



TWEED
SHIRE COUNCIL

Mayor: Cr B Longland (Mayor)

Councillors: P Youngblutt (Deputy Mayor)
D Holdom
K Milne
W Polglase
K Skinner
J van Lieshout

Agenda

Planning and Regulation Reports

Ordinary Council Meeting

Tuesday 24 January 2012

held at Murwillumbah Cultural and Civic Centre
commencing at 10.30am

COUNCIL'S CHARTER

Tweed Shire Council's charter comprises a set of principles that are to guide Council in the carrying out of its functions, in accordance with Section 8 of the Local Government Act, 1993.

Tweed Shire Council has the following charter:

- to provide directly or on behalf of other levels of government, after due consultation, adequate, equitable and appropriate services and facilities for the community and to ensure that those services and facilities are managed efficiently and effectively;
- to exercise community leadership;
- to exercise its functions in a manner that is consistent with and actively promotes the principles of multiculturalism;
- to promote and to provide and plan for the needs of children;
- to properly manage, develop, protect, restore, enhance and conserve the environment of the area for which it is responsible, in a manner that is consistent with and promotes the principles of ecologically sustainable development;
- to have regard to the long term and cumulative effects of its decisions;
- to bear in mind that it is the custodian and trustee of public assets and to effectively account for and manage the assets for which it is responsible;
- to facilitate the involvement of councillors, members of the public, users of facilities and services and council staff in the development, improvement and co-ordination of local government;
- to raise funds for local purposes by the fair imposition of rates, charges and fees, by income earned from investments and, when appropriate, by borrowings and grants;
- to keep the local community and the State government (and through it, the wider community) informed about its activities;
- to ensure that, in the exercise of its regulatory functions, it acts consistently and without bias, particularly where an activity of the council is affected;
- to be a responsible employer.

Items for Consideration of Council:

ITEM	PRECIS	PAGE
	ORDINARY ITEMS FOR CONSIDERATION	5
	REPORTS THROUGH THE GENERAL MANAGER	5
	REPORTS FROM THE DIRECTOR PLANNING AND REGULATION	5
6	[PR-CM] Kings Forest Stage 1 Project Application and Amendment 2 to the Concept Plan - Council's Submission to the NSW Department of Planning and Infrastructure	7
7	[PR-CM] Major Project Development Application DA09/0527 for a 85 Lot Residential Subdivision (MP05_0198) at Lot 1 DP 134787, Lot 1 DP 167380 and Lot 2 DP 961928 Walmsleys Road and Lot 5 DP 1117326 Stott Street, Bilambil Heights	127
8	[PR-CM] Class 1 Appeal - Development Application DA10/0295 for a Telecommunications Facility at Lot 7306 DP 1132011; No. 37 Boxsell Road, Limpinwood	141
9	[PR-CM] Unauthorised Activity - Poultry Farm at Lot 1 DP 881996 No. 576 Cudgen Road, Cudgen	145
10	[PR-CM] Variations to Development Standards under State Environmental Planning Policy No. 1 - Development Standards	149

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ORDINARY ITEMS FOR CONSIDERATION

REPORTS THROUGH THE GENERAL MANAGER

REPORTS FROM THE DIRECTOR PLANNING AND REGULATION

MATTERS FOR CONSIDERATION UNDER SECTION 79(C)(1) OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

The following are the matters Council is required to take into consideration under Section 79(C)(1) of the Environmental Planning and Assessment Act 1979 in assessing a development application.

MATTERS FOR CONSIDERATION

1. In determining a development application, a consent authority shall take into consideration such of the following matters as are of relevance to the development the subject of that development application:
 - (a) the provisions of
 - (i) any environmental planning instrument; and
 - (ii) any draft environmental planning instrument that is or has been placed on exhibition and details of which have been notified to the consent authority, and
 - (iii) any development control plan, and
 - (iv) any matters prescribed by the regulations,that apply to the land to which the development application relates,
 - (b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts of the locality,
 - (c) the suitability of the site for the development,
 - (d) any submissions made in accordance with this Act or the regulations,
 - (e) the public interest.

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6 [PR-CM] Kings Forest Stage 1 Project Application and Amendment 2 to the Concept Plan - Council's Submission to the NSW Department of Planning and Infrastructure

ORIGIN:

Development Assessment

FILE NO: DA11/0565 Pt2

SUMMARY OF REPORT:

The NSW Department of Planning and Infrastructure has invited Tweed Shire Council to comment on the current application for Kings Forest.

The current application specifically includes a request for the second amendment to the approved concept plan and a concurrent Stage 1 Project Application for bulk earthworks across the entire site and approval for Precincts 1 and 5 of the site.

This report serves two purposes. The first is to provide Councillors with a brief summary of the current proposal and the second is to provide an assessment of the application (primarily with regard to matters affecting Tweed Shire Council from an asset and infrastructure ownership perspective). This assessment is intended to be forwarded to the NSW Department of Planning and Infrastructure and form Council's official response to this application.

The application has been proposed with due regard to the approved Concept Plan and the approved Kings Forest Development Code and contains many positive outcomes for one of Tweed's largest urban land release areas. The following report however focuses on areas that Council Officers believe need further attention. The main issues are:

Engineering:

- Ensuring the provision of stormwater treatment at all urban drainage outlets;
- Long term hydraulic operation of Blacks Creek and associated modelling;
- Concept stormwater management for Precinct 4 to verify bulk earthworks plans;
- Lack of impact assessment for fill importation from external sources under the bulk earthworks concept plans;
- Traffic modelling and the subsequent intersection designs with Tweed Coast Road;
- Road widths and bus accessibility within Precinct 5;
- Lack of detail on engineering plans for on street parking, footpaths and cycleways.

Open Space:

- Splitting the Kings Forest structured open space into two locations;
- Ongoing maintenance for public open space areas.

Planning/Urban Design:

- Accessibility (walk ability) to the town centre;
- Approval process for Precinct 1 – rural retail development;
- Visual Implications of acoustic fences;
- Lack of detail on the plans of development and design guidelines to demonstrate compliance with the Kings Forest Code.

Ecological and Natural Resource Management Issues:

- Dedication of environmental land to Tweed Shire Council;
- Long term management of environmental open space;
- Timing and content of Voluntary Planning Agreements for managing open space;
- Land uses contained within ecological buffers;
- Protection of heathland;
- Clearing of littoral rainforest within Precinct 1;
- Conflicting rehabilitation and re-vegetation objectives;
- Koala management;
- Bushfire management
- Management plan implementation;
- Water quality in Cudgen Creek;
- East west wildlife corridor;
- Wallum Froglet habitat compensation; and
- Monitoring and evaluation.

It is therefore recommended that Council endorses this report to form the basis of a submission to the Department, and meet with the Department and Leda to seek improved outcomes as part of the upcoming Preferred Project Report. Initial discussions with the Department have indicated that meetings of this nature can be arranged for mid to late February.

RECOMMENDATION:

That Council endorses this report to form the basis of a submission to the NSW Department of Planning and Infrastructure in respect to the Stage 1 Project Application for Kings Forest.

REPORT:

Applicant: Project 28 Pty Ltd

Owner: Project 28 Pty Ltd

Location: Lot 6 DP 875446; Depot Road, Kings Forest; Lot 2 DP 819015; No. 102 Melaleuca Road, Duranbah; Lot 37A DP 13727; No. 126 Melaleuca Road, Kings Forest; Lot 7 DP 875447; No. 231 Tweed Coast Road Kings Forest; Lot 1 DP 129737 & Lot 1 DP 706497 & Lot 1 DP 781633 & Lot 272 DP 755701 & Lot 323 DP 755701 & Lot 326 DP 755701 & Lot 38A DP 13727 & Lot 38B DP 13727 & Lot 40 DP 7482 & Lot 76 DP 755701; No. 86 Melaleuca Road Kings Forest

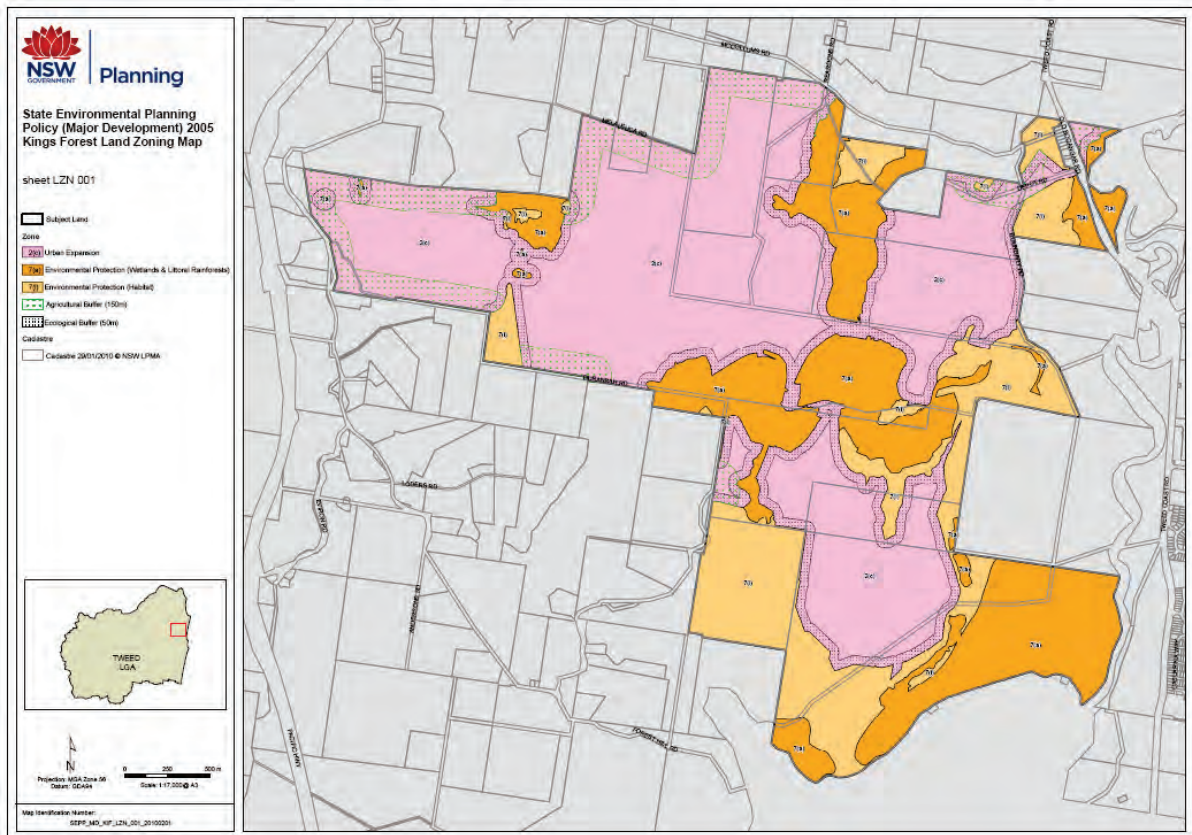
Zoning: In accordance with SEPP (Major Development) 2005 Kings Forest Land Zoning Map - 2(c) Urban Expansion, 7(a) Environmental Protection (Wetlands and Littoral Rainforest) and 7(l) Environmental Protection (habitat)

Cost: \$40,000,000

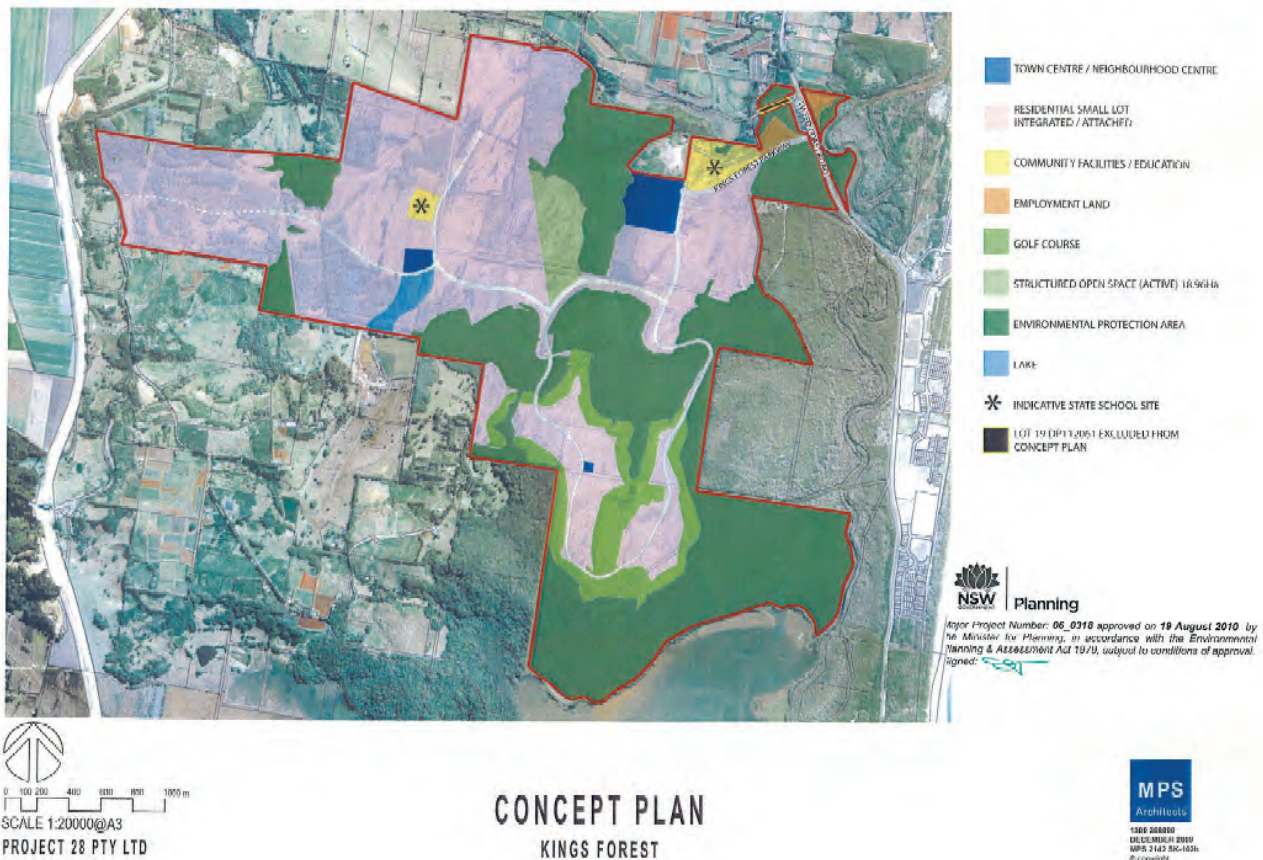
BACKGROUND:

The Kings Forest site has been the subject of numerous reports to Council over the last 40 years. However, more recently the site has been progressing through the NSW Department of Planning and Infrastructure assessment regime (previously known as Part 3A of the Environmental Planning and Assessment Act 1979). The current status of the site is as follows:

- The subject site is listed as a State Significant Site under State Environmental Planning Policy (Major Development) 2005 and has an approved zoning map (below) and written instrument provisions under this policy (updated 10/09/2010).



- The NSW Department of Planning approved the Kings Forest Concept Plan under Section 75O of the Environmental Planning and Assessment Act 1979 in August 2010.



- The NSW Department of Planning have approved an amended Kings Forest Concept Plan in accordance with 75W of the Environmental Planning and Assessment Act 1979 in December 2010. This amendment was primarily to facilitate the approval of the Kings Forest Development Code and make amendments regarding conditions of the original concept plan approval (the concept plan map was not amended – amendments were only made to the written notice).
- The NSW Department of Planning are now considering a second amendment to the approved concept plan and a concurrent Stage 1 Project Application for bulk earthworks across the entire site and approval for precincts 1 and 5 of the site.

It is the second amendment to the approved concept plan and the Stage 1 Project Application that Council now has an opportunity to comment on. Following is a summary of the elements proposed as part of this application as stipulated by the applicant in the Environmental Assessment Report:

Subdivision to create new lots for future development:

It is proposed to subdivide the Kings Forest site into 8 allotments (proposed Lots 1-8). In addition it is proposed to further subdivide proposed Lot 2 (Precinct 5) into 410 Torrens title allotments comprising 401 residential allotments, public reserves, drainage reserves and asset protection allotments, sewer pump station allotments, and environmental open space allotments. This will result in 442 dwellings or approximately 1150 people.

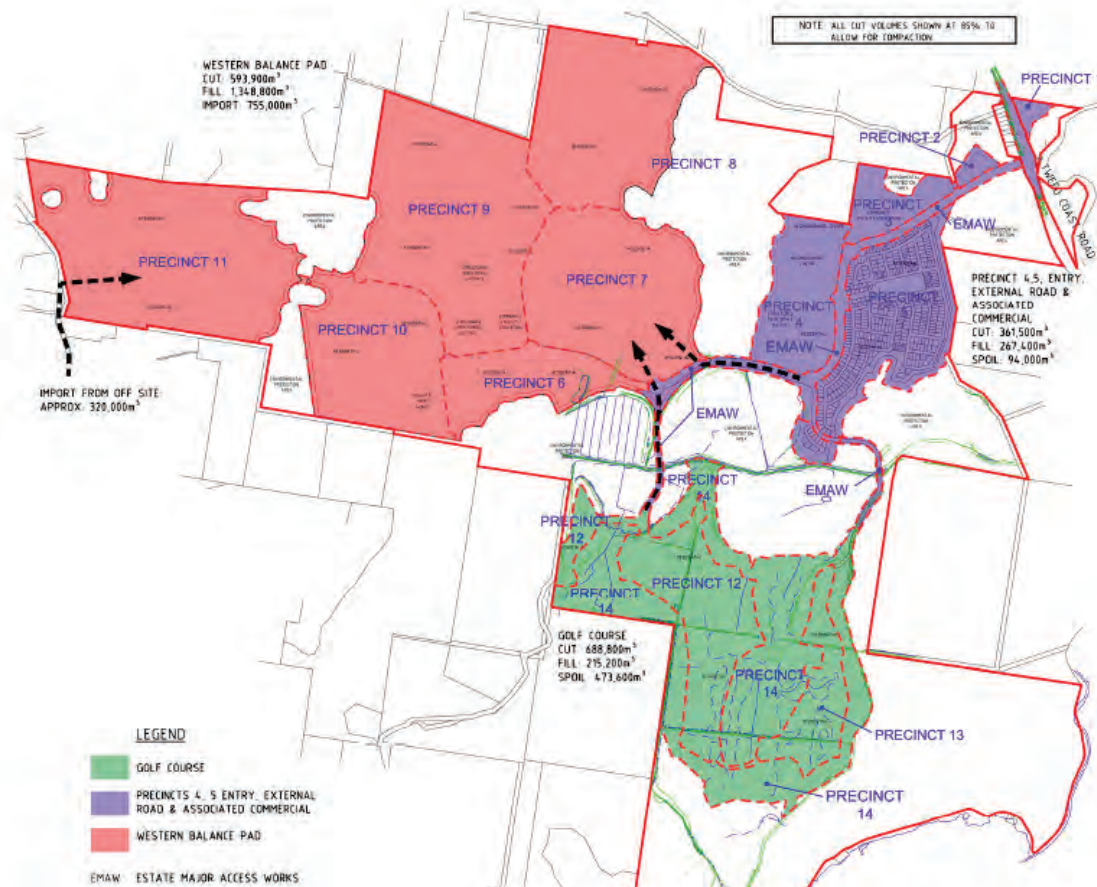
Bulk earthworks across the site:

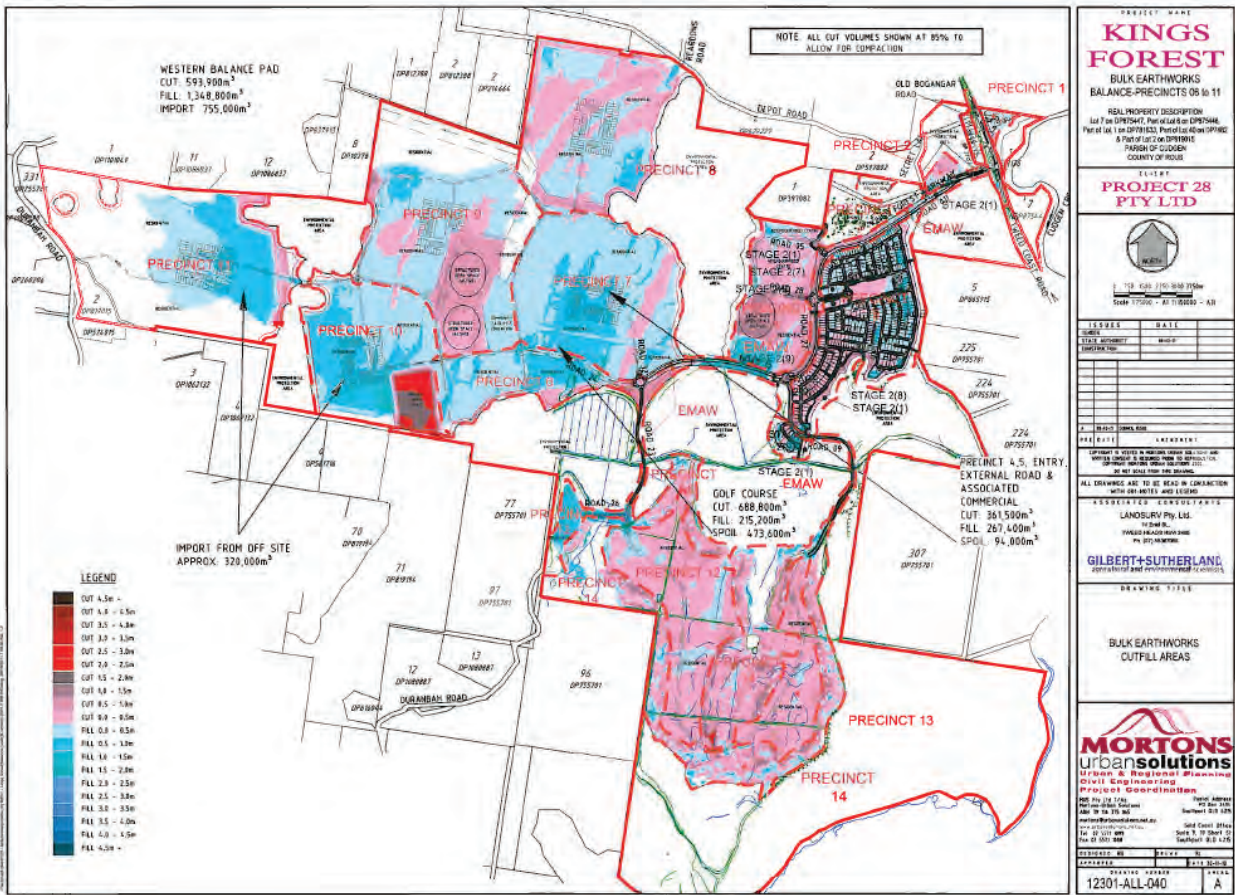
The applicant has stated that the purpose of the bulk earthworks is generally to assist with the stormwater management of the site and to lower the site levels in Precincts 2, 4, 5 and 12 to 14 in order to provide fill for Precincts 6 to 11 to form the development pads for the residential precincts and to contour the future golf course. Specifically:

- the northern precincts, that is, Precincts 2, 4 & 5, are generally in cut with an estimated 94,000m³ of excess spoil being transported from here to the western balance site (Precincts 6 to 11);
- the southern precincts, that is, Precincts 12, 13 & 14, are predominately in cut with an estimated 473,600m³ of excess spoil being transported to the western balance site (Precincts 6 to 11);
- an anticipated maximum 320,000m³ 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 at or above the 1:100 ARI.

The applicant proposes to haul the fill material via Duranbah Road however future details on the source of fill, exact haulage routes, traffic routes, volumes, and traffic impacts and any other requisite environmental management measures would be submitted when the additional fill is required for Precincts 6-11.

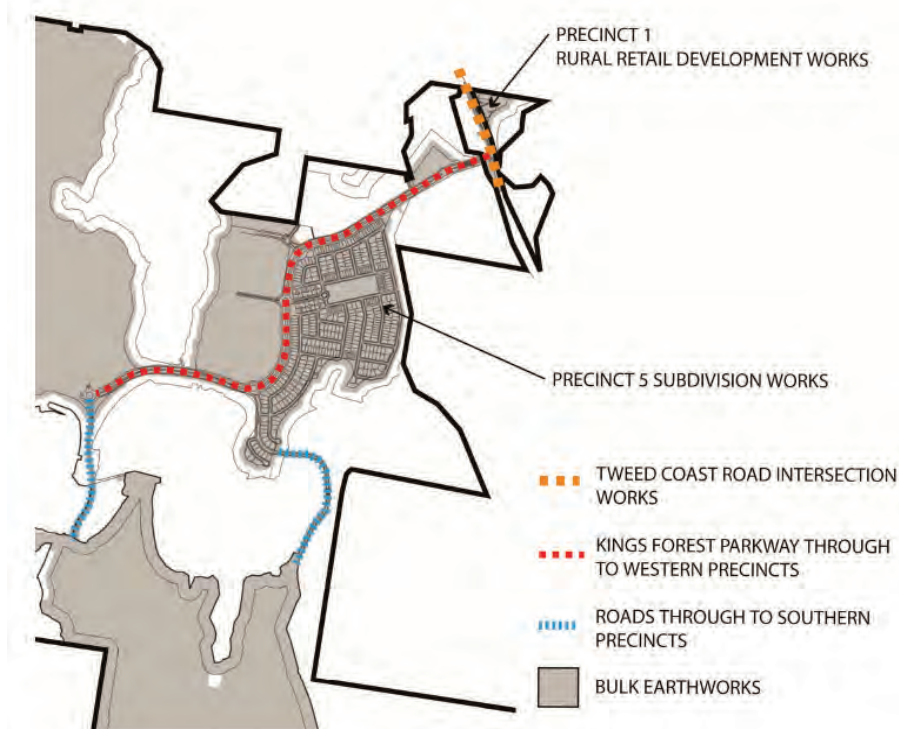
In the case of the western precincts it is anticipated that spoil from elsewhere on the site will be placed to the requisite levels in the vicinity of Precincts 9 to 11. After stabilisation and seeding the whole of the western precinct will be allowed to revegetate prior to further bulk earthworks and development in the long term.





Roadwork comprising:

- Construction of a four-lane entrance road into the site and associated intersection works on Tweed Coast Road. This road will have a fauna friendly crossing with the provision of slow down points, signage and fauna linkages in accordance with the Koala Plan of Management. The new intersection with Tweed Coast Road will necessitate the construction of a turning lanes and median strips on Tweed Coast Road. The applicant initially proposes a channelised right turn lane and auxiliary left turn lane in Tweed Coast Road but ultimately a signalised intersection once development reaches 1680 lots. Furthermore, initially only two lanes will be operational into and out of the site, until such time as the lot yield demands the additional lanes. In the interim, temporary signage entry walls (fencing) are proposed as detailed within Appendix K of the applicants Environmental Assessment Report.
- Alignment and construction of the proposed Kings Forest Parkway from Tweed Coast Road via Precincts 4 and 5 through to the western precincts. This is proposed as a four lane dual carriageway distributor road, with a varying road reserve width of approximately 34.6m to 40.6m. Carriageways will generally have a 7.5m width in both directions. A controlled “T” intersection with the town centre is proposed.
- Alignment and part construction of two proposed roads through SEPP 14 areas to access the southern precincts. The eastern road will include a bridge type structure to enable water flow and fish passage while the western road will include box culverts to allow flood waters to pass without upstream afflux issues and the safe passage of fish.



Precinct 1 – Rural Retail Development

The application seeks consent for development of 2,126m² of floor space for rural retail development within two separate buildings and access, parking and landscaping arrangements within Precinct 1.

The applicant has stated that approval for the fit out of the two buildings, use and hours of operation and signage will be the subject of future development applications submitted to Tweed Shire Council and determined under Part 4 of the EP&A Act 1979.

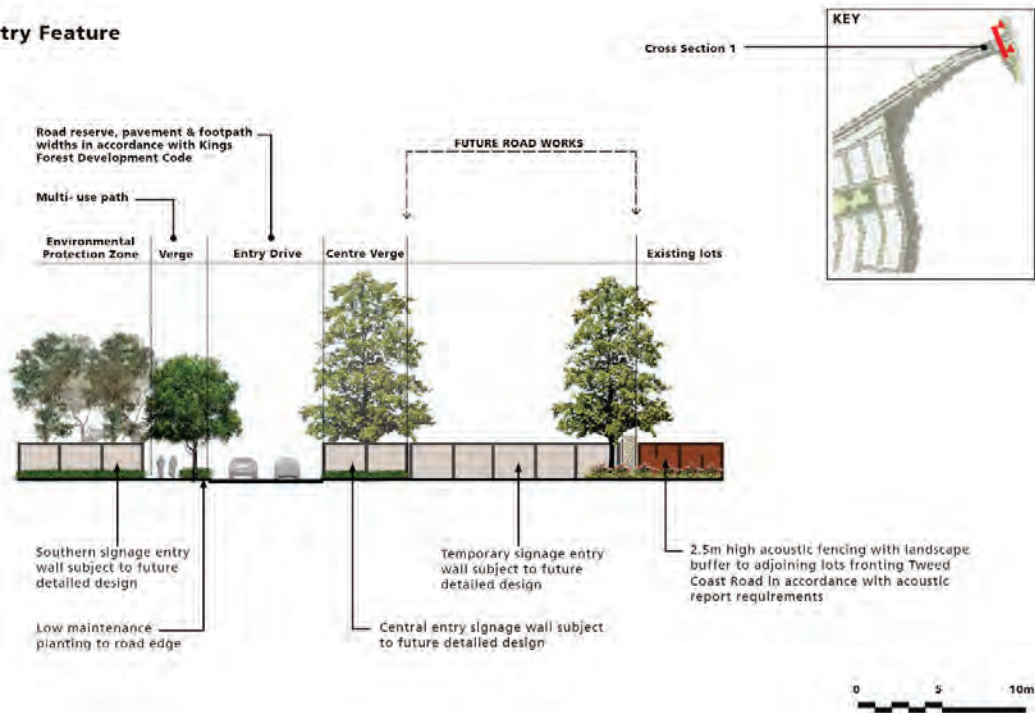


Infrastructure Works

The application includes infrastructure works to service Precincts 1 and 5 comprising:

- Sewer reticulation via a conventional gravity system augmented with sewer pump and lift stations;
- A regional pump station located just south of Precinct 1;
- Potable water reticulation connecting with Tweed Coast Road mains;
- Stormwater drainage consisting of concrete pipes with gully pits to capture road runoff which lead to water sensitive urban design treatment devices;
- Precinct 5 internal roads;
- Connection to power and telecommunication services;
- 2.5m high acoustic barrier will be constructed fronting Tweed Coast Road (as shown below) and a 1.8m and 2m high acoustic fence along the Kings Forest Parkway abutting Precinct 5.

Kings Forest Entry Feature



 <p>PLACE Design Group Pty Ltd Level 1, 282 Wickham Street Fortitude Valley, QLD 4006 AUSTRALIA T: 61 7 3852 2922 F: 61 7 3852 4766</p>	<p>KINGS FOREST INDICATIVE LANDSCAPE TREATMENTS</p>	<p>DATE: 10/02/2011 DWG NO: SK01-02B</p>
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Precinct 5

Precinct 5 is proposed to accommodate 442 residential dwellings across 410 Torrens title allotments.

The approved Kings Forest Development Code overrides Council's existing planning provisions and provides a housing choice (of lots less than 450m² and as small as 175m²) presently not available in the Tweed outside Kings Forest and Cobaki.

Development of Precinct 5 has utilised these provisions and provides a variety of housing types as shown below:

Proposed Dwelling Type	Number
Mews	24
Plex	37
Zero lot	141
Traditional detached	181
Terrace	59
TOTAL	442

A mews dwelling is defined as a group of more than three and up to five dwellings located on a single lot that share a common driveway and often have frontages to two streets or a street and a park but otherwise have no common facilities. These lots can be strata title subdivided.

A Plex dwelling is defined as up to six attached or detached dwellings located on one lot (duplex, triplex etc) but where no common facilities are provided.

A zero lot dwelling is where all or at least part of one side wall is built to boundary.

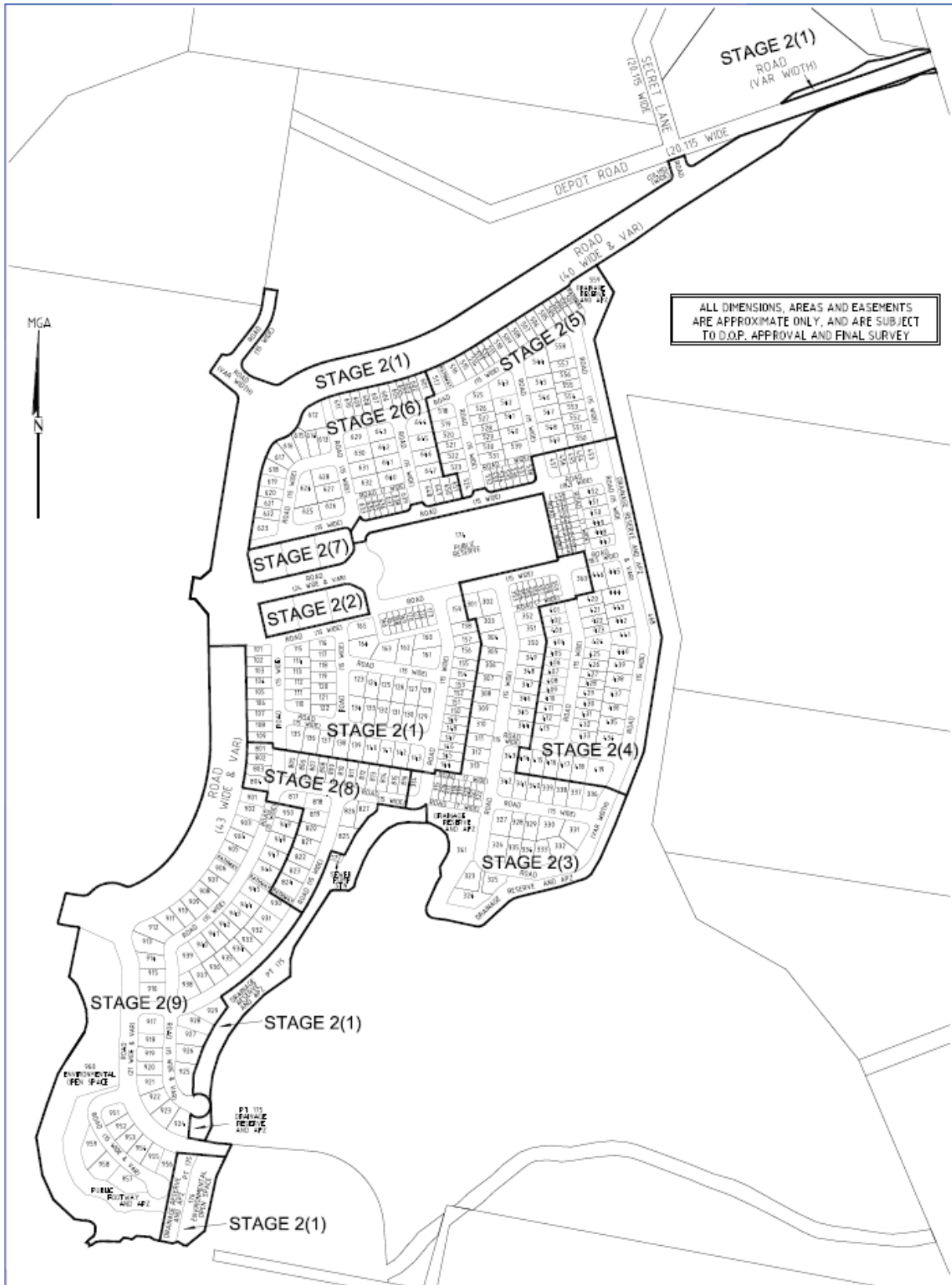
A traditional detached dwelling has no wall touching a property boundary.

A terrace dwelling is where all or at least part of both side walls are built to boundary (excluding corner lots or lots adjoining parks).

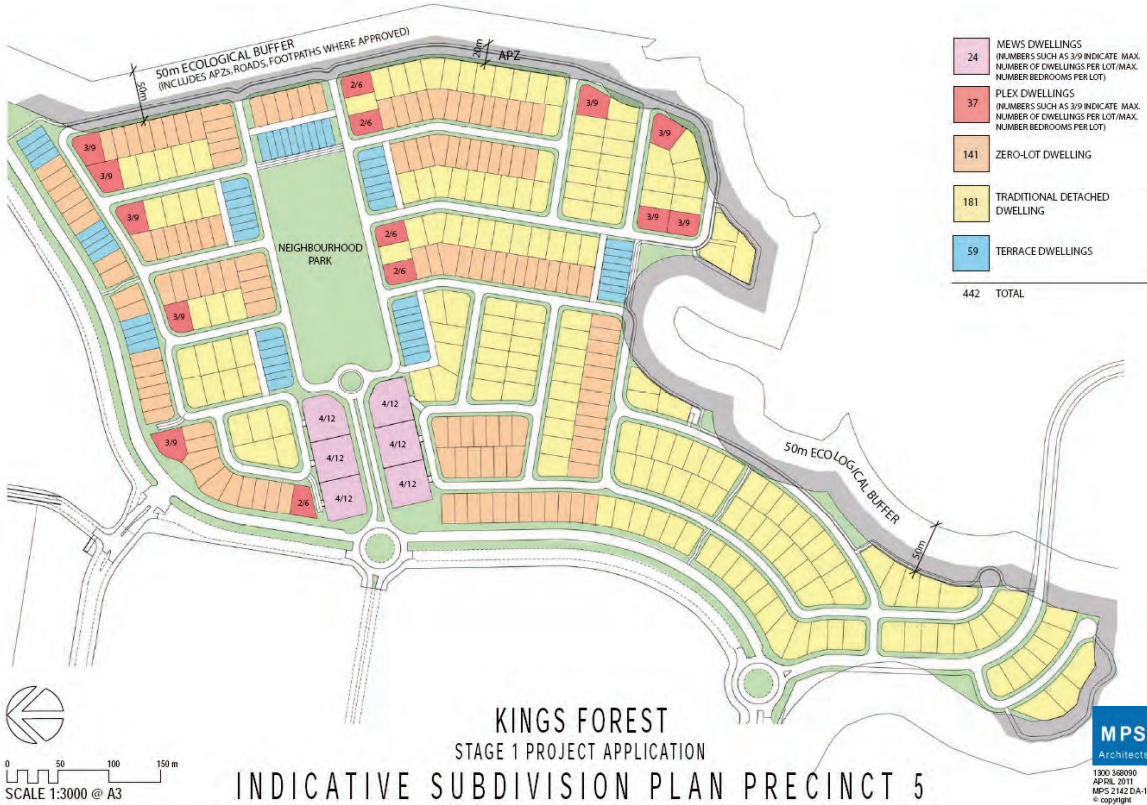
No seniors housing is proposed within Precinct 5 and none of the proposed lots will be flood affected.

As required by the approved Kings Forest Development Code the applicant has submitted a Plan of Development to accompany the subdivision application. The submitted Plan of Development demonstrates the following:

- zero-lot boundaries to the zero-lot dwellings;
- indicative location of vehicular access;
- indicative location of alternative vehicular access;
- indicative location for shared vehicular access;
- proposed location of the 1.8m to 2m high acoustic fence;
- proposed location of the 1.5m high transparent fence;
- proposed location of the 1.8m high translucent fence;
- the 20m wide Asset Protection Zones (APZ);
- lots to be affected by section 88B Covenants requiring the dwellings to be built to Bushfire Attack Levels 19 or 29; and
- number of dwellings per lot and bedrooms per dwelling for mews and plex dwellings.

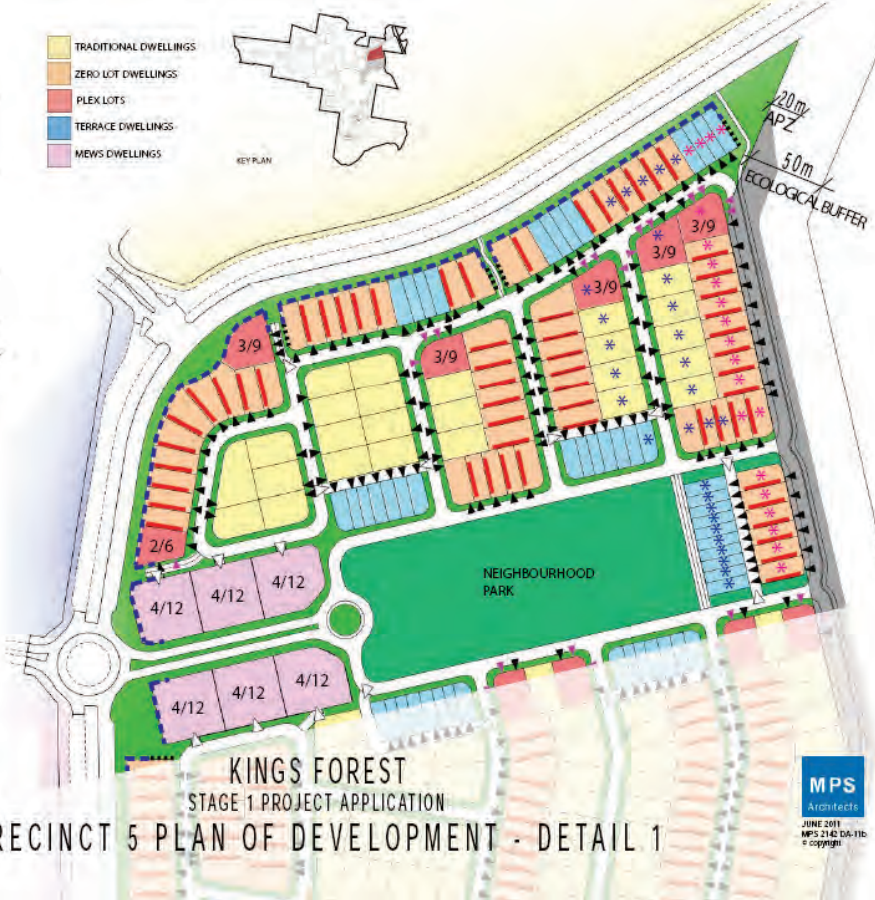


TITLE PLAN OF PROPOSED SUBDIVISION OF LOT 2 (PRECINCT 5) - STAGING PLAN KINGS FOREST FOR STAGE 1 PROJECT APPLICATION CLIENT: PROJECT 28 PTY LTD	LEVEL DATUM DATE OF SURVEY DATE 19.09.2011 DRAWN GMB CHECKED DVE / BG CAD FILE No. 348802_PROP	SCALE 1: 4000 REVISION C SHEET 1 OF 1 JOB No 34880-2	LANDSURV PTY LTD REGISTERED SURVEYORS & DEVELOPMENT CONSULTANTS 14 ENID STREET TWEED HEADS NSW 2485 Ph. (07) 55366467 Fax (07)55367489 email: mactsurv@landsurv.com.au
	ALL DIMENSIONS, AREAS AND EASEMENTS ARE APPROXIMATE ONLY, AND ARE SUBJECT TO D.O.P. APPROVAL AND FINAL SURVEY		



KINGS FOREST
STAGE 1 PROJECT APPLICATION
INDICATIVE SUBDIVISION PLAN PRECINCT 5

- DEVELOPMENT CONTROLS**
To be read in conjunction with Development Controls, Development Codes and Design Guidelines.
- 1. BUILDING ENVELOPE**
1.1 Buildings shall conform to the building envelope requirements specified in the Plan of Development and the setbacks in the Range Forest Estate Development Code.
 - 2. BOUNDARY WALLS**
2.1 All openable door and window frames shall be set back from the boundary wall in accordance with the Development Code.
 - 3. VEHICLE ACCESS POINT**
3.1 Vehicle access shall be provided in accordance with the location indicated on the Plan of Development.
 - 4. SETBACK**
4.1 Minimum boundary setbacks shall conform to the Development Code for each setback and be applied on the effective width of the lot as determined by the Code.
 - 5. HEIGHT**
5.1 Maximum building height to 7 metres except where a permit (or more than 50% of the gross floor area of the building) exceeds maximum height to be used on the Plan of Development.
 - 6. RESOUND AND VIBRATION**
6.1 Resound and vibration shall be provided in accordance with the Development Code.
 - 7. FENCING**
7.1 All fencing to be in accordance with the provisions of the Code and the Range Forest Estate Development Code.
 - 8. FENCE**
8.1 Fencing boundary lines adjoining a road shall only be provided where a screen board fence (Type 1) is indicated, shall be subject to the height and setback provisions provided in the Code and the Range Forest Estate Development Code.
 - 9. FENCE**
9.1 Fencing boundary lines shall not exceed 10% of the length of the boundary boundary any point and shall be set along the outermost boundary for 10m.
 - 10. FENCE**
10.1 Solid external boundary fencing between boundaries shall be subject to the provisions of the Code and the Range Forest Estate Development Code.
 - 11. FENCE**
11.1 Fencing shall be in accordance with the provisions of the Code and the Range Forest Estate Development Code.
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KINGS FOREST
STAGE 1 PROJECT APPLICATION
PRECINCT 5 PLAN OF DEVELOPMENT - DETAIL 1

DEVELOPMENT CONTROLS

To be read in conjunction with Development Controls, Development Codes and Design Guidelines.

1. **BUILDING ENVELOPE**
 - 1.1 Building shall conform to the building envelope requirements specified in the Plan of Development and the setbacks in the Rangitikei Rural Zone Development Code.
2. **BOUNDARY WALLS**
 - 2.1 Lots proposed as Zero Lots shall contain a habitable boundary wall between adjacent lots in accordance with the Development Code.
 - 2.2 Vehicle access shall be generally in accordance with the location indicated on the Plan of Development.
 - 2.3 Where alternative boundary setbacks comply with the intent of the Code and Design Guidelines, they may be accepted by Council (Range Rural Zone Development Code).
 - 2.4 Clear vehicle and pedestrian sight triangles shall not be compromised at any time by fencing or landscaping.
 - 2.5 Maximum building height is 2 storeys except where a permit for more than 10m of the open face area of the building is issued, shall be subject to the height planning provided between the base and the main boundary shall not exceed 10m of the length of the boundary boundary including any gable and shall extend along the complete front boundary line.
 - 2.6 Solid ground boundary fencing between adjacent lots shall be subject to 10m from a main boundary boundary and 20m from an open space boundary.
3. **SETBACKS**
 - 3.1 Minimum boundary setbacks shall conform to the Development Code for each residential lot and depend on the setbacks specified in the Development Code.
 - 3.2 Minimum setbacks shall be subject to the following:
 - 3.2.1 Maximum building height is 2 storeys except where a permit for more than 10m of the open face area of the building is issued, shall be subject to the height planning provided between the base and the main boundary shall not exceed 10m of the length of the boundary boundary including any gable and shall extend along the complete front boundary line.
 - 3.2.2 Solid ground boundary fencing between adjacent lots shall be subject to 10m from a main boundary boundary and 20m from an open space boundary.
4. **RESIDENT AND VISITOR CAR PARKING**
 - 4.1 Resident and visitor car parking to be provided in accordance with the Development Code.
 - 4.2 Fencing shall be in accordance with the provisions of the Code and the Rangitikei Rural Zone Development Code.
 - 4.3 Fencing boundary fences adjoining a road shall only be permitted where a Rural Zone Open Space is indicated, shall be subject to the height planning provided between the base and the main boundary shall not exceed 10m of the length of the boundary boundary including any gable and shall extend along the complete front boundary line.
 - 4.4 Solid ground boundary fencing between adjacent lots shall be subject to 10m from a main boundary boundary and 20m from an open space boundary.
5. **LANDSCAPING**
 - 5.1 Council progressively of nature is a shrub planting with conventional ground cover and trees.
 - 5.2 A primary tree shall be provided on each of 200m² or more in area.
 - 5.3 Landscaping planting shall be provided to the street side of all roadways.
 - 5.4 Sight triangles to both pedestrian and other vehicles shall not be compromised at any time during the life of the planting.
6. **UTILITIES REQUIREMENTS**
 - 6.1 Where alternative are indicated as being incorporated with a Section 222 Resource Consent, the consent must be in accordance with the Rangitikei Rural Zone Development Code and AS 2000 Code of Practice of Building in Earthquake Prone Areas.
 - 6.2 Firefighting shall be provided in accordance with the Rangitikei Rural Zone Development Code and AS 2000 Code of Practice of Building in Earthquake Prone Areas.
 - 6.3 Firefighting shall be provided in accordance with the Rangitikei Rural Zone Development Code and AS 2000 Code of Practice of Building in Earthquake Prone Areas.
7. **UTILITIES REQUIREMENTS**
 - 7.1 Sites in the Rangitikei Rural Zone Development Code by appropriate site calculations.
 - 7.2 Firefighting shall be provided in accordance with the Rangitikei Rural Zone Development Code and AS 2000 Code of Practice of Building in Earthquake Prone Areas.
 - 7.3 Firefighting shall be provided in accordance with the Rangitikei Rural Zone Development Code and AS 2000 Code of Practice of Building in Earthquake Prone Areas.

- SYMBOLS:**
- LOCATION OF ZERO LOT WALL
 - LOCATION OF PARTY/ZERO LOT WALL
 - ▲ INDICATIVE VEHICULAR ACCESS
 - ▲ INDICATIVE ALTERNATE VEHICULAR ACCESS
 - ▲ INDICATIVE SHARED VEHICULAR ACCESS
 - 1000-2000 HIGH ACOUSTIC FENCE
 - 1500 HIGH TRANSPARENT FENCE
 - 1800 HIGH TRANSPARENT FENCE
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KINGS FOREST
 STAGE 1 PROJECT APPLICATION
PRECINCT 5 PLAN OF DEVELOPMENT - DETAIL 2



DEVELOPMENT CONTROLS

To be read in conjunction with Development Controls, Development Codes and Design Guidelines.

1. **BUILDING ENVELOPE**
 - 1.1 Building shall conform to the building envelope requirements specified in the Plan of Development and the setbacks in the Rangitikei Rural Zone Development Code.
2. **BOUNDARY WALLS**
 - 2.1 Lots proposed as Zero Lots shall contain a habitable boundary wall between adjacent lots in accordance with the Development Code.
 - 2.2 Vehicle access shall be generally in accordance with the location indicated on the Plan of Development.
 - 2.3 Where alternative boundary setbacks comply with the intent of the Code and Design Guidelines, they may be accepted by Council (Range Rural Zone Development Code).
 - 2.4 Clear vehicle and pedestrian sight triangles shall not be compromised at any time by fencing or landscaping.
 - 2.5 Maximum building height is 2 storeys except where a permit for more than 10m of the open face area of the building is issued, shall be subject to the height planning provided between the base and the main boundary shall not exceed 10m of the length of the boundary boundary including any gable and shall extend along the complete front boundary line.
 - 2.6 Solid ground boundary fencing between adjacent lots shall be subject to 10m from a main boundary boundary and 20m from an open space boundary.
3. **SETBACKS**
 - 3.1 Minimum boundary setbacks shall conform to the Development Code for each residential lot and depend on the setbacks specified in the Development Code.
 - 3.2 Minimum setbacks shall be subject to the following:
 - 3.2.1 Maximum building height is 2 storeys except where a permit for more than 10m of the open face area of the building is issued, shall be subject to the height planning provided between the base and the main boundary shall not exceed 10m of the length of the boundary boundary including any gable and shall extend along the complete front boundary line.
 - 3.2.2 Solid ground boundary fencing between adjacent lots shall be subject to 10m from a main boundary boundary and 20m from an open space boundary.
4. **RESIDENT AND VISITOR CAR PARKING**
 - 4.1 Resident and visitor car parking to be provided in accordance with the Development Code.
 - 4.2 Fencing shall be in accordance with the provisions of the Code and the Rangitikei Rural Zone Development Code.
 - 4.3 Fencing boundary fences adjoining a road shall only be permitted where a Rural Zone Open Space is indicated, shall be subject to the height planning provided between the base and the main boundary shall not exceed 10m of the length of the boundary boundary including any gable and shall extend along the complete front boundary line.
 - 4.4 Solid ground boundary fencing between adjacent lots shall be subject to 10m from a main boundary boundary and 20m from an open space boundary.
5. **LANDSCAPING**
 - 5.1 Council progressively of nature is a shrub planting with conventional ground cover and trees.
 - 5.2 A primary tree shall be provided on each of 200m² or more in area.
 - 5.3 Landscaping planting shall be provided to the street side of all roadways.
 - 5.4 Sight triangles to both pedestrian and other vehicles shall not be compromised at any time during the life of the planting.
6. **UTILITIES REQUIREMENTS**
 - 6.1 Where alternative are indicated as being incorporated with a Section 222 Resource Consent, the consent must be in accordance with the Rangitikei Rural Zone Development Code and AS 2000 Code of Practice of Building in Earthquake Prone Areas.
 - 6.2 Firefighting shall be provided in accordance with the Rangitikei Rural Zone Development Code and AS 2000 Code of Practice of Building in Earthquake Prone Areas.
 - 6.3 Firefighting shall be provided in accordance with the Rangitikei Rural Zone Development Code and AS 2000 Code of Practice of Building in Earthquake Prone Areas.
7. **UTILITIES REQUIREMENTS**
 - 7.1 Sites in the Rangitikei Rural Zone Development Code by appropriate site calculations.
 - 7.2 Firefighting shall be provided in accordance with the Rangitikei Rural Zone Development Code and AS 2000 Code of Practice of Building in Earthquake Prone Areas.
 - 7.3 Firefighting shall be provided in accordance with the Rangitikei Rural Zone Development Code and AS 2000 Code of Practice of Building in Earthquake Prone Areas.

- SYMBOLS:**
- LOCATION OF ZERO LOT WALL
 - LOCATION OF PARTY/ZERO LOT WALL
 - ▲ INDICATIVE VEHICULAR ACCESS
 - ▲ INDICATIVE ALTERNATE VEHICULAR ACCESS
 - ▲ INDICATIVE SHARED VEHICULAR ACCESS
 - 1000-2000 HIGH ACOUSTIC FENCE
 - 1500 HIGH TRANSPARENT FENCE
 - 1800 HIGH TRANSPARENT FENCE
 - 2000 HIGH TRANSPARENT FENCE
 - 2500 HIGH TRANSPARENT FENCE
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KINGS FOREST
 STAGE 1 PROJECT APPLICATION
PRECINCT 5 PLAN OF DEVELOPMENT - DETAIL 3



Landscaping for Stage 1 Development

The main features of the landscape concept are:

- an entry feature at the site entrance on Kings Forest Parkway including a fauna crossing;
- street trees along Kings Forest Parkway and along the internal access streets within Precinct 5;
- landscaped median strips along the Kings Forest Parkway;
- planting and signage on the roundabouts and at intersections along Kings Forest Parkway;
- a neighbourhood park within the central part of Precinct 5;
- bio-retention swale along the eastern boundary of Precinct 5;
- multi-use pathway located along the western boundary of Precinct 5;
- acoustic fencing within Tweed Coast Road for existing Old Bogangar Road residences; and
- acoustic fencing along Kings Forest Parkway frontage of Precinct 5.

Drainage Maintenance

The applicant has stated that the east-west agricultural drainage channel - also known as Blacks Creek - running through the SEPP 14 wetlands within the central part of the site needs to be retained for flood management purposes and will require periodic maintenance to maintain adequate flows in flood events. This will involve removing excessive vegetation growth, obstructions to water flow (e.g. snags etc) and deposited sediment.

Based on the historical maintenance regime, it is expected that removing vegetation growth by chemical spraying will be required at two-yearly intervals, whilst the removal of deposited sediment will be required approximately once every ten years.

The drain has been routinely maintained under Existing Use Rights. The project application is seeking consent for the on-going routine maintenance of the east-west drain once these rights are relinquished.

Land Dedication to National Parks and Wildlife Services (NPWS)

In accordance with the Concept Plan approval, approximately 150 hectares of land within the Environmental Protection zones will be dedicated to the NPWS. A further 28 hectares contiguous with this land will also be dedicated to NPWS, and together they will form proposed Lot 3. The applicant states that a Voluntary Planning Agreement is to be entered into between NPWS and Project 28, with the terms to include:

- the area(s) of land to be dedicated;
- details and timing of rehabilitation and revegetation, fencing, and like works to be carried out;
- monitoring of impacts of development on the Cudgen Nature Reserve and the additional dedicated land;
- the timing of dedication(s);
- maintenance responsibilities after dedication and the funding thereof;
- public access, if any, and the associated conditions.

The agreement will need to meet the requirements of Condition C3 of the Concept Plan approval (as modified 22 December 2010), and the proponent will provide the Director-General with evidence of the agreement prior to the construction of Stage 1, or as otherwise agreed by the Director-General.



Land Dedication to Tweed Shire Council (TSC)

The applicant has stated that the following land in the Environmental Protection zone is at this stage intended (in principle) to be dedicated to Tweed Shire Council:

- Environmental Protection zone: 154ha (excluding buffer areas).
- Urban Expansion zone: 17ha (structured open space).

This is shown diagrammatically above.

Whilst the applicant's Environmental Assessment Report states that a Voluntary Planning Agreement will be entered into with Tweed Shire Council subsequent meetings with LEDA representatives have stressed that such land dedication would need to be undertaken subject to mutually acceptable terms. Accordingly a voluntary planning agreement may or may not be entered into in the future.

Management and Maintenance of Open Space

The applicant has stated that:

"The following management and maintenance arrangements are proposed for the areas of land zoned Environmental Protection:

- *Land to be dedicated to TSC: until such time as the land is dedicated to Council, it will be maintained and managed by the proponent. It will continue to be maintained and managed thereafter by the proponent for a period to be agreed with Council.*
- *Land to be dedicated to NPWS: until such time as the agreement referred to above comes into effect, the proponent will continue to maintain and manage the land in accordance with relevant Management Plans.*

The areas of future structured and unstructured open space will be managed and maintained by TSC in accordance with its normal standards and policies.

In addition to the areas of open space referred to above and in Section 3.9.2, some open space land will remain in private ownership, namely the owner(s) of the proposed golf course. These are:

- *the golf course estate itself, consisting of 60 ha of land in the Urban Expansion zone and 9ha in the Environmental Protection zone; and*
- *the proposed lake and its immediate surrounds, consisting of 7ha of land in the Urban Expansion zone.*

These areas will be maintained and managed by the proponent until such time as they are transferred to new ownership, after which they will be maintained and managed by the new owner(s) in accordance with agreements embodying the requirements of relevant Management Plans."

Indicative Staging

The applicant has stated that the sequencing of the works the subject of this Project Application will be a function of market conditions. A key consideration, however, will be the avoidance of impacts on the amenity of future residents in Precinct 5. Where bulk earthworks are undertaken, pad levels will be finalised with the objective of avoiding the need for further bulk earthworks.

After bulk earthworks have been completed in Precincts 12, 13 & 14, koala food trees will be planted in accordance with the Koala Plan of Management. All bulk earthworks areas will be revegetated for erosion and sediment control.

Indicative sequencing will generally be as follows:

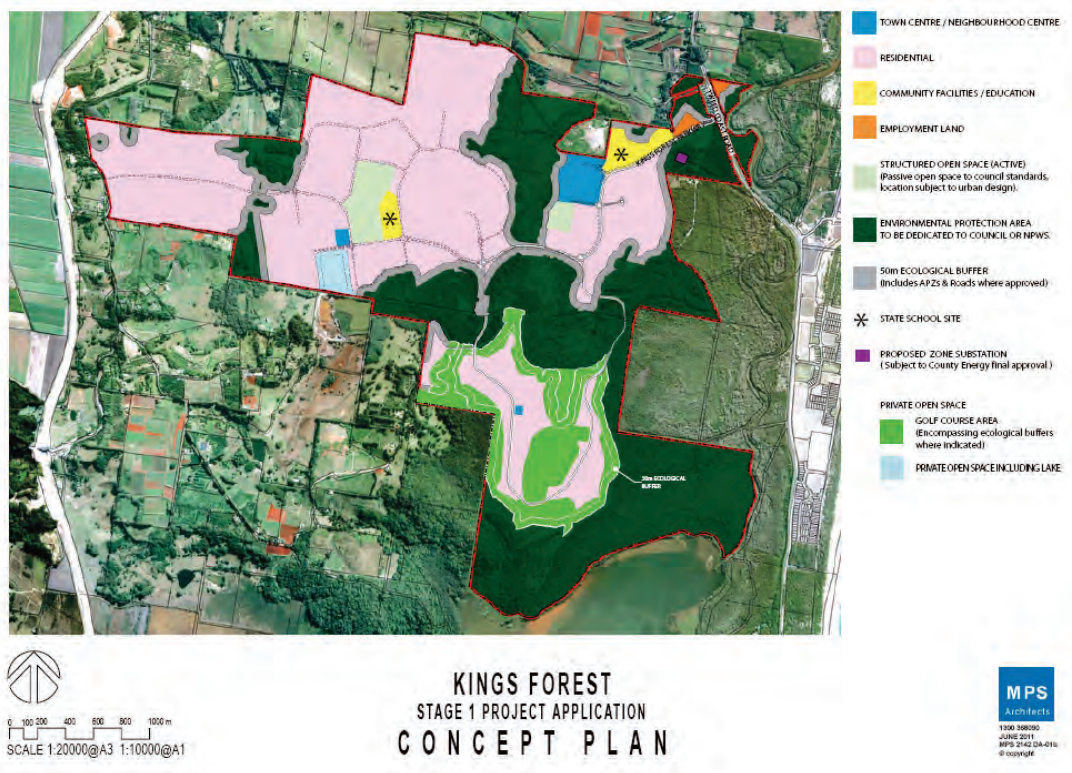
- Stage 1 - to be undertaken concurrently:
 - Bulk earthworks - Precincts 1, 2 and 3;
 - Bulk earthworks and road construction - Kings Forest Parkway to entry with Precinct 5;
 - Bulk earthworks and civil infrastructure works - Precinct 5;
 - Bulk earthworks - Precinct 4.
- Stage 2: Bulk earthworks and civil infrastructure - Tweed Coast Road Intersection.

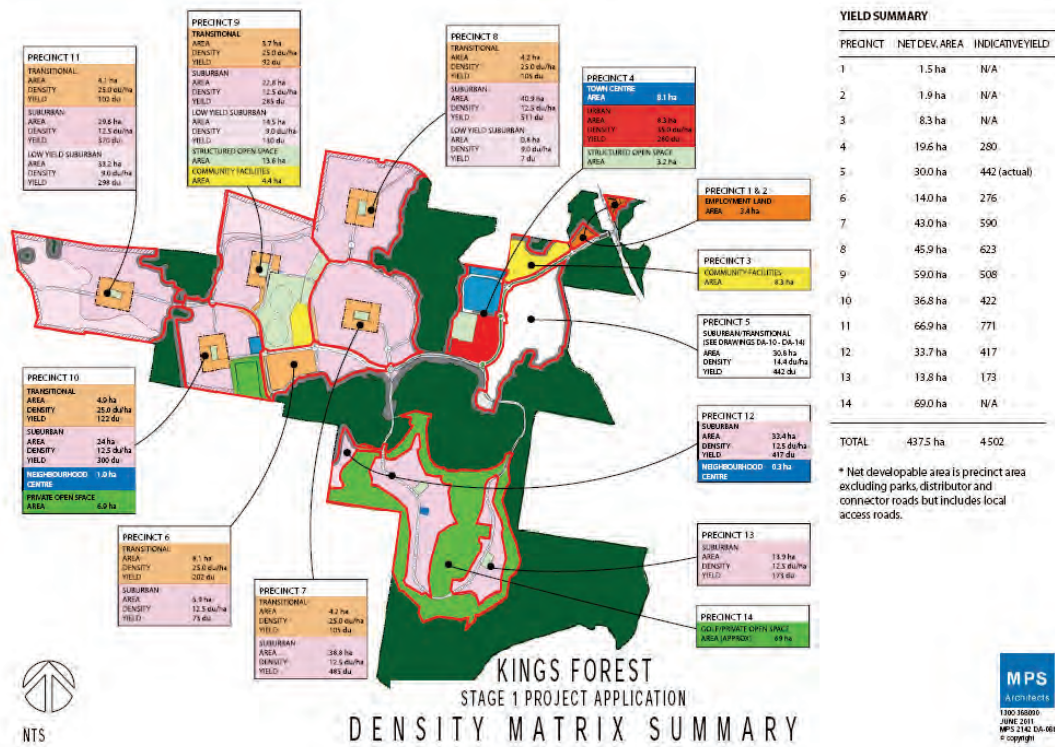
- Stage 3: Bulk earthworks - Precincts 12, 13 and 14.
- Stage 4: Roadworks for the remainder of the Kings Forest Parkway and the roads to Precincts 12 to 14.

Modification to the approved Concept Plan

The modifications to the Concept Plan relate to the following matters:

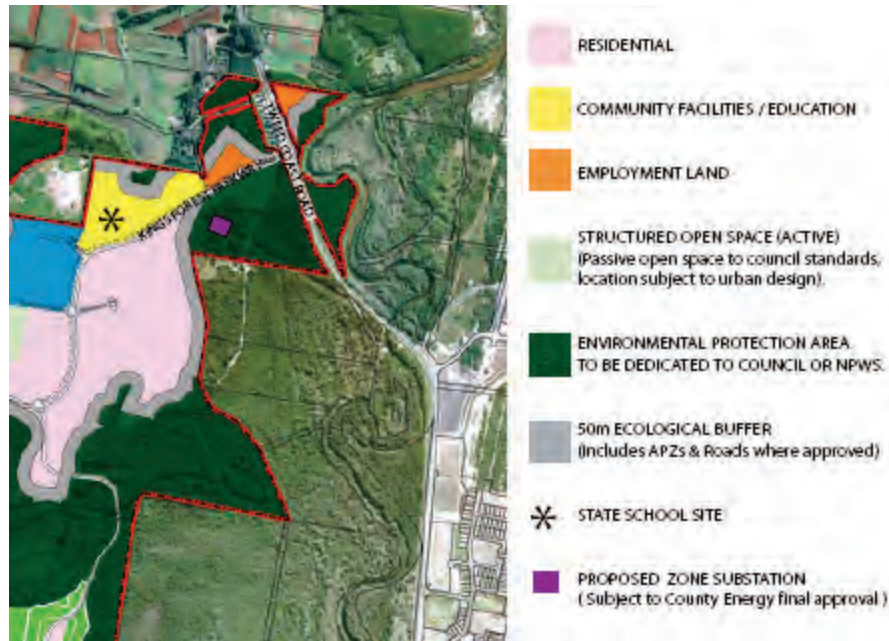
- Amendments to Concept Plan drawings.
 - The revised Concept Plan does not designate separate locations for medium and low density residential development. Instead the indicative density of each precinct is specifically set out in the Density Matrix Summary Plan. Higher density development will be placed in areas of higher amenity such as proximity to open space, neighbourhood and town centres etc. The yield of 4500 dwellings remains the same. The revised Concept Plan and Matrix are duplicated below:





- The Precinct Plan has been amended to reduce the number of precincts from 24 to 14. The extent of developable land has not changed.
- The 17ha of structured open space has been relocated to two locations to firstly provide a smaller area to service the eastern zone of the site and secondly, to locate the bulk of space more centrally in the western part of the site.
- As a result of the change to structured open space the western school site has been relocated and made larger (4.5ha).
- As a result of the changes to the structured open space and school site the neighbourhood centre site in the western part of the site has been made smaller and relocated.
- The water body to the south west of the site has been changed in shape to better assist flood detention.
- The road hierarchy plan and potential bus route plan has been updated to comply with the Kings Forest Development Code.

- The Concept Plan now shows a zone substation for Essential Energy east of Precinct 5 in the Environmental Protection Zone. A substation is essential to service the proposed development. This land use in this zone would necessitate a Clause 8(2) assessment in accordance with the Tweed LEP 2000. Essential Energy would also need to consent to this location. The proposed location of this is shown on the below map as a purple square south of Kings Forest Parkway.



- Amendments to the conditions of approval C2 and C13;
 - Condition C2 requires stage specific management plan updates (in relation to koalas, vegetation, feral animals, weeds, buffers and threatened species) to be included, where relevant, with all future applications. The applicant is seeking this condition be amended for these plans to only be required prior to issue of a construction certificate for the relevant works.
 - Condition C13 requires a detailed geotechnical assessment to be submitted with each future development application for subdivision. The applicant is seeking this condition be amended for these assessments to only be required where relevant to the proposed application.

- Koala Management

The applicant has stated that:

"The Concept Plan conditions of approval required that an updated Koala Management Plan (KPoM) be provided with each future Project or Development Application. Subsequent to the preparation of the KPoM, the proponent consulted with koala interest groups and considered alternative approaches to the management of koalas at Kings Forest.

The resultant KPoM submitted with this Project Application, prepared by a different ecologist, makes recommendations which reflect a different approach to that taken in the Concept Plan KPoM, but which the proponent believes will have the support of Council and local interest groups.

The essential difference in the approach to the koala management lies in the measures to effectively prevent koalas from entering developed areas.

These measures comprise a particular form of fencing in combination, where required, with road underpasses and cattle grids which meet certain requirements. They have recently been found to be effective in restricting koala movement so as to avoid contact with the threats posed by road traffic and domestic dogs, and the limited threat of swimming pools.

The KPoM submitted with the Concept Plan took a different approach where, because of the difficulty in restricting koala movement, it was deemed necessary to manage the above threats by way of controls to traffic, dog ownership and swimming pools.

The revised approach, detailed in the updated KPoM prepared by James Warren & Associates and appended at Appendix N, includes the following:

- Changes in the specification of koala fencing.*
- Facilitating road crossings by underpasses (not over-road crossing).*
- Providing cattle grids at particular points.*
- Limiting the zones to which koalas will be restricted to areas of habitat where concentrated use has been recorded.*

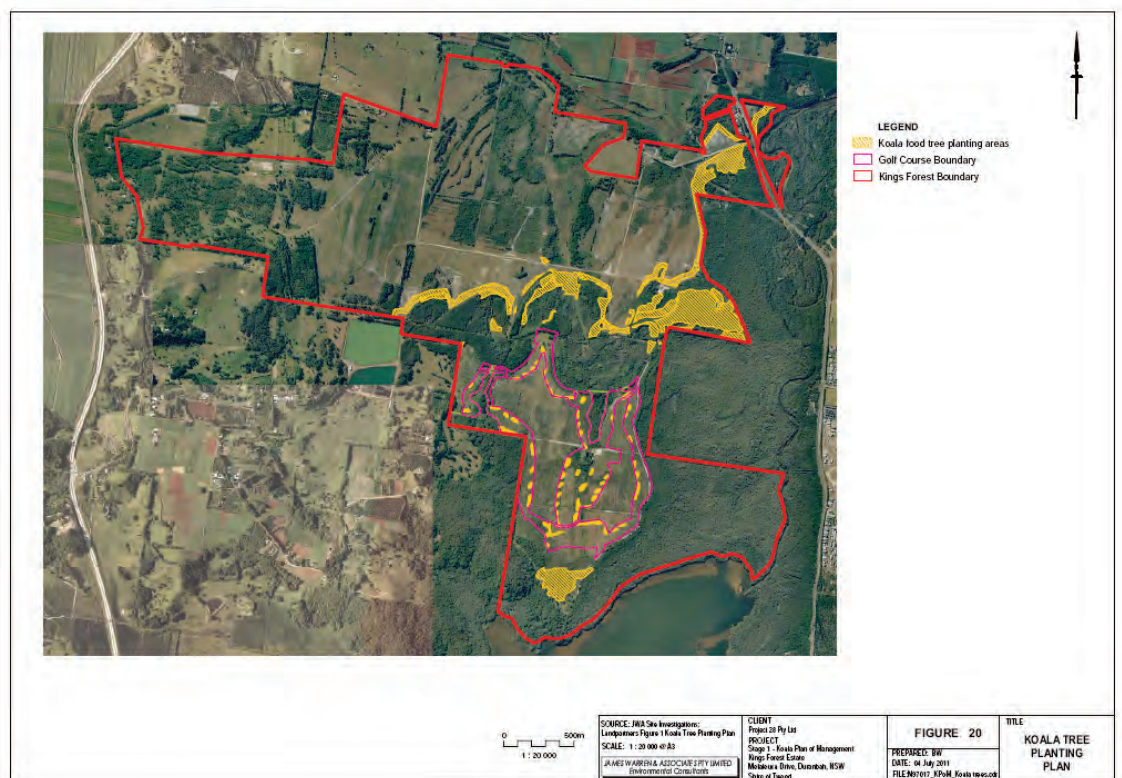
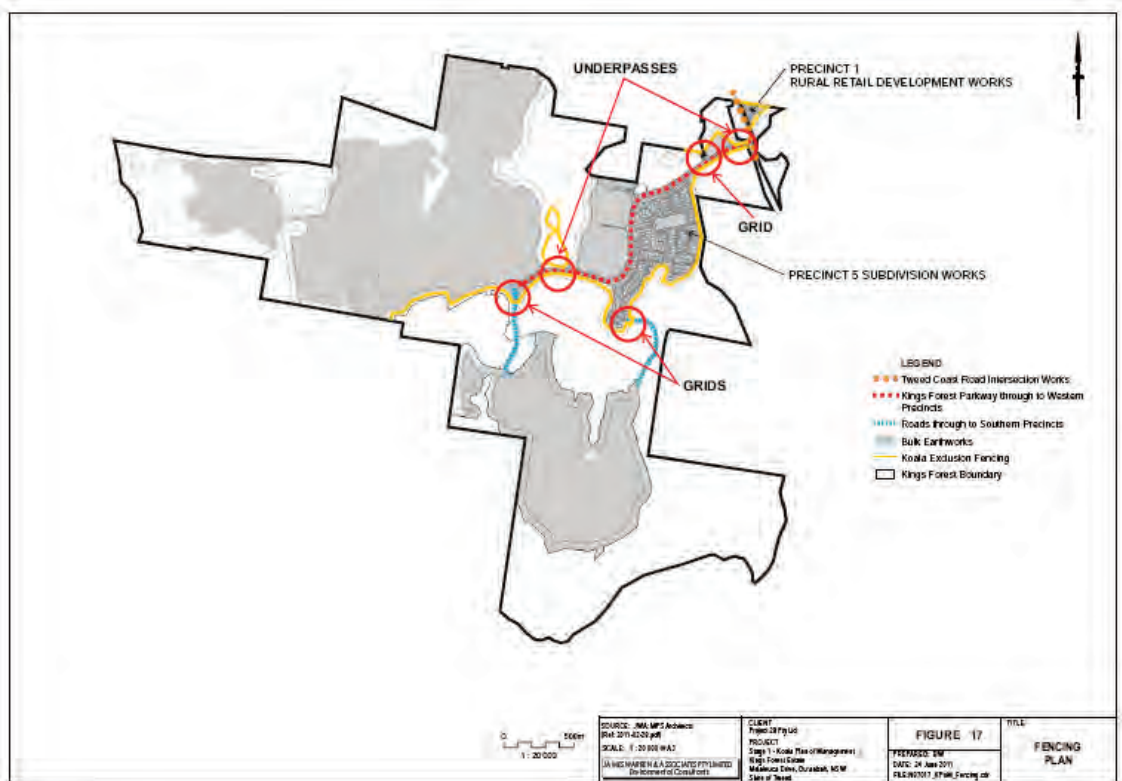
The effective restriction of koalas to parts of the Environmental Protection zone consequently obviates the need for:

- additional controls on dog ownership to those provided in the Companion Animals Act and Council's Regulations; and*
- measures to prevent koalas entering swimming pools and to enable their escape from them.*

Furthermore, the need for the previously recommended east-west koala movement corridor in the western part of the site is now called into question, but its retention will be considered at a later time.

Based on the content and direction of the updated KPoM there appear to be no negative impacts as a result of this amendment to the Concept Plan. Indeed the latest findings seem to indicate that the revised approach will be no less effective in managing koalas in the Tweed. It is further noted that in accordance with Condition B1 of the Concept Plan approval, the updated Koala Plan of Management is to be the subject of an independent review by a suitably qualified person to the satisfaction of the Director-General."

The revised Koala Plan of Management includes revised vegetation mapping, a new fencing plan and a commitment to undertake 49ha of revegetation works (including 17,000 Koala food trees).



AERIAL IMAGE 2009:



COUNCIL OFFICERS' ASSESSMENT:

On 23 November 2011 Council wrote to the Department of Planning requesting an extension of time to comment on the subject application (which was granted until 25 January 2011) and furthermore to request information on the level of detail required in Council's submission.

The NSW Department of Planning and Infrastructure responded by stating that they were keen to ascertain Council's views on technical aspects of the application in particular:

- Engineering (including flooding and stormwater management);
- Traffic and access;
- Bulk earthworks activities; and
- Future management of assets that are proposed to be dedicated to Council.

The Department also acknowledged Council's wider role on behalf of the Tweed community and accordingly stated that it's Council's discretion as to the issues raised and the level of detail provided.

Accordingly the application has been reviewed by Council's technical staff. The following report is a compilation of the assessments which have been derived from various divisions of Council.

The Department of Planning and Infrastructure advised the applicant that as part of their Environmental Assessment Report the applicant must address certain key issues. These are known as the Director General Requirements (DGR's).

All comments have had regard to the applicable DGR's which were issued for this development.

Council staff have been actively liaising with the applicant and their relevant consultants during exhibition to ensure a complete understanding of the application is achieved. These discussions have been valuable for both parties with anomalies being recognised early. Many of the issues raised in this report have already been raised with the applicant and it is understood that in most instances variations could be made to a future Preferred Project Report to satisfy Council's concerns. Where a mutually acceptable arrangement has yet to be made Council recommends further discussions to negotiate acceptable outcomes.

The main issues are:

Engineering:

- Ensuring the provision of stormwater treatment at all urban drainage outlets;
- Long term hydraulic operation of Blacks Creek and associated modelling;
- Concept stormwater management for Precinct 4 to verify bulk earthworks plans;
- Lack of impact assessment for fill importation from external sources under the bulk earthworks concept plans;
- Traffic modelling and the subsequent intersection designs with Tweed Coast Road;
- Road widths and bus accessibility within Precinct 5;
- Lack of detail on engineering plans for on street parking, footpaths and cycleways.

Open Space:

- Splitting the Kings Forest structured open space into two locations;
- Ongoing maintenance for public open space areas.

Planning/Urban Design:

- Accessibility (walk ability) to the town centre;
- Approval process for Precinct 1 – rural retail development;
- Visual Implications of acoustic fences;
- Lack of detail on the plans of development and design guidelines to demonstrate compliance with the Kings Forest Code.

Ecological and Natural Resource Management Issues:

- Dedication of environmental land to Tweed Shire Council;
- Long term management of environmental open space;
- Timing and content of Voluntary Planning Agreements for managing open space;
- Land uses contained within ecological buffers;
- Protection of heathland;
- Clearing of littoral rainforest within Precinct 1;
- Conflicting rehabilitation and re-vegetation objectives;
- Koala management;
- Bushfire management
- Management plan implementation;
- Water quality in Cudgen Creek;
- East west wildlife corridor;
- Wallum Froglet habitat compensation; and
- Monitoring and evaluation.

The Council Officer's assessment of all matters is provided below:

Flooding

With regard to flooding, the following DGRs are applicable:

DGR 6.5 Provide an assessment of any flood risk on site (for the full range of floods including events greater than the design flood, up to probable maximum flood; and from coastal inundation, catchment based flooding or a combination of the two) and having consideration of any relevant provisions of the NSW Floodplain Development Manual 2005. The assessment should determine: the flood hazard in the area; address the impact of flooding on the proposed development, address the impact of the development (including filling) on flood behaviour of the site and adjacent lands; and address adequate egress and safety in a flood event. The flooding assessment is to incorporate any re-calibrations of the Tweed Shire Council flood model.

DGR 6.6 The flood assessment must have regard to the following elements to determine the new flood planning level for Kings Forest:

- **a sea level rise scenario of 0.90 metres;**
- **a 10% increase in rainfall intensity;**
- **the detailed flood modelling results from the Tweed-Byron Coastal Creek Flood Study;**
- **consideration of freeboard of 0.5 metres; and**
- **applying the principle of risk-based approach to the development so that residents remain safe for all flood events up to and including the Probable Maximum Flood event.**

The application demonstrates general compliance with the flooding requirements of DCP-A5 (Subdivision Manual) and DCP-A3 (Development of Flood Liable Land), in that all allotments will be filled above a climate change derived design flood level (taking account of predicted sea level rise and increased rainfall intensity), all internal roads will be above the climate change derived design flood level, with rising road access to land above probable maximum flood (PMF) for evacuation purposes, and a flood study has been provided to demonstrate that the filling of the site will generally not have significant adverse impacts on the locality.

The flood study does show a significant impact on rural land to the southwest of the estate (primarily Lots 3 and 4 DP1062132 and Lot 1 DP 1129391, upstream of Precinct 10) for events of intensity up to the 10 year ARI event. The application does not examine these impacts in detail or propose any mitigation measures. While the current application does enable bulk earthworks across the whole of the site, bulk earthworks details have only been provided for the Stage 1 works, and the future construction certificates will be staged as such. Therefore, the impacts of the filling of Precinct 10 will not occur until a considerable time into the future, by which time alternate landforming details can be provided. This is consistent with conditions imposed on the Concept Plan approval:

C24 Flooding

All future applications for each stage of development are to incorporate any recalibrations of the Tweed Shire Council flood model.

A preliminary development landform for the entire Kings Forest site is to be provided with the Environmental Assessment for Stage 1 to allow comprehensive flood modelling to be carried out, but not in such a way as to preclude necessary modifications to land forms in subsequent stages of development.

In preliminary discussions with the applicant's consultants, the issue of increased flood levels on the western land is acknowledged but thought to be readily addressed by local fill and drainage design at a later stage. As it only occurs for relatively low intensity events (5 year and 10 year ARIs), this is generally acceptable to Council.

For completeness, the Flooding and Flood Management Assessment report (Appendix CC) should include impact maps for the probable maximum flood (PMF) and the 100 year ARI climate change scenarios, as has been provided for other design flood intensities.

It is noted that the application includes an evacuation response plan, and that bridge deck levels and other critical points have been determined based upon evacuation capability. Additional information such as "alert levels" may be of use to the State Emergency Service (SES) in the future.

The Plans of Development (PoD) for Precinct 5 include a Development Control (No.12) that states that "Kings Forest Precinct 5 has no flood prone lots", which is incorrect. In Development Control Plan Section A3 - Development of Flood Liable Land, Council defines "flood prone" land as being affected by the probable maximum flood (PMF). The Gilbert and Sutherland Flooding and Flood Management Assessment (Appendix CC) shows all of Precinct 5 is affected by the PMF and is therefore flood liable, despite being located above the climate change derived design flood level (100 year ARI). As such, Development Control No.12 should be removed, and DGR 2.2 requiring fill and floor levels to be shown on the PoD for all flood prone lots is still to be satisfied.

Stormwater

With regard to stormwater management the following DGRs are applicable:

- 7.1 Address and outline measures for Integrated Water Cycle Management (including stormwater) based on Water Sensitive Urban Design principles and which addresses impacts on the surrounding environment, drainage and water quality controls for the catchment.**
- 7.2 A detailed plan of erosion and sedimentation controls at construction and operational stages to ensure that the water quality of SEPP 14 Wetlands on the site remain unaffected.**
- 7.3 A Stormwater Management Plan is to be provided which includes a detailed design layout plan for the preferred stormwater treatment train showing location, size and key functional elements of each part of the system must be submitted with each development application for subdivision. MUSIC modelling must be undertaken to demonstrate appropriate water quality objectives are being achieved. The Plan is to demonstrate, through the provision of monitoring and adaptive management plans and commitments, that any proposed surface water/stormwater pollution reduction devices will be monitored to determine their pollutant removal efficiencies and the need for further treatment of drainage to ensure the preservation of water quality in Cudgen Creek and Blacks Creek.**
- 7.4 Assess the impacts of the proposal on surface and groundwater hydrology and quality during both construction and occupation of the site.**
- 7.6 Assess the necessity of drains currently in operation across the site and, for those required into the future, assess the impact of any ongoing maintenance required to ensure their effectiveness.**

A concept stormwater management plan for the overall estate has not yet been provided, despite requests during the Concept Plan process. Based on hydraulic modelling, the application identifies the existing east-west drain through the centre of the estate (known as Blacks Creek) as the main channel by which the majority of the site can drain eastward to Cudgen Creek. The Stage 1 precincts are largely their own catchments, without significant influence from external land. As such, the application can be adequately considered based on the information provided.

Stormwater Precinct 5

Based on discussions with the applicant's consultants, the stormwater design for Precinct 5 is highly constrained by the Concept Plan approval and the Director General's Requirements (DGRs) to maintain groundwater regimes for the adjacent groundwater dependent ecological communities to the east. Landforming and depth of services has been

determined iteratively based on this constraint, resulting in the system as proposed in the application.

Precinct 5 is bound to the east and south by bio-infiltration swales, to which the majority of urban stormwater will be discharged, either by pit and pipe road drainage, or by surface flows. The swales are located in the outer 20m of the 50m environmental buffer zone, which is subject to detailed discussion in the review of ecological matters later in this report. All stormwater contained within the swales will be disposed of by infiltration into the sandy soil, to recharge groundwater. The swales have been sized to contain at least the 100 year ARI storm event, but will likely contain considerably more. The northern section of swale in particular is oversized in terms of holding and treatment capacity as it has been designed primarily for groundwater recharge. In the event of larger rarer events, surcharge weirs will direct overflows towards environmental land and away from urban development. Due to the minimal grades on the street pipe network, it will convey most of the major storm (100 year ARI) flows. The grade and fill constraints do however result in the downstream sections of the piped network being below the invert level of the receiving swales. While there is adequate head to push most of the water through to the outlets, to ensure that standing water does not remain in the pipes, a low flow pipe will be constructed beneath the swales, to drain this trapped water to a discharge point at Blacks Creek.

In terms of stormwater quality, MUSIC modelling has been undertaken for a number of treatment scenarios, including the "deemed to comply" treatment train proposed by Development Design Specification D7 - Stormwater Quality, various "at source" treatment train options, such as roadside swales, pervious paving and biofilters, and the proposed bio-infiltration system. The modelling shows that none of the treatment trains are capable of meeting the currently adopted water quality objectives prescribed by the Tweed Urban Stormwater Quality Management Plan (TUSQMP), particularly for total nitrogen. This has been previously acknowledged, and as such, "interim water quality objectives" based on Water By Design Guidelines for South East Queensland shall be applied (percentage removal of target pollutants TSS, TP and TN). The proposed bio-infiltration system is shown to meet or exceed these Water By Design targets, and is superior to the D7 deemed to comply solution. It is noted that modelling assumes rainwater reuse tanks have been provided on all residential allotments, which is noted on the Plan of Development and implemented by the Development Code.

Depth and duration of inundation of water in public areas needs to be considered in the Preferred Planning Report (PPR), together with general risk management measures such as fencing, additional plantings, benching, and proximity to the shared user path, to mitigate hazards to the public. These could be included in the landscaping details with the PPR.

One remaining concern with the proposed stormwater design is the low flow pipe. Typically it is the low flow "first flush" that is targeted for treatment, as it is likely to contain the most gross pollutants, sediments, hydrocarbons, and other contaminants. Under the proposed system it appears that this water would, at least in part, be captured by the low flow system rather than the bio-infiltration treatment areas, and as such, could be discharged directly to Blacks Creek. These same concerns arise should a chemical spill, sewage overflow etc. enter the stormwater system. Council therefore requests the installation of a treatment basin at the outlet of the low flow pipe, for containment of contaminants prior to discharge to Blacks Creek. Such a containment area would also hopefully simplify Council's maintenance regime, given there are no upstream gross pollutant traps proposed, and this basin could provide a single collection point for much of this waste. In initial discussions the applicant's consultants consider such a basin to be feasible but unnecessary, however Council wishes to pursue this measure to ensure stormwater impacts downstream of the development are minimised.

To minimise future maintenance requirements, where possible the bio-infiltration areas should utilise the existing soil profile, rather than importing filter media and sub soil drainage, as proposed in the engineering drawings. This requires further consideration by the applicant's consultants, but can be addressed via consent conditions with the PPR.

The likely staging of Precinct 5 is not addressed in the application, and this could have implications for the provision of the stormwater drainage system. Each sub-stage of the development requires all necessary downstream drainage infrastructure to be provided. However if the bio-filtration systems are constructed up front with the rest of the bulk earthworks, measures need to be put in place to protect this system from the likely impacts of the house construction stage, where significant sediment loads are likely. This would create a blinding layer over the filter media and result in a loss of permeability which would be difficult to rectify. This may require the developer to explore options for extended maintenance agreements with Council.

Maintenance periods for landscaped stormwater facilities in the Open Space / Recreation section are detailed below.

Stormwater Precinct 1

As there are no development plans for Precinct 1 included in the application, little stormwater information has been provided. The proposed works on Tweed Coast Road include the provision of a stormwater discharge point for Precinct 1, to link to an upgraded drainage system in the vicinity of Depot Road / Kings Forest Parkway.

A future application for Precinct 1 would need to provide treatment measures for hardstand carparking / driveway areas.

Stormwater Kings Forest Parkway (KFP)

Kings Forest Parkway (KFP) is designed for an ultimate 4 lane configuration through Stage 1. The typical cross section consists of a central median containing a bio-infiltration swale with no longitudinal gradient. The roadway falls centrally to this swale. Where the swale is interrupted by intersections, connecting pipes will be provided, with 100 year ARI capacity. Like the Precinct 5 system, the KFP drainage relies on infiltration for stormwater disposal, however any flows that need to be conveyed by the piped system connect to the Precinct 5 drainage system.

The only issues raised concerning this drainage concept relate to maintenance. As only two lanes of KFP will be constructed initially, the swale drainage will be a roadside swale for the time being. In order to maintain this area without impacting on the traffic lanes, a maintenance track should be provided along the exterior of the swale. This can be addressed via consent conditions with the PPR.

Refer also to comments relating to maintenance periods for landscaped stormwater facilities in the Open Space / Recreation section.

A submission has been provided from an agricultural landholder upstream of the development, on the western side of Tweed Coast Road (194 Tweed Coast Road). He has expressed concerns regarding the impacts of the development on the existing drainage system, and has requested an upgrade of the transverse drainage under Tweed Coast Road (in the vicinity of the future Kings Forest Parkway intersection), to ensure that his property and residences in the area are not adversely affected. The applicant does not appear to have provided any examination of drainage capacity or impact in this area, so this should be investigated in the PPR, as it may be critical to the design of the Tweed Coast Road / Kings Forest Parkway intersection. A hydraulic assessment is required to investigate the available capacity in the transverse drain to deal with the existing catchment west of Tweed Coast Road plus additional flows generated by the Parkway, Precinct 2 and any other aspects of the Kings Forest development that may impact on the catchment. Impacts on the outlet of the drainage system at Cudgen Creek due to increased peak flow rates and discharge volumes from the development should also be addressed.

Stormwater Blacks Creek

The application incorporates ongoing maintenance measures for Blacks Creek, which is intended to be dedicated to Council at some future stage (the application is unclear in this regard, and tenure needs to be clarified in the PPR). Maintenance activities include removal of vegetation (approximately 2 yearly) and sediment (approximately 10 yearly), to reduce channel roughness, without increasing the size of the drain. To date this drain has apparently been maintained under existing use rights, but as these will be relinquished with the new development, the maintenance regime needs fresh consent. The applicant's hydraulic reports conclude that no other existing drainage lines are needed.

Clarification of the hydraulic assessment involving Blacks Drain is requested in the PPR, to determine the sensitivity of the system to changes, tailwater level assumptions, and the potential impacts of climate change, in particular sea level rise, on the operation of the drain and its connecting upstream urban drainage systems.

Stormwater Ecological Considerations.

Subject to the discussion and matters raised above, the stormwater management system proposed for Stage 1 of the Kings Forest development has been assessed to be generally compliant with the requirements of Development Design Specification D7 – Stormwater Quality and satisfies the interim water quality objectives of Council, being those adopted by the South East Queensland Water by Design Guidelines.

Section A5.4.6 of Council's Subdivision Manual (DCP Section A5) requires the following:

“Development in or adjacent to waterways, water bodies, wetlands or within their catchments must ... ensure development does not result in pollution or adversely effect quality or quantity of flows of water into the water way, water body, wetland or habitat.”

Stormwater quality modelling of the kind employed by the applicant, and promoted by most stormwater quality specifications, including D7, provides a “proof of concept” with regard to pollutant generation from urbanised catchments, and the effectiveness of treatment trains in reducing pollutant export to the receiving environment. Council’s Natural Resources Unit, being the arm of Council responsible for the management of estuary and waterway areas in Tweed Shire has requested further assessment of the potential impacts of the residual stormwater pollutants, particularly sediment and nutrients, entering Blacks Creek, Cudgen Creek and Cudgen Lake, with reference to existing Council management plans, water quality data and monitoring programs. These requirements are discussed in detail later in this report (refer to Review of Ecological Matters).

Bulk Earthworks

With regard to bulk earthworks the following DGRs are applicable:

- 6.8 *Provide a preliminary development landform for the entire Kings Forest site to allow comprehensive flood modelling to be carried out, but not in such a way as to preclude necessary modifications to land forms in subsequent stages of development.*
- 7.2 *A detailed plan of erosion and sedimentation controls at construction and operational stages to ensure that the water quality of SEPP 14 Wetlands on the site remain unaffected.*
- 12.2 *Describe the methods for excavation, transportation and spreading of fill and determine whether fill will need to be imported to the site.*

The application seeks approval for bulk earthworks across the balance of the site, not just those precincts that are intended for Stage 1 development works. The application includes preliminary details of the overall bulk earthworks plans for the entire estate, taking into account design flood levels, geotechnical conditions, flora and fauna requirements, and preservation of groundwater regimes for groundwater dependent ecosystems. The engineering report (Appendix D) anticipates a net 320,000m³ of fill will need to be imported to the western portion of the estate to achieve design flood levels for all residential precincts. There is no proposed source for this fill however the report indicates that it would be imported to the site via Duranbah Road. There is no impact assessment in terms of traffic or amenity for such activities and the applicant only intends to provide these details prior to the importation of fill to those western precincts (i.e. Precincts 9-11) in a future Haulage Management Plan.

It is not considered appropriate to approve the concept bulk earthworks plans in the absence of this haulage impact assessment, and the transportation of fill is a consideration of the DGRs (12.2). In the indicative construction sequencing and staging of the bulk earthworks (refer page 13, Table 1 Appendix D), the early stages of the development will focus on the internal transportation of spoil from Precincts 2, 4, 5, 12, 13 and 14, which will predominantly be in cut, to the western areas for application as fill. However the report shows that balance cut and fill across the entire estate is not feasible at this stage. The importation of 320,000m³ fill for which the applicant seeks approval is considered by the engineering report to be a worst case scenario, and as such should be the subject of further investigation. While a fill source is not known at this stage, the site can only be accessed by a few road routes, so can be reasonably predicted and assessed for the impacts of additional truck movements. If delivery via Duranbah Road is found to be unfeasible due to unacceptable impacts, the applicant must consider alternatives such as hydraulic placement of fill. The diversion of truck movements through the Estate itself from Tweed Coast Road would not likely be acceptable unless done ahead of schedule, as by the later development stages a significant population and level of urban infrastructure would be established.

Conditions of consent relating to the bulk earthworks plans will need to be worded such that the plans can be readily amended in future applications as stage designs are established.

Based on the concept bulk earthworks plans, maximum cut and fill depths across the site are estimated to be 1.5m which easily complies with limitations imposed by Development Design Specification D6 - Site Regrading. The exception is the proposed private lake, which will be to considerable depth, but only represents a small percentage area of the overall estate.

The engineering plans provided in Appendix E show the proposed bulk earthworks for:

- Precincts 1, 2 and Roadworks
- Precincts 3, 4 and 5,
- Precincts 6-11, and
- Precincts 12, 13 and 14 ("Cudgen Paddock")

Precinct 1 and 2 works generally consist of regrading and do not pose any issues, although the scale and resolution of the plans make it difficult to properly interpret. Further minor earthworks are likely once separate applications for development of these precincts are lodged.

Precinct 3 requires little or no bulk earthworks at this stage. Precinct 5 provides quite detailed earthworks plans, in conjunction with details of water, sewerage, stormwater drainage, and (in separate reports) a water sensitive urban design system. Precinct 4 also provides a detailed level of earthworks plans, but the stormwater drainage system for the Precinct, not being part of the Stage 1 subdivision works, is not as well understood. It is important that the landforming works reflect the interim and final stormwater management of the Precinct, and as such, Council requests a concept stormwater management plan for Precinct 4, to include the preliminary design and modelling for a stormwater quality control system (modelling provided in Appendix DD is limited to Precinct 5). This is considered reasonable given the earthworks plans show a significant degree of design works for roads, stormwater catchments, piped drainage systems and swales has already been undertaken, and the site's proximity to and grading towards an environmental protection area.

Precincts 6-11 take fill from the eastern precincts, to establish urban landform above the design flood level and provide for stormwater drainage. Details are conceptual only. The western precincts rely on the provision of internal basins (future park areas?) and future bio-retention areas to contain contaminated runoff. It is difficult to assess the potential impacts of these works given the scale of the proposal and limited resolution of the plans, however fill depths do not appear to be significant. As further details would be required to be submitted for future development of these precincts, provided erosion and sediment can be appropriately managed and details of stormwater management are provided at construction certificate stage, no objections to these concept plans are raised (except as mentioned earlier with regard to the importation of fill from external sources via Council's road network to address the fill imbalance for the Estate).

Precincts 12-14 provide the majority of spoil to be transported to the western precincts (almost 500,000m³). While cut depths are generally less than 1.5m, the cut earthworks are over a very large area, which is surrounded by environmental land. No engineering detail for the future usage of this land has been provided, and the engineering plans do not readily identify future road layouts or drainage paths, so it appears this area is only being developed for the production of spoil at this stage. From an engineering perspective, provided erosion and sediment control can be appropriately (and strictly) managed in this area, no objections are raised.

Erosion and sediment control during the bulk earthworks phase is of significant concern to Council, particularly in those areas that adjoin environmental protection land and SEPP14 wetlands. There are several documents that address this issue in concept in the Environmental Assessment Report (EAR), however as the earthworks staging has not been properly determined by the applicant's consultants, there are no operational documents, and therefore nothing that is readily enforceable in the event of a non-compliance with Council engineering requirements (or other environmental requirements imposed by others). Issues such as maximum exposed areas, stabilisation timeframes, and stockpile management need to be properly addressed. To date, the applicant's consultants have proposed to provide a Bulk Earthworks Management Plan with the construction certificate for the bulk earthworks, but consider that issues such as maximum exposed areas are too hard to define at this point, and should be reviewed with each future stage of the development. Consent conditions may be imposed in this regard, however the issue is raised now for the applicant's information and input via workshops, such that any consent is both workable and enforceable.

The applicant should note that a number of the proposed batters in the earthworks drawings in Appendix D do not comply with the recommended maximum batter slope for stability in the geotechnical report titled "Geotechnical Investigation proposed residential subdivision Depot Road Kings Forest" prepared by Cardno Bowler dated 7 April 2011. The geotechnical report recommends fill batter slopes are to have a slope of 1V:2H and residual sand (cut) is 1V:2H. The following fill batters are areas of non compliance to be addressed;

Cut batters

The battered area around Precinct 5 the infiltration swale is mainly in cut and generally has a 1.2m high batter. The slope of the batter is 1.2mV:0.9mH. The steepness of this slope does not comply with the batter recommendations for long term stability in the geotechnical report.

Fill Batters

The following fill batters are also non compliant with the geotechnical report's recommendations for long term stability of fill batters.

- Fill batter 1.8m high (2V:1H)– adjacent to cul-de-sac for Road 8
- Fill batter 3m high (3V:0.7H)– adjacent to cul-de-sac for Road 29
- Fill batter 2.5m high (2.4V:0.7H) – both sides of road 9 from Precinct 5 to golf course
- Fill batter 3.4m high (3.4V:1.0H) – Road 10 west of roundabout

Engineering drawings

Existing and finished levels on the bulk earthworks plans prepared by Morton Urban Solutions for precincts 6-11 cannot be read on the following drawings;

- Bulk earthworks cut fill plan sheets 1-6 (drawing numbers EWB-030 to 035)
- Bulk earthworks finished surface plan sheets 1-6 (drawing numbers EWB-070 to 075)

Future maintenance

Any areas which are steeper than 1V:5H are required to be landscaped, as Council's mowing maintenance crew cannot operate a mower safely at grades steeper than 1V:5H.

Traffic and Access

In regards to traffic and access the following Director General Requirements (DGR's) are applicable from an engineering perspective:

DGR 2.9 Demonstrate, through the provision of a Bus Network Implementation Plan that adequate provision has been made for public transport.

DGR 5.1 Prepare a traffic impact assessment in accordance with Table 2.1 of the RTA's Guide to Traffic Generating Developments. In particular, a detailed assessment should be provided for the intersection of Tweed Coast Road with the proposed Kings Forest Parkway and with the proposed development to the east of Tweed Coast Road. Details of intersection modelling and proposed upgrade works should be included.

DGR 5.2 Address the provision of cyclist and pedestrian access to, through and within the proposal.

DGR 5.3 Demonstrate that the alignment of the Kings Forest Parkway is designed to be a continuous or 'through' alignment to enforce its priority route status as a major collector/distributor road.

DGR 10.1 Address potential noise impacts, in particular road traffic noise, for future residents and appropriate mitigation measures. The assessment should include consideration of construction noise in reference to the draft NSW Construction Noise Guidelines (DECC, 2008).

DGR 5.4 In order to determine appropriate noise attenuation requirements adjacent to the Kings Forest Parkway, a road traffic noise impact assessment must be undertaken in accordance with RTA guidelines. Details of noise attenuation measures (buffers, mounds, acoustic walls, construction standards) are to be provided.

Traffic and Access – Intersection with Tweed Coast Road

Having reviewed Appendix T – Traffic Impact Assessment, Council has some significant concerns with the traffic analysis and geometric layout of the intersections of Kings Forest Parkway, Precinct 1 accesses and Old Bogangar Road/Depot Road with the Tweed Coast Road. They are considered to be based on incorrect assumptions and could result in a serious reduction in level of service and amenity on both the Tweed Coast Road, the key distributor road servicing the Tweed Coast to the Pacific Highway, and Kings Forest Parkway.

It should be noted that as a result of preliminary workshops with the applicant's consultants, the shortcomings of the traffic report have been acknowledged and generally agreed, and further workshops are proposed to resolve the issues regarding traffic modelling and intersection design prior to finalisation of the PPR.

However for the purposes of this report, the intersection layout as submitted is opposed and should be redesigned to take into account the issues/comments outlined below (all references to tables, pages etc below are in reference Appendix T – Traffic Impact Assessment) ;

- The applicant's traffic analysis assumes 80% of traffic leaving Kings Forest Parkway on to Tweed Coast Road will turn left (north) is not substantiated. Council data indicates that current traffic AM is 70-73% northbound and in the PM is 43-34% northbound.
- The applicant has used a figure of 6.5 trips per residential dwelling to determine intersection performance. AUSTROADS requires 9 trips for a dwelling.
- The claimed reduction in precinct traffic generation in Table 4.2 (after recalculation above) whilst considered reasonable for the ultimate development, cannot be accepted for any calculations of intersection capacity until the planned retail and community facilities are constructed. Until that time all trips generated by the development will be to external attractors. It should be noted that schools and playing fields would attract external traffic.
- In accordance with above, all Signalised Intersection and Design Research Aid (SIDRA) analysis associated with Kings Forest Parkway are to be recalculated.
- Table 4.1 and 4.2 are inconsistent in that the number of dwellings specified for a number of precincts are different. This discrepancy needs to be addressed and tables recalculated as required.
- Page 7 of the report estimates existing traffic volumes on Tweed Coast Road to be 8,000 vehicles per day. Council's records indicate that traffic volumes on this road in 2009 were 9,187.
- Page 14 should include an additional figure showing existing traffic situation and Figure 4.1 and 4.2 should show Old Bogangar Road / Depot Rd on the diagrams for completeness.
- Heavy vehicles are not included in turns to and from the development which is not considered realistic. This may impact on SIDRA outputs.
- Intersection spacing: The report does not address having 3 intersections within 220 metres on a major distributor road being Tweed Coast Road. Such spacing makes traffic movements complex and in this case unworkable as a required left turn acceleration lane from KFP northbound conflicts with the proposed relocated Old Bogangar Road / Depot Road intersection. The Tweed Road Development Strategy specifies intersections on distributor roads should be 500 metres apart. AUSTROADS indicates a range of 350m to 500m. The consultant has responded as follows *The intersection layout design will be modified so that the Depot Rd intersection is aligned with the commercial site access (to form a four way junction). The separation between the KFP intersection and proposed commercial centre intersection is considered to be satisfactory, noting that the commercial centre access is a private access and not a public road intersection. The Austroads guidelines mentioned do not apply in such situations.* In response, Council officers do consider the Precinct 1 access/egress to be an intersection, given the traffic environment, and should be considered as such in road network design and assessment. Safe pedestrian access across Tweed Coast Road needs to be included in the design.
- Access to Precinct 1 must be considered as an intersection in accordance with traffic comments relating to Kings Forest Parkway - Tweed Coast Road intersection and proximity to other intersections. Refer to request for intersection redesign above.

- For the year 2019, 1680 allotments, Degree of Saturation 0.99 is not considered acceptable. DoS of 0.8 is the appropriate trigger for road upgrading. The applicant's consultant considers 0.9 a more appropriate trigger for upgrading, but undertakes to review in PPR.
- Heavy vehicle turning templates are required to be overlaid on the intersection design and the chicane (slow point) on Kings Forest Parkway, using the appropriate software including advice on which software was used.
- Given that 80% of the traffic exiting Kings Forest Parkway is turning left, merging on to a single northbound lane on the Tweed Coast Road, a left turn northbound acceleration/merge lane is required in accordance with AUSTRROADS standards, estimated to be approximately 195m to 230m length.
- A left and right turn lane is required on Kings Forest Parkway at the intersection to ensure left turning vehicles are not unnecessarily delayed e.g. in 2019 a vehicle turning right is delayed by 125 seconds. If two vehicles are queued to turn right all traffic will be forced to experience extensive delays.
- The southbound right turn lane on Tweed Coast Road extends over the intersection of the Old Bogangar Road / Depot Road intersection. This is considered unsatisfactory.
- The left turn from Tweed Coast Road to Kings Forest Parkway requires a deceleration lane.
- A 2m sealed road shoulder is required on Tweed Coast Road.
- Sub Appendix B within Appendix A needs an intersection layout input diagram so we know what the model is using. What is through speed, it appears 60km/h but it is a posted 80km/h road?
- The development requires extension of the existing acoustic fence on Old Bogangar Road, and Council does not accept the maintenance responsibility for this fence, being on public land, but facilitating private development. If it is to be handed over to Council, it would have to be subject to a suitable funding mechanism for ongoing maintenance, acceptable to Council.

Traffic and Access – Precinct 5

The applicant needs to have regard to the following comments:

- Consider an additional road connection between Road 11 and 22, including appropriate intersection treatment;
- Development Design Specification D1 - Road Design requires provision of a roundabout at 4-way intersections i.e. intersection of Roads 8-19. Provide confirmation via consultation with Solo Waste that cul-de-sacs (Road 8 and 29) are suitable for garbage vehicle access and manoeuvrability, in accordance with comments later in this report under the heading Waste Management.
- The Potential Bus Route Figure 7.1 only considers allotments within a 400m radius of the route. Actual pedestrian access routes need to be supplied and assessed. Consultants have indicated that it is not feasible to provide a bus route to Council's required cross section internal to Precinct 5, and therefore rely on the (as yet undemonstrated) assertion that 90% of lots will be within 400m walking distance to a bus stop, however this is doubted by Council officers, given limited direct access to Kings Forest Parkway.

- There are no nominated bus zones or shelters or laybys which may impact on road cross sections, infrastructure locations and may affect pedestrian walking distances (as above).
- Evidence of consultation with school bus operators is required to demonstrate that no internal access to Precinct 5 is required. If it is required then evidence that a school bus can navigate the Precinct 5 needs to be provided. Consultants have indicated that from past experience at Cobaki the bus company is not interested in providing advice at this stage. It is recommended that LEDA talk to the local service provider to request written evidence that they are satisfied with the proposed bus routes. Council requests a copy of such documentation when received.
- Kings Forest Parkway - the Kings Forest Parkway cross sections show a 7.5m wide carriageway, others show a 10.3m wide carriageway (inclusive of a breakdown lane). The cross sections are requested to include chainages to ensure the detail is clear and in accordance with the road and drainage layout plans. The cross sections are required to accommodate a bus. A 7.5m wide carriageway is not wide enough to accommodate a bus (9m is needed as per Council's standards). Please provide long sections for all roads proposed in Precinct 5 to ensure sag pits and overland flow is compatible and doesn't comprise any proposed residential allotments.
- Confirm that the acoustic fence layout as shown on the Plan of Development, with breaks at each pathway (contrary to noise assessment recommendations), provides suitable noise attenuation for the ultimate development, and that where fencing is located on a private property boundary, the maintenance of this fence will be vested in the private property owner.
- Footpaths - No concrete footpaths are provided on any of the road cross sections. Tweed Shire Council's standard road cross sections specify a minimum of a 1.2m wide concrete footpath on all local access streets, neighbourhood collector roads and arterial roads. Tweed Shire Council road standards for a distributor road such as Kings Forest Parkway require a 1.2m concrete footpath one side and 2.5m cycleway on the opposite side of the road to the footpath. As discussed with the applicant's consultant - Mortons Urban Solutions on 7/12/2011, can the cross sectional for all roads be amended to show a minimum of a 1.2m wide concrete footpath. The provision of no footpaths throughout the site forces pedestrians to walk on the grassed verge which is often boggy, due to the areas high rainfall events. The elderly, children and people with prams require a concrete footpath for safety reasons and for ease of mobility. Morton's have advised that they will amend the cross sections to show footpaths on access streets, neighbourhood collectors and arterial roads and further that they will review requirements to see if all access roads require a 1.2m footpath. They stated that amendments will be made in the PPR. Council's standards require that a 1.2m wide concrete footpath is provided on all streets (including access streets) for the amenity and safety of pedestrians.
- Cycleways - No layout detail of the proposed cycleways have been provided. Some of the cross sections for Kings Forest Parkway show a cycleway. Although it is unclear how far the cycleway extends to along Kings Forest Parkway. It is also preferable for a cycleway to be included on low volume neighbourhood collector roads especially near the park. As discussed with Mortons Urban Solutions on 7/12/2011 can the cycleway be shown on the roads and drainage plans for Precinct 5.

- Road Cross Sections - Road cross sections are to be provided for Roads 9, 10, 23 and 27 (Kings Forest Parkway) or please show chainages on the existing cross sections to indicate where the cross sectional detail applies. i.e. Road 9 has two different road cross sections, and the inclusion of chainages would identify where they apply on the layout plan.
- Horizontal Road Alignment - The road layout plans do not provide information on the horizontal road alignment of sharp road corners on the plan. It is assumed that the radius for the inner kerb is 10m on the majority of roads, if this is correct then this minimal radius will require road carriageway widening in accordance with horizontal road design standards. Please note the following horizontal road design requirements apply to sharp curves to allow for safe passing and occasional heavy vehicle, which may affect the road layout;
 - Access roads require a minimum curve radius of 10m on the carriageway centreline
 - Neighbourhood collector roads require a minimum curve radius of 15m on the carriageway centreline.

Carriageway widening is required to be added to the inside of the kerb line by using a larger radius for the inner kerb; these design standards include;

- radius of less than 20m – 1m
 - radius of 20m to 30m – 0.5m
 - Designs should be verified by the provision of appropriate vehicle swept paths at key locations, to the satisfaction of Council.
- The Plans of Development for Precinct 5 (Appendix H Plan of Development Detail 1, 2 and 3) should be modified as follows in order to clearly depict future vehicle access and servicing to each allotment:
 - Include Lot Numbers on the plans;
 - Show shared Garbage Bin Collection Points for all lots without street frontage (e.g. lot 203, 501, 502, 612, 701). Shared collection points should be concrete surfaced, with minimum dimensions 1m deep by 2m long per residence serviced;
 - Show the indicative location of bus stops / laybys on Kings Forest Parkway and all other bus routes, determined in accordance with Council's Subdivision Manual (DCP Section A5) and in consultation with bus service providers and;
 - Clarify roadways/pathways on the southern side of terrace lots 315-322 and the western side of terrace lots 458-467. Subdivision plans show these as roads, but the PoD indicates pathways.
 - Request deletion of driveways on the Road Network Plan Precinct 5 to Mews Lots 201-203 and 701-703 from the plans. The acceptability or otherwise of such non-standard accesses should be addressed through individual development applications for each of these Mews Developments.

Water and Sewer Infrastructure

In regards to water and sewer infrastructure the following DGR's are applicable

DGR 4.1 Address existing capacity and requirements of the development for sewerage, water, electricity, waste disposal, telecommunications and gas in consultation with relevant agencies. Identify and describe staging, if any, of infrastructure works.

DGR 7.1 Address and outline measures for Integrated Water Cycle Management (including stormwater) based on Water Sensitive Urban Design principles and which addresses impacts on the surrounding environment, drainage and water quality controls for the catchment.

Having regard to these DGR's the following comments are made:

The Sewer and Water Report – The strategy document is a part of a Part 3A Project application rather than a separate submission to Council for approval by the Manager Water. This may mean that any alteration to the strategy, either at Council's request or the developer's request will require a 75W amendment application. Previous large developments had submitted the strategy for approval independently of the individual subdivision applications allowing more flexibility if circumstances of change.

Alternatively, if the Minister's approval is framed in such a way as to not specifically endorse the Sewer and Water Report, but require Water Supply and Sewerage to be provided in accordance with a Strategy approved by Council, this issue could be avoided.

Existing Sewer System – Description is incorrect - The description of the existing system is out of date in that the Salt development constructed a 375mm Sewer Rising Main (SRM) that inter connects with the 225mm SRM at Cudgen Road and at the SPS4008 pump station. The flow from Casuarina no longer flows through the 150 SRM from SPS4008 but through the 375 SRM from SPS4030 (Salt). This section does essentially flow under gravity from the standpipe near Cudgen Road unless there is a long run time in either the SPS4025 (Casuarina) or SPS4030 pump stations, as may occur during wet weather events.

Another recent change to the system has been for SPS4008 to now pump through the 375 SRM as the 150 SRM was experiencing frequent failures. This change has occurred since the date of the Sewer and Water Report.

It should be noted that Appendix D incorrectly refers to the 225 SRM as being 250mm diameter.

Sewer flow estimates: Flow Estimates appear to be excessive.

- a. Why is there a population of 685ep for the golf course area? The whole of Precinct 14 is actual golf course and the club house which has been estimated at 125ep separately. Approximately 29L/s reduction.
- b. Where several different categories make up the area draining to a pump station by gravity, the flow should be calculated on the aggregated area as the total area affects the size factor in the Inflow and Infiltration Flow (IIF) calculation and the aggregate equivalent population affects the peaking factor in the Peak Dry Water Flow (PDWF) calculation. Approximately 22L/s reduction (5%).
- c. Adoption of Average Recurrence Interval (ARI) of 10 years results in significantly larger flows than have been traditionally calculated using the Public Works Department (PWD) method. With past developments, Council have accepted lower ARIs but have not yet determined a particular standard to be adopted. At this stage Council would like to adopt ARI of 5 years but in many areas it is suspected that the downstream infrastructure in some cases will struggle with a 2 year ARI. In this particular case, there is to be new infrastructure developed over time to accommodate the development. Adopting the higher ARI will mean larger infrastructure than had been anticipated including pump sizes, rising main sizes and potentially inlet works at the treatment plant.

- d. The population derived by summing the Residential equivalent person figures is about 14410 whilst the approved Concept Plan estimated a population of 10,000 persons. Obviously, the anticipated population density is considerably less than the design figure of 3.2ep/ET. It is probable that the overall sewer strategy should be estimated on the basis of total population plus ep for commercial, school and golf club areas.
- e. The portion wet parameter used in the table on 123-01-SK530 is 0.1 whereas Table 3.1 suggests 0.15

Sewer Strategy

- a. The basic strategy for the internal servicing of the Kings Forest Development appears sound although nominated trunk conveyancing sizes may be larger than necessary given the difference in population and calculation methods and parameters discussed previously.
- b. The description of the Regional Pump Station (01 in Morton's Report, SPS4023 in previously allocated numbers in Tweed Shire Council strategy documents) doesn't fully pick up Council's Strategy for this pump station.

SPS4023 is to be a regional pump station with the existing 225 SRM being diverted to empty into it and the first stage of the development is to pump through the 225 SRM from 4023 to Kingscliff Waste Water Treatment Plan (WWTP). The first pumps should be sized to suit the existing main. When capacity reaches that, a 375SRM to the Kingscliff WWTP manifold pit will be constructed with flow diverted into it, then later into the two in parallel followed by a third SRM. Appropriate pump impellor changes/upgrades are to be determined at each step. Some of these works will be constructed from s64 contributions.

The staging of the external sewer works should be outlined in the Strategy regardless of who is responsible for the construction.

Water Strategy: Detailed network analysis required for subdivision works - The Strategy included in the document is for the trunk and distribution portion of the network. This does not preclude the need for a full network analysis of the reticulation for each subdivision. If not provided at this stage, it will be required prior to the Construction Certificate stage for each subdivision/precinct.

Sewer Reticulation: Refinement of design, omissions, etc. The sewer reticulation layout is generally satisfactory but sizing has not been shown. There appears to be some locations where the lots are not serviced (e.g. Lots 458-467, Lots 633,634 & 635, Lot 826). Having the reticulation layout plan divided in multiple sheets make it difficult to follow. There are no sizes specified for the sewers in the layout.

As long sections have not been provided, it can only be assumed that grading constraints have been met. This will be required in design drawings for Construction Certificate stage.

Sewers to Mews dwellings are to be arranged to provide separate connections for future subdivision of Mews Lots.

Sewer Reticulation Plan for Kings Forest Parkway shows SRM and 450 water main apparently in close proximity. Separation between SRMs and water mains in accordance with Water Services Association (WSA) standards is required.

Council has not yet adopted curved sewers.

Existing 225 SRM doesn't appear to be accurately located on the drawings.

In summary, the drawings submitted are considered indicative and will be subject to change before a Construction Certificate can be issued.

Sewer Pump Stations (SPS): Design issues - SPS are to be in accordance with the Design Specification D12 and Tweed Shire Council standard drawings. Points to note are:

- a. Control Buildings required for pumps rated at over 22kW each (i.e. total power is of a size requiring CT metering. Also Control buildings are required for variable speed drive installations. SD 272/273.
- b. Layout based on the standard drawing with either a turning head or in some cases an in and out driveway. Service vehicles are required to enter and leave the site forwards. Proposed lot 177 appears too narrow to accommodate turning head.
- c. The proponents' engineer is required to design each pump station and control building using Tweed Shire Council SD 220 as guide for smaller pump stations and design in consultation with Council's Water Unit for larger SPS.
- d. A separate lot is required for the Regional SPS. This site will require a control building, standby generator and probably air phase odour control.

Water Reticulation: Design issue

- a. The water reticulation layout has not provided size information which will need to be substantiated by a full network analysis.
- b. Water mains as shown into the Mews Dwelling lots are not acceptable. All services to these should be from the street boundary with easements for internal water pipes if necessary to service each mews. Council will not accept responsibility for water mains beyond the street frontage.
- c. On the notes page Water Note 4 nominates DICL K9 but DICL should now be either PN20 or PN35.
- d. Water Note 8 does not make sense 00kPa?
- e. Why 450mm water main in Tweed Coast Road from Kings Forest Parkway to Precinct 1? It would not appear to be necessary for the Precinct 1 development.

Subdivision Plan: Lots for Sewer Pump Stations - The Subdivision Plan does not show a separate lot for the Regional Sewer Pump Station (01 on DA plans – SPS4023 in Tweed Shire Council numbering system). Council requirement is for a separate lot and this pump station is necessary at the first stage of development – hence a separate lot should be provided.

As mentioned above, the Lot 177 on the subdivision plan is inadequate for the size of pump station and turning head required. Council requires an easement 5m wide over its existing 600mm diameter water main through existing lots Lot 76 DP755701 & Lot 272 DP755201

Existing Council 600mm diameter trunk water main: Easement and Earthworks issues - Council's 600mm diameter trunk water main within Lot 77 DP755701 & Lot 272 DP755201 is not shown in full across the project site. Council requires an easement 5m wide over the existing 600mm diameter water main. The bulk earthworks drawings indicate that there may be some cut and some fill over portions of this trunk water main. Detailed drawings are required showing the extent of earthworks in the vicinity of the trunk main and any alterations to the main that may be necessary. In addition, a management plan for works in proximity to the trunk main is required.

Integrated Water Management Plan - Demand management strategy not thoroughly implemented - The IWCM report mentions various demand management strategies but does not acknowledge Council's adopted Demand Management Strategy. The IWCM references a "new treatment plant" being built by Council that would enable consideration of dual reticulation. Council is not providing any such treatment plant in the foreseeable future. The IWCM also mentions rainwater tanks for non-potable use and the use of WELS rated water efficient fixtures in dwellings.

The Precinct 5 Plan of Development Detail 1, 2 & 3 (Appendix H) refers to the Kings Forest Development Code for minimum rainwater tanks sizes. The Development Code however is silent on mandating rainwater tanks for complying development but does require it in Section 3.1.8. (Note: Subdivisions 31 and 32 provide for the installation of rainwater tanks as exempt development.) despite having Appendix C "Council's Rainwater Harvesting Requirements." The Design Guidelines (Appendix P) say "Ensure the house design allows the majority of the roof water to be directed to the rainwater tank/s" as well as providing some conditions about screening, colour and use of underground tanks. There is nothing that actually mandates installation of rainwater tanks for complying development or more than 51% of the roof area to be drained to a tank. Council has adopted a Demand Management Strategy that identified a minimum size rain water tank connected to a minimum roof area as reflected in the table in the Development Code, Appendix C.

Open Space & Recreation

In regards to open space and recreation the following DGR's are applicable:

DGR 2.5 Outline the long-term management and maintenance of any areas of open space or conservation including ownership and control, management and maintenance funding, public access, revegetation and rehabilitation works and bushfire management

DGR 2.7 Provide details, within an Open Space Network Plan, of active and passive open space areas in accordance with Council's minimum requirements.

DGR 2.8 Provide details of landscaping in accordance with Council's open space landscape guidelines and standards.

Note: The ecological aspects of these are addressed later in this report

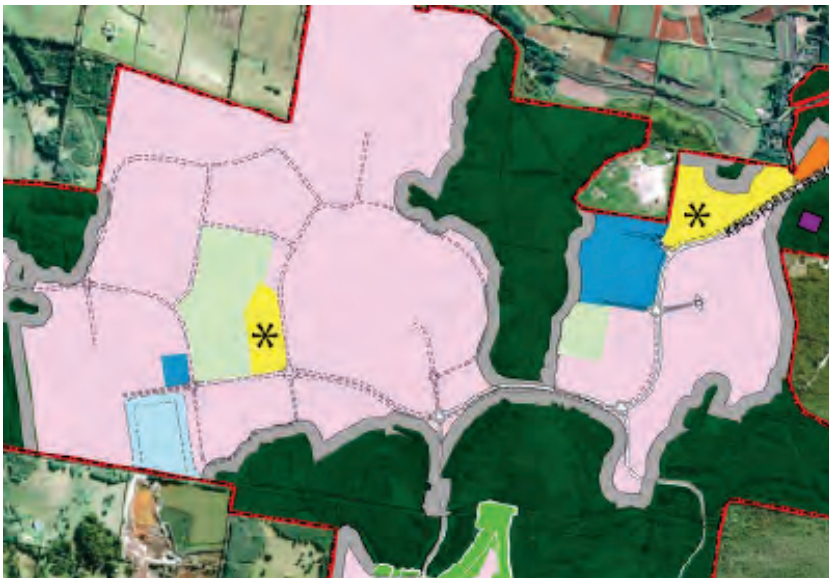
Open Space & Recreation -Concept Plan Amendment – Structured Open Space

One of the proposed amendments to the Concept Plan includes the relocation and splitting of the structured open space which will ultimately be dedicated to Council.

The approved concept plan showed structured open space (pale green on the below map) in the central part of the site adjoining environmental protection land as shown below:



The proposed concept plan shows structured open space split into two locations (pale green on the below map). One next to the main town centre and the second near the proposed lake in the western part of the site as shown below:



This change in layout is not supported for the following reasons;

- The proposed eastern field does not meet the criteria established by the Tweed Development Control Plan Section A5 - Subdivision Manual in terms of size or associated amenities.
- Separated fields are inefficient in terms of maintenance, and the need for additional facilities such as carparking, clubhouse and amenities.

- Separate areas do not allow multiple adjoining fields to cater for one sport, or for several sports at the one location.
- Separate fields are less flexible in terms of the sports field footprints that can be overlaid on them.
- Splitting the Kings Forest sports fields into two separate locations means that, with the adjacent Council Depot Road fields, there would be 3 separate sports field complexes within around 1500m. This is not a desirable outcome.

However, with Council's Depot Road sports fields still in the early stage of development, Council would consider the proposed separate field if it adjoined the Depot Road site and could be integrated into the field layout.

Subject to the outcome of Council's objection to the proposed modification of open space playing fields in the Concept Plan, there may be potential for a cooperative arrangement with the applicant to expand the Depot Road sports fields. This may be advantageous to Council as it brings the likely staging of provision of structured open space forward to service the eastern precincts of Kings Forest, including Precinct 5 which as yet has no provision for structured open space.

As an alternative, options could be explored with the applicant to fund embellishment of part of the Depot Road sports fields. Council still requires the area of structured open space generated by the Kings Forest development to be dedicated, but is prepared to consider an arrangement where embellishment of Council's Depot Road sports fields would offset future embellishment of part of the Kings Forest structured open space. While recent planning has largely involved soccer, there remains potential for other sports to be located on the site.

Were the western field likely to be supported by the Department of Planning and Infrastructure, Council would be requesting additional information on the exact size and configuration of the proposed new western location for the separated sports fields. Advice on constraints at the boundaries of the new location (including erection of lighting) is also sought as it is important that the site can be fully utilised for sports fields.

Open Space & Recreation - Access to Depot Road Sports Fields

Council requires ongoing access to the adjoining Depot Road sports fields (Lot 1 in DP397082) now under development. This can be achieved by the design and construction of Kings Forest Parkway allowing for continued vehicular access to the sports fields via Depot Road at Secret Lane, until such time as an alternate stub road internal to Kings Forest is provided. This stub road is not currently part of the Stage 1 plans but could be readily included if the Secret Lane connection is not practical.

Council seeks redesign of the stub road extending north east off Kings Forest Parkway between the Depot Road sports fields site and the Community Facilities/Education site. Design, construction and vegetation restrictions for Depot Road sports fields means vehicle access needs to be across the southern boundary, not the east.

Power, water and sewer services are required to service the Depot Road sports fields. Where practical these services should be integrated with the services being provided for the Kings Forest development.

The developer states that:

"Depot Rd to be closed when KF Parkway handed to Council, as agreed in writing with Patrick Knight".

Leda representatives at the Council staff workshop of 8 December 2011 verbally indicated that access to the Depot Road sports fields would continue, but no detail has been provided to date. Council will oppose any closure of Depot Road unless adequate road access to the sportsfields is maintained.

Open Space and Recreation – Precinct 5

The proposed yield for Precinct 5 is 442 dwellings. As the application does not appear to nominate a population yield for the various dwelling types, assume 2.6 persons per dwelling (as all are at least 3 bedroom) = 1150 persons (the applicant may wish to refine this population figure in the Preferred Project Report).

- For 1150 persons, required local open space is:
 - Structured open space (sports fields) @ 1.7ha/1000persons = 1.95ha
 - Casual open space (parks) @ 1.13ha/1000 persons = 1.30ha
- The open space proposed in Precinct 5 is:
 - Structured open space: Nil
 - Casual open space: One neighbourhood park of 1.668ha which exceeds the 1.30ha required.

Council seeks an agreement clarifying when structured open space (sports fields) that meets Council's requirements will be dedicated to service Precinct 5.

There is also a need for a meaningful parks and open space plan showing how the Precinct 5 Park will relate (in terms of hierarchy and available facilities) to other parks to be dedicated in the immediate area in future stages.

This is needed to satisfy DGR 2.7 as detailed above.

Other matters raised as a consequence of Precinct 5 include:

- Further consideration is sought regarding plant species selection for landscaping the public open space. Matters to consider include:
 - Use of large street trees such as Kauri and Hoop Pines must be restricted to wide streetscapes designed to accommodate such trees considering long term maintenance needs.
 - There needs to be a review of plant species for landscaping public areas, to ensure species used are appropriate from both landscape design and biodiversity perspectives.
- The median strip, roundabout and kerbside plantings need a safety buffer for maintenance operations.
- Council does not support grass in median strips or roundabouts due to the safety and cost issues for the frequent mowing required. Hard surfaces or plantings with safety buffers are supported.
- A boardwalk is indicated on both sides of Kings Forest Parkway (Statement of Landscape Intent Drawing SK01-03A). The reason for this boardwalk is sought.
- Changes to the concept landscaping plan will be required at detailed design stage. An example is street tree locations which will change due to street light and infrastructure impacts.

- The cycleway network does not link with the only formal park currently shown in the Precinct 5 subdivision. It is desirable that cycleway and pedestrian planning considers links with other parks in the area.

Open Space and Recreation – Precinct 1

There is no residential land in Precinct 1, so no open space is proposed or required in Precinct 1.

Open Space and Recreation – General

The proposed development raised several issues for Council to consider:

- There are widened road reserves with turf and landscaping indicated at a number of locations, such as adjacent to the Precinct 5 roundabout, the Kings Forest Parkway entry area and the Koala crossing. The issue of maintenance costs for additional public land (including infrastructure or landscaped areas) dedicated to achieve a 'better urban design' Council will oppose any closure of Depot Road unless adequate road access to the sportsfields is maintained. The buffers to Cudgen Creek in Precinct 1, and species selection within the development need to be considered. As this is to be private land its ongoing management needs to be discussed (the suitability of the buffers and associated management plans generally are further discussed later in this report).

Acid Sulfate Soil (ASS) and Groundwater Assessment

It is noted the Office of Water is the referral authority for the assessment of ASS and Groundwater for the Department of Planning. Sec 7.12 of the EAR states that an ASS Management Plan will be prepared and approved by the Department of Planning prior to the approval of the construction certificate applications and as per the requirement of the Approved Concept Plan MP06_0318 Sec C10 and 8.12 of the Statement of Commitments.

Sec 7.15 of the EAR states that bulk earthworks and residential development of Precinct 5 has the potential to have an adverse impact upon the existing groundwater regimes.

A review of the Groundwater Management Plan stipulates a number of resource demands on Tweed Shire Council officers during the construction phase:

- *Background water quality monitoring: Following the completion of background monitoring, a water quality report, including results and interpretation would be prepared and submitted to Tweed Shire Council for review.*
- *Groundwater Monitoring: Water quality objectives for the bulk earthworks phase of works would be devised using DECCW guidelines for groundwater monitoring. These proposed objectives would be submitted to Tweed Shire Council for review and approval prior to implementation.*

RECOMMENDED CONDITION: Any Management Plan or Variation to such Management Plan submitted to Tweed Shire Council for approval/review shall be subject a fee as stipulated within Tweed Shire Council's current adopted Fees and Charges Policy.

***FURTHER INFORMATION REQUIRED:** Groundwater Management Plan - The on-maintenance phase period stipulated for groundwater monitoring / management of potential impacts is 6 months and therefore does not take into account a full 12 month seasonal influences. Further, the reporting to Tweed Shire Council is annually. No commitment/corrective action required is provided should monitoring fail to meet criteria at the end of the on-maintenance period. Further information is required in this regard.*

Land Contamination

In regards to land contamination the following DGR is applicable:

DGR 6.1 Identify any contamination on site and appropriate mitigation measures in accordance with the provisions of SEPP 55 - Remediation of Land.

DGR 6.2 Identify the location and scale of any ASS impacts and provide a summary of the management likely to be required.

Also the Concept Plan Approval MP06_0318 Schedule 3 Statement of Commitments included at 5.4 Contamination, *Project 28 will undertake Stage 2 contamination investigations to accompany future project applications for areas of known potential contamination, including lands previously used for sugar cane and banana plantations and as a cattle dip site. Where required, Remediation Action Plan(s) will be prepared in accordance with NSW State government requirements.*

A Contamination Assessment and Summary Report, Kings Forest Stage 1 prepared by Gilbert & Sutherland dated April 2011 has been submitted.

Section 7.10 of the EAR (MP08_0194) highlighted the following exceedances and issues:

- The soil investigation of the southern banana plantation revealed exceedances for arsenic, above the NEPM Environmental Investigation Levels, in BH37, BH39 and BH42. Advising the levels were only marginally above background and therefore no remediation required.
- The soil investigation of the fuel storage site revealed exceedances for Total Petroleum Hydrocarbons, above NSW Health-based Investigation Levels, in BH03 (0.15m & 0.2-0.3m) and BH04 (0.15m & 0.2-0.3). TPH C₁₀-C₃₆ concentrations ranged from 1,010mg/kg to 16,700mg/kg in samples from directly below the AST (Appendix V). Advising the soil concentrations can be readily be remediated and therefore did not constrain the development. The statement of management of the issue was to excavate the contaminated soils and validate the site.
- The capped landfill was assessed for the potential to contaminate groundwater. It was concluded that given the groundwater flows towards the western side of the site the groundwater associated with the landfill would have no significant impact upon the proposal as the risk of groundwater extraction and possible leachate would be manageable due to the nature of the development to the west, being community infrastructure.
- The statement of management of the cattle tick dip site was to further delineate the contaminated area prior to remediation and remediate in accordance with an updated RAP if required.

The Report stated field investigations were undertaken across areas that a prior report (March 2008 Preliminary Contamination Report as part submission to MP08_0318) had established may have been subject to potentially contaminating activities. Shallow soil sampling was undertaken to a maximum depth of 0.3m BGL with samples extracted from depths ranging between 0-0.15m and 0.2-0.3m.

The 2002 EPA Guidelines for Service Station Sites: Assessment and Remediation requires minimum soil sampling for the investigation of contamination from aboveground fuel storage tank/drum at depth intervals of 0-0.2m and 0.2-0.5m (Table 1).

The *1995 EPA Guidelines for Contaminated Sites: Sampling Design Guidelines* recommends that to establish the vertical extent of contamination, samples should be collected from two or more different depths at each sampling location, at surface (0-0.15m) and at depth or at a number of different depths. Depth samples being at each identifiable soil horizon or if not identifiable then at depths that determine the extent of contamination penetration or the relevant site future use. The Report does not discuss/reason the depth sampling methodology.

The *1999 NEPM Schedule B (2) Guideline on Data Collection, Sample Design and Reporting* requires that to adequately assess health and ecological risk, the soil strata to which people and other receptors could feasibly be exposed should be adequately sampled.

The Report discusses prior investigations of the Duranbah Dip and the RAP prepared by Philip Bell and Partners PL dated Dec 2000. The Remediation Action Plan (RAP) summarises the required works including on-site containment. The RAP does not include the acceptance of onsite containment of contaminated soils within public lands to be dedicated/controlled/owned by Tweed Shire Council in the future. The RAP does not clearly delineate the contamination of soils. Section 7.10 of the EAR stipulates further delineation is required prior to remediation.

FURTHER INFORMATION REQUIRED: DGR 6.1 has not been satisfied as appropriate mitigation measures have not been provided. The Statement of Commitment 5.4 has not been met. The cattle tick dip site contamination has not been clearly identified and an adequate RAP has not been prepared. No evidence has been submitted that demonstrates Tweed Shire Council will accept contaminated soil within public lands. Further to this the sequencing of remediation actions have not been established in consideration of the bulk earthworks proposed for the site. The submitted RAP was prepared in 2000, it would need to incorporate the current approved concept plan of 2010, MP06_0318 and the current application MP08_0194.

The NSW Site Auditor Scheme was established to ensure that public health and the environment are protected through proper management of contaminated land, particularly during changes in land use. The Scheme facilitates an independent review of the assessment and remediation process of contaminated land consultants. As the site history has revealed the subject land has been exposed to a number of different sources of potential and actual contamination and is now subject to a change of use to the most sensitive of uses being residential and associated community facilities such and childcare/school activities it is considered prudent to require an independent review. As such the following condition is required:

RECOMMENDED CONDITION: A site audit statement prepared by an accredited NSW Site Auditor appointed under the provisions of the Contaminated Land Management Act shall be provided to Tweed Shire Council certifying the suitability of the subject land for the intended purposes as per Part A of the Statement following completion of bulk earthworks and prior to the commencement of any structures on-site.

Drainage Maintenance Management Plan

The main east-west drain has been identified as requiring ongoing maintenance to mitigate flood impacts (determined maintenance is once every ten years). Drain studies reveal the drain conveys predominantly surface waters with some groundwaters. The zone of drawdown extends approximately 20m from the edge of the drain. Drain maintenance will be limited to excess vegetation, snag and deposited sediment removal. The MP is attached at Appendix II.

FURTHER INFORMATION REQUIRED: In the applicants EAR Appendices' Appendix II Drainage Management Maintenance Plan Section 4.4 Surface Water Quality Management, needs to be amended to include Tweed Shire Council within the Reporting of Monitoring Results where results exceed accepted parameters.

Waste Management

In regards to waste management the following DGR is applicable:

DGR 4.1 Address existing capacity and requirements of the development for sewerage, water, electricity, waste disposal, telecommunications and gas in consultation with relevant agencies. Identify and describe staging, if any, of infrastructure works.

The Kings Forest Development Code is largely silent on waste management besides some demolition waste management techniques.

It is recommended that any future Preferred Project Report provide a Waste Management Plan to outline management measures relating to the demolition, construction and operational/occupational phases of the proposed development, both for the commercial precinct (Precinct 1) and the residential precinct (Precinct 5)

The Waste Management Plan should at a minimum include:

Demolition

- The volume and type of waste generated during demolition
- The methods of storage of material on site. A site plan should be included.
- How recyclable materials will be separated, managed, and where the materials will be sent for recycling
- The location and methods of disposal of all residual waste
- The licenced transporter of the waste

Construction

- The type of waste generated during construction
- The method and location of waste storage on site
- How any recyclable materials will be managed
- The location of the disposal facility for residual waste

Site Occupation

- Details of waste storage containers to be used by the development (ie mobile garbage bins or bulk bins, how many, frequency of collection etc.)
- Location, size, and design of waste storage areas, reference to Councils Code for Storage and Disposal of Garbage and Other Solid Wastes
- Nominate collection point for servicing

- Details of access for contractor where necessary. A development incorporating residential accommodation requires a signed letter from Council's Waste Contractor Solo Resource Recovery providing commitment and ability to service the proposed development. A development incorporating only commercial activities must provide a similar letter from the applicants desired Waste Contractor.

Building Code of Australia

It is noted that the Kings Forest Development Code references "AS3959 -1999 Construction of Buildings in Bush-Fire Prone Area". This standard has been amended and superseded by the 2009 version "AS3959 -2009 Construction of Buildings in Bush-Fire Prone Area".

The NSW Department of Planning and Leda should consider this in any future review of the Kings Forest Development Code.

Affordable Housing

The application has been accompanied with an Affordable Housing Study. It concludes by stating that Kings Forest has two strategies to satisfy the housing affordability issue:

1. Providing a mix of housing types and sizes at market price for households earning the higher end of the moderate to high incomes as of 2012 / 2013(i.e. households earning \$57,750 per annum and above);
2. Providing subsidised housing for rent for low and moderate incomes (i.e. below \$57,750).

In addition the study identifies two potential site locations for affordable rental housing. One in Precinct 5 opposite the town centre and the other in Precinct 10 west of the neighbourhood centre.

The implementation of Strategy 2 and Leda's commitment to it is not clearly defined. Councils interpretation of the strategy is that Leda will use its best endeavours to apply under the Federal Government National Rental Affordable Housing Scheme (NRAS) or similar scheme applicable at the time and that this strategy be embodied in the Statement of Commitments for a part3a application or a VPA for a part 4 application.

Given the short timeframe for assessment of this project it is recommended that the NSW Department of Planning and Infrastructure thoroughly review the affordable housing strategy specifically having regard to implications for Precinct 5. Council encourages a greater commitment to an affordable rental housing scheme within the project. Should affordable rental housing proceed within Precinct 5 details of this (by way of a potential voluntary planning agreement – as discussed in the report) should be finalised prior to approval.

Precinct 1 – Rural Retail Development - Suitability

The applicant is requesting that the NSW Department of Planning and Infrastructure approve the 2,126m² of floor space for "rural retail development" within two separate buildings and access, parking and landscaping arrangements within Precinct 1 but acknowledges that fit out of the two buildings, use and hours of operation and signage will be the subject of future development applications submitted to Tweed Shire Council and determined under Part 4 of the EP&A Act 1979.

Council objects to this approach to developing Precinct 1 on the following grounds;

- The objectives and function of Precinct 1 have not been established (Section 4.3 of the Kings Forest Development Code generally outlines objectives of all the Employment Land but this section does not reference rural retail development);

- There is no clear definition of rural retail development or what this may or may not include;
- Car parking cannot be calculated without knowing the intended future land use and rural retail development is not a current known land use;
- The submitted plans do not adequately show the true impact (extent of hard stand area to the rear) on the adjoining buffer;
- The length of external walls is excessive and results in two large commercial buildings within a presently undeveloped environment surrounded by sensitive environmental areas;
- The Plans show an air conditioning deck and screening on the roof which appears to be highly visible and large. This element should be redesigned.
- The footprint as shown raises ecological impacts that must be considered in more detail (see ecological comments later in this report);
- The application as submitted shows buildings setback into the site with extensive hardstand areas at the front and rear. The application has not demonstrated how this fits into the green character of Tweed Coast Road;
- The intersection between Precinct 1 and Tweed Coast Road needs to be reviewed having regard to the traffic comments in this report.

Fencing/Signage at the Entrance to Kings Forest - Visual Impacts

As only two of the ultimate four lanes will be constructed initially along Kings Forest Parkway the application shows fencing and entry signage for the remainder of the road reserve facing Tweed Coast Road.

This elevation will be the gateway to Kings Forest and will be visually prominent for traffic travelling along Tweed Coast Road. The visual analysis of this (Appendix K – Statement of Landscaping Intent) is not considered adequate. It shows a plain fence with no articulation and limited vegetation screens. An amended PPR should re-address this aspect of the development.

In addition the location of the fence is unclear. Appendix S, Figure 6 (Page 12) shows the entry of Old Bogangar Road from Tweed Coast Road being relocated south but Sketch 2 (Page 11) shows the proposed acoustic fence as per the existing road layout.

Sketch 2 also shows the acoustic fence wrapping around Lot 1 in DP 217163 to the southern boundary across Council's road reserve.

Leda and Tweed Shire Council should discuss the ultimate traffic movement in this area having regard to the acoustic fence and the Department of Planning should be encouraged to specifically discuss this element with residents in the location.

Acoustic Fencing along Kings Forest Parkway – Visual Impacts

The acoustic report requires Kings Forest Parkway to have acoustic fencing to protect the future amenity of residents within Precinct 5 and future precincts abutting the major roads. The design of this acoustic fence is extremely important and must form part of the urban design framework for the site rather than be an afterthought of design.

The fence needs to have a good rhythm, be of materials that complement the streetscape, and be significantly screened with landscaping for its entire length and a depth of at least 1.5 - 2m to enable the landscaping to have an element of depth (low, medium and high level plants). Where there are breaks in the acoustic fence for pedestrian access the landscaping will need to be splayed and well lit to comply with safety by design provisions.

It is also considered important that dwellings situated adjacent to this acoustic fence be of a two storey construction and present well to Kings Forest Parkway. The elevations fronting Kings Forest Parkway should not appear as rear of the dwellings. Below is a Google Street View from Varsity Lakes demonstrating this (note the dwellings on the right are home offices / so acoustic treatment wasn't required as the front part of the building was business or office. The buildings on the left were warehouse apartment with significant landscaping in front of the acoustic fence and buildings having a two storey form).



Plan of Development Precinct 5 – Details on Plans

The Plan of Development Drawings show “Development Control” detail which appears to be a summary of the Kings Forest Development Code. This detail should be removed as it is not a complete duplication of the provisions of the Code and could cause confusion for future assessment purposes.

In addition the submitted plans of development do not show sufficient detail to demonstrate compliance with the Kings Forest Development Code specifically table 5.4.1, and the Plan of Development requirements at 5.6 (1) (a-r). For example (this is not an exhaustive list) the plans of development do not have:

- lot sizes or dimensions cross referenced;
- setbacks for buildings and structure including garages;
- the location of private open space for each lot; and
- the lots on which three storey development is permissible;

Plan of Development Precinct 5 – Minimum Lot Dimensions

The Kings Forest Code requires certain types of developments to meet certain allotments sizes/frontages (Table 5.4.1). It appears that the following allotments do not provide the minimum front dimensions as specified in the Kings Forest Development Code.

- Zero Lot Properties Lot 615 requires 10m front access, provided only 7.73m
- Terrace Lot Property Lots 171, 172, 167, 168, 354, 355, 533, 534, 634, 635 requires 7.5m front access, provided only 7m

Plan of Development Precinct 5 – Building Height Limits

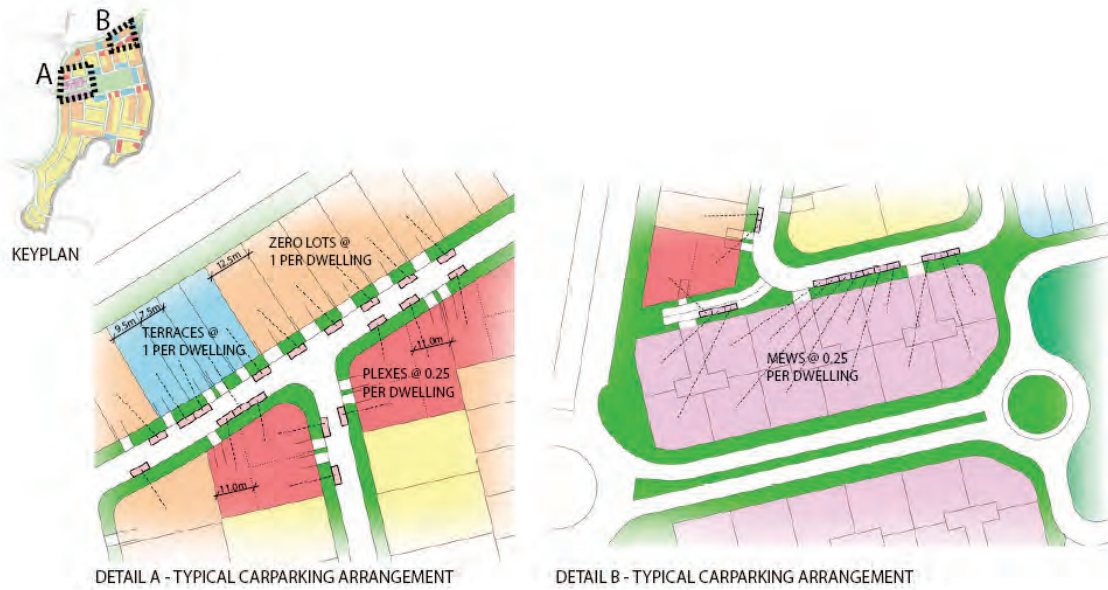
According to Part 3.1.4 of the Development Code, all development types are to generally be a maximum of two storeys in heights. However, Part 3.1.4 gives a number of provisions (subclause (3a)-(3e)) which permit a third storey if the certain criterion are met. A brief analysis suggests that through the virtue of subclauses (3)(a), (3)(b) and (3)(e), approximately 25% of dwellings within Precinct 5 can be three storeys high. In addition, subclause (3)(d) states that: '*A third storey may also be permitted where it can be demonstrated that the development is not likely to impact adversely on the existing or future amenity of any adjoining land on which residential development is permitted, having regard to overshadowing, visual impact and any unreasonable impact on privacy*'. This clause seems to be very generous and provides a 'gate' for developing three-storeys dwellings across the entire Precinct 5. Discussion should be had as to whether this is the intent of the Code and the intended character for Precinct 5.

Plan of Development Precinct 5 – On Street Parking

Section 5.4 of the Kings Forest Development Code (General subdivision controls of the development code) specifies that an on-street parking plan is required to be lodged with the first application for subdivision.

“An on street parking plan is required with the first development application for subdivision to demonstrate the availability of on street car parking for each nominated lot type at the rates specified in Table 5.4.1 (Minimum area and dimension controls for new lots) of the Kings Forest Development Code. The requirement and acceptance of designated on street car parking may be varied by a DRP Pre Approval Certificate.”

The application has only been accompanied with indicative on street parking plans as duplicated below:



NTS

KINGS FOREST
STAGE 1 PROJECT APPLICATION
TYPICAL ON STREET PARKING PLAN PRECINCT 5



These indicative plans are not considered adequate to satisfy the provisions of the Kings Forest Development Code.

The Kings Forest Development Code specifies in table 5.4.1 (Minimum area and dimension controls for new lots) that each 'Terrace' dwelling allotment is to provide 1 (one) on street car park. The minimum property frontage for terrace dwelling lots is specified as 7.5m in the code. A property frontage width of 7.5m does not provide enough space for an on street car park with the inclusion of a 3m wide driveway at the frontage. A number of terrace dwelling lots are located along road no.11, which are unable to conform with the codes requirements.

It is for this reason that a complete on street parking plan for Precinct 5 is needed. For the terrace dwellings alone the plan would need to show 59 on street parking spaces within close proximity to the terrace dwellings. For the entire Precinct 5 it is anticipated that 396 on street parking spaces need to be accommodated. These parking spaces are extremely important as many dwelling types do not have the traditional 6m front setback provisions which would allow visitor parking within driveways.

Plan of Development Precinct 5 – Terrace Dwellings

There are 12 terrace dwellings located adjacent to Kings Forest Parkway. No visual breaks are provided between them and the adjoining zero-lot dwellings. Such visual breaks seem to be necessary as they provide 'breathing space' which contribute to visual amenity of the neighbourhood, for the reason that zero-lot housing and terrace dwellings differ in terms of facade character.

In addition the Code states that lots nominated for terrace dwellings must have a secondary road frontage to a lane (section 5.4 (10) of the Kings Forest Development Code). Whilst the terrace dwellings along Kings Forest Parkway have access to another road, their frontage to Kings Forest Parkway precludes a true rear lane access scenario. The terrace dwellings will therefore need to have access off the other road and this could have a negative effect on the streetscape in this location. This matter needs to be discussed to determine whether terrace dwellings along Kings Forest Parkway are appropriate

Stage 1 Project Application Design Guidelines

The Kings Forest Development Code states (Section 5.7) that Design Guidelines must form part of a Plan of Development for subdivision and are intended to complement the controls in the Code.

A review of the submitted Design Guidelines indicates that the controls are very generic and do not establish a specific character for Precinct 5. The guidelines could be adapted to any subdivision in Tweed Shire which does not seem to be the intent within the Code as a revised Design Guideline is required for every development application for subdivision. The Design Guidelines should be reviewed and make specific reference to allotments within Precinct 5. It should identify where the view line corridors are and what special features are exhibited within Precinct 5 that should be integral to design (for example the park).

Kings Forest Development Code Road Cross Sections

The Kings Forest Development Code approved 12 December 2010 has differing road cross sections (Figure 5.4.2 Street Network Sections) as detailed in the Kings Forest Stage 1 Project Application Concept Plan (Road Hierarchy page 5).

This difference needs to be acknowledged and the two need to be aligned. If the Stage 1 design is preferred this may necessitate an amendment to the Kings Forest Development Code to ensure consistency and transparency into the future.

Kings Forest Development Code – Updates

The amendments to the concept plan will necessitate an update to the Kings Forest Development Code to ensure it reflects the most recent plans at all times. For example Figure 1.2.1 Kings Forest Concept Plan and Figure 5.1.1 Kings Forest Precinct Areas will need updating.

Design Review Panel

The approved Kings Forest Development Code at Section 5.8 states that *"the developer lodging the first Development Application shall establish and implement a Design Review Panel (the DRP). The DRP will review all proposals requiring development consent or a Complying Development Certificate; and will use the Design Guidelines and relevant Plan of Development in making that decision."* It does not appear that this Panel has been established for Kings Forest and furthermore the plan of development has not been lodged with the authorisation of the DRP. Any DRP should be made aware of the non-compliances that Council has identified with the Kings Forest Development Code and such non-compliances should be rectified within the future Preferred Project Report.

Amendment to the Concept Plan - Precinct 4 - The Proposed Town Centre

According to the proposed amendments to the Concept Plan, the Town Centre is to be situated in Precinct 4 and will be surrounded by: environmental protection areas in the west, open space areas in the north (outside Kings Forest site), community land in the north-east and sport fields situated south-west. The only adjoining residential areas will be those in Precinct 5 and the rest of Precinct 4.

As a result, only 16% of all dwellings (722 out of 4502) will be situated within the walking distance from the Town Centre. This seems to be in opposition to the objectives of Town Centre area (page 119 of the Development Code):

"To create a walkable and accessible pedestrian-oriented centre lower priority for car parking".

It is also contrary to the first outcome of Part 8 (Settlement Character and Design) of the Far North Coast Regional Strategy:

"New development will include a range of well designed housing, within easy access to services and facilities, preferably in walking distance. This will result in better places to live and attractive, adaptable and self-reliant settlements that foster a strong sense of community".

Amendment to the Concept Plan – Condition C13 – Geotechnical

It is noted that condition C13 of the Concept Plan is proposed to be amended with the insertion of words 'where relevant'. Condition C13 is proposed to be amended as follows:

*In order to ensure the stability of development lots, a detailed geotechnical assessment prepared by a suitably qualified person must be submitted, **where relevant** with each future development application for subdivision.....".*

Council recommends that condition C13 is not amended or the words 'to Council's satisfaction' are used in place of the proposed 'where relevant'. The reason the wording 'where relevant' is not supported is due to the wording giving no degree of certainty to ensure the stability of development lots.

Precinct 12 - Adjoining allotment

The Project Application seeks approval to undertake filling works in the western part of Precinct 12. The adjoining lot, being Lot 77 DP 755701 (situated outside the Kings Forest site, but adjacent to its boundary) is intended to be zoned R1 General Residential in the Draft Tweed LEP 2010. The total area of this site is 162781m². In the approved Concept Plan, no linkages are provided between Precinct 12 and the abovementioned lot, making the lot disconnected and isolated from the Kings Forest site. The applicant should investigate the possibilities of providing a linkage (road) that would connect lot 77 DP 755701 with Kings Forest's road network at the appropriate stage of development.

Operation of the SEPP (Major Development) 2005 and the Standard Instrument (local environmental plans) Order 2006

The NSW State Government commenced a series of planning reforms in 2006, which included the Standard Instrument (local environmental plans) Order 2006. This Order seeks to standardise the form and structure of LEPs across the State and all councils are required to prepare a new LEP based on the prescribed template instrument.

Tweed Council embarked on a new Shire-wide LEP in 2006, publicly exhibiting it for the first time in 2010. This new LEP will have the effect of switching off the SEPP (Major Development) when it is made because references in the SEPP relate only to the current Tweed LEP 2000 and there are no provisions to extend its operation once it is superseded by the new LEP.

In response to an enquiry by Council staff on this issue the Department of Planning and Infrastructure agreed in their letter of 11 January 2012 with that interpretation about the SEPP's operation.

Council officer's are working with the Dept's staff to ensure a smooth transition between the current and new LEP in a way that will not affect the SEPP's operation as it relates to the Kings Forest development. This is also likely to require an amendment to the SEPP provisions to recognise the new LEP and to maintain the balance of land-uses which are not otherwise permitted in the new zones.

This will be the subject of further reporting as the draft Shire-wide LEP progresses toward a further public exhibition.

S94 Contributions

At its meeting of 20 July 2010, Tweed Shire Council considered a report regarding the potential impacts that the NSW Government's capping of s94 developer contributions to \$20,000 per allotment would have on the provision of infrastructure to service the Kings Forest Development. In particular, the report focused on the planned four-laning of Tweed Coast Road from the Pacific Highway at Chinderah through to Casuarina, to cater for the increased traffic generated by Kings Forest. With the imposition of the cap, it is forecast that Council will not be able to finance the upgrade to Tweed Coast Road from s94.

As such, Council resolved as follows:

"58 [EO-CM] Road Capacity Limits on Kings Forest Part 3A Development Proposal

505

Cr W Polglase

Cr J van Lieshout

RESOLVED that Council advise the NSW Department of Planning, that:

1. *Due to the NSW Government's decision to hard cap developer contributions at an unindexed amount of \$20,000 per housing lot, Council will now be unable to fund planned roadworks required to provide additional traffic capacity to service the Kings Forest development. These works consist of duplication of the Tweed Coast Road to 4 lanes from the Chinderah Interchange to Casuarina.*
2. *The 2 lane Tweed Coast Road is the only arterial road link to Kings Forest and will only support development of 1,267 housing lots at Kings Forest, not the 4,500 planned lots that could have been serviced by a duplicated Tweed Coast Road.*
3. *Approvals for development at Kings Forest to be issued by the Department should not exceed 1,267 residential lots or equivalent.*

*The Motion was **Carried***

FOR VOTE - Unanimous"

While the cap for Kings Forest has since been increased to \$30,000 per allotment due to its "greenfield" status, the funding constraints and the Council resolution still apply. As the Stage 1 works create 401 residential allotments the above threshold is not reached, however this information is provided for the ongoing consideration of the Department of Planning and Infrastructure.

In accordance with the Kings Forest Development Code developer contributions are to be calculated in association with any approved plan of development. Given the issues raised in this report it is anticipated that changes to Precinct 5 will be made within a future Preferred Project Report (amended application) and accordingly S94's have not been calculated on the current layout. Calculations will be undertaken by Tweed Shire Council staff as part of the Preferred Project Report.

Essential Energy – Zone Substation

The applicant's proposed Concept Plan shows a proposed zone substation south of Kings Forest Parkway in the environmental protection area. Essential Energy have written to Tweed Shire Council and stated as follows:

"Essential Energy wished to advise that we have not reached agreement with Leda Developments Pty Ltd, the developer of Project 28, with regard to the provision of electrical infrastructure to the Project 28 (Kings Forest development).

To cater for the future loads in the Kings Forest local area, Essential Energy will be required to construct and commission a new 33,000/11,000 volt zone substation within the Project 28 subdivision. Essential Energy also has to acquire easements through Project 28 land for the power lines in and out of the zone sub station.

The original site for Essential Energy's zone substation, proposed by Leda Developments Pty Ltd is directly below the existing 33,000 volt line on Lot 6. The 30m wide corridor is bordered by mature trees and is in low lying flood prone land. Therefore, the site offered by Leda Developments Pty Ltd is not suitable and will not be accepted by Essential Energy. We have notified Leda Developments Pty Ltd the developer Project 28, and NSW Department of Planning of the same.

To move forward, Essential Energy needs to negotiate a suitable zone substation site and associated easements across Project 28's land to protect electrical infrastructure. Accordingly, to protect the existing 33,000 volt line across Project 28's land, Essential Energy will require Leda Developments Pty Ltd to provide an easement suitable to our requirements and as per our standard easement terms."

In addition to Essential Energy's objection, it would be Council's preference to have the zone substation located outside environmental protection areas where they are not a Clause 8(2) consent matter in accordance with the Tweed LEP 2000. However, it is noted that the location of the zone substation is surrounded by land proposed to be dedicated to NPWS and accordingly their comments on this location should also be sought. Should this location be abandoned the proposed subdivision layout will need amending.

Review of Ecological Matters and Relevant Management Plans

General Comments

The following comments are confined to ecological and land-use planning issues related to the management of natural resources. The response is framed in terms of the Director General's Requirements (DGRs) for the Stage 1 Project Application and related Concept Plan Conditions. Some additional comments are also included at the end of this Section although these should not be interpreted as a comprehensive treatment of all other issues that do not comfortably fit within the scope of the DGRs and Concept Plan Conditions.

A large number of recommendations are made, the object of which is to facilitate tangible improvements in the Project Application and to provide clear direction to assist the Department of Planning in their role as the Consent Authority.

While there are many positive aspects of the approach to managing the environmental impacts of the approved Concept Plan for the site, a number of substantive ecological issues remain. A summary of these is presented directly below with further details in subsequent sub-sections.

- **Dedication of Environmental Lands.** The proponent foreshadows the dedication to Council of some 200 ha of environmental lands and associated Ecological Buffers but proposes to delay transfer until future stages of the development. Due to the large scale of the development, uncertainties around timing and viability of future stages and possible changes in ownership it is considered in the public interest to ensure that any dedication are more closely linked to specific stages of the development. See response to DGR 2.4 below for further details.
- **Long Term Management of Environmental Open Space.** The proponent seeks to implement the approved management plans for a period of 5 years while construction is occurring, however the costs and responsibility for ongoing (i.e. long-term) management remain to be addressed. Because of: (1) the size of the development; (2) its location in an environmentally sensitive location; (3) the large number and complexity of environmental issues to be managed (evidenced by numerous management plans covering many species and issues); and (4) ongoing pressures placed on the natural environment from large-scale urban development (e.g. weeds, feral animals, bushfire, dumping, encroachment, road mortality, water quality etc.), it is expected that the ongoing long-term management costs will represent a significant and perpetual burden on Council resources beyond any funds that can be generated from a larger rate base. Further discussions with the Department of Planning have been requested to address this important issue. See response to DGR 2.5 below for further details.
- **Voluntary Planning Agreements.** The proponent suggests the use of a Voluntary Planning Agreement to guide dedication and management of open space and environmental lands. While this is considered an appropriate mechanism the proponent seeks to delay this until after approval of the Project Application. It is considered that the terms and principles of such an agreement should be conditioned at this point to ensure that an approval is not given that effectively imposes an unreasonable burden on existing ratepayers, or which prevents the implementation of works approved under one or more of the management plans that will form part of the development consent. See response to DGRs 4.2 and 2.5 below for further details.

- **Ecological Buffers.** The proponent seeks to use the outer 20 m of the Ecological Buffers for purposes such as roads, footpaths, cycleways, bushfire Asset Protection Zones, stormwater management, passive recreation and similar “compatible” purposes. It is also proposed to clear some 30ha of existing native vegetation in the Ecological Buffers to assist with the provision of fill for the developable portion of the site. It is considered that small-scale incursions into the outer 20m of ecological buffer from roads and cycle ways and the like may be acceptable in some circumstances but the extensive use of the outer 20 m and in some cases the inner 30m of the Ecological Buffer, as proposed, is not consistent with Clause 7 of Part 6 of SEPP (Major Projects) 2005 which explicitly seeks to restrict development and retain native vegetation in these areas. See response to Concept Plan Condition C20 below for further details.
- **Protection of Heathland.** The importance of heathland as a locally rare community that supports numerous threatened species was recognised in the Department of Planning at the Concept Plan stage where it was observed that the proposed revegetation measures in the Environmental Protection zones and Ecological Buffers were in response to an overall loss of some 59ha of heathland. The Department recommended that, where possible, outside of the proposed golf course, the full 50m width of the Ecological Buffer be naturally regenerated to heathland. In response to this the proponent committed to the retention of 22 ha of heathland already with Environmental Protection zones and the re-instatement of 77ha of heathland, mostly in the Ecological Buffers. As at least 30 ha of the 59 ha to be removed already exists in the Ecological Buffers, and as noted in the previous point, this is not considered consistent with the intended use of these areas. Further, it is not clear if heathland can be successfully re-established in areas where the ground surface and drainage has been radically altered by the proposed bulk earthworks. Also, as noted below, there are conflicting management objectives arising from plans to re-establish heathland within bushfire Asset Protection Zones and to plant koala food trees in areas of existing or proposed heathland. The Department also required the proponent to consider a mechanism such as environmental protection zoning to better protect heathland but the proponent has not made any such commitment. See response to Concept Plan Conditions B3 and C20 below for further details.
- **Clearing of Littoral Rainforest.** The proponent seeks to remove a small area of Littoral Rainforest from the Ecological Buffer adjacent to Precinct 1. This proposed clearing is considered inappropriate as: (1) Littoral Rainforest is Federally listed as *Critically Endangered* and *Endangered* in NSW; (2) no statutory assessment is presented to indicate its removal would not be significant; (3) its retention in the Ecological Buffer is consistent with the Clause 7 of Part 6 of SEPP (Major Projects) which regulates the use of Ecological Buffers; and (4) the proposed use of the Ecological Buffer for development infrastructure in this location is not considered consistent with the Clause 7 of Part 6 of SEPP (Major Projects). See response to General Requirement 6 and Concept Plan Condition C20 below for further details.

- **Conflicting Rehabilitation and Revegetation Objectives.** The proponent presents plans to re-establish heathland, plant koala food trees and create habitat for acid frogs over many of the same areas. As heathland is not regarded as koala habitat and does not contain koala food trees this is considered inappropriate. It is also proposed to plant koala food trees in the area currently mapped as Littoral Rainforest which is also not koala habitat. Similarly, planting of koala food trees in acid frog habitat would only be appropriate around the margins. The proponent also seeks to re-instate heathland (and koala food trees) in bushfire Asset Protection Zones, which is also considered inappropriate. See response to DGRs 9.4, 9.12 and Concept Plan Condition C20 below for further details.
- **Koala Management** The revised Koala Plan of Management (KPOM) proposes a major change in koala management philosophy for the site. Instead of allowing koalas to roam across the urban landscape which would inevitably bring them into contact with dogs and cars, the revised plan seeks to maintain a complete separation of koalas and their habitat from these threats by the use of a series of underpasses, grids and fencing. Council welcomes this change in approach however remains concerned that without additional mitigation measures, the proposed approach will result in residual and ongoing impacts that will adversely affect the koala population in the vicinity of the site. In particular, further measures are needed to ensure that: (1) development areas are effectively “sealed off” from koalas by fencing and grids; (2) dogs are banned from the site; (3) the threat from bushfire is actively managed and minimised (see next point); (4) sufficient areas can be located for koala food tree plantings without compromising other management objectives (see previous point); (5) connectivity can be maintained to the west by a new “southern” east-west corridor (see below); and (6) traffic calming devices (e.g. speed humps at 200m intervals) are installed such that motor vehicles are physically prevented from exceeding 40kph where roads traverse environmental areas. An alternative to banning of dogs may include improvements to the design of the fauna fencing to better prevent dogs from getting out of the urban area, and the inclusion of fenced roads through the environmental areas with regular fauna underpasses to allow unimpeded movement by koalas and other fauna. Further work would be necessary to determine acceptable designs for these features. Numerous other measures to improve the KPOM are also recommended (see detailed sub-sections below). See response to DGRs 9.4, 9.5, 9.6, 9.7, 9.8, 9.9, Concept Plan Conditions B4 and C20 and “Additional Comments on the revised KPOM” below for further details.
- **Bushfire Management.** The Bushfire Risk Management Plan focuses on protecting human life and property and does not consider vulnerable ecological assets such as the koala or other threatened species. This is despite recommendations in various management plans and the findings of the Tweed Coast Koala Habitat Study 2011 which suggests that uncontrolled wildfire is largely responsible for declines in the koala population over the last decade. See response to DGRs 2.2, 6.3 and Concept Plan Condition C20 below for further details.

- **Management Plan Implementation.** The timing for the implementation of actions within the Management Plans (including the KPOM) is not explicit. Given the number and complexity of issues to be managed it is considered essential that clear implementation schedules are provided. These schedules should itemise all recommended actions required (including those detailed in other management plans) to ensure that the relevant plan meets its aims. The schedule should show how each action meets the objectives of the plan, timing, frequency and responsibilities for action, resources required, costs, performance criteria, and outputs. The commencement and duration of management plans also lacks clarity. It is considered that all Management Plans should commence on approval of the Project Application and continue to be implemented by the proponent for a period of 5 years, or until 90% of lots are sold, or until completion criteria have been met, whichever is longer. See response to DGRs 9.4, 2.5 and additional comments on “Proposed amendments to Concept Plan Condition C2” below for further details.
- **Water Quality in Cudgen Creek.** While the Integrated Water Cycle Management Plan describes the way in which stormwater will be treated, and outlines the expected performance of treatment measures, it does not describe the receiving environment, the potential impact of increased nutrient discharge on that environment, or the significance of impacts of this. The potential impact of increased nitrogen discharge to Blacks Creek and Cudgen Creek should be investigated, specifically, the potential for increased risk of eutrophication and sags in dissolved oxygen levels in the creek due to increased frequency and duration of algae blooms. The point where Blacks Creek joins Cudgen Creek is approximately 2km downstream from Cudgen Lake. This is a poorly flushed part of the estuary and it is possible that stormwater inputs to this estuary reach could experience extended residence times and increase algae growth potential. It is also possible that stormwater discharged to Blacks Creek and Cudgen Creek could be conveyed into Cudgen Lake on incoming tides, increasing the nutrient input to this system. Additionally, long-term monitoring of the receiving environment is considered necessary to ensure any unanticipated impacts of the development on Blacks Creek, Cudgen Creek and Lake can be promptly addressed. See response to DGRs 7.1, 7.2, 7.3, and 7.7 below for further details.
- **East-West Wildlife Corridor.** The proponent rejects the need for both east-west corridors conditioned in the Concept Plan approval and seeks to delay the resolution of the issue as required by the Department of Planning. With: (1) the proposed changes in the Koala Plan of Management which seeks to exclude koalas from urban areas; (2) the likely need to find additional areas to plant koala food trees; and (3) the opportunity to augment koala movement to the south west towards the small outlier koala population and the Pacific Hwy underpass in the vicinity of Eviron Road, it is considered that corridor options should be resolved prior to determination of the Project Application as originally anticipated in the Concept Plan approval. See response to Concept Plan Condition B4 below for further details.

- **Wallum Frog Habitat Compensation.** The proponent is required to compensate for the loss of threatened acid frog habitat on the site and proposes the creation of “melon holes” to intercept the water table in suitable areas in order to retain water for sufficient periods to enable the breeding cycle of the frogs to be completed. It is considered that this proposal is largely experimental and it is not clear if the very specific conditions required by these frogs can be re-created, especially given the major changes to the land surface, drainage and groundwater relations that will occur with the proposed bulk earthworks. It is considered that further specialist advice is needed to examine the technical feasibility of the proposal, and that contingency plans be in place in the event that the proposed plans perform poorly. See response to DGR 9.12 below for further details.
- **Monitoring and Evaluation.** It was a condition of the Concept Plan that a draft outline of an annual flora and fauna monitoring report which collated and synthesised all monitoring and reporting requirements contained in the various management plans within 12 months of the Concept Plan approval. This was not done and the proponent now seeks to delay the preparation of report until the commencement of construction. This is considered undesirable as: (1) the existing management plans do not provide clear implementation schedule (see above); (2) adaptive management procedures have been included in the existing management plans, where it is made clear that the role of comprehensive monitoring is essential to inform changes in management; (3) it is crucial that baseline monitoring is carried out to ensure that post-impact changes can be effectively monitored, assessed and responded to as necessary; and (4) regular monitoring allows the consent authority and agencies responsible for environmental compliance to more clearly understand the issues and respond accordingly. It is also noted that many of the performance criteria suggested in the various management plans are not clearly linked to stated management objectives, insufficiently specific and in some cases not particularly relevant. As almost all of the environmental mitigation for the site is embodied in the management plans which are to be implemented over a number of years, it is considered in the interests of both the proponent and the consent authority to ensure that performance criteria are properly formulated. See response to Concept Plan Condition B2 and DGR 9.4 below for further details

Matters of National Environmental Significance

General Requirement 6 - Consideration of impacts, if any, on matters of National Environmental Significance under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999;

The EPBC Act referral in relation to the wallum sedge frog is noted.

It is also noted that Stage 1 of the development involves the clearing of an area of Littoral Rainforest in the Ecological Buffer adjacent to Precinct 1 (see Fig 12 and Table 1, Appendix MM). Littoral Rainforest is regarded as a *Critically Endangered* ecological community under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

Littoral Rainforest is also considered *Endangered* under the NSW *Threatened Species Conservation Act 1995*.

It does not appear that consideration has been given to the statutory requirements under the relevant Acts for this proposed clearing. However, given the significance of the Littoral Rainforest community and the fact that it is located in the Ecological Buffer it is considered inappropriate to clear it.

RECOMMENDATION: Council considers the proposed removal of Littoral Rainforest inappropriate and recommends Environmental Assessment and associated Management Plans are revised to ensure the retention and management of the Littoral Rainforest community in the vicinity of Precinct 1

Statement of Commitments

General Requirement - 7 - *An assessment of the potential impacts of the project and a draft Statement of Commitments, outlining environmental management, mitigation and monitoring measures to be implemented to minimise any potential impacts of the project.*

The proponent's draft Statement of Commitments is included in Section 8 of the Environmental Assessment.

At Section 8.1 the proponent commits to dedication of land in the Environmental Protection zones to Tweed Shire Council subject to a future Voluntary Planning Agreement. However, subsequent meetings with LEDA representatives have stressed that such land dedication would need to be undertaken subject to mutually acceptable terms. Accordingly a voluntary planning agreement may or may not be entered into in the future (Council officer meeting with Leda 15/12/11).

While Council is prepared to accept lands for dedication, it is considered that any proposed dedications should be appropriately staged with the precise areas and timing explicitly specified (see response to DGR 2.4 below) together with long term arrangements to provide for the ongoing management of these areas (see response to DGR 2.5 below). It is considered appropriate for such details to be included in a Voluntary Planning Agreement, however this should be finalised prior to the approval of the Project Application.

As discussed under the response to DGR 2.5 it is considered that there are significant ongoing financial implications implicit in the management prescriptions necessary to mitigate the impacts of the proposed development. Council is concerned to ensure that approval of the Project Application does not result in a situation that effectively imposes an unreasonable burden on existing ratepayers, or which prevents the implementation of works approved under one or more of the management plans that form part of the development consent. Accordingly, it is considered that the Statement of Commitments should reflect a finalised agreement rather than pre-empt a future one.

At Section 8 of the Environmental Assessment, the proponent commits to implementation of numerous Management Plans which are dated. These dates should be altered to reflect the plans as revised and approved for the Preferred Project Report.

It is also considered that the Statement of Commitments should explicitly ensure the proponent assumes responsibility for the implementation of the environmental Management Plans arising from this Project Application (including any necessary revisions) for a period of 5 years, or until 90% of lots are sold, or until completion criteria have been met, whichever is longer. See responses to DGR 2.4, 2.5 and 9.4 for further discussion on this.

RECOMMENDATION: That the draft Statement of Commitments and/or conditions of approval be revised to ensure that: (1) any Voluntary Planning Agreement is finalised prior to determination of the Project Application; and (2) the proponent assumes responsibility for the implementation of the environmental Management Plans arising from this Project Application (including any necessary revisions) for a period of 5 years, or until 90% of lots are sold, or until completion criteria have been met, whichever is longer.

Bushfire Asset Protection Zones

DGR 2.2 - Provide a Plan of Development that shows, at a minimum: the location and width of Asset Protection Zones; Level of construction required for dwellings/buildings adjacent to Asset Protection Zones in accordance with Planning for Bushfire Protection 2006 and Australian standard 3959 – 1999 – Construction of Building in Bushfire Prone Areas; the types of development permissible on each lot, eg: zero lot housing, plex housing, etc; and fill and finished floor level requirements on flood prone lots in accordance with the requirements of Tweed Shire Council's Development Control Plan- Section A3- Flood Liable Land (or any replacement document).

As per Concept Plan Condition C1 Plan of Development

The Bushfire Risk Management Plan (Appendix X) is generally consistent with DGR 2.2 although the location of the inner protection component of the APZ within the Ecological Buffer is not considered appropriate (see response to Concept Plan Condition C20 and associated the Department of Planning Director General's Report at p60 for further details including).

See response to DGR 6.3 for further details of compliance with bush fire regulations.

Staging of the Development

DGR 2.4 - Provide details of any staging that demonstrates the lots will be released in an orderly and coordinated manner.

The Environmental Assessment states (p20) that: *In principle, each area of Environmental Protection zoned land together with associated Ecological Buffers and any additional residual land will be dedicated to Council, subject to the terms of the VPA, once the boundary of the area to be dedicated has been determined by the approval of development applications for adjacent areas.*

Based on this statement and examination of the Staging Plan (EA Fig 4; Appendix L2) it appears that no dedication of environmental lands will occur until Stage 4 of the development and that this will consist of a small proportion of all lands proposed for dedication to Council (i.e. proposed Lot 5 in the vicinity of Tweed Coast Road).

It is considered that due to: (1) the large scale of the development; (2) uncertainty around future economic conditions which are likely to affect the timing, (3) the scope and possibly the viability of the proposed stages; and (4) possible changes to ownership of the land, it is in the public interest to ensure the dedication of environmental lands is more closely linked to specific stages of the development. Accordingly a number of principles for the staging of any dedications are suggested:

1. Dedication should occur as soon as practical after subdivision.

2. The extent of lands to be dedicated should include any environmental protection areas adjacent to the proposed stage extending to where such areas are intersected by any approved road alignment or adjoin environmental buffers to adjacent stages.
3. Environmental buffers directly adjacent to a proposed stage should be dedicated with the approval of that stage.
4. Buffers to adjacent stages to be dedicated with the approval of those stages.

Based on these principles, dedications of environmental lands associated with the Stage 1 would include:

- Environmental protection zones and relevant associated buffer areas east of Tweed Coast Rd.
- Environmental protection zone south of Precinct 5 to Precinct 14 and west to the western access road to the southern precincts.
- Relevant associated environmental buffer areas directly adjacent to Precinct 5.

It is also notable that the proponent plans to retain ownership of two areas under Environmental Protection zoning within the proposed golf course (Precinct 14, coloured red in Appendix L2). This may be acceptable providing the management obligations follow future owners and can be effectively enforced. This issue should be further considered when a future project application is lodged for the proposed golf course.

The Environmental Assessment also foreshadows the use of a Voluntary Planning Agreement under s93 of the *Environmental Planning and Assessment Act 1979* to guide dedication and management of open space and environmental lands (see p19 of the EA). This is considered an appropriate mechanism and is discussed further under DGR 2.5 below.

RECOMMENDATION: Subject to further consideration at a later stage of issues related to the ownership and management of environmental areas within Precinct 14 (proposed golf course), Council accepts dedication of the environmental lands (including buffers) proposed in Appendix L2 (see also Environmental Assessment Fig 4).

RECOMMENDATION: The Staging Plan for dedication of environmental lands to Tweed Shire Council should be reviewed and appropriately conditioned on the basis of the following principles: (1) dedication should occur as soon as practical after subdivision; (2) the extent of lands to be dedicated should include any environmental protection areas adjacent to the proposed stage extending to where such areas are intersected by any approved road alignment or adjoin environmental buffers to adjacent stages; (3) environmental buffers directly adjacent to a proposed stage should be dedicated with the approval of that stage; and (4) buffers to adjacent stages to be dedicated with the approval of those stages.

Long-term Management and Maintenance

DGR 2.5 - Outline the long-term management and maintenance of any areas of open space or conservation including ownership and control, management and maintenance funding, public access, revegetation and rehabilitation works and bushfire management.

Ownership and control

See response to DGR 2.4 above for comments on ownership. See below for comments on responsibility for management and maintenance.

Management and maintenance funding

The Environmental Assessment suggests the use of a Voluntary Planning Agreement under s93 of the *Environmental Planning and Assessment Act 1979* to guide dedication and management of open space and environmental lands (see p19 of the EA). This is considered an appropriate mechanism however the terms and principles of such an agreement should be conditioned at this point to ensure that an approval is not given that effectively imposes an unreasonable burden on existing ratepayers, or which prevents the implementation of works approved under one or more of the management plans that form part of the development consent.

This issue is further complicated by the absence of clear works schedules within the proposed management plans (koalas, buffers, weeds, vegetation, Threatened species etc) which are not costed. The proponent also appears to implicitly assume of a 5 year management horizon without proposing a solution to ongoing (i.e. long-term) management as required by the DGR 2.5. The logical implication of this is that Council will meet the costs of management after this time.

Because of: (1) the size of the development; (2) its location in an environmentally sensitive location; (3) the large number and complexity of environmental issues to be managed (evidenced by numerous management plans covering many species and issues); and (4) ongoing pressures placed on the natural environment from large-scale urban development (e.g. weeds, feral animals, bushfire, dumping, encroachment, road mortality, water quality etc.), it is expected that the ongoing long-term management costs will represent a significant and perpetual burden on Council resources beyond any funds that can be generated from a larger rate base.

While it is reasonable for the proponent to implement the approved management plans for a fixed period, such as 5 years while construction is occurring, the costs and responsibility for ongoing (i.e. long-term) management remain to be addressed.

The issue for Council is that it has limited capacity to fund these long-term management obligations from traditional sources due to State-imposed caps on developer contributions and rates. Without additional contributions from the developer or differential rating within the estate (such as Koala Beach estate) the long term obligations arising from the development could only be achieved by shire-wide reductions in services such as roads and parks maintenance, environmental management and community services.

One option to fund this work would be the establishment of a sinking fund based on a capital contribution from the developer which would use the interest to fund the works. This means the developer meets the full cost of the development but the arrangement is also subject to the vagaries of the investment markets which will inevitably lead to variation in the revenue stream. Such arrangements also need to cover costs of inflation which further increases the capital required.

Public access

The Environmental Assessment does not specifically address this issue but states (p20): *The areas of future structured and unstructured open space will be managed and maintained by Tweed Shire Council in accordance with its normal standards and policies.*

This response is considered adequate.

Revegetation and rehabilitation works

As noted previously, the various management plans do not contain costings or detailed implementation schedules to enable Council to precisely (or approximately) estimate the total maintenance burden for the long-term implementation of works required. It is considered essential that this work be commissioned and a mechanism to fund such works in perpetuity be agreed to prior to commencement of the development.

Bushfire management

Long term cost and management implications relating to bush fire risk to both life and property and ecological assets have not been addressed.

See response to DGR 6.3 for further comments related to bushfire management including the need to appropriately manage bush fire risk to ecological assets.

RECOMMENDATION: That conditions be imposed to ensure the proponent assumes responsibility for the implementation of the environmental management plans arising from this project application (including any necessary revisions) for a period of 5 years, or until 90% of lots are sold, or until completion criteria have been met, whichever is longer. After this time council will assume management responsibility for the dedicated areas.

RECOMMENDATION: That all environmental management plans be revised to ensure they can be independently costed for a 5 year period under the proponent's management and thereafter on an annual maintenance schedule under the control of Council.

RECOMMENDATION: That an independent consultant is engaged by the consent authority to cost all revised environmental management plans on a yearly basis up to 5 years under the control of the proponent and thereafter on an annual maintenance schedule under the control of Council.

RECOMMENDATION: That senior Council officers meet with the Department of Planning to further discuss an appropriate mechanism to enable the ongoing implementation of the various environmental management plans.

RECOMMENDATION: That the scope and intent of the above recommendations including the outcomes of discussions on an appropriate funding mechanism are to be embodied in a Voluntary Planning Agreement together with any other relevant matters (e.g. see p19 of EA) which is to be finalised prior to approval of Stage 1 of the development.

Landscaping

DGR 2.8 - Provide details of landscaping in accordance with Council's open space landscape guidelines and standards.

Several species outlined in Landscape Plans (Appendix J and K) may be inappropriate for the site, including *Angophora costata* (not local); *Barringtonia asiatica* (not native); *Nypa fruticans* (not local); *Callistemon citrinus* (not local could use *C. pacyphyllus* instead); *Cordyline australis* (not native, use local endemic *Cordyline* sp.); *Crinum asiaticum* (not native, note the native *C. pedunculatum* is prone to grub attack); *Eucalyptus* (*Corymbia*) *tesselaris* (not local species); *Agathis robusta* (not local species); *Ixora* Prince of Orange (not native); *Grevillea poorinda* 'Royal Mantle' (not local); *Trachelospermum* 'Tricolour' (not native). In addition several species are planned for use at sites that may be inappropriate including: *Eucalyptus grandis* which is prone to large limb drop; *Toona ciliata* which will be grub damaged if planted in the open and *Casuarina cunninghamiana* which does not occur on sand substrates and is only found adjacent to needs flowing freshwater.

Council does not have formal landscaping guidelines, however it is generally considered preferable to use local native species where possible. This approach is considered particularly important for developments in such as Kings Forest that are located in close proximity to sensitive environmental areas.

RECOMMENDATION: That the species used for landscaping be revised to reflect appropriate locally native species where possible. Acceptable species should be negotiated with Council staff.

Planning Agreements

DGR 4.2 - Address and provide the likely scope of any planning agreements and/or development contributions with Council/ Government agencies (including relevant community/state infrastructure contributions).

The Environmental Assessment suggests the use of a Voluntary Planning Agreement under s93 of the *Environmental Planning and Assessment Act 1979* to guide dedication and management of open space and environmental lands (see p19 of the EA).

As noted previously (see response to DGR 2.5), this is considered an appropriate mechanism however the terms and principles of such an agreement should be conditioned at this point to ensure that an approval is not given that effectively imposes an unreasonable burden on existing ratepayers, or which prevents the implementation of works approved under one or more of the management plans that form part of the development consent.

See response to DGR 2.5 for further discussion and recommendations on this issue.

Safe Passage of Wildlife

DGR 5.5 - Demonstrate that provision has been made to maintain safe passage of wildlife between habitat areas through specific road design, lighting and signage requirements and, where considered appropriate, fencing to road verges, fauna underpasses and like measures.

As per Concept Plan Conditions C2(3)(d) and C8(1) Traffic and Wildlife Protection Measures

This issue does not appear to be specifically addressed within the Environmental Assessment except as it relates to koalas (see p80 of the Environmental Assessment and Appendix N). The proponent directs readers to Appendix E which are series of engineering drawings without any explanation to demonstrate that provision has been made to maintain safe passage of wildlife as required by DGR 5.5.

It is assumed therefore that the measures proposed to mitigate traffic impacts on koalas are intended to apply to wildlife more generally. The following comments are made in relation to koalas but apply equally to measures to protect other wildlife.

The intention expressed in the revised KPOM (Appendix N) to prevent koalas from coming into contact with motor vehicles by the use of fencing, fauna underpasses and traffic calming devices is supported (see section 9.7 of KPOM). However, a number of elements of the design suggest an outcome which will not adequately ensure *safe passage between habitat areas* as required by DGR 5.5 (and DGR 9.8):

- The proposed fencing plan (Figure 17 of KPOM) does not “seal off” Precinct 5, potentially allowing koalas to access to roads from the north of the estate. This could be achieved by extending the fencing along the western boundary of Precinct 4, around the western and northern boundary of the Council sports fields (under construction) then around the ecological buffer at the north of Precinct 3 to link to the proposed fencing shown in Figure 17 of the revised KPOM. Proposed fencing to the south east of Precinct 7 (i.e. north of the proposed Kings Forest Parkway) is not considered necessary or desirable at this stage. Further fencing along the eastern boundaries of Precincts 7 and 8 should be included in the project applications for those stages.
- All fencing should be completed as soon as possible after approval not prior to occupation of buildings as proposed in Section 9.6 of the revised KPOM.
- Lockable gates should be installed at grids and other locations to ensure that public access is restricted to the undeveloped parts of the site at night and other times when the site is not fully supervised.
- It is not clear what is proposed in relation to fencing along Tweed Coast Road from the bridge over Cudgen Creek to beyond the northern boundary of the Precinct 1. There is an existing koala fence in this area but it will need modified and upgraded to ensure that koalas and other wildlife are effectively prevented from gaining access to this section of road.
- It appears that “traffic calming devices” of unspecified design without associated fencing (see Section 9.6 of KPOM) are proposed for roads that traverse environmental protection areas (and associated Ecological Buffers). This approach is supported providing: (1) the design is such that motor vehicles are physically prevented from travelling more than 40kph (e.g. full width speed humps at a maximum of 200m intervals); (2) adequate lighting to road verges is provided (e.g. bollard lights at regular intervals) in these areas not just at the grids; and (3) dogs are banned from the development. As noted elsewhere (see response to DGR 9.7) the use of grids between fenced sections of the roads will not prevent dogs from accessing koala habitat and other environmentally sensitive areas. The alternative of fencing the road in these areas and using underpasses is considered less desirable as underpasses are not likely to be as readily used as open crossings and the design of the fauna fences would need to be reviewed to ensure that they cannot be breached by dogs (see response to DGR 9.7).
- The design and content of signage is not specified.

RECOMMENDATION: That the revised KPOM be reviewed consistent with DGR 5.5 and 9.8 to address: (1) additional fencing to seal off Precinct 5; (2) timing of fenceings which should occur as soon as possible after approval; (3) installation of gates to prevent public access to undeveloped parts of the site; (4) design and modification of fencing adjacent to Tweed Coast Road; (5) design of traffic calming measures to prevent motor vehicle speeds in excess of 40kph through environmental areas; (6) the design of lighting to improve visibility in any areas where koalas and other wildlife are able to cross roads; and (7) the design of signage to ensure that motorists are aware of the possibility of encountering koalas and other fauna on roads through environmental areas.

RECOMMENDATION: That the Environmental Assessment be revised to specifically outline the suite of measures proposed to maintain safe passage of wildlife through habitat areas consistent with DGR 5.5.

Fish Passage

DGR 5.6 - Demonstrate that road crossings of waterways maintain existing fish passage.

As per Concept Plan Condition C8(2) Traffic and Wildlife Protection Measures

The two major road crossings of Blacks Creek are on roads numbered 9 and 23. On road 9 (eastern) a note is included on dwg. 12301-EMAW-108 (Appendix E) that bridge or culverts must facilitate 'requirements for safe fishing passage'. It is assumed (but should be confirmed by the applicant) that this will be interpreted via design and construction to provide adequate passage for fish movement, as opposed to safety for people fishing from the bridge. This includes consideration of hydraulics and the ability of fish to negotiate changes in elevation (hydraulic steps) and water velocity. The note also makes reference to dwg. 12301-EMAW-091 for indicative bridge structure. It is anticipated that if constructed a full span bridge will maintain existing fish passage, but this is not confirmed in documentation. Dwg. 12301-EMAW-110 shows the Blacks Creek crossing for road 23. A culvert is nominated to provide, "requirements for safe fishing passage" however no further details are provided, most importantly with respect to the invert level of culverts relative to mean tidal levels and depth of waters

In Table 5 of the Environmental Assessment (p32, statement addressing DGR's), the proponent nominates that information relating to maintenance of existing fish passage is provided in Section 7.1.6 of the Environmental Assessment and in Appendix E. There is no reference to maintenance of fish passage in section 7.1.6 of the Environmental Assessment or as noted above, provision of sufficient detail in Appendix E as to how this will be achieved.

Maintenance of fish passage, both along a stream and laterally into flood plains and tributaries is a key objective of the NSW DPI Fisheries and is legislated under the *Fisheries Management Act 1994*. It is likely that NSW DPI Fisheries staff will give this issue significant attention. While it is likely that provision of a full span bridge over Blacks Creek on roads 9 and 23 would have no negative impact on existing fish passage, the applicant has not addressed this in the EA, as required by DGR 5.6.

RECOMMENDATION: That the Environmental Assessment is revised to include a clear statement of policy and intent with respect to fish passage, along with accurate details of how this will be achieved in reality. Importantly, the impact of structures proposed in addition to road crossings, for example floodgates or causeways should also be addressed, including the location, maintenance, modification or installation of such structures on Blacks Creek.

Bushfire Risk Assessment

DGR 6.3 - In order to ensure the protection of property and assets, a detailed bushfire assessment and management plan prepared by a suitably qualified person must be submitted. The assessment must, at a minimum, demonstrate consistency with the requirements of *Planning for Bushfire Protection 2006*. All asset protection zones must be clearly specified on the Plan of Development and all affected lots are to be encumbered with a Section 88B instrument under the *NSW Conveyancing Act 1919*.

As per Concept Plan Condition C14 Bushfire Assessment

The 20m bushfire Asset Protection Zone (APZ) adjacent to Commercial development in Precinct 1 is adequate and BAL ratings for both buildings comply with Planning for Bushfire Protection.

Identification of vegetation communities to the east of Precinct 5 appear to be understated as some of the vegetation may be forest and not tall heath, requiring a 20m APZ instead of the recommended 15m (see Table 9, Appendix X - Bushfire Risk Management Plan). BAL levels would need to be adjusted accordingly if the vegetation is forest. Proposed fire trail standards contained within the APZ are adequate.

Although the design of the APZs are generally compliant with Planning for Bushfire Protection 2006 it is noted elsewhere (see response to Concept Plan Condition C20) that it is considered inappropriate to locate the inner protection component of the APZ within the Ecological Buffer and that the design of the outer protection area of any APZ located within the outer 20m of the Ecological Buffers should maximise its ecological function consistent with RFS guidelines.

It is noted that the Bushfire Risk Management Plan (Appendix X) does not address the issue of managing the risk to vulnerable ecological assets such as the koala, although the revised KPOM (Appendix N) acknowledges the need to actively manage bushfire to protect koalas from this threat but provides no guidance on this issue. This is particularly concerning given the finding of the Tweed Coast Koala Habitat Study 2011 which suggests that uncontrolled wildfire is largely responsible for declines in the koala population over the last decade and is consequently one of the biggest issues for koala management. Similarly, management of bushfire is essential for many of the vegetation communities on the site including heathland which requires relatively frequent fire to maintain its structural integrity.

RECOMMENDATION: That the Bushfire Risk Management Plan and associated plans (Vegetation, Threatened Species, Buffer and Koala Management Plans) are revised to ensure that: (1) ecological assets are appropriately managed to minimise damage from bushfire; (2) the Inner Protection Areas for APZs are not contained within the ecological buffer; and (3) any APZ Outer Protection Areas located within the Ecological Buffers are designed to maximise their ecological function consistent with RFS guidelines.

Integrated Water Cycle Management

DGR 7.1 - Address and outline measures for Integrated Water Cycle Management (including stormwater) based on Water Sensitive Urban Design principles and which address impacts on the surrounding environment, drainage and water quality for the catchment.

The above DGR is addressed in detail, particularly with respect to stormwater quality. A significant number of Water Sensitive Urban Design (WSUD) and integrated approaches to water management, for example stormwater infiltration devices have been identified. However, while the Integrated Water Cycle Management Plan (IWCMP; Appendix DD) does describe the way in which stormwater will be treated, and outlines the expected performance of treatment measures, it does not describe the receiving environment, the potential impact of increased nutrient discharge on that environment, or the significance of impacts of this.

It is also highlighted on page 24 of the IWCMP (Appendix DD) that detailed hydrological modelling needs to be completed before meaningful volume/area/discharge calculations can be made for stormwater treatment.

Detailed design of stormwater treatment devices is proposed to be undertaken at the future stage of development. The proponents IWCMP (page 24) notes that if insufficient water quality treatment areas are available at the time of detailed design, development land will need to be consumed to achieve water quality objectives.

It will be very important for conditions of approval to note the requirement of this future detailed design step, and make reference to the potential need for allocation of additional development land for stormwater treatment. It should be made clear that such land would not be sought within existing Environmental Protection areas or Ecological Buffers.

While the modelling used for the stormwater impact assessment (described in IWCMP) suggests that at ultimate development there will be a reduction in total export of sediment and phosphorous from the site (developed/treated v's base/rural case), it does not acknowledge the overall modelled increase of total nitrogen export from 220 kg/year (Table 4.1.1.1, page 26) to 316 kg/year, (Table 4.1.4.1, page 28). It is noted (by the proponent) that these figures are not expected to be accurate as there has been no localised model calibration; rather it is a conceptual indication of the effectiveness of stormwater treatment options. The Environmental Assessment (page 75) discussion of stormwater quality also fails to acknowledge the increased discharge of N from the development.

Nitrogen, and in particular dissolved inorganic forms of nitrogen, is the nutrient of most concern in the management of estuaries due to its rapid uptake by algae and the potential to cause increased algal blooms, reduced water clarity and suppressed dissolved oxygen levels.

The potential impact of increased nitrogen discharge to Blacks Creek and Cudgen Creek should be discussed, specifically, the potential for increased risk of eutrophication and sags in dissolved oxygen levels in the creek due to increased frequency and duration of algae blooms. The point where Blacks Creek joins Cudgen Creek is approximately 2km downstream from Cudgen Lake. This is a poorly flushed part of the estuary and it is possible that stormwater inputs to this estuary reach could experience extended residence times and increase algae growth potential. It is also possible that stormwater discharged to Blacks Creek and Cudgen Creek could be conveyed into Cudgen Lake on incoming tides, increasing the nutrient input to this system.

In addition, the IWCMP does not acknowledge the potential impact of construction phase activities on aquatic ecosystems and water quality. While there has been provision of a detailed erosion and sediment control plan, there will be many years of development on the site, particularly individual home construction, and the time until all stormwater quality treatment measures are operating at full efficiency will be very drawn out. Over this time large storms and floods will exceed the capacity of erosion and sediment control measures. In reality, the future point at which stormwater treatment drains are working at optimal efficiency is unknown. The impact of construction on water quality and aquatic ecosystems in the receiving environment could potentially be significant during this period.

Water quality within the receiving environment has not been discussed, nor has the condition of key environmental values within it. The points of discharge, rate of runoff from the development and primarily nutrients, are not clearly addressed. As such, there has not been a comprehensive or methodical attempt to gauge the impact of the development on water quality in Cudgen Creek, within the context of its catchment.

The IWCMP contains a section which refers to "Management Instruments" established for Cudgen Creek and Lake, but does not refer to the Tweed Coast Estuaries Management Plan, 2004-2008 which has been prepared and adopted by Tweed Shire Council to guide management for the system. Tweed Shire Council has water quality data for Cudgen Creek extending back to 2000, and this data set would be of value to the proponent to allow characterisation of the receiving environment.

There is no reference to the potential hydraulic impacts of stormwater discharge, in particular at the point of discharge to Blacks Creek identified as, "High flow discharge to existing watercourse via overflow weir" (dwg. 10468.3.6, page 6.1.6). The long term geomorphological implications of the potential for high volume and velocity of discharge to Blacks Creek should also be addressed, so as to ensure that this waterway does not become eroded due to bed and bank scour.

RECOMMENDATION: That the impact of stormwater on Cudgen Creek, particularly Nitrogen export, be investigated more thoroughly consistent with DGR 7.1 which explicitly requires impacts to be assessed on the "surrounding environment". The IWCMP modelling is an indication of the proposals capacity to meet requirements of the Tweed Shire Council's Urban Stormwater Quality Management Plan, but it has not been demonstrated that the development will have no impact on water quality and aquatic habitat values in receiving environments.

Erosion and Sedimentation Controls

DGR 7.2 - A detailed plan of erosion and sedimentation controls at construction and operational stages to ensure that the water quality of SEPP 14 Wetlands on the site remain unaffected.

The Erosion and Sediment Control Plan (ESCP; Appendix GG) provided by the proponent is comprehensive and if implemented effectively should achieve the requirement of DGR 7.2 to ensure water quality in SEPP 14 wetlands on the site remain unaffected. The ESCP does not however acknowledge the time over which construction will occur and the likelihood that erosion and sediment control measures will be exceeded during floods and storms, potentially leading to discharge of large volumes of sediment.

A criticism of this document which is common to related water management documents is the proposal to “establish appropriate discharge criteria for the construction phase” (Appendix GG, Table 2.1, page 8) by determining existing surface water quality parameters downstream of the proposed development, prior to construction. As noted previously, Tweed Shire Council has water quality data for Cudgen Creek extending back to 2000, (site CGN 3 is 500m downstream of Cudgen Lake) and this data set would be of value to the proponent to allow characterisation of the receiving environment. It would be possible to use this existing data to set discharge criteria at this stage of the development’s approval.

Stormwater Management

DGR 7.3 - A Stormwater Management Plan is to be provided which includes detailed design layout plan for the preferred stormwater treatment train showing location, size and key functional elements of each part of the system, must be submitted with each development application for subdivision. MUSIC modelling must be undertaken to demonstrate appropriate water quality objectives are being achieved. The Plan is to demonstrate, through the provision of monitoring and adaptive management plans and commitments, that any proposed surface water/stormwater pollution devices will be monitored to determine their pollutant removal efficiencies and the need for further treatment of drainage to ensure the preservation of water quality in Cudgen Creek and Blacks Creek.

It is recommended that the long term water quality objectives for the receiving environment be adopted from existing (under review) policy documents directly relevant to the area, this being the Tweed Coast Estuaries Management Plan 2004-2008 for Cudgen, Cudgera and Mooball Creek 2005. This document is currently being reviewed, with finalisation of a revised plan expected in 2012.

The water quality objectives for water being discharged from the site should be set in accord with the recommendations of this document and in consultation with the NSW Office of Environment and Heritage, particularly with respect to the nutrients nitrogen and phosphorous and percentage saturation dissolved oxygen. Tweed Shire Council has results for water quality in Cudgen Creek from 2000 onward, and this data would be provided to allow characterisation of the receiving environment.

The Stormwater Management Plan (Appendix FF) does not make reference to the potential impact of stormwater discharge from the Kings Forest development on Cudgen Creek and Cudgen Lake. A development of this scale cannot be considered in isolation, and must be considered with respect to the cumulative impact that it will have on an estuarine and coastal lake system that has previously shown signs of extreme ecological stress (major fish kills).

The impact of the development must be assessed with consideration of the existing capacity of the receiving environment to assimilate increased nutrient discharge without exceeding a threshold where key ecological processes are compromised. It is noted that the first two objectives of the stormwater management plan are to achieve; (1) appropriate stewardship of natural resources, (2) protection of downstream flora and fauna habitats.

There has been no investigation of or reference to the condition or stress levels of downstream flora and fauna habitats, or water quality. Additional comment specific to this document and a recommendation is as per that provided in DGR 7.1 above.

Surface and Groundwater Hydrology

DGR 7.4 - Assess the impacts of the proposal on surface and groundwater hydrology and quality during both construction and occupation of the site.

See response to DGR 7.1, 7.2, and 7.3 for comments on surface water management.

Potential impacts of the proposal on groundwater hydrology have not been reviewed due to the shortage of time and limited Council expertise in this area. It is presumed that the NSW Office of Environment and Heritage (OEH) will provide detailed comment on this aspect of the development.

However, given the following it is considered essential that a thorough review of the groundwater hydrology issues with particular reference to possible ecological impacts is conducted prior to approval of Stage 1:

1. The extensive scale of bulk earthworks proposed to take place on the site including within the Ecological Buffers.
2. The proximity of the existing water table close to the existing land surface.
3. Extensive and significant wetlands within and adjacent to the site.
4. The commitment to re-establish and rehabilitate groundwater-dependent vegetation communities such as freshwater wetlands wet and dry heath and swamp sclerophyll forest.
5. The requirement to manage habitat for, and compensate for losses of, numerous groundwater-sensitive threatened species including the Wallum Froglet and Wallum Sedge Frog.

RECOMMENDATION: That a thorough independent review of the groundwater hydrology impacts of the proposed development, with particular reference to possible ecological and catchment management implications, is conducted prior to approval of Stage 1. In addition to reviewing impacts on the surrounding natural environment, such a review should specifically address any uncertainties regarding the technical feasibility of the proponent's plans for habitat rehabilitation of groundwater-dependent or groundwater-sensitive vegetation communities or threatened species.

Groundwater Assessment and Monitoring

DGR 7.5 - Provide details of a groundwater assessment and monitoring program for the site.

As noted under the response to DGR 7.4 groundwater issues have not been reviewed due to shortage of time and limited Council expertise in this area. It is presumed that the NSW Office of Environment and Heritage (OEH) will provide detailed comment on this aspect of the development.

Overall Water Management

DGR 7.7 - Provide an overall water management plan, integrating any discrete water, stormwater, groundwater and Acid Sulfate Soil management plans.

As per Concept Plan Condition C25 Overall Water Management Plan

The Overall Water Management Plan (Appendix EE) contains a series of tables specifying measures to be taken by the proponent to avoid and mitigate potential impacts on the environment over the full term and phases of development. Table 6.7 and 8.6 of the document contain information relating to surface water quality monitoring. The document states that: "The quality of the discharge from the site should achieve the long term water quality objectives". It is stated that the long term water quality objectives will reflect background monitoring results for a number of parameters. No long term water quality objectives are provided, however these are proposed to be derived following completion of a water quality monitoring program being implemented by the proponent's consultant, described in Section 4, page 14. The sites where water quality is being monitored should have been included in information provided in this stage of the application.

It is considered that the long term water quality objectives for the receiving environment be set by referring to existing policy documents directly relevant to the area, this being the Tweed Coast Estuaries Management Plan 2004-2008 for Cudgen, Cudgera and Mooball Creek, (2005). This document is currently being reviewed, with finalisation of a revised plan expected in 2012. The water quality objectives for water being discharged from the site should be set in accord with the recommendations of this document and in consultation with NSW Office of Environment and Heritage (OEH), particularly with respect to the nutrients nitrogen and phosphorous and percentage saturation dissolved oxygen. OEH have set water quality objectives for the Tweed Catchment, these are available at: http://www.environment.nsw.gov.au/ieo/Tweed/report-02.htm#P250_20542

Consideration should also be given to the frequency and timing of sample collection through the post works commencement monitoring phase, to ensure that data collected are representative of the actual water quality being released during discharge events from the site.

The Overall Water Management Plan at Section 8.3 (Aquatic flora and weed management, page 83), specifies a policy of maintaining healthy aquatic plant life at and beyond the on-maintenance phase, but notes that it is unrealistic to expect that the waterways can be kept free of aquatic weeds. The document does not identify the likelihood of, or discuss consequences of infestation of the waterway systems by two noxious weeds of national significance that occur commonly in stormwater systems of the Tweed, that being *Salvinia* and *Cabomba*. Tweed Shire Council currently spends over \$50,000 per year harvesting aquatic weeds and the risk of creating an additional maintenance burden of this kind by developing extensive shallow and poorly flushed waterways must be avoided.

Golf course nutrient management is identified as a responsibility of the golf course manager at construction through to operational phases of the development. A commitment has been provided to ensure that the water table and surface waters associated with the golf course do not input excess nutrients into the surrounding SEPP 14 wetlands and Environmental Protection zones (page 126).

A comprehensive range of management practices have been nominated to address nutrients, and a comprehensive monitoring regime nominated to assess performance. The commitments and nominated management practices set out in this document are acknowledged, however there has not been any reference to the potential net impact of nutrient migration from the golf course on the receiving environment. The operational policy is to minimise golf course impact on surrounding ecological values. The proposal and supporting documentation in its current form do not demonstrate that this can actually be achieved.

RECOMMENDATION: That further information be provided demonstrating that the range of measures proposed to manage golf course nutrient leaching will be effective in eliminating increased nutrient export to adjacent natural areas.

RECOMMENDATION: That the Overall Water Management Plan is revised to include specific long term water quality monitoring in the Environmental Protection zones, Ecological Buffers, and in the receiving environment along Blacks Creek and Cudgen Creek including Cudgen Lake.

Cats

DGR 9.1 Demonstrate that the keeping of cats within the site shall be totally prohibited and that all residential lots will be encumbered to this effect with a Section 88B or 88E instrument under the NSW Conveyancing Act 1919.

As per Concept Plan Condition C9

Noted and supported.

Riparian Corridors

DGR 9.2 Address measures to protect and manage riparian corridors and adjacent aquatic habitats in consideration of the Tweed Coast Estuary Management Plan.

The development set-back is consistent with the 50 m buffer zone to Cudgen Creek recommended in the Tweed Coast Estuary Management Plan.

Wetlands

DGR 9.3 Demonstrate that the proposal will result in minimal impacts on the ecological integrity of the wetland habitats on the site, with particular consideration of the water cycle management measures proposed.

The Environmental Assessment for the project proposes significant clearing, earthworks and location of infrastructure within Ecological Buffers established for the purpose of protecting the ecological integrity of the wetland habitats of the site.

On page 79 of the EA, refers to a number of key conclusions of the Department of Planning Director General's Report on the Kings Forest Concept Plan stating (among other things) that: *The Department of Planning was satisfied that EEC's and SEPP 14 Wetlands on the site had been adequately mapped and protected through zoning, future land dedication and the application of ecological buffers.* This statement is taken from the Director General's Report (page 49) and needs to be considered in the context of that report which provides only qualified support for very limited development in the Ecological Buffers and conditioned the approval accordingly (see Concept Plan Condition C20). It is also noted that in relation to the consistency with the provisions of SEPP 14, the Director General's Report states at page 75 that *....no development is proposed within a 50 metre buffer of this wetland.*

If, as is proposed in the EA, ecological buffers to SEPP 14 wetlands are eroded through their use for development infrastructure, it may not be possible for them to perform their intended role, resulting in both acute and chronic degradation of the ecological integrity of the wetlands habitats.

See response to Concept Plan Condition C20 for further details and recommendations relating to the proposed uses of the Ecological Buffers.

Management Plans

DGR 9.4 Updates are to be provided, where relevant, for the various management plans for koalas, vegetation, threatened species, feral animals weeds, the buffers, and the golf course providing where relevant details on timelines for implementation of recommended works including maintenance periods, measurable performance and completion criteria. Each plan is to consider all other plans for the site to ensure that management strategies do not conflict and that each plan can be implemented without negatively impacting on the objectives of another.

As per Concept Plan Condition C2 Management Plans

Koala Plan of Management (KPOM; see Appendix N of EA)

Timing of the proposed recommendations (See Table 2, p33) is not explicit. This is particularly evident in relation to the stated long-term management objectives (as opposed to objectives relating to immediate habitat retention and the management of construction impacts) regarding to the maintenance of habitat connectivity (Objective 2, Table 2, p33), improvement of habitat (Objective 4, Table 2, p34), mitigation of ongoing development impacts (Objective 5, Table 2, p 34) and the commitment to ensure there is no reduction in koala numbers from the development (Objective 6, Table 2, p35).

Although little information is included to determine when, how often and where specific long-term works should be undertaken, consideration does however appear to have been given to limiting the proponent's management burden. The commitment to planting of koala food trees and annual monitoring appears to be notionally limited to 5 years (see Objective 4 in Table 2 and Section 13.4). Necessary habitat restoration works are similarly notionally limited to a 5 year time frame within the related management plans. Commitments to other recommended actions appear to be confined to works completed during construction (e.g. induction of workers, educational signage, the provision of fauna infrastructure such as grids, fencing and underpasses). Despite the inclusion of a specific objective in the revised KPOM that commits to ensuring that operational phase activities do not significantly impact on the local koala population (see Section 11 of KPOM), no provision has been made for timing of associated long-term community education, awareness and involvement, management of koala habitat, maintenance of grids, underpasses and fences, policing of dog and cat bans, traffic control, feral animal control, weed invasion, or bushfire management to protect ecological assets. While it is not explicitly stated it appears that the proponent expects Council to meet the management burden of the KPOM after a period of 5 years (see response to DGR 2.5 for further comment on this issue).

Performance criteria for each of the tabulated recommended actions are presented in Section 9 (see Table 2, p 33). This approach is supported however, they should include the following where relevant:

- Regular checking and prompt maintenance as required of any works (replanting, grids, fences, underpasses etc).
- Replanting to be from plants of local provenance.
- Koala food tree species to be consistent with the species listed in the Vegetation Management Plans (as revised in accordance with recommendation in response to DGR 9.6).
- Planting densities and species composition to be consistent with vegetation community to be rehabilitated.

- An average growth rate of plantings to be > 1 m by year 2 and > 3m by Year 5.
- Approval from relevant State agencies and Council of monitoring reports.
- Prompt notification to Council and relevant State of any breaches environmental mitigation measures (e.g. damage to fauna fences etc).

The revised KPOM relies on other management plans to implement some of the works necessary to meet the objectives of the KPOM. In particular actions in relation to vegetation management, feral animals, and bushfire management are all crucially important to support and recover the koala population. Reference is made in the KPOM to various management plans but specific actions are not reproduced or summarised in the KPOM, nor are they explicitly identified in the other management plans. This makes it very difficult for readers to consider the sum total of the commitments made to protect and recover koalas in the vicinity of the development.

Without a clear and explicit understanding of how the revised KPOM is to be implemented over both the short and long-term it is considered that the revised KPOM does not adequately address the requirements of DGR 9.4.

This issue is further highlighted by apparent conflicts between management plans. Some examples include the following:

- Overlapping proposals to revegetate the environmental buffers with both heathland and koala feed trees (compare for example Appendix MM Fig. 16B with Appendix N Fig 20). As heathland is not regarded as koala habitat (see Appendix II of Tweed Coast Koala Habitat Study 2011) this appears to represent an inconsistency in the revised KPOM and the Buffer Management Plans (Appendices MM and NN).
- The proposal to revegetate the environmental buffers surrounding Precinct 1 with koala feed trees when almost all of it is mapped as littoral Rainforest (compare for Fig. 17 with Fig 12 of Appendix MM). As Littoral Rainforest is not regarded as koala habitat (see Appendix II of Tweed Coast Koala Habitat Study 2011) this appears to represent an inconsistency in the revised KPOM and the Buffer Management Plans (Appendices MM and NN).
- Figure 20 of the revised KPOM proposes planting koala feed trees in scribbly gum vegetation community south of the proposed golf course. While scribbly gum (*Eucalyptus racemosa*) is known to be used by koalas on the Tweed Coast (see Figure 4.1, Tweed Coast koala Habitat Study 2011) it is also a locally rare community, the integrity of which should be maintained. Consequently, koala feed tree planting in this area should include scribbly gum with the judicious use of other koala feed trees. This issue has not been identified in either the revised KPOM (Appendix N) or the relevant Vegetation Management Plan (Appendix VV).
- Section 9.9.2 of KPOM that the revised KPOM includes measures to address koala incursions into built up areas during the operational phase of the development which are not reflected in the Site Management Plan which explicitly limits operational management measures to the proposed ongoing management of the proposed golf course (see p 229 of Appendix Z).

- Proposals to plant koala food trees in bushfire Asset Protection Zones and over fire trails (compare Plan 4 from Appendix X with Fig 17 from Appendix MM or Fig 20 from Appendix N).

RECOMMENDATION: That an implementation schedule should be included in a revised KPOM. This schedule should itemise all recommended actions required (including those detailed in other management plans) to ensure that the KPOM meets its aim. The schedule should show how each action meets the objectives of the KPOM, timing, frequency and responsibilities for action, resources required, costs, performance criteria, and outputs.

RECOMMENDATION: That further review of the management plans is conducted to ensure there are no inconsistencies in the implementation of the plans of management as required by DGR 9.4 and Concept Plan Condition C2.

Other Plans of Management

As many of the issues relating to the Vegetation (Appendices UU and VV), Threatened species (Appendices SS and TT), Feral animals (Appendix PP), Weeds (Appendices QQ and RR) and Buffers (Appendices MM, NN and OO) are similar they are dealt with collectively here. It is noted that the Golf Course Management Plan is not included in this Project Application

Timelines for implementation of recommended works

As was the case for the Koala Plan of Management (see above), the timing for the implementation of actions within the other Management Plans is not explicit. Some evidence for this includes the following:

- The Buffer Management Plans generally link management actions to stages but provide no specific implementation schedule, making it difficult to determine what is to be done, by whom and when.
- The Vegetation and Weed Management Plans include works schedules with an appropriate level of detail on the works to be carried out but, except for a few instances (e.g. work zones 12 and 13 in Appendix RR), there is no indication of timing or frequency of works to be completed.
- The Feral Animal Management Plan includes an implementation schedule which is not considered sufficiently focussed to be effective (see response to DGR 9.11).
- The Threatened Species Management Plans outline certain management actions but timing is rarely detailed. In particular, monitoring for the presence of threatened fauna is included as a management action but the monitoring and reporting sections only provides for annual monitoring. Frequent and targeted surveillance is considered essential if inform the appropriate management response.

Given the number and complexity of issues to be managed it is considered essential that clear implementation schedules are provided. As recommended for the revised KPOM above, these schedules should itemise all recommended actions required (including those detailed in other management plans) to ensure that the relevant plan meets its aims. The schedule should show how each action meets the objectives of the plan, timing, frequency and responsibilities for action, resources required, costs, performance criteria, and outputs.

Maintenance periods

The various Management Plans appear to anticipate a 5 year maintenance period however this is not generally made explicit. For example, the Vegetation, and Threatened Species Management Plans appear to imply a 5 year duration through their respective proposed monitoring programs. The Buffer Management Plans do the same and in addition commit to 5 years of maintenance. The Weed Management Plans are the only Plans to explicitly mention a 5 year duration (which is appropriately subject to performance criteria). The Feral Animal Management Plan does appear to specify a time horizon.

There is a similar lack of clarity around the commencement of the Management Plans. With the exception of the Weed Management Plans which indicate that works will commence on approval of the Project Application, the Buffer and Vegetation Management Plans do not make commencement explicit but indicate that certain works should be implemented along with the “construction” or bulk earthworks. Similarly the Feral Animal Management Plan anticipates some actions taking place at “start-up”. Commencement of the Threatened Species Management plans does not appear to be specified.

It is considered essential that these issues are clarified given the comments elsewhere regarding the long term implementation of the Management Plans (see response to DGR 2.5) and uncertainties regarding the timing and staging of the development. On the basis of the current commitments by the proponent, it is possible that the management obligations could be satisfied within 5 years of commencement of bulk earthworks without any subdivision or construction taking place. In fact, without additional appropriate conditions, the obligations to manage weeds on the site could be satisfied prior to any bulk earthworks.

It is considered that all Management Plans should commence on approval of the Project Application (see also response to Concept Plan Condition C2) and, as recommended under the response to DGR 2.5, continue to be implemented by the proponent for a period of 5 years or until 90% of lots are sold, or until completion criteria have been met, whichever is longer.

Measurable performance criteria

Performance criteria should correspond to the stated management strategies to ensure they are effective at achieving the Plan’s aims and objectives. Most of the Plans do not take this approach. For example, the Buffer Management Plans provide specific management actions for protective measures, weed control, heath regeneration and revegetation, koala habitat compensatory plantings, acid frog compensatory habitat, pest management and adaptive management (see Section 4 of Appendices MM and NN), but performance criteria are only included for general revegetation and weed control.

Performance criteria also need to be measurable, specific and relevant. Where the potential outcomes of a proposed management action may vary, it is essential that performance criteria are specific enough to meet the objective(s) of the works.

For tree planting and revegetation specific growth rates, projective foliage cover and species composition targets are essential to gauge performance of the plantings. The proportion of plants that survive is not sufficient on its own to measure the success of plantings. Even though 100% of plants may survive, those that are actively managed will perform much better than those that are neglected. It is noted that the Management Plans contain monitoring procedures which include the collation of data on parameters such as tree height, cover and species composition (e.g. see Section 6.2 of Appendices MM and NN and monitoring proforma appended to the Weed Management Plans, Appendices QQ and RR). It is not clear why this information has not informed the performance criteria.

Also some of the suggested performance criteria are not particularly relevant. For example performance criteria for weed control include the following (see Section 5.5 of Appendices QQ and RR):

- *Establishment of a 70% native ground cover after 2-3 years*
- *Average percentage cover of 90% native ground cover at the 5th year.*

Both of these criteria implicitly assume a benchmark native ground cover of 100% and neither are related to accepted benchmarks for specific vegetation communities (e.g. see <http://www.environment.nsw.gov.au/projects/VegetationTypingAndCondition.htm> for details). Additionally, for many vegetation communities natural benchmark ground cover percentages rarely exceed 50%. It is therefore considered inappropriate to propose performance criteria that are not relevant to the specific vegetation community to be restored, or the management action proposed.

Where possible performance criteria should also reflect baseline conditions determined from initial assessment and/or ongoing monitoring. For example, if weeds in the ground stratum of a particular work unit were assessed at 40% prior to treatment, appropriate performance criteria may be to reduce coverage to <10% in the first year, <5% in the second year and < 1% on maintenance. Given the amount of assessment work carried out to produce the existing Plans, it is regrettable that such work has not been used to derive achievable indicators of performance.

As almost all of the environmental mitigation for the site is embodied in the Management Plans and involve implementation over a number of years, it is in the interests of both the proponent and the consent authority to ensure that performance criteria are properly formulated.

Completion criteria

Most of the Management Plans acknowledge the possible need to delay completion until the relevant performance criteria have been achieved. This principle is supported and built in the recommendation below regarding the duration of Management Plans.

Integration with other Plans

A number of inconsistencies between the Koala Plan of Management and other Plans have been noted above. Further examples include:

- Figure 16B of the Buffer Management Plan for Precincts 1 and 5 (Appendix OO) shows considerable areas proposed for heathland revegetation within the APZ proposed in the Bushfire Risk Assessment (Plan 4, Appendix X). It is not clear how this is to occur given the planned fire trails and limitations on tree/shrub cover for APZs.

- Recommendations are made in the Threatened Species Management Plans (e.g. see p11 of Appendix SS) relating to bushfire management that are not reflected in the Bushfire Risk management Plan
- A number of specific feral animal control actions are noted in relation to individual Threatened species covered in the Threatened Species Management Plans (e.g. see p15 and p32 of Appendix SS) that are not mentioned in the Feral Animal Management Plan (Appendix PP).

A recommendation to ensure that Management plans are consistent has been made above. The recommendation below to include a detailed implementation table which includes relevant actions from other Plans will also assist to improve integration.

RECOMMENDATION: That all Management Plans should be revised to include a detailed implementation schedule which should itemise all recommended actions required (including those detailed in other management plans) to ensure that the relevant Plan meets its aims. The schedule should show how each action meets the objectives of the Plan, timing, frequency and responsibilities for action, resources required, costs, performance criteria, and outputs.

RECOMMENDATION: Performance criteria for all environmental Management Plans are revised in consultation with Department of Planning, Office of Environment and Heritage, and Tweed Shire Council to ensure they are specific, measurable, achievable, relevant and timely.

RECOMMENDATION: That all Management Plans to explicitly indicate their commencement and duration. All Plans should commence on approval of the Project Application and continue to be implemented by the proponent for a period of 5 years or until 90% of lots are sold, or until completion criteria have been met, whichever is longer.

Review of Koala Plan of Management and Offsets

DGR 9.5 Provide an update to the Koala Plan of Management (KPoM) for the site. The update should confirm that the measures identified and proposed in the KPoM to offset the impact of the development on existing and future Koala populations are adequate.

Concept Plan Condition B1 Koala Plan of Management –Ongoing Review

The Koala Plan of Management, and the measures contained therein to offset the impact of the development on existing and future koala populations, shall be updated at each stage of development so that these measures remain relevant and effective and based on contemporary scientific data throughout the development of the Project the subject of this concept plan. Each stage update shall be prepared in accordance with the requirements in C2 and subject to independent review by a suitably qualified person/s to the satisfaction of the Director-General.

The revised KPOM proposes a major change in koala management philosophy for the site. Instead of allowing koalas to roam across the urban landscape which would inevitably bring them into contact with dogs and cars, the revised plan seeks to maintain a complete separation of koalas and their habitat from these threats by the use of a series of underpasses, grids and fencing.

Council welcomes this change in approach however remains concerned that the proposed approach will result in residual and ongoing impacts that will adversely affect the koala population in the vicinity of the site. This is particularly important in light of the findings of the Tweed Coast Koala Habitat Study 2011 which found that over recent years the koala population declined rapidly to the point where aggressive measures are needed to prevent their local extinction. Of course, this finding reflects existing pressures on the population in the absence of further exacerbation of threats from large urban development such as Kings Forest.

DGR 9.5 seeks to ensure that any measures proposed in the revised KPOM can adequately “offset” the impacts of the development on existing and future koala populations. This cannot be properly achieved without an analysis to determine the type, nature and importance of any potential impacts arising from the development in relation to proposed mitigation measures. The revised KPOM lists some of the potential threats (Section 8, p19) and mitigation measures (Section 9, p22) but does not identify residual impacts that need to be “offset”. Instead, the revised KPOM proposes certain works (e.g. tree planting etc) aimed at increasing the amount and condition of koala habitat (Section 10, p29) based on an implicit assumption that such works will “adequately” offset other impacts of the development that are either not acknowledged or unqualified.

While the commitment to such works is welcome and will make more habitat for koalas in the future, it does not necessarily “offset” likely increases in koala mortalities due to inadequacies in the proposed mitigation measures. For example, the proposed fencing (Figure 17) will not prevent koalas from coming into contact dogs, cars, and other threats by accessing Precinct 5 from the north. Similarly, the proposed grids are unlikely to prevent dogs from accessing core koala habitat areas to the south and east of Precinct 5. The point here is twofold (1) no amount of tree planting can offset the short term impacts of koalas coming into contact with dogs and cars and (2) offsets are a last resort and should not be used to account for inadequacies in primary mitigation. Suggestions to improve the proposed mitigation measures are presented elsewhere (see recommendations in response to DGR 5.5, 9.7 and 9.9).

Notwithstanding further room for improving the mitigation measures noted elsewhere, Council supports the measures proposed to improve and expand koala habitat in the area as an offset for residual issues that cannot be adequately avoided or mitigated given the approval of the Concept Plan (e.g. impeded connectivity across the site, accidental breaches of fencing and grids, increased arson risks etc) and overall increases in pressures to the Tweed Coast koala population from a substantial increase in the human population.

As noted elsewhere (see response to DGR 9.4 and 9.6), The Environmental Assessment proposes the restoration of heathland pursuant to Concept Plan Condition B3 over much the same lands proposed for koala tree planting offsets (compare for example Appendix MM Fig. 16B with Appendix N Fig 20). As discussed under the response to DGR 9.4 these overlapping uses are incompatible. If the heathland restoration (see also Concept Plan Condition B3) is to prevail this will significantly reduce the amount of land available for koala offsets.

Further aspects of the revised KPOM relating to “offsets” concern: the future of the east-west corridor proposed within the approved Concept Plan discussed at pages 17 and 30. Further discussion and recommendations on this issue are presented under the “Concept Plan Condition B4 East-West Wildlife Corridors” below.

Given the issues raised in relation to koala management, Council supports the independent review of the revised KPOM as foreshadowed in the Concept Approval condition B1 (see above).

RECOMMENDATION: That the KPOM be reviewed to ensure that offsets are not used to account for impacts that can be avoided or mitigated and that residual impacts are explicitly identified and used to inform the proposed offset strategy

RECOMMENDATION: That a review of all offset and habitat compensation arrangements is undertaken prior to approval of the project application. This is ensure that all offsets are clearly documented, that there is no spatial duplication of offsets for ecologically unrelated impacts, and that management and contractual arrangements for any off-site compensation, should it be required, is in place.

RECOMMENDATION: That the consent authority seek an independent review of the revised KPOM in accordance Concept Approval condition B1.

Koala Plan of Management – Data, Monitoring, Koala habitat, Additional measures.

DGR 9.6 The KPOM update should take into account contemporary data/literature on koala management; the results of the monitoring of management measures operating as part any approved stage/s, in accordance with B2 of the concept plan approval; the role of additional koala habitat created in protecting koala numbers, and the provision of any additional koala management measures, specifically those relating to dogs.

As per Concept Plan Condition C2(1) Management Plans

Contemporary data and literature

At Section 3.4 (p 9-10) under the heading *Koala Management within the Tweed Shire* the revised KPOM outlines the objectives of the 1996 Tweed Coast Koala Habitat Atlas, mentions the Tweed Coast Koala Habitat Study (2011) in relation to the implementation of the 2011 Tree Preservation Order and states that Council *plans to develop a Shire-wide, comprehensive Koala Plan of Management for the Tweed Coast.*

It is considered that Section 3.4 does not adequately summarise the findings of the Tweed Coast Koala Habitat Study 2011, nor does it reflect Council planning and other initiatives to improve koala management on the Tweed Coast. For example, Section 3.4 omits to note: the existence of numerous site-specific KPOMs (Koala Beach and others); routine conditioning of koala recovery actions applied to development applications due to the listing of the koala as Vulnerable under the *Threatened Species Conservation Act 1995*; the existence of the Tweed Coast Koala Advisory Group; the imminent preparation of a comprehensive Koala Plan of Management for the Tweed Coast; Council and grant funded projects to rehabilitate and reconnect koala habitat; extensive community concern about koala conservation and; the important role of wildlife and koala welfare groups such as Tweed Valley Wildlife Carers and Friends of the Koala. Acknowledgement of these issues is crucial to ensure that the management of koalas at Kings Forest complements the management approach adopted for the broader koala population of the Tweed Coast.

Section 3.4 also erroneously states that because Council does not currently have a comprehensive Koala Plan of Management *that local statutory planning does not specifically allow for koala management.* This is incorrect; SEPP 44 still applies and so does the *Threatened Species Conservation Act 1995.*

Section 5.2.1 uses information from Faulks (1990) to list koala feed trees for the NSW north coast. A much more contemporary and comprehensive regional overview is presented in the NSW Koala Recovery Plan (DECC, 2008).

Despite the fact that the issue of bushfire was highlighted in the Tweed Coast Koala Habitat Study 2011 as one of, if not, the dominant factor responsible for recent declines in koala numbers on the Tweed Coast, this important finding is not mentioned in Section 8.3 where the issue of bushfire is raised. Failure to properly acknowledge this issue is further reflected in management response (Section 9.5) and the associated Bushfire Management Plan (EA Appendix X) which ignores the clear need to actively protect vulnerable ecological assets such as the koala population from bushfire.

RECOMMENDATION: That the KPOM is revised to accurately reflect contemporary literature on: (1) and koala management and planning practices in the Tweed Shire; (2) koala feed trees in northern NSW; and (3) threats to the local koala populations from bushfire.

Results of monitoring and management actions in accordance with Concept Plan Condition B2

Concept Plan Condition B2 (see Environmental Assessment Appendix B) requires synthesis and collation of all actions undertaken or proposed within the various management plans that form part of the Concept Plan approval within 12 months (or as otherwise determined by the Director General of Planning. The amended Concept Plan (Mod 1) was approved on 22 December 2010, which is more than 12 months ago.

The revised KPOM seeks to delay the preparation of both the baseline monitoring report and the outline of an Annual Koala Monitoring Report until the commencement of construction (see Section 13.3, p37). This is contrary to DGR 9.6 and Condition B2 which anticipate that the revised KPOM will be informed by this information.

In relation to the baseline monitoring report there does not appear to be any reason why koala monitoring from the time of the concept plan approval should not be included in the revised KPOM. Given the impacts of the wildfires in 2009 identified in the locality in the Tweed Coast Koala Habitat Study, the provision of such monitoring information is crucial to determining an appropriate management response. As noted elsewhere, the importance of bushfire management is not given sufficient emphasis in the revised KPOM.

The same applies to the required outline of the Annual Koala Monitoring Report the stated aim of which is to collate and synthesise all monitoring and reporting requirements associated with the development. In its current form the revised KPOM does not “collate” or “synthesise” any of the relevant management actions arising either from the KPOM itself or from related management plans. As noted previously, this makes it very difficult for interested parties to clearly understand the scope of the works required to meet its aim. Consequently, the revised KPOM is not implementable in its current form. (Of course the need for the KPOM to be implementable should arise from a clear implementation schedule and should not be reliant on the production of a draft monitoring program).

Although the revised KPOM seeks to delay the draft outline of the Annual Koala Monitoring Report it does highlight some of the likely content at Section 13.4. Comments on this section follow:

- The proponent seeks to consider terminating the need for further monitoring after 5 years. Monitoring is an integral part of any KPOM made under SEPP 44 and should continue while ever the plan is in force (see Section 3.2 p8).

- A number of ecological parameters are proposed to be included in the monitoring report. While these are admirable, further thought is needed to detail how they will be measured, how often and by who, and the resources required to do so.
- As mentioned previously the outline should also include a comprehensive summary of all actions required to implement the revised KPOM. For example, monitoring should evaluate the effectiveness of grids, underpasses, fencing, improvements in habitat quality, success of replanting efforts, community education, bushfire management, domestic dog control, feral dog control etc.
- Most of the remaining content of this Section simply repeats the requirements of Concept Plan Condition B2.

RECOMMENDATION: That the KPOM be reviewed to include a baseline monitoring report prior to approval of the current project application in accordance with DGR 9.6 and Concept Plan Condition B2

RECOMMENDATION: That the KPOM be reviewed to include an outline of an Annual Koala Monitoring Report prior to approval of the current project application in accordance with DGR 9.6 and Concept Plan Condition B2. This outline should provide a comprehensive list of all ecological monitoring parameters and management actions (including those detailed in other management plans) necessary to meet the aim of the KPOM together with information on how they are to be measured, how often, by whom, measurable performance criteria, and resources (technical and financial) necessary to carry out the actions themselves and the associated monitoring and reporting.

Role of additional koala habitat in protecting koala numbers

This issue is covered in Section 10 of the revised KPOM within three sub-sections, planting of koala feed trees (Section 10.2), maintaining connectivity across the site (Section 10.3), and the management of koala habitat (Section 10.4).

As noted under DGR 9.5 Council supports the planting of koala feed trees to increase the potential carrying capacity of the area, however there appear to be a number of issues which suggest that the planting of koala feed trees may not be appropriate in a number of areas indicated in Figure 20. These are addressed below:

- Section 10.2 indicates that koala feed tree planting areas are to include areas within the ecological buffer zones. Figure 17 of the Buffer Management Plan (Appendix MM) indicates that that these areas are generally contained within the proposed inner 30m vegetated buffer. However, the mapping of areas to be planted do not, appear to account for the location of the proposed koala fence which, at least in some places, is located well within the inner 30 m proposed vegetated buffer in order to accommodate a drainage swale (see Fig 13B Appendix MM). This suggests that the mapped areas shown in Figure 17 overstate the areas available for planting.
- As noted previously (see response to DGR 9.4), plans outlined in Section 10.2 and Figure 20 within the revised KPOM appear to conflict with overlapping plans pursuant to Concept Plan Condition B3 which proposes the restoration of heathland within much of the ecological buffer zones. As discussed under DGR 9.4 these overlapping uses are incompatible. If condition B3 is to prevail this will significantly reduce the amount of land available for the planting of koala feed trees.

- There may also be an issue in relation to the proposed planting of koala feed trees in scribbly gum vegetation community south of the proposed golf course. While scribbly gum (*Eucalyptus racemosa*) is known to be used by koalas on the Tweed Coast (see Figure 4.1, Tweed Coast koala Habitat Study 2011) it is also a locally rare community, the integrity of which should be maintained. Consequently, koala feed tree planting in this area should include scribbly gum with the judicious use of other koala feed trees. Note, this issue has not been identified in the relevant Vegetation Management Plan (Appendix VV).

The revised KPOM acknowledges the importance of retaining and improving habitat linkages as a way of providing a better long-term future for koalas in the locality (Section 10.3). This of course needs to be considered against the impediments to movement arising from the development that will remain despite mitigation measures proposed in the revised KPOM (fencing, grids, speed restrictions and underpasses). As discussed elsewhere these residual impacts need to be offset to ensure the long-term viability of the koala population as proposed in the revised KPOM.

It is also noted that the proponent seeks to abandon the proposed east-west koala habitat corridor which is required as part of the approved Concept Plan and further dismisses the need for establishing an additional east-west corridor along the southern boundary of the site pursuant to Concept Plan Condition B4 (see revised KPOM p 17 and 30). Further discussion and recommendations on this issue are presented under the response to Concept Plan Condition B4 East-West Wildlife Corridors below.

The management of koala habitat is included in Section 10.4 of the revised KPOM by simply listing 6 other plans that may include measures of relevance to koala habitat management. This approach is considered inadequate as there has been no attempt to summarise the relevant actions from these plans. Apart from making it difficult for interested parties to understand the full scope of the revised KPOM, this approach does little to demonstrate that such measures are integral to the plan and are driven by imperatives of koala management.

It is also noted that of the 6 plans listed, none correctly reference the appropriate appendices to the Environmental Assessment, and the Threatened Species and Vegetation Management Plans for Precincts 12, 13 and 14 referred to appear to have been absorbed in the respective plans for Precincts 2-4, 6-14 (Appendices TT and VV respectively). Further Section 10.4 of the KPOM does not include reference to the Weed, Buffer or Feral Management Plans all of which contain management measures relevant to protecting koalas and koala habitat.

The revised KPOM anticipates commencing revegetation and rehabilitation works within 6 months (180 days) of the commencement of works (see KPOM Section 10.4, p31). Given the long lead time for trees to grow and be useful to koalas, coupled with the fact that potential disruption to the koala population will occur on commencement of works, it is considered that this timeframe should be amended to ensure that revegetation and rehabilitation works will commence on approval of Stage 1.

*RECOMMENDATION: That the KPOM is reviewed to ensure that: (1) sufficient areas can be located for koala food tree planting without compromising other management objectives in the Ecological Buffers or the integrity of existing vegetation communities (2) the list of potential koala feed trees is expanded to include scribbly gum (*Eucalyptus racemosa*) which should be used only in vegetation communities containing this species; (3) the KPOM acknowledges and provides sufficient habitat compensation for residual impacts arising from impediments to movement of koalas throughout the site; (4) it includes a comprehensive summary of all management actions including those detailed in other Plans, necessary meet the objectives of the KPOM.; and (5) revegetation and rehabilitation works will commence on approval of Stage 1.*

Additional koala management measures specifically dogs

The revised KPOM does not specifically identify any “additional” koala management measures; rather it makes reference to the entire suite of measures contained within Section 9 (see Appendix 1 of revised KPOM). Considering the major change in approach taken by the revised KPOM this response is considered adequate.

Specific measures proposed in relation to dogs are addressed in the Revised KPOM at Section 9.8 and discussed more generally at Section 8.6. Further comment and discussion on the adequacy of the proposed dog control measures are contained under the response to DGR 9.7 below.

Koala Plan of Management – Dogs.

DGR 9.7 The KPOM update should include, but not be limited to: the identification of dog breeds known to present a significant threat to koalas and measures to effectively mitigate the threat posed to koalas by dogs. Such measures may include prohibitions/restrictions on particular breeds; limitations on the number of dogs per property; and specifications on the way dogs are to be housed from dusk to dawn.

As per Concept Plan Condition C2(2) Management Plans

The revised KPOM seeks to remove controls on domestic dogs (other than those that apply generally across the Shire and State under the *Companion Animals Act*) on the basis that dogs and koalas can be effectively prevented from coming into contact with each other by the implementation of fencing and grids.

This approach is considered inadequate to effectively mitigate the threat posed to koalas by dogs (as required by DGR 9.7) for the following reasons:

- The proposed fencing, while commendable is only likely to be semi-permeable to dogs. At only 1200mm high, the fencing is well within the capabilities of larger dogs to jump or scale.
- Experience with similar fauna fencing indicates that these structures require considerable maintenance and are frequently damaged (machinery, vandalism, fire, deterioration etc.) allowing opportunities for dogs to enter areas frequented by koalas (and vice versa).
- The proposed fencing plan (Figure 17 of KPOM) does not “seal off” Precinct 5 potentially allowing dogs access to koalas in areas to the north of the estate and vice versa. Note koalas are common visitors to areas of habitat north of Depot Rd.

- The proposed grids are likely to prevent koalas from accessing the developed area but are unlikely to do much to deter dogs from crossing them and gaining access into environmentally sensitive areas where koalas may be present.
- The KPOM makes no comment on or recommendations in relation to the need to control of feral dogs
- The measures proposed for the control of wild dogs in the Feral Animal Management Plan are not considered sufficient (see response to DGR 7.11 below).
- Evidence from the Tweed Coast Koala Habitat Study 2011 (p63) indicates that even in large healthy koala population a mortality rate of 2-3% is sufficient to precipitate population decline. In a population already under extreme stress any incidental increase in mortality, such as from dog attack (or any other source), will only hasten the trajectory to local extinction.

It is also important to note that under the approved concept plan a partial ban of dogs regulated by covenant on title was proposed (based on breed, size and competency of the owners), however this was criticised by Council as small dogs are known to attack and chase koalas and because it was not considered practical to police. In the context of the findings of the Tweed Coast Koala Habitat Study 2011 which have only come to light since the approval of the Concept Plan, the opposition to a partial ban on dogs needs to be reinforced. The detailed reasoning behind this approach is worth repeating here:

- *Covenants of this sort are very difficult if not impossible to enforce. The regulating authority (Tweed Shire Council) will be forced to make judgements about the likely weight and breed of a dog (not all dogs are established breeds), and whether or not it is kept inside, the nature of dog enclosures, the length of dog tethers (what if they are on a wire run), whether or not the owner or supervisor of the dog is a competent person and defences such as a high (koala proof) fence or the age and health of the dog (or owner). Owners and tenants who may not be fully aware of their responsibilities or the likely interpretation by Council will experience similar uncertainties. Experience from Koala Beach where all dogs are banned suggest that such a partial ban will be unworkable.*
- *It is the experience of wildlife carers that even small dogs can easily inflict wounds that prove fatal to koalas. Although small dogs may not be able to kill a healthy koala outright they are nonetheless capable of inflicting small puncture wounds, which according to wildlife carers almost always get infected and result in death. Terriers for example have been traditionally bred to hunt and are particularly aggressive towards wildlife. Many small breeds are also particularly territorial and regularly attack even large targets such as people.*
- *The proposed measures do nothing to prevent visitors (including workers and tradesmen) from bringing dogs (large or small) onto the estate. Again at Koala Beach this issue has been particularly difficult to police despite the fact that there is a blanket ban in place and additional resources allocated to policing the ban. Is it reasonable to allow tradesmen to bring dogs into the estate that the residents cannot?*

RECOMMENDATION: *That the KPOM is reviewed to ensure: (1) implementation of a complete ban on dogs within the site; and (2) provision is made to enable additional patrols and compliance by Council Rangers to police the ban.*

A possible alternative to the banning of dogs would be to:

- (1) Increase the height or design of the koala proof fence to effectively prevent dogs from scaling it; and
- (2) Ensure that the roads traversing the environmental lands were fenced on both sides with fauna underpasses at regular intervals

This would also mean that the grids could be dispensed with, and road speed would cease to be an issue (see response to DGR 5.5 above). Further specialist investigation is required to determine the number of underpasses that may be required at each crossing and an acceptable fencing design that will prevent both dogs and koalas from breaching it. Of course, elevated roads set on piers though the environmental areas would provide the safest and best connectivity for wildlife including koalas. Apart from the aesthetic issue it is not clear what measures could be implemented to prevent dogs from accessing koala habitat at the Kings Forest Parkway (Depot Rd) - Secret Lane intersection in the north of the site.

RECOMMENDATION: That should the recommendation to ban dogs from the site (see above) be considered unacceptable, the Project Application (including the KPOM) is reviewed to ensure that any roads though the environmental areas of the site include: (1) fencing on both sides of a design that will prevent the crossing by dogs and koalas; and (2) fauna underpasses are installed at intervals sufficient to allow unimpeded movement by wildlife including koalas across the roads.

Koala Plan of Management – Revegetation, Tree removal, Dogs, Road design.

DGR 9.8 The KPOM update must provide stage specific detail on the following: Revegetation and rehabilitation measures; measures to ensure that no identified koala food trees are removed within adjacent Ecological Buffers or identified core koala habitat within adjacent Environmental Protection zoned land; all obligations regarding the keeping of dogs, including regulatory and enforcement measures; specific road design, lighting and signage requirements aimed at protecting koalas and maintaining their safe passage between habitat areas. These requirements shall include fencing to road verges, fauna underpasses and like measures.

As per Concept Plan Condition C2(3) Management Plans

Revegetation and rehabilitation measures.

See the response to DGR 9.6 above, specifically the sub-section dealing with the role of additional koala habitat in protecting koala numbers.

Notwithstanding the comments made in relation to DGR 9.6 above, the proponent has provided stage-specific detail on revegetation and rehabilitation measures.

In relation to the current project application the allocation of work zones within the Weed (Appendices QQ, RR1, RR2) and Vegetation Management Plans (Appendices UU, VV1, VV2) are considered appropriate.

Similarly, the commitment to commence works on approval (p12 in Weed Appendices QQ, RR1,RR2; implied at p12 in Vegetation Appendices UU, VV1, VV2) is considered appropriate, however it is not clear how this relates to the notional 5 year time horizon for these plans considering that some precincts may not be completely developed for many years. To avoid this problem it was recommended previously (see response to DGR 2.5) that conditions be imposed to ensure the proponent assumes responsibility for the implementation of the environmental management plans for a period of 5 years, or until 90% of lots are sold, or until completion criteria have been met, whichever is longer.

No removal of koala food trees

The list of identified koala food trees for the site is discussed at Section 5.2 of the KPOM and Sections 4.4.4.3 and 4.4.5.2 of the Vegetation Management Plans. The list includes the following species Tallowwood *Eucalyptus microcorys*, Blackbutt *E. pilularis*, Red mahogany *E. resinifera*, Swamp mahogany *E. robusta*, Forest red gum *E. tereticornis*, Brushbox *Lophostemon confertus*, Swamp box *L. suaveolens*, Broad-leaved paperbark *Melaleuca quinquenervia*. As noted elsewhere (see response to DGR 9.4 and additional matters with KPOM below), Scribbly gum *E. racemosa* should also be added to this list.

Consistent with DGR 9.8, the revised KPOM states at p23 that no core koala habitat will be removed (see also p29) and that no koala food trees are to be removed from *adjacent Ecological Buffers, or identified core Koala habitat within adjacent Environmental Protection-zoned land*.

In relation to the removal of koala food trees within core koala habitat, it noted that the roadway from Precinct 5 to the southern precincts traverses areas mapped as core koala habitat (see Figure 15 of KPOM). However, the alignment appears to be within an area which was previously part of an exotic pine plantation that has now been cleared.

While it appears that there will be no clearing and therefore, no removal of koala food trees in Environmental Protection zones, the same cannot be said for the Ecological Buffers. The Buffer Management Plan for Precincts 1 and 5 indicate that approximately 1300 sqm of paperbark and scribbly gum forest both of which are dominated by identified koala food trees, will be lost (see Tables 1 and 2; Appendix MM) from the ecological buffer. Similarly, the Buffer Management Plan for the remaining precincts (see Table 1, Appendix NN) shows that a further 31,400 sqm of vegetation dominated by identified koala food trees will be lost. In terms of individual trees this could conservatively amount to over 3600 koala food trees (3.27 ha at 3m spacings). These observations suggest an inconsistency with DGR 9.8.

Further comments and recommendations in relation to the management of Ecological Buffers are the response to *Concept Plan Condition C20 Development within Ecological and Agricultural buffers* below.

Obligations regarding dogs

As noted previously (see response to DGR 9.7 above), the revised KPOM seeks to remove controls on domestic dogs other than those that apply generally across the Shire and State under the *Companion Animals Act* (see Section 9.8 of KPOM). The proponent does not suggest any additional regulatory or compliance measures.

Specific road design, lighting and signage

See response to DGR 5.5 and related recommendations.

Koala Plan of Management – Sightings, Dog exclusion, Education, Koala injury

DGR 9.9 The KPOM update must detail: Procedures to be adopted in the event that koalas are sighted within construction zones or the urban areas; specifications for any off-leash dog exercise areas to ensure appropriate separation from koala habitat; the detail of the location and construction specification of dog exclusion fencing to any adjacent Environmental Protection zoned land and the timing of its completion; the detail, content and distribution of koala education and awareness measures aimed in particular at contractors and staff engaged in construction and at future residents; and a protocol for the reporting of any deaths or injuries to any koala within Kings Forest including collection and recording procedures and where necessary post-mortem procedures or laboratory tests to identify the cause of death to any koala.

As per Concept Plan Condition C2(3) Management Plans

Procedures for koalas sighted in construction or urban areas

Procedures proposed for managing any koalas that venture into the construction zone or urban areas are addressed in Sections 9.2 and 9.9 of the revised KPOM with further detail provided in the Site Management Plan (Appendix Z) in relation to bulk earthworks (p30), land stabilisation (p99), civil construction (p122) and maintenance phases (p199).

It is noted however, that the revised KPOM includes measures to address koala incursions into built up areas during the operational phase of the development (Section 9.9.2 of KPOM) which are not reflected in the Site Management Plan which explicitly limits operational management measures to the proposed ongoing management of the proposed golf course (see p 229 of Appendix Z). This inconsistency reflects concerns expressed previously (see responses to DGR 2.5 and 9.4) about the responsibility for ongoing management necessary to meet the stated aim and objectives of the KPOM.

Notwithstanding the more general issue of koala management during the operational phase of the development, the measures are supported and considered adequate subject to the following:

- Revisions to ensure a 40kph speed limit where roads traverse the Environmental Protection (and associated Ecological Buffers) areas during the construction phases. (Note, speed limits during operational phase in these areas previously addressed under response to DGR 9.8.)
- Active supervision and monitoring of vehicle speeds during construction.

Specification for any off-leash dog exercise areas

The intention not to provide any off-lease areas within the development (Section 9.8 of KPOM) is noted, however as discussed previously the presence of dogs on the site is not supported (see response to DGR 9.7 above).

Location, construction and timing of dog exclusion fencing

Comments on the proposed fencing are provided under the response to DGR 9.8 above. It is also reiterated (as noted under the response to DGR 9.7) that although the fencing may prevent koalas from moving into urban areas, the design is such that it is unlikely to provide an adequate barrier to prevent incursions by dogs into koala habitat. From this perspective the fencing should be considered as koala exclusion fencing rather than dog exclusion fencing.

As noted under the response to DGR 9.8, all fencing should be completed as soon as possible after approval not prior to occupation of buildings as proposed in Section 9.6 of the revised KPOM.

Koala awareness and education measures

Awareness and education measures proposed in the revised KPOM include induction of site workers (Section 9.2 of KPOM) and an information package for new residents, educational signage and the establishment of a residents association (Section 9.11 of KPOM). These measures are supported and considered adequate subject to the following:

- Further detail on the proposed educational signage.
- Liaison and further detail on the scope, membership (should include Friends of Koala, Tweed Shire Council, EPA/NPWS) and resourcing of the proposed residents association.

Reporting of koala deaths and injuries

Procedures proposed for managing koala injuries and deaths are addressed in Sections 9.2 and 9.9. These are considered adequate subject to the following:

- Friends of Koala should be the immediate contact point regarding advice on the management of any injured or dead animals found on or near the site.
- Tweed Shire Council, Friends of Koala and EPA (previously DECCW; North East Branch) should be forwarded any observation/incident reports together with information of actions taken and any immediate outcomes as soon as practical after the observation/incident.

RECOMMENDATION: That the revised KPOM and where relevant the Site Management Plan be reviewed consistent with DGR 9.9 to: (1) make Friends of Koala the immediate contact point regarding advice on the management of any injured or dead animals found on or near the site; (2) ensure that Tweed Shire Council, Friends of Koala and EPA (previously DECCW; North East Branch) are forwarded any observation/incident reports together with information of actions taken and any immediate outcomes as soon as practical after the observation/incident; (3) ensure a 40kph speed limit where roads traverse the environmental protection areas during construction phases; (4) provide further detail on proposed educational signage and; (5) provide further detail and liaison on the scope, membership and resourcing of the proposed residents association.

Vegetation Management Plan

DGR 9.10 Provide an update to the Vegetation Management Plan for the site which details: the short, medium and long term measures to be implemented to rehabilitate degraded areas, and manage remnant vegetation and habitat within the buffers and Environmental Protection zoned land within the site; revegetation and regeneration including establishment of appropriate canopy (including koala feed trees), sub-canopy, understorey and ground strata; rehabilitation of creeks and drainage lines; conserving and re-using, where appropriate, the soil seed bank where good quality native vegetation is being removed; collection and propagation of endemic native seed for revegetation on the site; monitoring of water quality and vegetation health within buffers and Environmental Protection zoned land; the design, regeneration/revegetation and management of the east-west wildlife corridor/s; and specific monitoring to measure any impact of the development on the adjacent Cudgen Nature Reserve and adaptive management procedures to ensure any impacts are minimised.

As per Concept Plan Condition C2 Management Plans

Short, medium and long term habitat rehabilitation measures

As noted previously (see response to DGR 9.4), the Vegetation and Weed Management Plans include works schedules with an appropriate level of detail on the works to be carried out but, except for a few instances (e.g. work zones 12 and 13 in Appendix RR), there is no indication of timing or frequency of works to be completed.

It is further observed that the work zones shown on Figure 11 of Appendix UU (and repeated in other Vegetation Management Plans) does not identify a work unit for Precinct 1 or east and south of Precinct 5, both of which require works under the Plan (see Figure 10 of Appendix UU).

It was also noted in the response to DGR 9.4 that there was a lack of clarity and consistency regarding the duration and commencement of the Management Plans.

Long-term management is proposed under Council control, however as noted in the response to DGR 2.5 no provision has been made to meet the costs of such management.

Revegetation and regeneration

The approach to revegetation and regeneration outlined under Section 4.4.4 of the Vegetation Management Plans is generally supported, subject to resolution of issues raised elsewhere regarding appropriate koala food species (see response to DGR 9.6) and the need to ensure that the Management Plans are consistent and avoid spatial conflicts with respect to management actions over the same areas (see comments and recommendations in response to DGR 9.4, 9.12 and Concept Plan Condition C20).

Rehabilitation of creeks and drainage lines

This issue does not appear to have been explicitly addressed within the Vegetation management Plans as required by DGR 9.10.

Conserving and re-using the soil seed bank

Consistent with DGR 9.10, the proponent commits to the re-use of topsoil at Section 4.2 of the Vegetation Management Plans.

This approach is supported.

Collection and propagation of endemic native seed

Consistent with DGR 9.10, the proponent commits to the use of locally sourced seed stock at Section 4.4.4 of the Vegetation Management Plans.

This approach is supported.

Monitoring of water quality and vegetation health in buffers and environmental areas

Monitoring of water quality is not included in the Vegetation Management Plans as required by DGR 9.10. Some aspects of water quality monitoring are covered in the Overall Water Management Plan (Appendix EE) although sampling does not appear to directly target Environmental Protection Zones or Ecological Buffers. As noted elsewhere (see response to DGR 7.1 and 7.7 including recommendations), the Environmental Assessment does not specifically address water quality, or monitoring, in the receiving environment of Blacks Creek and Cudgen Creek.

Monitoring of vegetation health consistent with DGR 9.10 is included at Section 5.2 of the Vegetation Management Plans. This approach is supported however as noted elsewhere (see response to DGR 9.4) revisions are needed to ensure the performance criteria reflect the aims of the Plans

The east-west wildlife corridor/s

This issue is not included in the revised Vegetation Management Plans as required by DGR 9.10, although it is mentioned in the Environmental Assessment (p 99) and discussed in the revised Koala Management Plan (Appendix N, p17) where the proponent rejects the need for both of the proposed east-west corridors.

This issue is further addressed elsewhere under the response to Concept Plan Condition B4.

Monitoring impacts on Cudgen Nature Reserve

Monitoring of impacts on Cudgen Nature Reserve is mentioned at Section 5.3 of the Vegetation Management Plan for Precincts 1 and 5 (Appendix UU) however there is no commitment for additional sampling sites, evidence of consultation with NPWS to guide the monitoring program, or consideration of parameters other than vegetation at the interface between the site and the Nature Reserve. For example there does not appear to be any consideration of water quality impacts on Blacks Creek, Cudgen Creek and Cudgen Lake all of which are included within Cudgen Nature Reserve and will receive significant drainage inputs from the development. Similarly, there is no consideration of monitoring for incursions of feral animals such as Cane Toads and Mosquito fish into Cudgen Nature Reserve.

RECOMMENDATION: That the work units and associated management actions in the Vegetation Management Plans are revised to include all areas for which works are proposed.

RECOMMENDATION: That a detailed environmental monitoring program be prepared in consultation with NSW Office of Environment and Heritage (OEH) to ensure that any impacts of the development on Cudgen Nature Reserve are minimised.

Feral Animal Management Plan

DGR 9.11 Provide an update to the Feral Animal Management Plan which includes details on collaboration with adjoining land owners and incorporates measures which include shooting and baiting.

As per Concept Plan Condition C2 Management Plans.

Aim

The stated aim of the Feral Animal Management Plan (FAMP) is “to minimise the impacts feral animals have on native species, primarily threatened species present on site”.

Due to the extent and intensity of the development, the environmentally sensitive location of the development, and its context within a landscape that is rapidly being urbanised, it is important for the plan to aim towards minimising the impacts of feral animals on natural environment at an ecosystem level, as well as taking into account the impacts of feral animals on the built and human environments, rather than narrowing its focus to the impacts solely to impacts on Threatened Species.

The plan should acknowledge the fact that this development will make considerable and permanent changes to the types of habitats present at this site, and that along-side these changes will come a change in the suite of animals that are supported by those environments as well as changes to the distribution and abundance of those species already known to be present.

Review of relevant literature

The literature reviewed in this section is very limited and not particularly relevant. No reference is made to key documents including (among others): Australian Pest Animal Strategy 2007; New South Wales Invasive Species Plan 2008-2015; Northern Rivers Pest Animal Management Strategy 2008-2013; NPWS Pest Management Strategy, Northern Rivers Region 2008-2011; Final determinations for relevant Key Threatening Processes; Relevant Threat Abatement Plans; Threatened Species Priorities Action Statement; and current documents that outline best practice control methods for relevant feral animal species.

Feral animal assessment

Section 3.2 - Feral animals recorded from the locality

Section 3.2 appears to rely solely on records of feral animals gained through a desktop search of the NSW Office and Environment and Heritage (OEH) Wildlife Atlas. The date that the Wildlife Atlas search was conducted is not provided. The data held on the Wildlife Atlas “whilst extensive, is nevertheless ‘patchy’” and is “not a comprehensive inventory of all species” (<http://www.environment.nsw.gov.au/wildlifeatlas/about.htm> 19/12/2011). There is no report of on-site surveys that have been conducted to determine to what feral animal species are currently utilising the site.

Section 3.3 - Feral animals recorded from Kings Forest site

This Section draws heavily on the records provided through the OEH Wildlife Atlas. It is not possible to set clear management goals or develop management strategies or monitor effectiveness of management techniques unless: it is known what species are present at the site; what habitats they are utilising; and approximate population sizes. No effort has been made to establish any of this and there is no strategy built into this plan for this to be undertaken. The process by which feral animals have been selected for control, from the overall list of animals provided in the previous section as recorded at the site, is unclear. The merit of this process is brought into question by the failure to include further consideration of several species of significance. For example, there is no provision for control of Rabbits (*Oryctolagus cuniculus*) or Indian Mynas (*Sturnus tristis*) yet they are:

- Reported as being known from the site.
- Will thrive in response to increased levels of disturbance such as will occur through the works proposed to complete Stage 1 of the development and the resultant urbanisation of the site.

- Will, in the case of Rabbits, pose a considerable risk to the built and natural environment.
- Will, in the case of Indian Mynas, pose a considerable risk to the natural environment and to the health and safety of humans.
- Currently the focus of targeted control programs co-ordinated through Tweed Shire Council.

The Mosquito fish (*Gambusia holbrooki*) is another species that should be monitored carefully and controlled if outbreaks become apparent.

Due to the problems experienced elsewhere in the shire with Rabbits sourced from domestic pets (Casuarina, Koala Beach, Tweed Heads, parts of Murwillumbah etc), and the high risk of predation on native fauna if Ferrets (*Mustela putorius*) became established in the wild, the Plan should ensure that both of these species are banned as pets from the estate.

Section 3.3 does not include any reference to the general destruction obligation that is imposed by the NSW Rural Lands Protection Act 1998) on occupiers of all lands in NSW that are not Schedule 2 Lands (as defined under Pest Control Order no. 17) to control Wild Dogs and Rabbits by any lawful method.

Section 3.3 also fails to identify that Rabbits, Feral Dogs and *Gambusia holbrooki* have been listed as Key Threatening Processes under the NSW *Threatened Species Conservation Act 1995* (TSC Act). Similarly, this Section fails to make reference to the NSW Threat Abatement Plan for *Gambusia holbrooki*, or Commonwealth Threat Abatement Plans for Cane Toads and Rabbits.

Section 3.4 - Feral animal species profiles

This Section fails to provide species profiles for a number of feral animals that should be included in the Plan (see above).

The profiles that are provided do not provide details on the potential impacts from feral animals on any native fauna other than Threatened Species, nor is any consideration given to their impacts on the built, human or economic environments.

There is no reference made to the areas/habitat types currently utilised by each of the feral animals at the site. Nor is there any analysis provided on how each phase of the development of Stage 1 will influence the distribution and abundance of the species on site.

Assessment of possible control techniques

Section 4.0 - Introduction

Feral animal management is complex and it is widely accepted that effective feral animal management requires a cooperative and collaborative approach to management from all relevant landholders and other key stakeholders.

Council acknowledges that there are some off-site influences that can make it difficult to have effective control without such cooperation. It is likely that this is the reason behind requirement of DGR 9.11 and Concept Plan Condition C2 for the Plan to provide details of how cooperation and collaboration with adjoining landholders will be achieved. This requirement should be acknowledged in this Section.

Section 4.3 to 4.6 - Species Specific Techniques

Whilst lengthy, this section does not provide a sound analysis of control techniques for feral animals that relates to this site, nor are the requirements for different strategies during the various phases of development discussed. Numerous relevant management techniques have been omitted from the discussion, including (but not restricted to): fumigation of Fox dens and exclusion fencing for Cane Toads from around potential breeding sites supported by intensive collection.

Many techniques that could be applied at the site are erroneously discounted. For example, shooting has been discounted as a method, whereas this control strategy can be undertaken by suitably qualified persons on this site and should be employed as one of a suite of strategies to effectively control Rabbit, Cats, Dog and Foxes.

The management strategy developed for each of the priority feral animal should, as a minimum, include the components listed below:

- Clearly defined land management units/zones based on boundaries which define the habitat utilised by the feral animal, or which limit a particular management action.
- Defined management objectives that are a statement of what is to be achieved for each species. These objectives should state what will be achieved where, by when and by whom. Objectives should provide for sustained, adaptive and effective control of the feral animal species.
- The management options selected for each area that will most effectively and efficiently meet the management objectives. The options could include: eradication, containment, sustained management, targeted management, one-off action, a combination of actions, or taking no action.
- A clear management strategy that defines the actions that will be undertaken: who will do what, when, how and where. It should describe how the selected pest management options and techniques will be integrated and implemented to achieve the management objectives.

Additionally, all management actions should align with current NSW Department of Primary Industries Model Codes of Practice and Standard Operating Procedures for the control of the species.

Constraints to the implementation

In this section baiting has been discounted as a method of control at the site. However there is no evidence of consultation with the Ranger for the North Coast Livestock Health and Pest Authority (LHPA) prior to doing so. As the LHPA Ranger is the Authorised Control Officer for this area, all baiting programs in the region are planned in conjunction with this Authority. Baiting, as a method of feral animal control at this site, is feasible for inclusion in the Plan for Stage 1 and should not be discounted prior to consultation with the LHPA Ranger.

Whilst timing/seasonality is included as a section heading, the section does not include any discussion on how critical timing/seasonality is to achieving success with the various control strategies that need to be employed at this site. For example fumigation of Fox dens needs to be applied during the breeding season when the Foxes are utilising the dens, and once the cubs are sufficiently grown (> 4 weeks old). No schedule of control that includes timing / seasonality is provided.

It is unclear why the requirement of DGR 9.11 (and Concept Plan Condition C2) to adopt an integrated approach to feral animal control is included in this Section as a constraint to feral animal control. Current best practice acknowledges that significant benefits can be obtained through cooperative implementation of plans across different land tenures, and that a collaborative approach with adjoining landholders and other key stakeholders should be adopted in the initial stages of a feral animal planning process.

The Plan acknowledges that working collaboratively with neighbouring landholders is a worthwhile approach, however contrary to DGR 9.11 (and Concept Plan Condition C2) there is no evidence of this having occurred to date nor does the Plan demonstrate any definite intention of doing so in the future.

Recommended control options

Implementing effective and humane pest control programs requires a sound understanding of the ecology and biology of the targeted pest species and those species affected directly (non-targets) or indirectly (prey species) by a control program. It is also essential to understand the impact created by the pest and to understand the full range of control techniques available to a given situation, and how these techniques can be integrated into an effective control program

This section fails to develop any cohesive management strategy for any of the species considered in the Plan. It is widely accepted that successful feral animal strategies require the strategic application of a combination of methods to control the target for the target species and its impacts. The recommended control options that have been included are likely to be largely ineffective in providing measureable control of the targeted feral animal when applied in isolation.

In particular the Plan does not articulate specific strategies to control feral threats to the individual Threatened species that the Plan aims to protect although some of the relevant ecological issues are mentioned within the Threatened Species Management Plans (Appendices SS and TT). For example, at page 15 of Appendix SS it proposed to: *Undertake integrated predator & pest control programs in Bush stone curlew habitat with particular emphasis around breeding sites & in the breeding season.* While it is appropriate to highlight these such actions in the Threatened Species Management Plans they should also be reflected in the Feral Animal Management Plan along with relevant detail on the feral(s) to be controlled, appropriate control measures, known or likely breeding sites for the Bush stone curlew, details of its breeding season and surveillance and monitoring necessary to drive the implementation of feral animal control for this threatened species.

The Plan should provide a clear strategy for the management for each feral species of concern during each phase of the development. This should include actions for feral animal management during the development phases listed below:

- Prior to the initiation of development works. Where possible, control works to minimise the types and abundance of feral animals currently at the site should be undertaken prior to development commencing.
- During the construction phase. This phase will create considerable disturbance at the site. Consideration needs to be given to how this will influence the suite of feral animals utilising the site, and what measures will be put in place to manage these. For example, the construction of temporary settling ponds will provide new breeding areas for Cane Toads and this will lead to a dramatic increase in the population size of this species at this site and in the surrounding areas.

- During the operational phase. Feral animals in built-up areas have significant social, economic, and environmental impacts. Built-up areas present a special set of challenges and problems in the management of feral animals and inevitably require a significant commitment in terms of resourcing. It is therefore important that feral animal management is given due consideration for this phase of the development.

Additionally, the impacts on the surrounding landscape need to be considered, and all feral animal control strategies must include measures to manage the impacts of feral animals on the remaining areas of the property not included in Stage 1.

Implementation and monitoring

The implementation table (Section 6) highlights the general and opportunistic nature of the proposed Plan and the comment made previously that the Plan does not focus on the threatened species it aims to protect. It is also noted that responsibility for most of the actions listed is proposed as the site manager rather than a suitably qualified ecologist. It is Council's experience that feral animal control is a highly specialised area that requires considerable dedication and skill. It is considered that a suitably qualified ecologist should be responsible for all actions.

Nonetheless feral animal control should be integrated under the supervision of a suitably qualified officer into the implementation of other management plans including the operational management of essential infrastructure such as sediment ponds and stormwater management systems, as well as for other features of the urban landscape, such as parks and gardens, lakes and the golf course that can favour an increase in diversity and abundance of feral animals.

The monitoring strategies that are included in Section 7 are very general and essentially consist of regular sand pad monitoring. This section fails to include reference to the different strategies required to monitor different species of feral animals, and that multiple methods are generally required for each species.

This monitoring framework should consist of three components:

- Operational monitoring to measure the efficiency of the program (what was done when and at what cost).
- Performance monitoring to measure the effectiveness of the program (were the objectives of the plan achieved and if not why not);
- Clear and prescriptive recommendations for future management.

RECOMMENDATION: That the Feral Animal Management Plan is revised to ensure that : (1) the aim of the Plan is expanded to include ecological communities, the built and human environments; (2) appropriate acknowledgement is given to changes in the landscape that will arise from the development and the need for ongoing management of feral species; (3) contemporary literature and regulations of relevance are included in the Plan; (4) Rabbits, Indian Mynas and Mosquito fish are included as priority species for action; (5) Rabbits and Ferrets (and Stoats) are not to be kept on the estate; (6) a clear strategy for the management for each feral species of concern including management objectives for each species, actions for each phase of the development (pre-construction, construction and operational phases), specific control strategies for any Threatened species, clearly defined management zones, timing/seasonality, preferred management options (eradication, containment etc) and responsibilities for action; (7) the monitoring and evaluation framework is measurable and comprehensive, is able to effectively inform the management response and can be evaluated against the stated objectives; (8) efforts are made to build solid and ongoing working relationships with key stakeholders, in particular adjoining landholders and relevant staff from organisations such as the NSW LHPA, NSW NPWS and Tweed Shire Council; (9) future drafts of the Plan should be developed in consultation with these parties; and (10) the implementation table is updated to reflect all actions, timings and responsibilities necessary to meet the stated objectives.

Wallum Frog Habitat Compensation

DGR 9.12 Provide an update to the Threatened Species Management Plan which provides further details on specific habitat management measures to safeguard existing populations of the two threatened Wallum Frog species that occur within the Environmental Protection zoned land the Ecological Buffers and the golf course. These measures are to be determined with reference to contemporary scientific literature and current best practice.

As per Concept Plan Condition C2 Management Plans

Consistent with DGR 9.12, an Appendix has been included within the Threatened Species Management Plans on the proposed acid frog habitat compensation which mainly involves the creation of “melon holes” to intercept the watertable in suitable areas in order to retain water for sufficient periods to enable the breeding cycle to be completed.

While further specialist review of these plans is warranted the following points are made:

- The approach appears to be largely experimental and as a consequence caution should be exercised in any approval including contingency plans should it not be successful.
- It is not clear if the required conditions for successful breeding can be replicated in areas where there have been major changes to the land surface, drainage and groundwater relations. For example in the natural environment, accumulations of organic matter typically prevent seepage of water from depressions in the ground, allowing water to be retained long enough for breeding (5-6 weeks) and also contribute to the acid water quality required by these frogs. These factors are acknowledged by the proponent in the literature review.

- Many of the areas proposed for acid frog habitat compensation are also proposed for heathland re-instatement and/or koala food tree planting. While there may be scope for some spatial overlap with wet heath and acid frog habitat, heathland and koala food tree plantings are incompatible while acid frog habitat and koala food trees are only marginally compatible at best. This is because the primary koala food trees are generally found on the edges of the wet heath and paperbark forests favoured by acid frogs. As discussed elsewhere (see response to DGR 9.6) this limits the areas available for koala food tree plantings and will in turn affect areas available for acid frog habitat. It should also be noted that that areas to be re-established as dry heathland will also be unsuitable for acid frog habitat.
- The assessment does not include reference to the threat posed by the introduction of Mosquito fish (*Gambusia holbrooki*) to the site (see response to DGR 9.11). Despite Mosquito fish being known from the Kingscliff/Cudgen area, no mechanisms are included to prevent their incursion to the site. It is also noted that this species is listed as a Key Threatening Process due in part to the threat it poses to the acid frogs.
- Similarly, although it is a reasonable hypothesis, there is no evidence provided that describes the effectiveness of the dense plantings of sedges in deterring Cane Toads from utilising the frog ponds as breeding habitat. There is also no indication that interim measures will be put in place to deter Cane Toads utilising the compensatory habitat until plantings are established.
- Despite the design of the frog ponds there remains a risk that they will provide breeding habitat for mosquitoes.
- As there are many unknowns regarding the precise requirement for acid frogs (they are often not detected where the habitat is considered suitable and sometimes appear where they are not expected) the focus of any performance criteria should be the size and stability of the actual frog population in addition to the creation of "suitable" habitat.

RECOMMENDATION: That further specialist review is undertaken to examine the technical feasibility of the proponents plans to re-establish acid frog habitat on the site.

RECOMMENDATION: Should the review above indicate that the proposal is feasible, a comprehensive acid frog management plan is prepared by the proponent in consultation with Department of Planning, independent expert(s), OEH and Tweed Shire Council prior to the determination of the Project Application. Such a Plan should specify contingencies in the event that the proposed plans perform poorly.

RECOMMENDATION: That the mapping of areas for acid frog habitat is reviewed to ensure that it does not impinge on areas suitable for the planting of koala feed trees or dry heathland.

Square Stemmed Spike Rush

DGR 9.13 Survey for the Square Stemmed Spike Rush in those areas of the site corresponding to future precincts 13, 14 and 16. Provide, within an update to the Vegetation Management Plan, procedures for the protection and management of any newly identified occurrences of this species that are in accordance with the Approved Recovery Plan for this species.

As per Concept Plan Condition C17 Further threatened Flora Surveys – also notes surveys to be undertaken during the appropriate season.

This condition is addressed by the proponent within the Threatened Species Management Plan (Appendix TT) where it is explained that a subsequent survey could not locate this species however it is acknowledged that its apparent absence could be due to the timing of the survey. However, the proponent notes that the area where it was previously recorded is within an Environmental Protection zone which will be further protected by a minimum 30m inner Ecological Buffer.

Without further information such as mapping of its preferred habitat is not clear if the proposed management measures are adequate.

Wallum Frog Habitat on Proposed Golf Course

DGR 10.1 Further details are to be provided on how threatened Wallum frog species habitat is to be recreated, managed, monitored and reported on within the golf course. Adaptive management procedures are to be provided detailing how monitoring and reporting will feed back to corrective actions to optimise habitat for the two Wallum frog species.

Not assessed due to time constraints and the fact that the Golf Course Management Plan is not included in the documentation for this Project Application.

Golf Course Management

DGR 10.2 The Golf Course Management Plan is to demonstrate consistency with the Koala Plan of Management and the Threatened Species Management Plan.

As per Concept Plan Condition C2 Management Plans

Not assessed due to the fact that the Golf Course Management Plan is not included in the documentation for this Project Application.

Comments have been made elsewhere in relation to the use of the Ecological Buffers within the proposed golf course area (see response to Concept Plan Condition C20) where it was recommended that the design of the proposed golf course maintains a minimum 30m inner ecological buffer which should be densely revegetated.

In principle the planting of koala food trees within the proposed golf course area is supported however the design of the course and the surrounding residential areas will need to ensure that koalas do not come into contact with cars and dogs.

Annual Flora and Fauna Monitoring Report

Concept Plan Condition B2

Within 12 months of this approval, or as otherwise determined by the Director-General, the Proponent shall prepare a draft outline of a Flora and Fauna Monitoring Report to the satisfaction of the Director-General. The aim of the report is to collate and synthesise all monitoring and reporting requirements contained in the documents listed in A3. The draft outline of the Flora and Fauna Monitoring Report shall set out the proposed timeframe and duration for ongoing monitoring with reference to locations within Kings Forest, stages of development and the specific issues listed below. The Flora and Fauna Monitoring Report shall be prepared by a suitably qualified person/s and include, but not be limited to: (1) Aims, objectives and methodology for monitoring and reporting; (2) Baseline monitoring data focusing on existing populations of threatened species, including Wallum frog species and koalas; (3) Performance criteria against which the effectiveness of the various separate management plans required as part of this approval dealing with koalas, threatened species, buffers, weeds, vegetation and feral animals can be measured. Relevant benchmark reference vegetation communities are to be nominated from within surrounding conservation estates; (4) Actual performance against the above criteria; (5) Any required corrective actions; (6) Monitoring and reporting of fauna usage within the Environmental Projection zones, Ecological Buffers and the golf course; (7) Adaptive management procedures to ensure that the various separate management plans remain relevant and effective; (8) Monitoring and reporting of koala injury and mortality; and (9) Specific monitoring to measure any impact of the development on the adjacent Cudgen Nature Reserve and adaptive management procedures to ensure impacts are minimised. The Monitoring Reports are to be provided to the Department of Planning, DECCW, Tweed Shire Council and Industry and Investment - Fisheries.

As noted elsewhere (see response to DGR 9.6) this condition has not been met.

No mention is made of this condition in the body of the Environmental Assessment or the associated Threatened Species Management Plans (Appendices SS and TT) although it is mentioned in the revised KPOM (see Section 13.3, p37 of the revised KPOM, Appendix N) where the proponent seeks to delay the preparation of the Annual Koala Monitoring Report until the commencement of construction.

The further delay of the Annual Flora and Fauna Monitoring Report is considered unacceptable for the following reasons:

- Concept Plan Condition B2 requires synthesis and collation of all actions undertaken or proposed within the various Management Plans. This has not been done nor have the Plans adequately ensured that management strategies do not conflict as required by DGR 9.4 (see response to DGR 9.4 for further details). In their current form the proposed Management Plans refer to other Management Plans but do not explicitly list the relevant management actions in the original Plan nor is the relationship explicitly identified in the other Plans. This makes it very difficult to consider the sum total of the commitments required to achieve the stated objectives of any single Plan. The requirement to synthesise and collate all management actions within the Annual Flora and Fauna Monitoring Report will go a long way to addressing this issue.

- The Management Plans need to be able to react to changes in management conditions and new information to remain relevant and effective. A good example is the new information arising from the Tweed Coast Koala Habitat Study 2011 demonstrating rapid decline in the koala population and that effective bushfire management is more crucial for their continued survival than previously realised. Adaptive management procedures have been included in the proposed environmental Management Plans, where it is made clear that the role of comprehensive monitoring is essential to inform changes in management. The principles of adaptive management will not be able to be implemented without regular monitoring.
- Many of the impacts of the development will commence with bulk earthworks (vegetation clearing, changes in drainage, increased erosion and sediment loads, weed invasion etc). It is crucial that baseline monitoring is carried out in accordance with Concept Plan Condition B2 to ensure that post impact changes can be effectively monitored, assessed and responded to as necessary.
- Regular monitoring allows the consent authority and agencies responsible for environmental compliance to more clearly understand the issues and respond accordingly.

RECOMMENDATION: That an Annual Flora and Fauna Monitoring Report be prepared in accordance with Concept Plan Condition B2 prior to the approval of the Project Application.

Further Protection of Heathland

Concept Plan Condition B3

Further heathland is to be provided with long-term protection and allowed to naturally regenerate on the site. The further heathland to be protected is to be that contained within the 50m ecological buffer in the locations depicted as 'Heath to be Naturally Regenerated' in Figure 2A titled 'Heath Regeneration and Revegetation Areas' drawn James Warren and Associates and dated 22 March 2010. The heathland in these locations is to be protected and regenerated for the full 50m width of the ecological buffer. The details of this further protection are to be submitted along with the preferred long term protection mechanism, such as land use zoning, to the satisfaction of the Director-General prior to determination of Stage 1.

The importance of heathland as a locally rare community that supports numerous threatened species was recognised in the Department of Planning Director General's Report on the proposed Concept Plan (at p49) where it was observed that the proposed revegetation measures in the Environmental Protection zones and Ecological Buffers were in response to an overall loss of some 59ha of heathland. The Department recommended at p50 that, *where possible, outside of the proposed golf course, the full 50m width of the ecological buffer be naturally regenerated to heathland*. This recommendation resulted in the Concept Plan Condition B3 above which focused on 9.55ha of 'Heath to be Naturally Regenerated' depicted on the map referred to above. It should also be noted that the map referred to above also committed to the retention of 21.9ha of heathland within Environmental Protection zones and 77.29ha of heathland to be revegetated. In the current Project Application the proponent seeks to amend the areas involved indicating an increase in "Heath to be Naturally Regenerated" a decrease in "Heath to be Revegetated" (4.67 ha, - 1.73 ha respectively; see Table 3 of EA, p34). These changes reflect revised mapping of the extent and condition of heathland throughout the site.

Notwithstanding comments made elsewhere regarding the management of heathland (listed below) comments on compliance with Concept Plan Condition B3 above follow:

- As the extent of earthworks does not appear to encroach on the heath areas referred to in Concept Plan Condition B3 above (compare Fig 3 and Fig 16, Appendix NN) the changes relating to this area (compare Fig 16 and 17 Appendix NN) appear acceptable.
- Contrary to Concept Plan Condition B3 the Environmental Assessment makes no commitment to a long-term protection mechanism such as land-use zoning.
- It is noted from Figure 14 of Appendix NN that the revised heathland mapping indicates that 42.19 ha is now included in the "Heath to be Naturally Regenerated" category. This compares to 9.55 ha in the heath referred to in Concept Plan Condition B3 above. Contrary to Concept Plan Condition B3, the Environmental Assessment (including the Weed and Vegetation Management Plans) do not provide any specific detail on how these areas are to be managed. Given that the need to review the heathland mapping arose from changes due to ongoing weed infestations and other factors (see.p90 of the EA) it needs to be clear that measures such as weed control are necessary to assist natural regeneration in these areas.

Additional issues relating to heathland are addressed elsewhere (see response to Concept Plan Condition C20 above) and include the following:

- The appropriateness of clearing existing heathland within the Ecological Buffers to win fill and locate development infrastructure.
- Uncertainties regarding the ability to successfully re-establish heathland in areas where the ground surface and drainage has been radically altered.
- Conflicting management objectives arising from promoting heathland within bushfire APZs.
- Overlapping and incompatible proposals for koala food tree planting in areas of existing or proposed heathland.

RECOMMENDATION: The Environmental Assessment and related Management Plans should be revised to include: (1) a long-term protection mechanism such as Environmental Protection zoning for all heathland to be restored and; (2) specific provisions to manage weeds (and other issues) in areas denoted as "Heath to be Naturally Regenerated".

East-West Wildlife Corridors

Concept Plan Condition B4

As identified in Koala Plan of Management, an east west wildlife corridor of up to 100 metres wide (with a minimum of 50 metres at any one point) must be established. The corridor should be established to provide for habitat and the movement of threatened native fauna that inhabit the site. Prior to the determination of Stage 1, the Proponent shall also demonstrate the practicality or need for establishing a further east west 50 metre wide corridor along the southern boundary of the site. The details of this modification, including regeneration/revegetation of the corridor, the preferred long term protection mechanism, and the practicality of a new southern east west corridor are to be submitted to the satisfaction of the Director-General prior to determination of Stage 1.

The proponent rejects the need for both east-west corridors referred to in Concept Plan Condition B4 (see p17 of Appendix N) and seeks to delay the resolution of this issue at p98 of the EA: *The proponent will review and provide expert advice on the need for an east-west wildlife corridor in the north-west of the site at the time of any future application(s) for development over those areas of the site.* This is contrary to the requirement to address this issue prior to the determination of Stage 1.

There are a number of outcomes of the Project Application and new information which suggest that further consideration of issues surrounding this condition should not be delayed as suggested by the proponent. These include:

- The practical considerations arising from the revised KPOM which seeks to exclude koalas from the urban environment
- Lack of clarity regarding offsets (see response to DGR 9.5) including the possibility that considerable potential habitat for koalas and other species will be "lost" if the proposed east-west corridor is dispensed with.
- The likely need for additional areas for plant koala food trees due to overlapping and incompatible plans to plant koala food trees in APZs or areas to be regenerated as heathland (see response to DGR 9.4).
- Opportunities to augment koala movement to the south west (new southern corridor referred to in Condition B4) through the rural matrix of Duranbah to connect the small outlier population identified in the Tweed Coast Koala Habitat Study 2011 and facilitate movement across the Pacific Hwy underpass in the vicinity of Eviron Road. This would complement existing measures under Council's Koala Connection Project to re-establish koala habitat from the west of Cudgen Nature Reserve to the same Pacific Hwy underpass near Eviron Road.

RECOMMENDATION: That further options are explored with DoP, OEH, Tweed Shire Council, appropriate experts and the proponent to implement one or more east-west wildlife corridors generally in accordance with Concept Plan Condition B4 prior to the determination of Stage 1.

Development within Ecological and Agricultural buffers

Concept Plan Condition C20

All future development applications proposing development within either the ecological or the agricultural buffer must demonstrate that, as relevant, clauses 7 or 8 of Schedule 3 of the *State Environmental Planning Policy (Major Development) 2005* have been adequately addressed.

Ecological buffers

As noted in the Environmental Assessment (p41), the proposals advanced by the proponent in the Concept Plan foreshadowed the use of the outer 20m of the 50m Ecological Buffers for purposes such as roads, footpaths, cycleways, bushfire Asset Protection Zones, stormwater management, passive recreation and similar “compatible” purposes. However, support for this was heavily qualified by the Department of Planning who imposed condition C20 above and commented in the Director General’s Report on the proposed Concept Plan (at p60):

The Department supports, on planning grounds, the alignment for the future four lane entry road becoming the buffer within the Depot Road precinct. However, for other parts of the site, including the golf course, while the Department supports in principle the proposed buffer design and that in certain instances, some roads and outer asset protection zones may be acceptable within the ecological buffer, further assessment of ecological constraints within and adjacent to the buffers will need to inform any proposed development within these areas. Similarly with any proposed development within the agricultural buffer a assessment of the adjacent agricultural land use and its potential impact on any proposed development will be required.

In its previous submissions to the Concept Plan, Council also expressed concern regarding the widespread use of the outer 20m of the ecological buffer for uses (noted above) which were not considered to satisfy the intent of Clause 7 of Part 6 of Schedule 3 of the State Environmental Planning Policy (Major Development) 2005 which is reproduced below:

7 Ecological buffers

- (1) *Consent must not be granted to development on land within an ecological buffer unless the consent authority is satisfied, after considering a detailed environmental assessment, that:*
 - (a) *the development complies with the objectives for Ecological Buffers and other provisions of this clause, and*
 - (b) *there is no practicable alternative to siting the development within the buffer.*
- (2) *The objectives for Ecological Buffers are:*
 - (a) *to protect wetlands or areas of particular habitat significance, and*
 - (b) *to restrict development so that, as far as practicable, it does not occur within Ecological Buffers, and*
 - (c) *to help ensure that development is designed, sited and managed so as to minimise its impact on the ecological and hydrological functions of Ecological Buffers, and*

- (d) *to encourage the restoration and maintenance of native vegetation and the ecological processes of land within and adjacent to wetlands or areas of particular habitat significance.*
- (3) *Development on land within an ecological buffer is to:*
 - (a) *incorporate effective measures to manage wetlands or areas of particular habitat significance, and*
 - (b) *be designed and sited to maintain connectivity of vegetation and minimise vegetation clearing, soil disturbance and alterations to the rate, volume or quality of surface and ground-water flows, and*
 - (c) *retain and maintain all existing native vegetation outside the area immediately required for the development, and*
 - (d) *incorporate measures to regenerate native vegetation for all disturbed areas within the buffer, and*
 - (e) *incorporate appropriate stormwater and erosion control measures to protect the buffer from surface water run-off or other disturbance.*
- (4) *When considering whether or not there is a practicable alternative to siting development inside an ecological buffer, the consent authority must consider:*
 - (a) *the design, type and site cover of the proposed development, and*
 - (b) *the physical characteristics of the land on which the development is proposed to be carried out, and*
 - (c) *the suitability of the land for the proposed development.*
- (5) *Before deciding whether or not to grant consent to development on land within an ecological buffer, the consent authority must consult the Department.*

Despite Council's concerns and the clear intent of the Department of Planning to consider development within the Ecological Buffers in "certain instances", it is apparent from the Environmental Assessment that such development is proposed as the rule rather than the exception. For example, earthworks are proposed in almost all areas covered by the outer 20m of the 50m ecological buffer (see Fig 5 of Appendix MM and Fig. 3 of Appendix NN). Also, earthworks and permanent stormwater treatment swales extend well into the inner 30m of the 50m ecological buffer in many areas (see for example longitudinal sections on Fig 5 of Appendix MM; Fig. 3 of Appendix NN and Appendix C of Appendix D).

The proposal also includes the loss of some 30 ha of existing native vegetation within the Ecological Buffers (mostly heathland; see Table 1 and 2 of Appendix MM, Table 1 of Appendix NN) followed by revegetation (mostly heathland) after earthworks involving both cut and fill of up to 2m (see Appendix D). Although it is proposed to reuse topsoil for revegetation of heathland, little information is provided to ensure that such revegetation can be successfully accomplished especially given the top-soil management cautions outlined by the proponent (e.g. see p19 of Appendix NN), and changes in elevation, drainage and groundwater relations that will arise from the bulk earthworks.

Further comments on specific precincts follow:

Precinct 1

- Despite the claim at p42 of the Environmental Assessment that: *There are no wetlands or areas of particular ecological significance within the outer 20 metres of the buffer, with most of the 20 metre outer buffer highly modified and cleared of native vegetation*, the use of the outer 20m of the ecological buffer as a bushfire Asset Protection Zone in Precinct 1 involves the clearing of two Endangered Ecological Communities (EECs), Paperbark Forest and Littoral Rainforest (see Fig. 12 and Table 1 of Appendix MM; Note, Littoral Rainforest is also listed *Critically Endangered* Federally). This is clearly contrary to Clause 7 (2) and (3)a-d.
- The impacts and legislative implications of proposed clearing of this vegetation are not considered in Environmental Assessment nor are any offsets proposed for the loss of this important vegetation. It is also noted that the proponent claims that no EECs are located within the Ecological Buffers (see p21 of Appendix MM).
- The proposed design of the Asset Protection Zone in Precinct 1 appears to consist of a “delivery vehicle unloading and manoeuvring area” (see Appendix X, p10). Although the Bushfire Risk Assessment (Appendix X) confirms that this will meet the requirements for an APZ, it does not further consider the provisions of Clause 7 above which would suggest the need to consider a more ecologically sympathetic design (RFS guidelines for the design of APZs do not prevent the presence of trees and other vegetation).
- The Bushfire Risk Assessment (p10 of Appendix X) recommends that an APZ consisting of a 10m Inner Protection Area and a 10m Outer Protection Area. It is noted from the comments made by the Department of Planning in the Director General’s Report on the proposed Concept Plan (at p60; see above) that consideration may be given to locating “outer asset protection zones” within the ecological buffer, however the proponent seeks to locate all of the APZ in the ecological buffer.
- In relation to Clause 7(4) the proponent infers that the proposed use of the ecological buffer for uses directly related to the development (for loading, parking etc.) is essential to secure the economic viability of the proposed development in that location (see Environmental Assessment p42) but no evidence is provided of a “practical alternative”, for example to demonstrate the feasibility of slightly smaller scale development or alternative allowable uses for the site.
- Additional arguments in support of the proposed APZ in the outer 20m of the ecological buffer (p42 of EA) focus on the benefits of retaining of the inner 30m rather than justifying the proposed loss of the outer 20m in relation to the provisions of Clause 7(3). For example, the proponent claims at p42 of the Environmental Assessment that: *The APZ has been designed and sited to maintain connectivity of vegetation (see above dedication) and minimise vegetation clearing, soil disturbance and alterations to ground-water flows*. In relation to the outer 20m of the ecological buffer this is incorrect; all land will be cleared, connectivity will be reduced, soil will be disturbed and ground-water flows altered by impervious road surfaces. Such arguments are not consistent with the provisions of Clause 7.

- As noted previously (see response to DGR 9.4), the Buffer Management Plan for Precinct 1 proposes revegetation with koala food trees within the ecological buffer when almost all of it is mapped as Littoral Rainforest (compare Fig. 12 and Fig 17 of Appendix MM). As Littoral Rainforest is not regarded as koala habitat (see Appendix II of Tweed Coast Koala Habitat Study 2011) and is an Endangered Ecological Community whose integrity should be preserved, this proposal is considered unacceptable except perhaps at the margins.

Precinct 5

- Proposed use of the ecological buffer for development in this precinct will result in the loss of 1.27ha of native vegetation (See Table 2 of Appendix MM) involving vegetation communities that are Endangered (Swamp Sclerophyll Floodplain Forest and Freshwater Wetlands) or locally rare (Scribbly gum, Heathland). This appears contrary to Clause 7 (2) and (3)a-d and the proposed loss of such areas have not been explicitly justified.
- The proponent seeks to justify habitat loss within the ecological buffer by arguing that other parts of the buffer are to be retained. As noted previously such arguments are not consistent with the provisions of Clause 7.
- The argument at p43 of the Environmental Assessment that: *Restricting development to the 20 metre buffer is not practicable as it would compromise the development potential of Precinct 5 site and thus economic use of land zoned for urban purposes* should not be accepted, as the scope of the proposed use of ecological buffer extends well beyond the intent of Clause 7. It is also noted that Clause 2 of Part 6 of Schedule 3 of the State Environmental Planning Policy (Major Development) 2005 makes it clear that other provisions of that Part, such as Clause 7, prevail over permissible uses or other provisions arising from the zoning of the land.
- It is considered that small-scale incursions into the outer 20m of ecological buffer from roads and cycle ways in the south east area of Precinct 5 (see Fig 4, Appendix MM) may be acceptable as these incursions represent practical “give-and take” design considerations that may otherwise prevent efficient use of developable land outside of the Ecological Buffers consistent with Clause 7. The approximately 700m of road proposed within the ecological buffer along the eastern boundary of the precinct (see Fig 4, Appendix MM), however does not represent such an approach and the proponent offers no reasonable justification why such infrastructure cannot be located outside of the ecologic buffer in accordance with Clause 7.
- The Bushfire Risk Assessment (p20, Appendix X) recommends that an APZ consisting of a 10-15m Inner Protection Area and a 0-5 m Outer Protection Area. It is noted from the comments made by the Department of Planning in the Director General’s Report on the proposed Concept Plan (at p60; see above) that consideration may be given to locating “outer asset protection zones” within the ecological buffer, however, the proponent seeks to locate all of the APZ, including the Inner Protection Area in the ecological buffer.

- The swale section plans (Figs. 14 14A, 14B, Appendix MM) and indicative buffer layouts shown in Figure 13B of Appendix MM indicate that many of the stormwater management areas are proposed within the ecological buffer. While these structures may be acceptable in the outer 20m to encourage hydrological recharge etc., they should not be allowed in the inner 30m. These structures need to be accessible for maintenance and such work should not compromise the ecological integrity of rehabilitation and revegetation efforts proposed in the inner buffer areas.
- Similarly, the koala fencing should be contained within the outer 20m of the ecological buffer. As noted under the response to DGR 9.6 the extent of available areas for koala food tree revegetation is likely to be significantly overstated suggesting that as much of the ecological buffer as possible is used to for this purpose.
- As noted previously (see response to DGR 9.4), the Buffer Management Plan for Precinct 5 proposes revegetation of the Ecological Buffers with both heathland and koala feed trees (compare Appendix MM Figs. 16B and Fig 17). As heathland is not regarded as koala habitat (see Appendix II of Tweed Coast Koala Habitat Study 2011) this is not considered acceptable.
- Figure 16B (Appendix MM) shows considerable areas proposed for heathland revegetation within the APZ proposed in the Bushfire Risk Assessment (Plan 4, Appendix X). It is not clear how this is to occur given the planned fire trails and limitations on tree/shrub cover for APZs.
- A similar situation arises with the areas proposed for the planting of koala food trees (compare Plan 4 from Appendix X with Fig 17 from Appendix MM) in APZs.

Kings Forest Parkway

- No comment – could not locate plan.

Roads to Southern Precincts

- Noted

Other Precincts

- Proposed use of the ecological buffer for development in the other precincts will result in the loss of 28.59ha of native vegetation (See Table 1 of Appendix NN) involving vegetation communities that are Endangered (Swamp Sclerophyll Floodplain Forest and Freshwater Wetlands) or locally rare (Heathland, 25.6ha). This appears contrary to Clause 7 (2) and (3)a-d and the proposed loss of such areas has not been explicitly justified.
- The following argument is made at p44 of the Environmental Assessment in support of locating development within the ecological buffer: *Preventing any development within the outer 20 metre buffer is not practicable as the bulk earthworks are required to provide flood immunity for the site. Not proceeding would compromise the future development of the site and thus economic use of land zoned for urban purposes.* It is noted from this statement that the winning of fill appears to be a major motivation for the proposed earthworks in the Ecological Buffers within these precincts. As noted in relation to Precinct 5, the scope of the proposed use of the ecological buffer extends well beyond the intent of Clause 7 which prevails under the SEPP despite any development aspirations arising from the zoning of the land.

- To further justify the clearing of existing native vegetation in the Ecological Buffers against Clause 7, it is claimed at p44 of the Environmental Assessment that: *Proposed revegetation and regeneration measures will cover 44.15 hectares and result in a long-term net gain of 18.99 hectares of intact heathland communities.* While it might be true that it is intended to create more heathland than will be cleared in the Ecological Buffers, this is not solely pursuant to Clause 7. Department of Planning Director General's Report on the proposed Concept Plan (at p49) observed that the proposed revegetation measures in Environmental Protection zones and in the Ecological Buffers were in response to an overall loss of some 59 ha of heathland. The Department of Planning also imposed Concept Plan Condition (B3) to provide further protection for disturbed heathland on the site.
- While the layout of the proposed golf course is noted (see Fig. 5 Appendix NN) it is difficult to comment in detail in the absence of the information required to support a Project Application for it and the residential precincts it is proposed to surround. Council has previously expressed concerns regarding the potential use of the entire 50m ecological buffer for the proposed golf course fairways, greens, bunkers and the like and recommended the a minimum of 30m of the ecological buffer should be densely revegetated as in other parts of the site. However, rather than using most of the ecological buffer to protect areas adjacent to environmentally sensitive areas such as Cudgen Nature Reserve and Environmental Protection areas, the proposed golf course layout does the opposite by locating major fairways against the environmental areas and away from the residential precincts. This approach is considered contrary to Clause 7 and may promote future management conflicts. For example, the extensive revegetation of heathland and/or koala food trees directly adjacent to residential areas may constitute an unacceptable bushfire hazard.

RECOMMENDATION: That the Buffer Management Plans and other associated plans are revised consistent with Clause 7 of Part 6 of Schedule 3 of SEPP (Major Projects) to ensure that: (1) no clearing of existing native vegetation occurs in the Ecological Buffers; (2) no earthworks or infrastructure development occurs within the inner 30 m of the Ecological Buffers; (3) the Inner Protection Areas for APZs are not contained within the ecological buffer; (4) any APZ Outer Protection Areas located within the Ecological Buffers are designed to maximise their ecological function consistent with RFS guidelines; (5) the functionality of APZs is not compromised by overlapping habitat restoration; (6) koala food trees are not planted the same areas used to restore heathland; (7) the koala fencing should be contained within the 20m outer ecological buffer and encompass all planted koala food trees; (8) further detail is provided to document offsets required under the Concept Plan and their implementation within buffer areas adjacent environmental protection zones ensuring there are no spatial conflicts; (9) the proposed road within the ecological buffer on the eastern side of Precinct 5 is moved outside of the ecological buffer; (10) any drainage swales be confined to the 20m outer ecological buffer and be designed so that they can be maintained without compromising the ecological integrity of adjacent habitat and; (11) the design of the proposed golf course maintains a minimum of 30m inner ecological buffer which should be densely revegetated.

Agricultural buffers

No comment due to time constraints. It is expected that department of Primary Industries will provide relevant comment.

Additional Comments

Proposed amendments to Concept Plan Condition C2

The proponent seeks to delay the preparation of updated environmental Management Plans required under Concept Plan Condition C2 (see Environmental Assessment Appendix B) until construction certificate stage (see p 26 of EA). Note, Concept Plan Condition C2 is reflected in DGRs 9.4, 9.6, 9.7, 9.8, 9.9, 9.10, 9.11, 9.12 and 10.2.

In support of an amendment to Concept Plan Condition C2, the proponent argues that this change would ensure the Management Plans were up-to-date because: *there is likely to be a considerable time lag between the time of the preparation of supporting material for a development application and the actual works occurring (conceivably up to six years)*, and that Tweed Shire Council are likely to be supportive as it is consistent the approach taken at Cobaki.

The following points are made in support of maintaining the *status quo* in relation to this proposed amendment:

- The Management Plans are integral to the mitigation of impacts from the proposed development and should therefore be considered at Project Application stage. Failure to include relevant updates at the Project Application stage would result in considerable lack of transparency and outcomes contrary to the Concept Plan and the Project Application. For example, radical but welcome, changes have been made to the Koala Plan of Management approved under the Concept Plan within the current Project Application but delaying the presentation of such new approach until construction certificate stage would lack transparency and perpetuate “incorrect” assumptions by Agencies and the public of the likely outcomes. In the case of the Koala Plan of Management this would have almost certainly influenced the approach taken by Council in preparing and implementing a Comprehensive Koala Plan of Management for areas surrounding Kings Forest on the Tweed Coast.
- There is no reason why amendments cannot be made to ensure the Management Plans remain relevant should conditions change.
- There are also major lags in the time it will take to compensate for impacts of the development. For example trees planted for koalas are likely to take 5-10 years to be self-sustaining and reach a useful size for koalas. Heathlands may take a similar time to establish. To minimise such lags, this work should commence on approval. It is also noted that many areas proposed for habitat rehabilitation that are not dependent on bulk earthworks.
- The proponent notes that weed invasions have already resulted in changes to in the extent of heathland (p90 of EA). As it would not be in the public interest for weeds to become a greater problem than they already are, this suggests that it would be beneficial to commence formalised weed control on approval of the Project Application rather than at construction or even on commencement of earthworks. Similar arguments apply to feral animal control.
- Commencement of the Management Plans on approval of the Project application may also prompt the provision of baseline monitoring information which is considered essential to inform any changes to the Management Plans that may be necessary. It noted that the proponent has not met Concept Plan Condition B2 which requires the preparation of an Annual Flora and Fauna Monitoring Report and also seeks to delay the this condition to the commencement of construction.

- For many of the reasons above, Council is not comfortable with the process adopted at Cobaki. Also, unlike the Cobaki site where most clearing of habitat was done under old consents, Kings Forest is a true greenfields site. Also, the bulk earthworks at Kings Forest will result in removal of considerable habitat and precipitate major changes to the land surface, drainage and groundwater relations and it is not clear that all of the mitigation measures proposed will be successful. It is considered essential that an open and transparent process is adopted that allows for adaptive management over time.
- There is no formal opportunity for merit assessment or the imposition of conditions at construction certificate stage. In circumstances, such as at Kings Forest where there are considerable uncertainties regarding management it considered inappropriate to limit the ability of the consent authority to impose additional conditions should that be necessary. This is reinforced by the observation made in this submission that considerable work is necessary to ensure the provisions of the Management Plans are adequate and will provide the outcomes anticipated.

Further discussion and a recommendation the commencement and duration of the Management Plans is made in response to DGR 9.4 (see also response to DGR 2.5)

RECOMMENDATION: That Concept Plan Condition C2 relating to the updating of management plans with future project applications be retained.

Additional Comments on the revised KPOM (Appendix N)

- Section 1.1 should acknowledge relevant Concept Plan Conditions: B1 - KPOM Review (covered by DGRs); B4 – East-West Wildlife Corridor; B2 – Flora and Fauna Monitoring Report; C8 – Traffic and Wildlife Protection Measures; and C20 – Development within Buffers. Also, DGR 9.4 and additional Concept Plan Conditions (B2, B4, B2, C8, C20) not included in DGR compliance table within the KPOM (see p40).
- Section 2 p7 4th dot point states that lands adjacent to Kings Forest contain a “large population of Koalas”. This is incorrect. It would be more accurate to indicate that it is one of three disjunct populations on the Tweed Coast.
- Section 2 p7 7th dot point seeks only to “conserve existing core Koala Habitat”. Consistent with Section 10 this should seek to conserve and improve koala habitat – not just “core Koala habitat”.
- Section 2 p7 11th dot point – spelling mistake.
- Section 3.2 p8 – Should state the aim of SEPP 44 and meanings of core and potential koala habitat. Should also explain comprehensive and individual plans under SEPP 44 and triggers for them.
- There should be a recommendation/objective somewhere acknowledging the need to integrate the revised KPOM and the Comprehensive KPOM currently being prepared for the Tweed Coast.
- Section 4.5 p12 - The approach used to derive the core koala habitat map (Fig 12) should be explained somewhere.
- KPOM Section 5 p14-15, list of koala feed species (see also VMPs Tables 4.4.5.2, 4.4.4.3) – This list is based on limited sample (18 scats). It should reflect the findings of the Tweed Coast Koala Habitat Study 2011 which used a much larger sample.

Species selection and relative abundances should generally be consistent with the vegetation community to be restored (see also response to DGR 9.6).

- Section 6.3 p16 – dismisses the need to provide “...alternative habitat to compensate for the loss core koala habitat elsewhere”. This statement appears to misinterpret the original Matters for Consideration for the KPOM approved under the Concept Plan (see Table 1 of Carrick KPOM, Aug 2009) which required: *An assessment of the regional distribution of koalas and the extent of alternative habitat available to compensate for that affected by the actions*. This requirement does not confine itself to the “...loss of koala habitat elsewhere”; rather it requires an assessment of measures to necessary compensate for all actions arising from the development. This should include impeded connectivity across the site, accidental breaches of fencing and grids by dogs and koalas, increased arson risks, and overall increases in pressures to the regional koala population from a substantial increase in the human population. As noted under the response to DGR 9.5 further work is required to acknowledge these residual impacts and document the approach used to ensure that compensation arrangements are adequate.
- Section 7 p 17 – The title of this section appears to misinterpret the wording of the original Matters for Consideration for the KPOM approved under the Concept Plan (see Table 1 of Carrick KPOM, Aug 2009) which required: *Identification of linkages of “core koala habitat” to other areas of habitat and movement of koalas between areas of habitat. Provision of strategies to enhance and manage the “corridors”*. The title implies that linkages relate only to “core” koala habitat. See also last sentence of Para 2. It would be better to omit the word “Core” or replace it with “Notional”. Further comments in respect of habitat connectivity are made in response to Concept Plan Condition B4 East-West Wildlife Corridors elsewhere.
- Section 7.3 p 18 last Para – This implies that threats need to be managed both in core koala habitat, within potential koala habitat, and anywhere else koalas can venture.
- Section 8 p19 – The content of this section is very general and would benefit from the documentation of the impacts and management conclusions for each factor. This would then reinforce the rationale at Section 2.
- Section 8.2 p19 Para 3 should acknowledge the findings of the Tweed Coast Koala Habitat Study 2011 in relation to preferred food trees and soil landscapes.
- Section 8.3 p19 should refer to findings of Tweed Coast Koala Habitat Study 2011 and its conclusions in relation to bushfire as these have major implications for koala management on and adjacent to the site.
- Section 8.5 p20, last sentence – not strictly correct. Probably better to say that up to one third of koala deaths may be due to road strike.
- Section 8.6 p20 - Rationale for list of dogs not clear. Appears to reflect breeds “restricted” in NSW rather than those that pose the greatest risk to koalas. Fails to acknowledge the experience of licensed wildlife care organisations such as Friend of the Koala and Tweed Valley Wildlife Carers, that even small dogs can inflict fatal wounds on koalas and that some small dogs (such as terriers) are bred to hunt and will chase wildlife at every opportunity. This section should also mention the wild dogs and their control.
- Section 9 p22 – Chapter title – Should not imply that mitigation of impacts only relates to “core koala habitat”.

- Section 9.3 p23 - Retention of habitat is not an amelioration measure in itself. Amelioration of impacts involves measures such as fencing and dog control and habitat management to mitigate the direct and indirect impacts of the development. Retention of habitat could not be considered as amelioration unless there was a prior approval to remove the same vegetation.
- Section 9.4 p23 – Similarly, transfer to public ownership is not an amelioration measure. Indeed, unless the development meets the costs of managing any land transferred to public ownership it represents a cost burden on the wider community.
- Section 9.5 p23 – This section acknowledges the need to actively manage bushfire to protect koalas from this threat; however it provides no guidance, leaving it to the Bushfire Management Plan (Appendix X) which in turn does not address the issue. This is particularly concerning given the finding of the Tweed Coast Koala Habitat Study 2011 which suggests that uncontrolled wildfire is largely responsible for declines in the koala population over the last decade and is consequently one of the biggest issues for koala management. This section also highlights the beneficial potential of roads traversing environmental areas (and the proposed golf course) to act as fire breaks but does not acknowledge the likely increase in fire ignition risk that will accompany such a large increase in human population.
- Section 9.6 p24 – This section should indicate what the purpose of the grids is. In particular it should comment on the ability of these structures to prevent koalas and dogs from crossing them.
- Section 10.2 p29 – estimates of the increase in carrying capacity do not appear to be correct. The Tweed Coast Koala Habitat Study 2011 estimates 0.14 (+/- 0.12) koalas/ha while previous estimates for Kings Forest were reported as 0.18 (+/- 0.04) koalas/ha. These estimates are nowhere near the upper range of 2 quoted in the revised KPOM.
- The aim and objectives stated in Section 11 (p32) should be presented up-front.
- The objectives should reflect the aim and focus on ensuring a viable free-living koala population, consistent with SEPP 44 rather than simply minimizing impacts. Given the precarious state of the Tweed Coast koala population identified in the Tweed Coast Koala Habitat Study (2011), and to be consistent with SEPP 44 the proposed KPOM should explicitly commit to increasing the koala population rather than simply avoiding “significant impacts”.
- The proposed objectives are inconsistent as there are seven objectives stated in Section 11 and but only six listed in Table 2. Further, the wording used in Section 11 is different from that proposed in Table 2 and in some cases implying differing management responses. For example, last objective in Section 11 focuses on monitoring while the last objective in Table 2 seeks to ensure that *there is no reduction in koala numbers resulting from the proposed development* yet the recommendations associated with this broad objective in Table 2 (p35) relate only to monitoring. Recommended actions arising from such an objective would need to much broader than monitoring to meet such an objective.
- Table 2 should appear after Section 13 as it includes actions therein.
- Table 2 should include all recommendations and proposed actions (including those contained within other management plans) with cross references, timings, responsibilities, resources requirements, costs, performance criteria and outputs.

- The recommended dimensions of the underpasses in Table 2 (1.2m2) should be amended to reflect the dimensions shown in Figure 19 (i.e. 1.8m X 2.4m).

OPTIONS:

1. Endorse the contents of this report to form the response to the NSW Department of Planning and Infrastructure on the Stage 1 Project Application and second Concept Plan Amendment.
2. Modify the contents of this report to form the response the NSW Department of Planning and Infrastructure on the Stage 1 Project Application and second Concept Plan Amendment.

LEGAL/RESOURCE/FINANCIAL IMPLICATIONS:

Nil.

POLICY IMPLICATIONS:

Nil.

CONCLUSION:

Tweed Shire Council is reliant on Kings Forest to ensure future population growth is catered for. Furthermore, Tweed Shire Council has relied upon developer contributions (from urban land release areas such as Kings Forest) to ensure that future infrastructure needs are met. It is therefore crucial that planning for Kings Forest be done effectively.

The current Stage 1 Application sets up many of the design principles and maintenance regimes that will be relied upon for the remainder of the entire release area. The issues raised in this report need to be discussed with the applicant, the NSW Department of Planning and Infrastructure and other relevant state government agencies to ensure all parties can move forward cooperatively.

UNDER SEPARATE COVER/FURTHER INFORMATION:

To view any "non confidential" attachments listed below, access the meetings link on Council's website www.tweed.nsw.gov.au or visit Council's offices at Tweed Heads or Murwillumbah (from Friday the week before the meeting) or Council's libraries (from Monday the week of the meeting).

Nil.

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- 7 **[PR-CM] Major Project Development Application DA09/0527 for a 85 Lot Residential Subdivision (MP05_0198) at Lot 1 DP 134787, Lot 1 DP 167380 and Lot 2 DP 961928 Walmsleys Road and Lot 5 DP 1117326 Stott Street, Bilambil Heights**

ORIGIN:

Development Assessment

FILE NO: DA09/0527 Pt3

SUMMARY OF REPORT:

Council has previously provided comments on a Major Project application for an 85 lot residential subdivision at Walmsleys Road and Stott Street, Bilambil Heights.

The Department of Planning has now received from the developer a response to submissions, including a Preferred Project Report (PPR) prepared by Darryl Anderson Consulting, dated October 2011.

Council Officers have reviewed the PPR and raised outstanding issues in terms of the subdivision design, stormwater, road design, traffic, water, sewerage, parks etc.

The purpose of this report is to seek Council's endorsement of the attached submission, outlining detailed comments to the Department on the PPR.

It is considered that the nature, scale and design of the subject proposal are generally consistent with the broader planning objectives for this locality, subject to the applicant addressing a number of issues identified in this report.

RECOMMENDATION:

That Council endorses the attached submission to the Department of Planning on the Major Project Application for a 85 lot residential subdivision (MP05_0198) at Lot 1 DP 134787, Lot 1 DP 167380 and Lot 2 DP 961928 Walmsleys Road and Lot 5 DP 1117326 Stott Street, Bilambil Heights and forwards it to the Coastal Assessment Branch of the Department of Planning.

REPORT:

Applicant: Darryl Anderson Consulting Pty Ltd
Owner: Mrs DL Millar, Mr R Walmsley, Mr PN Walmsley, Ms HJ Mabbutt and Mrs VM Bailey
Location: Lot 1 DP 134787, Lot 1 DP 167380 and Lot 2 DP 961928 Walmsleys Road and Lot 5 DP 1117326 Stott Street, Bilambil Heights
Zoning: 2(c) Urban Expansion & 7(d) Environmental Protection (Scenic/Escarpment)
Cost: Nil

BACKGROUND:

The Department of Planning received an application for a Major Project from Darryl Anderson Consulting Pty Ltd for an 85 lot residential subdivision of the above site. The application was lodged pursuant to Part 3A of the *Environmental Planning and Assessment Act 1979* and the Minister for Planning is the consent authority.

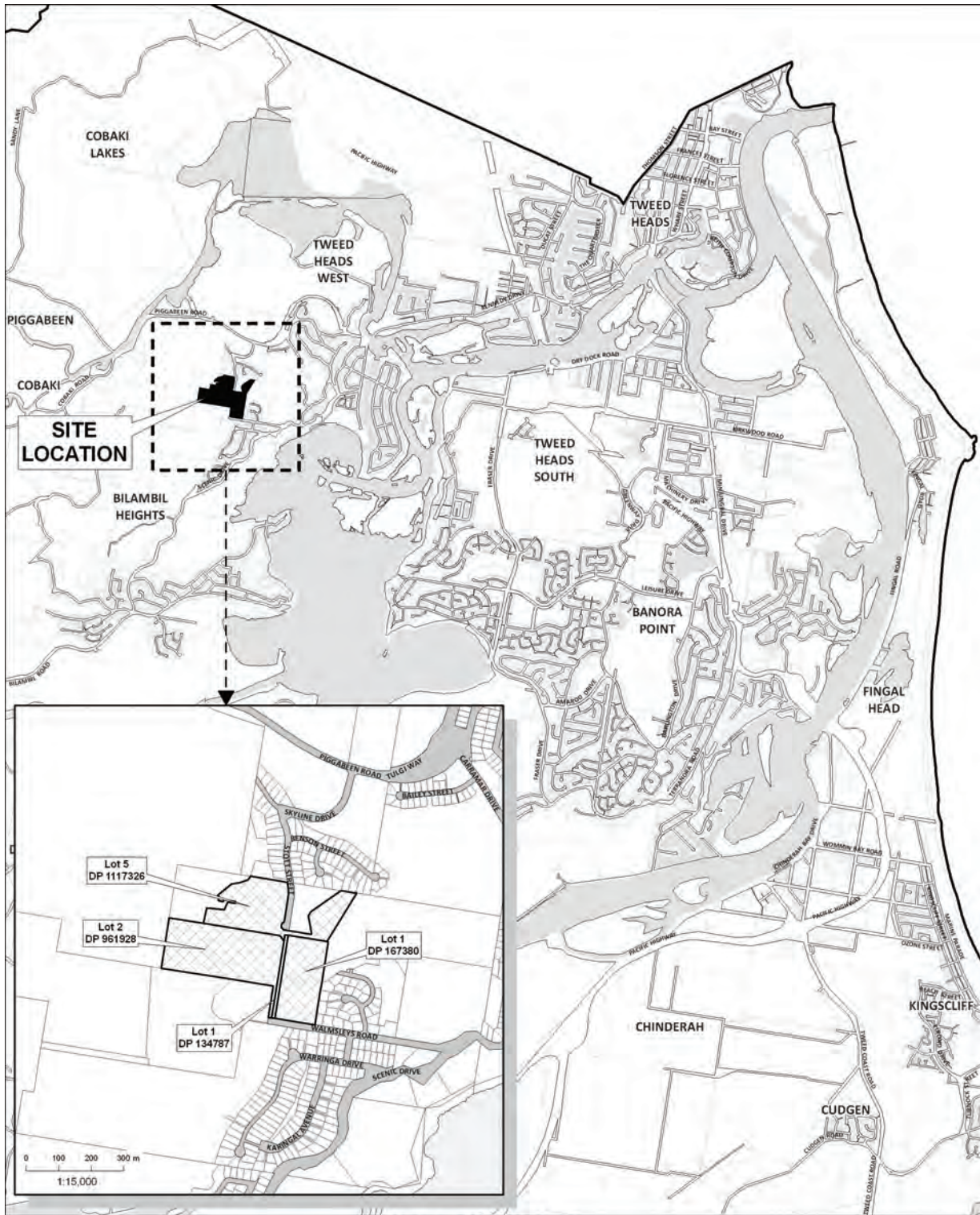
An Environmental Assessment (EA) and accompanying plans were lodged and publicly exhibited from 31 August 2009 to 29 September 2009.

Council reviewed the EA and provided the Department of Planning with a submission, endorsed at its meeting 20 October 2009.

Council received the applicant's initial Preferred Project Report (PPR) from the Department of Planning in May 2010. This version of the PPR was referred internally for comment. However, the Department of Planning considered that it did not satisfactorily address issues raised during the exhibition of the EA and requested a revised PPR from the applicant.

The Department of Planning has now provided Council with a revised Preferred Project Report (PPR) prepared by Darryl Anderson Consulting, dated October 2011.

SITE DIAGRAM:



Locality Plan

Lot 1 DP 134787, Lot 1 DP 167380 and Lot 2 DP 961928 Walmsleys Road and Lot 5 DP 1117326 Stott Street, Bilambil Heights

Disclaimer: While every care is taken to ensure the accuracy of this data, Tweed Shire Council makes no representations or warranties expressed or implied, statutory or otherwise, about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which may be incurred as a result of data being inaccurate in any way, and for any reason. This information is supplied for the general guidance and is to be considered indicative and diagnostic only. It should not be used for survey or construction purposes and prior to any excavations a "Call before you Dig" enquiry must be made by calling 1100. The information contained on this document remains valid for 10 days only from the date of supply.

Cadastre: 12 January 2012
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Boundaries shown should be considered approximate only.

0 0.5 1 Km
1:50,000 @ A4 Portrait
DO NOT SCALE
COPY ONLY - NOT CERTIFIED

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1984
Vertical Datum: Mean Sea Level, CGVD 56

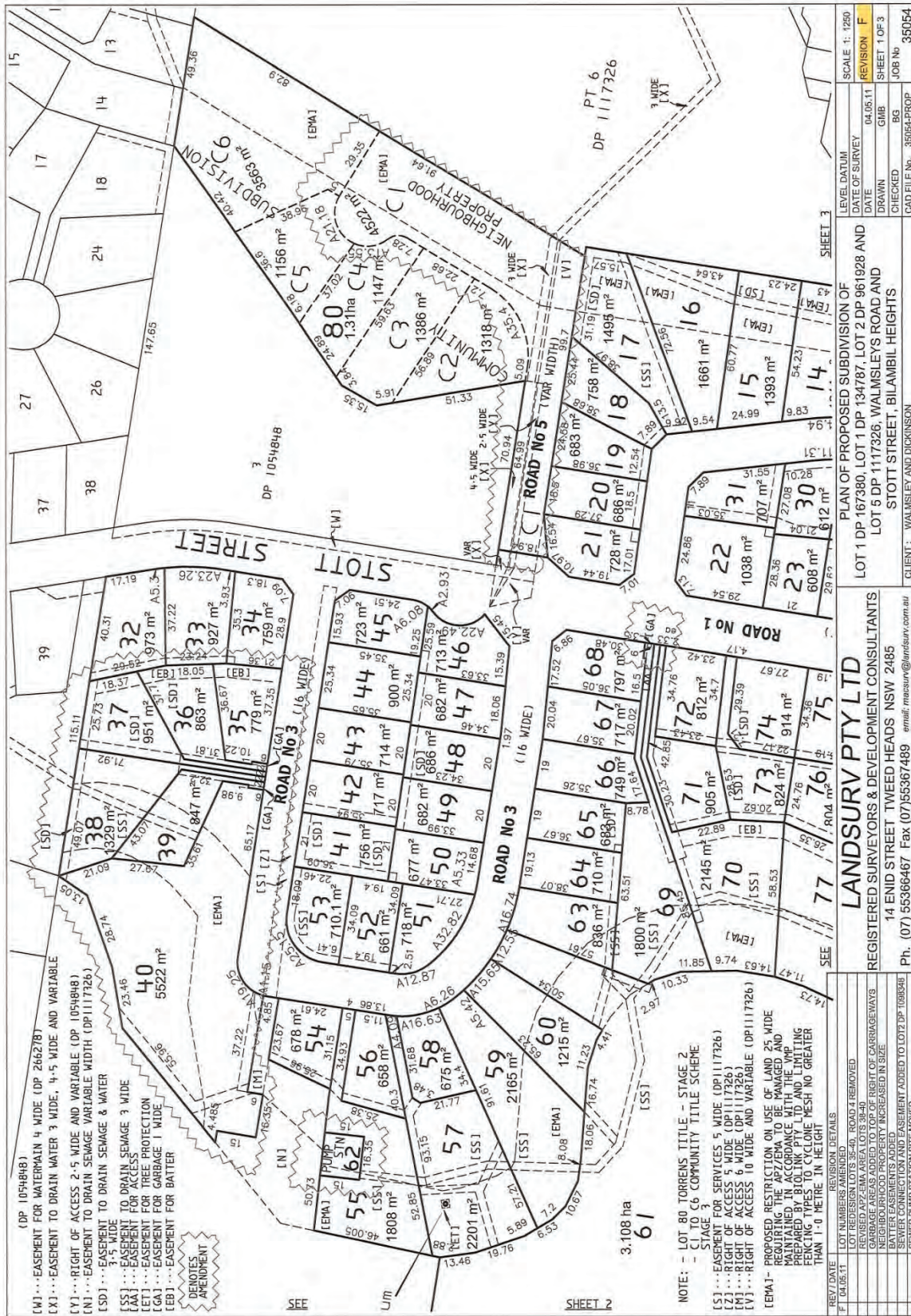
Civic and Cultural Centre
3 Tamburlage Road
Murwillumbah NSW 2484

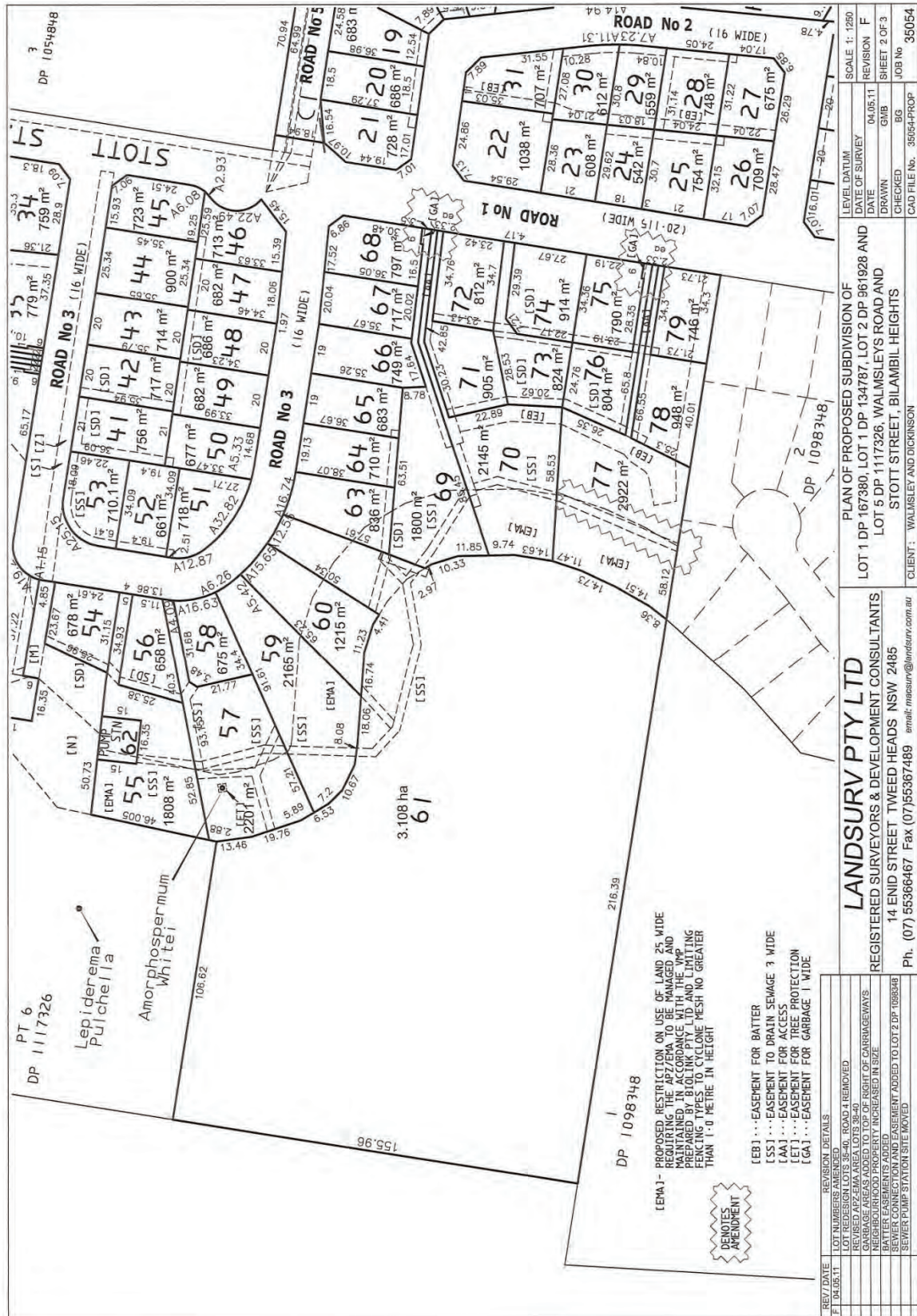
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PROPOSED SUBDIVISION PLANS:

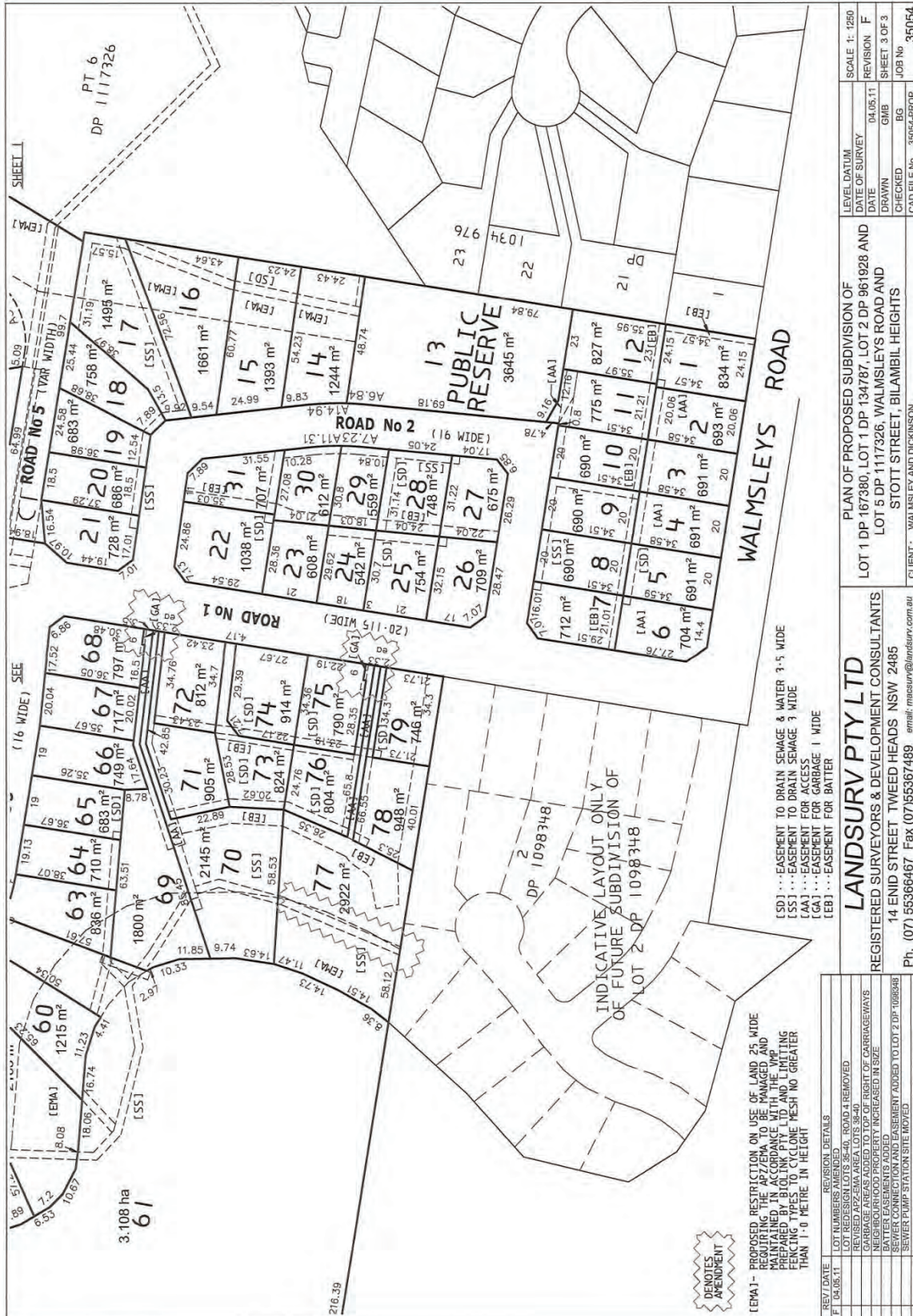




PLAN OF PROPOSED SUBDIVISION OF
 LOT 1 DP 167380, LOT 1 DP 134787, LOT 2 DP 961928 AND
 LOT 5 DP 1117326, WALMSLEY ROAD AND
 STOTT STREET, BALAMBIL HEIGHTS

LANDSURV PTY LTD
 REGISTERED SURVEYORS & DEVELOPMENT CONSULTANTS
 14 ENID STREET TWEED HEADS NSW 2485
 Ph. (07) 55366467 Fax (07) 55367489 email: msurvey@landsurv.com.au

LEVEL DATUM	SCALE	1: 250
DATE	DATE OF SURVEY	04.05.11
DRAWN	GMB	SHEET 2 OF 3
CHECKED	BIG	JOB No
CAD FILE No.	35/64-PROP	35054



PREFERRED PROJECT REPORT

The revised PPR identifies a number of changes made to the proposal in response to issues raised by the Department of Planning, Tweed Shire Council and the public. The project has been amended to:

- Reduce the total number of lots to 85 including 77 conventional residential lots (previously 78 conventional lots), 5 community title residential lots (previously 6 community title lots), 1 neighbourhood property lot (private access road); 1 sewer pump station lot (Lot 62) and 1 public reserve (Lot 13)
- Delete road number 4
- Relocate the sewer pump station (to remove the pump station from the Endangered Ecological Community buffer)
- Reconfigure the lot layout in the north western and north eastern corners of the site to provide suitable buffers to the endangered ecological communities.

It is noted that the Department of Environment, Climate Change and Water raised concerns in relation to the potential of proposed lots 38, 39, 41 and 42 on the adjacent endangered ecological community (EEC). In response to this concern, lots 38-42 have been reconfigured in the layout and replaced with lots 38-40. Building envelopes have been nominated on each of the 3 lots, which are 25 metres from the EEC.

Similarly, the sewer pump station has been relocated from Lot 58 (adjacent former Lot 42) to Lot 62.

The proposed 85 lot subdivision is comprised of 77 conventional lots and 5 community title lots. The application also includes the following components:

- Construction of a connector road (Road 1) connecting Walmsleys Road and Stott Street, designed with an 11 metre carriageway to accommodate buses
- Construction of local access streets to service each lot (roads 2, 3, 4 and 5). Road 1 – 4 will be dedicated to Tweed Shire Council as public roads whereas Road 5 is proposed to be a private accessway under the community scheme applicable to lots c1 to c6
- Bulk earthworks and landforming
- Dedication and embellishment (including playground equipment, turfing, landscaping and seathing) of approximately 3645m² of casual open space (Lot 13).
- Upgrade of Walmsleys Road
- Establishment of bushfire asset protection zones on the perimeter of adjacent hazard areas
- Construction of infrastructure including power, telephone services, reticulated water and sewer (including a pump station on lot 62).

CONSIDERATIONS UNDER SECTION 79C OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979:

The proposed development is not subject to matters under 79C of the Act as it is a Part 3A project. Notwithstanding, relevant documents are referenced in the Council Officer comments where applicable below.

COUNCIL OFFICER COMMENTS

Council officers from a variety of disciplines have reviewed the revised project and provided comments which are summarised below. A summary of any remaining concerns are highlighted. Recommended conditions of consent have been drafted to cater for stormwater, public space and environmental health issues.

Stormwater Management

In previous comments, various engineering issues were raised in relation to the PPR. It is generally considered that the issues have been resolved in the revised PPR by way of meetings with the applicant's consultants and via amendments to the plans. Several conditions of consent have been recommended in order to address the remaining concerns regarding stormwater management and landforming issues. Other issues have been referred to the Development Engineer and Traffic Engineer for comment.

Road Design

Walmsleys Road extension:

A "Y type intersection" is still proposed for the separation of DA09/0527 and DA09/0288. Sketch plans have been provided SK20100913 – 1 to 4 to indicate the proposed intersection. The following comments are provided in relation to the proposed intersection:

- Approach grades from Road 1 (12%) and Walmsleys Road (14.4%) towards the proposed intersection as demonstrated on sketch sk20100913-1 are steep. Being a neighbourhood connector and access road the designated maximum speed is 60km/h and 50km/h respectively. There are no controls to slow vehicles down prior to the intersection. A roundabout has been suggested to reduce approach speeds and separate potentially conflicting movements. A roundabout is considered to be a safer option.
- Sketch SK20100913- 2 indicates minimum site distances at the intersection. The landscape master plan indicates planting of primary trees (Hoop Pine, Illawarra Flame Tree and Blue Quandong) near the intersection. These trees are large in size and will potentially interfere with site distance.
- There are four (4) types of sight distance that should be considered when designing intersections; they are: Approach Sight Distance (ASD), Safe Intersection Sight Distance (SISD), Entering Sight Distance (ESD) and Minimum Gap Sight Distance (MGSD). The proposal only illustrates a safe stopping site distance at the intersection for Walmsleys Road. Grade corrections for site distances should also be considered for ASD and SISD.
- Sketch SK20100913 – 4 indicates turning templates for a bus. The templates indicate that the bus is required to cross the median strip and mount the kerb in order to complete the full turn. Concerns are raised that the bus can potentially conflict with traffic waiting within the median trying to complete a right hand turn.

- Sketch SK20100913-3 indicates site distances for driveways proposed off Walmsleys Road. A previous drawing by Opus Qantec McWilliam (Figure 15.0 dated April, 2010) indicates a right of carriageway “right of carriageway number 3” for proposed property numbers 1-6. It was considered that the proposed right of carriageway was acceptable to Council, provided that sight distance is acceptable and a maximum of five (5) lots were served. Access off Walmsleys Road was considered unacceptable.
- There are existing driveways located on Walmsleys Road that have not been taken into consideration regarding the proposed intersection. In particular driveways closest to the intersection off Lot 87 in DP776309.
- Figures 1 and 2 indicate that there is a future cul-de-sac road for a community title eight (8) lot subdivision located at the intersection of Walmsleys Road and Road Number 1. The proposal in its current form restricts future development of this subdivision.

The proposed minimal turning radius on steep approaching grades is considered poor engineering design. Modification of the intersection type (eg. roundabout) and removal of Lot 6 will improve the function of the road and provide a safer intersection.

Road No. 1:

The Road No. 1 cross sections indicate a compliant 3.5m road reserve. The proposed 2.2m high retaining wall is not compliant. Councils Development Design Specification D6 – Site Regrading specifies a maximum retaining wall height of 1.2m.

The absolute maximum gradient for a neighbourhood collector road is 12%. The longitudinal section for Road No. 1 (should read Walmsleys Road) shows gradients up to 14.4%. The road gradient is to be amended to a maximum of 12%. The proposed road still indicates a gradient of 14.4%.

Road No. 3:

Figure 12.3 indicates a right of carriageway No.3 proposed for Lots 53 & 60 (previous PPR configuration). The proposed right of carriageway does not align with the revised proposed lots, but it is assumed that the proposal is for lots 55 & 62. Lot 62 is a proposed pump station. Below are comments regarding access into Lots 55 & 62:

- Figure 7.2 indicates section 4 through the proposed carriageway with a 1 in 4 batter and an 8% grade to the proposed retaining wall. A conflicting figure 12.3 indicates the same right of carriageway with grades of 2.5% and 10%.
- 2) No change of grades has been considered for the right of carriageway. The maximum rate of change is 6.25% for trucks accessing the sewer pump station.

Road No. 5:

The minimum footpath verge proposed is 1.5m. Council's standards require the footpath verge to be 5.5m with a 1.2m concrete footpath located on one side. The plans are to be amended to provide an adequate verge width of 5.5m.

Right of carriageways:

The amended plans show (four) 4 right of carriageways with longitudinal and typical cross sections. The plans do not provide longitudinal and cross sections for access into lots 11 and 12. The plans have deleted right of carriageway access for lots 1-5.

The proposal for carriageways 1, 2 and 4 indicate a battle axe type of arrangement, with all properties having frontage to the street. Although not desirable to have battle axe type lot arrangements on green field sites, Council's development controls do not restrict these types of lots provided that a maximum of 5 lots are served, grades are compliant and services are achieved. Battle axe allotments are generally used in older existing subdivisions where access is restricted and not in new green field sites.

An area of 1m x 6m is dedicated for the provision of bin storage at the frontage of the lots. Bin storage areas have the potential to impact on driveway site distance.

Proposed access to Lot 6:

Sketch SK20100913-3 indicates sight distance for the driveway to Lot 6 of 40m. Being a neighbourhood connector type road with a maximum targeted speed off 60km/h sight distance required is 55m.

Road gradients greater than 12%

The provision for pedestrian footpaths gradients greater than 12% has not been considered in the design.

Traffic:

There are concerns in relation to the proposed intersection of Walmsleys Road and Stott Street. It would be expected that acceptance of this design by Council would result in an unacceptable vehicular crash location that would require remedial works in the future at Council's expense.

Water:

Location of water meters

The revised engineering drawings reflect the removal of Road No 4 (short cul-de-sac in the north west area of the development) in favour of several hatchet blocks with a right of carriageway across the handles to Road No 3. The drawings show a water main along the driveway of proposed lot 38. This is not consistent with Council's preferred practice which is not to have water mains on private property.

This results in a number of water meters located within the properties on what will be an unofficial road. From the Water Unit's perspective, it is much more appropriate that a formal road be included. If not, provision for the location of water meters outside the vehicle path will be required. Similar provision will be required at Lots 69, 70 & 71 and Lots 76, 77 & 78 although the issue is not as significant in these two locations.

Water tank size / connected roof area

Generally, the statement of commitments covers the area of water supply adequately including changes previously requested, however the statement of the minimum size water tank and connected roof area has omitted the actual amount of roof area required. The words under "Single Dwellings:" should read:

"Minimum 5000L rainwater tank with a minimum 160 m² roof area connected to it."

Sewerage:

The revised draft statement of commitments has included all requested changes from the previous version in relation to sewerage.

Section 64 charges:

The statement of commitments includes payment of development contribution charges in relation to water supply and sewerage under Section 64 of the Local Government Act.

These charges should be assessed in accordance with the schedules in Fees and Charges with a credit for the existing Lot 5 DP1117326 in relation to water only. None of the existing lots have previously been connected to sewer.

Parks

Landscape Masterplan – 'Public Park Concept'

- Council's concern with the park in the original PPR was primarily excessive slope across the park. As such, the applicant has simply deleted areas with excessive slope from the park plan but still dedicated this steep land to Council (refer to Dwg SK20100809 – 01 Rev A). This approach is not considered to be appropriate as there is no reason for Council to accept land that does not meet criteria for casual open space.

Accordingly, the 'compliance calculations' included in Dwg SK20100809 – 01 Rev A are not correct and cannot be considered. Slope calculations must include all land in the land parcel proposed for dedication. Despite Council's offer, there has been no discussion with the developer on this matter which could have been clarified had such discussion taken place.

Given the sloping nature of the land in this area, it is reasonable for Council to compromise on slope requirements. Council will accept the park but will require amendments in a detailed landscape plan to be prepared before the Construction Certificate is issued.

- There remain concerns over the slope and drainage in this park. Council will require negotiation over the final detailed plan for this park to ensure it deals with such slope and design issues. For instance, an overland flow path at the northern end of the park also appears to have a garden bed proposed. In addition, a 5% slope is indicated across the play area and no slope indication is provided for the 'kickabout area'.
- The Landscape Masterplan does not indicate park seating, shelter shed or other park infrastructure. The detailed landscape plan must provide for such items.

Discussions need to be held between Council staff and the developer regarding provision of park infrastructure.

- Council has noted an opportunity to provide a link in the future through the adjoining Lot 6 east of the proposed public reserve (not part of the subject site). The park design does not take this into account. It would be appropriate for the developer's representatives, including the landscape architect, to meet with Council to discuss concerns with regard to future access to the adjoining land described as the 'Eastern Conservation Area'.

Contamination:

The following still requires clarification from the applicant:

- Council's GIS does not recognise Lot 4 DP 105848 and it does not match the Lot and DP description of any of the adjacent Lots in Stott Street. Clarification is required in respect to whether Lot 4 DP105848 is meant to refer to Lot 5 DP1117326 Stott Street which is an allotment referred to in the proposed subdivision.

Noise:

Further clarification is required to be provided from the applicant as to why they have not included any reference to implementing the provisions and recommendations as contained in the submitted Noise Impact Report dated 30 October 2007 within the Statement of Commitments dated October 2011.

Fill:

It is important that fill material is not contaminated and therefore an appropriate condition should be placed on any consent to ensure that such fill is uncontaminated and tested if required.

OPTIONS:

1. Council endorse the attached draft submission and it is forwarded to the Coastal Assessment Branch of the Department of Planning.
2. Council amend the attached draft submission and the amended version is forwarded to the Coastal Assessment Branch of the Department of Planning.

LEGAL/RESOURCE/FINANCIAL IMPLICATIONS:

The proposal is a Part 3A application and Council is not the Consent Authority.

POLICY IMPLICATIONS:

There are limited policy implications arising from the proposal. However the proposal is part of the Bilambil Heights urban release area and relevant to future strategic planning of the release area.

CONCLUSION:

The Department of Planning has invited Council to provide a submission on the Part 3A major project application for an 85 lot subdivision at Walmsley Road and Stott Street Bilambil Heights.

The major application has been reviewed by Council officers and comments are summarised in this report.

It is recommended that the attached draft submission detailing comments is forwarded to the Department of Planning.

UNDER SEPARATE COVER/FURTHER INFORMATION:

To view any "non confidential" attachments listed below, access the meetings link on Council's website www.tweed.nsw.gov.au or visit Council's offices at Tweed Heads or Murwillumbah (from Friday the week before the meeting) or Council's libraries (from Monday the week of the meeting).

1. Draft submission to the Department of Planning on the Major Project Application for a 85 lot residential subdivision (MP05_0198) (ECM 44674709)
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- 8 **[PR-CM] Class 1 Appeal - Development Application DA10/0295 for a Telecommunications Facility at Lot 7306 DP 1132011; No. 37 Boxsell Road, Limpinwood**

ORIGIN:

Development Assessment

FILE NO: DA10/0295 Pt1

SUMMARY OF REPORT:

At its meeting on 21 June 2011, Council refused the Development Application DA10/0295 for a Telecommunications Facility at Lot 7306 DP1132011, 37 Boxsell Road, Limpinwood.

Council has been served notice of a Class 1 Appeal against Council's determination in the NSW Land and Environment Court. Lindsay Taylor Lawyers have been engaged to represent Council as a result of the initial telephone directions hearing set down prior to the next available Council meeting (Monday 16 January 2012). It is recommended that council defend the appeal.

RECOMMENDATION:

That Council, in respect of its decision to refuse Development Application DA10/0295 for a telecommunications facility at Lot 7306 DP 1132011; No. 37 Boxsell Road, Limpinwood, engages its solicitors to defend a related Class 1 appeal lodged by the applicant in the NSW Land and Environment Court.

REPORT:

Applicant: Optus Mobile
Owner: Land and Property Management Authority
Location: Lot 7306 DP 1132011 No. 37 Boxsell Road, Limpinwood
Zoning: 5(a) Garbage Depot
Cost: \$200,000

BACKGROUND:

The proposed development (DA10/0295) seeks consent for the construction of a telecommunications tower for Optus 3G coverage in the form of a monopole 30m in height and associated antennae, equipment shelter, bollards and chain-link security fence, within the existing garbage depot site on Boxsell Road, Limpinwood.

The subject site has an area of 15,705m², is zoned 5(a) Garbage Depot and is surrounded by land that is zoned 1(a) Rural. The site incorporates Council's waste transfer station and is approximately 2.2km from the township of Tyalgum.

The application was advertised for a period of 14 days, during which time twenty one submissions were received.

Issues raised by the proposal included visual amenity and cumulative impact as a result of the proposed Telstra tower a short distance away from the proposed Optus tower. Flora and fauna issues were also raised.

Council officers submitted a report to Council's meeting of 21 June 2011 recommending refusal of DA10/00295. At this meeting Council resolved to refuse the application based on the following reasons:

1. The development application is contrary to Clause 115(3) of the State Environmental Planning Policy (Infrastructure) 2007, in that the proposed development is not consistent with the principles described in the NSW Telecommunications Facilities Guidelines.
2. The development application is contrary to Clause 4 of the Tweed Local Environmental Plan 2000, in that the proposed development does not meet the aims of the plan.
3. The development application is contrary to Clause 5 of the Tweed Local Environmental Plan 2000, in that the proposed development would have an unacceptable adverse impact (particularly in terms of visual amenity and flora / fauna) on the natural environment.
4. The development application is contrary to Clause 8(1) of the Tweed Local Environmental Plan 2000, in that the proposed development is considered to have an unacceptable cumulative impact upon the surrounding environment.
5. The development application is not suitable for the subject site, in that there is considered to be better suited alternative sites in the same locality and the proposed development is contrary to the Tweed Shire Scenic Landscape Evaluation.
6. The development application is not considered to be in the public interest.

SITE DIAGRAM:



Locality Plan

Lot 7306 DP 1132011
No. 37 Boxsell Road, Limpinwood

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Cadastre: 31 May, 2011
© Land and Property Management Authority (LPMA)
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Boundaries shown should be considered approximate only.

0 2 4 Km
1:200,000 @ A4 Portrait
DO NOT SCALE
COPY ONLY - NOT CERTIFIED

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geodesic Datum of Australia 1994
GDA
Map Grid of Australia, Zone 56

Civic and Cultural Centre
3 Tombulgum Road
Murwillumbah NSW 2484
PO Box 816
Murwillumbah NSW 2484
T | (02) 6670 2400 | 1300 292 872
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W | www.tweed.nsw.gov.au
E | planning@tweed.nsw.gov.au



Filename: Z:\GIS\PROJECTS\2011\20110531\Map\Map\1132011Map_LocalityPlan_A4P.pdf

Author: |Beebebe - Planning Services Unit

Date Printed: 15 May 2012

OPTIONS:

1. Defend the Appeal
2. Negotiate Consent Orders.

It is recommended that Council support Option 1 to defend the Appeal.

LEGAL/RESOURCE/FINANCIAL IMPLICATIONS:

Council will be required to engage legal representation regarding the Appeal. Costs will be incurred as a result of the Appeal.

POLICY IMPLICATIONS:

Nil.

CONCLUSION:

Council has previously identified its concerns in refusing DA10/0295. It is therefore considered appropriate that Council defend the current Class 1 appeal.

UNDER SEPARATE COVER/FURTHER INFORMATION:

To view any "non confidential" attachments listed below, access the meetings link on Council's website www.tweed.nsw.gov.au or visit Council's offices at Tweed Heads or Murwillumbah (from Friday the week before the meeting) or Council's libraries (from Monday the week of the meeting).

Nil.

9 [PR-CM] Unauthorised Activity - Poultry Farm at Lot 1 DP 881996 No. 576 Cudgen Road, Cudgen

ORIGIN:

Development Assessment

SUMMARY OF REPORT:

Council undertook Class 4 proceedings in the NSW Land and Environment Court for an unauthorised animal establishment for a poultry (currently accommodating approximately 4000 chickens) farm at premises No. 576 Cudgen Road, Cudgen. The hearing took place before Justice Sheahan on 30 November and 1 December 2011 and the decision was handed down on 9 December 2011.

The judgment, provided as an attachment to the report, required the chickens to be removed from the site by 30 December 2011 and the sheds be demolished by 18 January 2012. The judgement also awarded Council its costs. The quantum of those costs can be settled by an agreement with the respondent, or if no agreement can be reached, then the costs are assessed through an administrative process regulated by the Supreme Court. The Council would be entitled to its further costs reasonably incurred by the formal cost assessment process.

At the time of finalising this report the chickens and the sheds have not been removed from the site. It is therefore recommended that contempt of court action be taken to enforce the Orders of the Court.

RECOMMENDATION:

That Council engages its Solicitors to enforce compliance with the NSW Land and Environment Court Orders dated 9 December 2011 for the premises known as No. 576 Cudgen Road, Cudgen (Lot 1 DP881996).

REPORT:

Council resolved on 16 August 2011 to engage its solicitors to commence proceedings to enforce compliance by removal of unauthorised building works (sheds and pens and cessation of unauthorised land use (animal establishment) on the premises known as No.576 Cudgen Road, Cudgen (Lot DP 881996).

Council undertook Class 4 proceedings in the NSW Land and Environment Court for an unauthorised animal establishment for a poultry (currently accommodating approximately 4000 chickens) farm at 576 Cudgen Road, Cudgen. The hearing took place before Justice Sheahan on 30 November and 1 December 2011 and the decision was handed down on 9 December 2011.

The judgment, (provided as an attachment to this report) required the chickens to be removed from the site by 30 December 2011 and the sheds be demolished by 18 January 2012. The Council has been awarded its costs as agreed or assessed.

As part of his conclusions Justice Sheahan said that *both the sheds and the birds should be quickly removed from the subject land, pending a DA being properly assessed to see if a consent can or will be granted for the respondent's project.*

At the time of finalising this report, the chickens and the sheds have not been removed from the site.

Adjacent residents have advised Council that the Orders have not been complied with and wish to know what course of action Council is going to take given the Orders have been ignored.

The landowner has submitted a Notice of Intention to Appeal the decision of the Land and Environment Court (the appeal would be to the NSW Court of Appeal). The grounds of the Appeal are not specified in the Notice of Intention (they are not required to be specified). The Notice of Intention is *not* a commencement of proceedings in the Court of Appeal. The Notice of Intention to Appeal allows the landowner to commence an appeal at any time before 8 March 2012.

The Council's solicitors have written to the landowner requiring the Appeal proper be commenced by 23 January 2012 or contempt of court proceedings may be commenced without further notice. Neither the Notice of Intention to Appeal or the commencement of the Appeal proper stay the Orders made by the Land and Environment Court on 9 December 2011. However, if the Appeal is commenced it is normal practice for the appellant to seek such a stay until a decision is made on the appeal. If the Appeal is commenced, the Council's solicitors have recommended that the matter be expedited, given the on-going (and potential) environmental impacts of the unauthorised development.

The powers of the Land and Environment Court to punish contempt are unlimited. There is no maximum penalty and the Court can either impose a sentence of imprisonment and/or a fine. As the Court will still seek compliance with its orders, it sometimes imposes a smaller initial monetary penalty and then an on-going penalty per month, for as long as the contempt continues. The Court can then stay the on-going monthly penalty for a short period to allow the landowner to comply (purge the contempt). The Court does not have the power to allow other persons to enter the land and physically enforce its orders.

LEGAL/RESOURCE/FINANCIAL IMPLICATIONS:

Legal costs will be incurred as a result of the action however Council will seek costs against the respondent. Costs have been awarded to Council for the proceedings undertaken so far (the gross amount of those costs are approximately \$85,000)). The costs are not awarded on an indemnity basis (100%) but rather on a party-party basis and the Council could reasonably expect its costs to be accessed at around 75-80%.

POLICY IMPLICATIONS:

Nil.

UNDER SEPARATE COVER/FURTHER INFORMATION:

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1. Land and Environment Court Judgement (ECM 44333495).
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10 [PR-CM] Variations to Development Standards under State Environmental Planning Policy No. 1 - Development Standards

ORIGIN:

Director Planning and Regulation

SUMMARY OF REPORT:

In accordance with the Department of Planning's Planning Circular PS 08-014 issued on 14 November 2008, the following information is provided with regards to development applications where a variation in standards under SEPP1 has been supported/refused.

RECOMMENDATION:

That Council notes the December 2011 Variations to Development Standards under State Environmental Planning Policy No. 1 - Development Standards.

REPORT:

On 14 November 2008 the Department of Planning issued Planning Circular PS 08-014 relating to reporting on variations to development standards under State Environmental Planning Policy No. 1 (SEPP1).

In accordance with that Planning Circular, the following Development Applications have been supported/refused where a variation in standards under SEPP1 has occurred.

DA No.	DA10/0666
Description of Development:	two (2) lot subdivision and dwelling construction
Property Address:	Lot 22 DP 1080322 No. 28 Joshua Street, Murwillumbah
Date Granted:	14/12/2011
Development Standard to be Varied:	Clause 20(2)(a) - Minimum lot size 40ha
Zoning:	1(b2) Agricultural Protection, 2(c) Urban Expansion
Justification:	Seeks to create a lot of 6.463ha in the 40ha zone for 1(b2) land, a variation of 83.85%.
Extent:	84% variation from prescribed minimum lot size (lot is 6.418ha in 1(b2) zone which requires 40ha)
Authority:	Director General of the Department of Planning

DA No.	DA11/0471
Description of Development:	Boundary adjustment
Property Address:	Lot 2 DP 702661 & Part Lot 5 DP 1000640 No. 473 Hopkins Creek Road, Hopkins Creek
Date Granted:	14/12/2011
Development Standard to be Varied:	Clause 20(2)(a) - Minimum lot size 40ha
Zoning:	1(a) Rural, 7(d) Environmental Protection (Scenic/Escarpment)
Justification:	The DA proposes the variation of a boundary between two lots with no creation of additional lots in the 1(a) Rural zone. The existing lots are below the relevant development standard of 40 hectares. The development proposes to adjust the boundary to produce two lots with areas: Lot 5 (8.66 ha) will expand to proposed Lot 21 measuring 17.54 ha and Lot 2 (15.33 ha) will be reduced to proposed Lot 20 measuring 6.44 ha. On this basis the SEPP 1 variation is considered to be justified.
Extent:	Proposed Lot 21 - 56.15% and Proposed Lot 20 - 83.9%
Authority:	Tweed Shire Council

LEGAL/RESOURCE/FINANCIAL IMPLICATIONS:

Nil.

POLICY IMPLICATIONS:

Nil.

UNDER SEPARATE COVER/FURTHER INFORMATION:

*To view any "**non confidential**" attachments listed below, access the meetings link on Council's website www.tweed.nsw.gov.au (from 8.00pm Wednesday the week before the meeting) or visit Council's offices at Tweed Heads or Murwillumbah (from 8.00am Thursday the week before the meeting) or Council's libraries (from 10.00am Thursday the week of the meeting).*

Nil.

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