

Our Ref: HRP14114  
Contact: Dominic Hammersley



23 January 2017

Cassowary Coast Regional Council  
PO Box 887  
INNISFAIL, QLD 4860

Attention: Byron Jones

Dear Byron,

**RESPONSE TO INFORMATION REQUEST – RECONFIGURING A LOT  
(ONE (1) LOT INTO TEN (10) LOTS) AND MATERIAL CHANGE OF USE (\$242  
PRELIMINARY APPROVAL OVERRIDING THE PLANNING SCHEME) AT EL-  
ARISH – MISSION BEACH ROAD, MISSION BEACH – LOT 5 ON SP202686**

I refer to Cassowary Coast Regional Council ('Council') correspondence dated 5 September 2016 requesting further information in relation to the above application ('the Information Request').

A written response to each of the items raised in the Information Request is enclosed.

For Council's convenience, we summarise the following with respect to the information request and the proposed development in general:

1. The proposed development, which has been designed with an emphasis on maximising protection to residents and property of the estate from natural hazards (particularly flooding) and protecting and promoting the native fauna located on-site and near to the Site, is considered to achieve compliance with the strategic framework elements for which further information was requested by Council, where relevant.
2. The Site is not considered to represent Good Quality Agricultural Land, as supported by the Agricultural Land Report provided at **Appendix J** of the town planning report and the proposed development is therefore not considered further alienate or impact upon the region's agricultural industry.
3. Infrastructure and common property are proposed to be managed under a community titles scheme; Council will therefore not be responsible for the maintenance of infrastructure associated with the proposed development, which will be the responsibility of the body corporate. Notwithstanding, the proposed development is proposed to be constructed generally consistent with FNQROC.

Further to the above, it is also considered that sufficient grounds to approve the proposed development, despite potential conflicts with the Cassowary Coast Regional Council Planning Scheme ('the Planning Scheme') (refer Chapter 7 of the town planning report for further discussion).

A summary of identified sufficient grounds, which we consider justify approval of the proposed development further to detailed responses provided to the Information Request, are detailed below.

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### **1. Sufficient ground 1: Significant community and ecological benefit**

The proposed development is unique in that it endeavours to retain and enhance the wildlife habitat for the Cassowary, predominantly through the dedication of a 60 plus hectare Cassowary conservation area.

Valuable corridor habitat is also retained and protected through the designation of a Cassowary corridor precinct.

It is proposed that the 60 plus hectare Southern Cassowary conservation area be placed under an environmental covenant, which will provide a significant environmental asset for the community and local fauna, particularly the endangered Southern Cassowary.

Refer to Chapter 7 of the town planning report for further discussion regarding Sufficient Ground 1.

### **2. Sufficient ground 2: A perspective on need**

The Mission Beach area is known for its unspoilt natural environment, comprising Wet Tropics rainforest and the Great Barrier Reef World Heritage areas. The lifestyle is reflective of the surrounds, with residential uses co-existing with the rainforest.

We note that the historical nature of subdivision in the vicinity of the site has led to the creation of an area characterized as a lifestyle community versus a rural community. For example, we note Mountain View Close to the immediate north of the proposed development ; and, South Maria Creek Close, farther north is representative of the small acreage 'lifestyle' allotments that are typical of the area. The Report prepared by Andersons Real Estate, provided at Attachment A of the Information Request Response identifies the strength of the residential market, and particularly small acreage allotments within the Mission Beach locality, stating:

*Vacant residential land activity over the past 12 months has been very strong due to the sell-out of remaining lots in the Oasis Estate Mission Beach, and the enquiry for 800-1000m<sup>2</sup> residential lots in the \$75,000 to \$150,000 price range remains steady. Enquiry for small acreage lots in the Mission Beach area has been high over the past 12 months but there have been only a few sales. This is due to 90% of the available lots being listed for between \$270,000 and \$320,000.*

In accordance with observed market demand, it is expected that the proposed allotments, under community title scheme arrangement will appeal to this established and evolving local market.

The proposed development is also consistent with smaller lot subdivisions in the immediate vicinity of the site, which establishes an historical pattern of subdivision that sets a precedent and context for a lifestyle community, not a traditional rural community.

Refer to Chapter 7 of the town planning report for further discussion regarding Sufficient Ground 2.

### **3. Sufficient ground 3: Non-viable Agricultural Land, Significant Environmental Values**

Although classed as Agricultural Land (Classes A and B), the Site is not considered to hold significant agricultural value, as identified within the Agricultural Land Report provided.

The report concludes that the subject land is not 'capable of sustainable use for agriculture with a reasonable level of inputs', as biophysical limitations, locational restraints and the size and fragmentation of the Site are not able to be resolved. The Site does however does retain considerable environmental values.

It is therefore requested that on the basis that the Site does not contain agricultural value, yet does contain significant environmental value that Council consider approving the proposed development, which seeks to conserve and enhance local environmental values consistent with the Environmental management and conservation zoning of part of the land and land surrounding the Site and also represents a use that is considered within the overall outcomes of the Rural zone code.

Refer to Chapter 7 of the town planning report for further discussion regarding Sufficient Ground 3.

#### **4. Sufficient ground 4: A Safe Eco-village**

The proposed development represents a flood safe eco-residential development, providing greater flood protection to residents, visitors and property than can be seen in many other locations within the Cassowary Coast region. Cassowary Rise Eco-Residential Estate incorporates various measures to ensure a high level of protection against flood hazard, over and beyond what is required under the Cassowary Coast Regional Council planning scheme.

The proposed development also has a negligible impact on discharges.

Refer to Chapter 7 of the town planning report for further discussion regarding Sufficient Ground 4.

In light of the above, it can be seen that the proposed development does achieve compliance with the Planning Scheme and has been designed with an emphasis on flood mitigation and the protection of environmental values, which are pertinent considerations with respect to development of the Site.

It is considered that the responses provided within the information request response enclosed herein and the sufficient grounds submitted within the town planning report (and highlighted above) present a strong case for approval; where inconsistencies with the planning scheme have been observed, the proposed development has submitted reasonable justification and endeavored to achieve compliance with the higher level aspects of the Planning Scheme.

We welcome Council's assessment of the enclosed and advise that we are happy to discuss any further matters of contention relating to the project.

If you have any queries with respect to the above and/or enclosed, please contact me directly on 0417 361 232.

Yours faithfully,



Dominic Hammersley  
Principal, Planning / Strategic Development Manager  
For Cardno

Enc:  
Attachment A – Response to Information Request Response

## **Attachment A – Response to Information Request Response**



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I refer to Cassowary Regional Council ('Council') correspondence dated 5 September 2016 requesting further information in relation to the above application ('the Information Request').

A written response to each of the items raised in the Information Request is provided below.

This response package represents a partial response to the information requested as per section 278(1)(b) of the *Sustainable Planning Act 2009* ('the SPA'). Further, it is respectfully requested that Council proceed with assessment of the application.

**Planning**

1. ***Please provide a report prepared by a suitably qualified professional to demonstrate the need and demand for.***
  - (a) ***10 Eco-residential allotments;***
  - (b) ***Commercial activities;***
  - (c) ***Environmental Facility; and***
  - (d) ***Nature Based Tourism.***

**Response:**

A report has been prepared by Andersons Real Estate, which assesses the proposed development against local market conditions to determine existing supply and anticipated demand for the proposed development (refer **Attachment A**).

The report identifies that there is a shortage of small acreage allotments available within the Mission Beach region. Accordingly, the report identifies that demand for lots within the proposed development will be high.

The Cassowary Rise Eco-Residential Estate Plan of Development ('POD') does not propose 'Commercial activities', the level of assessment was **increased** from potential 'Code Assessment' under the Johnstone Shire Planning Scheme to 'Impact Assessment' under the POD i.e. the POD was drafted such that it was made more difficult to undertake 'Commercial activities' on the Site. Accordingly, a need and demand assessment is not required for 'Commercial activities'.

An 'Environment facility', is considered to be consistent with the purpose of 'Cassowary Conservation Precinct'. 'Environment facility' is defined in the Cassowary Coast Regional Council Planning Scheme as:

*Facilities used for the conservation, interpretation and appreciation of areas of environmental, cultural or heritage value.*

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'Nature based tourism', is considered to be consistent with the purpose of 'Cassowary Conservation Precinct'. 'Nature based tourism' is defined in the Cassowary Coast Regional Council Planning Scheme as:

*The use of land or premises for a tourism activity, including tourist and visitor short-term accommodation, that is intended for the conservation, interpretation and appreciation of areas of environmental, cultural or heritage value, local ecosystem and attributes of the natural environment.*

*Nature-based tourism activities typically:*

- *maintain a nature based focus or product;*
- *promote environmental awareness, education and conservation;*
- *carry out sustainable practices.*

'Nature based tourism' and 'Environment facility' development are not need / demand driven development types. These types of development contribute to the economic vitality and cultural richness of a community and are often developed by philanthropists, community organisations or government. Accordingly, a need and demand assessment is not required for 'Nature based tourism' and 'Environment facility' development. Moreover, the impetus to nominate 'Code Assessment' for land uses consistent with the purpose of the 'Cassowary Conservation Precinct' was to enable the enhanced rehabilitation of the dedicated 60 hectares via the requirements of Performance Outcome 11 in the Cassowary Conservation Precinct Criteria for assessable development (Table 5.2.2) i.e. it is a requirement that as part of any 'Nature based tourism' and 'Environment facility' development that the 'Cassowary Conservation Precinct' be rehabilitated commensurate with the scale of development.

- 2. The Cassowary Rise Eco-Residential Estate Plan of Development refers to the "Johnstone Shire Planning Scheme 2005", this planning scheme was superseded by the "Cassowary Coast Regional Council Planning Scheme 2015" on 3 July 2015. Please provide an amended Cassowary Rise Eco-Residential Estate Plan of Development which refers to the provisions of the "Cassowary Coast Regional Council Planning Scheme 2015" and provide details on how the proposed development addresses the revised assessment criteria in the levels of assessment tables.***

**Response:**

An updated Plan of Development is provided at **Attachment B**, in response to Item 2 above.

- 3. Please be advised that Council does not wish to take control of the Cassowary Conservation Area or Cassowary Corridor Precinct and these areas should be a nature refuge arrangement with the State or as a covenant on private property.***

**Response:**

Noted. The Applicant will investigate alternative tenure and/or management options with respect to the Cassowary Conservation Area and Cassowary Corridor Precinct, including Private Land Conservation in association with Nature Conservation Trust as part of the proposed Community Title Scheme for the development<sup>1</sup>.

- 4. Please provide details on the tenure, stature and management, including a support plan, for the entire site. Such details should include:***
  - (a) A statement clearly defining the responsibility of Council or any other agency in on-going maintenance of either infrastructure established within the subject site or open space/environmental conservation areas within the site.***

**Response:**

The proposed Reconfiguring a Lot is now proposed as a community titles scheme under the Body Corporate and *Community Management Act 1997*. The Cassowary Coast Regional Council will not

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<sup>1</sup> Note – the proposed Reconfiguring a Lot is now proposed as a community titles scheme under the *Body Corporate and Community Management Act 1997*.

be responsible for the maintenance of any infrastructure or the Cassowary Conservation Precinct or the Cassowary Corridor Precinct.

A plan identifying common property within the estate is provided at **Attachment C**.

**5. Please provide a definition for "Multiple Rural Occupancy" as referred to in the Cassowary Rise Eco-Residential Estate Plan of Development.**

**Response:**

The level of assessment for 'Multiple Rural Occupancy' was increased from 'Code Assessment' under the Johnstone Shire Planning Scheme to 'Impact Assessment' under the POD i.e. 'Multiple Rural Occupancy' was nominated as 'Impact Assessment' under the POD to improve Council's discretionary powers in undertaking development assessment for 'Multiple Rural Occupancy' development. As a definition for 'Multiple Rural Occupancy' does not exist in the Cassowary Coast Regional Council Planning Scheme and that the nearest equivalent definition of 'Multiple dwelling' is subject to 'Impact Assessment' the updated POD does not need to nominate an alternative (e.g. more rigorous) level of assessment.

**6. Please provide a definition for "Rural Service Industry" as referred to in the Cassowary Rise Eco-Residential Estate Plan of Development.**

**Response:**

The Plan of Development has been updated to substitute the use 'Rural service industry' with 'Rural industry' per the definition in the Cassowary Coast Regional Council Planning Scheme.

**7. It is noted Table of Assessment for the Cassowary Conservation Precinct that a Nature Based Tourism use requires Code Assessment if the GFA does not exceed 3,000m<sup>2</sup>. Please provide justification as to why a Nature Based Tourism use in the Cassowary Conservation Precinct should not be an Impact Assessable use regardless of the Gross Floor Area.**

**Response:**

Whilst the purpose of the Cassowary Conservation Precinct is to protect the Southern Cassowary through the dedication of approximately 60 hectares of land as ecological habitat, the Cassowary conservation precinct also seeks to facilitate particular land uses (including 'Nature based tourism') that promote a thriving Southern Cassowary population, as detailed within overall outcome (a) of the Cassowary conservation precinct purpose (refer section 2.2 of the Plan of Development). This is reinforced by overall outcome (b) and (c) of the Cassowary Conservation Precinct, re-stated as follows:

*b) Existing native vegetation is protected and enhanced*

*c) Any development within the Cassowary Conservation Precinct includes compensatory rehabilitation of former agricultural land or degraded land and other ecological enhancements in support of a thriving Southern Cassowary population*

A gross floor area of 3,000m<sup>2</sup> provides for the rehabilitation of 15 hectares of the Cassowary Conservation Precinct in accordance with AO11.2 of the Cassowary Conservation Precinct Criteria for assessable development (Table 5.2.2).

Impact Assessment provides the opportunity for submissions to be made in respect to the development. In our opinion, as this development application and associated POD will be publicly notified, the public will have the opportunity to comment on the level of assessment for 'Nature based tourism' development. The POD otherwise provides for a more robust assessment of 'Nature based tourism' development, in addition to the Cassowary Coast Regional Council Planning Scheme. Moreover, the SPA allows for consideration of the purpose of any instrument in respect to Code Assessment, which includes the Strategic Framework of the Cassowary Coast Regional Planning Scheme. Therefore, in our opinion the proposed level of assessment and the public notification of the POD represents a holistic and transparent assessment of any future Environment facility development, and affords Council sufficient discretionary power in the assessment of any future development.

- 8. It is noted Table of Assessment for the Cassowary Conservation Precinct that an Environment Facility use requires Code Assessment if the GFA does not exceed 3,000m<sup>2</sup>. Please provide justification as to why an Environment Facility use in the Cassowary Conservation Precinct should not be an Impact Assessable use regardless of the Gross Floor Area.**

**Response:**

Whilst the purpose of the Cassowary Conservation Precinct is to protect the Southern Cassowary through the dedication of approximately 60 hectares of land as ecological habitat, the Cassowary conservation precinct also seeks to facilitate particular land uses (including Environment facility) that promote a thriving Southern Cassowary population, as detailed within overall outcome (a).

This is reinforced by overall outcome (b) and (c) of the Cassowary Conservation Precinct, re-stated as follows:

*b) Existing native vegetation is protected and enhanced*

*c) Any development within the Cassowary Conservation Precinct includes compensatory rehabilitation of former agricultural land or degraded land and other ecological enhancements in support of a thriving Southern Cassowary population*

A gross floor area of 3,000m<sup>2</sup> provides for the rehabilitation of 15 hectares of the Cassowary Conservation Precinct in accordance with AO11.2 of the Cassowary Conservation Precinct Criteria for assessable development (Table 5.2.2).

Impact Assessment provides the opportunity for submissions to be made in respect to the development. In our opinion, as this development application and associated POD will be publicly notified, the public will have the opportunity to comment on the level of assessment for 'Environment facility' development. The POD otherwise provides for a more robust assessment of 'Environment facility' development, in addition to the Cassowary Coast Regional Council Planning Scheme. Moreover, the SPA allows for consideration of the purpose of any instrument in respect to Code Assessment, which includes the Strategic Framework of the Cassowary Coast Regional Planning Scheme. Therefore, in our opinion the proposed level of assessment and the public notification of the POD represents a holistic and transparent assessment of any future Environment facility development, and affords Council sufficient discretionary power in the assessment of any future development.

- 9. The increase in resident numbers of the site is likely to cause some indirect conflict with native fauna species such as the cassowary, beach stone curlew, mahogany glider and micro bats. It is considered necessary that a management strategy be prepared that addresses conflicts that have the potential to exist between the proposed use and native species. Examples of these conflicts include human/animal interaction and the possibility of car strike. It is considered necessary for the basic concepts of the management strategy be prepared and submitted to Council at this stage of the proposal to assist in the determination of likely impacts of the development on environmental values.**

**Response:**

A Management Strategy for the eco-residential estate has been prepared in consideration of the fauna species recorded or likely to be present on the Site, which seeks to address and minimise potential conflicts between the proposed land uses and native species that may be present on Site.

The Management Strategy identifies potential impacts and risks during both the construction and operational phases and provides a risk rating for identified impacts. Individual management strategies have been prepared for each identified impact, in accordance with the risk rating.

A copy of the Management Strategy is provided at **Attachment D**.

- 10. Strategic Outcome (12 of 3.3.1) of the Planning Scheme Strategic Framework (3.3 Settlement Pattern) outlines that; 'as new urban development occurs, it will be sequenced to minimise the burden on Council's infrastructure networks (for example transport, water, sewerage). Infill development and urban consolidation is the preferred form of development to maximise efficiencies in the delivery of**

**infrastructure and other services'. Please justify how the proposed development will meet this strategic outcome.**

**Response:**

The Site is located outside of a Priority Infrastructure Area on land located within the Rural and Environment Management and Conservation zones. Further, the Site is located within the Regional Landscape and Rural Protection Area (RLRPA), i.e. outside of the Urban Footprint in accordance with the Far North Queensland Regional Plan.

The proposed development is not considered to constitute 'urban development', to which Strategic Outcome (12) of 3.3.1 is understood to relate.

Notwithstanding, it is noted that the Site is not proposed to be connected to Council's reticulated water or sewer network (refer section 4.2.6 of the town planning report). Water supply for potable purposes will be provided by way of roof water tanks or water bores and waste water is proposed to be disposed onsite (further detail to be provided at future detailed design stages of development).

The Site is fronted by a constructed road and the Applicant will pay infrastructure charges as required to contribute to the additional demand generated by the proposed development in this regard.

Although not representing infill or urban consolidation development (which is noted as being the *preferred* form of development) and in accordance with the above, the proposed development is not considered to burden or impact the efficiencies of Council's infrastructure networks in terms of transport, water and/or sewerage, per the requirements of strategic outcome (12) of 3.3.1.

**11. Strategic Outcome (16 of 3.3.1) of Planning Scheme Strategic Framework (3.3 Settlement Pattern) outlines that; 'Development is designed to take into account the potential impacts of climate change'. Please provide justification regarding how the proposed development will be able to meet this strategic outcome.**

**Response:**

It is noted that the Planning Scheme does not explicitly define 'climate change' or identify measurable potential climate change impacts.

It is further noted that the Site is not located within a Vulnerable area, being (emphasis added):

**Areas vulnerable to climate change impacts** such as inundation and coastal erosion up to 2100.

**These areas are shown as vulnerable area on the Coastal Protection Overlay Map (OM-005).**

Notwithstanding the above, a climate change factor was included within flood modelling undertaken for the proposed development (regional flood model provided by BMT WBM).

The regional flood model identified peak flood levels for upstream end of the site and downstream end of the site, as well as peak discharge for downstream end of the site for various flood events, including the 100 Year ARI + Climate Change (refer **Table 1**).

**Table 1. Regional flood model results**

Flood Event	Peak Flood Level Upstream End of Site (mAHD)	Peak Flood Level Downstream End of Site (mAHD)	Peak Discharge Downstream End of Site (m³/s)
100 Year ARI	12.95	12.83	194
100 Year ARI + Climate Change	13.27	13.20	239
200 Year ARI	13.28	13.20	240
500 Year ARI	13.64	13.59	300
PMF	16.09	16.06	634



In accordance with the findings of the flood modelling, the elevation of the fill pads is proposed to be 13.65 metres AHD. Thus, the fill pads are generally 900 mm to one metre above the 100 year ARI flood level. The minimum floor levels in the dwellings are likely to be at least 300 millimetres above the elevation of the fill pad. Therefore, the minimum floor levels will be approximately 1.2 to 1.3 metres above the 100 year ARI flood level, thus exceeding Council's requirement for minimum floor levels to be 300 millimetres above the 100 year ARI flood level.

It is further noted that internal roads are proposed to be constructed no lower than 300mm below the 50 year ARI flood level (2% AEP). The results presented in Figure D7 of the Report provided at **Appendix G** of the town planning report demonstrate that the peak flood depths over the internal roads during the 50 year ARI (2% AEP) flood event are less than 300mm.

Development is proposed on cleared land within the Site, mitigating bush fire hazard risk.

Given that the Site is not located within proximity to the coast line, coastal hazards are not considered to be relevant to the proposed development.

It is therefore considered that the proposed development takes into account the potential impacts of climate change, to the extent relevant, as required by strategic outcome (16) of 3.3.1.

**12. Strategic Outcome (17 of 3.3.1) of the Planning Scheme Strategic Framework (3.3 Settlement Pattern) outlines that; 'Rural residential development is located on land already within the rural residential zone. Rural residential development occurs as to achieve cost-effective delivery of services and infrastructure'. Please justify how the proposed development will meet this strategic outcome.**

**Response:**

It is noted that 'Rural residential' development is not specifically defined under the Planning Scheme, other than the description for the Rural residential zone. It is further noted that no 'rural' uses are proposed to be undertaken as part of the proposed development, such as Cropping and/or Rural industry. Accordingly, it is submitted that the proposed development does not represent Rural residential development.

As identified within the town planning report, it is asserted that the proposed development is for 'eco-residential' development and accordingly, it is not considered that strategic outcome (17) of 3.3.1 is relevant to the proposed development.

In accordance with the above, no further response is provided to Item 12.

**13. Strategic Outcome (4 of 3.4.1) of the Planning Scheme Strategic Framework (3.4 Natural Environment) outlines that; 'The ecological values of the Region are protected from the potential adverse impacts of urban development and urban development will only occur within the township zone, unless the locational requirements of the development necessitate its location outside the urban footprint'. Please justify how the proposed development will meet this strategic outcome.**

**Response:**

As detailed in the response to Item 10 above, the Site is located outside of a Priority Infrastructure Area on land located within the Rural and Environment Management and Conservation zones. Further, the Site is located within the Regional Landscape and Rural Protection Area (RLRPA).

The proposed development is not considered to represent 'urban development', to which strategic outcome (4) of 3.4.1 is understood to relate. Accordingly, Strategic Outcome (4) of 3.4.1 is not considered to be relevant to the proposed development.

Notwithstanding, the proposed development incorporates numerous measures to protect the ecological values of the area, as detailed in the response to item 14 below and in section 4.6 of the town planning report.

**14. Strategic Outcome (7 of 3.4.1) of the Planning Scheme Strategic Framework (3.4 Natural Environment) outlines that; 'Development is carried out in a way that is sensitive to and protective of the Region's endangered and threatened species, including the cassowary and the mahogany glider. This means that urban impacts,**

***such as fencing, traffic and the introduction of pest plants and animals do not impact on the future viability of these species'. Please justify how the proposed development will meet this strategic outcome.***

**Response:**

The proposed development and accompanying POD provides numerous measures to ensure that development is carried out in a way that is sensitive to and protective of the Region's endangered and threatened species, including the cassowary and mahogany glider. Such measures include:

- > Facilitating development with an emphasis on Southern Cassowary (*Casuarus casuaris johnsonii*) other native wildlife preservation (low rise, minimal impact);
- > Facilitating habitat protection and preservation, restoration and connectivity;
- > Facilitating land uses, including 'Environment facility' and 'Nature-based tourism' that promote a thriving Southern Cassowary population;
- > Protecting and enhancing existing native vegetation;
- > Including requirements for compensatory rehabilitation of former agricultural land or degraded land and other ecological enhancements in support of a thriving Southern Cassowary population (within the Cassowary Conservation Precinct);
- > Providing no fencing that limits the movement of the Southern Cassowary within the Cassowary Corridor Precinct and permitting only four (4) strand electrified plain wire fencing within the Cassowary Rise Eco-residential Estate Precinct.

Further, a Management Strategy is provided at **Attachment D** that addresses potential conflicts between residents and native fauna species.

In accordance with the above and the submitted common material, the proposed development is considered to meeting specific outcome (7) of 3.4.1 – Natural environment.

**15. *Specific Outcome (2 of 3.4.2) of Planning Scheme Strategic Framework (3.4 Natural Environment) outlines that; 'Urban development is located within the township zone, except where this is not feasible due to the size and specific locational requirements of the development. However, development must avoid environmentally significant areas. Nature-based tourism may be located in environmentally significant areas, provided the activity:***

- (a) is low key and low impact;***
- (b) is reliant upon, consistent with and does not degrade the ecological values of the area;***
- (c) maintains ecological connectivity or habitat extent'.***

***Please provide justification as to how any proposed development is capable of meeting the Specific Outcome.***

**Response:**

As detailed in the response to item 10 and item 13 above, the Site is located outside of a Priority Infrastructure Area on land located within the Rural and Environment Management and Conservation zones. Further, the Site is located within the Regional Landscape and Rural Protection Area (RLRPA), i.e. outside of the Urban Footprint.

The proposed development is not considered to represent 'urban development', to which Specific Outcome (2) of 3.4.2 is understood to relate.

Notwithstanding that specific outcome (2) of 3.4.2 is not considered to be relevant to the proposed development (and therefore additional justification not required), it is reinforced that the proposed development has been designed in consideration of items (a), (b) and (c) above and achieves compliance with the higher level 'Element – Natural environment' (section 3.4.2), which states:

*The Region's natural environment is protected and enhanced through the design and siting of development and infrastructure.*

**16. *Specific Outcome (10 of 3.5.2.1) of the Planning Scheme Strategic Framework. (3.5.2 Element - Social Infrastructure) outlines that; 'Social infrastructure is provided in***

***sequence with new residential development as appropriate'. Please provide details of the social infrastructure provided in accordance with the development and at what stage/s of the development this infrastructure will be provided.***

**Response:**

Specific outcome (10) of 3.5.2.1 requires that social infrastructure is provided in sequence with new residential development *as appropriate*.

Given that the proposed development comprises 10 eco-residential lots within the El Arish locality, the provision of attendant social infrastructure such as education and training facilities, health services and facilities, open space, sport and recreation facilities, emergency services, religious facilities, arts and cultural facilities, community meeting places, etcetera is not considered to be appropriate in this instance, particularly given the Site's proximity to Mission Beach and El Arish (which are approximately 8 kilometres away), where appropriate levels of social infrastructure exist.

The proposed development is therefore considered to achieve compliance with specific outcome (10) of 3.5.2.1 and the higher level 'Element – Social infrastructure' (section 3.5.2), which states:

*Adequate and appropriate social infrastructure is provided to service the Region's towns and villages.*

Moreover, having regard to the extensive private open space and the restorative effects of the natural environment the proposed development is considered to have in-built passive social infrastructure and cannot be compared to an intensive urban development in this regard.

**17. Specific Outcome (11 of 3.5.2) of Planning Scheme Strategic Framework (3.5 Safe and Strong Communities) outlines that 'Development provides for:**

- (a) safe access to the surrounding road network;**
- (b) for development involving the reconfiguration of a lot, multiple points of access to the external road network;**
- (c) access to public transport (where applicable);**
- (d) access to useable open space and natural areas;**
- (e) integrated or linked pedestrian and bikeways;**
- (f) appropriate lighting;**
- (g) sight lines and passive surveillance of public areas;**
- (h) the incorporation of Crime Prevention through Environmental Design Principles;**
- (i) subdivision and building layout that minimises opportunities for criminal activity and situations causing social conflict between residents'.**

***Please provide justification regarding how the proposed development will be able to meet this Specific Outcome.***

**Response:**

The proposed development achieves compliance with specific outcome (11) of 3.5.2 as follows:

***Development provides for:***

- (a) safe access to the surrounding road network;**

**Comment:** Safe access to the surrounding road network is facilitated via an internal road network that intersects with the exiting road network. We note that the Department of Transport and Main Roads (TMR), being Road Manager for El-Arish-Mission Beach Road has requested further information by way of an information request in respect to the proposed development (namely, the intersection) and as discussed on Wednesday 11<sup>th</sup> January at our meeting at Council's offices, TMR will have primary responsibility in respect to the consideration of the safe function of the road network, particularly as no new road is proposed where Council would be Road Manager. Council will be provided with a copy of our Information Request Response to the State Assessment Referral Agency (SARA).

- (b) for development involving the reconfiguration of a lot, multiple points of access to the external road network;**

**Comment:** Given the nature of the Site, which is accessed via a single access strip, multiple points of access to the external road network are not provided. Notwithstanding, given that



the internal road facilitates safe access to the proposed lots under normal circumstances and for floods up to and including the 50 year ARI (2% AEP) event, a single access point is considered to be sufficient in this instance.

**(c) access to public transport (where applicable);**

**Comment:** Given the location of the Site, i.e. outside of an urban area, item (c) is not considered to be relevant to the proposed development. Notwithstanding, it is understood that public transport does pass by and/or near to the Site via El Arish Mission Beach Road.

**(d) access to useable open space and natural areas;**

**Comment:** The proposed development provides for large lots ranging in size from 7,182m<sup>2</sup> – 62,486m<sup>2</sup> (which include cleared areas of open space), plus a 60.7 hectare Cassowary conservation lot, which provides access to natural areas. The open space and natural areas provided are considered to be sufficient, given the nature of the proposed development, being for an eco-residential estate.

**(e) integrated or linked pedestrian and bikeways;**

**Comment:** Given the nature of the proposed development, being for an eco-residential estate located within the RLRPA, linked pedestrian and bikeways are not considered to be relevant in this instance. Further, it is understood that footpaths are not required for a Community Title Scheme development as the provisions of the FNQROC Development Manual need not apply.

**(f) appropriate lighting;**

**Comment:** the proposed development will incorporate lighting that is appropriate for the nature and scale of the development, and in accordance with the requirements of the Plan of Development, particularly with respect to wildlife considerations.

**(g) sight lines and passive surveillance of public areas;**

**Comment:** Lots and proposed building pads within the estate have been designed to allow for future Dwelling houses to be constructed fronting the internal road network, facilitating passive surveillance of common areas. The linear nature of development facilitates clear sightlines to common areas.

**(h) the incorporation of Crime Prevention through Environmental Design Principles;** It is noted that Crime Prevention through Environmental Design (CPTED) principles are not defined or articulated within the Planning Scheme. Notwithstanding, it is noted that lots and proposed building pads within the estate have been designed to allow for dwellings to be constructed fronting the internal road network, facilitating passive surveillance in consideration of Crime Prevention through Environmental Design principles. Appropriate lighting and clear sightlines are also considered to be a feature of the proposed development, with respect to CPTED.

**(i) subdivision and building layout that minimises opportunities for criminal activity and situations causing social conflict between residents'.**

Lot sizes proposed facilitate adequate separation between residents and facilitate casual surveillance of private property and common areas, minimising opportunities for criminal activity and situations causing social conflict between residents.

**18. Specific Outcome (12 of 3.5.2) of Planning Scheme Strategic Framework (3.5 Safe and Strong Communities) outlines that; 'Urban development is designed to take into account the possible health impacts of biting insects and incorporates measures to prevent associated health impacts'. Please provide justification regarding how the proposed development will be able to meet this Specific Outcome.**

**Response:**

The Cassowary Coast Regional Council Planning Scheme does not provide specific guidance on urban design in consideration of biting insects (other than requiring that urban development is 'designed, located and operated' to mitigate the health impacts of biting insects). Notwithstanding, The Design for Safety Code has been included within the POD as a relevant code for the purposes of development assessment, to reflect the Planning Scheme in this regard, which requires that:

*'Urban development is designed, located and operated to mitigate the health impacts of biting insects.'*

- 19. Strategic Outcome (3 of 3.6.1) of the Planning Scheme Strategic Framework (3.6 Natural Resources and Landscapes) outlines that; 'Land classified as important agricultural land is prevalent in the Region (see strategic framework maps SFM-03a, SFM-03b and SFM-03c). This land is important in maintaining the viability of the Region's agricultural industries. ALC Class A and B land must be protected from development that may lead to its alienation or diminished productivity'. Please justify how the proposed development will meet this strategic outcome.**

**Response:**

Although mapped as containing Agricultural Land (Classes A and B), it is considered that the Site currently has little to no agricultural value, as identified within the Agricultural Land Report provided with the town planning report (refer **Appendix J** of the town planning report).

The Agricultural Land Report was prepared for the Site by Rural and Environmental Resources in accordance with the requirements of the Planning Guidelines for 'The Identification of Good Quality Agricultural Land' (GQAL) (DPI and DHLGP) as recommended in the former State Planning Policy 1/92. The report concludes that the Site is not 'capable of sustainable use for agriculture with a reasonable level of inputs', as biophysical limitations, locational restraints and the size and fragmentation of the Site are not able to be resolved.

We also note that flood is a limitation in respect to consideration of whether agricultural land is GQAL as elucidated in the Guidelines for Agricultural Land Evaluation in Queensland and further note that the flood constraints on the Site were a determining factor in the cessation of agricultural production on the Site.

On the basis of the above, it is considered that the Site does not represent GQAL (or important agricultural land) that contributes to sustaining the regions agricultural industries. Accordingly, strategic outcome 3 of 3.6.1 is not considered to be relevant to the proposed development.

- 20. Specific Outcome (6 of 3.6.2.1) of Planning Scheme Strategic Framework (3.6.2 Element - Rural and agricultural land) outlines that; 'ALC Class A and B land is not reconfigured into lot sizes or used for any purpose that is inconsistent with the current or potential use of the land for agriculture'. Please provide justification regarding how the proposed development will be able to meet this Specific Outcome.**

**Response:**

Although mapped as containing Agricultural Land (Classes A and B), it is considered that the Site currently has little to no agricultural value, as identified within the Agricultural Land Report provided with the town planning report (refer **Appendix J** of the town planning report).

Accordingly, the already fragmented Site is not considered to represent land with potential for viable agricultural purposes.

We also note that flood is a limitation in respect to consideration of whether agricultural land is GQAL as elucidated in the Guidelines for Agricultural Land Evaluation in Queensland and further note that the flood constraints on the Site were a determining factor in the cessation of agricultural production on the Site.

On the basis of the above, it is considered that the Site does not represent GQAL (or important agricultural land) and accordingly, strategic outcome 6 of 3.6.1 is not considered to be relevant to the proposed development.

- 21. Specific Outcome (7 of 3.6.2.1) of Planning Scheme Strategic Framework (3.6.2 Element - Rural and agricultural land) outlines that; 'ALC Class A and B land is not alienated by development when suitable alternative land exists for that development. Development that would have the impact of alienating ALC Class A and B land does not occur on that land unless there is an overriding need for the development in terms of public benefit and no other site is suitable'. Please provide justification regarding how the proposed development will be able to meet this Specific Outcome.**

**Response:**

Although mapped as containing Agricultural Land (Classes A and B), it is considered that the Site currently has little to no agricultural value, as identified within the Agricultural Land Report provided with the town planning report (refer **Appendix J** of the town planning report). The Agricultural Land Report further identifies that the Site is already fragmented and comprises 14 discrete parcels that are cleared and separated by either vegetation strips or vegetated creek lines.

On the basis that the Site does not comprise GQAL, justification of overriding the need for the development where proposed is not considered to be required in this instance. Accordingly, strategic outcome (7) of 3.6.1 is not considered to be relevant to the proposed development.

**22. Specific Outcome (8 of 3.7.2.1) of the Planning Scheme Strategic Framework (3.7.2 Element - Active and public transport) outlines that; 'Development incorporates integrated opportunities for walking and cycling between destinations within and outside the development site'. Please justify how the proposed development will meet this specific outcome.**

**Response:**

Notwithstanding that the Site is not located within proximity to a town centre or other focal point to which walking or cycling would typically occur, the proposed development connects to the external road network via the internal road; the proposed development therefore does not preclude walking or cycling to destinations within and outside the development site, as required by specific outcome 8 of 3.7.2.1.

**23. Strategic Outcome (3 of 3.8.1) of the Planning Scheme Strategic Framework (3.8 Infrastructure and services) outlines that; 'The Region's relatively low population is generally well serviced by extensive infrastructure networks. To minimise the need to further extend these infrastructure networks, infill and consolidation is the preferred form of development to ensure maximum efficiency and cost effectiveness'. Please justify how the proposed development will meet this strategic outcome.**

**Response:**

The proposed development provides for on-site infrastructure and therefore does not require existing infrastructure networks to be extended (refer section 4.2.6 of the town planning report). The Site is fronted by a constructed road and the Applicant will pay infrastructure charges as required to contribute to the additional demand generated by the proposed development in this regard.

Accordingly, strategic outcome (3) of 3.8.1 is not considered to be relevant to the proposed development; no further response is provided.

**24. Specific Outcome (4 of 3.8.2.1) of the Planning Scheme Strategic Framework (3.8.2 Element - Delivery of infrastructure) outlines that; 'New infrastructure is designed and located to avoid areas at risk of natural hazards, such as bushfire, storm tide inundation, landslide and flooding. Where avoidance is not practicable, infrastructure is designed and located to ensure maximum resilience from the impacts of natural hazards. The design of infrastructure also takes into account the impacts of climate change'. Please justify how the proposed development will meet this specific outcome.**

**Response:**

Development is proposed on land that is identified as containing bushfire, coastal and flood hazards, as identified on the respective overlays.

It is noted that development is proposed on existing cleared areas of the Site, which provide a 'firebreak' from hazardous vegetation, thus mitigating bushfire hazard risk to infrastructure.

With respect to flood, the proposed development maximises the resilience from the impacts of flooding by constructing the residential fill pads (13.65 mAHD) above the 500 year Average Recurrence Interval (ARI) regional flood level. This fill level is 700 mm above the 100 year ARI regional flood level, and 380 mm above the climate change 100 year ARI regional flood level.

Services infrastructure, including the onsite sewer disposal systems will be constructed in accordance with the relevant standards and in consideration of the natural hazards, to be detailed at future detailed design / building works stages.

Infrastructure will therefore be designed and located to ensure maximum resilience from the impacts of climate change to the extent relevant, thus achieving compliance with specific outcome (4) of 3.8.2.1.

**25. Strategic Outcome (1 of 3.11.1) of the Planning Scheme Strategic Framework (3.11 Natural Hazards) outlines that; 'The Cassowary Coast Region is subject to a range of natural hazards, notably flooding and cyclones. Development in the Region must be able to either withstand the impacts of these natural hazards or recover quickly when affected. The highest priority in the design of a development is that people are kept safe from natural hazards. The protection of property is also important, although a secondary concern to ensuring people are safe'. Please justify how the proposed development will meet this strategic outcome.**

**Response:**

The proposed development has been designed with a key focus on the safety of people and property, particularly with respect to flooding.

As detailed above, the residential fill pads (13.65 mAHD) are located: above the 500 year Average Recurrence Interval (ARI) regional flood level; 700 mm above the 100 year ARI regional flood level; and 380 mm above the climate change 100 year ARI regional flood level. It is anticipated that the ground floor level of any constructed dwelling will be at least 300 mm above the fill pad level. Thus, the minimum living area will be at least one metre above the regional 100 year ARI flood level. Any two storey dwellings will provide a residential floor level above the Probable Maximum Flood level. Consequently, the proposed development minimises the risk to residents.

The proposed development, incorporating various flood mitigation measures, is therefore considered to achieve compliance with strategic outcome (1) of 3.11.1.

**26. Strategic Outcome (2 of 3.11.1) of the Planning Scheme Strategic Framework (3.11 Natural Hazards) outlines that; 'The first option is always to locate development away from natural hazards and outside areas subject to natural hazards. However, this may not always be practical given the extent of certain natural hazards in the Region, such as flooding, and the pattern of historical development making infill development likely. Therefore, the focus is on designing and locating development to ensure maximum resilience to natural hazard events. However, land subject to extreme hazard flooding is not considered suitable for urban development and high coastal hazard areas are not considered suitable for any intensification of development'. Please justify how the proposed development will meet this strategic outcome.**

**Response:**

As detailed above:

The residential fill pads (13.65 m AHD) are located: above the 500 year Average Recurrence Interval (ARI) regional flood level; 700 mm above the 100 year ARI regional flood level; and 380 mm above the climate change 100 year ARI regional flood level.

The minimum ground floor level of any constructed dwelling will be at least 300 mm above the fill pad level, further increasing the flood immunity of the residential areas.

Any two storey dwellings will provide a residential floor level above the Probable Maximum Flood level.

It is therefore considered that the proposed development maximises the resilience to flooding and achieves compliance with strategic outcome (2) of 3.11.1.

**27. Strategic Outcome (4 of 3.11.1) of the Planning Scheme Strategic Framework (3.11 Natural Hazards) outlines that; 'Climate change, and in particular the likelihood of more intense and frequent events, is taken into account when incorporating disaster**

***and natural hazard mitigation features into a development'. Please justify how the proposed development will meet this strategic outcome.***

**Response:**

A 'Climate change' factor was included within flood modelling undertaken with respect to the proposed development, ultimately informing design levels for building pads and internal roads.

Development is also proposed within cleared areas of the Site (providing for a firebreak of sorts from potentially hazardous vegetation) and provides an internal road network to facilitate evacuation in light of bushfire risk, should bushfire hazard intensity and frequency increase as a result of climate change.

In accordance with the above, the proposed development is considered to achieve compliance with strategic outcome (4) of 3.11.1.

***28. Strategic Outcome (6 of 3.11.1) of the Planning Scheme Strategic Framework (3.11 Natural Hazards) outlines that; 'Large parts of the Region are subject to flooding. The Region's residents accept this aspect of living in the Wet Tropics, and are resilient to this aspect of living "up north". However, new development must be designed to provide maximum protection to people and property during flood events. Subdivision design provides for an evacuation route for persons wanting to leave a potentially affected property for the duration of a flood event'. Please justify how the proposed development will meet this strategic outcome.***

**Response:**

As detailed above and documented with the Flood Report (refer **Appendix G** of the town planning report), flood modelling has been undertaken with respect to the proposed development, to ensure that the proposed development has been designed to provide maximum protection to people and property during flood events.

Should residents choose to seek refuge in place rather than evacuate the Site prior to a flood event, the following is noted:

- the proposed fill pads provide greater than a 500 year ARI (0.2% AEP) flood immunity for the residential dwellings;
- the minimum floor levels in the dwellings will be approximately 1.2 to 1.3 metres above the 100 year ARI (1% AEP) flood level, thus exceeding Council's requirement of floor levels of greater than or equal to the 1% AEP level plus 0.3 metres of 0.3 metres above the 1% AEP level);
- all rooms in the second storey of the proposed dwellings will be located above the Probable Maximum Flood level, which has an Average Recurrence Interval of between 1,000,000 and 10,000,000 years, i.e. between 1 million and 10 million years; and
- the duration for which the Site will be isolated has been identified generally as less than one day during extreme flood events.

In addition to the above, it is identified that residents will be able to safely drive on the internal roads and enter/exit the Site for floods up to and including the 50 year ARI (2% AEP) event.

Thus, residents will be able to freely enter and exit the Site for the vast majority of flood events. During extreme flood events (i.e. an average recurrence interval of 100 years or more), residents may either choose to evacuate the Site prior to the flood event, or safely seek refuge within their Dwelling house.

The proposed development is therefore considered to achieve compliance with strategic outcome 6 of 3.11.1.

***29. Specific Outcome (1 of 3.11.2.1) of the Planning Scheme Strategic Framework (3.11.2 Element - Safety and resilience) outlines that, 'Development provides for the safe evacuation of persons by road'. Please justify how the proposed development will meet this specific outcome.***



**Response:**

Internal roads of the estate are proposed to be constructed no lower than 300mm below the 50 year ARI flood level (2% AEP). The results presented in Figure D7 of the Flood Report provided at **Appendix G** of the town planning report, demonstrate that the peak flood depths over the internal roads during the 50 year ARI (2% AEP) flood event are less than 300 mm.

Residents will therefore be able to safely drive on the internal roads and enter/exit the Site for all floods up to and including the 50 year ARI (2% AEP) event, and be able to freely enter and exit the Site for the vast majority of flood events.

The proposed development is considered to achieve compliance with specific outcome (1) of 3.11.2.1.

- 30. Specific Outcome (3 of 3.11.2.1) of the Planning Scheme Strategic Framework (3.11.2 Element - Safety and resilience) outlines that, 'New residential and commercial subdivisions allow persons to be evacuated by road out of the development site'. Please justify how the proposed development will meet this specific outcome.**

**Response:**

Refer response to Item 29 above.

- 31. Specific Outcome (4 of 3.11.2.1) of the Planning Scheme Strategic Framework (3.11.2 Element - Safety and resilience) outlines that; 'If part of a development is below the 1% annual exceedance probability flood event level, the development site or building contains an area above the 1% annual exceedance probability flood event level for persons within the development site to evacuate to during a flood'. Please justify how the proposed development will meet this specific outcome.**

**Response:**

As discussed above, all residential allotments are located 700 mm above the 100 year ARI (or 1% Annual Exceedance Probability) regional flood level.

Further, internal roads are proposed to be constructed no lower than 300mm below the 50 year ARI flood level (2% AEP); peak flood depths over the internal roads during the 50 year ARI (2% AEP) flood event are less than 300 mm.

Residents are therefore expected to be able to safely drive on the internal roads and enter/exit the Site for floods up to and including the 50 year ARI (2% AEP) event. Thus, residents will be able to freely enter and exit the Site for the vast majority of flood events.

The proposed development is considered to achieve compliance with specific outcome (4) of 3.11.2.1.

**ENGINEERING**

- 32. The Planning Report mentions the construction of 'building pads', do these "building pads" also contain the proposed effluent disposal areas and are outside of the effects of inundation from flooding?, and are consistent with setbacks required within the planning scheme codes?**

**Response:**

On-site sewer disposal will be designed at future detailed design stages of development, in accordance with the relevant standards. Notwithstanding, it is understood that a bio-cycle sewerage disposal systems can be accommodated on the proposed building pads, which afford protection from flood inundation.

Accordingly, the Plan of Development has been updated to include assessment criteria that requires on-site waste water disposal infrastructure to be located within the building envelope areas as shown on Map 2 – Development Parameters Plan (refer AO10.1 and PO10 of Table 5.2.1 - Eco-residential Precinct Criteria for self assessable and assessable development).

Regarding setbacks, the Rural zone code (being the zone wherein development will predominantly occur) requires that buildings and other structures are set back at least 6 metres from the street frontage where fronting a private road.

The proposed building pads are considered to comply with the requirements of the Rural zone code (if the internal road, currently accessed via access easement is considered to be a private road). Should there be any doubt, it is also considered that the proposed development is able to comply with PO1 of the Rural zone code, being the relevant performance outcome, in terms of maintaining the amenity of the locality.

**33. Please identify the proposed road infrastructure i.e. standard of seal, roadside drainage.**

**Response:**

Notwithstanding that the proposed development will now be under a Community Title Scheme the main internal road will be constructed to a similar standard as the existing access strip, which is understood to have been constructed in accordance with the provisions for the lowest order Rural road designation under FNQROC Development Manual (20 metre wide road reserve, seal width of 4.5 metres).

The secondary internal road heading south will be constructed to an Access place standard, in accordance with the provisions of the FNQROC Development Manual. This is considered to be sufficient given the number of lots accessing this section of the road (four).

The internal road network will be detailed at future detailed design stages of development, however will be designed in accordance with the relevant standards and as conditioned by Council.

All stormwater infrastructure required for the proposed development will be designed and constructed to comply with the requirements of Council's Planning Scheme Policy 5, with further detail to be provided at future detailed design stages.

**34. The existing easement access works were completed to an "access" standard. Council will require all documentation including Registered Professional Engineer Queensland endorsement of ITP; test results; CBR and pavement design, drainage/culvert design and "as constructed" details and endorsed plans prior to assessing the development further. Please identify if this information is readily available, and if so please submit to Council. This information is required so Council can be confident that the access has been constructed in accordance with current standards.**

**Response:**

It is firstly noted that it is the Applicant's intention to retain the existing access road as a private road, managed under Community Title Scheme.

Documentation relating to the construction of the existing road as required by Item 34 will be provided to Council at Operational Works stages of development; the Applicant is willing to accept a condition of approval in this regard.

**35. Council's preference is that the current access easement remains a private asset (ownership to be outlined refer item 34) and does not become a council asset. Should the applicant prefer to have the current access become a Council asset the road will need to be to FNQROC standards, including all driveways coming off it, both future and existing (existing driveways will need to be sealed to the property boundary). How is this to be achieved on existing lots outside of the current development proposal but included as part of the development plan of approval?. Construction to FNQROC standard could be avoided if the easement remains a private road under body corporate agreement; however it will still need to meet AS2890 for off road access.**

**Response:**

It is proposed that common property (including internal roads and existing access road) be managed under Community Title Scheme.

A plan identifying common property within the estate is provided at **Attachment C**.

**36. Two of the proposed dams cross property boundaries, which may lead to ownership and maintenance issues and disputes between neighbors in the future. How will this**

***be manage/ resolved? Can the dams be included as part of a body corporate arrangement ?***

**Response:**

It is proposed that common property (including dams) be managed under the Community Title Scheme.

A plan identifying common property within the estate is provided at **Attachment C**.

***37. How is to be ascertained prior to any plan endorsement the requirements of onsite treatment and disposal of effluent in particular PO11 & P13 of Council's Infrastructure Code will be able to be complied with? Please note Council needs to be sure the statements made in the planning report can be verified by feasibility studies for each proposed lot prior to assessment for reconfiguration especially as significant areas will become inundated during local and regional flood events and are included in conservation areas.***

**Response:**

It is understood that bio-cycle sewerage disposal systems can be accommodated on proposed building pads. Given the type of on-site disposal proposed to be utilized within the estate and their proposed siting above flood inundation levels, feasibility studies pertaining for each lot are not considered to be required in this instance. If required, the POD can be updated to include this as a requirement.

***38. The application confirms the site is subject to inundation with the supporting flood study concentrating on the local flooding events. There is a significant height difference between the local and regional flood levels. Please submit details of property inundation with respect to the regional flood events for Q100 (property and floor levels) and Q50 (road/access levels). Please also confirm that house pads, roads and accesses were modelled in the post development flood model. Please provide details as to how stormwater and floodwater will be managed in respect to the substantial embankments and pads that will be constructed for roads, accesses and dwelling pads. It is also required as part of this information request that all flood modelling be peer reviewed at no cost to Council, BMT WBM are Council's consultants.***

**Response:**

The flood study report details the results from two hydraulic models:

- A regional model of the Liverpool/Maria Creek catchment, using a 20 metre grid, to examine the flood immunity of the proposed building pads.
- A local model of Jurs Creek, using a 10 metre grid, to examine the impact of the proposed development on flooding in the vicinity of the site.

Both models use the same inflow hydrographs in the Jurs Creek catchment. Consequently, the two models yield similar peak flood levels, especially as the flood events get lower (and there is less backwater influence from the Maria Creek catchment. For example, in the 100 year ARI event, the peak flood level at the upstream end of the site is:

- 12.95m AHD from the regional model; and
- 12.80m AHD from the local model.

The house pads, roads and accesses were modelled in the post-development flood model.

Driveway ramps will be used to transition from the internal roads to the top of the building pads.

***39. Please provide a statement of compliance that all signage used as part of the flood mitigation risk management, particularly in terms of road flooding is in accordance with the MUTCD. It will not be acceptable to utilize non standard signage for this purpose.***



**Response:**

Table 5.2.1 A – Flood Signage of the Plan of Development has been updated to include a notation requiring that all flood signage erected within the Cassowary Rise Eco-Residential Estate is to be in accordance with the provisions of the Manual of Uniform Traffic Control Devices (MUTCD), to ensure that standard signage will be used internally. It is further noted that the Applicant is willing to accept a condition of approval in this regard.

- 40. *The plan of development shows cross drainage on the internal roads, where do these discharge to ensure all storm water flows are directed to a legal point of discharge?. Please ensure there are easements for drainage flow paths if required, with these easements burdened over the respective properties and the responsibility of the property owners to maintain not Council.***

**Response:**

Further detail on drainage design will be provided to Council at future detailed design stages of development. The Applicant is willing to accept conditions requiring that stormwater drainage be directed to a lawful point of discharge.

- 41. *There is mention of cassowary treatments on the road. Please identify what these are? Council is not supportive of road humps or traffic control devices and don't see the need for these in a low speed low traffic environment.***

**Response:**

A Management Strategy is provided at **Attachment D**, which details strategies with respect to Fauna-safe roads and vehicle strike. The management strategy details reduced speed limits, cassowary / macropod signage and animal emergency contact details. Additional road design treatments include pavement treatments (cassowary zone etc) and traffic calming measures.

**Conclusion**

The above represents a partial response to the information requested under section 278(1)(b) of SPA. Council is requested to proceed with the assessment of this application.

If you have any further queries, please contact me on (07) 4034 0500.

Yours faithfully,



Dominic Hammersley  
Principal, Planning / Strategic Development Manager  
For Cardno

**Enc:**

Attachment A – Needs and Demand Report  
Attachment B – Amended Plan of Development  
Attachment C – Plan of Common Property  
Attachment D – Management Strategy

## **Attachment A – Needs and Demand Report**



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**Client: Graeme Thompson**

**Property: Proposed Development  
Cassowary Eco-Residential Estate  
356 Mission Beach Road  
Maria Creeks, QLD 4855.**

## **Market Overview**

Driven by the strength of the real estate market in other states, general property enquiries in the Mission Beach area increased substantially in 2015, and has continued into 2016 with a number of sales recorded.

The most recent sales have been very close to if not the listed price, and some properties have had more than one buyer interested indicating the market has improved. Based on the number of sales we should start to see even more demand for properties which in turn will see prices increase.

The demand for prime property/beachfront property has also increased with several beachfront properties selling, this will certainly help the market strengthen, prices to increase, and will add to buyer confidence.

## **Future/Proposed Developments**

Strong interest from developers continues in the Mission Beach area with a number of significant projects approved and due to commence in 2016/2017, and several more in the planning/negotiating stage.

Some of the more significant projects include;

- Combined recreational/commercial safe boating facility in boat bay Mission Beach due to commence construction 2016/2017.
- Swimming Pool and Aquatic Centre to commence construction 2016/2017 at Marc's Park Mission Beach.
- 80 apartment complex in Wongaling Beach (approved) stage 1 - 20 apartments due to commence late 2016.

I am also in negotiations with new developers to the area looking to secure a few prime sites in Wongaling Beach and Mission Beach. These developers have been watching the Mission Beach market for several years now and with construction funding more readily available from a variety of lenders, they see this as the right time to get into the market to take advantage of the next rise.

## Houses/Units

Enquiry for existing houses, units, and apartments in the Mission Beach area has improved substantially over the past 12 months with many houses in the \$250,000 to \$350,000 price range getting plenty of interest, which are turning into sales.


We have also seen an increase in the number of inspections offers, and sales for houses in the \$400,000 to \$600,000 range, and the level of interest for beachfront properties has improved with recent sales of some of the “cheaper” ones increasing demand.

## Residential Land

Vacant residential land activity over the past 12 months has been very strong due to the sell-out of remaining lots in the Oasis Estate Mission Beach, and the enquiry for 800-1000m<sup>2</sup> residential lots in the \$75,000 to \$150,000 price range remains steady. Enquiry for small acreage lots in the Mission Beach area has been high over the past 12 months but there have been only a few sales. This is due to 90% of the available lots being listed for between \$270,000 and \$320,000.

### Cassowary Eco-Residential Estate

Proposed Lot	Area (m <sup>2</sup> )	Frontage (m)
1	62,486m <sup>2</sup>	235.6m <sup>2</sup>
2	19,940m <sup>2</sup>	159.6m <sup>2</sup>
3	7,467m <sup>2</sup>	70.5m <sup>2</sup>
4	7,182m <sup>2</sup>	106.5m <sup>2</sup>
5	10,381m <sup>2</sup>	168.2m <sup>2</sup>
6	61,130m <sup>2</sup>	234.1m <sup>2</sup>
7	25,519m <sup>2</sup>	95.4m <sup>2</sup>
8	20,002m <sup>2</sup>	78.8m <sup>2</sup>
9	18,430m <sup>2</sup>	84.7m <sup>2</sup>
10	25,761m <sup>2</sup>	90.7m <sup>2</sup>
100	60.7ha	N/A

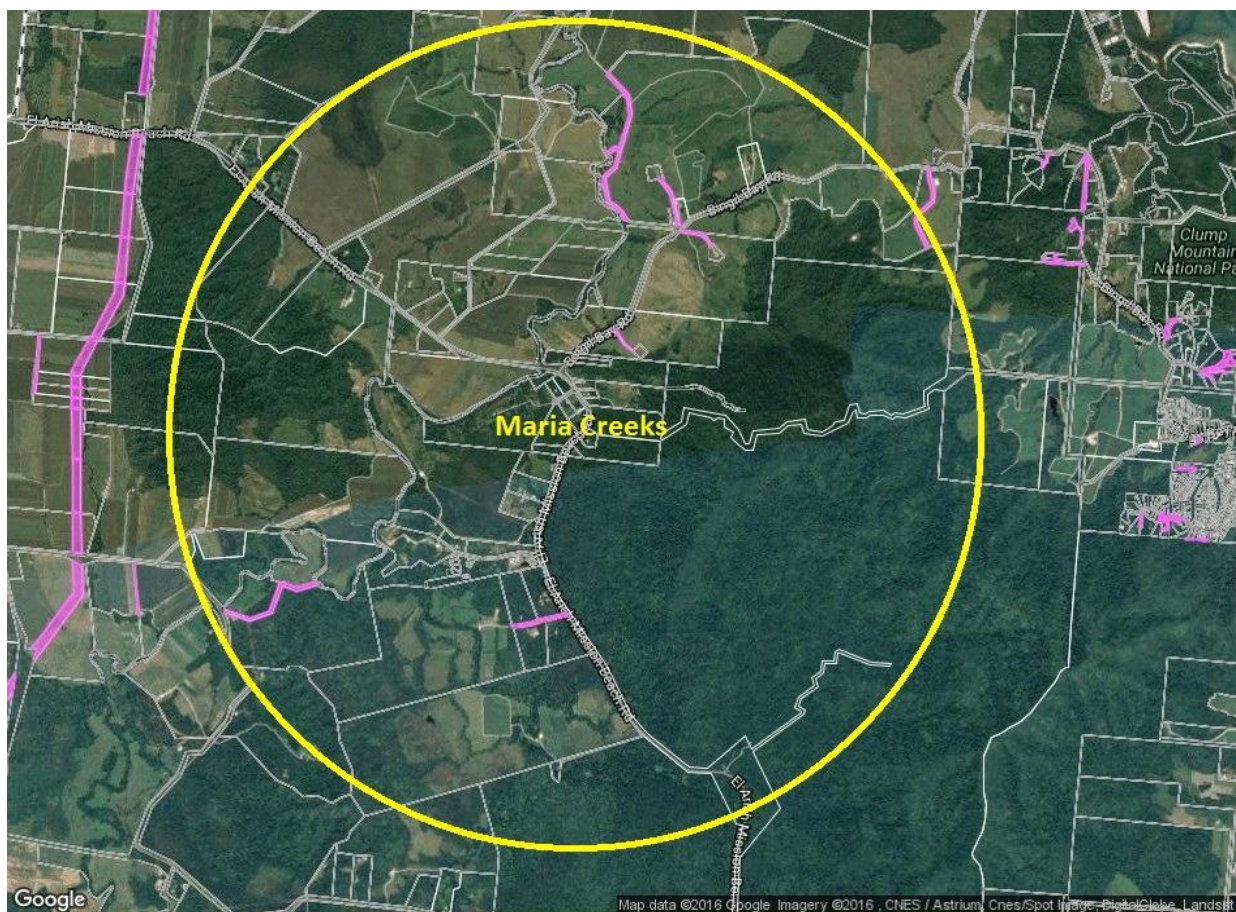






## Location:

Maria Creeks is Located less than 10 minutes drive to the centre of Mission Beach, this small “suburb” is made up of approx 70 rural/rural residential properties in a 3km radius ranging in size from 2000m<sup>2</sup> to over 300acres







The proposed site for the **Cassowary Eco-Residential Estate** is towards the southern end of this area, has only 1 property between it and the **Djiru National Park**, and unlike other local Rural Residential developments, is ideally situated in a highly sought after location.

With a limited number of only 10 lots ranging in size from 0.71ha to 6.24ha plus a further 60ha of protected rainforest, Cassowary Eco-Residential Estate offer buyers a unique opportunity. The majority of these lots include their very own piece of rainforest, some will have dams, and all lots have easy access to Jurs Creek via parkland.

This fantastic boutique development offers a lifestyle like no other, and with the increased level of enquiry for houses in the \$400,000 - \$600,000 price range, these lots are well priced and will be well suited for “lifestyle/energy efficient” house & land packages on which the owners can live in privacy in a Rainforest environment.

## Conclusion

As mentioned above, there is steady enquiry but a shortage of small acreage allotments available throughout the Mission Beach and surrounding areas, and based on the amount of enquiry our office has been getting for small acreage lots, and the fact there are only a limited number of lots available the demand for these lots will be high. Once marketing commences on these lots I am confident of securing several pre-sales, in further demonstration of demand for eco-residential allotments.

## Summary

Thank you for the opportunity to submit this report in relation to the proposed **Cassowary Eco-Residential Estate** development in Maria Creeks.

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## **Attachment B – Amended Plan of Development**



# CASSOWARY RISE ECO- RESIDENTIAL ESTATE PLAN OF DEVELOPMENT

EL ARISH – MISSION BEACH ROAD, MISSION BEACH (LOT 5 SP202686)

## VERSION 2.0

Prepared for:  
**Buxton Superannuation Fund**

Prepared by:  
**Cardno**

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CASSOWARY RISE ECO-RESIDENTIAL ESTATE PLAN OF DEVELOPMENT  
– EL ARISH – MISSION BEACH ROAD, MISSION BEACH  
(LOT 5 SP202686)

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# 1. Introduction

## 1.1 Application

This Plan of Development applies to the area identified as the *Cassowary Rise Eco-residential Estate Plan of Development, El Arish – Mission Beach Road, Mission Beach* (hereafter 'Plan of Development') as shown on **Map 1 – Precinct Plan**. It contains specific planning requirements to those set out in the *Cassowary Coast Regional Council Planning Scheme 2015 (the 'planning scheme')*.

Where it conflicts with the requirements of the planning scheme, this Plan of Development prevails.

## 1.2 Relationship to the Sustainable Planning Act 2009

The Plan of Development functions as part of the preliminary approval pursuant to s242 of the *Sustainable Planning Act 2009* ('SPA') that varies the effect of the local planning instrument for the area by specifying:

- a) The level of assessment for certain development within the Plan of Development Area
- b) Codes that form part of the common material against which subsequent development applications within the Plan of Development Area will be assessed.

## 1.3 Structure

The Plan of Development includes:

- a) a Precinct Plan (**Map 1 – Precinct Plan**)
- b) A plan describing select parameters for development (**Map 2 – Development Parameters Plan**)
- c) **Figures 1a to 1e** that pictorially represent the Eco-residential vision
- d) a statement of purpose for the Eco-residential Precinct, Cassowary Corridor Precinct and Cassowary Conservation Precinct
- e) Tables of Assessment
- f) a Precincts Code applying to development within the Plan of Development Area which forms part of the common material against which subsequent development applications within the Plan of Development Area will be assessed.





## 2. Purpose

### 2.1 Eco-residential Precinct Purpose

The purpose of the Eco-residential Precinct is to facilitate the establishment of an eco-village that sensitively responds to the surrounding environment.

The purpose of the Eco-residential precinct will be achieved through the following overall outcomes:

- a) Protect the Southern Cassowary (*Casuaris casuaris*) through maintaining eco-residential land uses and activities that are consistent with maintaining the local Southern Cassowary population in the Cassowary Conservation Precinct and Cassowary Corridor Precinct
- b) Facilitate sustainable eco-residential development with a low-rise built form
- c) Flood risk management minimises the impact on property and appropriately protects the health and safety of persons at risk of potential flood hazard.

### 2.2 Cassowary Conservation Precinct Purpose

The purpose of the Cassowary Conservation Precinct is to protect the Southern Cassowary through the dedication of approximately 60 hectares of land as ecological habitat.

The purpose of the Cassowary Conservation Precinct will be achieved through the following overall outcomes:

- a) Facilitate land uses, including 'Environment facility' and 'Nature-based tourism' that promote a thriving Southern Cassowary population
- b) Existing native vegetation is protected and enhanced
- c) Any development within the Cassowary Conservation Precinct includes compensatory rehabilitation of former agricultural land or degraded land and other ecological enhancements in support of a thriving Southern Cassowary population
- d) Flood risk management minimises the impact on property and appropriately protects the health and safety of persons at risk of potential flood hazard.

### 2.3 Cassowary Corridor Precinct Purpose

The purpose of the Cassowary Corridor Precinct is to facilitate and support the habitat and movements of the Southern Cassowary.

The purpose of the Cassowary Corridor Precinct will be achieved through the following overall outcomes:

- a) Existing native vegetation is protected and enhanced
- b) No fencing is provided that limits the movement of the Southern Cassowary within the Cassowary Corridor Precinct
- c) The ecological and hydrological function of Jurs Creek is protected and enhanced.



## 3. Tables of Assessment

The Tables of Assessment in the following sub-sections apply to land identified on **Map 1 – Precinct Plan**.

### 3.1 Levels of assessment - Material change of use

The following tables identify **exceptions** to the material change of use levels of assessment contained in Part 5, section 5.5 of the planning scheme.

**Table 3.1.1 Eco-residential Precinct - Material Change of Use**

Use	Level of assessment	Assessment criteria
Food and drink outlet	<ul style="list-style-type: none"> <li>Impact assessment</li> </ul>	<ul style="list-style-type: none"> <li>Cassowary Coast Regional Council Planning Scheme</li> <li>Cassowary Rise Eco-residential estate precincts code</li> </ul>
Roadside stall	<ul style="list-style-type: none"> <li>Impact assessment</li> </ul>	<ul style="list-style-type: none"> <li>Cassowary Coast Regional Council Planning Scheme</li> <li>Cassowary Rise Eco-residential estate precincts code</li> </ul>
Dwelling house	<ul style="list-style-type: none"> <li>Self assessable if complying with the self assessable acceptable outcomes</li> <li>Code assessment where not self assessable</li> </ul>	<ul style="list-style-type: none"> <li>Rural zone code AO13.1 (Cassowary Coast Regional Council Planning Scheme)</li> <li>Dwelling house code A02.1 to A010.1 (Cassowary Coast Regional Council Planning Scheme)</li> <li>Design for safety code (Cassowary Coast Regional Council Planning Scheme)</li> <li>Cassowary Rise Eco-residential estate precincts code</li> </ul>
Rural industry	<ul style="list-style-type: none"> <li>Impact assessment</li> </ul>	<ul style="list-style-type: none"> <li>Cassowary Coast Regional Council Planning Scheme</li> <li>Cassowary Rise Eco-residential estate precincts code</li> </ul>



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**Table 3.1.2 Cassowary Conservation Precinct - Material Change of Use**

Use	Level of assessment	Assessment criteria
Food and drink outlet	<ul style="list-style-type: none"> <li>Impact assessment</li> </ul>	<ul style="list-style-type: none"> <li>Cassowary Coast Regional Council Planning Scheme</li> <li>Cassowary Rise Eco-residential estate precincts code</li> </ul>
Roadside stall	<ul style="list-style-type: none"> <li>Impact assessment</li> </ul>	<ul style="list-style-type: none"> <li>Cassowary Coast Regional Council Planning Scheme</li> <li>Cassowary Rise Eco-residential estate precincts code</li> </ul>
Environment facility	<ul style="list-style-type: none"> <li>Code Assessment if not exceeding the GFA limit in AO3.2 of Table 5.2.2</li> <li>Impact assessment where not code assessable</li> </ul>	<ul style="list-style-type: none"> <li>Design for safety code (Cassowary Coast Regional Council Planning Scheme)</li> <li>Cassowary Rise Eco-residential estate precincts code</li> </ul>
Nature based tourism	<ul style="list-style-type: none"> <li>Code Assessment if not exceeding the GFA limit in AO3.2 of Table 5.2.2</li> <li>Impact assessment where not code assessable</li> </ul>	<ul style="list-style-type: none"> <li>Design for safety code (Cassowary Coast Regional Council Planning Scheme)</li> <li>Cassowary Rise Eco-residential estate precincts code</li> </ul>
Caretaker's accommodation	<ul style="list-style-type: none"> <li>Code assessment if for the use of a caretaker associated with an 'Environment facility' or 'Nature based tourism'</li> <li>Impact assessment where not code assessable</li> </ul>	<ul style="list-style-type: none"> <li>Rural zone code AO13.1 (Cassowary Coast Regional Council Planning Scheme)</li> <li>Caretaker's accommodation code (Cassowary Coast Regional Council Planning Scheme)</li> <li>Design for safety code (Cassowary Coast Regional Council Planning Scheme)</li> <li>Cassowary Rise Eco-residential estate precincts code</li> </ul>
Dwelling house	<ul style="list-style-type: none"> <li>Impact assessable</li> </ul>	<ul style="list-style-type: none"> <li>Rural zone code AO13.1 (Cassowary Coast Regional Council Planning Scheme)</li> <li>Dwelling house code A02.1 to A010.1 (Cassowary Coast Regional Council Planning Scheme)</li> <li>Cassowary Rise Eco-residential estate precincts code</li> </ul>
Rural industry	<ul style="list-style-type: none"> <li>Impact assessment</li> </ul>	<ul style="list-style-type: none"> <li>Cassowary Coast Regional Council Planning Scheme</li> <li>Cassowary Rise Eco-residential estate precincts code</li> </ul>





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**Table 3.1.3 Cassowary Corridor Precinct - Material Change of Use**

Use	Level of assessment	Assessment criteria
Environment facility	<ul style="list-style-type: none"> <li>Code Assessment if 0m<sup>2</sup> GFA is proposed in the Cassowary Corridor Precinct</li> <li>Impact assessment where not code assessable</li> </ul>	<ul style="list-style-type: none"> <li>Design for safety code (Cassowary Coast Regional Council Planning Scheme)</li> <li>Cassowary Rise Eco-residential estate precincts code</li> </ul>
Nature based tourism	<ul style="list-style-type: none"> <li>Code Assessment if 0m<sup>2</sup> GFA is proposed in the Cassowary Corridor Precinct</li> <li>Impact assessment where not code assessable</li> </ul>	<ul style="list-style-type: none"> <li>Design for safety code (Cassowary Coast Regional Council Planning Scheme)</li> <li>Cassowary Rise Eco-residential estate precincts code</li> </ul>

### 3.2 Levels of assessment – Reconfiguring a lot

The following table identifies exceptions to the Reconfiguring a lot levels of assessment contained in Part 5, Section 5.6 of the planning scheme.

**Table 3.2.1 Reconfiguring a lot**

Precinct	Level of assessment	Assessment criteria
Eco-residential Precinct	<ul style="list-style-type: none"> <li>Code assessment where not exceeding a maximum of 10 lots within the Eco-residential precinct</li> <li>Impact assessment</li> </ul>	<ul style="list-style-type: none"> <li>Reconfiguring a lot code (Cassowary Coast Regional Council Planning Scheme)</li> <li>Design for safety code (Cassowary Coast Regional Council Planning Scheme)</li> <li>Cassowary Rise Eco-residential estate precincts code</li> </ul>
Cassowary Conservation Precinct	<ul style="list-style-type: none"> <li>Impact assessment</li> </ul>	<ul style="list-style-type: none"> <li>Cassowary Coast Regional Council Planning Scheme</li> <li>Cassowary Rise Eco-residential estate precincts code</li> </ul>
Cassowary Corridor Precinct	<ul style="list-style-type: none"> <li>Impact assessment</li> </ul>	<ul style="list-style-type: none"> <li>Cassowary Coast Regional Council Planning Scheme</li> <li>Cassowary Rise Eco-residential estate precincts code</li> </ul>

### 3.3 Levels of assessment – Building work

The following table identifies exceptions to the Building work levels of assessment contained in Part 5, Section 5.7 of the planning scheme.

**Table 3.3.1 Eco-residential Precinct – Building work**

Precinct	Level of assessment	Assessment criteria
Building work not associated with a material change of use		



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Eco-residential Precinct	<ul style="list-style-type: none"> <li>Self assessable if complying with the self assessable acceptable outcomes</li> <li>Code assessment where not self assessable</li> </ul>	<ul style="list-style-type: none"> <li>Dwelling house code A02.1 to A010.1 (Cassowary Coast Regional Council Planning Scheme)</li> <li>Design for safety code (Cassowary Coast Regional Council Planning Scheme)</li> <li>Cassowary Rise Eco-residential estate precincts code</li> </ul>
Cassowary Conservation Precinct	<ul style="list-style-type: none"> <li>Impact assessment</li> </ul>	<ul style="list-style-type: none"> <li>Cassowary Coast Regional Council Planning Scheme</li> <li>Cassowary Rise Eco-residential estate precincts code</li> </ul>
Cassowary Corridor Precinct	<ul style="list-style-type: none"> <li>Impact assessment</li> </ul>	<ul style="list-style-type: none"> <li>Cassowary Coast Regional Council Planning Scheme</li> <li>Cassowary Rise Eco-residential estate precincts code</li> </ul>

### 3.4 Levels of assessment – Operational work

The following table identifies **exceptions** to the Operational work levels of assessment contained in Part 5, Section 5.8 of the planning scheme.

**Table 3.4.1 Eco-residential Precinct – Operational work**

Precinct	Level of assessment	Assessment criteria
Eco-residential Precinct	Self assessment	
	If for: <ul style="list-style-type: none"> <li>clearing of <i>vegetation</i><sup>1</sup>;</li> <li>AND</li> <li>Complying with the self assessable acceptable solutions</li> </ul>	<ul style="list-style-type: none"> <li>Cassowary Rise Eco-residential estate precincts code</li> <li>Excavating and filling code (Cassowary Coast Regional Council Planning Scheme)</li> <li>Infrastructure works code (Cassowary Coast Regional Council Planning Scheme)</li> </ul>
	Code assessment	
	Where not self assessable	<ul style="list-style-type: none"> <li>Cassowary Rise Eco-residential estate precincts code</li> <li>Excavating and filling code (Cassowary Coast Regional Council Planning Scheme)</li> <li>Infrastructure works code (Cassowary Coast Regional Council Planning Scheme)</li> </ul>
	Impact assessment	

<sup>1</sup> *Vegetation* as defined in the *Vegetation Management Act 1999*.



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	If for extracting or filling	<ul style="list-style-type: none"> <li>• Cassowary Coast Regional Council Planning Scheme</li> <li>• Cassowary Rise Eco-residential estate precincts code</li> </ul>
Cassowary Conservation Precinct / Cassowary Corridor precinct	Impact assessment	
	If for clearing of <i>vegetation</i> <sup>3</sup>	<ul style="list-style-type: none"> <li>• Cassowary Coast Regional Council Planning Scheme</li> <li>• Cassowary Rise Eco-residential estate precincts code</li> </ul>
	If for extracting or filling	<ul style="list-style-type: none"> <li>• Cassowary Coast Regional Council Planning Scheme</li> <li>• Cassowary Rise Eco-residential estate precincts code</li> </ul>



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## 4. Overlay Maps

The following planning scheme maps are not applicable to the Eco-residential Precinct, Cassowary Conservation Precinct or Cassowary Corridor Precinct:

- Agricultural Land Overlay;
- Bushfire Hazard Overlay;
- Coastal Protection Overlay;
- Environmental Significance Overlay;
- Flood Hazard Overlay;
- Landslide Hazard Overlay;
- Scenic Amenity Overlay;
- Transport Noise Corridors Overlay;
- Waterway Corridors and Wetlands Overlay.

This section overrides the provisions in Schedule 2 of the planning scheme, to the extent that provisions applied to the above-listed planning scheme maps.



## 5. Cassowary Rise Eco-residential Estate Precincts Code

### 5.1 Introduction

This section provides a code for the Plan of Development area (**Map 1 – Precinct Plan**). The code provides additional and/or alternative performance outcomes and acceptable outcomes to the codes identified in Part 4, Division 2, and Part 5 of the planning scheme.

The purpose of this code is to ensure that development in the Plan of Development area is consistent with the purpose (refer Part 2) of this Plan of Development.

### 5.2 Cassowary Rise Eco-Residential Estate Precincts Assessment Criteria

**Table 5.2.1 Eco-residential Precinct Criteria for self assessable and assessable development**

Performance Outcome	Acceptable Outcome
<b>Development that is Self Assessable and Assessable Development</b>	
<b>Built form</b>	
<b>PO1</b> Eco-residential precinct buildings must: <ul style="list-style-type: none"> <li>a) have a predominant low-rise character;</li> <li>b) retain an appropriate human scale and relationship with the landscape setting and with other buildings adjoining the land;</li> <li>c) ensure that the maximum height of buildings is sensitive to the height of other buildings adjoining the land and the prevailing local character;</li> <li>d) maintain a high degree of visual access through the site.</li> </ul>	<b>AO1.1</b> Buildings and structures do not exceed a maximum: <ul style="list-style-type: none"> <li>a) <i>building height</i> of 8.5 metres;</li> <li>b) <i>height</i> of 10.5 metres;</li> <li>c) two (2) storeys.</li> </ul>
<b>PO2</b> Buildings must provide for setbacks from the side and rear boundaries of the site, which are appropriate for the: <ul style="list-style-type: none"> <li>a) efficient use of the site;</li> <li>b) local character of the area;</li> <li>c) effective separation from neighbouring properties.</li> </ul>	<b>AO2.1</b> The building envelope of any building does not extend beyond the building envelope shown on <b>Map 2 – Development Parameters Plan</b> .
<b>Site Coverage</b>	
<b>PO3</b> The site coverage of development must be in accordance with the function of the Eco-residential Precinct and surrounding precincts.	<b>AO3.1</b> The site coverage of any building does not exceed 20% of the area of the site within the Eco-residential precinct.





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Performance Outcome	Acceptable Outcome
<b>Car Parking</b>	
<b>PO4</b> Car parking spaces are provided consistent with the requirements of lower density development in a natural setting.	<b>AO4.1</b> A minimum of two (2) car parking spaces are provided for each <i>single residential</i> dwelling. <b>AS5.2</b> A minimum of one (1) car parking space is covered.
<b>Sustainability</b>	
<b>PO5</b> Buildings and structures are designed to respond to the tropical climate of Mission Beach, the natural surrounds and have minimal impact on ecological systems or natural resources.	<b>AO5.1</b> The placement of buildings is consistent with the design intent shown conceptually in <b>Figure 1a – 1e Cassowary Rise Eco-residential estate renders</b> . Note – Example buildings are indicative of only and building height must be in accordance with <b>AO6.2</b> .  <b>AO5.2</b> <i>Single residential</i> dwellings are designed to maximise natural ventilation and natural light and every dwelling has: a) Access to prevailing breezes including external walls with openings in at least two different orientations / facades to allow breeze paths within the dwelling; and b) Access to a covered, outside area accessible to breezes.  <b>AO5.3</b> The external features, walls and roofs of buildings and structures have a subdued and non-reflective palette. Note – Examples of suitable colours include shades of green, olive green, blue green, grey green, green blue, indigo, brown, blue grey, and green yellow.  <b>AO5.4</b> Each <i>single residential</i> dwelling includes one or more of the following alternative energy sources: a) Solar hot water; or b) Solar electricity; or c) Solar pool pump.  <b>AO5.5</b> Each <i>single residential</i> dwelling includes on-site storage for potable water with a minimum storage capacity of 20,000 litres.  <b>AO5.6</b> No domestic cats or dogs are permitted.



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Performance Outcome	Acceptable Outcome
<b>Flood Immunity</b>	
<p><b>PO6</b></p> <p>The habitable floor level for buildings, structures and associated development within the Eco-residential Precinct addresses the risk of flood impacts such that:</p> <ul style="list-style-type: none"> <li>a) habitable floor levels are above known flood inundation levels with immunity to a 500 year Annual Recurrence Interval (ARI) + 300mm freeboard; and</li> <li>b) vehicular access, including roads has a minimum immunity of 300 mm below a 50 year ARI event.</li> </ul>	<p><b>AO6.1</b></p> <p>The habitable floor level for <i>buildings</i> is not less than 13.95 metres Australian Height Datum (AHD).</p> <p><b>AO6.2</b></p> <p>Buildings are a minimum of two (2) storeys in height.</p> <p><b>AO6.3</b></p> <p>All car parking areas are provided with a minimum surface level of 13.65 metres AHD.</p> <p><b>Where for Reconfiguring a Lot or Operational Works associated with Reconfiguring a Lot</b></p> <p><b>AO6.4</b></p> <p>Operational Works must be undertaken generally in accordance with El Arish – Mission Beach Road Development Flood Investigation (refer <b>Appendix A</b>) and:</p> <ul style="list-style-type: none"> <li>a) Include a filled house pad with a minimum area of 1,200m<sup>2</sup> for each lot at the prescribed minimum finished ground level (refer <b>AO6.4(b)</b>);</li> <li>b) Each filled house pad has a minimum finished ground level of 13.65 metres AHD;</li> <li>c) Roads and vehicle access to house pads have a minimum flood immunity of 300mm below a 50 year ARI event.</li> </ul> <p>Note - refer <b>Figure 1a – 1e Cassowary Rise Eco-residential estate renders</b>.</p> <p><b>AO6.5</b></p> <p>The layout for any Reconfiguring a Lot is generally consistent with <b>Figure 2 – Cassowary Rise Eco-residential estate master plan</b>.</p>
<b>Flood Risk Management</b>	
<p><b>PO7</b></p> <p>Flood risk management minimises the impact on property and appropriately protects the health and safety of persons at risk of flood hazard, and:</p> <ul style="list-style-type: none"> <li>(a) indicates the position and path of all safe evacuation routes off the site; and</li> <li>(b) hazard warning signage and depth indicators are provided at key hazard points, such as at floodway crossings.</li> </ul>	<p><b>Where for Reconfiguring a Lot or Operational Works associated with Reconfiguring a Lot</b></p> <p><b>AO7.1</b></p> <p>The following flood related infrastructure must be provided in accordance with <b>Map 2 – Development Parameters Plan</b> and <b>Table 5.2.1 A – Flood signage</b>:</p> <ul style="list-style-type: none"> <li>(a) Flood Warning Sign 1A;</li> <li>(b) Flood Warning Sign 1B;</li> <li>(c) Flood Gauge;</li> <li>(d) Road markers.</li> </ul>



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Performance Criteria	Acceptable Solutions
<b>Stormwater Infrastructure</b>	
<b>PO8</b> Stormwater infrastructure is provided in consideration of best practice water sensitive urban design and the mitigation of potential flood worsening impacts.	<b>Where for Reconfiguring a Lot or Operational Works associated with Reconfiguring a Lot</b> <b>AO8.1</b> Operational Works (extracting or filling) and Operational Works (works for infrastructure) shall be undertaken generally in accordance with El Arish – Mission Beach Road Development Flood Investigation (refer <b>Appendix A</b> ) and box culverts are provided to roads as identified on <b>Map 2 – Development Parameters Plan</b> .
<b>Setbacks to Vegetation</b>	
<b>PO9</b> Buildings are appropriately set back from rehabilitation areas and environmental covenants to reduce land-use conflict.	<b>PO9.1</b> Buildings are not located within rehabilitation areas (as shown on <b>Figure 2 – Master Plan</b> ) or within areas under environmental covenant.
<b>Waste Water Disposal</b>	
<b>PO10</b> On-site waste water disposal infrastructure is appropriately located to maintain the environmental values of the site and remain functional during all-weather circumstances, including a 1% AEP flood event.	<b>AO10.1</b> On-site waste water disposal infrastructure is to be located within the building envelope areas as shown on <b>Map 2 – Development Parameters Plan</b> .
<b>Landscaping</b>	
<b>PO11</b> Landscaping is provided consistent with the local character of Mission Beach and the ecological values of the site and surrounds, including the protection and conservation of the Southern Cassowary.	<b>AO11.1</b> Boundary fencing is limited to four (4) strand un-electrified plain wire.  <b>Where for Reconfiguring a Lot or Operational Works associated with Reconfiguring a Lot</b> <b>AO10.2</b> On-street landscaping includes plant species contained in Table SC6.4.3.2 – On-street landscaping – species suitable in certain localities (Schedule 6 – Cassowary Coast Planning Scheme).
<b>Cassowary Corridor Precinct Rehabilitation</b>	
<b>PO12</b> Rehabilitation and management arrangements in the Cassowary Corridor Precinct identified on <b>Map 1 – Precinct Plan</b> are undertaken as part of any Reconfiguring a Lot in the Eco-residential Precinct identified on <b>Map 1 – Precinct Plan</b> to ensure the ongoing viability of the Southern Cassowary.	<b>Where for Reconfiguring a Lot or Operational Works associated with Reconfiguring a Lot</b> <b>AO12.1</b> The Cassowary Corridor Precinct is rehabilitated where indicated on <b>Figure 2 – Master Plan</b> in accordance with an approved Rehabilitation Management Plan. <b>AO12.2</b> A wildlife crossing point must be provided in accordance with <b>Map 2 – Development Parameters Plan</b> and includes: a) Reduction in design speed of the road to 40 km/h;



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Performance Criteria	Acceptable Solutions
	b) Road surface and edge treatment to encourage reduced vehicle speed; and c) Erection of signage to educate motorists on Cassowary and other wildlife movements.

**Table 5.2.1 A – Flood signage**

<b>Flood Warning Sign 1A</b>	
<p>This is a generic flood warning sign indicating that the area is subject to flooding and must contain the wording shown right.</p> <p>The proposed dimensions of this sign is 600 x 600 (diamond) plus additional wording of 600 x 400 below.</p> <p>Location of Flood Warning Sign 1A to be provided in accordance with <b>Map 2 – Development Parameters Plan</b>.</p> <p>Note – All flood signage erected within the Cassowary Rise Eco-Residential Estate is to be in accordance with the provisions of the Manual of Uniform Traffic Control Devices (MUTCD).</p>	<p>Example:</p> 
<b>Flood Warning Sign 1B</b>	
<p>This sign includes a warning of deep water associated with the waterway in the event of a flood and must contain the wording shown right (or similar).</p> <p>The proposed dimensions of this sign is 600 x 400.</p> <p>Location of Flood Warning Sign 1B to be provided in accordance with <b>Map 2 – Development Parameters Plan</b>.</p> <p>Note – All flood signage erected within the Cassowary Rise Eco-Residential Estate is to be in accordance with the provisions of the Manual of Uniform Traffic Control Devices (MUTCD).</p>	<p>Example:</p> 
<b>Flood Gauge</b>	
<p>This sign indicates the depth of water along road ways.</p> <p>Location of Flood Gauge signage is to be provided in accordance with <b>Map 2 – Development Parameters Plan</b>.</p> <p>Note – All flood signage erected within the Cassowary Rise Eco-Residential Estate is to be in</p>	<p>Example:</p>



**CASSOWARY RISE ECO-RESIDENTIAL ESTATE PLAN OF DEVELOPMENT – EL ARISH – MISSION BEACH ROAD, MISSION BEACH**  
**PLAN OF DEVELOPMENT VERSION 2.0**

<p>accordance with the provisions of the Manual of Uniform Traffic Control Devices (MUTCD).</p>	
<p><b>Road Markers</b></p>	
<p>Road markers are to be placed every 25 metres marking the horizontal alignment of the road.</p> <p>Location of Road Markers is to be provided in accordance with <b>Map 2 – Development Parameters Plan</b>.</p> <p>Note – All flood signage erected within the Cassowary Rise Eco-Residential Estate is to be in accordance with the provisions of the Manual of Uniform Traffic Control Devices (MUTCD).</p>	<p><b>Example:</b></p> 





**CASSOWARY RISE ECO-RESIDENTIAL ESTATE PLAN OF DEVELOPMENT – EL ARISH – MISSION BEACH ROAD, MISSION BEACH**  
**PLAN OF DEVELOPMENT VERSION 2.0**

**Table 5.2.2 Cassowary Conservation Precinct Criteria for assessable development**

Performance Outcome	Acceptable Outcome
<b>Development that is Assessable Development</b>	
<b>Built form</b>	
<b>PO1</b> Cassowary Conservation Precinct buildings must: <ul style="list-style-type: none"> <li>a) have a predominant low-rise character;</li> <li>b) retain an appropriate human scale and relationship with the landscape setting and with other buildings adjoining the land;</li> <li>c) ensure that the maximum height of buildings is sensitive to the height of other buildings adjoining the land and the prevailing local character;</li> <li>d) maintain a high degree of visual access through the site.</li> </ul>	<b>AO1.1</b> Buildings and structures do not exceed a maximum: <ul style="list-style-type: none"> <li>a) <i>building height</i> of 8.5 metres;</li> <li>b) <i>height</i> of 10.5 metres;</li> <li>c) two (2) storeys.</li> </ul>
<b>PO2</b> Buildings must provide for setbacks from the side and rear boundaries of the site, which are appropriate for the: <ul style="list-style-type: none"> <li>a) efficient use of cleared areas;</li> <li>b) local character of the area;</li> <li>c) effective separation from neighbouring properties.</li> </ul>	<b>AO2.1</b> No acceptable outcome.
<b>Site Coverage</b>	
<b>PO3</b> The site coverage of development must be in accordance with the function of the Cassowary Conservation Precinct.	<b>AO3.1</b> The site coverage of any building or hardstand area does not exceed 5% of the area of the site.  <b>AO3.2</b> The cumulative Gross Floor Area (GFA) of Environment facility and / or Nature based tourism development does not exceed 3,000m <sup>2</sup> .
<b>Sustainability</b>	
<b>PO4</b> Buildings and structures are designed to respond to the tropical climate of Mission Beach, the natural surrounds and have minimal impact on ecological systems or natural resources.	<b>AO4.1</b> Buildings are designed to maximise natural ventilation and natural light and every dwelling has: <ul style="list-style-type: none"> <li>a) Access to prevailing breezes including external walls with openings in at least two different orientations / facades to allow breeze paths within the dwelling; and</li> <li>b) Access to a covered, outside area accessible to breezes.</li> </ul>



**CASSOWARY RISE ECO-RESIDENTIAL ESTATE PLAN OF DEVELOPMENT – EL ARISH – MISSION BEACH ROAD, MISSION BEACH**  
**PLAN OF DEVELOPMENT VERSION 2.0**

Performance Outcome	Acceptable Outcome
	<p><b>AO4.2</b></p> <p>The external features, walls and roofs of buildings and structures have a subdued and non-reflective palette.  Note – Examples of suitable colours include shades of green, olive green, blue green, grey green, green blue, indigo, brown, blue grey, and green yellow.</p> <p><b>AO4.3</b></p> <p>All buildings include one or more of the following alternative energy sources:</p> <ul style="list-style-type: none"> <li>a) Solar hot water; or</li> <li>b) Solar electricity; or</li> <li>c) Solar pool pump.</li> </ul> <p><b>AO4.4</b></p> <p>No domestic cats or dogs are permitted.</p>
<b>Flood Immunity</b>	
<p><b>PO5</b></p> <p>The habitable floor level for buildings, structures and associated development within the Eco-residential Precinct addresses the risk of flood impacts such that habitable floor levels are above known flood inundation levels with immunity to a 500 year Annual Recurrence Interval (ARI) + 300mm freeboard.</p>	<p><b>AO5.1</b></p> <p>The habitable floor level for <i>buildings</i> is not less than 13.95 metres Australian Height Datum (AHD).</p>
<b>Flood Risk Management</b>	
<p><b>PO6</b></p> <p>Flood risk management minimises the impact on property and appropriately protects the health and safety of persons at risk of flood hazard, and:</p> <ul style="list-style-type: none"> <li>(a) indicates the position and path of all safe evacuation routes off the site; and</li> <li>(b) hazard warning signage and depth indicators are provided at key hazard points, such as at floodway crossings; and</li> <li>(c) identifies the level of immunity for development associated with Environment facility and/or Nature based tourism, having regard to the flood risk. Development includes but is not limited to roads, vehicular access, waterway crossings and car parking areas; and</li> <li>(d) identifies a flood management response to be enacted in the event of a flood and managed by an appropriate entity.</li> </ul>	<p><b>AO6.1</b></p> <p>No acceptable outcome.</p>



**CASSOWARY RISE ECO-RESIDENTIAL ESTATE PLAN OF DEVELOPMENT – EL ARISH – MISSION BEACH ROAD, MISSION BEACH**  
**PLAN OF DEVELOPMENT VERSION 2.0**

Performance Outcome	Acceptable Outcome
Note – A material change of use that involves new GFA or increases the number of persons living, working or residing in the Cassowary Conservation Precinct is supported by a Flood Emergency Evacuation Plan prepared by suitably qualified persons having regard to Floodplain Management in Australia: Best Practice Principles and Guidelines (2000), prepared by Standing Committee on Agriculture and Resource Management (SCARM), CSIRO.	
<b>Stormwater Infrastructure</b>	
<b>PO7</b> Stormwater infrastructure is provided in consideration of best practice water sensitive urban design and the mitigation of potential flood worsening impacts.	<b>AO7.1</b> No acceptable outcome.
<b>Setbacks to Vegetation</b>	
<b>PO8</b> Buildings are appropriately set back from rehabilitation areas and environmental covenants to reduce land-use conflict.	<b>AO8.1</b> Vegetation is not removed or destroyed for the purposes of accommodating buildings.
<b>Landscaping</b>	
<b>PO9</b> Landscaping is provided consistent with the local character of Mission Beach and the ecological values of the site and surrounds and supports the health and vitality of the local Southern Cassowary population.	<b>AO9.1</b> No acceptable outcome.
<b>Lighting</b>	
<b>PO10</b> Outside lighting devices associated with the development shall be positioned on the site and shielded so as not to cause glare or other nuisance to nearby residents or affect wildlife that is known or likely to inhabit the area.	<b>AO10.1</b> No acceptable outcome.



**CASSOWARY RISE ECO-RESIDENTIAL ESTATE PLAN OF DEVELOPMENT – EL ARISH – MISSION BEACH ROAD, MISSION BEACH**  
**PLAN OF DEVELOPMENT VERSION 2.0**

Performance Outcome	Acceptable Outcome
<b>Cassowary Conservation Precinct Rehabilitation</b>	
<b>PO11</b> Rehabilitation and management arrangements must facilitate the conservation and protection of the Cassowary Conservation Precinct and the Southern Cassowary in consideration of the staged development of the Cassowary Conservation Precinct.	<b>AO11.1</b> The Cassowary Conservation Precinct is protected under environmental covenant, where reflecting the restricted bounds of the Plan of Development for development.  <b>AO11.2</b> The rehabilitation areas identified on <b>Figure 2 – Master Plan</b> are rehabilitated in accordance with the following requirements: a) One (1) hectare for every 200m <sup>2</sup> (or part thereof) of GFA associated with Nature based tourism and/or Environment facility; and Note – rehabilitation must be in accordance with a rehabilitation plan prepared by suitably qualified persons to the satisfaction of Cassowary Coast Regional Council.
<b>Vegetation clearing</b>	
<b>PO12</b> The ecological values of the Cassowary Conservation Precinct and the protection and conservation of the Southern Cassowary is protected in perpetuity.	<b>AO12.1</b> The development does not result in the loss of habitat or vegetation.

**Table 5.2.3 Cassowary Corridor Precinct Criteria for assessable development**

Performance Outcome	Acceptable Outcome
<b>Ecological Protection</b>	
<b>PO1</b> Any development within the Cassowary Corridor Precinct must not detrimentally impact the natural environment by way of: a) Loss of connectivity; b) Loss of habitat; c) Loss of soils or erosion; d) Inappropriate fire management practices; or e) Introduction of pest and weed species.	<b>AO1.1</b> No buildings or structures are permitted.



**CASSOWARY RISE ECO-RESIDENTIAL ESTATE PLAN OF DEVELOPMENT – EL ARISH – MISSION BEACH ROAD, MISSION BEACH**  
**PLAN OF DEVELOPMENT VERSION 2.0**

Performance Outcome	Acceptable Outcome
<b>PO2</b> Native fauna and its habitat located in the Cassowary Corridor Precinct must be conserved.	<b>AO2.1</b> Vegetation or native fauna habitat is not damaged.
<b>Riparian Function</b>	
<b>PO3</b> The hydrological regime of Jurs Creek, including natural water quality, quantity and groundwater conditions is maintained and enhanced.	<b>AO3.1</b> No acceptable solution.
<b>Operational Works</b>	
<b>PO4</b> No cut or fill occurs within the Cassowary Corridor Precinct, except where to undertake essential hydraulic (flood mitigation) and stormwater (hydraulic conveyance) works.	<b>AO4.1</b> Development within the Cassowary Corridor Precinct is limited to operational works associated with essential hydraulic (flood mitigation) and stormwater (hydraulic conveyance) infrastructure.  <b>AO4.2</b> No cut or fill is undertaken except where in accordance with <b>AO4.1</b> .
<b>Ecological Management</b>	
<b>PO5</b> Management arrangements must facilitate the conservation and protection of ecologically significant areas, ecological corridors and buffers.	<b>AO5.1</b> The Cassowary Corridor Precinct is protected under environmental covenant.  <b>AO5.2</b> Public access to the Cassowary Corridor Precinct is consistent with the ecological values and purpose of the area.
<b>Ecological Management</b>	
<b>PO6</b> Management arrangements must facilitate the conservation and protection of the Environmental Covenant Area.	<b>AO6.1</b> The Environmental Covenant Area identified on <b>Map 2 – Development Parameters Plan</b> is protected under environmental covenant.
<b>Educational Embellishments</b>	
<b>PO7</b> Minor nature based embellishments may occur where the ecological values and ecological function of the Cassowary Corridor Precinct is maintained.	<b>AO7.1</b> No acceptable outcome.

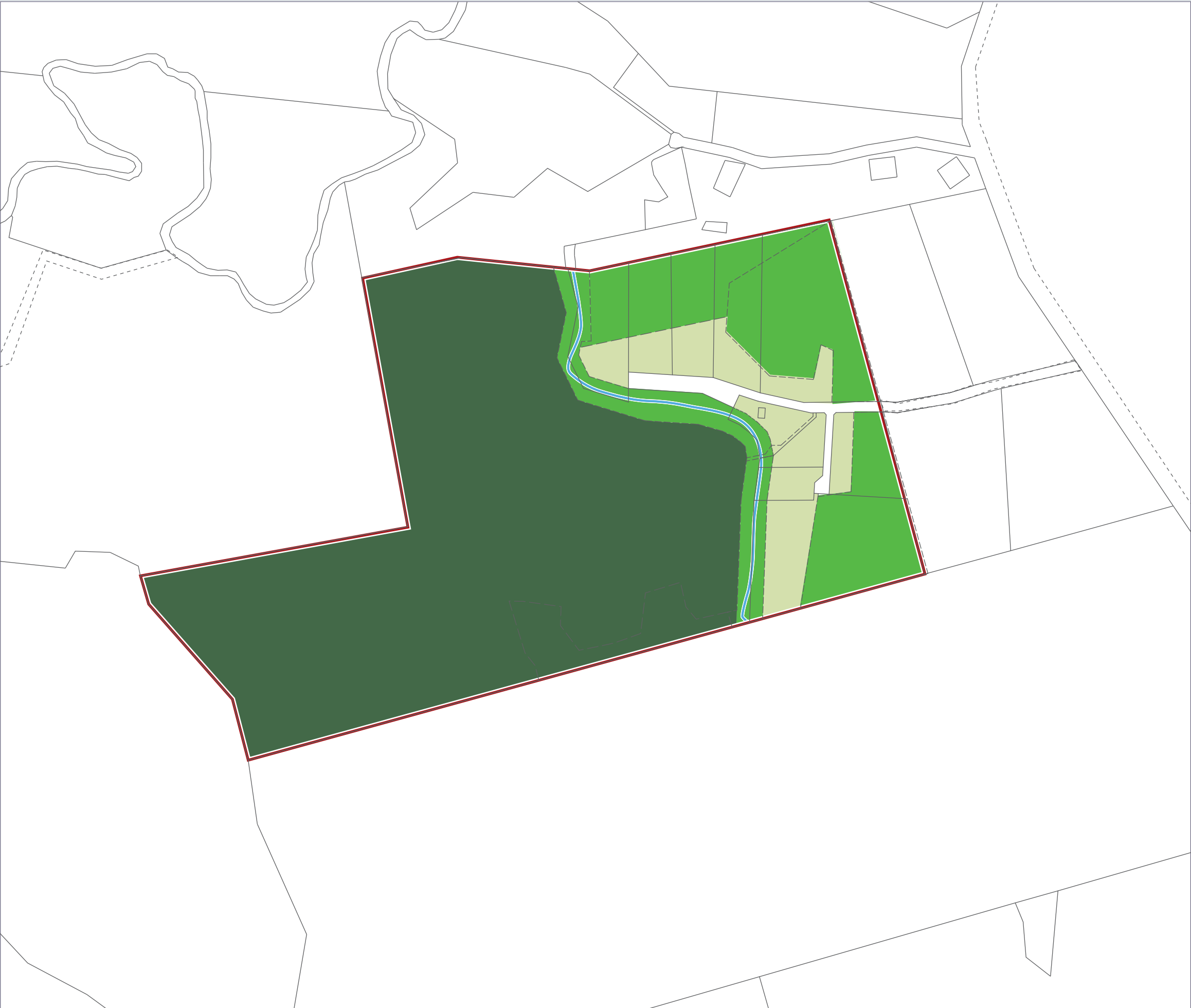




CASSOWARY RISE ECO-RESIDENTIAL ESTATE PLAN OF DEVELOPMENT – EL ARISH – MISSION BEACH ROAD, MISSION BEACH  
PLAN OF DEVELOPMENT VERSION 2.0

# 6. Supporting Maps

MAP 1	–	PRECINCT PLAN
MAP 2	–	DEVELOPMENT PARAMETERS PLAN



**LEGEND**

SUBJECT SITE

**PRECINCTS LEGEND**

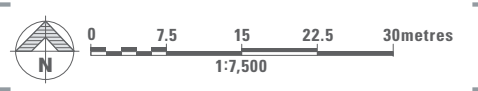
ECO-RESIDENTIAL PRECINCT

CASSOWARY CONSERVATION PRECINCT

CASSOWARY CORRIDOR PRECINCT

WATERWAY

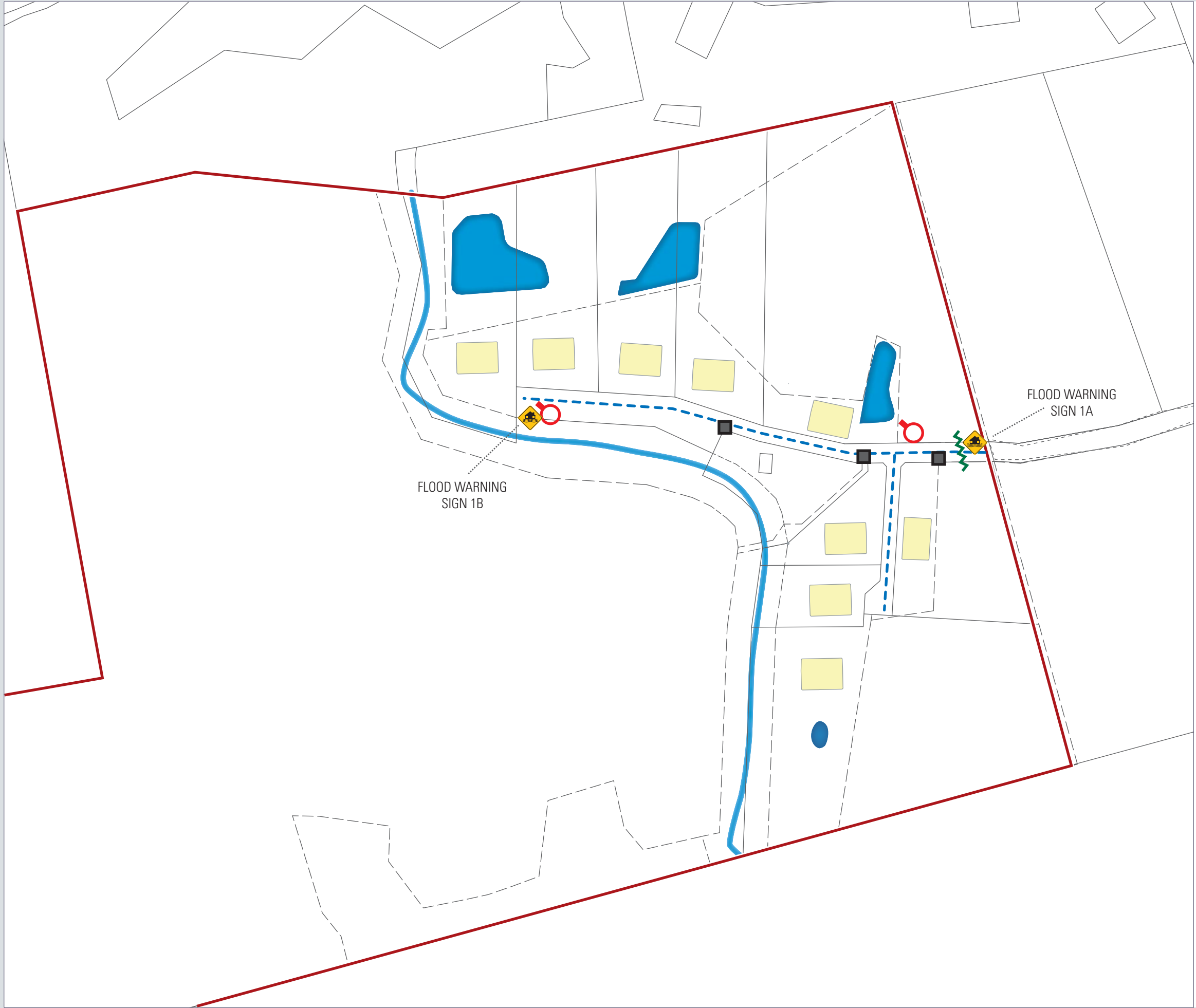
\* AREAS NOT IDENTIFIED AS 'ECO-RESIDENTIAL LIFESTYLE AREAS' ARE PROTECTED AREAS TO BE MANAGED IN ACCORDANCE WITH RELEVANT COUNCIL APPROVALS AND COVENANTS.



MISSION BEACH  
LOT 5 ON SP202686

# Precinct Plan

FILENAME >	PRECINCT PLAN	DATE >	JULY 2015
JOB NO. >	HRP14114	AMENDED >	N/A
SCALE >	1:7,500	VERSION >	1.0
SOURCE >	QUEENSLAND GOVERNMENT: STATE OF QUEENSLAND: DNRM: 2015: SMARTMAP		



LEGEND	
	SUBJECT SITE
	BUILDING ENVELOPES/EARTHEN PADS
	BOX CULVERTS
	WILDLIFE CROSSING
	FLOOD WARNING SIGN
	FLOOD GAUGE
	ROAD MARKERS
	DAMS
	RIVER

\* AREAS NOT IDENTIFIED AS 'ECO-RESIDENTIAL LIFESTYLE AREAS' ARE PROTECTED AREAS TO BE MANAGED IN ACCORDANCE WITH RELEVANT COUNCIL APPROVALS AND COVENANTS.



MISSION BEACH  
LOT 5 ON SP202686

## Development Parameters Plan

FILENAME >	DEV PARAMETERS	DATE >	JULY 2015
JOB NO. >	HRP14114	AMENDED >	N/A
SCALE >	1:4,000	VERSION >	1.0
SOURCE >	DTMR SMARTMAP		



CASSOWARY RISE ECO-RESIDENTIAL ESTATE PLAN OF DEVELOPMENT – EL ARISH – MISSION BEACH ROAD, MISSION BEACH  
PLAN OF DEVELOPMENT VERSION 2.0

# 7. Supporting Figures

- FIGURES 1a-1e – CASSOWARY RISE ECO-RESIDENTIAL ESTATE RENDERS
- FIGURE 2 – CASSOWARY RISE ECO-RESIDENTIAL ESTATE MASTER PLAN



# Cassowary Rise Eco-residential Estate

## 3D Render Lots 9 &10

MISSION BEACH

LOT 5 ON SP202686

FILENAME >	FIGURE 1a	DATE >	JULY 2015
JOB NO. >	HRP14114	AMENDED >	N/A
SOURCE >	GOOGLE EARTH	VERSION >	1.0

CAMERA ANGLE LOCATION KEY:





# Cassowary Rise Eco-residential Estate

## 3D Render Lots 7 & 8

MISSION BEACH

LOT 5 ON SP202686

FILENAME >	FIGURE 1b	DATE >	JULY 2015
JOB NO. >	HRP14114	AMENDED >	N/A
SOURCE >	GOOGLE EARTH	VERSION >	1.0

CAMERA ANGLE LOCATION KEY:





# Cassowary Rise Eco-residential Estate

## 3D Render Lots 6,7 & 8

MISSION BEACH

LOT 5 ON SP202686

FILENAME >	FIGURE 1c	DATE >	JULY 2015
JOB NO. >	HRP14114	AMENDED >	N/A
SOURCE >	GOOGLE EARTH	VERSION >	1.0

CAMERA ANGLE LOCATION KEY:





# Cassowary Rise Eco-residential Estate

## 3D Render Lots 2,3 & 4

MISSION BEACH

LOT 5 ON SP202686

FILENAME >	FIGURE 1d	DATE >	JULY 2015
JOB NO. >	HRP14114	AMENDED >	N/A
SOURCE >	GOOGLE EARTH	VERSION >	1.0

CAMERA ANGLE LOCATION KEY:





# Cassowary Rise Eco-residential Estate

## 3D Render Lots 1 & 3

MISSION BEACH

LOT 5 ON SP202686

FILENAME >	FIGURE 1e	DATE >	JULY 2015
JOB NO. >	HRP14114	AMENDED >	N/A
SOURCE >	GOOGLE EARTH	VERSION >	1.0

CAMERA ANGLE LOCATION KEY:

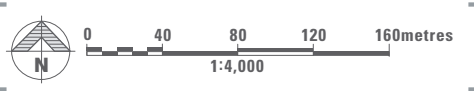






LEGEND	
	SUBJECT SITE
	REHABILITATION AREAS
	HOUSE PADS (FL 13.65m AHD)
	DAMS
	ECO-RESIDENTIAL LIFESTYLE AREAS *

\* AREAS NOT IDENTIFIED AS 'ECO-RESIDENTIAL LIFESTYLE AREAS' ARE PROTECTED AREAS TO BE MANAGED IN ACCORDANCE WITH RELEVANT COUNCIL APPROVALS AND COVENANTS.



MISSION BEACH  
LOT 5 ON SP202686

## Master Plan


FILENAME >	MASTER PLAN_v2.ai	DATE >	FEBRUARY 2015
JOB NO. >	HRP14114	AMENDED >	19 JANUARY 2017
SCALE >	1:4,000	VERSION >	2.0
SOURCE >	GOOGLE EARTH		





## **Attachment C – Plan of Common Property**





LEGEND


 PROPOSED COMMUNITY TITLE LOT


 PROPOSED COMMON PROPERTY


 PROPOSED PAVEMENT


 PROPOSED EARTHWORKS


 PROPOSED BUILDING PAD

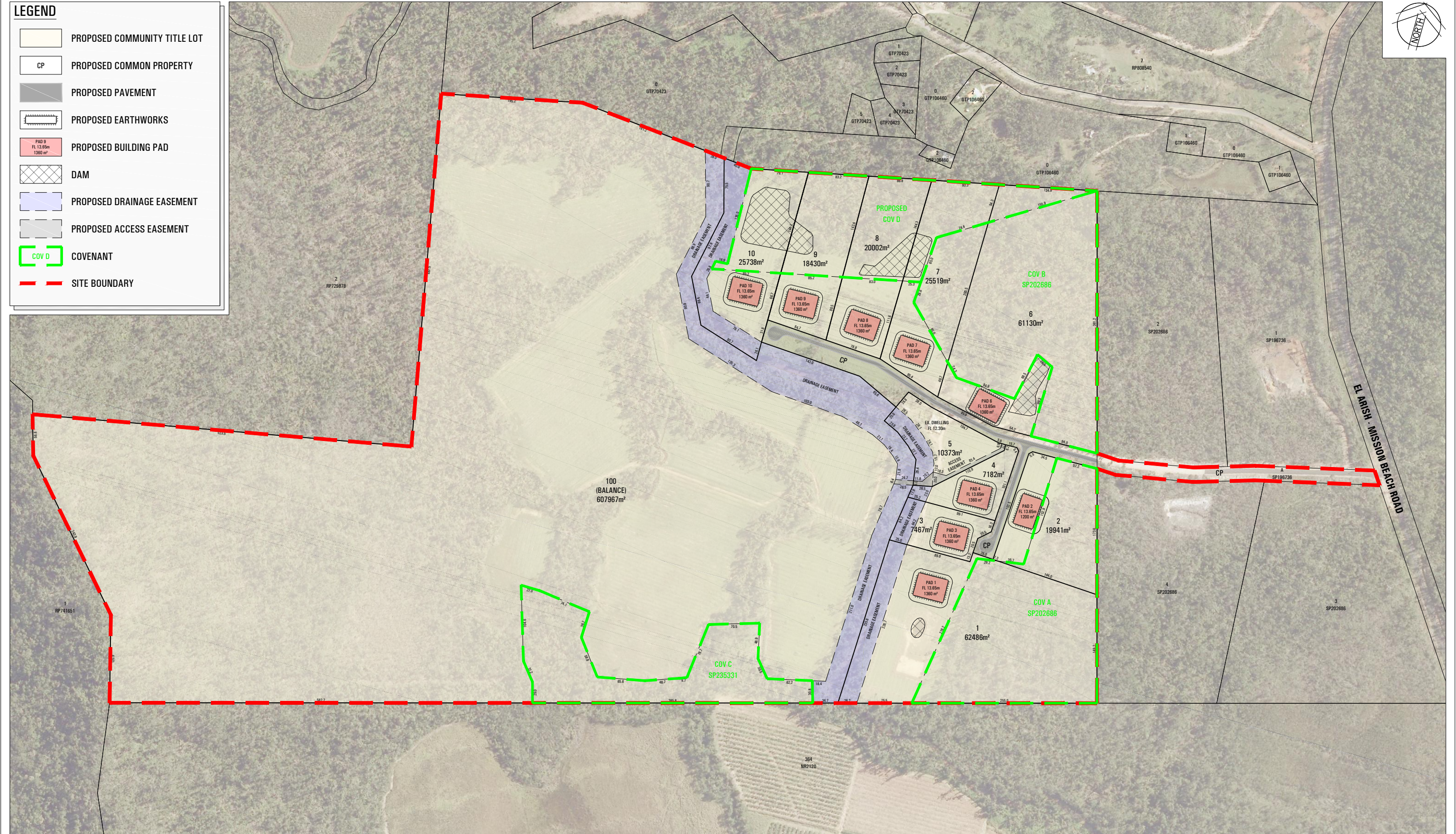
 DAM

 PROPOSED DRAINAGE EASEMENT

 PROPOSED ACCESS EASEMENT

 COVENANT

 SITE BOUNDARY



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SCALE 1:5000

@A3

This plan is conceptual and for discussion purposes only. All areas, dimensions and land uses are preliminary, subject to investigation, survey, engineering and Local Authority and Agency approvals.

# EL ARISH MISSION BEACH

PROPOSED COMMUNITY TITLE SCHEME (RECONFIGURING A LOT)  
EL ARISH  
CANCELLING LOT 5 ON SP202686  
EL ARISH - MISSION BEACH ROAD  
MISSION BEACH

Date	Sketch/Figure Number	Revision
18th JANUARY 2017	HRP14114-001-RAL-01	A

AUSTRALASIA      ASIA      AFRICA      MIDDLE EAST      UK/EUROPE      NORTH AMERICA      LATIN AMERICA



## **Attachment D– Management Strategy**

# Management Strategy

El Arish Eco-Residential Estate, El  
Arish-Mission Beach Road, Maria  
Creeks

HRP14114



Prepared for  
Buxton Superannuation Fund

19 December 2016

## Document Information

Prepared for Buxton Superannuation Fund  
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## Document Control

Version	Date	Description of Revision	Author Initials	Author Signature	Reviewer Initials	Reviewed Signature
A	19/12/2016	El Arish Management Strategy_VA	NF		DF	

Version	Reason for Issue / Stage of Deliverable	Approver Initials	Approved Signature	Approved Release Date
A	For internal review	DF		19/12/16

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# Executive Summary

The purpose of this document is to outline potential impacts resulting from the proposed development on fauna species within the Cassowary Rise Eco-Residential Estate. The document has also been prepared to address item 9 of an information request issued by Cassowary Coast Regional Council on 5<sup>th</sup> of September, 2016 that specifically requires:

*'The increase in resident numbers of the site is likely to cause some indirect conflict with native fauna species such as the cassowary, beach stone curlew, mahogany glider and micro bats. It is considered necessary that a management strategy be prepared that addresses conflicts that have the potential to exist between the proposed use and native species. Examples of these conflicts include human/animal interaction and the possibility of car strike. It is considered necessary for the basic concepts of the management strategy be prepared and submitted to Council at this stage of the proposal to assist in the determination of likely impacts of the development on environmental values.'*

The document provides management and mitigations actions to minimise the impacts on fauna species within the proposed development footprint.

Environmental Management Measures for the purpose of reducing impacts upon fauna on the Site include:

- > Use of 'best management practice' measures during construction to reduce erosion and siltation of local waterways intersecting the Site.
- > Retention of vegetation that is not directly required for removal for the proposed development.
- > Clearing of vegetation during the construction phase should be supervised by a suitably qualified spotter-catcher.
- > Signage to notify visitors in vehicles of presence wildlife with specific reference to Cassowaries.
- > Implementation of vehicle management measures, such as well-signed speed limits.
- > Secure waste facilities to ensure scavenging and associated negative fauna-human interactions do not occur.
- > Restrictions on pet ownership within the 'eco-residential estate' to minimise negative fauna-pet interactions.
- > Limitations on roadside landscaping to reduce the occurrence of blind-spots and possible fauna strike zones.
- > Warnings and/or education on the impacts of Cassowary interactions, such as risk posed by feeding fauna.
- > Revegetation of areas away from residences to create preferred habitat for Cassowary movement and reduce negative fauna-human interactions.
- > Revegetation of cleared areas outside of the development footprint incorporating Cassowary food plants.
- > Use of species indigenous to the area for landscaping purposes rather than exotic species to reduce the potential of garden escapees and subsequent impacts on local ecosystems.
- > Management actions for invasive plant species, such as the control and subsequent revegetation of *Rubus alceifolius* Giant Bramble infestations.
- > Management of *Sus scrofa* Feral pigs at known sites of activity along watercourse margins.
- > Reduction in the use or complete absence of fencing and barriers to Cassowary and other fauna movement. Where fencing is required, ensure fencing is of 'fauna-friendly' construction. Any fencing shall not utilise barbed-wire for the purpose of eliminating entanglement of birds, bats, and gliders.

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# 1 Introduction

## 1.1 Project Background

Cardno has been engaged by Buxton Superannuation Fund (the Client) to provide an Ecological Assessment and Management Strategy for the Cassowary rise Eco-Residential Estate. This document supports other documents including the Cassowary Rise Eco-Residential Estate Plan of Development, Covenants (i.e. A, B and C) and the body corporate by-laws that include measures manage the Site particularly for the endangered Southern Cassowary. The document also aims to address, in part, an Information Request (IR) from the Cassowary Coast Regional Council (Council) dated 5<sup>th</sup> of September, 2016. The IR relates to a development application lodged for Lot 5 on SP202686 (the Site), seeking approval to Reconfigure a Lot (from 1 to 10) to establish an 'eco-residential estate.' The specific item to which this management strategy relates is:

*9. The increase in resident numbers of the site is likely to cause some indirect conflict with native fauna species such as the cassowary, beach stone curlew, mahogany glider and micro bats. It is considered necessary that a management strategy be prepared that addresses conflicts that have the potential to exist between the proposed use and native species. Examples of these conflicts include human/animal interaction and the possibility of car strike. It is considered necessary for the basic concepts of the management strategy be prepared and submitted to Council at this stage of the proposal to assist in the determination of likely impacts of the development on environmental values.*

The Site is located west of El Arish Mission Beach Road on an unnamed roadway in the locality of Maria Creeks. The total area of the Site is 89ha featuring a mixture of remnant vegetation, cleared land of historical agriculture use, and regrowth vegetation in disused irrigation and drainage channels. An existing dwelling and associated structures are located on the Site on proposed subdivision Lot 5.

## 1.2 Southern Cassowary

Known to inhabit the Site and surrounds, the Southern Cassowary *Casuarius casuarius johnsonii* is listed as Endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and as Endangered (southern population) under the Queensland *Nature Conservation Act 1992* (NC Act).

The Recovery Plan for the Southern Cassowary *Casuarius casuarius johnsonii* (Cassowary Recovery Team, 2007) notes that the southern population of Southern Cassowary has declined from an estimated 4,000 individuals in 1988 to less than 1,500 individuals in 2001. Key threats outlined by the Cassowary Recovery Team (2007) to the southern population relevant to the proposed development include:

- > Habitat loss, fragmentation, and degradation.
- > Vehicle strikes and roads as impediments to movement.
- > Dog attacks.
- > Pig attacks and nest destruction.
- > Negative Human-cassowary interactions.
- > Tropical cyclone impacts upon Cassowary habitat and resources.

As outlined in the Recovery Plan for the Southern Cassowary *Casuarius casuarius johnsonii* (Cassowary Recovery Team, 2007), the mitigation approaches for the key threats include:

- > Incentivising the protection of Cassowary habitat on private land.
- > Restoring connectivity between fragmented habitats.
- > Road mortality management through the use of culverts, 'black spot' studies, identification of road crossing points.
- > Dog management through education campaigns of responsible dog ownership.
- > Feral pig management programmes undertaken by State Government agencies.

### 1.3 Southern Cassowary values within the Impact Area

A two-day field ecological assessment was conducted from 22<sup>nd</sup>-23<sup>rd</sup> of November, 2016 to assess the presence/absence and habitat suitability of the Site for the Southern Cassowary.

As outlined in the *Significant impact guidelines for the endangered southern cassowary (Casuarius casuarius johnsonii) Wet Tropics population* (DEWHA, 2010), scat detection is a recommended survey method to determine the presence/absence of Southern Cassowary across the Site. A full site traversal of vegetation margins was conducted over the two days within the impact area. The scat detection exercise found cassowary scats across the Site.

Vegetation communities across the proposed impact area include both remnant and non-remnant vegetation. Mapped remnant vegetation is described as the following:

- > **RE 7.3.10c** Floodplain (other than floodplain wetlands). Mesophyll vine forest with scattered *Archontophoenix alexandrae* Feather Palm in the sub-canopy. Seasonally inundated lowland alluvial plains.

The mapped remnant vegetation within the impact area is identified as 'essential habitat' for the Southern Cassowary.

### 1.4 Other Fauna species

Field ecological assessments opportunistically identified several fauna species across the Site. Those identified, as well as those assessed as having a 'known,' 'likely', or 'possible' occurrence across the Site, as outlined in Table 3-1 in the Ecological Assessment, have been considered in the preparation of this Management Strategy.

### 1.5 Objectives of the Management Strategy

The objective of this Management Strategy is to provide advice on managing and mitigating the conflicts between the proposed development use and native fauna species. Management and mitigation of conflicts will seek to minimise overall impacts upon fauna species.

The aims of management actions within this Management Strategy are to:

1. Prevent fauna mortality during construction and operational phases.
2. Minimise impediments to fauna movement.
3. Limit the loss of fauna habitat in the proposed impact area.
4. Minimise fauna-human interactions.
5. Ensure the proposed development integrates the objectives of this Management Strategy.

## 2 Potential Impacts and Risks

The potential impacts from the construction and operational phases of the proposed development include:

> **Construction Phase**

- Loss of habitat (uncontrolled clearing)
- Degradation of habitat
- Loss of habitat connectivity
- Machinery/vehicle strike

> **Operational Phase**

- Negative fauna-human interaction resulting in injury/death to fauna or humans
- Dog attacks
- Pigs impacting Cassowary nests in the broader locality
- Introduction of pest plant or animals
- Barriers to movement of fauna
- Fence mortality
- Vehicle strike
- Degradation of habitat

Table 2-1 below summarises the likelihood that a potential impact may occur without mitigation measures during the construction and operational phases.

**Table 2-1 Likelihood of occurrence assessment**

Rating	Description	Timing
Likely	The event will probably occur in most circumstances	1-3> times / year
Possible	The event might occur at some time	<1 time / 1-4 years
Unlikely	The event could occur at some time	<1 time / 5-20 years

Table 2-2 below presents a risk assessment matrix using a criteria of impact severity against the assessed likelihood of occurrence of an impact.

**Table 2-2 Risk assessment matrix**

		Severity of Impact		
		Minimal (e.g. no impact on cassowaries)	Medium (e.g. some weeds hinder cassowary access)	Major (e.g. weeds prevent cassowary access)
Likelihood of Occurrence	Likely	Moderate	High	High
	Possible	Low	Moderate	High
	Unlikely	Low	Low	Moderate

**Low**  
**Moderate**  
**High**

No further action required beyond the risk management measures currently in place  
Current risk management should be reviewed and additional steps taken if appropriate  
Additional management actions should be implemented as soon as possible



Using the above criteria and matrix, each potential impact was assessed against likelihood of occurrence and severity of impact, where no mitigation or management measures are applied. The results of this assessment are provided in Table 2-3 below.

**Table 2-3 Risk matrix for impacts to Southern Cassowary and other fauna**

Impact	Likelihood	Severity of Impact	Risk Rating
<b>Construction Phase</b>			
Loss of habitat (uncontrolled clearing)	Likely	Major	High
Degradation of habitat	Possible	Medium	Moderate
Loss of habitat connectivity	Unlikely	Medium	Low
Machinery/vehicle strike	Possible	Major	High
<b>Operational Phase</b>			
Negative fauna-human interactions	Possible	Major	High
Dog attacks	Possible	Major	High
Pig attack/ Cassowary nest destruction	Possible	Major	High
Introduction of pest plants/animals	Possible	Major	High
Barriers to movement of fauna	Likely	Medium	High
Fence mortality	Likely	Major	High
Vehicle strike	Possible	Major	High
Degradation of habitat	Possible	Medium	Moderate

## 3 Environmental Management Strategies & Monitoring

### 3.1 Management Strategies

Table 3-1 below identifies the management strategies to be adopted to mitigate impacts on Cassowaries and other wildlife.

**Table 3-1 Management strategies**

Management Strategy	Covenant	Requirement under approval of Plan of Development	Body corporate by-laws	Construction Management Plan
<p><b>Uncontrolled vegetation clearing</b></p> <p>The proposed development for the Reconfiguration of a Lot (1 into 10), where clearing of non-regulated vegetation may be required for the purposes of delineating some Lot boundaries outside of covenants. Where clearing is deemed to be necessary, minimum clearing footprint set by relevant Local and State agencies should be adhered to. Any further clearing not for the explicit purpose of reconfiguring the lot should implement a 'minimal as practical' clearing footprint.</p> <p>It is recommended that cleared vegetation be mulched on Site and stockpiled for future habitat restoration or landscaping purposes.</p>	✓		✓	✓
<p><b>Erosion impacts</b></p> <p>It is recognised that while the proposed development seeks to Reconfigure a Lot, future applications are likely to seek approvals for construction of the proposed Eco-Residential Estate.</p> <p>Works involving the movement of soil shall ensure that appropriate siltation barriers are installed to control soil movement across the Site and into waterways.</p> <p>It is advised that due to the tropical nature of the Site operations involving earthworks are to be performed out of recognised Wet seasons, typically October to March. Conducting works outside of the Wet season can assist in minimising runoff and erosion of bare soils.</p> <p>Soils shall only be exposed when necessary, to minimise exposure of bare soils. If soil is to be stockpiled it is recommended to seed stockpiles with a grass cover to reduce erosion and runoff potential.</p>		✓		
<p><b>Feeding wildlife</b></p> <p>Feeding wildlife poses a risk to both humans and wildlife, as negative interactions are likely to result. Education through signage at the Site entry can seek to inform visitors and residents of the risks posed by feeding wildlife, both the dangers to animals and humans.</p>			✓	
<p><b>Fencing</b></p> <p>No fencing, temporary or otherwise, shall be erected during the construction phase as to not restrict fauna movement. An exception to this is an allowable 'entry gate' at the Site entry for security and safety purposes.</p>	✓	✓		✓

Management Strategy	Covenant	Requirement under approval of Plan of Development	Body corporate by-laws	Construction Management Plan
<p>Fencing in areas of high fauna activity poses risks through both restricting fauna movement and through the danger of entanglement. Where possible, fencing should be eliminated to allow for the free movement of fauna both within the Site and for the purpose of migration and emigration to and from the Site.</p> <p>Where the elimination of fencing is not possible, fauna-friendly fencing that provides horizontal gaps (greater than 500mm from the ground, 300mm thereafter) in the fencing for movement should be used. It should be noted that this fauna-friendly fencing does not provide measures for Cassowary movement. Intermittent vertical gaps (greater than 700mm wide), where possible, should be provided to allow for Cassowary movement through extensive lengths of fencing.</p> <p>To reduce entanglement of birds, bats, and gliders, and subsequent mortality, the elimination of barbed wire in fencing is recommended. Where mesh fencing is to be used, a mesh square size of at least 150mm is recommended, with a vertical ground gap of at least 300mm. A timber rail no wider than 1,500mm as a capping material is recommended for the top of mesh fencing.</p>				

**Fauna-safe roads and vehicle strike**

Clearly signed speed limits within and approaching the Site shall control vehicles and machinery to a speed appropriate to ensure that the risk of vehicle strikes on fauna are effectively eliminated. Adherence to speed limits shall be enforced as a ‘condition of entry.’

Upon completion of the Eco-Residential Estate, speed limits of 40 km/hr shall be clearly signed to minimise the possibility of fauna strikes (including Cassowary). Speed limit signage shall be accompanied by signage representing wildlife in the area (Cassowary and macropods). Animal emergency contact details shall be placed in conjunction with signage.

Road design treatment such as pavement treatments, lateral line markings, and visual warnings shall be used as traffic calming measures to slow vehicles upon entry to the Site, such as illustrated in Plate 1 below.



**Plate 1 – Road surface Cassowary warning**

✓

✓

Management Strategy	Covenant	Requirement under approval of Plan of Development	Body corporate by-laws	Construction Management Plan
Any new landscaping, revegetation, or structures shall be set back at an appropriate distance from the roadway to reduce the risk of fauna blind spots and subsequent vehicle strikes. Relevant agencies, i.e. Department of Environment and Heritage Protection should be informed of wildlife injuries or fatalities. Appropriate contact numbers can be added to the site entry signage.				
<b>Invasive species management</b> To reduce the potential for new introductions of pest plant species through garden escapees, native plants local to the region should be utilised for landscaping purposes across the Site. In preventing new infestations, this management action will ensure that impacts on fauna habitat and local ecosystems are minimised. Where on-street landscaping occurs throughout the Site, tree species from Schedule 6 of the <i>Cassowary Coast Planning Scheme Table SC6.4.3.2- On-street landscaping – species suitable to certain localities</i> shall be used. Where there are existing infestations of invasive species i.e. <i>Rubus alceifolius</i> Giant Bramble in disturbed rainforest, control and subsequent revegetation works should be implemented to maximise the available area of suitable habitat for fauna, in particular Cassowaries. The management of pest animals i.e. Feral pigs <i>Sus scrofa</i> in the riparian areas, can reduce the impacts on both local ecosystems and direct impacts on Cassowary individuals and nests. It is recommended that future landholders or body-corporate managers develop a Pest Management Plan to manage feral pig numbers and their associated impacts across the Site .		✓	✓	
<b>Pets</b> Clear signage will be provided at the site entry during construction advising contractors of their obligation not to bring dogs onto the construction site. That is, entering the site without dogs is a 'condition of entry'. It is recommended that to eliminate the threats posed to wildlife, and in keeping with the proposed 'Eco-residential Estate' theme, ownership of cats and dogs should be prohibited in the proposed development. Where reasons prevent this, owners shall be responsible for keeping pets within enclosures that prevent escape as well as wildlife ingress. Pets off-leash in common areas should not be permitted.			✓	
<b>Revegetation</b> Where suitable, revegetation of cleared areas should occur using Cassowary food plants. The areas to be revegetated should be strategically planned to best link areas of habitat, improving connectivity. Preferably, these areas would be situated away from dwellings and roads to assist in fauna movement while preventing fauna-human interactions.		✓	✓	

## 3.2 Monitoring

While the environmental management measures seek to minimise the risk and impacts upon wildlife within the Site, monitoring of the subsequent impacts should inform further amendments to the Management Strategy. The implementation of an adaptive management protocol ensures that upon review of the effectiveness of the Management Strategy, actions can be taken to further minimise risk where actions have been found to be ineffective or capable of improvement. These should be conducted in the instance that a significant environmental incident occurs (e.g. cassowary mortality/injury) or when a minor environmental incident occurs on multiple occasions (e.g. continued feeding of wildlife, fence entanglement).



## 4 Environmental Management Measures Risk Assessment

Table 4-1 outlines the implementation of recommended environmental management measures and the resulting risk rating using the risk assessment matrix provided in Chapter 2. Adherence to recommended environmental management measures will ensure that risks are minimised in accordance to the matrix.

**Table 4-1 Risk matrix after the implementation of recommended Environmental Management Measures**

Impact	Likelihood	Consequence	Unmitigated Risk Rating	Mitigated Likelihood	Mitigated Consequence	Mitigated Risk Rating
<b>Construction Phase</b>						
Loss of Habitat (uncontrolled clearing)	Likely	Major	High	Unlikely	Medium	Low
Degradation of Habitat	Possible	Medium	Moderate	Unlikely	Minor	Low
Loss of Habitat Connectivity	Unlikely	Medium	Low	Unlikely	Medium	Low
Machinery/Vehicle Strike	Possible	Major	High	Unlikely	Major	Moderate
<b>Operational Phase</b>						
Negative fauna-human interactions	Possible	Major	High	Unlikely	Medium	Low
Dog attacks	Possible	Major	High	Unlikely	Medium	Low
Pig impacts on Cassowary nests	Possible	Major	High	Unlikely	Medium	Low
Introduction of pest plants/animals	Possible	Major	High	Unlikely	Medium	Low
Barriers to Movement of fauna	Likely	Medium	High	Unlikely	Medium	Low
Fence mortality	Likely	Major	High	Unlikely	Medium	Low
Vehicle Strike	Possible	Major	High	Unlikely	Major	Moderate
Degradation of habitat	Possible	Medium	Moderate	Unlikely	Medium	Low

## 5 References

Department of the Environment, Water, Heritage and the Arts, 2010, *Significant impact guidelines for the endangered southern cassowary (Casuarius casuarius johnsonii) Wet Tropics population*, Commonwealth of Australia, Canberra ACT

Cassowary Recovery Team, 2007, *Recovery plan for the southern cassowary Casuarius casuarius johnsonii*, Queensland Environmental Protection Agency, Brisbane QLD