could block the downstream pipe; and

e. Stabilisation and regular maintenance of the sediment basin.

Final details of the above drainage measures should be submitted in conjunction with the Development Application for Operational Works. All works must be carried out in accordance with the Approved Plans, to the requirements and satisfaction of the Chief Executive Officer prior to Commencement of Use.

Restoration and Revegetation Plan

13. Restoration and revegetation works (including but not limited to) weed eradication, restoration of the waterway (removal of cut vegetation) and revegetation planting to provide a vegetation buffer on the eastern boundary is required. The Restoration and Revegetation Plan must be prepared by a project environmental consultant or a suitably qualified person, and must include:

a. Weed management methods to be employed to eradicate and monitor existing environmental and invasive weeds and prevent the import and export of weeds to and from the site. The plan must identify the roles and responsibilities of stakeholders and direction and duration for pest management activities;

b. Details and specifications for a minimum six (6) metre wide native buffer planting adjacent to the eastern property boundary (excluding the location of the Dual Occupancy and associated access/services).

c. A mixture of local native shrubs and trees;

d. Plant spacing at a maximum of one (1) metre centres; and

e. A planting schedule including, botanic names, quantities, container size
A Restoration and Revegetation Plan must be submitted to and endorsed by the Chief Executive Officer as part of the Development Application for Operational Works. The endorsed works must be implemented and inspected by Council prior to Commencement of Use or the Certificate of Classification, whichever occurs first.

Protection of Vegetation

14. Existing vegetation on the subject land must be retained in all areas, unless:

a. Identified as a tree to be removed on the Approved Landscaping Plan;

b. Identified as an *Spathodea campanulata* more commonly known as the African Tulip Tree; or

c. Those areas affected by the construction of access driveways and/or the installation of services as detailed on the Approved Plans.

Any further proposed clearing must be detailed on the Restoration and Revegetation Plan for endorsement or requires a Development Permit for Operational Works.

15. Existing native vegetation to be retained must be protected in accordance with the Australian Standard 4970 Protection of Trees on Development Sites.

16. Excavation and fill is not permitted within the structural root zones of the significant *Alstonia scholaris*, Milky Pines. A minimum two (2) meter buffer area with protective fencing must be installed around these trees throughout construction.

Landscaping Plan

17. Landscaping is required following the completion of building works on all batters adjacent to the driveway, waterway and the northern boundary. The Landscaping Plan must be prepared by a Landscape Designer/Landscape Architect and be submitted as part of the Development Application for Operational Works. The Landscaping Plan must include:

a. Details of the existing vegetation to be retained;
b. Details and specifications for site preparation, weed eradication, planting, mulching, watering and maintenance;

c. A planting schedule including, botanic names, quantities, container size to include native species only.

d. Inclusion of shrubs and trees for soil stability; and

e. Provisions to ensure landscaping will not adversely impact the function of the waterway.

A Landscaping Plan must be endorsed by the Chief Executive Officer as part of the Development Application for Operational Works. The endorsed landscaping must be implemented and inspected by Council’s Environmental Officer prior to Commencement of Use.

External Colours and Materials

18. The exterior finishes and colours of the proposed dwelling and any retaining walls are non-reflective and blend with the natural colours of the surrounding environment. Roofs and structures (including water tanks) must be of moderately dark to darker shades of green, grey, blue and brown.

The selected colours and materials must be submitted to, and endorsed by the Chief Executive Officer prior to the issue of a Development Permit for Building Work.

Damage to Infrastructure

19. In the event that any part of Council’s existing sewer, water or road infrastructure is damaged as a result of construction activities occurring on the site, including but not limited to; mobilisation of heavy construction equipment, stripping and grubbing, the Applicant/Owner must notify Cairns Regional Council immediately of the affected infrastructure and have it repaired or replaced at the Developers/Owners/Builders cost prior to Commencement of Use.

Sediment and Erosion Control

20. Soil and water management measures must be installed/implemented prior to discharge of water from the site, such that no external stormwater flow from the site adversely affects surrounding or downstream properties (in accordance with the requirements of the Environmental Protection Act 1994, and the FNQROC Development Manual).
Concentration of Stormwater

21. The proposed development must not create ponding nuisances and/or a concentration of stormwater flows to adjoining properties.

Lawful Point of Discharge

22. All stormwater from the property must be directed to a lawful point of discharge such that it does not adversely affect surrounding properties or properties downstream from the development, to the requirements and satisfaction of the Chief Executive Officer.

Stockpiling and Transportation of Material

23. Soil used for filling or spoil from earthworks carried out on the site is not to be stockpiled in locations that can be viewed from adjoining premises or a road frontage for any longer than one (1) month from the commencement of works. Transportation of fill or spoil to and/or from the site must not occur:
   a. before 7:00am or after 6:00pm Monday to Friday;
   b. before 7:00am or after 1:00pm Saturday; and
   c. at any time on a Sunday or Public Holiday.

24. Dust emissions or other air pollutants must not extend beyond the boundary of the site and cause nuisance to surrounding properties.

Storage of Machinery and Plant

25. The storage of any machinery, material and vehicles must not cause a nuisance to surrounding properties to the satisfaction of the Chief Executive Officer.

ADVICE

1. All building site managers must take all action necessary to ensure building materials and/or machinery on construction sites are secured immediately following the first cyclone watch and that relevant emergency telephone contacts are provided to Council Officers, prior to commencement of works.

2. This approval does not negate the requirement for compliance with all other relevant Local Laws and other statutory requirements.
Infrastructure Charges Notice

3. A charge levied for the supply of trunk infrastructure is payable to Council towards the provision of trunk infrastructure in accordance with the Infrastructure Charges Notice. The original Infrastructure Charges Notice will be provided under cover of a separate letter.

The amount in the Infrastructure Charges Notice has been calculated according to Council’s Infrastructure Charges Resolution.

Please note that this Decision Notice and the Infrastructure Charges Notice are stand-alone documents. The Planning Act 2016 confers rights to make representations and appeal in relation to a Decision Notice and an Infrastructure Charges Notice separately.

The amount in the Infrastructure Charges Notice is subject to index adjustments and may be different at the time of payment. Please contact the Planning Approvals Team at council for review of the charge amount prior to payment.

The time when payment is due is contained in the Infrastructure Charges Notice.

4. Council will be implementing “smart” meters during the currency of this development. The Plumbing contractor must confirm with Council, at the time of making a Development Application for Plumbing Works, what they type of sub meter should be installed.


LAND USE DEFINITIONS*

In accordance with CairnsPlan 2016 v1.2 the approved land use of Dual Occupancy is defined as:

Premises containing two dwellings, each for a separate household, and consisting of:

- a single lot, where neither dwelling is a secondary dwelling; or
- two lots sharing common property where one dwelling is located on each lot.

*This definition is provided for convenience only. This Development Permit is limited to the specifications, facts and circumstances as set out in the application submitted to Council and is subject to the abovementioned conditions of approval and the requirements of Council’s Planning Scheme and the FNQROC Development Manual.
B. That the following Rates Notation be placed on Council's future rates record for the Lot:

**Water Supply**

1. The property owner is responsible for providing adequate pressure to the Dual Occupancy. Any pump required must be supplied, maintained and replaced at the owner's expense.

EXECUTIVE SUMMARY

Council is in receipt of a Development Application for Material Change of Use ‘Dual Occupancy’ on land at 61 Barclay Road, Brinsmead, formally described as Lot 4 on SP177748.

The development involves the retention of the existing Dwelling House and the construction of an additional single storey, three (3) bedroom dwelling, located on the north-eastern portion of the site. The proposed dwelling is to be located on an existing benched site, and vehicular access is to be provided via the existing crossover and driveway to the site. An internal driveway will be constructed, and an existing culvert which is located over a drainage channel will be upgraded as a result of the development.

The subject site has a total area of 4,862m² in a battle-axe configuration, is heavily vegetated, and is sloping with a downward slope toward Barclay Road. The site includes an existing Dwelling House on the western-most portion of the subject site, and a Garden Shed, located in the centre of the site. Vehicular access is provided via a concrete driveway, which extends from Barclay Road to the existing Dwelling House.

The site is located within the Environmental Management Zone – Precinct 1 Residential Zone of CairnsPlan 2016 v1.2. The site is also affected by the Hillslopes Overlay, Landscape Values Overlay, Natural Areas Overlay and Potential Landslip Hazard Overlay. A Dual Occupancy is impact-assessable in the Environmental Management – Precinct 1 Zone.

The development was subject to a period of Public Notification which occurred for 15 business days from 8 April 2019 until 1 May 2019. Three properly made submissions were received, which included one petition with sixty-nine (69) signatures. All submissions did not support the proposed development.

Officers have assessed the proposed development in accordance with the relevant Assessment Benchmarks of CairnsPlan 2016 v1.2, with consideration afforded to the Assessment Benchmarks under the Planning Regulations 2017, FNQ Regional Plan 2009-2031 and the Local Government Infrastructure Plan (LGIP). Additionally, consideration has been afforded to all properly made submissions which were received during the Public Notification period.
The proposed development is considered to generally be an appropriate outcome for the subject site, when considering the proposed development in the context of the site. In assessing the proposed development, reasonable and relevant conditions have been recommended to ensure compliance with the Assessment Benchmarks of the CairnsPlan 2016 v1.2.

The recommendation was presented to the Ordinary meeting on 28 August however was deferred by Council until the meeting of 11 September. No changes have been made to the recommendation as originally presented.

**TOWN PLANNING CONSIDERATIONS**

**Background**

The subject site has a total area of 4,862m$^2$ in a battle-axe configuration, is heavily vegetated, and is sloping with a downward slope toward Barclay Road. The site includes an existing Dwelling House on the western-most portion of the subject site, and a Garden Shed, located in the centre of the site. Vehicular access is provided via a concrete driveway, which extends from Barclay Road to the existing Dwelling House.

The site is burdened and benefited by an Easement, being Easement C on SP177748, which is for drainage purposes. The Easement intersects the centre of the site, and extends from the northern boundary to the southern boundary, and continues through adjoining Lot 3 on SP177748 and Lot 99 on RP741251, discharging to Curlewis Close.

The site is also burdened by Easement A on SP177748, which provides vehicular access to Lot 4 on SP269688. An aerial image of the site which identifies the Easements (in ‘green’) is included below for reference:
The site is typically surrounded by single detached Dwelling Houses, and adjoins Conservation Zoned land to the north which is owned by Cairns Regional Council.

**Proposal**

The proposal seeks the establishment of a Dual Occupancy over the subject site. In particular, the proposed development involves the construction of an additional single storey dwelling, located on the north-eastern portion of the site. The proposed dwelling includes three (3) bedrooms, living area, kitchen, swimming pool and double bay garage. The building is oriented to the south-east. The existing Dwelling House is proposed to be retained as part of the development.

A Proposal Site Plan was included with the Development Application to identify the location of the proposed development (shown in red annotation):

![Site Plan](https://via.placeholder.com/150)

*Figure: Site Plan*

*Source: Response to Council Information Request, Council Reference #6027668*

The proposed dwelling is to be located on an existing benched pad on the site, which is clear of any significant vegetation. The dwelling has been designed within the constraints of the land, and requires minimal excavation and fill which is mostly limited to the construction of the driveway to the proposed dwelling.
Access to the proposed dwelling is proposed via an existing crossover and driveway which extends from Barclay Road to the existing Dwelling House, and across an existing culvert which provides access across a drainage channel (within Easement C on SP177748). The culvert is proposed to be upgraded to the appropriate standard and will achieve immunity with the Q100 level. A driveway will then be constructed from the upgraded culvert, to the Garage of the proposed dwelling.

Site Photos were taken upon a site inspection which occurred on 17 May 2019, and are attached at Appendix 5. The photos identify the existing benched pad, and the existing culvert which is proposed to be upgraded.

Vegetation clearing is proposed as part of the development, which is identified on the Landscape Plan included at Appendix 1. The vegetation proposed to be removed is not considered to contribute to the ecological significance of the site.

The development will be serviced by reticulated water and sewerage and will be connected to drainage, electricity and telecommunications infrastructure.

**ASSESSMENT BENCHMARKS**

The proposed development was assessed against the following Assessment Benchmarks of CairnsPlan 2016 v1.2.

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<th>Zone</th>
<th>Local Plans</th>
<th>Overlays</th>
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<td>Environmental Management – Precinct 1 Residential</td>
<td>None applicable</td>
<td>Hillslopes</td>
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<td>Landscape Values (High Landscape Values)</td>
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<td>Natural Areas (MLES &amp; MSES Protected Areas)</td>
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<td>Potential Landslip Hazard</td>
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<td>Development codes</td>
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<td>Dual Occupancy</td>
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<td>Excavation and Filling</td>
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<td>Infrastructure Works</td>
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<td>Vegetation Management</td>
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**Strategic Framework Assessment**

The development proposal requires assessment against the Strategic Framework. The applicable Strategic Outcomes under the Themes for the Planning Scheme are as discussed as follows:
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<tr>
<th>Strategic Framework</th>
<th>Assessment</th>
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<tr>
<td><strong>3.3 Settlement Pattern Theme</strong></td>
<td></td>
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<tr>
<td>3.3.1 Strategic Outcomes</td>
<td>Complies. The proposal represents an orderly and logical urban expansion which promotes infrastructure efficiencies (through infill development), contributes to the affordable housing choice and addresses the natural hazards constraints of the site. Additionally, the development does not compromise the natural environment, ecological process or biodiversity values of the site, and maintains the scenic amenity of the region.</td>
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<tr>
<td>3.3.2 Element – Centres and Centre Activities</td>
<td>Not Applicable.</td>
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<td>3.3.3 Element – Mixed Use Areas and Specialised Centres</td>
<td>Not Applicable.</td>
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<td>3.3.4 Element – Industry Areas and Activities</td>
<td>Not Applicable.</td>
</tr>
<tr>
<td>3.3.5 Element – Residential Areas and Activities</td>
<td>Complies. The residential development is located and designed to provide a wide range of living options that maintain and enhance the character and identity of individual communities, whilst responding to the natural environment and climate.</td>
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<td>3.3.6 Element – Rural Activities</td>
<td>Not Applicable.</td>
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<td>3.3.7 Element – Townships and Small Communities</td>
<td>Not Applicable.</td>
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<td>3.3.8 Element – Islands</td>
<td>Not Applicable.</td>
</tr>
<tr>
<td>3.3.9 Element – Built Form, Design and City Image</td>
<td>Not Applicable.</td>
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<tr>
<td>3.3.10 Element – Places of Significance and Neighbourhood Character</td>
<td>Not Applicable.</td>
</tr>
<tr>
<td>3.3.11 Element – Community Health and Wellbeing</td>
<td>Complies. The proposed development is located and designed to ensure community health and wellbeing is not compromised.</td>
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<td><strong>3.4 Natural Areas and Features Theme</strong></td>
<td></td>
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<tr>
<td>3.4.1 Strategic Outcomes</td>
<td>Complies. The proposed development has been conditioned to ensure that the region’s natural environment, ecological processes and biodiversity values are protected and enhanced over the site.</td>
</tr>
</tbody>
</table>
| 3.4.2 Element – Biodiversity | Complies. The proposed development is not considered to compromise the ecological value of the site. In particular, the region’s biodiversity values and associated habitats and ecosystems are maintained, protected and managed, and where appropriate, and the ecological integrity and habitat connectivity is enhanced throughout the site.

The proposed development footprint (additional to the existing Dwelling House) is limited to previously disturbed land, or land with limited ecological value. In particular, the proposed dwelling is located in an area which is already cleared, and where vegetation removal is proposed, is considered to have little or no ecological value.

Further, conditions have been included to enhance the ecological integrity throughout the site. In particular, a Restoration and Revegetation Management Plan is required to be prepared, which identifies areas of replanting, weed eradication/control, and mitigation measures to ensure the vegetation of significance on the site is not compromised both during and post construction activity. |
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<tr>
<td>3.4.3 – Element – Waterways, Wetlands and Water Catchments</td>
<td>Complies. The proposed development does not compromise the riparian areas of the surrounding catchment and has been conditions to include water quality controls.</td>
</tr>
</tbody>
</table>
| 3.4.4 Element – Landscapes | Complies. The proposed development is single storey, and is not considered to be visually obtrusive, nor compromise the scenic backdrop to the region.

Conditions have been included to ensure that the exterior finishes and colours of the new dwelling and retaining walls are non-reflective and blend with the natural colours of the surrounding environment. |
| 3.4.5 Element – Coastal Areas | Not applicable. |
| 3.4.6 Element – Natural Hazards | Complies. Development does not directly or cumulatively cause or increase adverse impacts of natural hazards on other properties. |
| **3.5 Economic Theme** | **3.5.1 Strategic Outcomes** | Complies. The Strategic Framework supports development that contributes to diversifying the economy in locations where development is complimentary to scale, is highly accessible, avoids areas vulnerable to natural hazards and is supported by necessary infrastructure. |
| **3.6 Infrastructure Theme** | **3.6.1 Strategic Outcomes** | The proposed development will not compromise the Strategic Outcomes of the Infrastructure Theme, which seeks to ensure the provision of orderly and adequate infrastructure for urban development. |
### NON-COMPLIANCE WITH BENCHMARKS

The development was assessed against all of the Assessment Benchmarks listed above and complies with all of these with the exception listed below:

<table>
<thead>
<tr>
<th>Assessment Benchmark</th>
<th>Reasons for the approval despite non-compliance with benchmark</th>
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<tbody>
<tr>
<td>Environmental Management Zone Code</td>
<td>The purpose of the Environmental Management Zone is to <em>recognise environmentally sensitive areas and constrained land and provide for houses on lots and other low impact activities where suitable</em>. Additionally, with the Environmental management precinct 1 – Residential, the overall outcomes sought for the precinct are to ensure the precinct provides for dwelling houses that are located, designed and managed to avoid adverse impacts on areas of ecological significance. Although the proposed development is not a Dwelling House, the purpose of the zone identifies other low impact activities, where suitable. The proposed development footprint (additional to the existing Dwelling House) is limited to previously disturbed land, or land with limited ecological value. In particular, the proposed dwelling is located in an area which is already cleared, and where vegetation removal is proposed, is considered to have little or no ecological value. Further, conditions have been included to enhance the ecological integrity throughout the site and increase the amenity for adjoining residents. In particular, a Restoration and Revegetation Management Plan is required to be prepared, which identifies areas of replanting, weed eradication/control, and mitigation measures to ensure the existing vegetation which is of significance on the site is not compromised both during and post construction activity. The Plan also requires the planting of a 6 metre vegetation buffer along the eastern boundary of the site, which (in addition to providing an ecological function) will contribute to mitigating any potential impacts on the amenity of neighbouring properties as a result of the development. The proposed development is not considered to compromise the ecological value of the site. In particular, the region’s biodiversity values and associated habitats and ecosystems are maintained, protected and managed, and where appropriate, and the ecological integrity and habitat connectivity is enhanced throughout the site. Accordingly, Officers consider that the proposed development does not compromise the Purpose or intent of the Environmental Management Zone, and complies with the Acceptable Outcomes and Performance Outcomes of the Code.</td>
</tr>
</tbody>
</table>

| 3.6.2 Element – Energy | Not Applicable. |
| 3.6.3 Element – Transport | The proposed development does not compromise the safety and efficiency of the transport network. |
| 3.6.4 Element – Water and Waste | Complies. The development will be connected to reticulated water and sewer infrastructure. |
| 3.6.5 Element – Open Space and Recreation | Not Applicable. |
### Environmental Management Zone Code

**AO9.1**  
The maximum residential density is one dwelling house per lot.

The proposed development seeks the construction of an additional dwelling, to create a Dual Occupancy and therefore does not comply with the Acceptable Outcome.

The proposed development footprint (additional to the existing Dwelling House) is limited to previously disturbed land, or land with limited ecological value. In particular, the proposed dwelling is located in an area which is already cleared, and where vegetation removal is proposed, is considered to have little or no ecological value.

Further, conditions have been included to enhance the ecological integrity throughout the site and increase the amenity for adjoining residents. In particular, a Restoration and Revegetation Management Plan is required to be prepared, which identifies areas of replanting, weed eradication/control, and mitigation measures to ensure the existing vegetation which is of significance on the site is not compromised both during and post construction activity. The Plan also requires the planting of a 6 metre vegetation buffer along the eastern boundary of the site, which (in addition to providing an ecological function) will contribute to mitigating any potential impacts on the amenity of neighbouring properties as a result of the development.

The proposed development is not considered to compromise the ecological value of the site. In particular, the region's biodiversity values and associated habitats and ecosystems are maintained, protected and managed, and where appropriate, and the ecological integrity and habitat connectivity is enhanced throughout the site.

Accordingly, Officers consider that the development complies with the corresponding Performance Outcome which states that the density of development ensures that the environmental and scenic amenity values of the site and surrounding area are not adversely affected.

### Hillslopes Overlay Code

**AO1.2**  
No vegetation damage occurs.

The development will result in vegetation damage, which is identified on the Landscape Plan included at Appendix 1. The vegetation proposed to be removed is not considered to contribute to the ecological significance of the site.

Officers consider that the proposed vegetation damage complies with the corresponding Performance Outcomes which seeks to ensure development does not compromise the landscape character and scenic amenity quality of hillslopes area, and ultimately the scenic backdrop to the region.

### Additional Planning Scheme Considerations

In addition to the above, the development has been assessed against all applicable Assessment Benchmarks, which are identified as part of the recommendation. Where compliance has not been demonstrated or is capable of complying as part of the development, conditions have been included to ensure compliance is achieved. Particular consideration has been afforded to the environmental significance of the site, and ensuring that the development does not compromise the values of the site. Conditions pertaining to earthworks, treatment of batters/retaining structures, stormwater and sediment runoff, restoration and revegetation of the site, vegetation retention, site stability considerations, external building and retaining wall colours, and protection of the amenity of adjoining properties have been included.
Officers consider that the development will not adversely affect the amenity of the zone and adjoining land uses in terms of traffic, noise, dust, odour, lighting of other physical or environmental impacts. Additionally, the density of the development ensures that the environmental and scenic amenity values of the site and surrounding area are not adversely affected.

Accordingly, Officers consider that the development has demonstrated, and has been conditioned to demonstrate compliance with the overall Purpose of the Environmental Management Zone.

RELEVANT MATTERS FOR IMPACT ASSESSMENT:

The following matters were given regard to or assessment carried out against, in undertaking the assessment of this development application under Section 45 of the Planning Act 2016.

<table>
<thead>
<tr>
<th>Assessment Benchmark/Other Relevant Matters</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Far North Queensland Regional Plan (FNQRP) 2009-2031</td>
<td>The site is located within the Urban Footprint. The proposed development footprint is located adjacent to existing and approved urban development. Further, the proposed development is consistent with the purpose of the Urban Footprint which seeks to <em>provide for the region’s urban development needs to 2031</em>. Accordingly, Officers are satisfied that the proposal can achieve the outcomes of the FNQ Regional Plan.</td>
</tr>
</tbody>
</table>
| State Planning Policy (SPP) | Part E of the SPP contains the State Interest Policies and Assessment Benchmarks which are applicable to the development. The subject site is subject to several state interests including:  
  - Biodiversity (MSES – Wildlife Habitat and Essential Habitat)  
  - Natural Hazards, Risk and Resilience (Bushfire Prone Area)  
  - Strategic Airports and Aviation Facilities (Obstacle Limitation Surface Area, Lighting Area Buffer – 6km, Wildlife Hazard Buffer Zone, Aviation Facility)  
  The CairnsPlan 2016 v1.2 advances the SPP except for erosion prone areas and therefore all the State interests have been appropriately reflected in the Planning Scheme. |
MATTERS RAISED IN SUBMISSIONS

In accordance with Impact Assessable procedures outlined in Part 4 of the Development Assessment Rules (DA Rules) the proposal was publicly notified for a minimum of 15 business days, with the following actions being carried out:

- Publish a notice at least once in the newspaper circulating generally in the locality;
- Place a notice on the land in the way prescribed under the regulation; and
- Give a notice to the owners of all lots adjoining the premises.

A Notice of Compliance was received on 8 May 2019. A summary of the submissions received is provided in the table below:

<table>
<thead>
<tr>
<th>No. of submissions received:</th>
<th>3</th>
<th>Properly Made: 0</th>
<th>Not Properly Made: 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature of submission</td>
<td>0</td>
<td>Support: 3</td>
<td>Object: 0</td>
</tr>
</tbody>
</table>

Of the three (3) submissions received, one (1) submission is in the form of a petition, which included sixty-nine (69) signatures.

The key themes of the submissions are identified and addressed below.

<table>
<thead>
<tr>
<th>Submitter Concern</th>
<th>Council Officers Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>The soil runoff since the development of the existing residential house and excavation works.</td>
<td>Officers acknowledge the concerns raised with regards to the existing Easement, as identified in the submission.</td>
</tr>
<tr>
<td></td>
<td>As part of the Development Application, the Applicant submitted a Local Flood Study, prepared by Rodgers Consulting Engineering dated 16 July 2019 (Council Reference #6135133), which assessed whether there would be any impact from the development on the immediate and downstream stormwater/drainage infrastructure and the adjoining properties.</td>
</tr>
<tr>
<td></td>
<td>The recommendations of the Study identify that the proposed development will have a negligible impact on existing downstream properties. Additionally, the Study recommends additional measures to be adopted to ensure that downstream properties are not affected during the construction of the new dwelling and in the longer term. These measures include the stabilisation of proposed earthworks, implementation of erosion and sediment control measures, removal of debris from the existing drainage channel (Easement C on SP177748), and regular maintenance of the sediment basin.</td>
</tr>
<tr>
<td></td>
<td>Accordingly, conditions have been included to capture the above recommendations.</td>
</tr>
<tr>
<td><strong>Submitter Concern</strong></td>
<td><strong>Council Officers Response</strong></td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>The destruction of the habitat site due to the development of this property.</td>
<td>Officers note that the concerns raised are not as a result of the subject application. Notwithstanding, the proposed development footprint (additional to the existing Dwelling House) is limited to previously disturbed land, or land with limited ecological value. In particular, the proposed dwelling is located in an area which is already cleared, and where vegetation removal is proposed, is considered to have little or no ecological value. Conditions have been included to enhance the ecological integrity throughout the site. In particular, a Restoration and Revegetation Management Plan is required to be prepared, which identifies areas of replanting, weed eradication/control, and mitigation measures to ensure the vegetation of significance on the site is not compromised both during and post construction activity.</td>
</tr>
<tr>
<td>The noise levels from the ongoing development at this property.</td>
<td>Officers advise that this concern is not a planning matter which is subject to this application. Notwithstanding, conditions have been included to ensure that any transportation of fill/spoil to and from the site must not occur, before 7am, after 6pm Monday to Friday, before 7am or after 1pm on Saturday or any time on Sundays and Public Holidays. Additionally, dust emissions must not extend beyond the property boundary and cause nuisance to surrounding properties, and the storage of machinery/plant equipment must not cause a nuisance.</td>
</tr>
<tr>
<td>Concerns regarding the content of the Development Application, and the Applicant response to the applicable Assessment Benchmarks.</td>
<td>In response to these concerns, Officers advise that an assessment of the relevant Assessment Benchmarks has been undertaken and reasonable and relevant conditions imposed where required. Refer to the Assessment Benchmarks section of the recommendation and the conditions package.</td>
</tr>
<tr>
<td>Allegations of significant illegal earthworks and vegetation clearing which has occurred over a number of years and more frequently over the last six (6) months.</td>
<td>Officers advise that this concern is not a planning matter which is subject to this application. Notwithstanding, Officers highlight that conditions have been included to enhance the ecological integrity throughout the site. In particular, a Restoration and Revegetation Management Plan is required to be prepared, which identifies areas of replanting, weed eradication/control, and mitigation measures to ensure the vegetation of significance on the site is not compromised both during and post construction activity.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Concerns raised in the Petition</strong></th>
<th><strong>Council Officers Response</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The proposed development is directly in conflict with CairnsPlan 2016 as the Environmental Management Zone specifies only one (1) Dwelling House per lot.</td>
<td>The purpose of the Environmental Management Zone is to recognise environmentally sensitive areas and constrained land and provide for houses on lots and other low impact activities where suitable. Officers acknowledge that AO9.1 of the Environmental Management Zone Code states that the maximum residential density is one dwelling house per lot. However, this is an Acceptable Outcome, and where the development demonstrates compliance with the corresponding Performance Outcome and Purpose of the Zone Code, an alternate outcome can be supported.</td>
</tr>
<tr>
<td>Submitter Concern</td>
<td>Council Officers Response</td>
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<tr>
<td>---------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| **The site is constrained by the Bushfire Hazard Overlay, the Hillslopes Overlay,** | Officers acknowledge that the site is subject to a range of Overlays, as identified. An assessment has been undertaken against the relevant Overlay Codes. Where compliance has not been demonstrated or requires further actions as a result of the development (i.e. construction works), conditions have been included to ensure this occurs. In particular, the following items have been conditioned:  
  - External Colours and Materials - Limitation on the exterior finishes and colours of the new dwelling and retaining walls to ensure they are non-reflective and blend with the natural colours of the surrounding environment;  
  - Earthworks and Retaining Structures - Certification and treatment (i.e. material types) of any existing and proposed retaining walls and batters;  
  - Stormwater and Drainage - recommendations in accordance with the Flood Study prepared by Rodgers Consulting Engineering, dated 16 July 2019;  
  - Geotechnical Assessment or amended Certification – Site stability;  
  - Restoration and Revegetation Management Plan - Ecological values; and  
  - Vegetation Protection – limiting the extent of vegetation clearing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| **Landscape Values Overlay, Natural Areas Overlay and Potential Landslip Hazard Overlay** | The purpose of the zone is to protect and buffer areas of environmental significance and constrained land from inappropriate development. The proposed development footprint (additional to the existing Dwelling House) is limited to previously disturbed land, or land with limited ecological value. In particular, the proposed dwelling is located in an area which is already cleared, and where vegetation removal is proposed, is considered to have little or no ecological value. Notwithstanding, conditions have been included to enhance the ecological integrity throughout the site. In particular, a Restoration and Revegetation Management Plan is required to be prepared, which identifies areas of replanting, weed eradication/control, and mitigation measures to ensure the vegetation of significance on the site is not compromised both during and post construction activity. |
| **A Dual Occupancy (additional 3 bedroom Dwelling House with swimming pool) is an inappropriate form of development on the site, which is already developed with a modern 3 bedroom Dwelling House** | Officers note that this concern is a statement, and does not include specific planning grounds that can be responded to. Notwithstanding, Officers advise that the development has been assessed against all applicable Assessment Benchmarks, which are identified as part of the recommendation. Where compliance has not been demonstrated or requires further actions as a result of the development (i.e. construction works), conditions have been included to ensure this occurs. Refer to the Assessment Benchmarks section of the recommendation. |
HEADWORKS / CONTRIBUTIONS

The proposed development triggers the payment of Infrastructure Charges. Refer to Appendix 4 to view calculations.

STATEMENT OF REASONS FOR DECISION

The following information is provided in accordance with section 63 of the Planning Act 2016.

The proposal demonstrates compliance with Assessment Benchmarks of the CairnsPlan 2016 v1.2 in that:

1. The development does not compromise the purpose of the Environmental Management Zone, which seeks to recognise environmentally sensitive areas and constrained land and provide for houses on lots and other low impact activities where suitable.

2. The proposed development generally complies with the applicable Assessment Benchmarks contained within CairnsPlan 2016 v1.2. Where compliance has not been demonstrated or is capable of complying as part of the development, conditions have been included to ensure compliance is achieved. Particular consideration has been afforded to the environmental significance of the site, and ensuring that the development does not compromise the values of same. Conditions pertaining to earthworks, treatment of batters/retaining structures, stormwater and sediment runoff, restoration and revegetation of the site, vegetation retention, site stability considerations, external building and retaining wall colours, and protection of the amenity of adjoining properties have been included.

3. The development is reflective of the environmental values of the site. The proposed development footprint (additional to the existing Dwelling House) is limited to previously disturbed land, or land with limited ecological value. In particular, the proposed dwelling is located in an area which is already cleared, and where vegetation removal is proposed, is considered to have little or no ecological value.

4. The development minimises the impact on both on-site and on adjoining land through the location, design and management of development. In particular, the development has demonstrated that any stormwater from the existing and the proposed dwellings will be discharged to a lawful point of discharge and will not cause an adverse impact on adjoining properties.

5. The development is not of a scale that will dominate the streetscape or impact upon views to natural landscape features.

6. The development is limited to a low scale, that does not result in adverse impacts on areas of environmental significance, or natural systems.
7. The proposed development has demonstrated that a high level of residential amenity is maintained, having specific regard to traffic, noise, visual amenity and safety.

8. The proposed development is generally consistent with the Far North Queensland Regional Plan 2009-2031, and will represent an efficient and orderly delivery of urban infrastructure.

Claire Anderson  
Planning Officer  
Action Officer

Peter Boyd  
Manager Strategic Planning & Approvals

Kelly Reaston  
General Manager Planning & Environment
APPENDIX 1: APPROVED PLAN(S) & DOCUMENT(S)

LOT 4
SP177748
4862m²

Site Plan
1:500
Terrace existing batter with 500 wide open space drain @ 107 & fall to spillway. Spillway to be lined with geotext and stones to stop erosion. Empty over level area to disperse water over wide area to stop erosion.

Proposed building

K & J Moxon
61 Barclay Rd, Brinsmead

Proposed Residence

LAWSON DESIGN

TBC

1813

C2

20/12/18

Roswell Road

CRC 3

Rodgers Consulting Engineers

Ph: 40 519 466

These directions are recommendations only and should not be relied on without the written approval of the relevant local authorities. The responsible architect or engineer must ensure that all necessary approvals are obtained before commencing work and that the work complies with all relevant building regulations and other statutory requirements.

Agenda – Ordinary Meeting 11 September 2019 - #6165626
APPENDIX 2: NOTICE OF INTENTION TO COMMENCE USE

Notice of Intention to Commence Use

DEVELOPMENT PERMIT
Planning Act 2016

<table>
<thead>
<tr>
<th>Development Permit</th>
<th>8/8/1530</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Approval</td>
<td>28 August 2019</td>
</tr>
<tr>
<td>Approved Use</td>
<td>Dual Occupancy</td>
</tr>
<tr>
<td>Location</td>
<td>61 Barclay Road BRINSMEAD</td>
</tr>
<tr>
<td>Property Description</td>
<td>Lot 4 on SP177748</td>
</tr>
</tbody>
</table>

I/we are hereby notifying Cairns Regional Council of my/our intention to commence the approved use outlined above on ________________________________ (insert date).

I have read the conditions of the Decision Notice issued and believe that all the applicable conditions have been complied with.

Applicant: 
Address: 
Contact Phone: 
Signature of Applicant/Owner: 
Date: 
APPENDIX 3: FNQROC STANDARD DRAWINGS

CONCRETE DRIVEWAY - TYPE 1
(WITHOUT DRAINAGE)

CONCRETE DRIVEWAY - TYPE 2
(WITH DRAINAGE)

TYPICAL DRIVEWAY LAYOUT

NOTES
1. For driveway alignment, longitudinal grade and associated drainage details refer project drawings.
2. Concrete is N35 in accordance with AS 1279 and AS 3600.
3. Construction joints shall be provided at 4.0m max. Cms with expansion joints or approved equivalent.
4. All dimensions to be in millimetres.
5. Residential refers to single dwellings/units.
6. For commercial or industrial driveways 150mm thick N32 concrete and SL82 mesh.
7. Access to Grease Pollutant Trap (GPT) to be max 3.5m wide to commercial/industrial driveway standard.

DISCLAIMER
The author and preparing organisation shall have no liability or responsibility for any loss, damage or injury or any action taken or not taken due to the use of this document. This information was prepared for general guidance and should be subject to the advice of an appropriate qualified professional.

CONCRETE DRIVEWAY FOR ALLOTMENT ACCESS

Standard Drawing
S1110

END CAP
Spacing 10000 max.

EXPANSION JOINT
Spacing 4000 max.

CONTRACTION JOINT
Spacing 4000 max.

FNQROC
### APPENDIX 4: INFRASTRUCTURE CHARGES NOTICE

**Appendix A to Infrastructure Charges Notice**

<table>
<thead>
<tr>
<th>Category</th>
<th>Use</th>
<th>Quantity</th>
<th>Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>Dwelling house - 1 or 2 bedroom dwelling</td>
<td>1</td>
<td>$18,000.00</td>
</tr>
<tr>
<td></td>
<td>Stormwater Charge</td>
<td>0</td>
<td>$0.00</td>
</tr>
<tr>
<td><strong>EXISTING CHARGE</strong></td>
<td></td>
<td></td>
<td><strong>$18,000.00</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Use</th>
<th>Quantity</th>
<th>Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>Dual occupancy - 2 bedroom dwelling</td>
<td>1</td>
<td>$16,993.92</td>
</tr>
<tr>
<td></td>
<td>Stormwater Charge</td>
<td>0</td>
<td>$0.00</td>
</tr>
<tr>
<td>Residential</td>
<td>Dual occupancy - 3 or more bedroom dwelling</td>
<td>1</td>
<td>$21,304.25</td>
</tr>
<tr>
<td></td>
<td>Stormwater Charge</td>
<td>0</td>
<td>$0.00</td>
</tr>
<tr>
<td><strong>PROPOSED CHARGE</strong></td>
<td></td>
<td></td>
<td><strong>$37,298.17</strong></td>
</tr>
</tbody>
</table>

| LC (LEVIED CHARGE) | $19,268.17 | Account: 7648 65446 |

### OFFICE USE ONLY:

- **DATE PAYABLE**: [ ]
- **DATE PAID**: [ ]
- **RECEIPT NUMBER**: [ ]
APPENDIX 5: SUPPORTING INFORMATION TO PLANNING REPORT
LOCAL DRAINAGE STUDY, COUNCIL REFERENCE #6135133

RODGERS
CONSULTING ENGINEERS

100459  HFM  16-07-2019

To Whom it May Concern

RE: Proposed New Residence
At 61 Barclay Road, Brinsmead

Rodgers Consulting Engineers has been engaged to provide engineering services for a proposed dwelling at No 61 Barclay Road, Brinsmead. The following local drainage study has been prepared in response to an Information Request from the Cairns Regional Council.

Existing site

No 61 (Lot 4 on S1877748) is located at the eastern end of Barclay Road. The 'hatchet' style block rises steeply from Barclay Road and shares an access driveway to the road with No 53-59 and No 63 Barclay Road. At the rear of the site is Lot 2 on RP 892235 which contains a mountain ridge line extending westward from the Mt Whitfield Conservation Park that separates the Brinsmead and Freshwater suburbs. A natural gully from the mountain ridge flows through the site in easements in Nos 61 & 63 Barclay Road and discharges to an existing pipe inlet at the rear of No 19 Curlew Close. A dwelling exists on No 61 at the top of the existing access driveway. To the east of the existing dwelling is a slab crossing of the existing gully that allows access to an existing shed to the east. To the north of the existing shed is an existing earthworks berm that is the proposed location for the new dwelling. The new dwelling will be accessed by a driveway from the existing slab crossing of the gully and cutting across the existing batter between the high level pad and the existing shed. Downstream of the slab crossing, the gully flows south and is on the eastern side of the existing driveway from Barclay Road. At the southern end of the easement within No 63, a sediment basin and debris bollards have been constructed. The sediment basin is heavily silted and is approximately 1 metre below the invert of the outlet drain. Downstream from the sediment basin, stormwater is contained in a stone pitched open drain along the rear of the Curlew Close lots where it discharges to a pipe inlet headwall at the rear of No 19 Curlew Close. The pipe appears to be either a 375 or 450 diameter with no evidence of an overland flow path over the pipe to Curlew Close. From a conversation with the long term resident of No 19 Curlew Close, flows have never overtopped the headwall and surplus flows continue overland to the south along the rear of the Curlew Close lots. The capacity of the existing pipe is unknown. It appears that Council recently constructed the sediment basin and bollards following sitation of the existing open drain and blockage of the pipe on No 19 Curlew Close.

Stormwater drainage catchments

Predevelopment and post development stormwater drainage catchments are shown on Rodgers Consulting drawing 180459-SK1.
1. Predevelopment catchment boundaries have been determined from Lidar contour data and detail engineering survey of No 61 Barclay Road. To assess the impact of this development on existing and downstream infrastructure, two nodes were selected for analysis. Node A is upstream of an existing slab crossing of the gully within the subject site and Node B is the point where the gully discharges to an underground stormwater pipe at the rear of No 19 Curlewis Close.

2. Post development catchment boundaries reflect the minor adjustments to the catchments caused by the new dwelling and driveway construction. The new dwelling and driveway will cause a partial diversion of stormwater runoff discharging to the east (into the rear of lots on Curlewis Close) into the existing gully in No 61. The partial diversion will have a beneficial impact by reducing stormwater flows discharging to the rear of lots on Curlewis Close.

**Time of Concentration**

Time of concentration to Node B has been calculated in accordance with the Queensland Urban Drainage Manual using the Bransby Williams method and is summarised as follows:

\[ T_c = \frac{58l}{(A^{0.5} \times S_{c}^{0.2})} \]

L: 0.3083 km  
A: 3.351 ha  
S_c: 256.179

\[ T_c = 5.23 \text{ Min} \]

Because of the steep terrain, the time of concentration is short and for the purposes of this study, a Time of Concentration of 5 minutes will be adopted for all catchments.

**Friction Impervious**

Due to the large hillside catchment, the existing and proposed structures will have a minor impact on site impermeability and is shown on the following tabulation.
## Stormwater Flows

Calculated pre and post development stormwater flows for Nodes A & B are summarised in the following table:

<table>
<thead>
<tr>
<th></th>
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<tr>
<td>Node A</td>
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</tr>
<tr>
<td>PRE</td>
<td>25872</td>
<td>5</td>
<td>162.2</td>
<td>265.2</td>
<td>230.5</td>
<td>264.5</td>
<td>344.1</td>
<td>0.00</td>
<td>0.69</td>
<td>0.67</td>
<td>0.70</td>
<td>0.74</td>
<td>0.84</td>
<td>0.801</td>
<td>1.132</td>
<td>1.330</td>
<td>1.613</td>
<td>2.395</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>POST</td>
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<td>5</td>
<td>162.2</td>
<td>265.2</td>
<td>230.5</td>
<td>264.5</td>
<td>344.1</td>
<td>0.02</td>
<td>0.69</td>
<td>0.67</td>
<td>0.70</td>
<td>0.74</td>
<td>0.84</td>
<td>0.808</td>
<td>1.143</td>
<td>1.391</td>
<td>1.629</td>
<td>2.421</td>
<td></td>
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<td></td>
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<tr>
<td>Node B</td>
<td></td>
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<tr>
<td>PRE</td>
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<td>142.2</td>
<td>265.2</td>
<td>230.5</td>
<td>264.5</td>
<td>344.1</td>
<td>0.02</td>
<td>0.69</td>
<td>0.67</td>
<td>0.70</td>
<td>0.74</td>
<td>0.84</td>
<td>0.898</td>
<td>1.273</td>
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<tr>
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<td>1.816</td>
<td>2.699</td>
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As can be seen from these calculations, the construction of a new dwelling on the upper bench will have a negligible impact on stormwater flows at Node B (0.3% increase). It is considered therefore that construction of a new dwelling on the upper bench on No 61 Barclay Road will have a negligible impact on existing downstream properties.
Discussion with the occupant of No 19 Curlewis Close revealed the following issues:

- An inspection of the pipe inlet blockage was performed recently by Council officers and Alan McPherson of SMEC
- The pipe inlet was raised approximately 500mm after the pipes were cleared
- The sediment basin was constructed in response to silting of the existing open drain and downstream pipe.
- 3 x steel bollards were installed downstream of the sediment basin to catch debris

As well as the negligible impact of the new construction, the recent sediment basin and bollard remedial works within the gully will assist in ensuring that downstream properties are protected. The sediment basin, while of unknown size, will also serve as a detention basin as the water level is approximately 1 metre below the invert of the outlet drain.

**Existing slab crossing of gully**

To the east of the existing dwelling, a 150mm thick slab crossing of the existing gully has been constructed with the gully flowing under the slab as an unlined earth channel. A site inspection reveals the following dimensions of the slab and channel:

![Diagram of slab crossing](image)

Levels from the site survey show a natural 1 in 50 grade of the drain invert under the slab and calculations for open channel flow show that the drain has a capacity of 0.92 Cumecs (greater than Q2 but less than Q5). Assessing the existing slab crossing as a rectangular culvert results in a calculated capacity of 0.73 Cumecs (less than Q2) with 0.65m headwater depth. These calculations reveal that the existing channel under the slab crossing has an approximate capacity of Q2. It is recommended that the immunity of the crossing be increased along with the reconstruction of the existing slab crossing required for the grading of the driveway to the new dwelling. To achieve Q10 immunity for access to the new dwelling, a channel or culvert opening of 1500mm x 600mm will convey Q10 flows under the 150mm thick driveway with 750mm headwater depth and an outlet velocity of 1.5m/s. This capacity increase can also be accomplished using multiple stormwater pipes under the slab. For a Q100 immunity for the crossing, a channel or culvert opening of 2600mm x 600mm is required (0.75m Hw and Vout of 1.6m/sec)
Response to Council REI

The Council Information Request is as follows:

Please see below requirements for a local drainage study over this site. The intent for the study over this site will be to ensure that there is no worsening effect on downstream properties due to the works and that access can be maintained to the new lot during a majority of rain events (i.e. what immunity is to be provided at this crossing).

Undertake a local drainage study of the site to determine the drainage impacts on upstream and downstream properties and the mitigation measures required to minimise such impacts. In particular, the study must address the following, as a minimum;

1. All contributing catchment areas;
2. The extent of the 1% AEP flood event in relation to the site both pre and post development (with particular focus on any impacts of works proposed to be undertaken within existing Easement C);
3. Primary and secondary flow paths for the 2, 5, 10, and 100 year ARI flood events;
4. Nominate existing and proposed immunity for the existing bridge/new access driveway to the new dwelling proposed on the subject site (with particular focus on planning for evacuation measures);
5. Identify any requirement for additional drainage easements through the site;
6. Identify the need and tenure for flood detention areas to ensure a no worsening impact on surrounding properties, for the entire development;
7. Identify and provide detailed sections of the type of crossing proposed for any identified drainage lines that cross roads or other creeks/tributaries contained within the site (being the bridge structure located within Easement C);
8. Lawful points of discharge.

The drainage study is to be certified by an appropriately qualified and experienced engineer (RPEQ certified) and must comply, in all regards, with the requirements of the Queensland Urban Drainage Manual (QUDM) and the Council’s development manual (FNQROC).

Formal responses are as follows:

1. Contributing catchment areas are shown on Rodgers Consulting drawing 180459-SK1.
2. The extent of the Q100 or 1% AEP flood event with the drain remains unchanged and no works are intended within the existing drain.
3. Flow paths are shown by the stormwater drainage catchments on Rodgers Consulting drawing 180459-SK1.
4. The existing and proposed immunity of the slab crossing has been detailed above.
5. No additional easements are required
6. Because of the insignificant changes in stormwater flow, flood detention is not required. It is noted that the sediment basin in No 65 will serve as a detention basin and while calculations have not been undertaken, the basin would likely provide sufficient storage for such small increases in flow.
7. The opening required under the culvert crossing for Q10 and Q100 flows has been discussed above.
8. The lawful point of discharge remains in the easement within the subject lot as well as the rear of some Curlewis Close lots and will be unchanged by this development.
Conclusion

While it has been demonstrated that a new dwelling on the upper bench on No 61 Barclay Road will have a negligible impact on existing downstream properties, additional measures should be adopted to ensure that downstream properties are not affected during the construction of the new dwelling and in the longer term. Additional measures to ensure adequate downstream drainage include:

- Stabilisation of exposed earthworks and batters with hydro mulching or other vegetation
- Implementation of appropriate Erosion and Sediment Control measures during the course of the new construction
- Removal of logs, dead wood and other debris within the gully that could block the downstream pipe
- Stabilisation and regular maintenance of the sediment basin

Please do not hesitate to contact this office should you require any further clarification of the above.

Yours faithfully

RODGERS CONSULTING ENGINEERS

Heath P Rodgers
B.E. Hons, MIE Aust, RPEQ 7859
Figure: Edge of existing building pad, looking east.

Figure: Building pad for new dwelling, looking west.
Figure: Edge of existing building pad, looking east.

Figure: Access to be upgraded, looking west.
Figure: End of existing driveway (on the right), access to be upgraded and building pad location, looking east.