

## Issues Plan

Riveroaks, Ballina

proposed for project approval



CONICS



Job #: 21019-0082-060  
 Date: April 2008  
 Scale: 1:1500 @ B1

Figure 4.4 Preliminary Issues

05

## DESCRIPTION OF PROPOSAL

### 5.1. Overview of Proposal

The project seeks the Minister of Planning's approval to subdivide land known as Riveroaks, Pacific Highway, Ballina into 236 residential lots (Torrens Title Freehold) that will potentially provide for up to 269 future dwellings. The application is seeking the creation of freehold lots. The development does not include strata or community title. In addition to the subdivision of land, the application seeks approval for:

- the provision of roads (including the Link Road),
- open space and recreational areas,
- allocated land for a childcare centre,
- infrastructure, including minor land recontouring for drainage purposes.

The proposal does not include filling nor consent for the development of dwelling houses or other buildings.

The proposed minor land recontouring on Lot 2 DP 107424 is necessary to facilitate stormwater drainage and flood management. While filling the site is the subject of the previous Council consent DA 2002/566, the proposed drainage infrastructure will address the requirements of Council following finalisation of the Ballina Flood Study 2007. The proposed land recontouring will result in a 30-50 metre wide drainage swale that will divert storm and flood waters south of the proposed residential subdivision directly into North Creek Canal.

The subdivision site will be accessed from the Pacific Highway via the proposed Link Road which is located partially Lot 2 DP 1074242 and Lot 269 DP 755684. The proposed intersection to the Highway is subject to a previous consent DA 2002/566 (see Appendix 19) issued by Ballina Shire Council and is not included in this development application.

Open space and public facilities including roads, footpaths, and stormwater drainage/flood management infrastructure will be dedicated to Council.

For the purpose of clarification the following table, 'Table 5.1 Schedule of Inclusions/Exclusion' details those elements of the development that are included as part of the Major Project application and those elements addressed by previous consents.

The proposal can be described in two parts. The first

**Table 5.1 Schedule of Exclusions/Inclusion**

Action	Included/Excluded	Comment
Bulk earthworks for subdivision works and Link Road including associated temporary drainage works and acoustic mounds along the Pacific Highway and western side of the Link Road	<u>Excluded</u> from Part 3A Application	Approved by Ballina Shire Council under DA 2002/566. Note Construction Certificates issued on 19 December 2007 and 22 January 2008 and allows earthworks on Lots 1, 3 and 5 DP 1074242 and that portion of the Link Road within the Natuna site.
Roundabout/Link Road intersection	<u>Excluded</u> from Part 3A application	Approved by Ballina Shire Council and RTA under DA 2002/566
Link Road/Internal roundabout	<u>Included</u> in Part 3A application.	
Lot 1 residential subdivision including roads, footpaths, cycle tracks, services, landscaping, etc	<u>Included</u> in Part 3A application.	
Playing fields, amenities, car parks, playgrounds.	<u>Included</u> in Part 3A application.	
Relocation of Country Energy overhead cables	<u>Excluded</u> from Part 3A application.	Further to the submission of the draft EAR to the Department of Planning on 22 February 2008, the developer will address the relocation of the overhead cables along the Link Road. This will be addressed as a section 96 application to DA 2002/566.
Floodway in Lot 2	<u>Included</u> in Part 3A application.	
Floodgates	<u>Excluded</u> from Part 3A application.	Procedure has been resolved with Ballina Shire Council under DA 2002/566.
Revegetation area planting	<u>Excluded</u> from Part 3A application.	Works are proceeding in accordance with DA 2002/566.
Combined sewer pump station for Natuna and Raysheild development	<u>Excluded</u> from Part 3A application.	The matter of the sewer pump station and location is to be addressed in a separate section 68 application under the Local Government Act 1993.
Pacific Highway stormwater drain	<u>Excluded</u> from Part 3A application.	A Construction Certificate will be applied for under DA 002/566 NB. This will be carried out as part of the bulk earthworks as agreed with Ballina Shire.
Sound mound landscaping and acoustic fence	<u>Excluded</u> from Part 3A application.	Landscaping for the sound mound has been approved by Ballina Shire Council under DA 2006/650. The acoustic fence will be the subject of a Construction Certificate application under the DA 2002/566.

element of the proposal includes:

- Residential subdivision of Lots 1,3 and 5 on DP 1074242 into 236 Lots;
- Provision of 2065 m<sup>2</sup> lot for a future child care centre; and
- Construction of 2.097 hectares of structured landscaped open space (playingfield) and 1700 m<sup>2</sup> open space area.

The second element of the project includes the provision and construction of significant infrastructural elements that provide sufficient access to the residential development and addresses flood and stormwater management. In this regard the proposal includes:

- The construction of the Link Road (two lane road incorporating pedestrian footpaths and acoustical barrier) on part Lot 1 on DP 1074242 and part Lot 269 on DP 755684 including roundabout to access site; and
- Land recontouring to facilitate drainage swale on Lot 2 in DP 1074242 approximately 0.7m deep and 30-50metres wide.

The description of the two elements of the proposal does not reflect the staging nor sequence of development proposed but reflects the two most important structural elements of the proposal that being the residential subdivision and supporting infrastructure.

### Design Philosophy

The proposed layout is considered to provide an improved urban outcome to the subdivision pattern originally proposed. This preferred subdivision layout, shown in Figure 5.1, significantly improves permeability throughout the site, includes a variety of allotment sizes to promote housing diversity and improves the response to the overland flow considerations of the site.

We have attempted to develop a subdivision pattern that would satisfactorily address the relevant planning requirements, both statutory and strategic, as well as the site constraints.

On each proposed pattern we were required to balance out the need to promote good urban design principles such as permeability, legibility, walk ability and identity with the requirements of the Coastal Design Guidelines as well as the needs of the market place.

In this regard, we sought to promote road pattern that would encourage pedestrian and cycling activity, a diversity in housing lots, linkages to adjoining areas, implementation of water sensitive urban design principles that would see the treatment and capture of runoff within the site and accessibility to open space.

## 5.2. Residential Subdivision

The proposed subdivision will result in the creation of 236 residential allotments. Four types of residential lots are provided:

- a) Villa Lots
- b) Courtyard Lots
- c) Traditional Lots and
- d) Duplex Lots.

The diversity in lots provide for a range of development outcomes, mainly appealing to market conditions, but also providing the opportunity to vary development form and promote a community rich in diversity and in lifestyle.

All lots will be created under Torrens title and marketed as freehold. Duplex lots will be marketed as freehold title, any subsequent strata title subdivision will require separate approval.

### *Villa Lots*

Five villa lots are provided. These lots vary in size in between 400-410m<sup>2</sup>. Villa lots provide for small lot housing. The lots are accessed via a rear laneway thus promoting residential amenity by improving streetscape frontage but not providing for driveways or garages. Villa lots only provide for single dwellings.

These lots are provided in close proximity to open space so that future residents may maximise outlooks and views.

### *Courtyard Lots*

Courtyard allotments range in size from between 421-480m<sup>2</sup>. These allotments provide for single dwelling structures. These lots are interspersed between the traditional and duplex allotments. The locations of the courtyard allotments allow for maximisation of development yields by provide a development alternative to the traditional allotments without the need to maintain garden aspects. Courtyard allotments will support traditional dwelling structures that will be accessed from



the front.

#### *Traditional Lots*

The traditional allotments are the largest allotments that provide for single dwellings. Traditional lots will form the bulk of the subdivision layout. Access is from the front through either direct from the street or the access laneways provided.

#### *Duplex Lots*

Duplex Lots will provide for medium density development. Lots vary in size but generally start at approximately 795m<sup>2</sup>. Duplex lots will provide at least 2 dwellings per lot. Lots are accessed from the main street and are nominally located on corners to maximise appeal and frontage.

#### *Building Layouts*

Figure 5.3 and Figure 5.4 provides an indicative detail of how future dwellings may be located within each of the lot types. An additional plan showing the indicative building envelopes across the subdivision is also provided. This plan is provided in Appendix 18.

### **5.3. Open Space**

Two types of open space are provided. The largest area of open space provided is the 2.097 hectares of playing field provided in the south eastern corner of the development. The location and provision of this facility was determined through adopting the conditions of consent in DA 2002/566.

A 1700m<sup>2</sup> space is provided on the western boundary of Lot 1. The location of this space recognises the future links available to any future development that may occur to the west.

### **5.4. Landscaping**

A landscaping plan is provided in Appendix x. Essentially the landscaping achieves an outcome consistent with that of a well ordered high amenity residential development.

### **5.5. Roads, Transport and Accessibility**

The site is accessed from the south eastern corner of Lot 2. The location of this access point was a consequence of the previous Council consent DA 2002/566. The main access point will occur off a secondary roundabout provided on the Link Road. The Link Road falls within a 35 metre wide corridor and details are included in

Appendix 18.

The road hierarchy within the proposed subdivision can be described as:

**22m Boulevard:** A two lane road separated by a planted median strip that accommodates storm water treatment measures. This road will be dedicated to Council upon completion.

**18m Main Road:** Forms the main entrance road into the estate. The road will be dedicated to Council upon completion.

**16m Secondary Road:** Is the dominant road type within the proposed estate. These roads will be dedicated back to Council.

**6m Lane:** Services the Villa lots. The laneways will be dedicated back to Council upon completion.

**Access ways:** Private access ways to service particular development lots. The access ways will be created as access easements and will form part of the property. They will not be dedicated to Council.

All roads reserves will accommodate pedestrian and cycling traffic. A Pedestrian movement plan is provided on the following page. The Plan demonstrates the location of pedestrian and cycle pathways within the estate. The proposal does not provide formal access to North Creek Canal. Public access to North Creek Canal will be realised as part of the Natuna development. The Riveroaks development will include the construction of cycle and pedestrian connections to the entrance roundabout in order to provide for future connectivity. The final design of the Link Road will include a refuge for future pedestrian and cycle traffic.

The proposed subdivision layout promotes high levels of walkability by providing pedestrian and cycle access to the Link Road and Pacific Highway in locations other than the main entrance.

#### *Public Transport*

Bus services operate within the locality providing access to community, health, retail and administrative facilities currently provided in Ballina. The proposed road layout has been amended in consultation with Council officers to facilitate better opportunities for future bus movements throughout the estate.

### **5.6. Infrastructure**

Appendix 9 contains the report, 'Infrastructure Provisions

Riveroaks' prepared by LandPartners Pty Ltd. In summary the development is able to be serviced by all available infrastructure, including, water, electricity, sewerage, telephone and gas. Correspondence from Country Energy indicating that the site can be serviced is also included in Appendix 9.

### **5.7 Staging**

The development is delivered over 5 stages. Figure 5.5 provides an indicative staging plan for the proposal. This figure is provided at scale in Appendix 18.

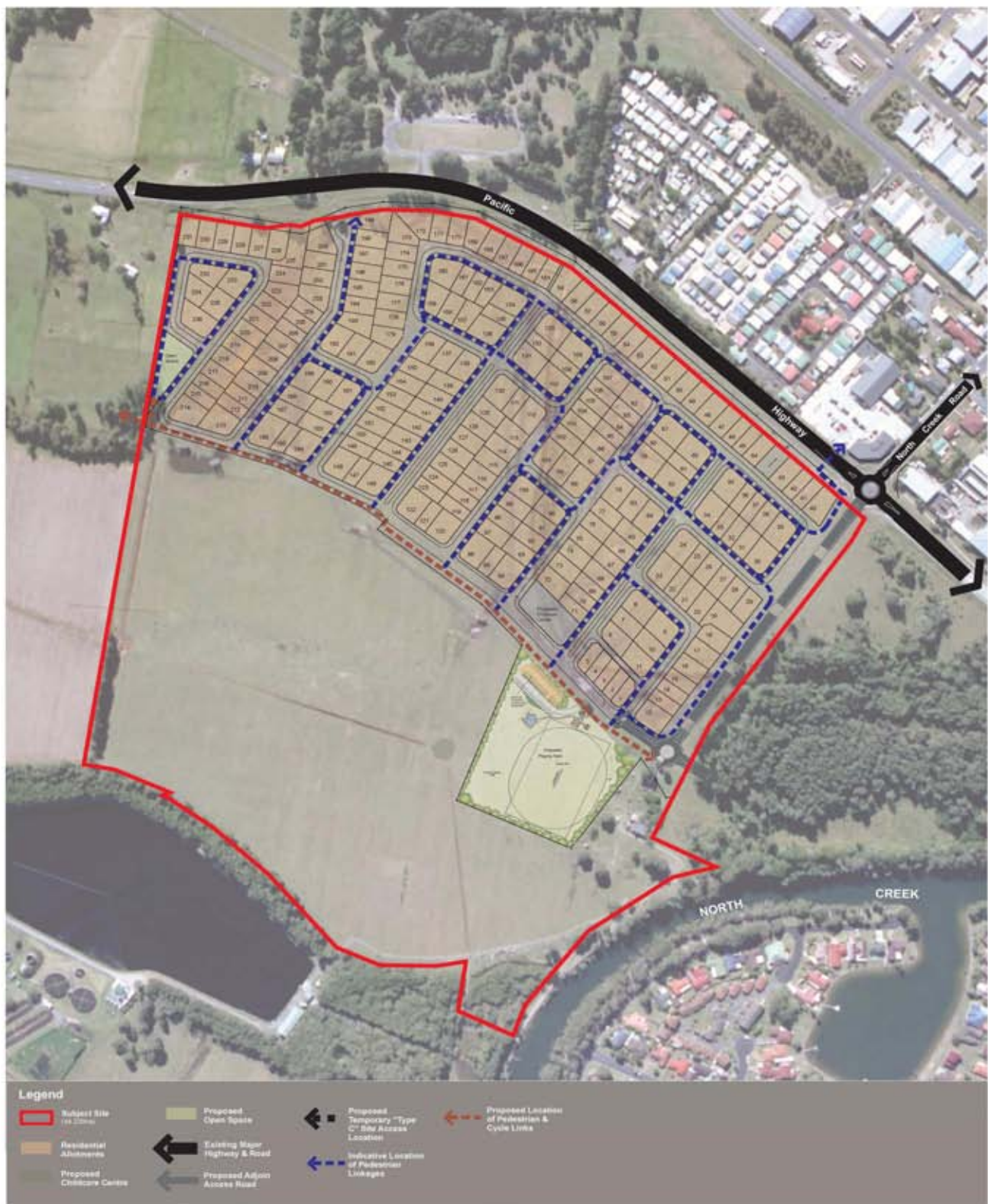


Figure 5.1 Proposed Development



# **Pedestrian Movement Plan** (Ref To Proposal Plan: 20997 - 13N) Riveroaks, Ballina

proposed for project approval



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Figure 5.2 Pedestrian/Cycle

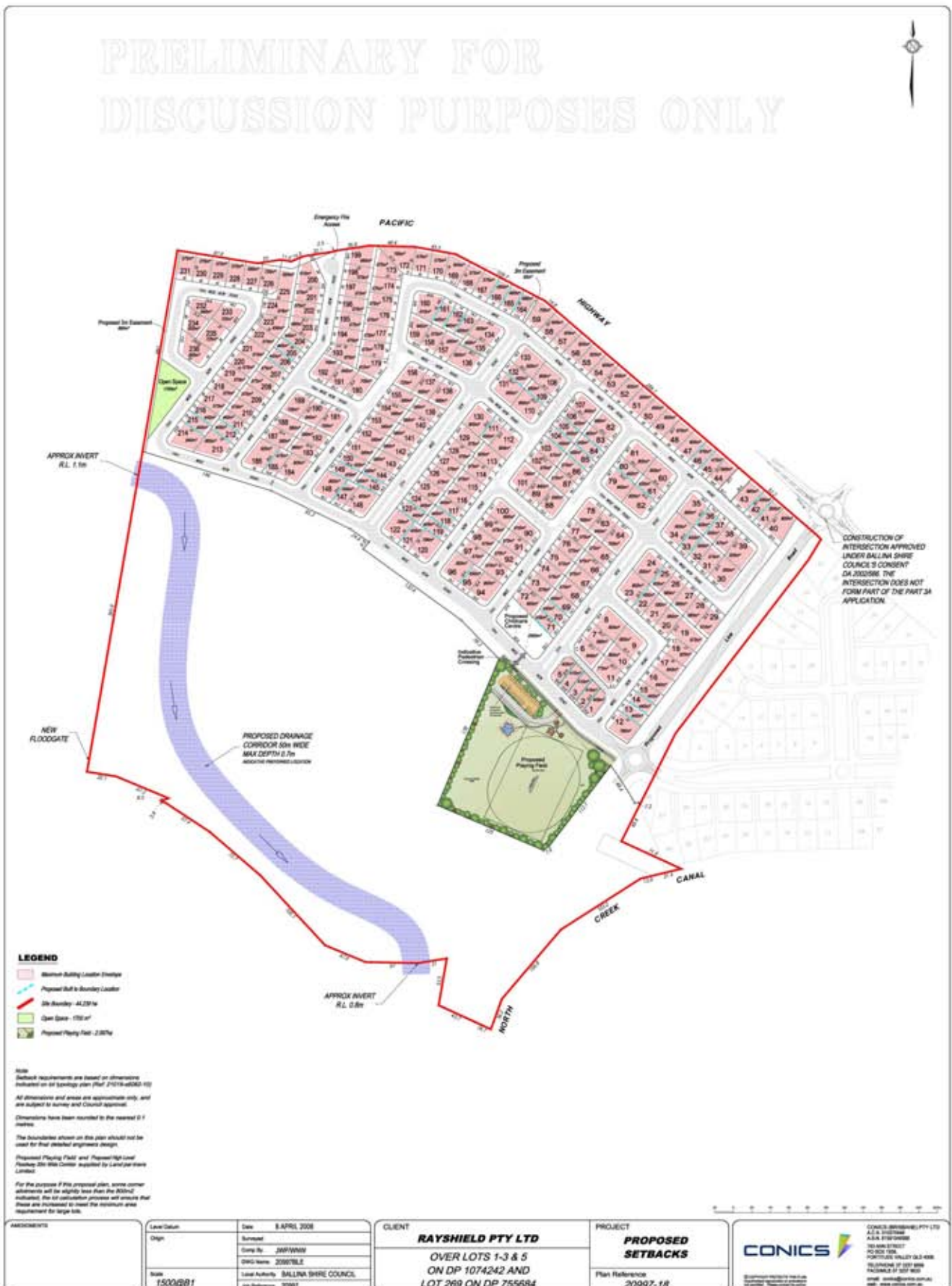


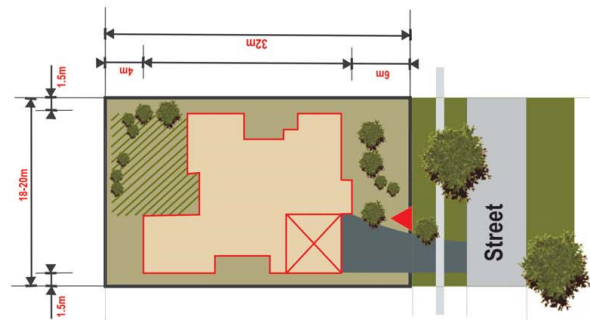
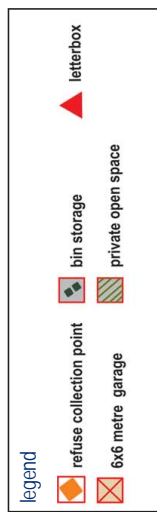
Figure 5.3 Indicative Building Envelope



# riveroaks ballina

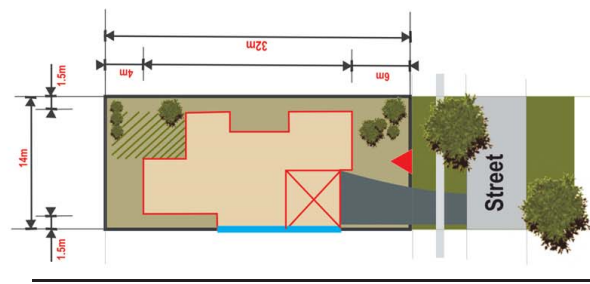
## lot typologies

preliminary for discussion purposes only



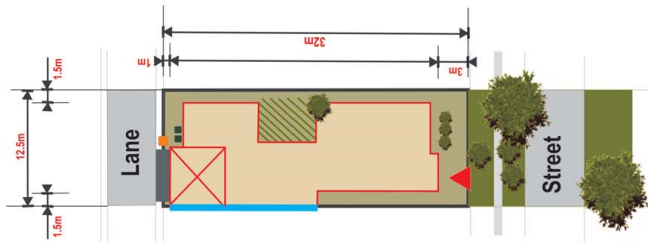
Typical Traditional

- Lot sizes 575+ sqm. Typically 40sqm with 18.20m wide frontages
- The primary street frontage of the allotments should have a 1.5m setback for the ground and second level of the dwelling. Balconies may project beyond the building line provided:
  - The balcony is cantilevered with no walls or columns below the balcony and no walls or roof above the balcony
  - The balcony has a maximum projection of 1.8m
- Garages should be set back behind the primary building line where possible
- Reduced secondary frontage setback of 2m applies to all corner traditional allotments
- A minimum of one (1) on-site car parking spaces will be provided for each dwelling



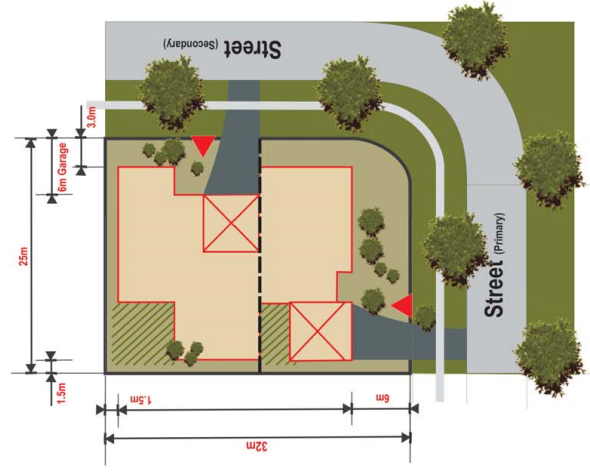
Typical Courtyard

- Lot sizes 421sqm - 480sqm + sqm. Typically 44sqm with 14.5m wide frontages
- The primary street frontage of the allotments should have a 3m setback for the ground and second level of the dwelling. Balconies may project beyond the building line provided:
  - The balcony is cantilevered with no walls or columns below the balcony and no walls or roof above the balcony
  - The balcony has a maximum projection of 1.8m
- A zero lot line tolerance of 0.2m is permitted to facilitate a gutter overhang length of the wall
- The built to boundary wall must not exceed 50% of the boundary at ground level
- The second level must be setback a minimum of 1.5m from the built to boundary side to avoid overhanging on the adjoining dwellings
- If a zero lot line option is not adopted, then the standard 1.5m side setback will apply
- A reduced secondary frontage setback of 2m applies to all corner courtyard allotments
- Garages should be set back behind the primary building line where possible
- A minimum of one (1) on-site car parking spaces will be provided for each dwelling



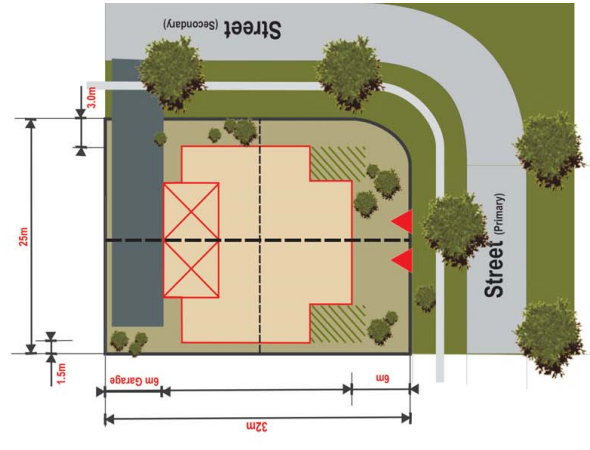
Typical Villa

- Lot sizes 421sqm - 480sqm + sqm. Typically 44sqm with 14.5m wide frontages
- The primary street frontage of the allotments should have a 3m setback for the ground and second level of the dwelling
- The minimum rear laneway frontage of the allotments should have a 1m setback to the ground level. This entry to the garage must be built to meet the building line and be cantilevered with no walls or columns below the balcony and no walls or roof above the balcony
- A zero lot line tolerance of 0.2m is permitted to facilitate a gutter overhang length of the wall
- The built to boundary wall must not exceed 50% of the boundary at ground level
- The second level must be setback a minimum of 1.5m from the built to boundary side to avoid overhanging on the adjoining dwellings
- If a zero lot line option is not adopted, then the standard 1.5m side setback will apply
- A reduced secondary frontage setback of 2m applies to all corner Villa allotments



Duplex - Option 1

- Lot sizes 800+ sqm. Typically 800sqm with 20m wide frontages
- The primary street frontage of the allotments should have a 3m setback for the ground and second level of the dwelling. Balconies may project beyond the building line provided:
  - The balcony is cantilevered with no walls or columns below the balcony and no walls or roof above the balcony
  - The balcony has a maximum projection of 1.8m
- A reduced secondary frontage setback of 2m applies to all corner Duplex allotments
- Garages should be set back behind the primary building line where possible. Garages to be located at the rear of the allotment to improve street amenity
- A minimum of two (2) on-site car parking spaces will be provided for each dwelling



Duplex - Option 2

- Lot sizes 800+ sqm. Typically 800sqm with 20m wide frontages
- The primary street frontage of the allotments should have a 3m setback for the ground and second level of the dwelling. Balconies may project beyond the building line provided:
  - The balcony is cantilevered with no walls or columns below the balcony and no walls or roof above the balcony
  - The balcony has a maximum projection of 1.8m
- A reduced secondary frontage setback of 2m applies to all corner Duplex allotments
- Garages should be set back behind the primary building line where possible. Garages to be located at the rear of the allotment to improve street amenity
- A minimum of two (2) on-site car parking spaces will be provided for each dwelling



The contents of this plan are conceptual only for discussion purposes. All areas and dimensions are approximate only subject to relevant studies, Survey, Engineering and Council approval.

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**Pedestrian Staging Plan** (Ref To Proposal Plan: 20997 - 13N)  
Riveroaks, Ballina

proposed for project approval



**Legend**

- Subject Site
- Staging Boundary
- Proposed Future Subdivision Layout



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Figure 5.5 Staging Plan



## CONSULTATION

## 6.1. Introduction

The Director General Environmental Assessment Requirements of 2 January 2008 require that an appropriate level of consultation should be undertaken with the following:

- Ballina Shire Council;
- Department of Environment and Climate Change;
- Department of Primary Industries;
- NSW Rural Fire Service;
- Department of Water and Energy;
- Roads and Traffic Authority;
- State Emergency Service
- Jali Local Aboriginal Land Council and other relevant Aboriginal community groups; and
- Country Energy.

In addition we were required to document all community consultation or discuss the proposed strategy for undertaking community consultation.

The following section provides an overview of the outcomes developed in consultation with relevant State Agencies and Ballina Shire Council in the preparation of this document. However, this is addressed at the end of this section.

Ballina Shire Council have been extensively consulted throughout the preparation of this application. We have not sought written confirmation from Council as to the extent to which issues have been resolved as this would pre-empt the assessment of the Environmental Assessment Report and fetter the discretion of Council in providing their comments to the Department of Planning.

Further to the issue Department's correspondence of 2nd January 2008, it should be noted that State Agencies and Council have provided comments on previous occasions notably following the submission of the Preliminary Environmental Assessment on the 20 February 2007 and 31 July 2007.

Following a review of the comments provided by State Agencies in the formulation of the Director General Environmental Assessment Requirements we concluded

that the points raised by each Agency could be readily addressed as part of our proposal and would not require further consultation. Again we considered that seeking endorsement from each State Agency on the specific issues raised would pre-empt the opportunity to provide comment have regard to the whole Environmental Assessment Report. In this regard we considered, given the nature of the comments raised, a more effective and efficient consultation process would occur within the exhibition of our Environmental Assessment Report.

The following tables represents the comments and issues raised by the State Agencies and other groups. The table details the outcome agreed upon and an indication of how the proposal has responded to the comments made.

## 6.2. Ballina Shire Council 4 April 2007

Comment	Outcome	Outcome achieved Y/N
The project follows a comprehensive rezoning, development control plan preparation process and the issuing of development consent on an integrated basis over a wider area than covered in the application. It would be Council's preference that its efforts to attain a comprehensive integrated outcome to the planning and development of the larger area be respected.	Integrated development outcomes have been recognised within the existing consent and development control plan. The development of the site is consistent with those outcomes.	Y
There is a risk that the grant of consent to the subject proposal may render the underlying consent void and adversely impact on the property values of the adjoining lands. Consequently the Department is advised to specifically consult with these adjoining landowners so as to maintain the public interest and direct stakeholder confidence in the planning system.	Under Part 3A, the matters to be considered in the assessment of a major project are those listed and identified in the DG EARs. The economic impact of the proposal on adjacent landholders has not been identified. Notwithstanding, clause (9)(3)(f) of the Ballina LEP requires a consideration of the social, economic, and environmental values of the development application. While our proposal does not seek to rescind or revoke the extent to which an existing development application may apply to a site, this is the Department's prerogative.	Y
Approval needs to be obtained from the RTA for interim access from the Pacific Highway. A Traffic Impact Assessment is required to determine the adequacy of the proposed temporary access to cater for projected traffic volumes.	Noted. A Traffic Impact Assessment has been prepared and the RTA consulted. The proposal no longer includes the interim accessway. Given that access to the Pacific Highway has been satisfied in accordance with DA2002/566 which required signoff on the proposed Link Road/Pacific Highway Intersection, our Traffic Assessment concludes that the intersection will accommodate the proposed increase in lot numbers.	Y
Highway noise impacts and appropriate sound barriers need to be considered.	A Noise Impact Assessment has been undertaken, and has provided recommendations with regards to traffic noise. Sound barriers are proposed in accordance with these recommendations.	Y
Pedestrian and cycle links to the Ballina Island via North Creek Canal via a separate shared pedestrian/cycleway bridge would appear to be a superior outcome to a pedestrian crossing at the Highway, particularly if a pedestrian/cycle bridge was required to be constructed across the canal.	The proposed development has the facility to connect to existing networks only once adjoining properties have been developed, including the link road. As yet there is no formal access to North Creek Canal, as the land is currently privately owned.	Y



Comment	Outcome	Outcome achieved Y/N
The proposed link road would require a suitably designed buffer along the eastern boundary of the applicable lots. This would need to be located within the estate to minimise ongoing public maintenance costs.	The 35m road corridor includes provision for the construction of an acoustic barrier.	Y
The WBM floodway study for the Ballina flood plain has identified a major floodway located approximately along the southern boundary of the estate and possibly through the playing fields. This study is being finalised and discussions with Council will need to accommodate this floodway.	The floodway has been relocated since this advice was provided and no longer impacts upon the playing fields. The new location of the floodway has been incorporated into the final layout.	Y
If the split carriageway roads have central drainage swales, the construction methods will need to be approved by Council so that the long term operation and maintenance of these areas within the road can be addressed.	This will be addressed at a later phase of the development process.	Y
Details of compensatory mangrove plantings will need to be submitted.	This was provided as a condition of consent to the clearing of vegetation on Lot 1 and has thus been suitably addressed.	Y
he staging and roll out of playing fields needs to be clarified and prescribed as the provision of sports fields and open space to service the planning area are intended to be provided on site.	The Environmental Assessment will detail the staging and roll out of playing fields.	Y
Provision of dual reticulation water supply needs to also be incorporated into any consent.	This will be addressed when applications for dwellings are submitted, following finalisation of this stage of the development.	Y
The requirements of chapter 13 will need to be addressed. This relates to stormwater whereby there is to be no net increase in the average annual load of key stormwater pollutants and peak discharge flow rates, above that occurring under existing conditions (ie. pre development state).	This has been addressed in the Water Cycle Management Plan prepared by LandPartners. Through the utilisation of detention basins and the implementation of rainwater tanks serving each of the residential lots within the proposed subdivision, as well as grassed swales and bio retention systems, the impact of the subdivision and subsequent development on downstream water quantity and quality can be managed so as to be within allowable guidelines.	Y

### 6.3. Rural Fire Service

Comment	Outcome	Outcome achieved Y/N
Future residential or Special Fire Protection Purpose developments are likely to be subject to the requirements of Section 100B of the Rural Fires Act 1997 and Section 79BA of the Environmental Planning and Assessment Act 1979.	Agree. No further consultation necessary.	Y
Address the construction of assets in accordance with Australian Standard 3959 Building in Bush Fire Prone Areas to minimise the vulnerability of buildings to ignition from radiation and ember attack.	The Bushfire Protection Assessment undertaken for the proposed development has assessed construction standards necessary for future dwellings. The majority of dwellings do not require construction standards, however a small number will need to be comply with level 1 standards.	Y
Identify future management regimes, focusing on the level of hazard and how the hazard may change as a result of the development.	The Bushfire Protection Assessment provides guidelines for the ongoing management of landscaping, vegetation and property associated with the development.	Y
Any proposed revegetation should be undertaken in such a way that limits the spread and occurrence of fire.	The Bushfire Protection Assessment includes recommendations for the ongoing maintenance and management of vegetation and landscaping within bushfire prone areas.	Y
Identify the extent to which future development can provide for asset protection zones in accordance with Planning for Bush Fire Protection 2006 to minimise the impact of radiant heat and direct flame contact.	the required APZs for the proposed development will be located predominantly within the boundary of the Subject Site, however to the north of the site it is proposed that the Pacific Highway is already acting as an effective APZ and, therefore no further APZs prescriptions are required along the boundary with the Pacific Highway.	Y
Control fuel levels to reduce the rate of heat output (intensity) of a bushfire close to development.	The Bushfire Protection Assessment includes recommendations for the ongoing maintenance and management of vegetation and landscaping within bushfire prone areas.	Y
Provide adequate egress/access to the proposed development as outlined within Section 4.1.3 of Planning for Bushfire Protection 2006.	The proposed development complies with Section 4.1.3, as has been assessed in the BPA. In summary, an all-weather perimeter road is proposed, with no dead ends. Allotments will have suitable access and egress.	Y
Site and provide for adequate future water supplies for bush fire suppression operations.	The site will have access to reticulated water supply.	Y

Comment	Outcome	Outcome achieved Y/N
Prepare a Plan of Management including fuel management within the development and maintenance of asset protection zones in accordance with Planning for Bushfire Protection 2006.	The requirements in relation to bushfire protection will be included as “restrictions as to user” on the final allotments. The level of bushfire threat is minimal and will not require a high level of maintenance.	Y

#### 6.4. Department of Natural Resources 13 March 2007

Comment	Outcome	Outcome achieved Y/N
Waterways		
<p>The natural resource of importance at the River Oaks site is a natural drainage channel flowing from west to east through the site. This feature is important for flood conveyance and connects to an area of high biodiversity value to the east, adjoining the North Creek canal.</p> <p>In proposing a subdivision layout and associated road alignments, high priority must be given to protection of the drainage channel, including the provision of buffers to ensure stormwater conveyance, bank stability, riparian vegetation and amenity objectives are achieved.</p> <p>Assessment of the potential impacts by the development on the adjacent high biodiversity area adjoining North Creek canal should be part of the Director-General's requirements.</p>	Noted. We have only been able to limit our assessment on conservation values to the development site. Notwithstanding, vegetation on Lo268 and 269 has been approved for clearing in accordance with DA 2002/566.	Y
Flooding Considerations		
<p>In 1997 Ballina Shire Council completed the Ballina Floodplain Management Study which identified the site as being affected by the 1 in 100 year flood. The study considered options for future development, including River Oaks, and their flood impacts. A floodway referred to as 'F3' would be required to alleviate flood impacts due to filled development in the area. It is understood that the location of F3 is now between the proposed site and the Ballina Sewage Treatment Plant. Council's DCP is largely based on the 1997 study and is now out of date.</p> <p>Council is at present preparing an update of the 1997 study which will include further modelling to assist in the formulation of a strategic approach to new development within the Ballina floodplain. The above issues will be addressed over the coming months, including a review of Council's DCP. Latest hydraulic modelling has demonstrated that floodway F3 is critical in removing flood waters from floodplain storages, west of the subject site. Flood flows from F3 discharges into North Creek Canal before being discharged into the Richmond River or North Creek. It is therefore important that flood flows in North Creek Canal remain unimpeded.</p>	This drainage channel has been filled in accordance with DA2002/566.	Y



Comment	Outcome	Outcome achieved Y/N
Although not the subject of this application, the Preliminary Issues Plan, Page 11, indicates future development to the southeast of the proposed development. For the reasons discussed above, it is considered essential that a large component of this parcel of land, adjacent to North Creek Canal and southeast of the proposed Link Road, remain unfilled or undeveloped and reserved for flood conveyance in perpetuity. It is considered appropriate that this issue be investigated in conjunction with the assessment of the flood impact for the Riveroaks proposal.	The future development referred to is not part of this application.	Y
It is understood that Ballina Shire Council will commence preparing a floodplain risk management plan in 2008. It is also considered necessary that a Flood Evacuation Plan be prepared and submitted to Council for adoption, as part of this proposal.	A Floodplain Evacuation Plan has been prepared for the proposed development. Refer to Appendix 15.	Y

## 6.5. Department of Environment and Conservation 2 March 2007

Comment	Response	Outcome Achieved Y/N
The environmental impacts below need to be assessed, quantified and reported on. The mitigation and management options that will be used to prevent, control, abate or mitigate identified environmental impacts and to reduce risks to human health and prevent degradation of the environment should be described.		
Water Quality		
<p>The environmental outcomes should be:</p> <ul style="list-style-type: none"> <li>•There is no pollution of waters during the construction and operational phases of the development,</li> <li>•There is no inconsistency with any relevant Statement of Joint Intent established by the Healthy Rivers Commission, and</li> <li>•It is acceptable in terms of the achievement or protection of the River Flow Objectives and Water Quality Objectives.</li> </ul>	The Water Cycle Management Plan has addressed the issue of water quality associated with the future use of the site. In addition, A Construction Management Plan template has been prepared that would be completed by the site head contractor who will be appointed by the developer and who will be in control of the site during the course of the works. Its satisfactory completion would be required prior to any works commencing on site.	Y
Contaminated Land		
The EA must document the assessment and management of any land contamination to ensure that the land is not allowed to be put to a use that is inappropriate because of the presence of contamination. Under the Contaminated Land Management Act 1997 there is a responsibility to notify the DEC of sites that pose a significant risk of harm to human health or the environment.	A Contamination Assessment has been undertaken for the site, which has concluded that the likelihood of contamination is minimal.	Y
Noise		
The proposal must be designed, constructed, operated and maintained so that there are no adverse impacts from noise (including traffic noise).	An Environmental Noise Assessment has been undertaken for the site. This report concludes that the development will increase noise levels by between 0.6 – 0.9 dB, which is below the noise criteria limit of 2 dB as specified in the “Environmental Criteria for Road Traffic Noise”.	Y
Impacts of the proposal on threatened species and their habitat		Y

Comment	Response	Outcome Acheived Y/N
1. A field survey of the site should be conducted and documented in accordance with the draft 'Guideline for threatened species assessment'.	This was undertaken as part of the Flora and Fauna Assessment prepared by LandPartners for the subject site.	Y
2. Likely impacts on threatened species and/or community and their habitat need to be assessed, evaluated and reported on. The assessment should specifically report on the considerations listed in Step 3 of the draft guideline.	The subject site is not considered to provide any habitat of significance to any threatened flora or fauna species. An Assessment of Significance under Section 5A of the EPA Act (1979) is not required for removal of the Endangered Ecological Community 'Swamp Oak Floodplain Forest' due to existing consent.	Y
3. Describe the actions that will be taken to avoid or mitigate impacts or compensate to prevent unavoidable impacts of the project on threatened species and their habitat. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures and implemented.	The proposal will not have any impacts on any vegetation communities adjacent to the site (i.e. to the east and west). It is considered that the adjacent Swamp Oak and Mangrove communities to the east will continue to be adequately serviced by tidal flows from North Creek Canal and inundation from rainfall events.	Y
4. The EA needs to clearly state whether it meets each of the key thresholds set out in Step 5 of the draft guideline.	This has been undertaken and is included within the Flora and Fauna Assessment.	Y
Impacts of the project on Aboriginal cultural heritage values		
1. The EA should address and document the information requirements set out in the draft 'Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation' involving surveys and consultation with the Aboriginal community.	The Aboriginal Community Consultation process was carried out via a newspaper advertisement, mail out and site inspection. A mail out to individuals and organizations was undertaken in the event that persons may not have had an opportunity to see the advertisement.	Y
2. Identify the nature and extent of impacts on Aboriginal cultural heritage values across the project area.	No archaeological material was found and no cultural heritage values identified on the subject land. It was concluded that there were no constraints to the proposed development on cultural heritage grounds.	Y
3. The extent and significance of this site will need to be assessed and preferably any development in this area would avoid disturbance of the site.	See above.	
4. Describe the actions that will be taken to avoid or mitigate impacts or to compensate to prevent unavoidable impacts of the project on Aboriginal cultural heritage values. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.	See above.	

Comment	Response	Outcome Achieved Y/N
5. The EA needs to clearly demonstrate that effective community consultation with Aboriginal communities has been undertaken in determining and assessing impacts, developing options and making final recommendations.	As detailed above, the Aboriginal Community Consultation process was carried out via a newspaper advertisement, mail out and site inspection. A mail out to individuals and organizations was undertaken in the event that persons may not have had an opportunity to see the advertisement.	



## 6.6. NSW Department of Primary Industries – Aquatic Habitat Protection Unit2 March 2007

Comment	Response	Outcome Achieved Y/N
Dredging and Reclamation Activities		
<p>DPI AHPU would like an assessment of the extent and impact of dredging and reclamation activities within 'water land' as the works will involve the redirection of watercourses as outlined in the preliminary environmental assessment. This assessment should include details of:</p> <ul style="list-style-type: none"> <li>• Dimension and depth of area to be dredged,</li> <li>• Nature of sediment to be dredged, including Acid Sulfate Soil,</li> <li>• Environmental safeguards to be used during and after works,</li> <li>• Measures for minimising harm to fish habitat,</li> <li>• Spoil type and source location for reclamation activities,</li> <li>• Method of disposal of dredge material,</li> <li>• Location and duration of spoil stockpiling, if planned.</li> </ul>	<p>This proposal does not seek consent for dredging and reclamation activities. Filling associated with the site has already been approved in DA2002/566.</p>	Y
Buffer Zones		
<p>DPI AHPU supports the incorporation of riparian buffers surrounding aquatic habitats. Details of proposed buffer zones surrounding the waterway system should be mapped and included in the environmental assessment. This assessment should clearly identify key environmental assets that are being protected, and outline how these assets are to be protected during the construction and the operational phase of the development. DPI AHPU advocate incorporation of riparian buffer zones lined with native vegetation adjacent to drainage lines and creeks. The assessment process should identify how well these requirements are met and identify any inconsistencies with these requirements where areas of buffer zones can be improved or remediated through revegetation.</p>	<p>Given that the filling of the site has already been approved, inclusion of riparian buffers is unlikely to be of any benefit.</p>	Y
Stormwater Management		

Comment	Response	Outcome Achieved Y/N
<p>One of the key concerns that needs to be addressed is the ability of the nearby waterway system (North Creek Canal and Richmond River) to accommodate the nutrient/pollutant load that will enter the system. DPI AHPU expects that the proponent needs to demonstrate that the development will ensure that there is no net increase in nutrient loads entering the waterways. The assessment should include details of the stormwater treatment system such as gross pollutant traps, stormwater detention ponds and swales.</p> <p>Maintenance of stormwater control systems and an associated management plan is an important issue that needs to be addressed, as does stringent monitoring of the water quality of the receiving waters.</p>	<p>The Water Cycle Management Plan prepared by LandPartners over the subject site includes details of Stormwater Management. This report has provided recommendations in relation to treatment techniques and concludes that there would be minimal impact associated with the proposed system</p>	Y
Compensatory Habitats		
<p>Previous negotiations for development on these Lots have included consent conditions for compensatory habitat. DPI AHPU believe that compensatory habitat for this development is a relevant consideration, potentially including such issues as:</p> <ol style="list-style-type: none"> <li>1. Removal of existing floodgates. The existing floodgate valves, specifically the most south western gate may be replaced by fish friendly tidal gates that permit tidal inundation to a specified and manageable level that will enable considerable improvements in water quality and fish passage.</li> <li>2. The establishment and management of an area of compensatory wetland area habitat.</li> </ol>	<p>We have been consulting with DPI Fisheries on this particular issue and DPI have endorsed our approach, which is resulting in provision of a new tidal gate and input into the compensatory habitat area. Refer to Appendix 20.</p>	Y
Recreational Fishing Access		
<p>It is important to DPI AHPU that residential encroachment does not impede on access to foreshores for recreational fishers whom may wish to angle or obtain bait in North Creek Canal. Potential impacts on foreshore access needs to be assessed.</p>	<p>As yet there is no formal access to North Creek Canal, as the land is currently privately owned.</p>	Y
Threatened Species		

Comment	Response	Outcome Achieved Y/N
The proposal should include a threatened aquatic species assessment (as per Part 5C, EP&A Act 1979) to address whether there are likely to be any significant impacts on listed threatened species on our website. This should include initial 'Seven-Part Tests' and consultation with DPI.	The subject site is not considered to provide any habitat of significance to any threatened flora or fauna species. An Assessment of Significance under Section 5A of the EPA Act (1979) is not required for removal of the Endangered Ecological Community 'Swamp Oak Floodplain Forest' due to existing consent.	Y
Sea Level Rise / Climate Change		
DPI AHPU strongly recommend that potential future sea level rise in low lying coastal floodplains be taken into consideration when assessing and determining such a development.	Council and WBM have prepared a Flood Management Study for Ballina, which is currently on exhibition as a draft. The flood study has taken into account the possible effects of sea level rises in its flood modelling. After taking these factors into account, the 1 in 100 year flood level was determined to be 2.1 m AHD. At drainage discharge points into streams having tidal influence, flood gates will be installed to minimise potential adverse salination effects.	Y
Cumulative Assessment		
DPI AHPU are concerned that the cumulative impacts of development in this precinct are not being considered. Immediately adjacent to this development on the River Oaks Plans is a proposed future subdivision layout which indicates development will occur immediately on wetlands and mangroves and will encroach directly right up to the waters edge, which contradicts the department's Policy and Guidelines Aquatic Habitat Management and Fish Conservation 1999 and almost all State Environmental Planning Policies. These development should not be assessed individually, instead the cumulative impacts of these developments on the sustainability and integrity of the aquatic ecosystem needs to be given due consideration.	The loss of aquatic and wetland environments as described by DPI have been addressed by provision of rehabilitation area along southern part of Lot 2. This was previously negotiated with DPI in granting to DA 2002/566.	Y

## 6.7. NSW Roads and Traffic Authority – Major Development Assessment 19 December 2007

Comment	Response	Outcome Achieved Y/N
The RDC supports the previous condition to construct a roundabout at the junction of North Creek Road and the Pacific Highway. However, if further investigations reveal that an alternative treatment would maintain the safety and efficiency of the highway and local roads, then no objections would be raised.	Noted.	Y
Provisions need to be made for pedestrians and cyclist to be able to cross the highway safely to connect to the existing facilities.	The Traffic report has proposed that safe pedestrian movement across the Pacific Highway be facilitated through the implementation of a pedestrian refuge.	Y
There are a number of anomalous junctions, right-angled bends and cross-intersections. Consideration needs to be given to how these will be safely managed.	Noted.	Y
Provisions need to be made for town and school bus services	In accordance with Council's requirements, the proposed road network has been designed to facilitate bus access in the residential estate. All of the proposed lots will be within 400m walk of a bus route.	Y
The internal road network should include traffic calming to maintain a safe speed environment and to protect other road users.	Consultation with Council to date has not identified traffic calming as an issue for this development. Notwithstanding, should the RTA raise specific issues in relation to this matter, these will be considered as part of our response to submissions.	Y
All lots are to be accessed from the internal road network  The design of the subdivision will need to cater for the impact of road traffic noise from both the highway and the Weest Ballina Arterial.	This has been assessed by the Noise Impact Assessment.	Y



**6.8. NSW Rural Fire Service –Urban Assessments 23 December 2007**

Comment	Response	Outcome Achieved Y/N
The requirements of planning for bushfire protection 2006 should be considered in the planning stages of any development	A Bushfire Assessment has been prepared by LandPartners Limited in accordance with the relevant provisions of Planning for Bushfire Protection 2006.	Y

**6.9. NSW Department of Primary Industries –Urban Assessments 23 December 2007**

Comment	Response	Outcome Achieved Y/N
Information on the floodway outlet and dissipation measures to be employed to ensure that a poorly flushed scour hole is not created on the edge of the mangrove vegetation is required. Information on the invert of the floodway would also assist assessment	The floodway design seeks to mimic existing drainage patterns by which runoff dissipates onto the open grassed area, prior to entering the mangrove vegetation on the southern boundary of Lot 2.	Y

**6.10. NSW Department of Water and Energy– Major Projects and Planning Unit 30 October 2007**

Comment	Response	Outcome Achieved Y/N
The environment assessment should outline the intended water supply for the development, whether it is town water supply, rainwater tanks etc. The department encourages the use of town water supply for proposed subdivisions.	An Infrastructure Provision report has been prepared by LandPartners outlining the intended water supply for the proposed development, which is reticulated town water.	Y
The environment assessment should include the plans for all structures associated with the access road and drainage swale, including diversion banks, drainage and diversion issues associated with the natural flows through the site, impacts on flooding and diverting flood water	Drainage of the link road will be conditioned by Council.	Y
The environment assessment should discuss potential contamination issues resulting from the development on surface water and groundwater.	The Water Cycle Management Strategy prepared for the development outlines proposed treatment and management for the subdivision. It has concluded that the impact of the subdivision and subsequent development on downstream water quantity and quality can be managed so as to be within allowable guidelines.	Y

### 6.11 Jali Local Aboriginal Land Council

Appendix 7 and Appendix 8 include the Cultural Heritage Assessment Report. These reports were prepared having regard to the requirements and guidelines expressed within the Director General's Environmental Assessment Requirements. The guidelines require consultation with relevant Traditional Owners and Local Aboriginal Council's.

### 6.12 Country Energy and State Emergency Service

Appendix 9 and Appendix 15 include reports relevant to the provision of infrastructure and flood evacuation. Each report was prepared having consulted both Country Energy and the SES. Appendix 20 includes correspondence from Country Energy.

### 6.13 Natuna

Natuna Pty Ltd owns Lot 268 and Lot 269 on DP755684 and subsequent gain a significant benefit as a result of consent DA 2002/566. At the time of submission, consent DA 2002/566 is commenced and currently site filling is progressing on Lot 1,3 and 5.

We have considered the impact of the development and any determination by the Minister to approve our proposal on the interests of Natuna. Consequently we have limited our proposal to specific areas, particularly on Lot 268. In this manner, we feel this provide the ideal situation where that component of the existing Part 4 consent will continue in force, but will cease to have effect on those specific works that are relevant to the development we are seeking approval for. This would therefore allow the interests and benefits of the Part 4 consent to remain to Natuna. Nonetheless Appendix 20 includes correspondence from Natuna.

### 6.14 Community Consultation

Pursuant to the Director General Environmental Assessment Requirements dated 30 April 2007, we undertook a letter drop of nearby surrounding residents. The letter drop included a copy of the then applicable plan of subdivision. Surrounding residents included mainly those residents occupying the nearby Caravan Park and neighbouring properties (who were not already directly involved with the application to date).

In total, 3 submissions were recieved. The issues raised included appropriate consideration of flooding and other environmental impacts.

In this regard we consider that the issues raised have been satisfactorily addressed and as such we conclude that any future consultation may occur as a result of exhibiting our Environmental Assessment Report.

**DESCRIPTION OF  
ENVIRONMENTAL IMPACTS AND  
PROPOSED ENVIRONMENTAL  
MANAGEMENT MEASURES**

## 7.1. Introduction

The following section provides an overview of the proposed developments environmental impacts and a description of the proposed environmental measures that have been implemented to minimise environmental impacts. Environmental impacts and associated management measures are detailed under the following headings;

- Visual Amenity and Impacts;
- Noise Amenity and Impacts;
- Biodiversity and Conservation;
- Stormwater Management;
- Cultural Heritage;
- Acid Sulfate Soils
- Groundwater
- Bushfire Management;
- Flooding;
- Traffic;
- Contaminated Lands

## 7.2. Visual Amenity and Impacts

### 7.2.1. Existing Environment

Appendix 3 includes the report, 'Visual Assessment Riveroaks Lots 1,2,3 and 5 DP 1074242 and part Lot 269 DP 788684' prepared by LandPartners Pty Ltd. In summary, the existing visual amenity of the site is limited. The site is low lying, flat and predominately cleared. The site does not afford any vistas or views to significant landscapes or natural features.

Currently the site is a cleared rural property. When viewed from the Pacific Highway existing vegetation fringing the southern boundary of Lot 2 and that contained within the remaining part of Lot 269 can be seen.

### 7.2.2. Potential Impacts

The proposed development will radically alter the existing

rural visual aspect of the site. The proposed subdivision will be raised to 2.1m AHD and be bounded by a 2.5m acoustical vegetated/fenced barrier. The impacts of the proposed development are potentially locally significant, particularly when viewed in the context of providing an entry into the township of Ballina. Notwithstanding, the assessment concludes that in general the landscaped value and visual character of this particular area lacks cohesion is significantly reduced as a consequence of the existing industrial estate to the north of the site and existing poor quality advertising billboards.

### 7.2.3. Proposed Management

The visual amenity report proposes a number of recommendations to improve the potential impacts associated with the development. These include vegetation of the acoustical mound and street tree planting.

### 7.2.4. Recommendation

Conditions of consent should adopt, where relevant, the recommendations contained with the Visual Assessment Riveroaks.

## 7.3. Noise Amenity and Impacts

### 7.3.1. Existing Environment

The site is bounded by the Pacific Highway to the north and north-east, with the proposed Link Road to the eastern boundary. Current noise levels measured from the Pacific Highway are listed in Appendix 10 in the report prepared by Carter Rystenski Group, 'Proposed Residential Estate Development "Riveroaks" Ballina Environmental Noise Impact Assessment, and January 2006.'

### 7.3.2. Potential Impacts

The proposed residential will increase traffic use of the Pacific Highway and along the Link Road. Consequently potential impacts include reduced residential amenity to future residential buildings within close proximity of the Pacific Highway and the Link Road. Properties potentially at risk from increased noise impacts are identified in the aforementioned report in Sketch 5. Notwithstanding, the Assessment concludes that the potential impacts are considered negligible.

### 7.3.3. Proposed Management

Management measures proposed include three specific approaches:

- 1) Principles that should be applied to building design and orientation, particular those identified in Sketch 5;
- 2) The management of potential noise impacts to the proposed childcare be addressed at the time of construction of the centre; and
- 3) A 2.5m acoustical barrier be constructed in the location identified in Sketch 5. The barrier may be either a fence type structure or a combination of earth mound and fencing.

### 7.3.4. Recommendation

The principles for future building design and orientation should be reflected in the design covenants for those lots considered at risk. Notwithstanding the measures are not required to form conditions of consent as it future buildings will be subject to an approval at a later date.

The acoustical fence barrier should be constructed in accordance with the recommendations of the Noise Assessment. The requirement to construct the barrier can be identified as a condition of consent.

## 7.4. Biodiversity and Conservation

### 7.4.1. Existing Environment

A flora and fauna assessment is provided in Appendix 1, The majority of the site has been cleared of remnant vegetation. Remanent vegetation on Lots 1,2,3 and 5 DP 1074242 are limited to either individual stands of trees in proximity to the existing dwelling or fringing the southern boundary of Lot 2.

Lot 268 contains the Endangered Ecological Community, 'Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin'.

### 7.4.2. Potential Impacts

Approximately 277 square metres of EEC will be removed in order to construct the Link Road. The potential impact is not considered significant.

### 7.4.3. Proposed Management

No management measures are proposed. It should be noted that clearing of the vegetation on Lot 1 was granted conditional approval by Ballina Shire Council subject to the provision of a 2 hectare rehabilitation area adjacent to the southern boundary of Lot 2.



#### 7.4.4. Recommendation

No management measures are recommended.

### 7.5. Stormwater Management

#### Existing Environment

The existing stormwater runoff conditions are detailed in Appendix 6 and are contained in the report, 'Water Cycle Management Plan (including Treatment System Design and Performance Modelling) for Riveroaks Estate – Pacific Highway Ballina July 2007' prepared by Landpartners Pty Ltd.

In general Lot 1 includes a water way that connects the adjoining western site in the south western corner. This water way accepts runoff from the Pacific Highway and meanders across Lot 1 and the adjoining lots 268 and 269 to the east. The runoff drains across these lots and then is discharged into North Canal Creek via pipe outlet/flood gate structure.

A constructed channel runs the length of the western boundary of Lot 2. This channel also connects to the water way described above. During rain events water is diverted from the natural water way into the constructed channel. Water is then discharged into another constructed channel that is located along the southern boundary of Lot 2 and eventually into North Canal Creek.

Currently there are no measures to identify the quality of or determine the potential impacts of existing stormwater runoff to North Creek Canal.

#### 7.5.2. Potential Impacts

The existing drainage regime will not support the proposed development. The proposed development will result in the filling of the existing water way through Lot 1. Consequently the existing drainage channel along the western boundary of Lot 2 is unlikely to provide a suitable alternative to accommodate the increased runoff.

In addition filling of the site and the subsequent urban development has the potential to increase pollutant loads during storm events.

#### 7.5.3. Proposed Management

Ballina Shire Council requires that a stormwater management system maintains a nil pollutant load increase during both development and ad construction activities. In additional Table 1 of the Ballina DCP details the performance measures for any stormwater

management system.

In order to address Council's requirements the Water Cycle Management Plan proposes the following:

- A treatment train approach;
- The installation of rainwater tanks;
- Use of the natural overland flow and vegetated flow paths in non built up areas;
- Use of flow dissipaters at piped stormwater outlets; and
- The use of sedimentation basins pre-development and bio retention systems post development.

The proposed approach to stormwater management is detailed in the drawing, 'LMO&0133-CV2 Revision E' prepared by LandPartners Pty Ltd. This drawing is located in Appendix 6.

#### 7.5.4. Recommendation

We recommend adoption of the proposed Stormwater Management Strategy.

### 7.6. Cultural Heritage

#### 7.6.1. Existing Environment

The existing environment is described in Appendix 7 and Appendix 8 and includes the following reports:

'Cultural Heritage Assessment at Lots 1,3 and 5 DP 1074242 Riveroaks Pacific Highway via Ballina, October 2007' and

'Cultural Heritage Assessment Lot 2 DP 1074242 and Lot 269 DP 755684, January 2008' prepared by Richard Robins, Everick Heritage Consultants Pty Ltd.

The Assessment sought to identify values associated with indigenous cultural heritage, archaeological value and European heritage value.

#### 7.6.2. Potential Impacts

No impacts to cultural heritage values were identified.

Archaeological values were considered limited. While some artefacts were discovered these items were not consider to represent any value. The development will not impact on the items identified.

No values associated with European heritage were identified.

### 7.6.3. Proposed Management

Management measures are recommended in the above mentioned reports provide the management of potential impacts that may be identified during the construction of the proposed residential development.

### 7.6.4. Recommendation

Management recommendations be included as conditions of consent.

## 7.7. Acid Sulfate Soils

### 7.7.1. Existing Environment

Existing Acid Sulfate Soil conditions are detail in the Appendix 4 are contained within the report, 'Acid Sulfate Soil Management Plan, 'Riveroaks Estate', Pacific Highway, North Ballina.

In summary the report indicates the following subsurface characteristics regarding the acid generating capabilities of the subject site are:

The subsurface conditions within the subject site were predominantly clayey sand – sandy clay alluvial sequences, consistently overlying waterlogged sandy – clayey sand subsoils;

Field sampling and subsequent laboratory analyses identified Actual Acid Sulfate Soils within samples collected from BH 2 (refer Fig. 8; ASS Assessment) at a depth of approximately 1.4 m below EGS. Potential Acid Sulfate Soils were identified within samples collected from all excavated boreholes with the exception of BH 6 (refer Fig. 8; ASS Assessment). The typical depth to PASS ranged between 0.75 – 1.5 m below Existing GroundSurface (EGS).

The Reduced Inorganic sulphur (%S) levels were observed to exceed the ASSMAC action criteria (0.03 %Scr; 18 mol H<sup>+</sup>/tonne) in the analysed samples from five (5) of the six (6) excavated boreholes. Recorded (%Scr) levels ranged between 0.005 to 0.684 %Scr (average; 0.316 %Scr) (refer Table 6; ASS Assessment); and

Given the sandy nature of the subsoils observed within the excavated boreholes and the lack of shell materials (containing CaCO<sub>3</sub> available for buffering of generated acid), the Acid Neutralising Capability (ANC) has been assessed as negligible whilst the Acid Generating Capability (AGC) has been assessed as significant;

### 7.7.2. Potential Impacts

It has been assessed that the proposed works associated with the residential subdivision of Lots 1, 3 and 5 DP1074242 and the associated drainage works on adjoining Lot 2 DP1074242 will disturb ASS layers occurring at a minimum depth of 0.75 m below EGS.

### 7.7.3. Proposed Management

In an effort to reduce the risk of exposure and subsequent oxidation of these materials, this Acid Sulfate Soil Management Plan has been prepared to provide effective management guidelines and mitigation practices that are to be incorporated as a part of the proposed works. These guidelines and practices have been prepared in accordance with the recommendations specified in Stone et al (1998).

### 7.7.4. Recommendation

We conclude that the management of ASS should be in accordance with the findings of the management plan. The management plan should be included as a condition of consent in any approval.

## 7.8. Groundwater

### 7.8.1. Existing Environment

The existing groundwater conditions are detailed in Appendix 6 and are contained in the report, 'Water Cycle Management Plan (including Treatment System Design and Performance Modelling) for Riveroaks Estate – Pacific Highway Ballina July 2007' prepared by Landpartners Pty Ltd.

In summary, a geological assessment of the site indicates that subsurface groundwater was located at a depth of approximately 1.0 metre. The geology is Quaternary alluvium materials overlain by Pleistocene sands. Given the proximity of the tidally influenced North Creek Canal, and the sandy nature of the subsurface environment, groundwater levels could be expected to vary in response to the tidal influences and following periods of wet weather.

### 7.8.2. Potential Impacts

Our assessment concludes that the development does not include the interception or diversion of groundwater. While the increase of impervious surfaces is a likely result as a consequence of residential development, maintaining the opportunities for groundwater infiltration is considered to be addressed through the provision of sedimentation basins and grassed swales. Therefore the potential impacts are considered negligible.

### 7.8.3. Proposed Management

Groundwater values can be satisfactorily maintained by avoiding interception and diversion of existing groundwater. Groundwater inputs can also be maintained through implementation of the concept Stormwater Management Plan detailed in the drawing, 'LMO&0133-CV2 Revision E' prepared by LandPartners Pty Ltd. This drawing is located in Appendix 6.

### 7.8.4. Recommendations

We recommend adoption of the proposed stormwater management plan.

## 7.9. Bushfire Management

### 7.9.1. Existing Environment

Existing bushfire hazard risks and management measures are proposed in the report, 'Bush Fire Assessment Riveroaks,' 7 January 2008, prepared by Landpartners Pty Ltd, Appendix 2.

In summary, the site contains lands mapped by Ballina Shire Council as bushfire prone. However the site has a relatively low risk due to the sparsely surrounding forest vegetation and cleared grassed land.

### 7.9.2. Potential Impacts

Due to the low risk associated with bushfire management, the development will have negligible impacts to existing bushfire hazard management regimes.

### 7.9.3. Proposed Management

To provide for the adequate management of bushfire risk the Bush Fire Assessment report details a number of measures that are to be implemented in the proposed development. These measures include:

- Asset Protection Zones;
- Access;
- Services;
- Emergency Management; and
- Landscaping and Maintenance.

### 7.9.4. Recommendations

Where necessary, the measures proposed in the Bush Fire Assessment report should be included as conditions of consent in any future approval.

## 7.10. Flooding

### 7.10.1. Existing Environment

Prior to Council's consent DA 2002/566 Lot 1,3 and 5 on DP 1074242 was identified as being subject to the Q100 flooding events. Subsequently Council's approval required that the land be raised to 2.1 metres AHD. During flood events, floodwaters flow across Lot 1 in an easterly direction towards North Creek Canal. Lot 1 is considered to be a flood pathway.

Notwithstanding, Council are now required to review flooding and developments in flood prone areas in accordance with the 'Floodplain Development Manual, The Management of Floodliable Land. 2005". Consequently Council are finalising their Flood Study after recently placing it on exhibition for public comment.

Flood modelling undertaken for the 2007 Study sought to identify the risks associated with 5,20.50, 100 and 500 year ARI flood events in addition to PMF events. In this regard our site was considered to be at risk from flooding. It should be noted that in the preparation of the Shire wide Flood Study a literature review was undertaken and identified that any new model would be required to address sea level and climate change. To this end it was 200 mm sea level rise was adopted in the model.

The Department of Environment and Climate Change are co-sponsors of Council's Shire Wide Flood Study. DECCs acceptance of the Study's findings are implicit with the finalisation of the Shire Wide Study.

Further to Council's Flood Study Appendix 15 includes our Flood Study for the Riveroaks Site

### 7.10.2. Potential Impacts

The filling of the site to approximately 2.0 metres AHD will impede the identified flood path across Lot 1. The consequence being that flood flows will either backup or divert around the site. This potential may create an increased flood hazard to nearby residents.

### 7.10.3. Proposed Management

Proposed management measures are detailed in the drawing, 'LMO&0133-CV2 Revision E' prepared by LandPartners Pty Ltd. This drawing is located in Appendix 6.

The proposed development addresses flood risk through the provision of a drainage swale through Lot 2. The swale connects to the existing waterway located on the

south wester corner of Lot 1 and diverts flow through Lot 2 to end point prior to an open discharge are before entering Lot 2. While the drainage swale accounts for 2, 20, 50 and 100 ARI flood events, a flood evacuation plan has been prepared to address risks associated with more significant flood events. The Flood Evacuation Plan is detailed in Appendix 15.

#### **7.10.4. Recommendations**

The concept plan provides for a flood management regime that is consistent with achieve the outcomes proposed in Council's Flood Management Strategy. We recommended the adoption of this strategy.

### **7.11 Traffic**

#### **7.11.1 Existing Environment**

The report, 'Proposed Residential Estate "Riveroaks" – Pacific Highway Ballina Traffic Engineering Assessment' prepared by CRG Traffic and Acoustics Pty Ltd, January 2008 is provided in Appendix 11.

In summary the report states that the Pacific Highway comprises two traffic lanes in the vicinity of the subject site and is subject to a speed limit of 60km/hr. The intersection of the Pacific Highway and North Creek Road currently has Austroads Type 'C' turning lane treatment.

The Roads and Traffic Authority's publication 'Traffic Volume Data for the Hunter and Northern Regions 2004' indicates that the 2004 AADT on the Pacific Highway in the vicinity of the subject site was 12,627vpd. Assuming a growth rate of 3% p.a., it is estimated that the current 2008 AADT is approximately 14,200vpd.

Ballina Shire Council and the RTA is planning to construct an arterial road (known as the "Western Arterial") between the existing Pacific Highway at Tevan and North Creek Road. It is also planned that a new section of the Pacific Highway be constructed so to bypass Ballina. According to the Ballina Shire Road Network model, it is estimated that the existing Pacific Highway will carry approximately 16,500 vehicles per day by 2025, with the Pacific Highway Bypass in place. It is anticipated that the proposed Pacific Highway Bypass will be completed by 2012.

The proposed development is anticipated to generate 2,424 additional new daily trips. The propose development will access the Pacific Highway via the proposed Link Road. The intersection was approved as a roundabout in DA 2002/566.

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#### **7.11.2 Potential Impacts**

Potential impacts of the proposal include increased congestion of the Pacific Highway from an increased number of users. Congestion may result as a consequence of too many users and/or users not being able to access or exit the highway in a timely and efficient manner.

The assessment concludes that sufficient capacity exists within the existing road structure to accommodate additional users from the proposed development.

#### **7.11.3. Proposed Management**

The assessment further concludes that a Roundabout is the preferred intersection type to ensure that traffic flows and delays at the intersection are minimised. This is consistent with the outcomes of the previous assessment.

#### **7.11.4. Recommendations**

We recommend that the previously approved roundabout intersection with the Pacific Highway remain.

### **7.12 Contamination**

#### **7.12.1 Existing Conditions**

The report, 'Preliminary Contamination Site Investigation Riveroaks Estate' is provided in Appendix 16.

The site has been cleared for agricultural uses for at least 30 years. Rural activities may have resulted in contamination. However a review and investigation of the site's history indicates that no contamination exists on the site.

#### **7.12.2 Potential Impacts**

There are not potential impacts associated with contamination.

#### **7.12.3 Proposed Management**

No management measures are proposed.

#### **7.12.4 Recommendations.**

The findings of the Preliminary Contamination Site Investigation Report be accepted

## Draft Statement of Commitments



## 8.1. Introduction

The following section outlines our approach to ensure that potential environmental impacts are effectively and satisfactorily addressed throughout each of the stages of development that is, pre-construction, construction and post construction. The draft Statement of commitments has been prepared having regard to the 'Draft Guideline for Proponents: Preparing Statements of Commitments' December 2005, Department of Planning.

We have structured the Statement of Commitments in the following manner. General Terms and conditions that will apply throughout the proposal are provided below. Following this we have identified specific components of the project and detailed the appropriate commitment and outcome in a table format. We hope this provides sufficient detail to assist in the Department's assessment.

### 8.1.1. Draft Statement of Commitments General Terms

The project will be carried out generally in accordance with the plans and materials submitted as part of the Environmental Assessment Report prepared by Conics Pty Ltd for MP 06\_118 including all appendices.

The developer will ensure that all works are undertaken in accordance with the determination and associated conditions of MP 06\_118.

#### Built Form

Future development of dwellings and structures will be subject to approval under the Ballina Local Environmental Plan 1987.

The Building and Design Covenant will be included on each certificate of title.

Future dwellings are to generally conform to the setbacks nominated in the plan 'Lot Typologies' dated February 2008 prepared by Conics Pty.

Future dwellings constructed on lots highlighted on Sketch No.5 Recommended Acoustic Barriers and Noise Affected Lots Requiring Building Acoustic Design' in the report, 'Environmental Noise Impact Assessment' prepared by CRG Traffic and Acoustics Pty Ltd, dated 9 January 2008, are to be constructed in accordance with the applicable design standard.

### **Development Staging**

The development will generally be undertaken in accordance with the plan Plan Ref: 21019-s6082-07b' prepared by Conics Pty Ltd

### **Open Space and Recreational Areas.**

All open space areas will be dedicated to Council upon satisfactory completion of works.

### **Visual Amenity**

Acoustical treatment mounds are to be constructed as a combination fence and vegetated mounds. Mounds should be constructed in sequence with development staging as proposed in plan, 'Staging Plan Plan Ref: 21019-s6082-07b' prepared by Conics Pty Ltd.

Entrance treatment planting and signage should be designed by a landscape Architect.

All landscaping following site preparation works should be undertaken in accordance with the 'Landscape Masterplan and Visual Analysis' prepared by LandPartners Pty Ltd.

### **Noise**

A 2.5metre high acoustic barrier constructed of a material with a surface mass of greater than 11 kg/m<sup>2</sup>. The location of the barrier is to be generally accordance with 'Sketch No.5 Recommended Acoustic Barriers and Noise Affected Lots Requiring Building Acoustic Design' in the report, 'Environmental Noise Impact Assessment' prepared by CRG Traffic and Acoustics Pty Ltd, dated 9 January 2008.

### **Infrastructure**

The site is to be serviced by all available water, sewerage, telephone, electricity and gas services.

The Link Road corridor is to be dedicated to Ballina Shire Council. The indicative location of the area to be dedicated is identified in the plan, 'Plan Reference: 20097-13N, dated 7th February 2008' prepared by Conics Pty Ltd.

The drainage swale on Lot 2 is to be dedicated to Ballina Shire Council. The location of drainage swale is identified in the 'Proposed Stormwater Management and Floodway Plan, LM070113CV2 Revision E', prepared by LandPartners Pty Ltd.

Water and sewage infrastructure are to be generally in accordance with Dwg.No. LM070113\_CV3 Revision E, prepared by LandPartners Pty Ltd.

### **Footpaths and Cycle Ways**

Footpaths and Cycle ways are to be constructed generally in accordance with the plan, 'Pedestrian Movement Plan' dated February 2008 prepared by Conics.

Footpaths and Cycle ways are to be built in accordance with the requirements of Ballina Shire Council.

### **Construction and Site Preparation Works**

Pursuant to the completion of filling works, all site preparation works should be undertaken in accordance with the construction management plan detailed in the report, 'Construction Management Plan' prepared by Landpartners dated January 20, 2008.

### **Acid Sulfate Soils**

Management of Acid Sulfate Soils is to be in accordance with Acid Sulfate Soil Management Plan prepared by Landpartners Pty Ltd dated 24 January 2008 and detailed in the report, 'Acid Sulfate Soil Management Plan'.

### **Bushfire Management**

Any future development in the areas identified on the Residential Lots identified on Plan LM070114-EV14 Issue B located in the report, 'Bush Fire Assessment Riveroak' prepared by LandPartners dated 7th January 2008, are to be constructed to the standards specified on the aforementioned map.

Prior to the issue of subdivision certificate for Stage 1, an Emergency Evacuation Management Plan is to be prepared in accordance with the recommendations contained within the report, 'Bush Fire Assessment Riveroak' prepared by LandPartners dated 7th January 2008.

### **Stormwater Management**

All runoff leaving the site is to achieve the performance criteria identified by Ballina Shire Council.

#### *Site Preparation Earth Works;*

Following completion of filling all stormwater management is to be undertaken in accordance with Sediment and Erosion Control Plan Dwg. No.LM07113\_

CV14C , prepared by Landpartners Pty Ltd.

### *Operational*

Stormwater management measures are to be generally in accordance with Proposed Stormwater Management and Floodway Plan, LM070113CV2 Revision E, prepared by LandPartners Pty Ltd.

### **Cultural Heritage**

At any time it is believed materials of an Aboriginal origin are found, works at the location must stop immediately. The NSW Department of Environment and Climate Change (DECC) Regional Office - Coffs Harbour and Jali LALC must be advised and advice sought as to the most appropriate course of action to follow. Jali LALC may also wish to inform Traditional Owner respondents and seek their views as to how cultural heritage values might be impacted and to how best to mitigate potential impacts. Works must not proceed in the specific location without written consent of the DECC and Jali LALC.

Prior to any vegetation clearing, earthworks contractors be advised of the statutory requirements of the National Parks & Wildlife Services Act (1974 as amended) that in regard to Aboriginal sites or relics: it is an offence to knowingly disturb, deface, damage or destroy, or to permit the disturbance, defacement, damage or destruction of a relic without first obtaining written consent to do so from the Director General of the DECC.

### **Vegetation Management**

A variety of locally occurring native flora species to be utilised in landscaping and as street trees.

Weed species should be controlled or removed anywhere on the site.

The rehabilitation plantings identified in the VMP by James Warren & Associates (2006) should be established (and maintained) as soon as possible;

Disturbed areas are to be watered regularly to minimise dust generation and transportation of sediment off the site.

Any earthmoving equipment brought to the site should be free from soil and weed propagules.

### 8.1.2 Specific Commitments

The following tables detail the specific commitments relevant for each project component.

	Project Component	Environmental outcome (commitment)	Measure (commitment)	Purpose of Measure	Timing for Completion
1.	Bulk earthworks	1.1. Pursuant to the completion of filling works, all site preparation works should be undertaken in accordance with the construction management plan detailed in the report, 'Construction Management Plan' prepared by Landpartners dated January 20, 2008.	PCA	Ensure compliance with approved plan  Ensure compliance with approved plan	Preliminary site works to be completed prior to Stage 1
		1.2 Following completion of filling all stormwater management is to be undertaken in accordance with Sediment and Erosion Control Plan Dwg. No.LM07113_CV14C, prepared by Landpartners Pty Ltd.	PCA	Ensure compliance with approved plan	Preliminary site works to be completed prior to Stage 1
2.	Link Road & Roundabouts x 2	The Link Road corridor is to be dedicated to Ballina Shire Council. The indicative location of the area to be dedicated is identified in the plan, 'Plan Reference: 20097-13N, dated 7th February 2008' prepared by Conics Pty Ltd.	PCA	Ensure compliance with approved plan	Stage 1
3.	Amenities, car park and playground	Development must be undertaken in accordance with the requirements of Ballina Shire Council.	PCA	Ensure compliance with approved plan	Stage 5
4.	Landscaping and Playing Field	Development must be undertaken in accordance with the requirements of Ballina Shire Council.	PCA	Ensure compliance with approved plan	Stage 5

	Project Component	Environmental outcome (commitment)	Measure (commitment)	Purpose of Measure	Timing for Completion
5.	Drainage-way/ swale in Lot 2	The drainage swale on Lot 2 is to be dedicated to Ballina Shire Council. The location of drainage swale is identified in the 'Proposed Stormwater Management and Floodway Plan, LM070113CV2 Revision E', prepared by LandPartners Pty Ltd.	PCA	Ensure compliance with approved plan	Stage 1
6.	Acoustic mound forming and landscaping	A 2.5metre high acoustic barrier constructed of a material with a surface mass of greater than 11 kg/m2.  The location of the barrier is to be generally in accordance with 'Sketch No.5 Recommended Acoustic Barriers and Noise Affected Lots Requiring Building Acoustic Design' in the report, 'Environmental Noise Impact Assessment' prepared by CRG Traffic and Acoustics Pty Ltd, dated 9 January 2008.	PCA	Ensure compliance with approved plan	Stage 1 and 2
7.	Acoustic mound and landscaping, Link Road (Western boundary)	All landscaping following site preparation works should be undertaken in accordance with the 'Landscape Masterplan and Visual Analysis' prepared by LandPartners Pty Ltd.	PCA	Ensure compliance with approved plan	Relevant to each Stage
8.	Entry statement, Highway intersection and internal roundabout (as per landscape concept)	The entry statement must be designed by a qualified and landscape architect and should be substantially in accordance with the landscape concept.	PCA	Ensure compliance with approved plan	Stages 1 & 2
9.	Relocation of electrical above link road.	Development must be undertaken in accordance with the requirements of Ballina Shire Council.	PCA	Ensure compliance with approved plan	Stages 1 & 2



	<b>Project Component</b>	<b>Environmental outcome (commitment)</b>	<b>Measure (commitment)</b>	<b>Purpose of Measure</b>	<b>Timing for Completion</b>
10.	Main sewer pump station and rising main to treatment plant	Development must be undertaken in accordance with the requirements Ballina Shire Council.	PCA	Ensure compliance with approved plan	Relevant to each Stage.
11.	Key plant perimeter (separate approval) rehabilitate area, completion	All landscaping following site preparation works should be undertaken in accordance with the 'Landscape Masterplan and Visual Analysis' prepared by LandPartners Pty Ltd.	PCA	Ensure compliance with approved plan	Completed
12.	Civil works				
12.1	Roadworks	Development must be undertaken in accordance with the requirements of Ballina Shire Council.	PCA	Ensure compliance with approved plan	For each Stage
12.2	Sewer drainage	Development must be undertaken in accordance with the requirements of Ballina Shire Council.	PCA	Ensure compliance with approved plan	For each Stage
12.3	Stormwater drainage	Following completion of filling (Refer to 1.0 above) all stormwater management is to be undertaken in accordance with Sediment and Erosion Control Plan Dwg. No.LM07113_CV14C , prepared by Landpartners Pty LTd.	PCA	Ensure compliance with approved plan	Stage 5
12.4	Water reticulation	Water infrastructure is to be generally in accordance with Dwg.No. LM070113_CV3 Revision E, prepared by LandPartners Pty Ltd.	PCA	Ensure compliance with approved plan	For each Stage

	<b>Project Component</b>	<b>Environmental outcome (commitment)</b>	<b>Measure (commitment)</b>	<b>Purpose of Measure</b>	<b>Timing for Completion</b>
12.5	Dual reticulation	Dual reticulation is to be generally in accordance with Dwg.No. LM070113_CV3 Revision E, prepared by LandPartners Pty Ltd.	PCA	Ensure compliance with approved plan	For each Stage
12.6	Underground electrical reticulation and streetlighting and substations	Design and location in accordance with the requirements of Ballina Shire Council.	Certification by Ballina Shire Council.	Ensure compliance with approved plan	For each Stage
12.7	Footpaths, cycle tracks and street signage	Footpaths and Cycle ways are to be constructed generally in accordance with the plan, 'Pedestrian Movement Plan dated February 2008 prepared by Conics, in accordance with the requirements of Ballina Shire Council.	Certification by Ballina Shire Council.	Ensure compliance with the requirements of Ballina Shire Council.	For each Stage
12.8	Bus shelters	Design and location in accordance with the requirements of Ballina Shire Council.	Certification by Ballina Shire Council.	Ensure compliance with approved plan	Staging subject to agreement with service providers

	Project Component	Environmental outcome (commitment)	Measure (commitment)	Purpose of Measure	Timing for Completion
12.9	General landscaping including grassing and significant trees	<p>A variety of locally occurring native flora species must be utilised in landscaping and as street trees.</p> <p>Weed species should be controlled or removed anywhere on the site.</p> <p>The rehabilitation plantings identified in the VMP by James Warren &amp; Associates (2006) must be established (and maintained) as soon as possible;</p> <p>Disturbed areas are to be watered regularly to minimise dust generation and transportation of sediment off the site.</p> <p>Any earthmoving equipment brought to the site should be free from soil and weed propagules</p>	PCA	Ensure compliance with approved plan	Stages 4 & 5
12.10	Playing field and Western open space	Development must be undertaken in accordance with the requirements of Ballina Shire Council.	PCA	Ensure compliance with approved plan	Stage 5

	Project Component	Environmental outcome (commitment)	Measure (commitment)	Purpose of Measure	Timing for Completion
13.	Cultural Heritage	<p>At any time it is believed materials of an Aboriginal origin are found, works at the location must stop immediately.</p> <p>The NSW Department of Environment and Climate Change (DECC) Regional Office - Coffs Harbour and Jali LALC must be advised and advice sought as to the most appropriate course of action to follow. Jali LALC may also wish to inform Traditional Owner respondents and seek their views as to how cultural heritage values might be impacted and to how best to mitigate potential impacts. Works must not proceed in the specific location without written consent of the DECC and Jali LALC. Prior to any vegetation clearing, earthworks contractors be advised of the statutory requirements of the National Parks &amp; Wildlife Services Act (1974 as amended) that in regard to Aboriginal sites or relics: it is an offence to knowingly disturb, deface, damage or destroy, or to permit the disturbance, defacement, damage or destruction of a relic without first obtaining written consent to do so from the Director General of the DECC.</p>	PCA/ DECC/ Jali LALC	Deal with aboriginal cultural heritage using established NPWS guidelines.	Stages 1-5

## CONCLUSION AND SUMMARY



## Conclusion

The Major Project application MP06\_118 seeks project approval to create:

- 236 Lot residential subdivision; and
- 1 lot for a future child care centre; and
- The Link Road; and
- Drainage Swale on Lot 2 DP 1074242.

The subdivision will create torrens title freehold lots. Any strata subdivision of the proposed duplex lots will require separate approval. The development does not incorporate construction of future dwellings.

The development is permissible under the Ballina Local Environmental Plan 1987 and addresses the requirements of all relevant State and Regional Environmental Planning Policies.

In addition the development is consistent with delivering strategic planning policies such as:

- The NSW Coastal Policy 1997;
- The Floodplain Development Manual 2005; and
- The Far North Coast Regional Strategy.

The development is consistent with local strategic planning in that it delivers future infrastructure that will address Shire wide future transport infrastructure and flood mitigation measures.

The development does vary from the lot sizes proposed by Council's development controls, the average lot size is 575m<sup>2</sup>, the smallest lot being 400 m<sup>2</sup> and the largest 815 m<sup>2</sup>. In addition future dwellings may need variation to side and rear setbacks. The variations however are considered minor and do not detract from local character or future residential amenity. The variations provide the opportunity for the developers to provide lots that appeal to the current market requirements.

The site seeks to provide a range of residential housing lots that in close proximity to Ballina CBD and nearby commercial and employment centres. In addition the development will deliver a high level of amenity through the provision public facilities such as cycleways, access to major thoroughfares and sporting facilities.

The proposed development site is currently the subject of a previous development approval DA 2002/566 issued by Ballina Shire Council. The consent sought an integrated residential development outcome for this site and the adjoining Lots 268 and 269 on DP 755684. Currently Lots 1,3 and 5 on DP 1074242 are being filled in accordance with this consent. Following liaison with the Department of Planning and our own legal counsel we consider that the adjoining landowner of Lots 268 and 269 will not be impacted upon if the Minister for Planning determines the proposal and grants approval.

Development of the site has the potential to create adverse environmental impacts for current surrounding and future residents. As such the development incorporates:

- the provision of an acoustic barrier along the Pacific Highway and future Link Road to ensure that future residents do not suffer reduced amenity as a consequence of traffic noise;
- the provision of permanent stormwater management measures to ensure any future stormwater runoff during construction and operation is satisfactorily treated prior to entering North Creek Canal;
- a management plan for Acid Sulfate Soils; and
- proposes conditions to ensure the appropriate management of cultural heritage items if any items are uncovered in the course of development.

The most significant management measure includes the provision of the drainage swale on Lot 2 DP 1074242. The development of the swale follows the recommendations of the Ballina Flood Study 2007. The swale will ensure that future development and existing residents are not exposed to an increased flood risk.

The development of the Link Road will result in the removal of 277 m<sup>2</sup> of the Endangered Ecological Community, 'Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin'. The removal of this vegetation is not considered significant. It should be noted that EEC that occurs on both Lots 268 and 269 will be removed in accordance with DA 2002/566. The loss of this vegetation has been offset by the provision of a

rehabilitation area on the southern boundary of Lot 2. The rehabilitation area is a condition of DA 2002/566 and does not form part of this application.

In conclusion, the proposed residential subdivision and associated infrastructure result in a development outcome that is entirely consistent with the relevant and application development standards, albeit with some minor variations.

We would consider the development as providing a sustainable development outcome and if undertaken in accordance with the Statement of Commitments detail would not result in any significant or unacceptable environmental impacts.

We recommend that the Minister for Planning grant an approval for this development subject to the relevant conditions and commitments proposed.