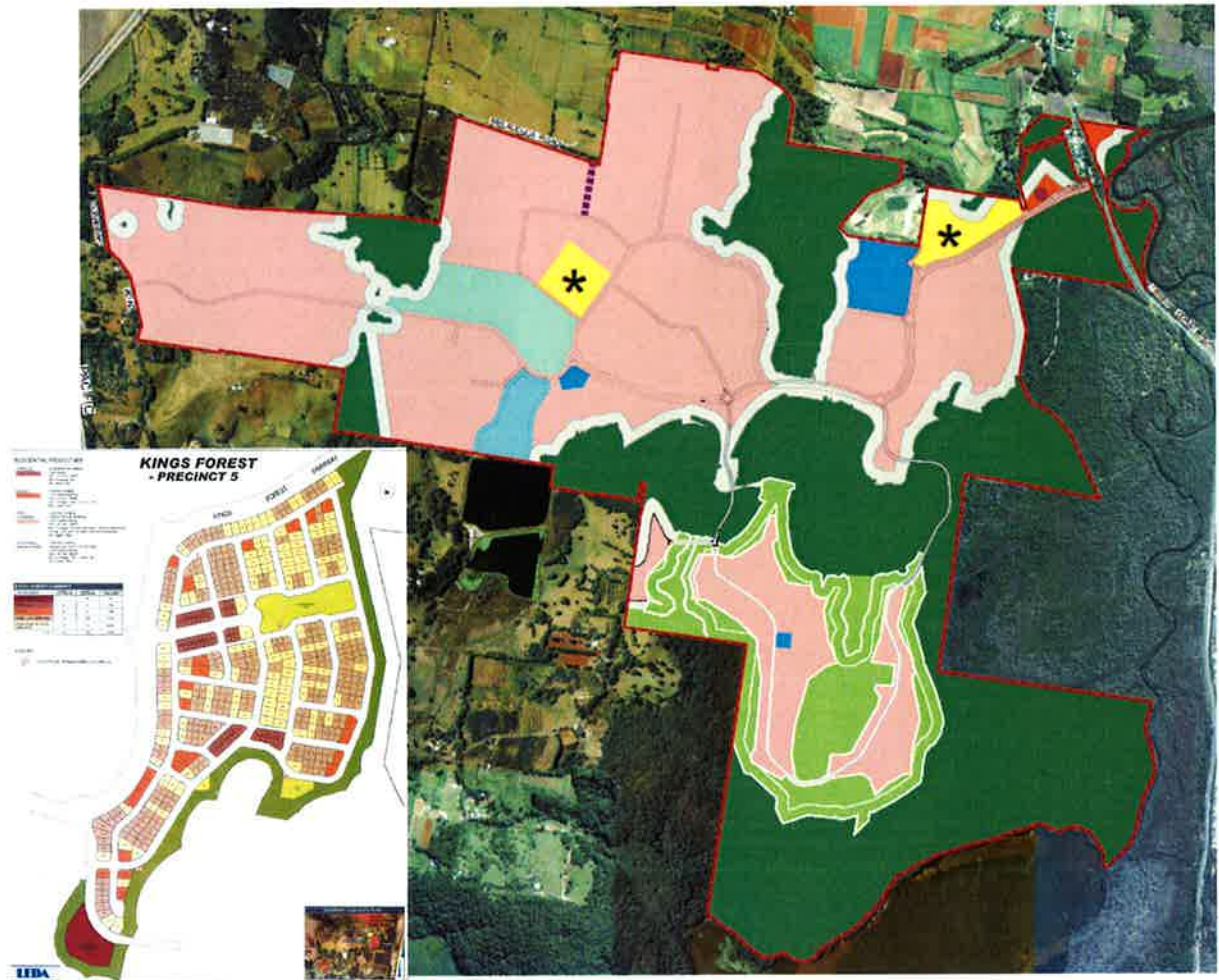




**TRANSITIONAL PART 3A PROJECT  
ASSESSMENT:  
Kings Forest Estate  
Concept Plan Modification (06\_0318 Mod  
2) and Project Application for Bulk  
Earthworks and Stage 1 Subdivision  
(08\_0194), Tweed local government area**



Director-General's  
Environmental Assessment Report  
Section 75I of the  
*Environmental Planning and Assessment Act 1979*

May 2013

## ABBREVIATIONS

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CIV	Capital Investment Value
Department	Department of Planning and Infrastructure
DGRs	Director-General's Environmental Assessment Requirements
Director-General	Director-General of the Department of Planning and Infrastructure, or his delegate.
EA	Environmental Assessment
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPI	Environmental Planning Instrument
LEP	Local Environmental Plan
MD SEPP	State Environmental Planning Policy (Major Development) 2005
Minister	Minister for Planning and Infrastructure
PAC	Planning Assessment Commission
Part 3A	Part 3A of the <i>Environmental Planning and Assessment Act 1979</i>
PPR	Preferred Project Report
Proponent	Project 28 Pty Ltd
SEPP	State Environmental Planning Policy

Cover Photograph: Modified Concept Plan (October 2012)

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## EXECUTIVE SUMMARY

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This is a report for a modification to an approved concept plan and the Stage 1 project application for a transitional Part 3A project known as the Kings Forest Estate in the Tweed local government area.

The proponent is seeking project approval for Stage 1 of the Estate, including the following components:

- subdivision of the site into 10 lots in four stages;
- the Plan of Development for and further subdivision of Precinct 5 into 383 residential lots;
- dedication of approximately 150ha of land to OEH as an addition to the Cudgen Nature Reserve;
- development of 2,036m<sup>2</sup> of floor space for a 'rural supplies' building, car parking, landscaping and access arrangements;
- construction of subdivision and infrastructure works along Kings Forest Parkway and within Precincts 1 and 5;
- bulk earthworks across the site;
- road works; and
- a biodiversity compensation strategy comprising revegetation and rehabilitation works detailed within a range of environmental management plans to offset impacts on a range of threatened species and ecological communities.

The project application has a capital investment value (CIV) of \$40 million and will create an estimated 50 construction jobs and 5 operational jobs. The NSW Far North Coast Regional Strategy projects that the Tweed will need to provide 19,100 new dwellings by 2031, the concept plan will provide approximately 23% of this requirement, being a major release area for up to 4,500 new dwellings. The first stage project application provides for 431 dwellings across 383 residential lots.

Key modifications proposed to the concept plan approval include: amending the requirement for an east-west wildlife corridor; a revised approach to Koala management through an updated Koala Plan of Management; minor amendments to the Kings Forest Development Code; and a number of minor changes to the approved concept plan drawings.

The Kings Forest site is listed as a State Significant Site in Schedule 3 of the SEPP (Major Development) 2005. Part 6 of Schedule 3 refers to Kings Forest and sets out the planning provisions which apply to development within the site. The approved concept plan sets out the proposed uses and the project application is consistent with these.

A Voluntary Planning Agreement is currently being negotiated with OEH for the dedication of approximately 150ha of environmental offset lands as an addition to the Cudgen Nature Reserve. Details of this agreement are to be submitted to the Director-General prior to the release of the first subdivision certificate for the project.

The Environmental Assessment report was publically exhibited from 22 November 2011 until 23 December 2011 for a period of 32 days. The Department received 302 submissions during the exhibition of the EA, including 10 submissions from public authorities and 292 submissions from the general public and special interest groups. All submissions were made as objections to the proposal. The application is being referred to the PAC for determination as more than 25 public submissions in the nature of objections were received.

The department considers the key environmental issues for the concept plan modification to be:

- ongoing management and maintenance of environmental lands;
- the location of the east-west wildlife corridor; and
- changes to the Kings Forest Development Code.

The department considers the key environmental issues for the project application to be:

- implementation and content of environmental management plans;
- koala management and protection;
- biodiversity compensation strategy;
- protection of heathland and earthworks in the ecological buffers;
- precinct 1 rural supplies development, including use, location and access
- bushfire management;
- sequencing of bulk earthworks; and
- affordable housing.

The proponent provided a Response to Submissions (RtS) and a Preferred Project Report (PPR). The PPR included the following key changes to the concept plan modification and project application:

#### Concept Plan

- minor amendments to the Kings Forest Development Code
- relocation of precinct neighbourhood centre to Precinct 6
- relocation and consolidation of structured open space into Precinct 9
- an East-West wildlife corridor assessment
- new road connection to Melaleuca Rd to the north and new road types, and
- 2 and 3 storey townhouses to replace apartments in the Development Matrix.

#### Project Application

- revision of Precinct 1 layout to locate APZ outside 50m ecological buffer, reduction in size of proposed rural supplies building, improved site circulation for service vehicles and car parking
- revised subdivision layout in Precinct 5, including a reduction in the number of lots from 410 to 376 lots, and the inclusion of a townhouse lot
- removal of all development from the 50m ecological buffer with the exception of Koala fencing, a stormwater swale and Road No.9 in Precinct 5 within the outer 20m of the ecological buffer
- revised Drainage Maintenance Management Plan
- relocation of proposed zone sub-station to Precinct 2
- amended suite of environmental management plans
- amended Construction Management Plan to clarify bulk earthworks staging and sequencing
- revised Statement of Commitments, and
- amended Kings Forest Design Guidelines

Although the RtS and PPR were not publicly exhibited, it was made available on the department's website and referred to relevant government agencies and council. The department received 86 submissions, including 6 public authority submissions and 80 public submissions (including 76 form letters). Key issues raised by the public primarily related to impacts on the Wallum sedge frogs and koalas, earthworks and clearing of vegetation in ecological buffers, protection of the east-west wildlife corridor, timing of the approval of management plans, and the dedication and long-term management of environmental lands.

The department has considered the key issues raised in relation to the concept plan modification and has recommended modifications to the concept plan and requirements for future applications to ensure these issues are satisfactorily addressed with minimal impacts. New and modified terms of the concept plan approval require the provision of a superior east-west wildlife corridor, a modified staging plan for lands to be dedicated to council, minor amendments to the Kings Forest Development Code, the proponent to be responsible for the management of all environmental lands and implementation of the revised suite of environmental management plans in perpetuity, and subsequent environmental audits of all environmental lands to confirm the appropriate implementation of the management plans.

The key issues raised in relation to the project application have been addressed through the proponent's PPR, the Statement of Commitments and the recommended conditions of approval. The department is satisfied that the project will have acceptable impacts and will provide the following public benefits:

- provision of housing, including a range of housing types, within the Tweed LGA;
- rehabilitation of large areas of the site for the creation of new habitat;
- conservation of threatened and vulnerable plant and animal species;
- protection of the Tweed koala population; and
- provision of a superior east-west wildlife corridor to maintain connectivity across the site.

On these grounds the department considers the site to be suitable for the project and in the public interest. Consequently the department recommends that the concept plan be modified in accordance with the modifying instrument and the proponent's statement of commitments and the project application be approved subject to the recommended conditions of approval.



# 1. PROPOSED PROJECT & SITE DESCRIPTION

## 1.1 Site Description

Project 28 Pty Ltd (the proponent) proposes to construct Stage 1 of the Kings Forest residential community development at Kings Forest in the Tweed local government area. The site covers an area of 880 hectares and is comprised of 14 parcels of land (Lot 76, 272, 323 and 326 of DP 755701; Lot 6 DP 875446; Lot 2 DP 819015; Lot 1 DP706497; Lot 40 DP7482; Lot 38A DP 137213; Lot 38B DP 139737; Lot 1 DP 129737; Lot 1 DP 781633; Lot 7 DP 875447; and Lot 37A DP 13727).

The project location is shown in **Figure 1**.



Figure 1: Project Location

Table 1: Site Description

<b>Topography</b>	Gentle undulating topography, and a relatively low elevation. Approximately 25% of the coastal plain on the site is permanent wetland.
<b>Site History</b>	Agricultural purposes, sand mining
<b>Current use of site</b>	Cattle grazing and silviculture. The subject site also contains areas of high conservation value, including SEPP14 wetlands and Core Koala Habitat.
<b>Surrounding land use(s)</b>	The site is surrounded by agricultural and pastoral lands to the north, south and west. Cudgen Lake and wetland habitat surrounding the lake borders the south-eastern site boundary. The lake itself covers an area of approximately 160 hectares and is located within the Cudgen Nature Reserve. The Cudgen Nature Reserve extends alongside much of the eastern site boundary. Further east on the opposite side of the reserve is the established coastal suburb of Casuarina. <b>Figure 2</b> identifies surrounding features of the site.

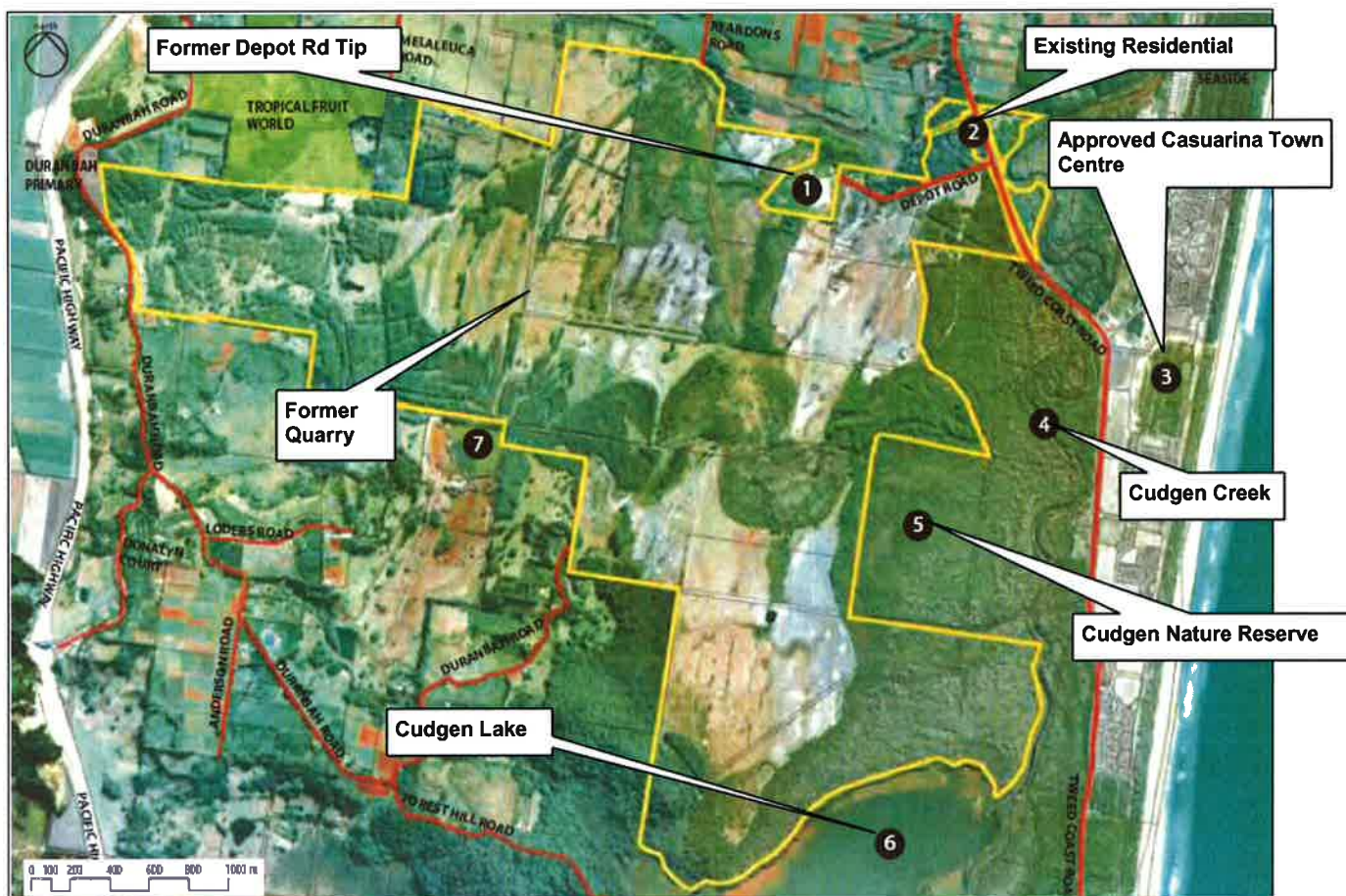


Figure 2: Surrounding Environment (Source: JBA Urban Planning, 2008)

## 1.2 Project Background

On 19 August 2010, the then Minister for Planning approved a concept plan for the site under Section 75O of the EP&A Act. The concept plan approved the following:

- residential development for approximately 4500 dwellings;
- town centre and neighbourhood centre for future retail and commercial uses;
- community and education facilities;
- employment land;
- a golf course;
- open space;
- wildlife corridors;
- protection and rehabilitation of environmentally sensitive land;
- utility services infrastructure;
- water management areas and lake; and
- roads, bicycle and pedestrian network.

Figure 3 (overleaf) shows the approved concept plan.

## 1.3 Planning Assessment Commission Non-Statutory Review

On 16 July 2010 the Planning Assessment Commission (PAC), in its capacity as an independent body, provided the then Minister for Planning with a review of the reasonableness of the Director-General's Environmental Assessment Report for the concept plan.

The PAC Review concluded that it was generally satisfied that the department's assessment, conclusion and recommendations were reasonable. However the PAC was of the opinion that certain issues required strengthened requirements both at the concept plan stage and in applications for future stages of development. The department was generally supportive of the PAC recommendations, with some minor exceptions. The PAC recommendations were incorporated into the final instrument of approval. A copy of the PAC review and the department's response is provided at **Appendix B**.



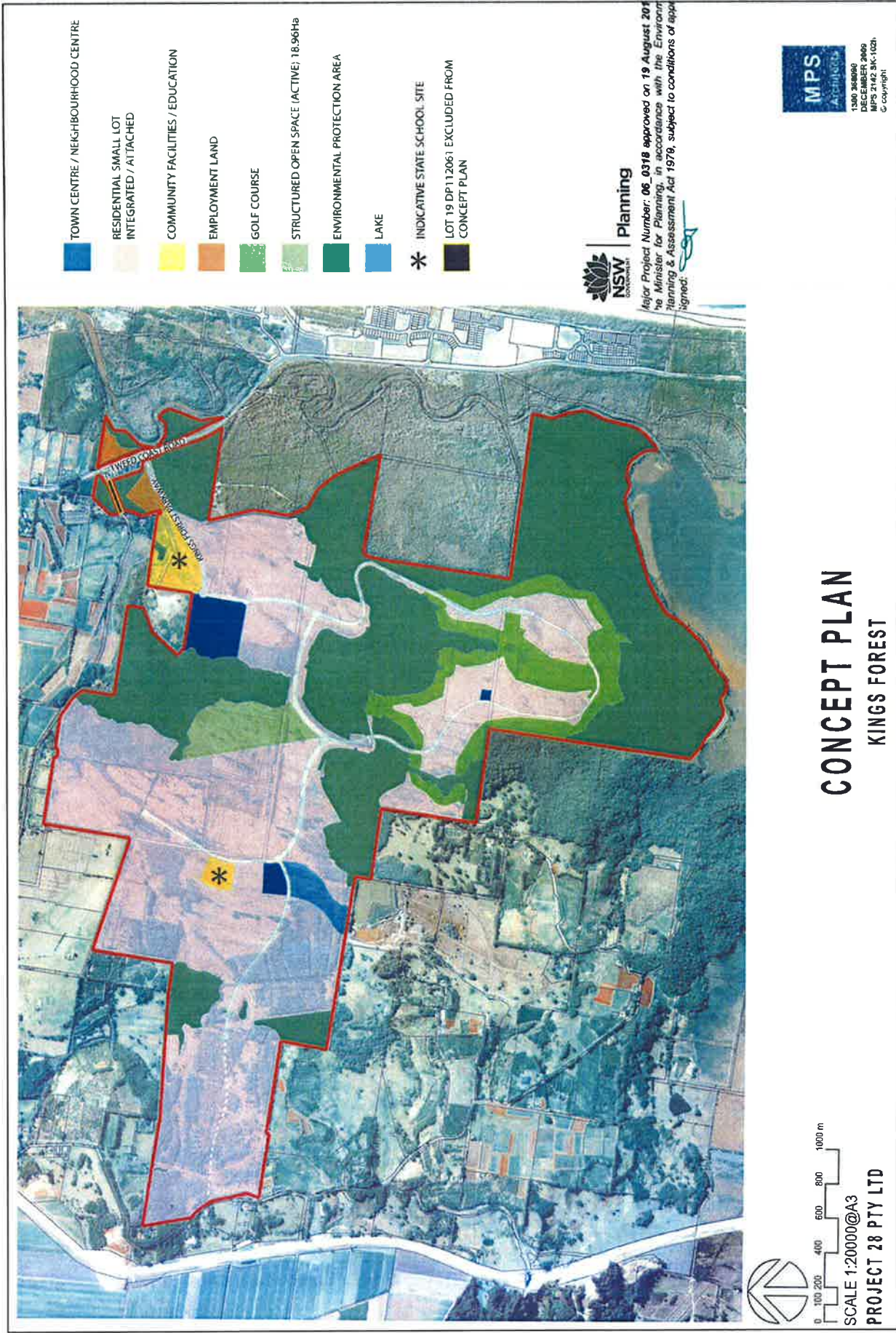


Figure 3: Approved Concept Plan (August 2010)

## 1.4 Key Project Components and Features

The proponent is seeking project approval for Stage 1 of the Estate, including bulk earthworks across the entire site as well as seeking several modifications to the approved concept plan. Details of the concept plan modifications and project application are described in turn below.

The concept plan modification is described below in **Table 2** and the modified concept plan layout, as proposed by the proponent, is presented in **Figure 4**. Modifications to the concept plan approval are sought in response to the Stage 1 project application and in response to more detailed design of the entire estate that has occurred since approval was given.

**Table 2: Concept Plan Modification Summary**

<b>Modification</b>	<b>Description</b>
Residential Density	<ul style="list-style-type: none"> <li>Densities across the site are now shown in a Density Matrix Summary Plan (densities have not changed).</li> </ul>
Precincts	<ul style="list-style-type: none"> <li>The Precinct Plan has been modified to reduce the number of precincts from 24 to 14.</li> </ul>
Structured Open Space	<ul style="list-style-type: none"> <li>The relocation and consolidation of approximately 19ha of structured open space into Precinct 9.</li> </ul>
School site & neighbourhood centre	<ul style="list-style-type: none"> <li>Relocated and resized as a result of relocation of structured open space.</li> </ul>
Lake configuration	<ul style="list-style-type: none"> <li>To address flood management concerns, the lake in Precinct 10 has been resized and reshaped.</li> </ul>
Road Hierarchy and Potential Bus Route Plans	<ul style="list-style-type: none"> <li>Plans updated to reflect revised precinct layout and road widths amended to comply with Development Code.</li> </ul>
Amended road layout	<ul style="list-style-type: none"> <li>New connection to Melaleuca Road and more details of the proposed road network on slightly amended alignments.</li> </ul>
Development Matrix	<ul style="list-style-type: none"> <li>Two and three storey townhouses instead of three storey apartments.</li> </ul>
Country Energy Zone substation	<ul style="list-style-type: none"> <li>Relocation of sub-station from Precinct 5 to Precinct 2.</li> </ul>
Development Code	<ul style="list-style-type: none"> <li>Administrative "housekeeping" amendments to assist with interpretation of Code and correct inconsistencies (<i>recommended for approval, in part</i>).</li> </ul>
Requirement for an east west wildlife corridor (Term B4)	<ul style="list-style-type: none"> <li>Seeking to provide only an extension of the existing east-west corridor across the centre of the site to the Environ Road underpass to the south west of the site (<i>not recommended for approval</i>).</li> </ul>
Timing of management plan approvals (Term C2)	<ul style="list-style-type: none"> <li>Submission of stage-specific management plans prior to issue of a construction certificate rather than as part of future development applications across the site (<i>not recommended for approval</i>).</li> </ul>
Requirement for a geotechnical assessment (Term C13)	<ul style="list-style-type: none"> <li>Seeking to submit a geotechnical assessment with each stage "where relevant", rather than for every stage.</li> </ul>
Koala Plan of Management (KPoM)	<ul style="list-style-type: none"> <li>An updated KPoM that takes a revised approach to the management of koalas by preventing koalas from entering developed areas through the use of fencing, underpasses and cattle grids, rather than allowing koalas to roam freely throughout the development and managing threats to their survival through controls to traffic, dog ownership and swimming pools (<i>recommended for approval, in part</i>).</li> </ul>
Revised Statement of Commitments	



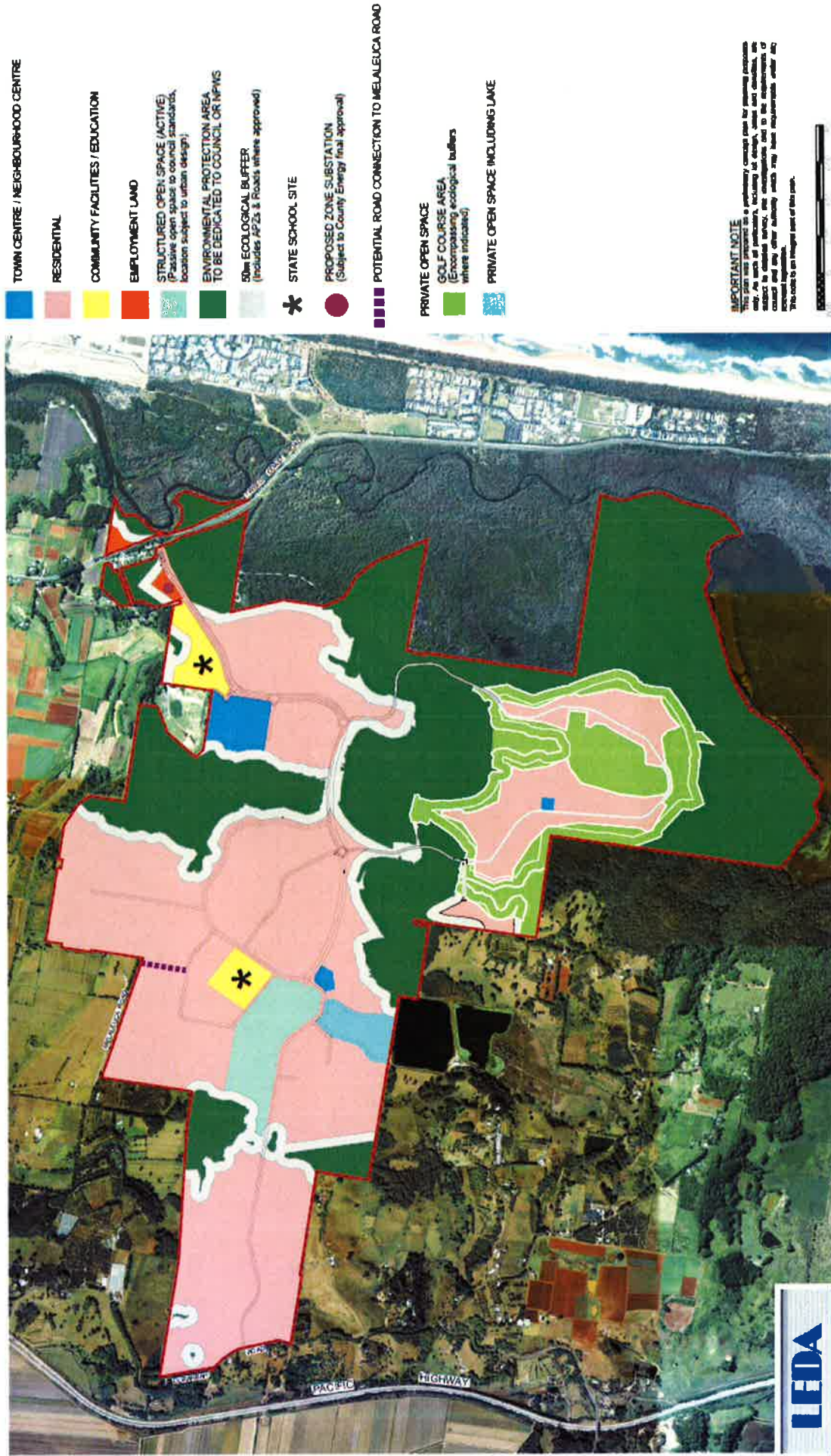






Figure 4: Modified Concept Plan (PPR, October 2012)

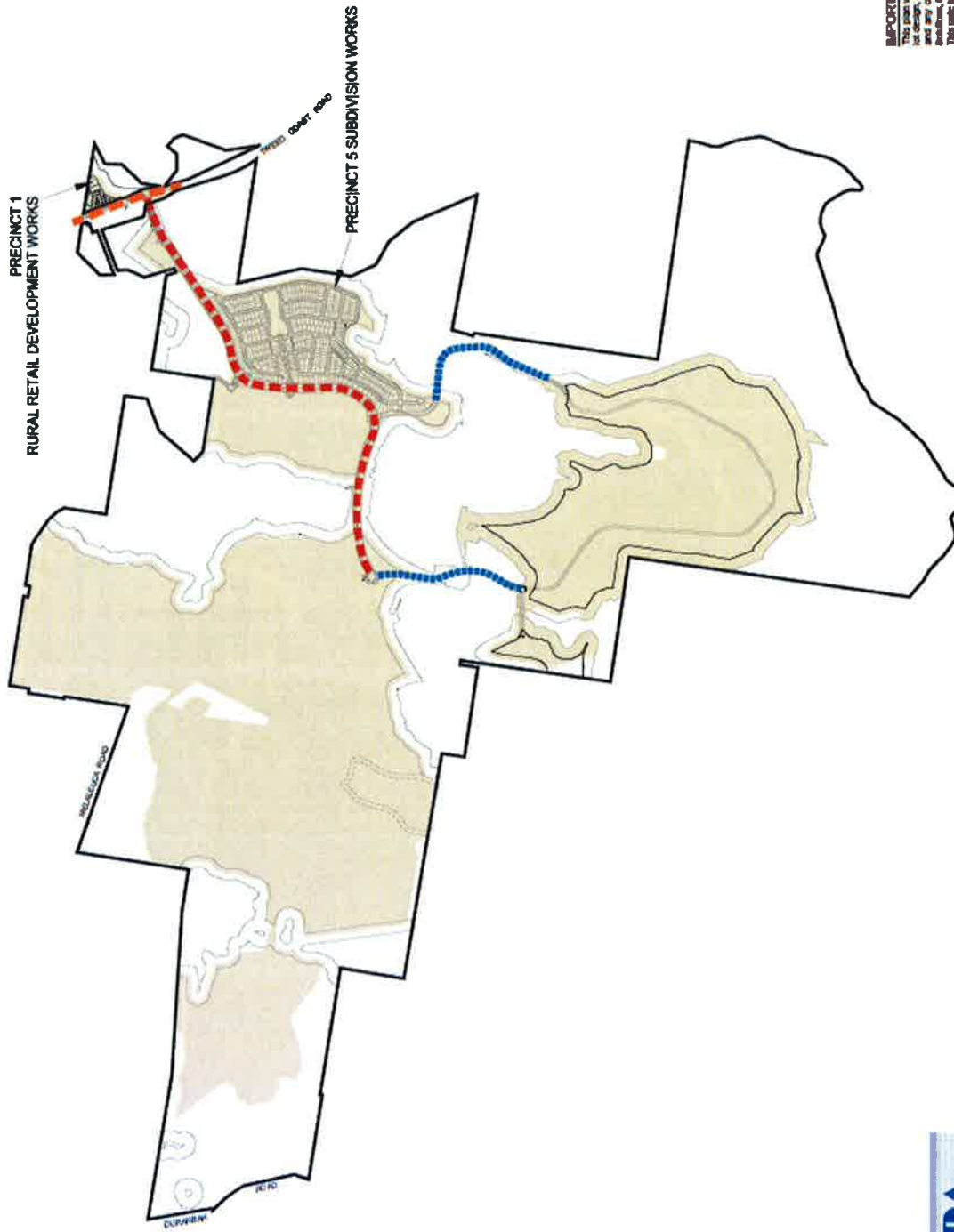
The Scope of Works for the project application is presented in **Figure 6** and is described below in **Table 3**.

**Table 3: Project Application Summary**

<p><b>Project Summary and features</b></p>	<ul style="list-style-type: none"> <li>• Subdivision of the site into 10 lots in four stages (refer <b>Figure 6</b>);</li> <li>• Dedication of approximately 150 hectares of land to OEH as an addition to the Cudgen Nature Reserve;</li> <li>• Bulk earthworks across the site (refer <b>Figure 7</b>);</li> <li>• Road works comprising: <ul style="list-style-type: none"> <li>- construction of the entrance road into the site and associated intersection works on Tweed Coast Road;</li> <li>- alignment and construction of Kings Forest Parkway from Tweed Coast Road via Precincts 4 and 5 through to the western precincts;</li> <li>- alignment and part construction of two roads through SEPP14 wetland areas to access the southern development precincts;</li> </ul> </li> <li>• The Plan of Development for and subdivision of Precinct 5 (<b>Figure 8</b>);</li> <li>• Development of 2,036m<sup>2</sup> of floor space for a 'rural supplies' building and access arrangements within Precinct 1 (refer <b>Figure 9</b>); and</li> <li>• Construction of subdivision and infrastructure works along Kings Forest Parkway and within Precincts 1 and 5 (see 'housing' below).</li> </ul>
<p><b>Housing</b></p>	<p>Subdivision of Lot 2 (Precinct 5) to provide 431 dwellings across 383 residential lots comprising:</p> <ul style="list-style-type: none"> <li>• 1 townhouse lot to contain 20 dwellings (7,860m<sup>2</sup>);</li> <li>• 44 terrace house lots (minimum lot size 150m<sup>2</sup>);</li> <li>• 25 plexes (minimum lot size 450m<sup>2</sup>);</li> <li>• 192 zero-lot dwellings (minimum lot size 240m<sup>2</sup>); and</li> <li>• 121 traditional detached dwellings (minimum lot size 400m<sup>2</sup>).</li> </ul> <p>Note: The construction and occupation of dwellings does not form part of this application.</p>
<p><b>Biodiversity</b></p>	<p>A suite of management plans provide details of specific management measures, performance criteria and monitoring requirements to protect and manage the key ecological values of the site. The Kings Forest Stage 1 Management Plan acts as a tool for the integration and implementation of the range of management strategies in the various management plans. Revegetation, rehabilitation works and landscaping are designed to avoid impacts on the SEPP14 wetlands, Cudgen Nature Reserve, threatened species and their habitats, endangered ecological communities, heath and koala food trees.</p>
<p><b>Bulk Earthworks</b></p>	<p>The sequencing of bulk earthworks ensures that a cut fill balance is achieved in as many areas as possible. Works within the 50m buffer area in the Golf Course precincts has been reduced and are to be undertaken in consultation with an environmental officer to co-ordinate heath relocation and regeneration</p>
<p><b>Value</b></p>	<ul style="list-style-type: none"> <li>• Job creation – 50 construction jobs, 5 operational jobs</li> <li>• Capital Investment Value = \$40 million</li> </ul>



-  TWEED COAST ROAD INTERSECTION WORKS
-  KINGS FOREST PARKWAY THROUGH TO WESTERN PRECINCTS
-  ROADS THROUGH TO SOUTHERN PRECINCTS
-  INDICATIVE BULK EARTHWORKS LOCATION (REFER TO DETAILED ENGINEERING DESIGN BY MORTON URBAN SOLUTIONS)



**IMPORTANT NOTES**

This plan was prepared as a preliminary concept plan for planning purposes only. As such it pertains, including its design, areas and details, are subject to detailed design, site investigation and to the requirements of Council and any applicable regulatory requirements. It is not intended to be used for any other purpose. Please refer to Morton Urban Solutions for further details. This plan is an integral part of this plan.



Figure 5: Scope of Works

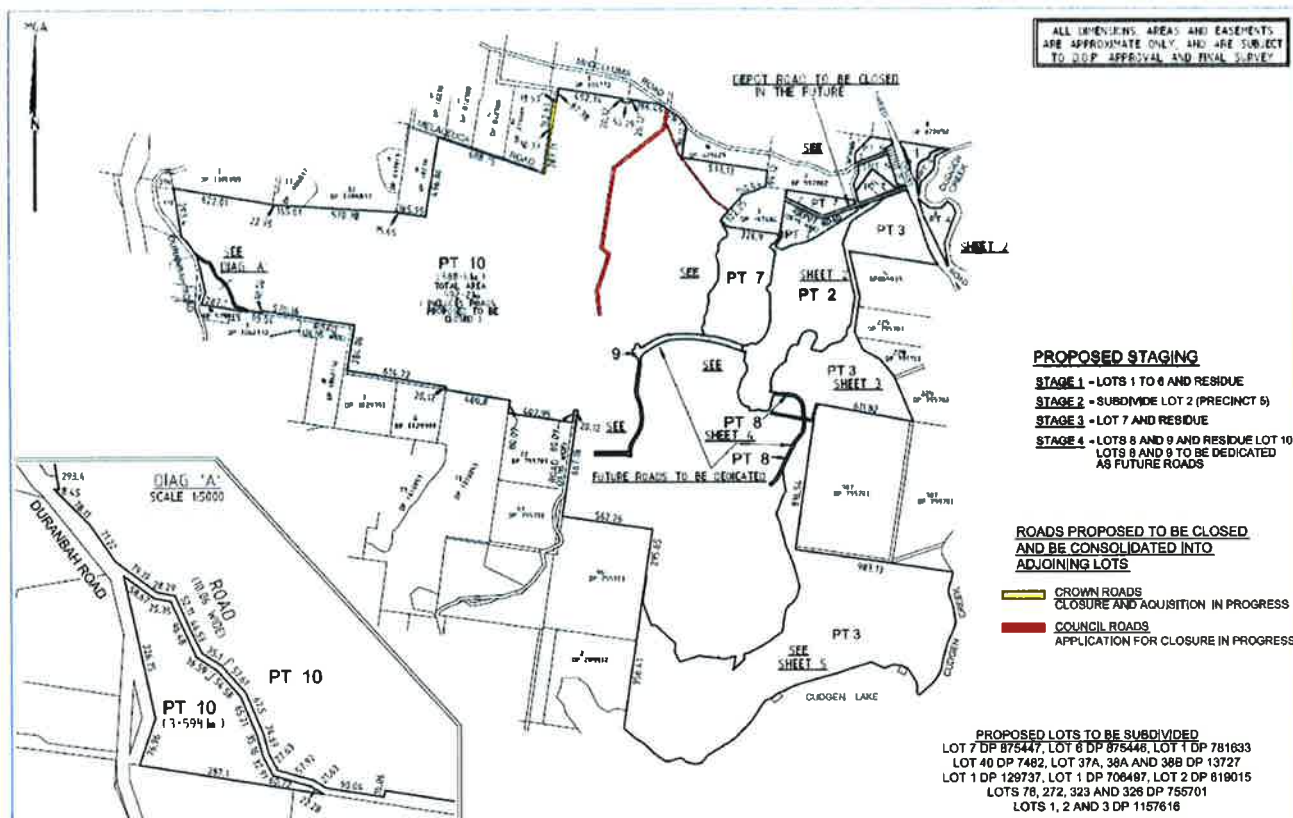


Figure 6: Proposed subdivision of Kings Forest Site

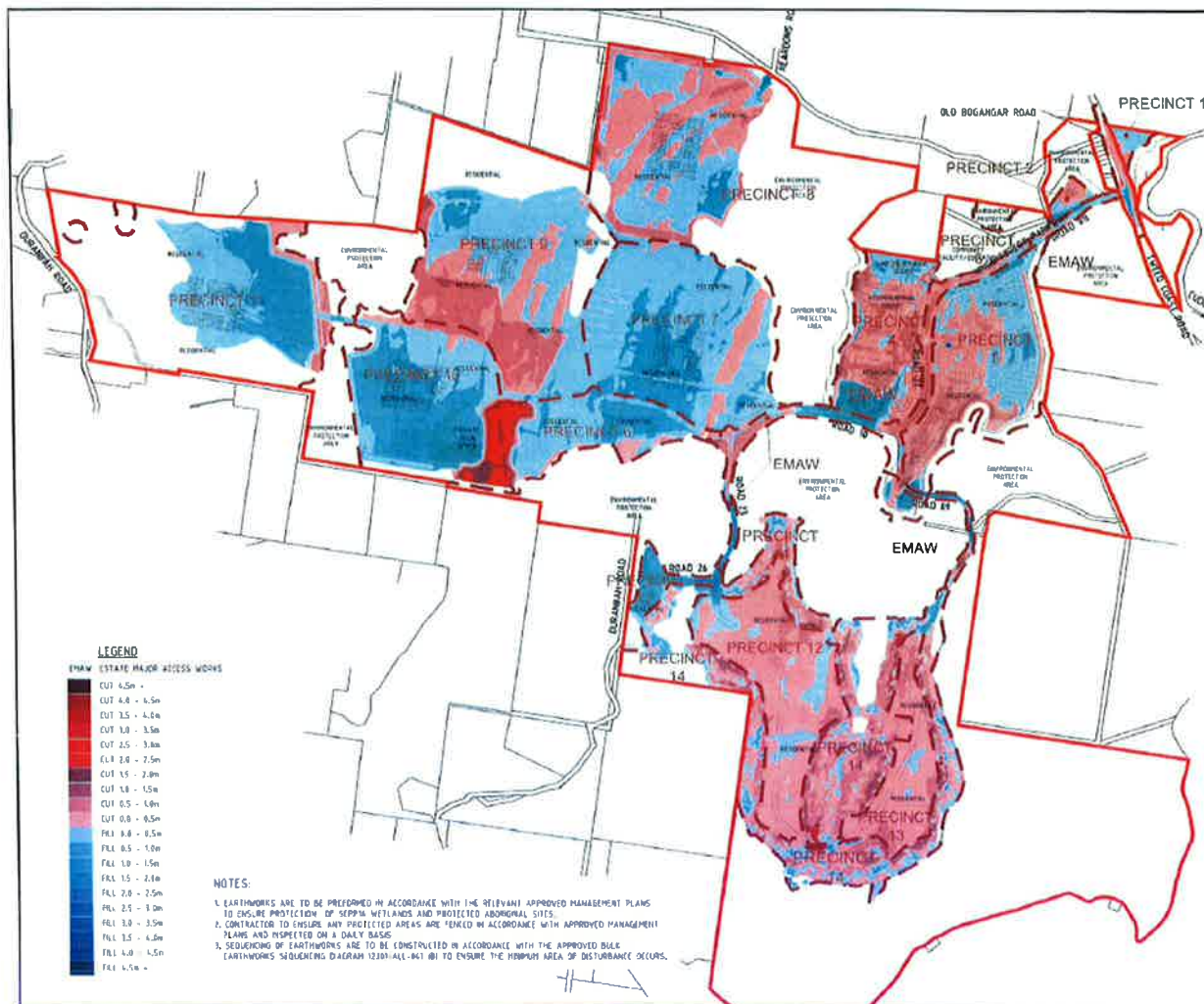


Figure 7: Proposed Bulk Earthworks (Source: PPR, 2012)





Figure 8: Proposed Subdivision Plan of Precinct 5 (PPR, 2012)

Broom finished coloured concrete pathways to contrast with buildings finish and facades

Retail Signage Location

**Araucaria Cunninghamii (Hoop Pine)**  
Height and scale indicates approach to the rural supplies centre from the Tweed Coast Road. Allows open views to retail frontages under canopy base

**Angophora Costata (Smooth Barked apple)**  
providing shade and amenity within carparking planting islands

Low scale shrubs and ground covers within planting beds to provide screening of car parking and improve visual amenity along Tweed Coast Road frontage

Low scale shrubs and groundcovers to carpark edge with adjoining buffer zone

Vehicle turn around

Regional Pump Station

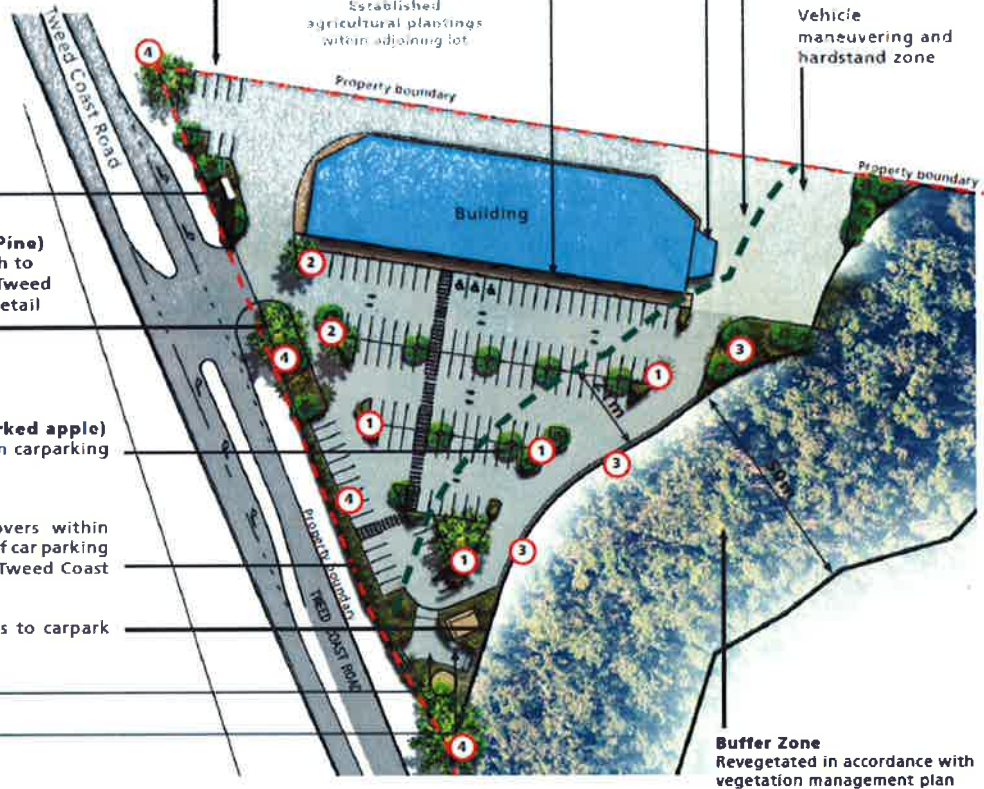
Boundary fencing to adjoining property and buffer zones (chain wire mesh or similar)

Established agricultural plantings within adjoining lot

Waste Storage Area

21m APZ setback from vegetation

Vehicle maneuvering and hardstand zone



**Buffer Zone**  
Revegetated in accordance with vegetation management plan

Figure 9: Proposed Rural Supplies Development in Precinct 1 (PPR, 2012)

## 2. STATUTORY AND STRATEGIC CONTEXT

### 2.1 Major Development SEPP

Both the modification to the concept plan and the project application are transitional Part 3A projects by virtue of Schedule 6A of the EP&A Act. This is because the project is the subject of an approved concept plan and in respect of the project application, DGRs were issued on 23 December 2010, which was prior to the repeal of Part 3A. The Minister for Planning and Infrastructure is the approval authority.

### 2.2 Approval Authority

On 14 September 2011, the then Minister for Planning delegated responsibility for the determination of project applications under Part 3A of the EP&A Act to the PAC where:

- council has made an objection in relation to the proposal; or,
- more than 25 public submissions objecting to the proposal were received; or,
- a political disclosure statement has been made in relation to the application.

The application is being referred to the PAC for determination as more than 25 public submissions in the nature of objections were received. No political disclosure statement has been made in relation to the application. Accordingly, the project application and s75W modification to the concept plan can therefore be determined by the PAC under delegation.



### 2.3 Permissibility and Zoning

The Kings Forest site is listed as a State Significant Site in Schedule 3 of the SEPP (Major Development) 2005. Part 6 of Schedule 3 refers to Kings Forest and sets out the planning provisions which apply to development within the site.

Under Schedule 3 (Clause 4, Part 6) of the Major Development SEPP, the land use zones which apply to Kings Forest are Zone 2(c) Urban Expansion; Zone 7(a) Environmental Protection (Wetlands and Littoral Rainforests); and Zone 7(l) Environmental Protection (Habitat). The approved concept plan sets out the proposed uses in the above zones and the project application is consistent with these.

### 2.4 Environmental Planning Instruments (EPIs)

The department has considered the following relevant EPIs (including SEPPs):

- Tweed Local Environmental Plan 2000
- State Environmental Planning Policy No.14 – Coastal Wetlands
- State Environmental Planning Policy No.26 – Littoral Rainforests
- State Environmental Planning Policy No.44 – Koala Protection
- State Environmental Planning Policy No.55 – Remediation of Land
- State Environmental Planning Policy No.71 – Coastal Protection
- State Environmental Planning Policy (Affordable Rental Housing) 2009
- State Environmental Planning Policy (Exempt and Complying Development Codes) 2008
- State Environmental Planning Policy (Infrastructure) 2007

The proposal is generally consistent with the relevant requirements of the EPIs.

### 2.5 Objects of the EP&A Act

Decisions made under the EP&A Act must have regard to the objects of the EP&A Act, as set out in Section 5. The department has considered the objects of the EP&A Act and considers that the project application and modification to the Concept Plan are consistent with the relevant objects, specifically the encouragement of the proper management, development and conservation of natural resources, the provision of land for public purposes, the protection of the environment, ecologically sustainable development, and provision of public involvement and participation in the environmental planning and assessment process. The assessment of the application in relation to the relevant objects of the Act is outlined in Section 5 of this report.

### 2.6 Ecologically Sustainable Development

The EP&A Act adopts the definition of Ecologically Sustainable Development (ESD) found in the *Protection of the Environment Administration Act 1991*. Section 6(2) of that Act states that ESD requires the effective integration of economic and environmental considerations in decision-making processes.

The department has considered the project in relation to the ESD principles. The precautionary and inter-generational equity principles have been applied in the decision making process via a thorough and rigorous assessment of the environmental impacts of the project. The proposal is considered to be consistent with ESD principles as described in Section 7 of the proponent's EA.

### 2.7 Environment Protection and Biodiversity Conservation Act

On 12 November 2012 the project was determined to be a "controlled action" under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), as it was considered likely that the proposal could have a significant impact on listed threatened species and communities, such as the Wallum Sedge Frog and the Koala. The Commonwealth Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) is currently undertaking its assessment of the project.

## 2.8 Strategic Context

The department considers that the proposal is consistent with and/or supports the following local/state/regional strategies through the creation of a diverse range of new housing, including affordable housing, planned infrastructure and investment in employment generation:

- NSW 2021: A Plan to Make NSW Number One
- Far North Coast Regional Strategy
- Tweed Shire Urban Land Release Strategy 2009

## 3. CONSULTATION AND SUBMISSIONS

### 3.1 Exhibition

Under Section 75H(3) of the EP&A Act, the Director-General is required to make the environmental assessment (EA) of an application publicly available for at least 30 days.

**Table 4: Public Exhibition Details**

Exhibition/Notification	Appearing	Dates
Publicly exhibited on web site(s)	DP&I Sydney and Grafton Offices, Tweed Shire Council, Murwillumbah and Tweed Heads Offices	22 November 2011 to 23 December 2011
Newspaper notice	Tweed Border Mail, Tweed Sun, Tweed Link	
Written notices to	Adjoining landholders, public authorities, local community groups	

The department received 302 submissions during the exhibition of the EA - 10 submissions from public authorities and 292 submissions from the general public and special interest groups. A summary of the issues raised in submissions is provided below.

### 3.2 Public Authority Submissions

10 submissions were received from public authorities, as addressed below in **Table 5**:

**Table 5: Public Authority Submissions Summary**

<b>Tweed Shire Council</b>	<p><u>Engineering</u></p> <ul style="list-style-type: none"> <li>• need to provide stormwater treatment at all urban drainage outlets</li> <li>• clarification of long term hydraulic operation of Blacks Creek and associated modelling</li> <li>• need concept stormwater management for Precinct 4 to verify bulk earthworks plans</li> <li>• lack of assessment for fill importation from external sources under the bulk earthworks concept plans</li> <li>• concerns with traffic modelling and the subsequent intersection designs with Tweed Coast Road</li> <li>• concerns with road widths and bus accessibility within Precinct 5</li> <li>• lack of detail on engineering plans for on-street car parking, footpaths and cycleways</li> </ul> <p><u>Open Space</u></p> <ul style="list-style-type: none"> <li>• opposed to splitting structured open space into two separate locations</li> <li>• concerns with ongoing maintenance of public open space areas</li> </ul> <p><u>Urban Design</u></p> <ul style="list-style-type: none"> <li>• accessibility (ease of walking ability) to the town centre issues</li> <li>• clarify approval process for proposed rural retail development at Precinct 1</li> <li>• visual implications of acoustic fences</li> </ul>
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	<ul style="list-style-type: none"> <li>• lack of details provided on the plans of development and design guidelines to demonstrate compliance with the KF Development Code</li> </ul> <p><u>Ecological and Natural Resource Management</u> issues raised with:</p> <ul style="list-style-type: none"> <li>• dedication of environmental land to council</li> <li>• long term management of environmental open space</li> <li>• timing and content of Voluntary Planning Agreements for managing open space</li> <li>• land uses within ecological buffers,</li> <li>• protection of heathland</li> <li>• clearing of littoral rainforest within Precinct 1</li> <li>• conflicting rehabilitation and re-vegetation objectives</li> <li>• koala management</li> <li>• bushfire management</li> <li>• implementation of management plans</li> <li>• water quality within Cudgen Creek</li> <li>• the existing east-west wildlife corridor</li> <li>• Wallum Froglet habitat compensation</li> <li>• monitoring and evaluation procedures</li> </ul>
<p><b>Environment Protection Authority</b></p>	<p><u>Ecological Buffer Zones</u></p> <ul style="list-style-type: none"> <li>• environmental protection zones (EPZs) required under the concept plan approval should be preserved</li> <li>• all infrastructure including Asset Protection Zones (APZs), roads and footpaths should be located within the development footprint and outside of the EPZs</li> <li>• should approval be granted allowing the provision of development related infrastructure within EPZs, the proponent should demonstrate the losses of existing native vegetation communities are unavoidable, and demonstrate a commitment to appropriate offsetting</li> <li>• request further information regarding the significance of earth works and changed hydrology upon existing and potential habitat values of the environmental buffer EPZs across the site</li> <li>• the proposal and related management plans should be revised to avoid the loss of littoral rainforest EEC</li> </ul> <p><u>Koala Plan of Management</u></p> <ul style="list-style-type: none"> <li>• KPOM should be amended to include:             <ul style="list-style-type: none"> <li>- objectives, performance criteria, timelines, monitoring and reporting issues;</li> <li>- clarifications of commitments to contingency plans/adaptive management;</li> <li>- design, alignment, maintenance and ownership of the proposed koala fence; and</li> <li>- demonstrate consistency with other studies, advisory groups and the KPOM being finalised by the Tweed Coast Koala Advisory Group.</li> </ul> </li> </ul> <p><u>East-West Wildlife Corridor</u></p> <ul style="list-style-type: none"> <li>• proposed development layout should be amended to comply with the requirement for an east-west wildlife corridor, as per term B4 of the concept plan approval.</li> </ul> <p><u>Acid Frog Species</u></p> <ul style="list-style-type: none"> <li>• compensatory habitat should be revised to EPA's satisfaction</li> </ul>
<p><b>Department of Primary Industries</b></p>	<p><u>Fisheries</u></p> <ul style="list-style-type: none"> <li>• proposed maintenance of Blacks Creek is inconsistent with the objects of the <i>Fisheries Management Act 1994</i> and the DPI's Policy and Guidelines for Aquatic Habitat Management and Fish Conservation (1999), and is therefore not supported</li> <li>• the EA does not demonstrate how the proposal meets the objectives and recommendations outlined in the Tweed Coast Estuaries Management Plan</li> </ul> <p><u>Agriculture</u></p> <ul style="list-style-type: none"> <li>• mitigation of land use conflicts at the urban/rural interface needs to be minimised</li> <li>• inconsistencies within the Agricultural Buffer Zone (ABF) assessment in relation</li> </ul>

	<p>to buffer widths</p> <ul style="list-style-type: none"> <li>• a supplementary ABF assessment should be conducted which considers the long term use of the site on the adjoining agricultural lands.</li> </ul>
<b>NSW Office of Water</b>	<p><u>Water licensing requirements</u></p> <ul style="list-style-type: none"> <li>• water access licence may be required</li> </ul> <p><u>Management and maintenance of Blacks Creek</u></p> <ul style="list-style-type: none"> <li>• potential for hydrological impacts, acid sulfate soils (ASS) disturbance, water quality impacts, and erosion and sediment control impacts on flora and fauna</li> </ul> <p><u>Wetland management</u></p> <ul style="list-style-type: none"> <li>• provisions contained within the NSW Wetland Management Policy should be addressed</li> <li>• sufficient buffers (30m-50m) are recommended to estuarine aquatic vegetation</li> </ul>
<b>CMA Northern Rivers</b>	<p><u>SEPP14 Wetland</u></p> <ul style="list-style-type: none"> <li>• works may affect groundwater and the SEPP14 wetland</li> </ul> <p><u>Management of Blacks Creek</u></p> <ul style="list-style-type: none"> <li>• management activities to be more sympathetic to biota in creek</li> </ul> <p><u>Environmental Buffers</u></p> <ul style="list-style-type: none"> <li>• do not support use of 20m of ecological buffer as part of APZ or manicured golf course</li> <li>• does not support use of road or biotention swale as a buffer</li> </ul>
<b>Roads &amp; Maritime Services</b>	<ul style="list-style-type: none"> <li>• consideration should be given to future funding mechanisms of infrastructure upgrades to the surrounding road network, particularly the intersections of Tweed Coast Road with Kings Forest Parkway and Cudgen Road</li> <li>• consideration should be given to future options involving an alternative connection to Cudgen Road, therefore reducing the overall traffic demand on Tweed Coast Road</li> <li>• internal street network should allow for potential connections to any future development immediately north of the site</li> <li>• the installation of traffic signals at Tweed Coast Rd and Kings Forest Parkway will require the consent of RMS and that a further traffic assessment will be required at the time the signals are warranted. If signals are approved, the proponent must enter into a Works Authorisation Deed with RMS</li> </ul>
<b>Rural Fire Service</b>	<ul style="list-style-type: none"> <li>• Recommended conditions to ensure compliance with <i>Planning for Bush Fire Protection 2006</i>.</li> </ul>
<b>Housing NSW</b>	<ul style="list-style-type: none"> <li>• generally supportive as the increase in residential development has the potential to reduce pressure on existing housing and house prices through increased supply and a variety of lot sizes and dwelling types</li> <li>• greater diversity of dwelling sizes is recommended</li> <li>• concern was raised in relation to the delivery of affordable housing, with only 1% to 3% of total dwellings nominated as affordable housing, considered a relatively low target.</li> </ul>
<b>Essential Energy</b>	<ul style="list-style-type: none"> <li>• not supportive of proposed sub-station location in EPZ</li> </ul>
<b>Dept of Trade &amp; Investment</b>	<ul style="list-style-type: none"> <li>• no issues raised</li> </ul>

### 3.3 Public Submissions

A total of 302 submissions were received from the public. These included submissions from a number of community and special interest groups, including: Cabarita Beach/Bogangar Residents Association; Caldera Environment Centre; Fingal Head Coastcare Inc.; Fingal Head Community Association; Friends of the Koala; Kingscliff Ratepayers & Residents Association; Murwillumbah Ratepayers & Residents Association; Pottsville Community Association; Tweed Heads



Environment Group; Tweed Landcare Inc.; Uki Village and District Ratepayers & Residents Association, and Wooyung Action Group.

All public submissions received raised objections to the proposal. Of the 302 submissions received, 165 were pro-forma letters in objection. The key issues raised in public submissions are listed in **Table 6**. The department has fully considered the issues raised in submissions in its assessment of the project.

**Table 6: Summary of Issues Raised In Public Submissions**

<b>Proposed Development Layout</b>
<ul style="list-style-type: none"> <li>• The proposed development is too dense and the development footprint too large.</li> <li>• The development layout does not incorporate enough open space.</li> <li>• The development is out of character with the existing rural and coastal amenity.</li> <li>• Lot sizes should be larger to provide additional space for shade trees and gardens.</li> <li>• A proposed golf course next to a nature reserve seems poorly considered and encourages feral species.</li> </ul>
<b>Bulk Earthworks and Land Clearing</b>
<ul style="list-style-type: none"> <li>• The proposed bulk earthworks and land clearing will lead to massive fauna habitat destruction.</li> <li>• Contaminated material will need to be removed from the site.</li> <li>• It is likely that earthworks on the site will have adverse effects on hydrology.</li> <li>• The application should provide further detail on where proposed fill material is being imported from.</li> </ul>
<b>Ecology</b>
<ul style="list-style-type: none"> <li>• The proposal threatens the existing biodiversity within the region with no assessment of the longer term impacts on flora and fauna.</li> <li>• The proposal places pressure on the existing natural coastal ecosystem.</li> <li>• Detrimental impacts of the development are predicted on Cudgen Creek, Cudgen Lake, and the Cudgen Nature Reserve. An ecological health study should be undertaken before earthworks drainage enters the Cudgen marine system.</li> <li>• The Cudgen Nature Reserve is of regional and state significance which provides habitat for numerous threatened fauna species.</li> <li>• The assessment of potential impacts on Blacks Creek is flawed.</li> <li>• Wildlife corridors need to be connected, not fragmented.</li> <li>• Native forest areas should be fenced off.</li> <li>• There are no measures proposed to protect threatened species.</li> <li>• The proposal will detrimentally impact on the regions existing Koala population.</li> <li>• The Koala Plan of Management fails to provide adequate protection for the declining koala population – does not ensure adequate connectivity and safe passages for koala movements.</li> <li>• Core koala habitat should be retained.</li> <li>• No koala feed trees should be felled to construct the development.</li> <li>• More land should be dedicated in the Koala corridor areas.</li> <li>• There are no measures proposed to protect identified threatened species</li> <li>• Road and traffic management policies do not consider fauna movements. Traffic routes should be diverted around Koala habitat areas.</li> <li>• Domestic pets, particularly cats and dogs should not be allowed within the development to protect native fauna, particularly koalas.</li> <li>• Roads should be restricted to 40km/h speed zones to protect Koalas and road signage should be provided throughout the subdivision advising motorists to slow down.</li> </ul>

- The subdivision encroaches within wallum froglet habitat.
- Drainage from the development site will impact on Blacks Creek.
- The proposal will force wildlife into nearby agricultural areas.
- Destruction of SEPP 26 Littoral Rainforest should be avoided.
- The 50m ecological buffer zones should be increased and not serve multiple purposes (including asset protection zones, roads, cycle and pedestrian pathways etc.).
- Funding for ecological maintenance and rehabilitation should be provided by the developer.
- The Environmental Management Plans lack descriptions of species proposed for regeneration and revegetation.
- Weed invasion within the adjoining nature reserve will need to be managed.

#### **Impact on Existing Services**

- Roads and services in the region are currently inadequate to service the existing population.
- The additional population will see a huge increase in the number of people visiting the region's existing reserves, villages, beaches and recreational areas.

#### **Sustainability**

- The development should be self sufficient in terms of water usage with rainwater tanks installed on proposed lots.
- Dual water reticulation should be incorporated as part of the subdivision design.
- There is a lack of recycled water infrastructure proposed.
- The subdivision should include provisions for stormwater harvesting for use as grey water.
- The subdivision should incorporate specific measures to reduce demand on state-wide energy infrastructure.

#### **Flooding**

- The development is within a flood prone area.
- All residential lots should be above the existing flood level.
- The proposed sporting fields are located on low-lying ground and poorly drained.
- The proposal needs to be assessed having considered the impacts of increased sea level rise.
- The existing drain which runs under Old Bogangar Road requires upgrading and regular maintenance. If the drain is not appropriately managed, rising flood waters will impact on State significant farmland.

#### **Other Issues**

- The reduced agricultural buffer zones will impact future residents by way of dust, noise and spray drift.
- The 50m ecological buffer zones should be increased and not serve multiple purposes (being asset protection zones, roads, cycle and pedestrian pathways etc.).
- The timing of dedication of land to National Parks and Wildlife is unclear.
- The proposed amendment to Term C2 of the concept plan approval will create uncertainty regarding the scope and timing of flora and fauna rehabilitation and compensation works.
- The development should incorporate more affordable housing options.
- There are a number of known Aboriginal heritage sites within the development footprint.
- Impacts on Key Fish Habitats within Cudgen Creek should be further assessed.
- Treatment of acid sulphate soils and stormwater drainage water quality needs to be monitored.
- The golf course should use only non-toxic pesticides.
- Lack of faith in the planning process.

### 3.4 Proponent's Response to Submissions and Preferred Project Report

The proponent provided a response to the issues raised in submissions and a Preferred Project Report (PPR). The PPR included the following key changes to the concept plan and project application:

#### Concept Plan

- minor amendments to the Kings Forest Development Code;
- relocation of precinct neighbourhood centre to Precinct 6;
- relocation and consolidation of structured open space into one area of approximately 19ha in Precinct 9;
- justification for the amendment to term B4 of the concept plan regarding the requirement for an East-West wildlife corridor;
- slight realignment of roads, new road connection to Melaleuca Rd to the north and new road types; and
- 2 and 3 storey townhouses to replace three storey apartments in the Development Matrix.

#### Project Application

- revision of Precinct 1 layout to locate APZ outside 50m ecological buffer, reduction in size of proposed rural supplies building, improved site circulation for service vehicles and car parking;
- revised subdivision layout in Precinct 5, including a reduction in the number of lots from 410 to 376 lots, inclusion of a townhouse lot, removal of all development from the 50m ecological buffer with the exception of Koala fencing, a stormwater swale and a minor encroachment of Road No.9 in Precinct 5 within the outer 20m of the ecological buffer;
- revised Drainage Maintenance Management Plan;
- relocation of proposed zone sub-station to Precinct 2;
- amended suite of environmental management plans;
- amended Construction Management Plan to clarify bulk earthworks staging and sequencing;
- revised Statement of Commitments; and
- amended Kings Forest Design Guidelines.

Although the PPR was not publicly exhibited, it was made available on the department's website and referred to relevant government agencies and council. The department received 86 submissions, including 6 public authority submissions and 80 public submissions (including 76 form letters). Key issues raised by the public primarily related to the following:

- impacts on the Wallum Sedge Frogs and Koalas, including a request to ban all dogs from the development;
- earthworks and clearing of vegetation in ecological buffers;
- protection of the east-west wildlife corridor;
- approval of management plans should not be deferred to a later date; and
- issues regarding the dedication and long-term management of environmental lands should be resolved now.

The key issues raised in agency submissions are discussed in Section 4 of this report.

## 4. ASSESSMENT

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The department considers the key environmental issues for the concept plan modification to be:

- ongoing management and maintenance of environmental lands;
- east-west wildlife corridor; and
- Kings Forest Development Code;

The department considers the key environmental issues for the project application to be:

- implementation and content of environmental management plans;
- koala management and protection;
- biodiversity compensation strategy;
- protection of heathland and earthworks in the ecological buffers;
- precinct 1 rural supplies development, including use, location and access;
- bushfire management;
- sequencing of bulk earthworks; and
- affordable housing.

### 4.1 Ongoing Management and Maintenance of Environmental Lands

As part of the concept plan approval the proponent committed to dedicating approximately 150 hectares of environmental land to OEH as an addition to the Cudgen Nature Reserve. Term C3 of the concept plan requires details of the dedication and agreement with OEH to be submitted prior to the construction of Stage 1 of the development. The proponent has requested that term C3 be amended to require submission of these detail prior to the release of the first subdivision certificate for the project. It is understood that negotiations with OEH regarding the dedication are progressing positively and OEH has agreed to this timing. This area is shown in green in **Figure 10** below.

At the time of the concept plan approval, it was foreshadowed that the proponent would also dedicate approximately 200 ha of land to council, including conservation areas, ecological buffers and drainage reserves. It was anticipated that the details of this dedication would be the subject of a Voluntary Planning Agreement (VPA) with council, which would be finalised prior to the approval of the Stage 1 project application. Council agreed that this was an appropriate mechanism.

There are two key issues relating to the proposed dedication of lands to council, firstly, the ongoing funding mechanism for the long term management of environmental lands, and secondly the proposed staging of dedication. These two matters are discussed in turn below.

#### Funding of Long-Term Management of Environmental Lands

The proponent originally proposed to enter into a VPA with the council under s93F of the EP&A Act to guide dedication and management of open space and environmental lands. Council was supportive of this approach, however, the proponent and council were unable to come to an agreement about the ongoing costs of management and suitable funding arrangements. To minimise the cost to existing ratepayers, council has consistently sought to ensure that the proponent accepts responsibility for the ongoing management of these areas, whether or not they are dedicated to council. Council indicated it may refuse to accept the dedication of any lands unless suitable arrangements have been made for ongoing funding for the management and maintenance of the lands.

To advance this matter the department recommended the proponent and council prepare cost estimates relating to the ongoing management of the land to provide a basis for negotiation and resolution of this matter. Both parties have provided a copy of these estimates to the department. There is a significant discrepancy between the proponent's estimate for ongoing management and maintenance (\$85K) versus council's estimate (\$600 - \$800K). The discrepancies appear to lie in the range of activities included in the maintenance schedules and the estimated resources required for these activities.



For example, the proponent's maintenance schedule is limited to (i) cleaning operations (litter collection, clearing of drains), (ii) built environment (koala fence, bioretention swale) and (iii) horticultural environment (weeding, APZs, ecological buffer, native bushland).

In contrast, council has included the following as requiring ongoing attention once the land has been dedicated: project management and administration; feral animal control; monitoring and reporting; community consultation and education; revegetation (plantings); bush fire management; maintenance of infrastructure such as fauna fencing, underpasses, grids; policing of dog controls and cat bans; and other actions required to manage individual threatened species.

Furthermore, the discrepancies are also a result of the lack of detail provided in the environmental management plans, and therefore cost estimates are based on a range of assumptions for many activities. This is further discussed in Section 4.4 of this report.

#### Department's Consideration

The choice to develop environmentally sensitive lands and provide an offset in return was made by the proponent as part of the concept plan and it was understood that the offset would need to be maintained in perpetuity. A significant proportion of land associated with the development of Precincts 1 and 5 are required to be set aside for conservation purposes and this should be addressed as part of the project application with the framework for future dedications, established within the modified concept plan approval.

The department has investigated three options to address the issue of ongoing funding. The options investigated included:

- that the proponent enters into a planning agreement with the Minister to create an environmental fund that would operate for a limited period until lands are dedicated and management actions are funded through the rate base. The department would need to establish the value of the contribution by the developer, based on the cost of implementing the various environmental management plans.

Comment – At this stage the proponent has not indicated any willingness to enter into any agreements and there is insufficient information to cost the value of the fund needed.

- the ongoing management is paid for by council through a special environmental levy and rates.

Comment – This places the burden of funding the management of the offset land on the council and future rate payers, rather than on the proponent.

- the proponent takes full responsibility for managing and maintaining the lands in perpetuity.

Comment – This is the department's preferred option whereby the proponent is required to manage and maintain the lands in accordance with the various environmental management plans, in perpetuity. It is recommended that a new term of approval be placed on the concept plan that requires the proponent to adhere to this.

Specifically, the framework for option three has been embedded into the modified concept plan approval through a new term of approval that specifies that the proponent is responsible for the implementation of all environmental management plans and ongoing management and maintenance activities specified in the implementation schedules from the date of the approval, in perpetuity. Furthermore, a condition of the project approval requires the environmental lands to be surveyed and a new lot created for these lands, which is to be shown on a revised subdivision plan of the entire Kings Forest Estate. The lands should then be burdened with a restrictive and positive covenant under the *Conveyancing Act 1919* referring to the surveyed environmental offset areas, to ensure that the proponent and subsequently the landowner:

1. manage the offset areas for conservation in perpetuity;
2. implement all relevant environmental management plans in perpetuity; and
3. permit access to the offset areas by the department and relevant public authorities at all times for the purposes of monitoring compliance with the covenants and the environmental management plans to the satisfaction of the Director-General.

This approach also provides the opportunity for council and the proponent to enter into a VPA in the future for the staged dedication of lands, if considered appropriate at the time, once the actual cost and resources required for the management of the environmental lands is better understood. Council would then be responsible for managing the lands as conservation lands in perpetuity, as per the covenant and the original intent of the concept plan, as approved.

A condition of approval on the project application requires the proponent to revise all the environmental management plans to include an annual maintenance schedule of works, a detailed set of agreed completion criteria and ongoing monitoring requirements following the initial establishment period (once the agreed completion criteria have been met), within 12 months of the date of the project approval. This should provide council with enough detail to more accurately cost the implementation of the management plans, should they decide to review the costs again at this time.

The proponent has advised that they are satisfied with this approach.

Council also considered the long term management and funding options for the environmental lands at Council's meeting of 26 June 2012. A summary of the options considered by the Councillors and the department's consideration of each option is provided as an appendix to this report (see **Appendix C**). The recommended approach outlined above takes into consideration options 5 and 8 identified by council.

#### Staging of Dedication

At this stage, the proposed modified concept plan identifies approximately 209 hectares of land to be dedicated to council in the future, including 153 hectares of conservation offset lands, 49.07 hectares of ecological buffers, 3.81 hectares of drainage reserve and 2.477 hectares of environmental open space (public reserve) (refer **Table 7**). **Figure 10** overleaf shows the proposed areas of dedication. The proponent's plan indicates land dedication will occur in stages, as each precinct is developed. Under the proponent's proposed dedication staging plan, the following areas are to be dedicated as part of the development of each precinct:

**Table 7: Summary of Proposed Land Dedications to Council**

	Conservation Offset (Future Land) (ha)	Drainage Reserve (ha)	Environmental Open Space (Public Reserve) (ha)	Ecological Buffers (ha)	TOTALS (ha)
Precinct 1	5.18	-	-	1.27	6.45
Precinct 2	4.68	-	-	1.63	6.31
Precinct 3	0.515	-	-	1.77	2.285
Precinct 5	-	3.81	2.477	-	6.287
Precinct 7 & 8	44.75	-	-	25.82	70.57
Precinct 11	17.22	-	-	15.94	33.16
Golf Course	80.41	-	-	2.64	83.05
<b>TOTALS</b>	<b>152.76</b>	<b>3.81</b>	<b>2.477</b>	<b>49.07</b>	<b>208.12</b>

As discussed above, council has not yet agreed to the dedication of environmental lands, however, the proponent is optimistic that an agreement may be reached with council in the future. Assuming such dedication will occur, council considers it in the public interest to ensure that any dedication of land is more closely linked to specific stages of the development. This is primarily due to the large scale of the development, uncertainties around the timing of development of future stages and possible changes in ownership over time. Furthermore, in addition to the areas listed above, council considers it would be appropriate to dedicate the environmental protection areas south of

Precinct 5 and extending west to the westerly southern access road to southern precincts (an area of 49.66ha) to coincide with subdivision of Precinct 5 rather than with the Golf Course as is currently proposed. The proponent does not agree with the proposed change.

Department's Consideration

The department considers that council's arguments are reasonable. If the dedication of the 49.66ha of environmental land is linked to the subdivision of Precinct 5, this would reduce the total area to be dedicated as part of the Golf Course subdivision from 80.41ha to a more manageable 30.75ha. Should council accept dedication of the environmental offset lands in the future, this would provide council with an opportunity to refine management practices in the environmental offset lands within the 49.66ha area before taking over management responsibility for the entire 80.41ha parcel. A term of the modified concept plan approval requires the plan of proposed dedication lands to be revised to reflect the above change.

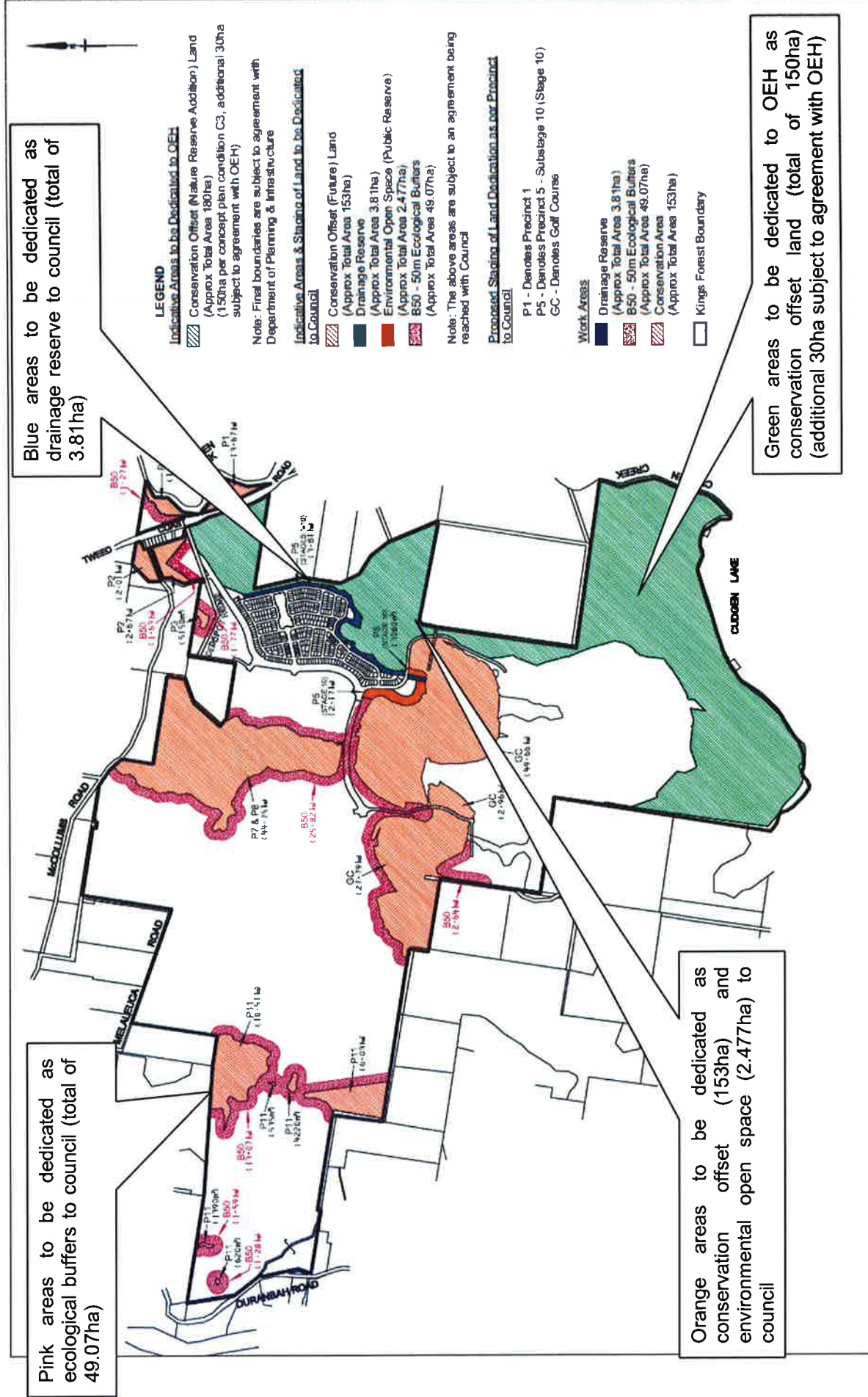


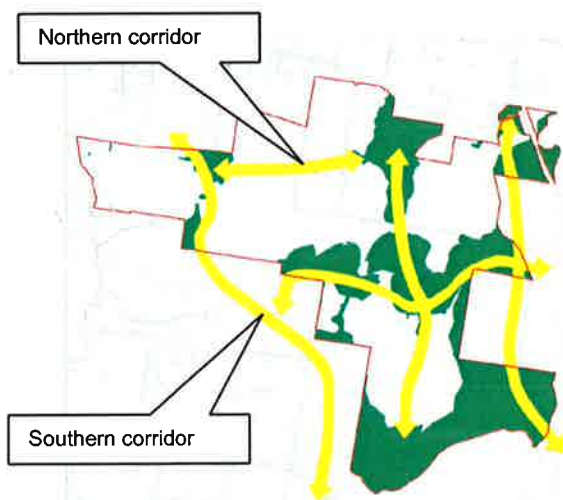
Figure 10: Areas proposed to be dedicated to Council and OEH (Source: KPoM, 2012)



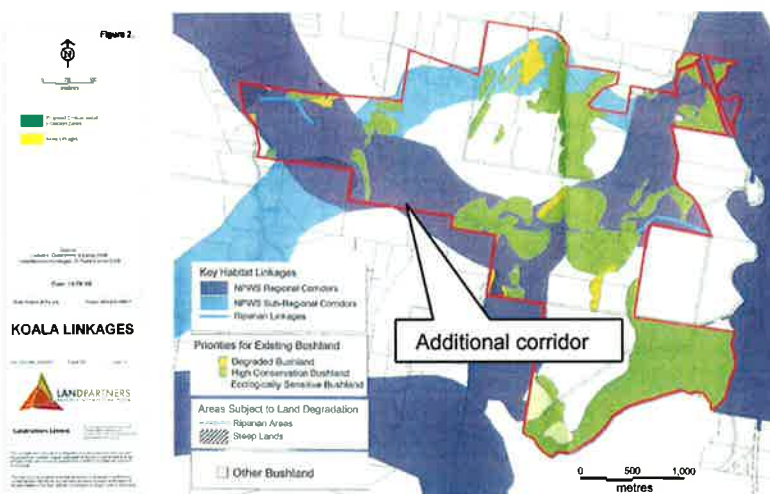
#### 4.2 Amendment to East West Wildlife Corridor

Term B4 of the concept plan approval requires the provision of an east-west wildlife corridor in the north of the site to retain connectivity and promote flora and fauna movement across and outside the site. The northern corridor was a recommendation of the proponent's original KPOM by Carrick (2009) to facilitate koala movement to the north-west and correlates with NPWS indicative sub-regional corridor mapping for the movement of a wide range of fauna. Carrick noted that the Cudgen Road fauna overpass in the north-west provides one of the very few opportunities for fauna to cross the Pacific Highway in the area. Despite there only being some tenuous vegetated linkages abutting the eastern side of the fauna overpass and to the west open agricultural fields, Carrick adopted the precautionary approach that some native vegetation may be restored to connect with the western side of the fauna overpass at some time in the future. The department supported this precautionary approach and therefore the requirement for such a corridor formed part of term B4 of the approved concept plan.

The indicative movement corridors for koalas identified by Carrick (2009) are illustrated in **Figure 11** below. The NPWS indicative habitat linkages are shown in **Figure 12**, clearly showing a sub-regional corridor across the northern part of the Kings Forest site.



**Figure 11: Proposed Koala Movement Corridors (as proposed by Carrick, 2009)**



**Figure 12: Regional and Sub-Regional Corridors (NPWS Mapping)**

Term B4 also requires the proponent to investigate the need for a further east-west corridor along the southern boundary of the site (**Figure 12**). A major regional corridor has been mapped by NPWS in this area (**Figure 12**) and Carrick (2009) shows a similar koala linkage in **Figure 11**.

The proponent now requests that the requirement for a northern and southern east-west corridor be deleted from term B4 and that this condition be modified to only require an east-west corridor across existing environmental protection zoned land (refer **Figure 13**) through the middle of the Kings Forest site.

The proponent argues that the highly fragmented vegetation in agricultural land to the north-west of the site represents a significant obstruction to faunal movement between the Kings Forest site and the Highway overpass, and meaningful revegetation in these areas is highly unlikely. The proponent further promotes the extension of the existing east-west corridor to the south-west across existing agricultural land to the Environ Road Underpass. This would require some revegetation around the decommissioned Turner's sand quarry lake and extensive revegetation within adjacent agricultural properties between the existing East-West corridor and the Environ Road underpass. However, the proponent's assessment does not provide any suggestions as to how the south-western extension of the corridor, which would be located off the Kings Forest site, may be achieved or why such revegetation efforts would be more successful in this location than in the north. The proposed linkage is shown in **Figure 13**. The public raised particular concern about the clearing of native vegetation on the site to allow for development, the loss of koala habitat and the loss of connectivity for all threatened species, but particularly for koalas.



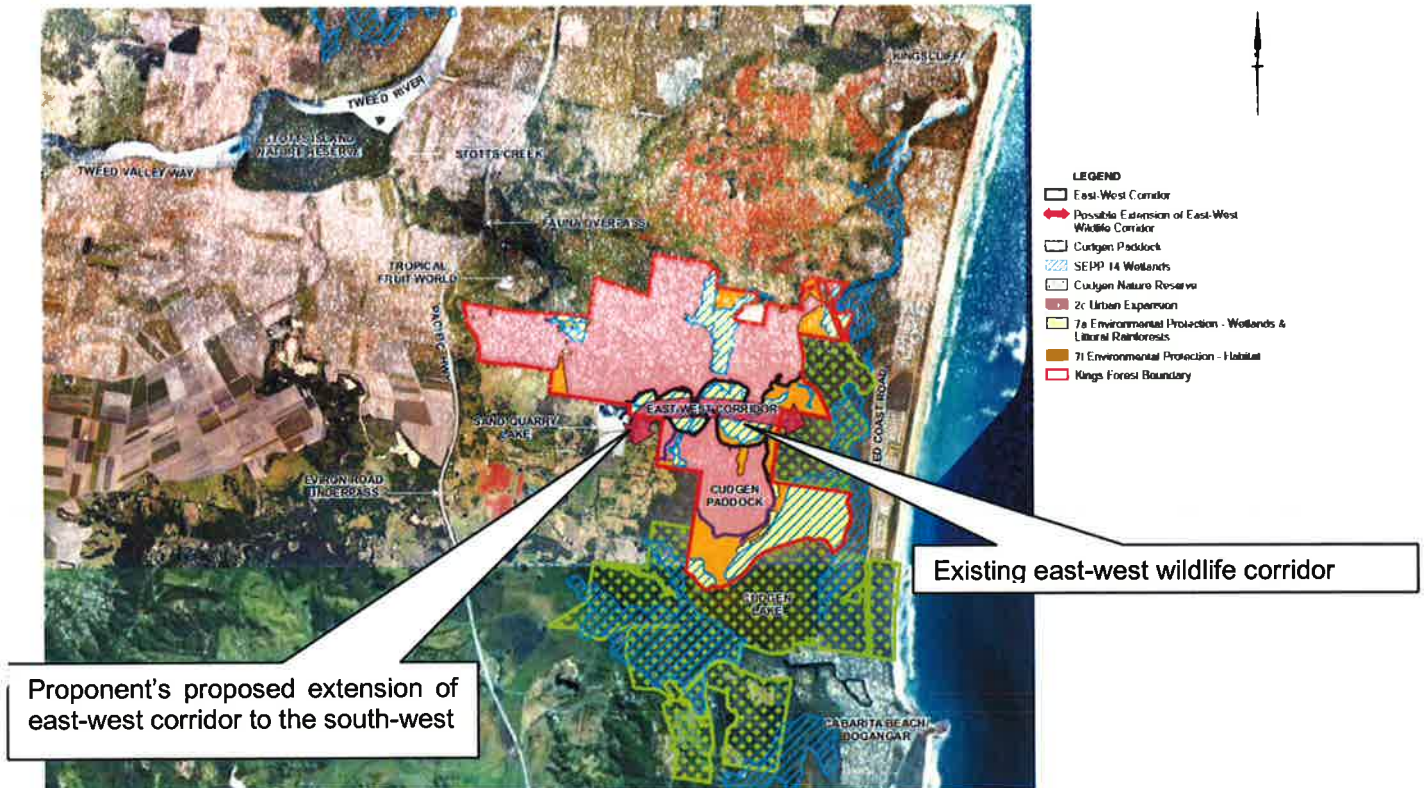


Figure 13: Proponent's Proposed East-West Corridor (Source: PPR, 2012)

Department's Consideration

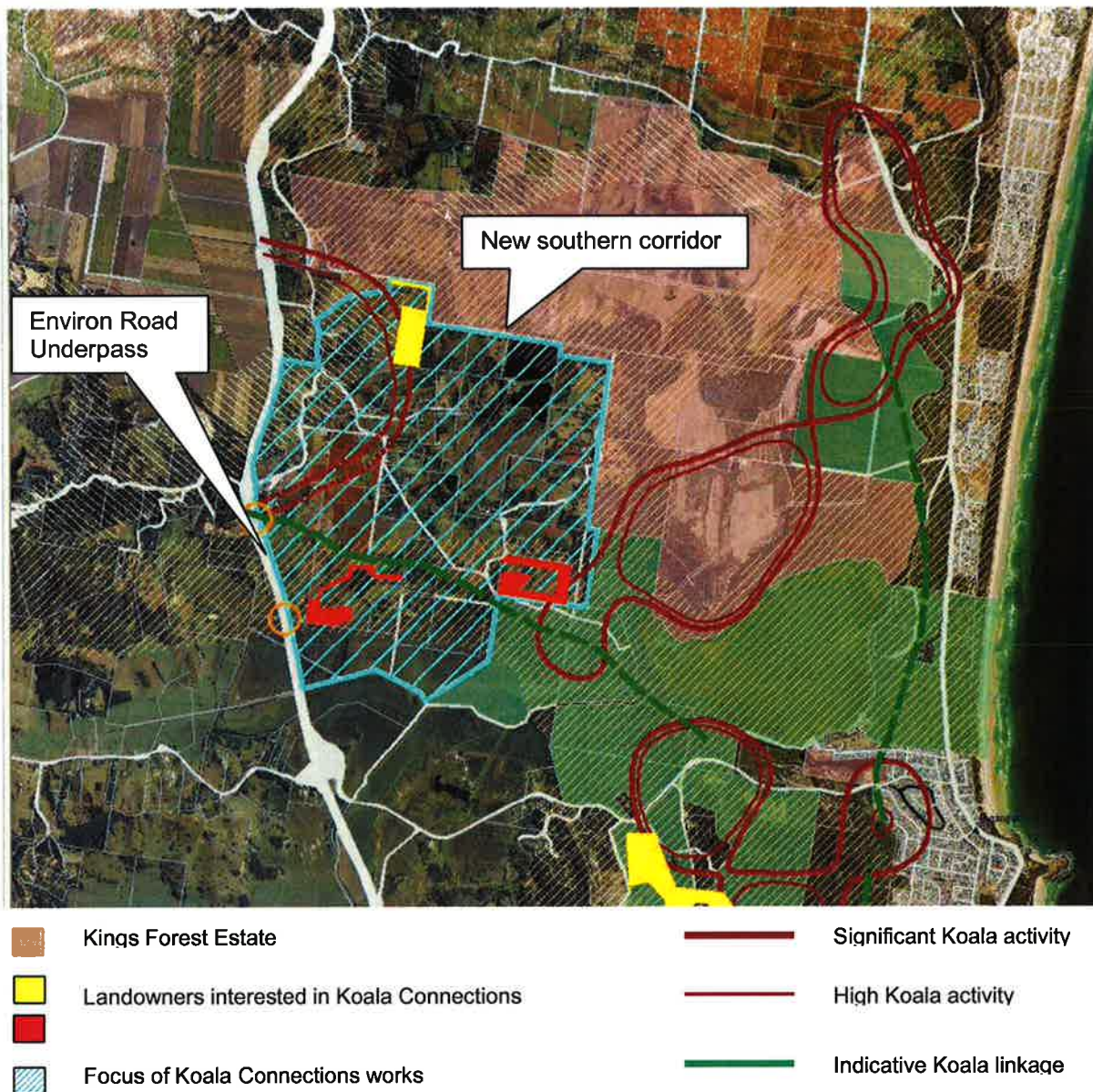
The department does not support the proponent's proposal to delete the requirement for a northern or southern east-west wildlife corridor and instead extend the existing central east-west wildlife corridor off the site. If a northern or southern east-west corridor is not provided, there are potential impacts on fauna movements and habitat connectivity at a regional scale, with reduced connectivity to the north west and south west of the Kings Forest site. To the north-west, connectivity will be reduced to Duranbah and along Cudgen Road (via the Cudgen Road fauna overpass over the Pacific Highway) to Stotts Island Nature Reserve. Although heavily disturbed and consisting primarily of introduced plant species (camphor laurel), the Cudgen Road corridor links an area of remnant lowland sub-tropical rainforest (Stotts Island Nature Reserve) with swamp sclerophyll forests north of Cudgen Lake via a network of vegetated and semi-vegetated ridges.

As part of the PAC's assessment of the original concept plan approval, the PAC considered dispensing with the east-west connectivity proposal for the site (ie, term B4 of the concept plan). However, the department argued that there is substantial merit in retaining east-west connectivity across the site as it is important for a range of wildlife not only for koalas. Safe movement corridors between areas of habitat are required to allow for dispersal of native fauna, in particular for less mobile species, juveniles searching for unoccupied habitat and to provide refuge in times of a stochastic event, such as a fire or flood. Furthermore, by ensuring this connectivity remains, future possibilities for greater connectivity outside the site are not closed off. Consideration of the principles of ecologically sustainable development (ESD) is relevant here, particularly with regard to the precautionary principle. The PAC accepted the department's argument and term B4 of the concept plan approval was retained. The department's position on this matter has not changed.

The department's independent ecologist, Ecological Australia, Council and OEH are of the opinion that a 100m wide corridor along the southern boundary of Kings Forest to connect the isolated environmental protection zone adjacent to Precincts 9, 10 and 11, with environmental protection areas in the east and continuing further west to Duranbah Road is still required for the movement of fauna. A further extension of the corridor from the southern boundary of the Kings Forest Estate down to the Environ Road underpass has been identified by the Koala Connections Project and the Tweed Coast Koala Habitat Study as a key fauna movement corridor (refer Figure 14). It is also consistent with NPWS mapping of indicative regional corridors.



[Note: The Koala Connections Project is a \$3.5 million program funded primarily by a grant from the Federal Government, that aims to improve koala habitat and many other species of endangered fauna and flora through tree planting, weed control, community engagement, invasive vertebrate pest management and fire management and planning on both private and public land. It is hoped that up to 75 private landowners will participate in the project to create a series of "stepping stones" within the rural land use matrix.]



**Figure 14: Areas of Koala activity (Phillips 2011), indicative corridors and location of Koala Connections Project**

The southern corridor is a logical extension of the vegetation in this part of the site. It would make a substantial contribution to the Koala Connections project work in this area and would provide a valuable buffer between the existing agricultural and urban land uses within the Kings Forest estate. The proponent has requested some flexibility in the final alignment of the corridor as it would be problematic to modify the location of the proposed lake, which is required for flood management purposes and which is proposed to connect to the waterbody to the south of the Kings Forest Estate southern boundary. It is understood that the land to the south of the Estate is in the ownership of the proponent, and therefore the corridor may be able to be provided around the southern edge of the waterbody. The department is satisfied that this is a reasonable request and has therefore allowed for some flexibility of the final location in a new term of approval on the modified concept plan approval. The potential alignment of the southern corridor is illustrated in **Figure 15**.



The corridor is unlikely to impact too greatly on development yield as much of the corridor would be within an agricultural buffer to the south of Precinct 10, which could potentially be comprised of elements which will not reduce the effectiveness of the buffer such as public open space, road reserve and natural features such as water courses and vegetated areas. Some loss of development yield may result should the proponent decide to follow the alignment to the north around the proposed lake. However, this loss was always anticipated even with the provision of the original concept plan term of approval which required the northern east-west wildlife corridor through the northern development precincts.

The department accepts the proponent's request to delete the need for a northern east-west wildlife corridor, on the basis that the resources that were to be allocated to the establishment of this northern corridor be reallocated to the establishment of a superior functional wildlife corridor along the southern boundary of the site (as described above). The department therefore recommends that term B4 of the concept plan approval be modified to remove the requirement for a northern east-west corridor and instead require a fully revegetated southern east-west wildlife corridor generally 100 metres wide (with a minimum of 50 metres at any one point) across the southern boundary of the site generally along the alignment outlined with arrows in **Figure 15**. The proponent is also required to prepare a detailed management plan that addresses the precise location, restoration methodology, schedule and timing of works to be undertaken, maintenance and monitoring schedule, completion criteria and a mechanism for long-term protection of the new southern east-west corridor as part of the development application for Stage 2 of the development.



Figure 15: Location of new southern corridor, as required by a modified term of the concept plan approval

### 4.3 Kings Forest Development Code

The Kings Forest Development Code was approved by the Director-General on 12 December 2010 as a component of the Concept Plan. On 24 December 2010, pursuant to section 75P(2)(d) of the EP&A Act, the then Minister for Planning issued an order which declared that development within the Kings Forest site would fall under two categories:

- development specified in Part A - Exempt and Complying Development within the Kings Forest Development Code, is exempt and complying development; and
- development specified in Part B of the Code sets out planning controls for development within Kings Forest that is not exempt or complying development.

The code prevails to the extent of any inconsistency with council's planning controls and the NSW Housing Code and provides for a range of housing choice to be assessed as complying development, including lot sizes ranging from 150m<sup>2</sup> for a terrace dwelling, 400m<sup>2</sup> for a traditional detached dwelling and up to 500m<sup>2</sup> for mews dwellings. The Code was developed in consultation and agreement with council.

The proponent seeks to make several minor amendments to the approved Development Code described as "housekeeping" amendments. Primarily the amendments relate to ensuring all the plans reflect the modified concept plan, readability/clarity of development controls and plan of development requirements.

The RFS and council provided specific comment on the proposed amendments as many proposed amendments related to urban design and bushfire management requirements. The RFS also recommended a number of minor changes to the Code to reflect updates to the NSW Housing Code in relation to bushfire management.

#### Department's Consideration

The department, council and RFS are generally supportive of the amendments proposed, however, the following amendments to the subdivision controls (Part B, Section 5 of the Code) are not supported:

- Section 5.4, Control 10 – the proponent requests that Control 10 be amended by adding the words "or public footway" such that terrace dwellings may have their secondary frontage to a public footpath or a lane. This amendment is not supported as terrace dwellings will rely on the rear lane for vehicular access to minimise impact on the primary frontage. It is therefore generally not acceptable for the secondary frontage to be a public footpath.
- Section 5.6, Control 1(a) – the proponent requests deletion of the requirement to show the location and width of Asset Protection Zones (APZs) on the Plan of Development for future subdivision applications as this is an onerous and unnecessary requirement. This amendment is not supported as the location of APZs are essential information to prospective purchasers and building designers in relation to future maintenance burdens, building design and location of building envelopes and should be shown on the Plan of Development.
- Section 5.6, Control 1(j) – the proponent requests that the requirement to note the "dwellings per lot" be changed to require the number of "bedrooms per dwelling" on the Plan of Development as this is a more relevant consideration for the purposes of determining contributions at the subdivision stage. This amendment is not supported as the number of dwellings and the number of bedrooms are both relevant for the purpose of calculating developer contributions. Council has requested that the requirement should be for both the number of dwellings and bedrooms per dwelling to be noted on the Plan of Development. The department supports council's request.

The department has recommended a modification to the concept plan to modify the Development Code to reflect the above amendments to the development controls. The department also supports the changes recommended by the RFS in their entirety. Conditions of approval require these changes to be made to the Development Code. The revised Development Code is to be submitted to the satisfaction of the Director-General within 3 months from the date of this approval. At this time, the Minister (or delegate) can amend the Code by:

- approving the revised Code to replace the existing Code, dated 15 November 2010; and
- making an order to amend the section 75P(2)(d) order, dated 6 December 2010.

The amending order would simply replace the reference to '*Part A - Exempt and Complying Development in Cobaki Estate Development Code, 15 November 2010*' with '*Part A - Exempt and Complying Development in Cobaki Estate Development Code, [X] 2013*', being the revised Code.

#### 4.4 Environmental Management Plans

As part of the original concept plan approval, the proponent committed to implementing a series of environmental management plans to manage and mitigate the potential impacts of the development during construction and following the urban development of the estate in relation to the management of vegetation, ecological buffers, threatened species, koalas, feral animals, weeds and the golf course. The concept plan approved a series of overarching environmental management plans containing broad management principles, but the plans lacked detailed actions and measurable performance criteria. Term C2 of the concept plan approval requires all future applications to include, where relevant, stage-specific management plan updates providing details on timelines for implementation of recommended works. This includes maintenance periods and measurable performance and completion criteria. Each plan is to consider all other existing plans for the site to ensure management strategies do not conflict and that each plan can be implemented without negatively impacting on the objectives of another. The suite of management plans required included the following:

- Koala Plan of Management;
- Vegetation Management Plan;
- Feral Animal Management Plan;
- Weed Management Plan;
- Buffer Management Plan; and
- Threatened Species Management Plan.

As the project application proposes bulk earthworks across the entire Kings Forest Estate, it will be necessary for many of the management plans to be finalised and implemented upfront, before construction commences. The department, OEH and council have worked closely with the proponent to refine the suite of management plans submitted as part of this project application, particularly with regard to the level of detail provided in the implementation schedules. Despite a number of requests for the plans to be revised, the department, OEH and council consider that many of the above listed documents included in the PPR are still yet to provide sufficient detail with regards to the location of works, the timing and frequency of works, resources required, the monitoring program and measurable performance criteria against which to assess the effective completion of works. Given the number and complexity of issues to be managed, it is considered essential that the implementation schedules provide a clear itemisation of actions. The plans lack sufficient detail to enable management actions to be accurately resourced, costed and implemented throughout the life of the project.

##### Department's Consideration

The current approach to the implementation tables included in each management plan creates the potential for important detail to be lost or overlooked. To further complicate the matter, management plans have been prepared in such a way that they address separate ecological management issues across the range of environmental protection areas, rather than management plans that address all the required management actions within each environment protection area. This has resulted in a consistent lack of detail across the management plans concerning the exact management aims and objectives for all the ecological values within each environmental protection area. It has also resulted in management information being scattered across a plethora of reports that is difficult to access.

As discussed in Section 4.1 of this report, the department recommends the proponent be responsible for the lands in perpetuity. The plans as currently submitted do not address the ongoing longer term management, maintenance and monitoring requirements once the agreed completion criteria have been met. This detailed information is important, particularly to the extent that it impacts upon the physical and financial resources required for the longer term management of these areas, which are likely to be the responsibility of council.

The longer term management issues for the site will be different to those experienced during the construction phase when the site is not yet fully developed and urbanised. Such pressures will include constant weed invasions from plants within surrounding gardens (typically from seeds eaten from these plants, but can also include wind-blown and fur borne seeds); the dumping of illegal



household rubbish and garden waste; incursions into the bushland from people and domestic animals, accidental damage and/or vandalism of the fences and signage, etc. These issues have not been addressed in the management plans as they only focus on the actions required to be undertaken by the proponent during the initial establishment and maintenance period.

The schedules in the current plans generally provide a summary rather than an itemisation of actions as well as a significant amount of cross-referencing to other sections and other plans for further details. The management plans are not stand-alone documents, and they are difficult to relate to the actual on-the-ground ecological conditions and objectives. It was intended that the implementation tables be a reference point for any person tasked with implementing the plan to be able to see every action to be done in order to meet the objectives of the plan, the location, timing, frequency and resources required for carrying out of these actions and the performance criteria against which each action is to be measured. The plans should also be clear as to the actions that would be the responsibility of the landowner or OEH following land dedication. No such distinction has been made, and in many cases, the ongoing management actions beyond the maintenance period are not even stated.

Three examples are provided below from the Precinct 1 & 5 Vegetation Management Plan, Precinct 1 & 5 Threatened Species Management Plan and the Precinct 1 & 5 Buffer Management Plan.

Action No	Action	Location (Reference to Map)	Purpose	Timing and Frequency	Responsibility	Performance Measure	Monitoring and Reporting	Further Details
VMP-8	Regeneration and revegetation (as detailed in Section 24.3.4 of the VMP)	Ecological buffers and EPZs	To assist natural regeneration, plant Koala food trees, provide core Acid frog habitat and revegetate heathland communities	On completion of bulk earthworks. Planting in wetter months (i.e. late summer/autumn) in accordance with the Scope of Works sequencing (FIGURE 2, APPENDIX 2)	Bush Regeneration Company / Site manager	All designated regeneration / revegetation areas rehabilitated.	Regular inspections to ensure plants are healthy and becoming established	In accordance with the KPOM (JWA 2012) and Precinct 1 & 5 TSMP (JWA 2012)
		Reference to another section of the plan	No plan/map reference	Area to be planted (m <sup>2</sup> ), planting density?	Rehabilitated to what standard?	Frequency of inspections?	Cross-referencing	
Action No	Action	Location (Reference to Map)	Purpose	Timing and Frequency	Responsibility	Performance Measure	Monitoring and Reporting	Further Details
<b>Threatened Fauna</b>								
TSMP-7	Construction of compensatory habitat	Within the vicinity of Precinct 1 & 5	To increase amount/availability of suitable habitat for threatened fauna across the site	During the construction phase of the development	Project 28 Pty Ltd- Site Manager	Compensatory habitat is constructed and utilised	Annual basis for a period of 5 years	See KPOM (JWA, 2012 and Appendix 2 (this document))
	Individual species requirements not specified	No plan/map reference	Construction of bulk earthworks, civil works, subdivision works?	What percentage of use makes it successful? Surveys required?	Species specific monitoring? Resources required?			
Action No	Action	Location (Reference to Map)	Purpose	Timing and Frequency	Responsibility	Performance Measure	Monitoring and Reporting	Further Details
<b>Koala compensatory habitat planting</b>								
BMP- 10	Planting of Koala feed trees	Within inner buffer zones (FIGURES 10 & 10A - 10L, APPENDIX 2)	To improve the quality and quantity of Koala habitat on the site and facilitate dispersal across the site	At the completion of bulk earthworks	Suitably qualified Bush Regeneration company	Approximately 10,294 Koala food trees planted in accordance with the Performance Criteria outlined in the Precinct 1 & 5 VMP, Precinct 2, 3, 4, 6, 7, 8, 9, 10, 11 VMP and Precinct 12, 13 & 14 VMP	Growth and condition of plantings to be monitored and reporting completed until self-sustaining, i.e. 3 - 5yrs	Rehabilitation monitoring/ reporting is outlined in the Flora and Fauna Monitoring Report
	How many trees in Precinct 1 & 5? Density of planting?	Map references are across the whole site, and not specific to Precinct 1 and 5	Across whole site or just Precinct 1 and/or Precinct 5?	How many trees in Precinct 1 & 5? Cross-referencing to other plans not relevant to Precinct 1 & 5	Ongoing management actions not specified			

In order for these tables to guide resourcing and implementation, more detail is required in most cases within the "Timing and Frequency" column, but generally a review of all implementation schedules is required. Further information is also required in terms of a concise set of the ongoing management, maintenance and monitoring actions required once the agreed completion criteria



have been met as, under the new term of the concept plan approval, the proponent, and subsequently the landowner (potentially council) will be responsible for implementation of all environmental management plans in perpetuity.

To address this issue, conditions of approval are proposed that require the proponent to revise and update the implementation schedules of all environmental management plans to ensure sufficient detail is provided as relevant to the specific precinct to which the plan relates. Furthermore, details of all ongoing management, maintenance and monitoring actions are to be included in the implementation schedules for actions required once the agreed completion criteria have been met. As bulk earthworks are to occur across the whole site, it is important that all plans be submitted to the Director-General for approval within 12 months of the date of the project approval or prior to the issue of the first construction certificate, whichever occurs first.

#### **4.5 Koala Management and Protection**

##### **Koalas and Dogs**

A Koala Plan of Management prepared by Carrick (2009), was approved as part of the original Concept Plan approval granted by the Minister in August 2010. The general philosophy behind this plan was to allow koalas to roam freely across the site, unrestricted by residential areas, utilising controls for traffic, dog ownership and swimming pools to protect the Koala from potential harm. Term C2 of the concept plan required an update to the KPoM with the development application for each future stage of development.

The proponent has engaged a new ecologist, James Warren and Associates, to prepare a revised KPoM in support of the current Stage 1 project application. The revised KPoM has taken a different approach to koala management on the site which incorporates the use of wildlife exclusion fencing, cattle grids and underpasses to control where the koalas may move across the site (refer **Figure 16**). As illustrated in **Figure 16**, koalas will be excluded from the development areas in Precincts 1, 2, 3, 4 and 5 by exclusion fencing in conjunction with road underpasses and grids. The use of such infrastructure restricts koala movement across the site to the environmental areas within and adjacent to the site, while at the same time restricting dogs kept as pets in the residential areas from accessing the koala accessible areas. The zones to which koalas will be restricted to are in areas of habitat where concentrated use has been recorded. The proposed koala linkages are illustrated in **Figure 17**.

The Plan states that koalas will be protected during the pre-construction, construction and operational phases of the development, and provides a list of management strategies to be implemented during each of these stages. This includes activities that would be the responsibility of Council following handover of public reserve areas containing koala fencing and habitat and roads containing koala infrastructure. Regular checking of fencing, grids and underpasses and the detection and addressing of maintenance issues as they arise are imperative to their ongoing effective function.

As part of its assessment of the concept plan, the department closely considered the proposed dog control measures and considered alternative schemes, such as dog exclusion across all or parts of the site. The department's opinion was that a prohibition of all dogs across such a large site (potentially 4500 dwellings) was not practical.

Council resolved in January 2012 to support the keeping of dogs within Kings Forest by separating koalas from the residential areas with appropriate fencing. Council staff are satisfied with this approach provided suitable fencing is proposed. Council's submission on the EA made a number of recommendations for amendments to the KPoM, including the following:

- all dogs must be enclosed in fully fenced and self-closing gated yards;
- provision is made to enable additional patrols and compliance by Council Rangers to police the restrictions by a sinking fund provided by the developer, and a differential rate paid by future owners (who own a dog) at the Kings Forest site/development, in perpetuity;
- the department sources a list of dogs that are historically known to be aggressive, predatory by nature and/or have a propensity to dig or tunnel and/or have a propensity to develop a

“pack mentality” and that those 5 of 123 breeds form a list of banned dogs by way of a s88B instrument at Kings Forest;

- all pools and surrounding fencing must be designed in such a way that should any koala accidentally fall into any pool, provisions are there for the koala to remove itself by way of steps, ropes and the like, as it is a known fact that koalas do fall from trees into swimming pools;
- fencing should be constructed on both sides of the roads that traverse environmental areas and fauna underpasses installed at intervals sufficient to allow unimpeded movement by wildlife, including koalas, across roads, prior to development of future stages; and
- temporary lockable koala and dog-proof gates at the access roads to the southern and western precincts to remain until exclusion fencing and underpasses have been constructed.

The current PPR has not adopted council’s suggestions and as such, council objects to the adoption of the KPoM. Council’s key concern is that any roaming dogs will be free to access areas of koala habitat by utilising grids to get across roads. This is of particular concern for the two roads that cross the existing east-west fauna corridor. From an ecological point of view, council considers that this outcome remains unacceptable. Council recommends that the proposed grids be replaced with temporary dog-proof lockable gates and that a condition is imposed to ensure that adequate fencing and underpasses (consistent with Council’s previous recommendation) are constructed prior to development of future stages that traverse environmental areas.

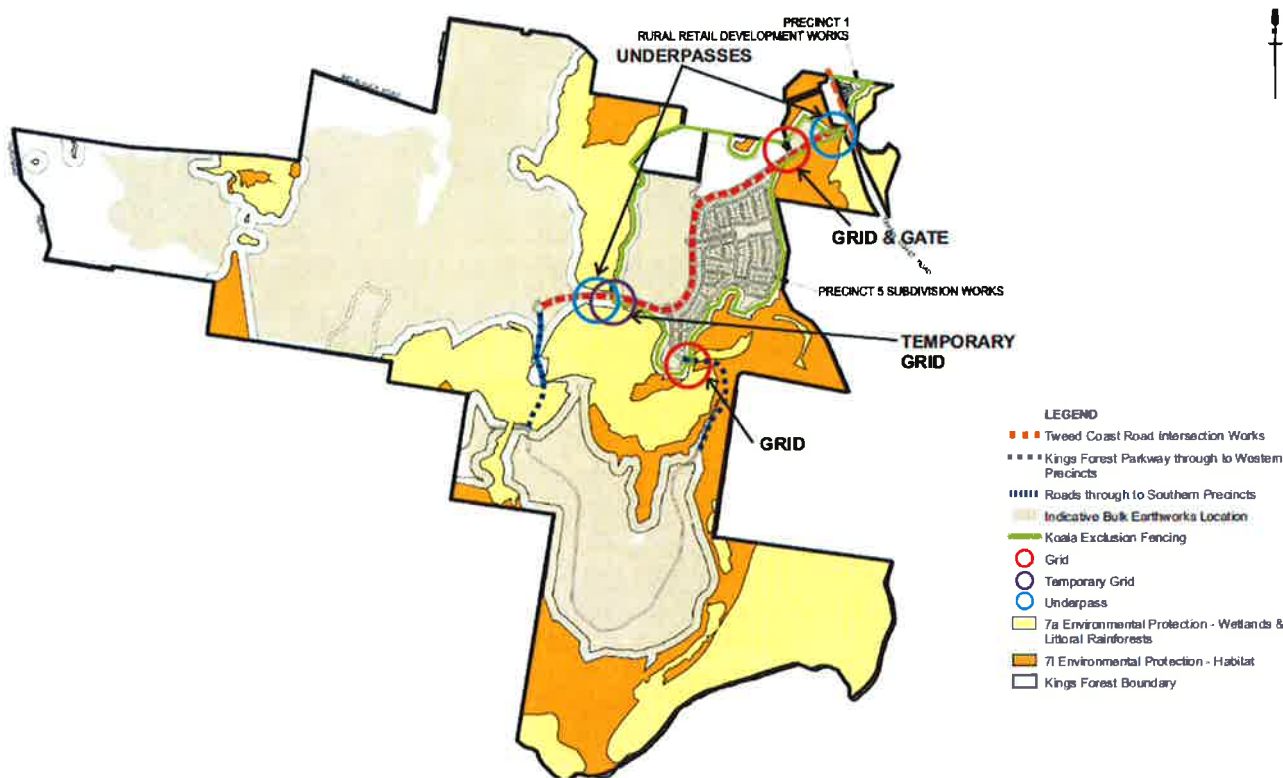


Figure 16: Proposed Koala Infrastructure at Kings Forest

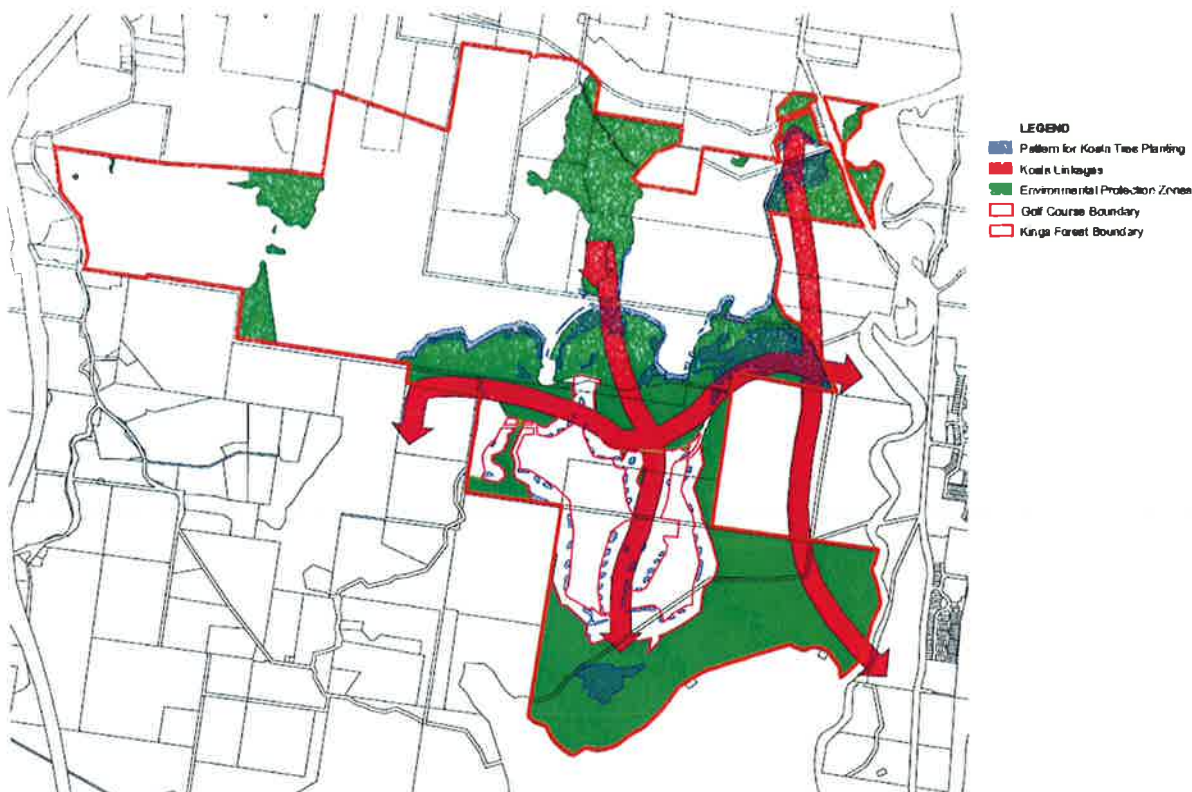


Figure 17: Proposed Koala Linkages at Kings Forest

Many submissions received from the public also raised concerns with the presence of dogs at Kings Forest and considered that dogs should be banned and that koala areas should be more adequately fenced and protected from vehicles and swimming pools (and dogs, if they are allowed).

While generally supportive of the use of exclusion fencing and grids, OEH raised several concerns with the concept of the koala exclusion fence in terms of its effectiveness and the possibility of other impacts it may have:

- the extent to which the fence may expose koala to increased risk from any dog breed that can scale the fence in order to pursue them should be considered;
- impacts to the fence itself from vandalism, fire, accidental damage and deterioration could at any stage be a point of entry for dogs and people or koalas;
- vandal proof signs should be provided at appropriate intervals to inform people about the purpose of the fence and the importance of maintaining the fence; and
- appropriate financial mechanisms (ie developer contributions, levies etc) for the resourcing of the long-term management of such infrastructure and monitoring be formulated before approval of the KPoM is granted.

In response to these concerns, the proponent sought further advice from an independent koala expert, Dr Steve Phillips. Dr Phillips is the author of Council's Tweed Coast Koala Habitat Study which was prepared to ultimately inform the Tweed Coast Koala Plan of Management. Dr Phillips has provided a letter in support of the proponent's KPoM stating that it "*theoretically minimised the chances of domestic dogs and koalas coming into contact to a far greater degree than that envisaged in the original Carrick KPoM, while also better accommodating ongoing koala movement through the site through a process of redistribution of overall habitat rehabilitation effort.*" Phillips is satisfied that the proposed grids and fencing have proven to not only be effective in keeping koalas outside of exclusion areas but will minimise domestic dogs from entering koala habitat areas.

The proponent also advised that the location and design of floppy-top koala exclusion fencing combined with the use of grids and traffic calming devices through the central Environmental Protection Zones (including SEPP 14 wetlands), rather than constructing fences on both sides of the roadways, will allow for unimpeded Koala movements into other Environmental Protection zones, the golf course area and adjacent vegetated properties.

### Department's Consideration

Hopkins and Phillips (2009) demonstrated the ability of exclusion fencing coupled with strategically placed underpasses and the use of cattle-grids at driveways and fence ends to effectively exclude koalas from a 3km section of road at Skyline Road in Lismore. Floppy-top koala exclusion fencing is also recommended as an option for new urban developments by the Queensland EPA (Koalas and Dogs Fact Sheet, QLD EPA, July 2006) as a means of separating dogs and koalas. This fact sheet notes that the majority of koala attacks occur in the dog's yard, rather than in koala habitat areas. It would seem therefore, that it may be more important that the infrastructure is effective in keeping the koalas out of residential areas, more so than the problem of controlling dogs from accessing koala habitat areas.

The department has considered the issue raised by council that any roaming dogs will be free to access areas of koala habitat by utilising grids to gain access to the southern and western development areas prior to development of these areas and during bulk earthworks. The KPoM for Stage 1 proposes two permanent grids and one temporary grid (refer **Figure 16**). The cattle grids are proposed to be 3050mm long by 4680mm wide with pipes laid at 100mm centres. It is considered unlikely that a dog would be readily able to cross such a grid, certainly not without sustaining an injury. Considering the small number of grids proposed (only three), it is not considered that this infrastructure poses a significant risk in terms of dogs accessing koala habitat areas. Furthermore, the *Companion Animals Act 1998* requires dog owners to adhere to a number of legal responsibilities for the control of dogs, including preventing a dog from escaping from a property, being under the effective control of a competent person by means of an adequate leash (or such like), discouraging dogs from attacking, muzzles to be used for more aggressive dogs (as prescribed by the regulations), and dogs to be secured or seized if they bite or attack an animal.

The Approved Recovery Plan for the Koala (DECC, November 2008) supports the use of koala exclusion fencing and refers to several examples of where it has been used successfully to stop koalas from crossing the Pacific Highway, and has shown to be effective in reducing koala deaths on roads. It specifically states that "*Floppy-top fencing is effective in preventing koala movement (Pieters 1999).*"

The department agrees with council that the reliance on monitoring and operating procedures to limit speed and possible interaction with fauna during bulk earthworks in the southern and western precincts is insufficient to ensure the protection of wildlife and allow safe fauna crossing. The department agrees with council that fencing should be constructed on both sides of the roads that traverse environmental areas and fauna underpasses installed at intervals sufficient to allow unimpeded movement by wildlife, including koalas, across roads. A condition of approval requires this fencing to be constructed prior to the commencement of bulk earthworks in the southern and/or western precincts. Details of the fencing and underpasses are to be submitted to the department for approval prior to the issue of a construction certificate for the relevant stages of bulk earthworks.

The department is therefore satisfied that the proposed cattle grids coupled with the existing legislated controls for the keeping of dogs, community education and the use of koala exclusion fencing surrounding the residential areas should be effective in separating dogs from koalas. The department also recommends that signage be placed strategically around the site, such as in the public open space areas within Precinct 5 and at fauna underpasses advising residents that koalas are active in the area and dogs should be kept on a leash at all times and encourage residents to keep dogs in enclosed yards between the hours of 6pm and 6am. This has been incorporated into the recommended conditions of approval.

Ultimately the key to success of the exclusion fencing is ensuring that the fence is maintained in perpetuity, including the removal of any vegetation overhanging the fence. While this has been included as an ongoing management strategy in the KPoM, the KPoM is lacking sufficient detail with regards to the ongoing management actions required. A condition of approval therefore requires the KPoM to be updated to include the details of management actions required for the longer term management of the fence, including timing and frequency of maintenance inspections.



In addition, conditions of approval require vandal proof signs to be erected at regular intervals along the fence informing people of its purpose and the presence of koalas. Maintenance activities will be the responsibility of the developer until handover to council. The issue of funding such maintenance activities in the longer term has been discussed in **Section 4.2** of this report.

#### 4.6 Biodiversity Compensation Strategy

In order to offset the impacts of the development on threatened species of flora and fauna, the proponent has provided details of a compensation strategy across the site. The strategy specifically addresses proposed compensatory habitat for heath, two species of 'acid frog'<sup>1</sup> and koalas. The two species of acid frog that have been recorded on the site are the wallum froglet (*Crinia tinnula*); and the wallum sedge frog (*Litoria olongburensis*). The wallum froglet is listed as vulnerable within the schedule of the NSW *Threatened Species Conservation Act 1995*. The wallum sedge frog is listed as vulnerable within schedules of the NSW *Threatened Species Conservation Act 1995* and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

Wallum froglets have been recorded in association with constructed drainage lines within the development area as well as inhabiting depressions formed during slash pine stump removal. Low lying wet heath and drainage line communities and adjacent areas prone to frequent inundation, within adjacent EPZ zoned land, are considered to provide core habitat for this species. Wallum sedge frogs have been recorded within regenerating heath communities to the north and east of Precinct 5, and within the adjacent Cudgen Nature Reserve (refer **Figure 18**).

The proposed protection of these species will involve maintenance of existing suitable habitat within EPZs in accordance with the Threatened Species Management Plan and associated Buffer Management Plans and Vegetation Management Plans. However, it is acknowledged that the proposed development will result in unavoidable impacts on some core habitat areas. The proponent proposes the creation of additional compensatory habitat areas within EPZs and ecological buffers to offset unavoidable losses of habitat. The proponent is relying heavily on the creation of compensatory habitat including core breeding habitat and forage habitat areas. The proposal involves the construction of small ponds, or 'melon holes' in compensatory areas (refer **Figure 19** and **Figure 20**).



Figure 18: Acid Frog Core Habitat and Recordings (Source: James Warren & Assoc, 2012)

<sup>1</sup> So called because they are typically associated with nutrient poor and acidic (pH between 3.5 and 6.0) water



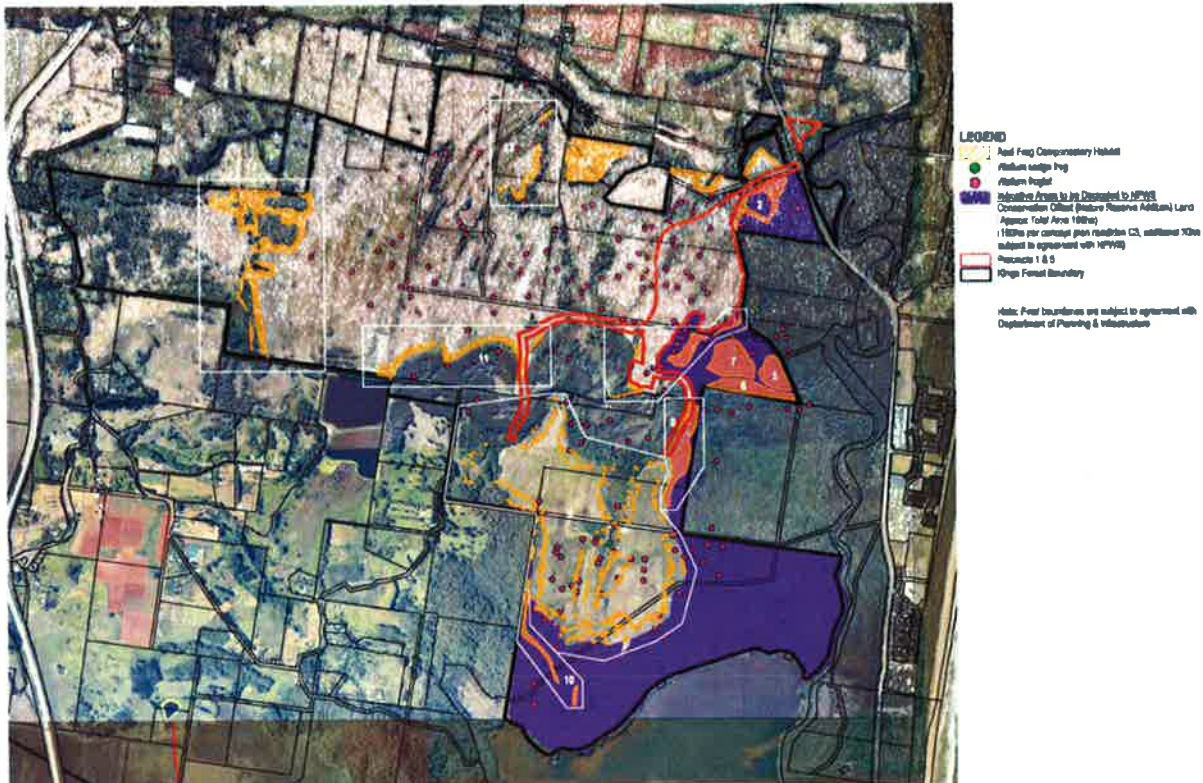


Figure 19: Proposed Acid Frog Compensatory Habitat and Records (Source: James Warren & Assoc, 2012)



Figure 20: Proposed Acid Frog Compensatory Habitat 'Melon Hole' (Source: James Warren & Assoc, 2012)

With respect to koalas, which are also listed as threatened on both NSW and Commonwealth legislation, the KPoM prepared for the site states that there will be minimal losses to koala habitat as only isolated occurrences of koala food trees will be removed. **Figure 21** illustrates the proposed extent of works with an overlay of existing “core koala habitat”. Specifically, the proposed development will result in the loss of 0.81ha of primary koala habitat and 6.68 ha of secondary (A) habitat (742 individual trees, including eighteen food trees). To mitigate against the loss of koala habitat, the proponent proposes to plant several thousand koala food trees. However, it is not clear how many trees will be planted or at what density. The KPoM states a figure of 7,875 trees while the Buffer Management Plans state a total of 10,294 trees. The proponent proposes the planting of koala food trees in various locations across the site. In total, 71.12ha at the Kings Forest site has been identified as suitable for planting koala food trees. The proponent contends that existing koala habitat and koala dispersal will be improved and new potential core habitat areas will be created.

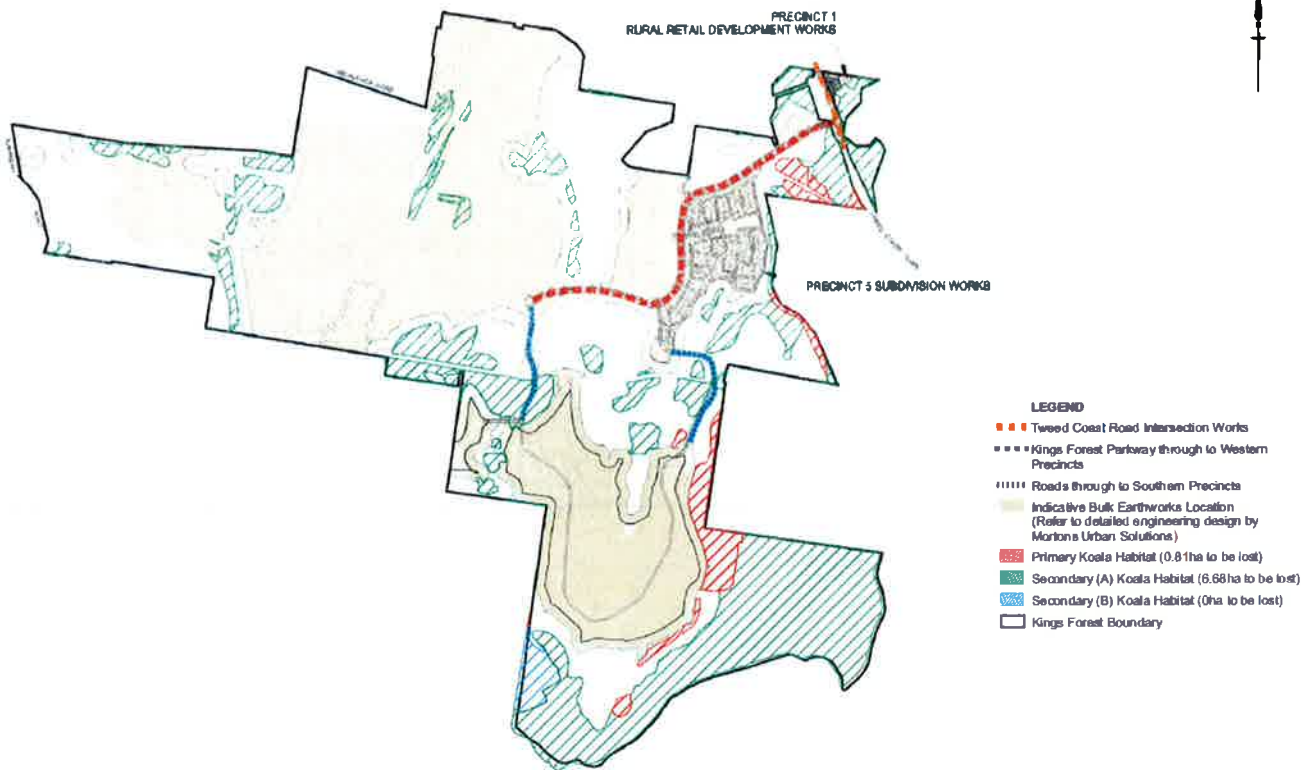


Figure 21: Loss of Koala habitat at Kings Forest (Source: KPoM, 2012)

Approximately 45.83ha (64%) of the identified koala tree planting area will be protected within environmental protection zones with 17.43ha (25%) to be located within ecological buffers. The remaining 7.86ha (11%) will be located within the proposed golf course. The proponent plans to plant significant numbers of koala food trees in areas of heathland and areas proposed for the creation of habitat for acid frogs. Of the 71.12ha of koala food tree planting offsets, approximately 65.27ha (92%) would be overlapping with other compensatory habitat (refer Table 8).

The entire proposed acid frog compensatory habitat is proposed to be created in the same areas as areas identified for heath revegetation and Koala food tree planting (Acid Frog Compensation Areas Nos. 5, 6, 7 and 8).

A summary of the proposed compensatory habitat areas is outlined below and represented visually in Figure 22 below.

Table 8: Summary of Proposed Compensatory Habitat Areas for Koala habitat

Overlapping Areas	Area (ha)
Overlapping areas of Wallum Sedge Frog, Koala and Heath compensatory habitat	40.24
Areas designated for Koala compensatory habitat & Heath revegetation only	10.21
Areas designated for Koala compensatory habitat & Heath regeneration only	14.82
Areas designated for Koala Compensatory habitat only (no overlap)	6.19
Areas designated for Heath revegetation only (no overlap)	24.74
Areas designated for Heath regeneration only (no overlap)	21.69
<b>TOTAL</b>	<b>71.12</b>



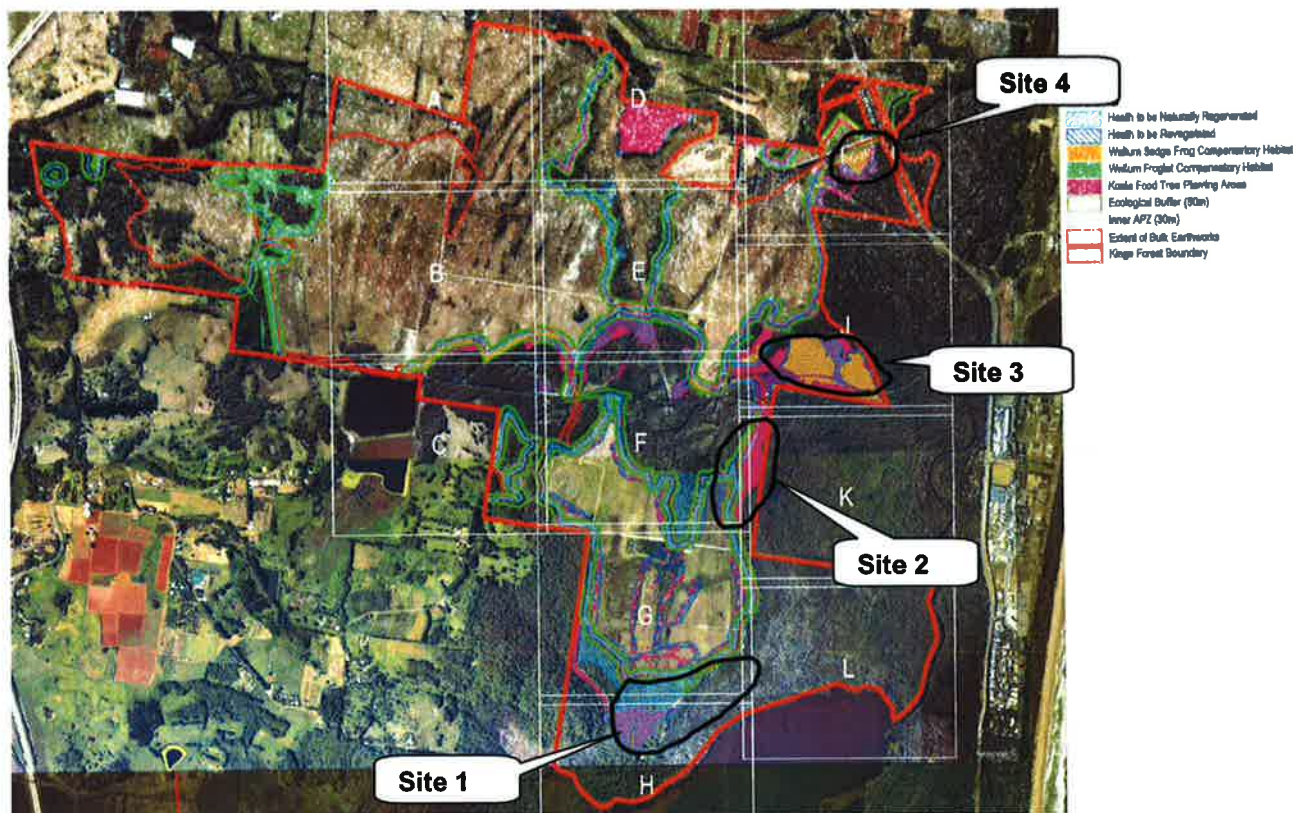


Figure 22: Proposed Compensatory Habitat Areas (Source: Precinct 1 & 5 Buffer Management Plan, 2012)

In August 2012 OEH staff and the proponent inspected a reference site containing heath, koala food trees and naturally formed acid frog habitat and four other key sites proposed for overlapping compensatory habitat areas at Kings Forest. These compensation sites are shown in **Figure 22** above.

OEH considered that Sites 1-3 demonstrated strong natural regeneration (to varying degrees) sufficient to warrant no further active intervention other than invasive weed removal and ongoing management. Site 4, on the other hand, showed significantly less natural regeneration occurring and was more strongly affected by weed incursion than the other sites. Under these circumstances, OEH would be willing to allow the proponent to undertake its proposed acid frog habitat creation and koala food tree enhancement measures in this area.

OEH recommended a strategic approach be taken to the proposed planting of koala food trees on Kings Forest and upon lands proposed to be dedicated to OEH. Such strategic prioritisation includes looking to areas outside of the Kings Forest site that will not naturally regenerate and which will require resources not otherwise available to land managers. In particular, OEH recommends taking a tiered approach to koala habitat offsetting arrangements as follows:

- planting of koala food trees in a 27ha area (ex-banana plantation land) within the Cudgen Nature Reserve to the south of Kings Forest which has been identified as being important to the Tweed koala population;
- experimental planting of koala food trees in Site 4; and
- managed koala food tree plantings in Sites 1 to 3.

OEH has also recommended that wherever significant natural regeneration is occurring within the EPZ and/ or ecological buffer areas, this regeneration should be supported in preference to active revegetation or rehabilitation programs and this be incorporated as a guiding principle in the statement of commitments and relevant management plans.

### Department's Consideration

It is accepted that such overlapping habitat types comprising heath, koala food trees and naturally formed acid frog habitat occur on the site. This has been demonstrated. However, it is not the compatibility of such habitats that is of concern here. It is the significant areas of spatial overlap proposed to meet offsetting requirements and the required disturbance to areas that would naturally regenerate (with only basic weed control activities) that is the concern. The offsetting approach is not supported for the following reasons:

- management strategies for individual species or communities should avoid conflicts;
- planting thousands of koala food trees or digging holes and ground disturbance with machinery in good condition bushland or naturally regenerating bushland that only requires some weeding and not any planting may result in other unintended side effects, such as overshadowing, increased disease and pests and the like;
- heathland is not regarded as primary or secondary koala habitat, therefore it is not considered appropriate for plantings to occur in areas of naturally regenerating heath or areas proposed for heath revegetation;
- planting of koala food trees in acid frog habitat will create overshadowing, which is incompatible with acid frog optimal habitat, which is away from the tree canopy. Such plantings would only be appropriate around the margins of acid frog habitat and not to the extent proposed by the proponent;
- site inspections by OEH staff have reported strong evidence of vigorous regeneration of heath and koala food tree species in areas proposed for acid frog compensation;
- there are already numerous existing natural depressions in the ground in these areas that would provide a regime of ephemeral breeding and forage habitat for acid frogs; and
- OEH will ultimately be responsible for these lands in the future and does not wish to inherit responsibility for ensuring ongoing functioning of created 'melon holes' and newly established koala food trees.

The department supports OEH's suggestion for significant natural regeneration to be a guiding principle for the approach to habitat compensation within the KPoM and the Threatened Species Management Plans and also supports the tiered offsetting approach. However, in addition to offsite offsets, the department supports the planting of koala food trees on site in the new southern east-west corridor (see discussion in **Section 4.4**). Conditions of approval require the revision of all management plans to reflect this guiding principle and specifically require the KPoM to be revised to provide a revised offsetting strategy that takes the following tiered approach to offsets:

- offsite offsets in ex-banana plantation land within Cudgen Nature Reserve;
- plantings within the new southern east-west wildlife corridor; and
- managed plantings in other suitable areas within ecological buffers and environmental protection zoned land.

The 'melon hole' experiment should be restricted to degraded land or land with marginal regeneration potential on the outside edges of the core bushland of the environmental zones. The department and OEH agree that the 'melon hole' experiment may be undertaken in acid frog compensation area no.2, to the north-east of Precinct 5, as there is no natural regeneration evident in this location. However, the 'melon hole' experiment should be supported by either published scientific study or monitoring from the Tugun bypass (where this experiment is already underway) over a number of years, demonstrating its success.

Dr Arthur White, an expert in acid frog ecology, has reviewed the proponent's 'melon hole' creation proposal. Dr White agrees that the planting of koala food trees in areas of acid frog habitat can become problematic as trees mature and create overshadowing. The growth of such trees must be monitored biannually, and the correct response made in terms of thinning the vegetation. This would ultimately become the responsibility of OEH or council, requiring additional resources to manage such areas. Dr White also states that he supports the methodologies proposed, but that "it is important that this project be regarded as an experiment". It is therefore the department's opinion that such broadscale use of such an experiment with inherent risks is inappropriate as a tool to compensate for the loss of these species' habitat.



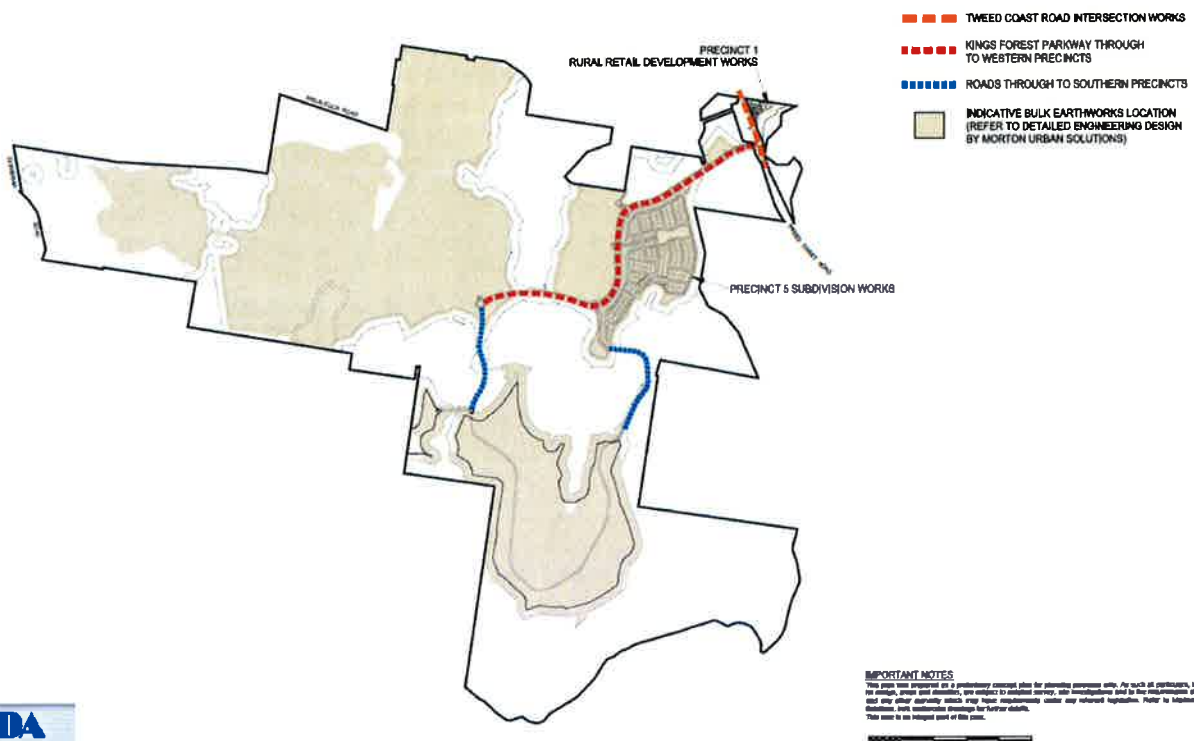
Conditions of approval therefore require revision of the relevant environmental management plans (TSMP, VMP, BMP) such that there is no creation of 'melon holes' in acid frog compensation areas 5, 6, 7 and 8. While this ultimately means the actual created habitat may be reduced, it is likely that with the protection and regeneration of heath and assisted natural regeneration in other areas across the site where habitat for acid frogs occurs naturally, additional offsets for the acid frog may not be required. However, the proponent must review its compensation strategy across the site and provide the details of all offsetting arrangements for the loss of acid frog habitat in the final Threatened Species Management Plan for approval by the Director-General. The provision of the new southern east-west corridor provides further opportunity for offsets to be provided on the site.

**4.7 Protection of Heathland and Works in Ecological Buffers**

**Protection of Heathland**

Heathland, including wallum sand heaths, provide an important year-round food source for a variety of species and are important to a number of threatened species as roosting/nesting habitat as well as foraging habitat. The mosaic of wet and dry wallum heathland on the site is known to provide habitat for the two threatened species of acid frogs, the wallum froglet and the wallum sedge frog. The original concept plan approval noted that a significant amount of heath was to be removed and as such required additional naturally regenerated heathland to be retained and protected within ecological buffers, outside of the current environmental protection zones through term B3 of the concept plan approval. The heathland in these locations was noted as "heath to be naturally regenerated" on an approved plan and is to be protected and regenerated for the full 50m width of the ecological buffer. Details of this further protection were to be submitted, along with the preferred long-term protection mechanism to the Director-General's satisfaction prior to determination of the project application for Stage 1.

The PPR includes further protection of heathland in only the inner 30m ecological buffer in all development precincts across the site (with the exception of the golf course precincts), not the full 50m width, which is inconsistent with the concept plan approval. The proponent proposes to remove heathland which was to be naturally regenerated from the 20m outer buffer and undertake bulk earthworks to accommodate stormwater management areas (bio-infiltration and vegetated swales) for future subdivision (refer **Figure 23**) in a number of areas across the site. After the completion of these works these areas would be revegetated with heathland and the full 50m of the ecological buffer would be protected within the land to be dedicated to either OEH or council.



**Figure 23: Indicative extent of bulk earthworks**

### Earthworks in Ecological Buffers

In respect of Precinct 1, the layout has been revised such that all infrastructure including the bushfire asset protection zone is clear of the 50m ecological buffer as required by the concept plan approval. As a result, earthworks within the buffer, including the clearing of littoral rainforest is not required.

In response to concerns raised by the department and agencies, the Precinct 5 subdivision layout has been amended in the PPR to remove all infrastructure from the 30m inner ecological buffer. The only infrastructure in the outer 20m of the ecological buffer will be stormwater management areas (bioinfiltration and vegetated swales), part of a bushfire APZ, a Koala fence and encroachment by Road No. 9 in the south western corner of Precinct 5 for an area of 686m<sup>2</sup>.

For the golf course precincts (Precincts 12, 13 and 14) bulk earthworks are proposed to occupy the entire area with the exception of sections of the inner buffer at the west of Precinct 12, and where heath is to be naturally regenerated (in accordance with term B3 of the concept plan approval). At the completion of earthworks the golf course will be revegetated and function as the ecological buffer to the surrounding EPZs.

Council is of the opinion that whilst the ecological buffer could be expected to accommodate these devices in some instances where it has been demonstrated that no other option is available, Council remains concerned that this approach appears to have been adopted as the rule in Precinct 5, rather than the exception, and will set a precedent for the remainder of the Estate.

The proponent has placed emphasis upon scaling back infrastructure within the ecological buffers, however, OEH notes that there may still be possible ecological impacts upon habitat areas within ecological buffers and land zoned for environmental protection from an altered hydrological regime.

### Department's Consideration

#### Protection of Heathland

The department, council and agencies do not support the clearing of any heathland to be naturally regenerated anywhere on the site and note that this is inconsistent with term B3 of the concept plan approval which states that no heath that is to be naturally regenerated, as depicted on the plan of "Revised Heath Regeneration & Revegetation Areas", is to be removed anywhere on the site.

The dedication of 150ha of environmental offset land containing heath to OEH in accordance with a VPA will ensure the long term protection of these lands. The remaining 200ha of environmental land is to remain the responsibility of the proponent and subsequently the landowner and will be protected, in perpetuity, by a restrictive and positive covenant (as discussed in Section 4.1 of this report). The provisions of the numerous revised environmental management plans will ensure these areas are appropriately restored and managed in the short and long-term. This is considered to satisfy term B3 of the concept plan.

### Earthworks in Buffers

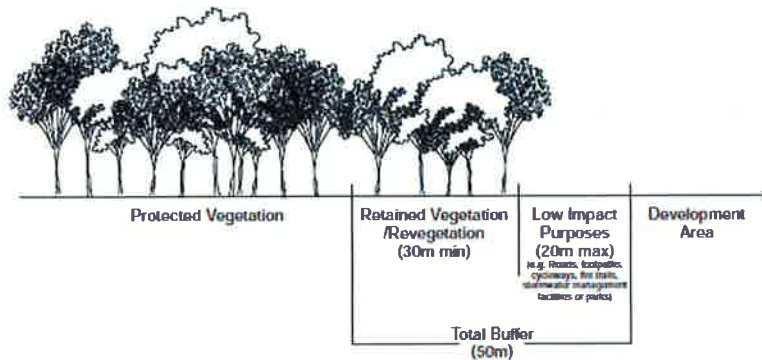
The department does not support bulk earthworks activities in the ecological buffers across the site with the exception of certain works within Precinct 5. The department considers that insufficient detail has been provided to support the need for such works outside of Precinct 5 at this stage of the development. In addition, the removal of heath and earthworks in these other areas is unjustified having regard to clauses 7 and 8 of Schedule 3 Part 6 of the MD SEPP.

As such, conditions of approval are recommended that limit the approval such that no clearing of existing heath or bulk earthworks can occur in the full extent of the 50metre ecological buffer across the entire site. This is, however, with the exception of those areas identified in Precinct 5 for stormwater management areas. Details of such works were provided to the department and agencies for consideration and the department agrees that some minor encroachments into the outer 20m ecological buffer would be acceptable for the following reasons:

- the ecological buffer layout is consistent with the agreed indicative cross-section specified in the approved concept plan Buffer Management Plan (refer **Figure 24**);

- Precinct 5 is not located immediately adjacent to any SEPP14 wetlands;
- the proposed development is not inconsistent with the objectives of the buffer;
- there will be no hard infrastructure within the ecological buffer;
- overflow events from the stormwater swale are likely to be very rare and will therefore not impact significantly on environmental land; and
- there are no areas of heath to be naturally regenerated that are proposed to be removed.

**CROSS-SECTION A**  
**BUFFERS TO PROTECTED VEGETATION**  
**(EEC's, ENVIRONMENTAL PROTECTION LAND, SEPP 14 WETLANDS)**  
**OPTION 2**



**Figure 24: Approved indicative ecological buffer cross-section (Source: Approved Buffer Management Plan, August 2009)**

As such, the department is satisfied that, subject to the recommended conditions of approval and terms of the modified concept plan approval, naturally regenerating heathland and the integrity of the ecological buffers will be maintained.

#### 4.8 Precinct 1 Rural Supplies Building

##### Use and Location

The proponent is seeking project approval for a 'rural supplies' building within Precinct 1, which is located on the eastern side of Tweed Coast Road. The proposal is for a building with a GFA of 2,036m<sup>2</sup>, a maximum height of 6.5 metres, 135 car parking spaces, landscaping and access. As the actual tenancy of the building is unknown, the department and council were concerned that there was insufficient information regarding the final use of the rural supplies development to enable a thorough assessment of carparking (customer, staff, delivery vehicles), servicing (no. and size of truck movements), access (conflict between service vehicles & customers) and environmental controls (eg. storage of hazardous materials). Council objects to the department recommending approval to the development without knowing the true nature of the development and whether car parking is adequate on site.

The department and council also raised concern regarding potential land use conflicts between the development and the agricultural land to the north. Impacts may include dust, odours and agricultural pesticides. This is of particular concern as the Precinct 1 development is located within the 150m agricultural buffer, as specified in the approved concept plan. There may also be impacts from the development on the adjoining agricultural land such as lighting, noise, sediment, storage of hazardous materials and stormwater runoff.

The proponent is of the opinion that the architectural plans submitted (refer **Figure 25**) provide sufficient detail for approval of the proposed building and maintains that the provision of car parking (135 spaces) is sufficient to satisfy the parking requirements for either a 'shop' or a 'bulky goods retailer' as specified in Section A2 Site Access and Parking Code in Tweed Shire Council's Development Control Plan 2008.

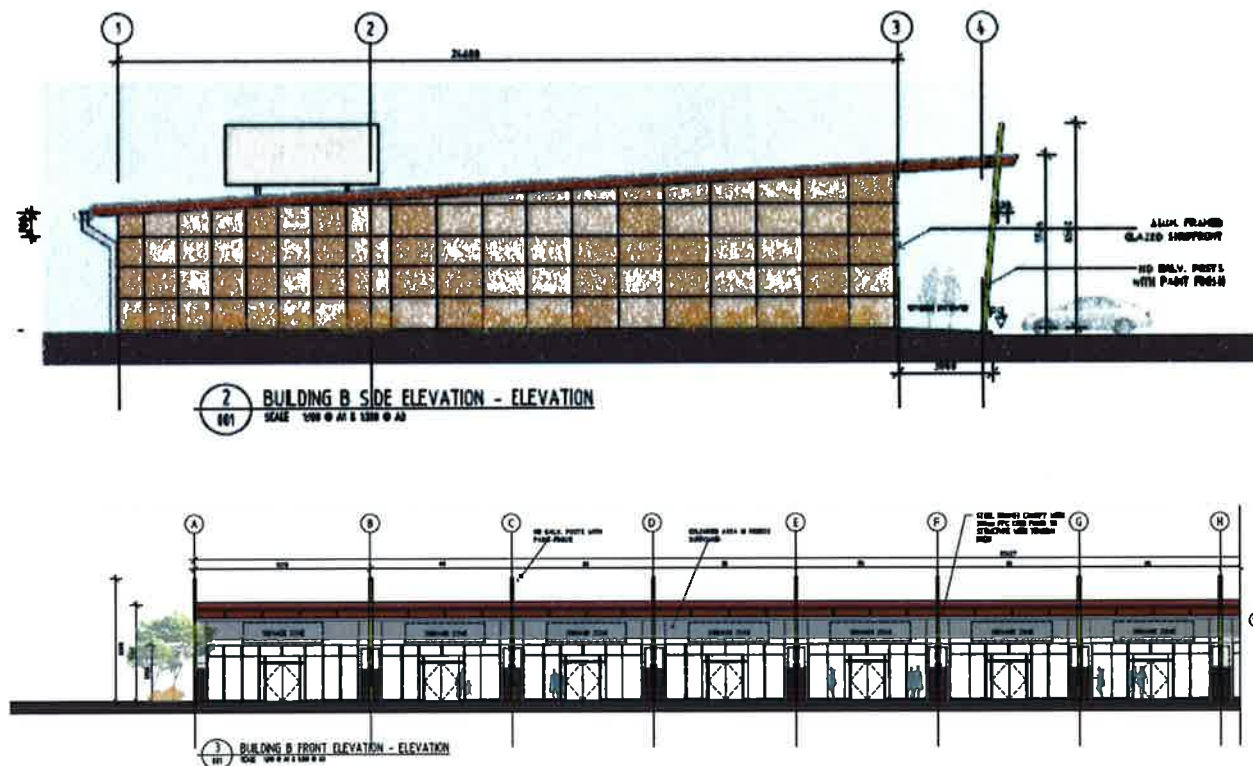


Figure 25: Rural Supplies Building Elevations (PPR, October 2012)

#### Department's Consideration

Schedule 3, Part 6, Clause 8 of the Major Development SEPP (2005) states that "Consent must not be granted to development on land within an agricultural buffer unless the consent authority: (a) has considered the potential impact of the proposed development on agricultural activities on land adjoining the buffer and of those agricultural activities on future occupiers of land within the buffer, and (b) has consulted the Department of Primary Industries."

The northern face of the proposed building includes three roller shutter doors. The proposed building is separated from the northern site boundary by a hardstand area of a width of 8 metres. No landscaping is proposed along the site boundary. While the Precinct 1 development is not a residential development, it is considered that there may be potential for conflict between the development and the adjacent agricultural land. Vegetated buffer areas can be used to minimise impacts of conflicting land use activities. The Queensland's Department of Natural Resources Planning Guideline – "Separating Agricultural and Residential Land Uses" recommends a vegetated buffer of 40 metres between residential areas and agricultural land. Council's DCP recommends a buffer of 30 metres including 10 metres of vegetation.

The NSW Department of Primary Industries (DPI) has recommended taking a conservative approach as the final use of the building is unknown and the future use of the building may change. Taking these matters into consideration, the department considers that a vegetated buffer that is a minimum of 10 metres wide would be suitable to minimise any future potential land use conflict with agricultural land to the north of the site and any potential impacts of the development within Precinct 1 on the adjoining agricultural land. The department accepts that the proponent may be able to negotiate an alternative arrangement with DPI, however, the use of screens in lieu of vegetation (as proposed by the proponent) is not supported. A recommended condition of approval requires the layout of precinct 1 to be modified to accommodate this buffer (or as agreed with DPI) with details of the amended design to be submitted to the department for approval, prior to the issue of a construction certificate for the building in Precinct 1.

With respect to parking requirements, the department has reviewed council's Site Access and Parking Code which identifies parking rates for different development. The car parking requirement



for a 'shop' represents the worst case scenario for any type of shop or retail development in the DCP, being 5.4 spaces per 100m<sup>2</sup> (4.4 spaces for customers, 1.0 spaces for staff) plus 2 Heavy Rigid Vehicle (HRV) service bays. For Precinct 1 this equates to a requirement of 110 spaces for both customer and staff parking. The proposed car parking layout provides 135 car parking spaces and two HRV service vehicle bays, which complies with this requirement. The department is therefore satisfied that the parking arrangements are suitable for any kind of shop or retail development.

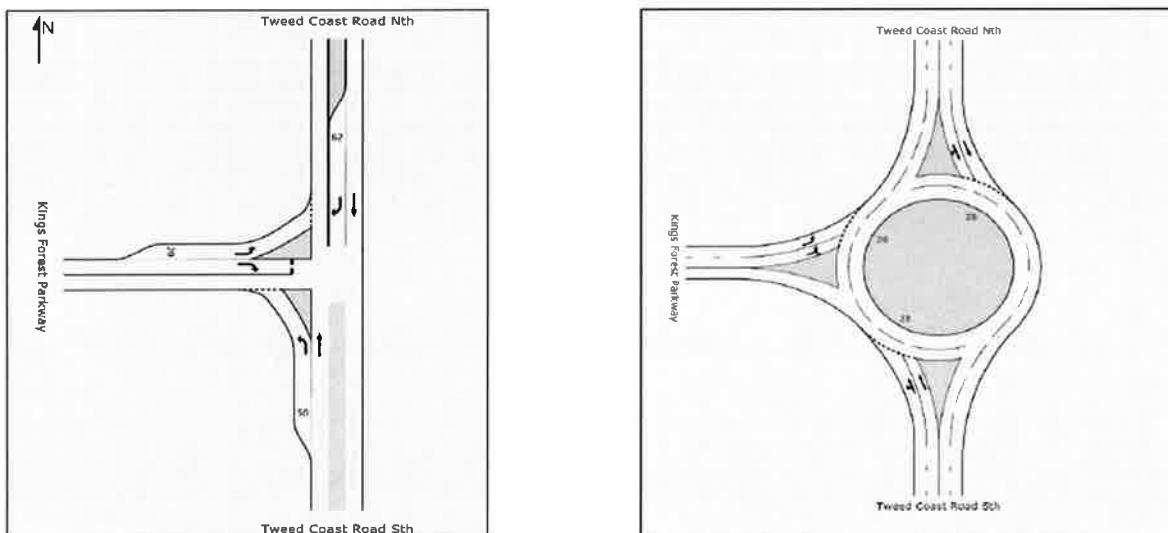
In terms of potential sediment and stormwater impacts from the Precinct 1 development on adjoining agricultural land, the department has reviewed the proposed stormwater management plan for the development. The proposed stormwater treatment measures include the installation of proprietary treatment devices to remove gross pollutants, sediments and entrained nutrients prior to discharge to Cudgen Creek. This is in accordance with Section A5 of council's DCP. The department is satisfied that the proposed stormwater treatment measures are satisfactory to minimise any potential impacts on the adjoining agricultural land.

The department is satisfied that, subject to the design modifications above, the proposed building and landscaping may be approved, subject to conditions. However, as the final tenancy of the building is unknown, separate development consent must be obtained for the first use of the building and the hours of operation, service delivery vehicle arrangements and any external displays and signage.

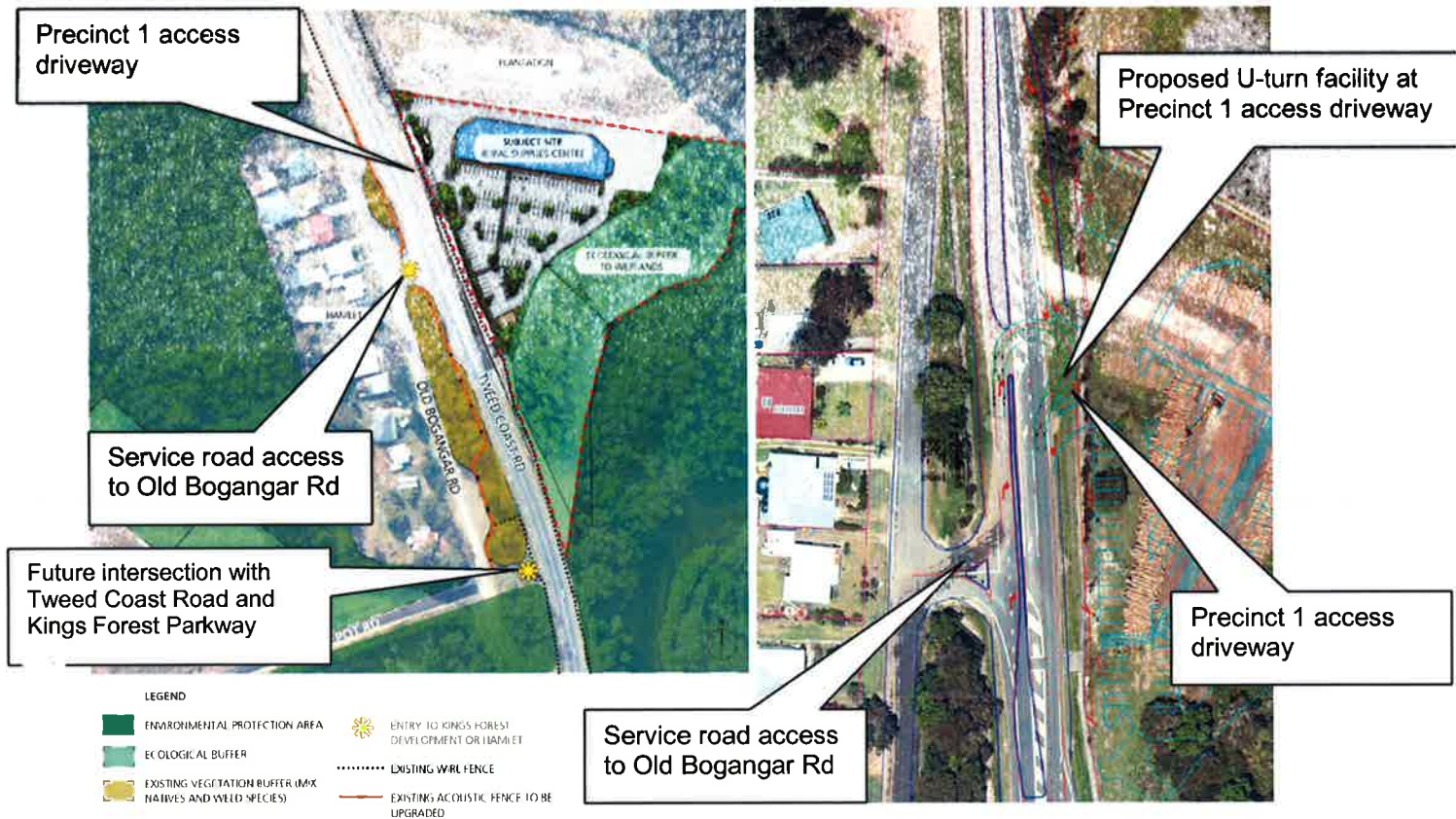
**Precinct 1 Access and Old Bogangar Road Egress**

It is proposed to access Precinct 1 off the eastern side of Tweed Coast Road with a right turn bay for users heading north. This access is to be located approximately 220 metres north of the major intersection into the Kings Forest estate (being the intersection of Tweed Coast Road and the Kings Forest Parkway, which is being constructed as part of this project application). The main intersection is proposed to be a priority controlled intersection arrangement as an interim measure to cater for Stage 1 of development but will ultimately be upgraded to a roundabout (refer **Figure 26**). There is also an existing service road to allow access for residents on Old Bogangar Road approximately 180 metres to the north of the proposed major intersection on the western side of Tweed Coast Road (refer **Figure 27**).

As part of the current application, the proposed road upgrades would result in the existing service road to Old Bogangar Road being closed and relocated approximately 50m further south. Vehicles wanting to travel south from Old Bogangar Road would need to travel north on Tweed Coast Road and utilise the Precinct 1 access to facilitate a U-turn. The proposed roundabout at ultimate construction will allow traffic approaching from the north to perform a U-Turn and then turn left into the service road.



**Figure 26: Interim and Ultimate Intersection Arrangements for Tweed Coast Road and Kings Forest Parkway**



**Figure 27: Access arrangements for Precinct 1 and Old Bogangar Road**

Council's traffic engineers raised the following concerns with the proposed Precinct 1 access:

- having three intersections within 220m of each other on a major road such as Tweed Coast Road restricts intersection layouts and makes traffic movements complex;
- the intersection layout does not conform to the Tweed Road Development Strategy which states that intersections should be 500m apart and the Austroads Guidelines, which indicate a range of 350m to 500m;
- the left-in left-out intersection configuration for old Bogangar Road significantly reduces the level of service onto and off Tweed Coast Road for the properties along Old Bogangar Road;
- there are potential conflicts between vehicles making U-turns and vehicles exiting Precinct 1;
- the road design only caters for standard cars and does not cater for larger vehicles or cars with trailers/caravans; and
- the impacts of the relocation of the Old Bogangar Rd service road have not been assessed.

Council's preferred arrangement is a roundabout at Kings Forest Parkway with a separate realigned four-way intersection at the Precinct 1 entry which would align with the entry to Old Bogangar Road. The proponent investigated a 4-way intersection by moving the location of the Old Bogangar Road service road, not the Precinct 1 access. The analysis suggests that vehicle turn paths would be compromised, particularly for larger vehicles such as garbage trucks. Additionally, the required Old Bogangar Road alignment impacts upon existing residential properties on Old Bogangar Road.

Department's Consideration

To assist in its assessment of this issue, the department engaged an independent expert traffic consultant to review the proposed intersection arrangements. The consultant advised that the provision of a four-way intersection in either location would resolve the U-turn issue and level of service for the 12 properties on Old Bogangar Road. However, a sign controlled intersection would introduce additional conflict movements into Tweed Coast Road. A four-way intersection at this

location would be better controlled by traffic signals or a roundabout, particularly in the longer term when traffic flows increase on Tweed Coast Road. However, with this arrangement there is potential for queuing back to the main roundabout at Kings Forest Estate at peak times as the intersection separation distance would only be approximately 180m to 220m, which would not comply with council controls or Austroads guidelines.

The department's traffic consultant suggested that the proponent could provide a dedicated U-turn facility within the boundaries of Precinct 1. However, the proponent rejected this proposal as it would not be appropriate for a public U-turn facility to be provided on private land. The department accepts this position and notes that this alternative may not discourage illegal U-turn movements at the junction and would also create additional traffic within the Precinct 1 area.

An alternative arrangement recommended by the department's traffic consultant is the closure of the existing service road from Old Bogangar Road to Tweed Coast Road and providing access to the south to Kings Forest Parkway. Due to its likely proximity to the Tweed Coast Road junction, it is expected that the access from Kings Forest Parkway would need to be left-in / left-out with a raised central median (or similar) to prevent vehicles turning right into Old Bogangar Road immediately after entering Kings Forest Parkway. A roundabout or median break along Kings Forest Parkway at an appropriate distance from the Tweed Coast Road junction would allow returning residents to U-turn and access Old Bogangar Road via a left-turn off Kings Forest Parkway. Council considers this option could be feasible subject to a more detailed assessment of the impacts. The proponent may need to acquire part of the land between Old Bogangar Road and Kings Forest Parkway to make this work in terms of road geometry, however, this does not negate this option. A further option would be to have a dedicated U-turn facility on Tweed Coast Road for Old Bogangar Road traffic seeking to travel south on Tweed Coast Road. The location of the U-turn facility would need to be to the north of Precinct 1 so that it does not conflict with the Precinct 1 access driveway.

The department considers that either option would provide a suitable solution to the access issues for Old Bogangar residents and that the final solution can be determined following any approval. Accordingly, the department has recommended a condition of approval that requires the final arrangement to be approved by the Director-General within twelve months of any project approval for Stage 1.

#### **4.9 Bushfire Management**

The Kings Forest Bushfire Risk Management Plan aims to provide for the mitigation of bush fires for the protection of life and property and to reduce the threat to ecological and environmental assets. The plan relates to the management of bushfire for Precinct 1 and Precinct 5.

Areas of Subtropical Floodplain Forest and Littoral Rainforest are located to the south of Precinct 1 and present a bushfire hazard to the Precinct 1 development. These ecological assets are protected from the development by a 50 metre fully vegetated buffer. A 21 metre Asset Protection Zone (APZ) lies to the north of the ecological buffer, protecting the Precinct 1 development from the bushfire hazard.

Cudgen Nature Reserve adjoins the eastern, southern and south/eastern aspects of Precinct 5 with fire protection of the reserve being the responsibility of OEH and managed through the implementation of the Cudgen Nature Reserve Fire Management Strategy. The Reserve contains significant areas of core koala habitat and therefore fire management in this area needs to take koala management into account. Typically speaking, the required APZ between the Precinct 5 residential development and the fire hazard within the reserve to the east is contained within the Precinct 5 perimeter road and the outer 20m ecological buffer, measured from the boundary of the residential lots.

Council raised concern that the submitted Bushfire Risk Management Plan (BRMP) does not adequately consider vulnerable ecological assets such as the Koala and other threatened species and needs to be revised to have regard for long term management of bushfire in open space and

conservation areas. OEH is concerned that there is currently no integration of the BRMP with the Cudgen Nature Reserve Fire Management Strategy (CNRFMS).

#### Department's Consideration

The Tweed Coast Koala Habitat Study 2011 reports that 'fire frequency and intensity within remaining Koala habitat areas over the last decade has been identified as the major contributor to recent population attrition. The report identifies an urgent need for development of a coordinated strategic management response to fire on the Tweed Coast, requiring a cooperative approach by the National Parks and Wildlife Service, Council and the Rural Fire Service. The intent of this approach is immediate suppression, rather than control, of fire in the event of any future fire events occurring in the vicinity of the remaining source population(s), and to exclude fire from currently occupied areas for a minimum of 6 – 8 years (i.e. at least one koala generation).

Areas within both Kings Forest and Cudgen Nature Reserve have been identified and mapped as core koala habitat. The protection of koalas from the impact of bush fires within Cudgen Nature Reserve is the responsibility of the NPWS. While the BRMP recognises the Cudgen Nature Reserve as core koala habitat, it does not recommend any specific strategies for managing fuel loads for koala management on the Kings Forest site or in the Conservation Offset lands to be dedicated to OEH as part of the proposal. Similarly, the KPoM states that a fundamental strategy of the BRMS is to assess and manage fuel loads within the Kings Forest site. It further states that "The risk of high intensity fires should be reduced within core koala habitat areas through controlled low intensity burns or mechanical means if and where appropriate. The risk of high intensity fires should be reduced within core koala habitat areas through controlled low intensity burns or mechanical means if and where appropriate". Despite these statements in both plans, there are no specific management actions specified in either plan for the management of bushfire in relation to koalas or any other threatened species.

The protection of koalas from the impact of bush fires is critical to their long-term survival. Management actions to address the risk of bushfire on Kings Forest lands should be addressed in both the KPoM and the BRMP. Conditions of approval require both plans to be revised to include appropriate management actions for those lands containing core koala habitat and other vulnerable ecological assets within the Kings Forest site. This is of great importance as the proponent will be responsible for the management of these lands for a period of at least 5 years prior to handover and dedication to OEH.

Integration of the BRMP with the CNRFMS is a critical requirement having regard to the existing and proposed fire management trail east of Precinct 5 and as the three road crossings cross core koala habitat. These roads will constitute a valuable asset for the control of both prescribed burns as well as any wildfires in these areas, and vegetation adjacent to these roads should be managed with this in mind. A condition of approval reflects this requirement for integration of the plans.

#### **4.10 Sequencing of Bulk Earthworks**

The application seeks approval for bulk earthworks across the entire Kings Forest estate for the purposes of flood protection and stormwater management. Generally it involves the lowering of levels in precincts 2, 4, 5 and 12 to 14 in the east of the site in order to provide fill for the western precincts 6 to 11. An anticipated maximum 360,000m<sup>3</sup> of imported fill material may be required within the western balance site (Precincts 6 to 11) to achieve the designated flood levels for residential development. A critical issue for the site is the creation of significant amounts of sediment and dust when large areas of the site are exposed. Large amounts of sediment could potentially be discharged to Blacks Creek, Cudgen Creek and areas of adjoining SEPP14 wetlands, and dust blown across sensitive environmental lands and adjoining agricultural land.

The bulk earthworks sequencing diagrams presented in the PPR illustrate the proposed earthworks broken down into 9 sequences with a proposed maximum exposed area of 20 hectares at any one time (refer **Figure 28**). According to the proponent these areas have been determined to ensure cut/fill balance in as many areas as possible, and in some larger areas, larger machinery can be used more efficiently so that stabilisation can follow more immediately.



The proponent has also requested the flexibility to respond to emergency situations upon the exposure of 'poor soils' that require works to cease and/or temporary stockpiling of soils to enable mixing, drying or the like. In such a situation, the proponent sought a condition that allowed for bulk earthworks to be undertaken in any sequence in any precinct for the purposes of, but not limited to, the temporary placing or stockpiling of material to be mixed, dried or the like, on the proviso that these areas would not exceed 20 hectares at any one time and the area is vegetated after the material is removed.

Council raised concern that the proposed maximum exposed area of 20ha was too large and, if approved, has the potential to create significant sediment and erosion control management issues. Council recommended, based on its experience, that a condition of approval should limit the maximum exposed area to 5ha.

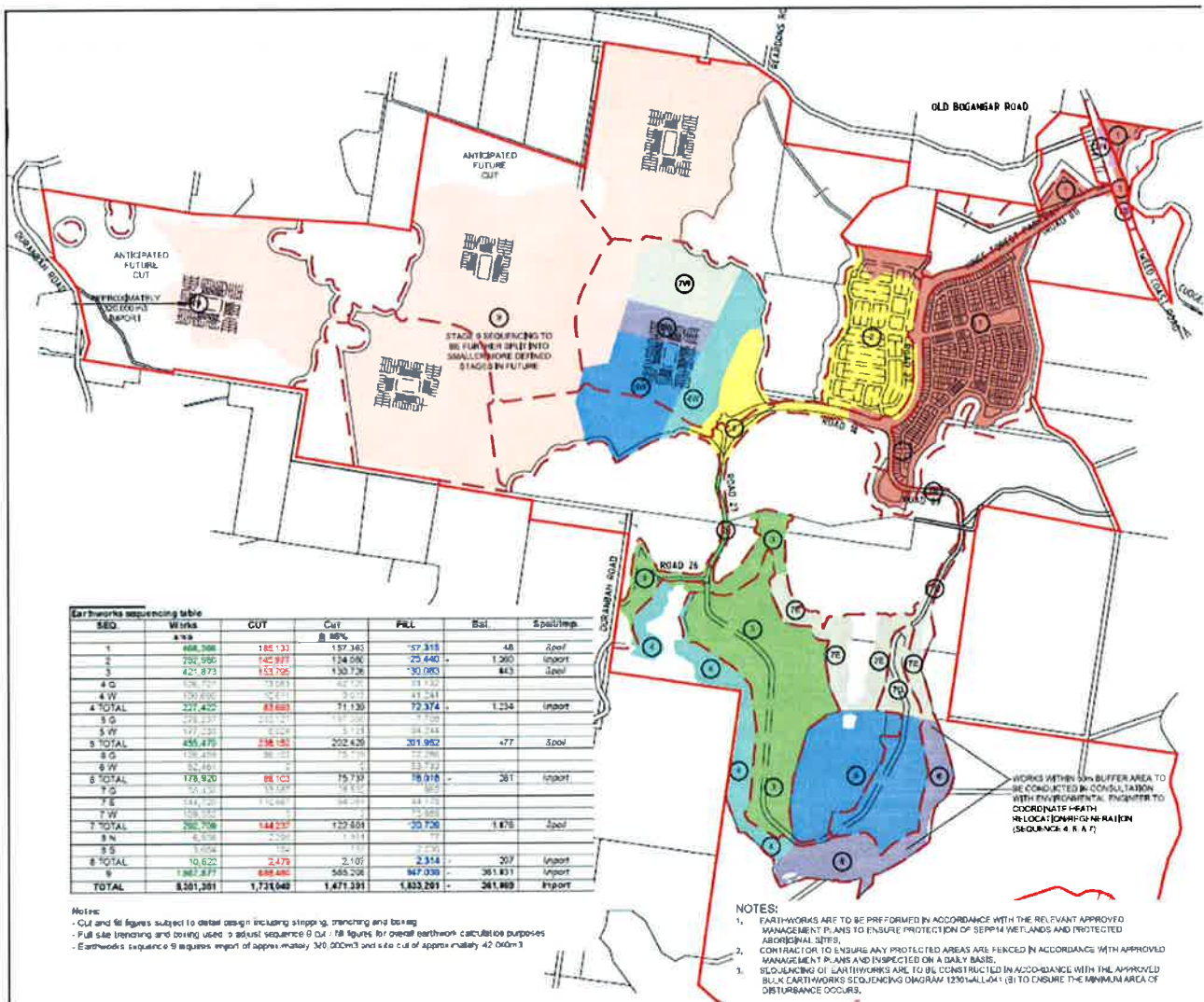


Figure 28: Bulk Earthworks Sequencing Diagram (PPR, October 2012)

Department's Consideration

A key measure to reduce the risk of sediment pollution from a development site is to minimise the area of land disturbed and exposed, as recommended in the Landcom document, 'Soils and Construction' (Landcom 2004). The department agrees with council that a maximum exposed area of 20ha is too large. However, it acknowledges that the sequencing of earthworks must allow for a balance of cut and fill with a minimal amount of stockpiling of excess spoil. As such, the department requested that the proponent provide a detailed earthworks phasing diagram for Precincts 1 to 5 (sequence 1 and 2) to minimise exposed areas. This diagram is presented in Figure 29 below.

The phasing diagram still presents large areas of up to 17.02ha to be exposed at one time. This is not considered acceptable as it presents a significant risk to adjoining watercourses and sensitive environmental lands. Phase 1 exposes the entire ecological buffer at one time. As such, the department recommends that Phase 1 be further broken down into two phases with a maximum exposed area no greater than 5.5ha. As phases 2 and 6 are in the centre of the site, slightly larger exposed areas have been accepted. Phase 3 also exposes a significant area along the northern site boundary. It is recommended that this be broken down into two phases with a maximum exposed area no greater than 7ha at any one time.

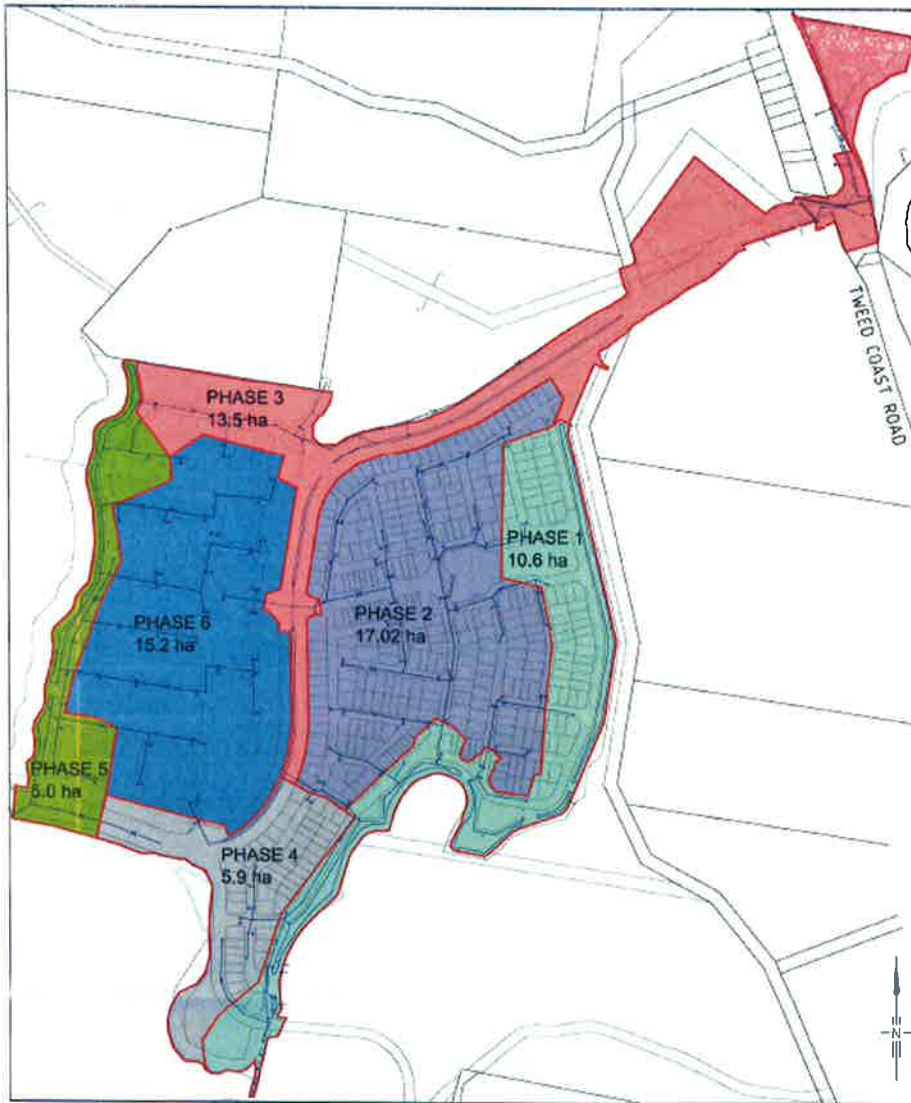


Figure 29: Bulk Earthworks Sequencing Diagram

The department accepts that a degree of flexibility should be built in to any approval to enable earthworks to continue in other areas if 'poor soil' is encountered. However, the proponent's proposed approach is considered too flexible and would potentially enable work to be undertaken across the site with a maximum exposed area of up to 25 ha. The department has therefore drafted a condition to limit the temporary placing of 'poor soils' up to a maximum of 5 ha at any time and only with confirmation from a suitably qualified geotechnical engineer that such work is required. Work must not proceed without the prior written approval of the Director-General. The revised condition of approval has been incorporated into the recommended conditions of approval.

**4.11 Affordable Housing**

In its review of the reasonableness of the Director-General's Environmental Assessment Report for the approved concept plan in July 2010, the PAC considered that the proponent should look in more detail at the issue of affordable housing and that the strategic plan in relation to densities and

yields would go some way to address the issue of dwelling size and location. However, the PAC considered a more detailed strategy needed to be developed to address the issue of housing affordability. Term C4 of the concept plan required a study to be submitted with the project application for Stage 1 that addresses the following:

- the likely future demographics of the population of the Kings Forest Estate and immediate locality by household type, income, employment and tenure;
- the need for affordable housing both for rental and purchase in the Kings Forest Estate and immediate locality;
- a plan showing the possible location of affordable housing on the Kings Forest site in the various precincts; and
- investigation of mechanisms for the provision of affordable housing, including any role for community housing providers or the potential use of Voluntary Planning Agreements.

The Kings Forest Affordable Housing Study, submitted with the Environmental Assessment satisfactorily addresses the requirements of term C4. The modified Precinct Plan nominates a possible location for affordable housing within residential Precinct 7. However, the proponent has advised that affordable housing will only be provided subject to National Rental Affordable Housing Scheme (NRAS) funding. The proponent applied for NRAS funding (Round 4), however, the application for Kings Forest was unsuccessful.

Council would prefer that some affordable housing be retained in the first stage (Precinct 5), and that it not be dependent entirely on Commonwealth funding.

Housing NSW is generally supportive of the Kings Forest Affordable Housing Strategy and commends the proponent for providing a range of dwelling types/sizes and lot sizes. However, Housing NSW does note that the dwellings being offered for sale are not considered affordable for the very low to low income earners. Housing NSW requested that the department consider a VPA with the developer for the provision of affordable housing on the site.

#### Department's Consideration

Affordable housing has not been nominated for Precinct 5 because this is the first residential precinct in the project and its location close to the town centre, Tweed Coast Road and the coastal village of Kingscliff would not give rise to affordable land costs. It is therefore considered that Precinct 7, as proposed, is the most appropriate location having regard to accessibility, bus routes and affordability. Where a development application(s) for the residential subdivision of this precinct is submitted to council, the proposed affordable housing contribution could be secured through a VPA with council or Housing NSW. This has been required through a new future environmental assessment requirement on the modified concept plan.

## **5. CONCLUSION AND RECOMMENDATION**

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### **5.1 Conclusion**

The department has assessed the merits of the project, including the proponent's Environmental Assessment, the Response to Submissions and Preferred Project Report and has considered all issues raised by State agencies, council and the public. The key issues raised and discussed in relation to the concept plan modification include the ongoing management and maintenance of environmental lands, the provision of an east-west wildlife corridor and amendments to the Kings Forest Development Code.

The Department has considered the key issues raised and has recommended modifications to the concept plan, and requirements for future applications to ensure the satisfactory addressing of these issues and minimal impacts as a result of the proposal. Key modifications and further assessment requirements include:



- **B4 – East-West Wildlife Corridor**  
A new term that requires the provision of the southern east-west wildlife corridor to retain east-west connectivity across the developed site;
- **B5 – Dedication of Land to Council**  
A new term that requires the proposed staging plan of areas to be dedicated to council to be modified so dedications are more closely linked to the subdivision of individual precincts;
- **B6 – Kings Forest Development Code**  
A new term that requires a number of minor amendments to the Kings Forest Development Code to ensure consistency with the NSW Housing Code and clarify bushfire management requirements;
- **B7 – Implementation of Environmental Management Plans**  
A new term that makes the proponent responsible for the management of all environmental lands and offset areas for conservation and implementation of ongoing management and maintenance activities specified in the various environmental management plans, in perpetuity, or until such time that an agreement is reached with OEH and/or council regarding dedication of these lands.
- **B8 – Environmental Audit Reports**  
A new term that requires the proponent to engage an independent environmental consultant to undertake an audit of all environmental lands to confirm that the agreed completion criteria have been met. Further 'follow-up' audits of those lands proposed to be dedicated to council, are required after 1 year, then 3 years, to ensure the environmental lands are being maintained at the appropriate standards;
- **C2 – Management Plans**  
A modified future assessment requirement that requires all future applications to include precinct-specific management plans, rather than 'stage-specific' management plans, as management plans relate to specific development precincts, rather than stages of the development;
- **C6 – Traffic Assessment**  
A modified future assessment requirement that requires a further traffic assessment to determine the most appropriate traffic control device for the Tweed Coast Road and Kings Forest Parkway intersection;
- **C15 – Open Space**  
A modified future assessment requirement for the embellishment and dedication of active open space with the release of the 750<sup>th</sup> lot or the release of the subdivision certificate for Precinct 4 (which includes the town centre), whichever occurs first. Flexibility is provided to potentially allow the provision of temporary open space, to the satisfaction of council;
- **C27 – Blacks Creek Rehabilitation Plan**  
A new future assessment requirement for a Rehabilitation Plan for Blacks Creek to be submitted with the first development application for subdivision, subsequent to Stage 1 (08\_0194);
- **C28 – East-West Wildlife Corridor**  
A new future assessment requirement that requires a detailed management plan, including details of the long-term protection mechanism for the new southern east-west wildlife corridor to be submitted with the development application for subdivision in Precincts 6, 7, 9 or 10, whichever occurs first;
- **C29 – Dedication of Land to Council**  
A new future assessment requirement that requires all future development applications for subdivision to provide details of proposed land dedications to council in accordance with the revised plan of dedication as required by term B5 of the modified concept plan approval; and

- **C30 – Affordable Housing**

A new future assessment requirement that requires the development application for subdivision of Precinct 7 to include details of how affordable housing will be provided within this precinct.

The key issues raised in relation to the project application include implementation and content of environmental management plans, koala management and protection, the ecological compensation strategy, protection of heathland, earthworks in ecological buffers, the access, design and use of the Precinct 1 rural supplies building, bushfire management and the sequencing of bulk earthworks. Recommended conditions of approval address these key issues such that the department is satisfied that the project will have minimal impacts.

The proposal will provide the following public benefits:

- provision of housing, including a range of housing types, within the Tweed area;
- rehabilitation of large areas of the site for the creation of new habitat;
- conservation of threatened and vulnerable plant and animal species;
- protection of the Tweed Koala population; and
- provision of a superior east-west wildlife corridor to maintain connectivity across the site.

The project application is generally consistent with the concept plan and existing environmental planning instruments.

On these grounds the department considers the site to be suitable for the project and in the public interest. Consequently the department recommends that the concept plan be modified in accordance with the proposed modifying instrument and the proponent's statement of commitments and the project application be approved subject to the recommended conditions of approval.

## 5.2 Recommendation

It is recommended that the Planning Assessment Commission exercise the powers and functions delegated to it in the Instrument of Delegation from the Minister for Planning and Infrastructure, dated 14 September 2011, and:

- **consider** the findings and recommendations of this report;
- **approve** the request to modify the concept plan subject to the modified terms of approval and future environmental assessment requirements under section 75W of the EP&A Act;
- **approve** the project application, subject to conditions, under section 75J of the EP&A Act; and
- **sign** the attached Instruments of Approval (**Tag D**).

Prepared by

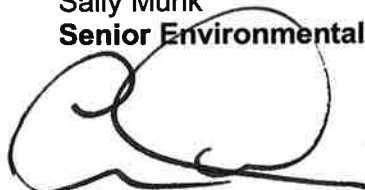


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16.5.13