



COASTAL GROVE

ENVIRONMENTAL ASSESSMENT

1 Survey Street Lennox Head

September 2006



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Prepared for
Department of Planning
On behalf of DM and RD Dossor

Prepared by
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September 2006

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| Appendix 2 | Director General's Requirements | Department of Planning |
| Appendix 3 | Survey Plans | Aspect North |
| Appendix 4 | Draft DCP | MG Planning |
| Appendix 5 | Infrastructure Strategy | Patterson Britton and Partners |
| Appendix 6 | Assessment of Traffic and Parking Implications | Transport and Traffic Planning |
| Appendix 7 | Water Cycle Management Report | Patterson Britton and Partners |
| Appendix 8 | Flora and Fauna Report | Peter Parker Environmental Consultants |
| Appendix 9 | Construction, Environmental and Waster Management Plan | Patterson Britton and Partners |
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| Appendix 14 | Aboriginal Cultural Heritage Assessment | Dominic Steele Archaeology |
| Appendix 15 | Environmental Site Assessment | Coffey Geosciences |
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STATEMENT OF VALIDITY

Submission of Environmental Assessment

Prepared under Part 3A of the *Environmental
Planning and Assessment Act 1971*

Environmental Assessment prepared by

| | |
|----------------|---|
| Name | Nicola Gibson |
| Qualifications | Bachelor of Arts Graduate Diploma in Urban & Regional Planning MPIA, CPP |
| Address | MG Planning Pty Ltd Suite 11, 340 Darling Street BALMAIN NSW 2041 |
| In respect of | Coastal Grove, Lennox Head |

Applicant & Land Details

| | |
|-------------------|--|
| Applicant name | DM & RD Dossor |
| Applicant address | C/- SAKE Development Suite 11, 340 Darling Street BALMAIN NSW 2041 |

| | |
|----------------------|------------------|
| Land to be developed | Lot 2, DP 622475 |
| Lot No, DP | |

Environmental Assessment

An environmental assessment is attached

Statement of Validity

I certify that I have prepared the contents of the environmental assessment in accordance with the Director-General's Requirements dated 15 May 2006, and that to the best of my knowledge, the information contained in the environmental assessment is neither false or misleading.

Signature



Nicola Gibson

Name

19 September 2006

Date

EXECUTIVE SUMMARY

This Environmental Assessment Report is submitted to the Department of Planning under Part 3A of the *Environmental Planning and Assessment Act 1979* and State Environmental Planning Policy (Major Projects) 2005.

The application proposes the residential subdivision of land at 1 Survey Street, Lennox Head, known as Coastal Grove, into 45 lots together with public open space, areas set aside for environmental protection and civil works.

The Coastal Grove site has been earmarked for residential development since 1999 when it was rezoned from Rural 1(d) - Urban Investigation to predominantly Residential 2(a) - Living Area. Various schemes have been proposed for the site but have lacked the necessary detail and consideration of environmental issues required for development in this area.

Recognising the need to improve the subdivision design and better address the concerns of Council, government agencies and the community, a new project team was appointed with the aim of achieving a "best practice" and environmentally sustainable approach to the development. The current development proposal reflects this ambition.

This Environmental Assessment provides a detailed description of the proposed development and the site, as well as an extensive evaluation of the potential environmental impacts of the development and measures to mitigate any impacts. The Environmental Assessment has been prepared in accordance with the requirements of the Director-General of the Department of Planning, which are detailed in the letter at Appendix 2.

A number of specialist studies have been commissioned to inform the preparation of this Environmental Assessment, copies of which are provided in the attached appendices or under separate cover (Hassell report).

The site is currently vacant and used for grazing. The site is moderately undulating and has a similar topography to the adjoining existing residential suburbs to the west. There are small pockets of remnant native vegetation, including SEPP 26 Littoral Rainforest, however these areas will not be developed but instead will be set aside for environmental protection purposes.

The Coastal Grove development involves the following:

- subdivision of the site into 45 residential lots ranging in size from 519m² to 1987m², fronting a new loop road and cul-de-sac;
- the establishment of a landscaped open space (riparian) corridor either side of the creek, including a children's playground;
- the creation of two residue lots, one to the south of the site and one within the northern escarpment area. These residue lots will provide for the protection and enhancement of significant remnant vegetation within the site.

The proposed lots will be located on land that is already largely cleared of vegetation.

The subdivision has been designed to locate the majority of lots on the lower, more level parts of the site. Larger lots are proposed in the south east corner of the site due to slope and visual sensitivity.

The design and construction of housing do not form part of this application, although proposed building envelopes and design guidelines have been prepared and are incorporated in a draft development control plan which is provided at Appendix 4.

A substantial component of the Coastal Grove development is the major open space spine which runs through the site. This park not only provides an attractive recreation space for local residents, but will also serve as an important riparian corridor which will assist in protecting the existing creek that runs through the site. A new children's playground is also proposed together with pedestrian and cycleway linkages which will maximise accessibility to the park from surrounding existing and new residences.

The development features a water cycle management strategy based on an integrated water cycle management approach in order to promote an environmental sustainable outcome for water. The water cycle management approach deals with all aspects of the cycle including stormwater runoff, groundwater, potable water and sewage.

Extensive consultation was undertaken during the course of preparing this environmental assessment. This included consultation with Ballina Shire Council, Department of Environment and Conservation, Department of Natural Resources, Department of Planning (Grafton office), Department of Primary Industries and Jali Aboriginal Land Council. The community's views were also sought during an information evening at Lennox Head and through consultation with the Lennox Head Monitoring Committee. Modifications to the design of the project and additional environmental safeguards were put in place in response to many of the issues raised during consultation.

The key potential environmental impacts associated with the development were identified as follows:

- stormwater management and water quality
- slope and stability
- flora and fauna
- visual impact
- traffic

At present the site receives untreated stormwater run-off from external residential areas which has caused extensive erosion on the western side of the site as well as sedimentation in downstream creek lines, increased bank erosion and loss of aquatic habitats. A detailed Water Cycle Management Report has been prepared by Patterson Britton and Partners to address potential water quality and quantity issues associated with the development. The proposed stormwater management strategy will significantly improve the existing situation with the introduction of water sensitive urban design measures to the site. These include infiltration trenches, bioretention/vegetated swales, gross pollutant traps and raingardens/bioretention basins. The strategy also ensures that existing run-off regimes are mimicked as closely as possible.

The potential impact of the development on flora and fauna has been considered in a Flora and Fauna Report prepared by Peter Parker Environmental Consultants. A number of threatened plant species were recorded both at the site and in the immediate environs. Those recorded at the site include hairy-joint grass, rough-shelled bushnut, and durobby and those recorded in adjoining land include coastal fontainea, hairy-joint grass, rough-shelled bushnut, xylosma, stinking cryptocarya and arrowhead vine.

Although no threatened fauna species has been recorded on the site, a number of threatened species are considered likely to periodically occur amongst the landscape species planted at the site.

The Flora and Fauna Report provides an assessment of the impacts of the development on threatened species, populations or ecological communities, or their habitats. The assessment concludes that there would be no significant effect on threatened species, populations or ecological communities or their habitats due to the conservation and management measures that will be put in place as part of the development. These include the provision of the areas around the hairy-joint grass and coastal fontainea, reforestation and landscaping adjacent to the littoral rainforest remnants, together with a program of bushland regeneration and weed control.

An assessment of slope stability was undertaken for the environmental assessment by Coffey Geosciences Pty Ltd. The assessment divides the site into three zones based on the steepness of the land. Two of the three zones are ranked as having very low to low-risk of slope instability, with the third zone ranked as having low to moderate risk of instability. The Coffey Report makes a number of recommendations regarding guidelines for construction. These recommendations have been incorporated into the draft development control plan. Subject to these recommendations, the report concludes that the site is appropriate for residential subdivision development.

A detailed visual assessment of the proposed development was undertaken by Hassell. The assessment considered the impact on both local and distant views. The assessment indicates that the visual impact of the proposed development from important vantage points along the coast will be minor, provided that future housing on the site does not intrude above the ridgeline. In the case of foreground views, the visual impact of the development will be moderate because the changing view will be significantly contrasting from that which exists now.

To mitigate the visual impact of the proposed development, the visual assessment contains a number of recommendations regarding the future siting and design of housing. The development also makes provision for extensive landscaping in both the public and private domain.

Traffic and parking implications of the development have been addressed in an assessment prepared by Transport and Traffic Planning Associates. The assessment demonstrates that increased traffic volumes generated by future residential development on the site will be well below the environmental capacity set for such residential developments. The report also considers the impacts of the development on existing and proposed intersections and concludes that the intersections will operate at a satisfactory level (Level of Service A).

Roads within the development have been designed to comply with Council's standards. In particular, provision is made for "slow ways" to control traffic speed.

A range of other issues are also addressed in the environmental assessment as required by the Director-General of the Department of Planning, such as aboriginal archaeology, noise and construction impacts. None of these issues raises significant environmental concerns or will result in adverse social or economic consequences.

A draft statement of commitments has been prepared which identifies the proposed mitigation measures, environmental management of residual impacts and monitoring for the proposed development. The draft statement of commitments identifies those measures that will need to be implemented during the preconstruction and construction phases as was once a development is complete in order to minimise impact on the environment. The applicant undertakes to carry out the development in accordance with these commitments.

In summary, it is considered that the proposed development will have a positive and beneficial environmental, social and economic impact in that it will:

- Provide land for high quality and sustainable housing in the area that is growing and where there is high demand for new residential development,
- provide for the dedication of embellished public open space, including the provision of a local children's playground,
- ensure that areas of significant environmental value are protected,
- provide for a riparian buffer to protect and enhance the creek,
- provide for a bushland regeneration and weed eradication program over a two-year period,
- generate economic and employment opportunities during construction,
- generate additional demand for local retail and business services, and
- provide for cycleways and improved pedestrian linkages between the site and adjoining residential areas.

No significant adverse environmental, social or economic impacts have been identified which would preclude the site being developed for residential development.

1.0 INTRODUCTION

This Environmental Assessment Report is submitted to the Department of Planning (DoP) pursuant to Part 3A of the *Environmental Planning and Assessment Act 1979* (the EP&A Act) and State Environmental Planning Policy (Major Projects) 2005 (the Major Projects SEPP).

The application proposes the residential subdivision of land at Lot 2 in DP 622475, Survey Street, Lennox Head, known as Coastal Grove, into 45 lots together with open space to meet recreation and environmental protection needs.

The Director-General's Environmental Assessment Requirements (EA Requirements) for the project were issued on 15 May 2006.

The report includes the following information relevant to the project and as set out in the EA Requirements:

- A Statement of Validity of the environmental assessment.
- An executive summary;
- Location of the development site and relationship to the surrounding area;
- A description of the proposal including subdivision design and construction;
- The existing planning provisions applying to the site including the permissibility of the proposal and consideration of alternatives to the proposal;
- Assessment of the environmental impacts and key issues and proposed mitigation and management of any adverse impacts;
- Justification for undertaking the proposal, including consideration of the suitability of the site and whether the project is in the public interest; and
- A draft Statement of Commitments for the environmental management and mitigation measures for the establishment/construction and operation of the project.

This EA has been prepared by MG Planning Pty Ltd on behalf of the proponents, DM and RD Dosser. The report should be read in conjunction with the following material:

| | | |
|-------------|--|--|
| Appendix 1 | Major Project Opinion | Department of Planning |
| Appendix 2 | Director General's Requirements | Department of Planning |
| Appendix 3 | Survey Plans | Aspect North |
| Appendix 4 | Draft DCP | MG Planning |
| Appendix 5 | Infrastructure Strategy | Patterson Britton and Partners |
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| Appendix 15 | Environmental Site Assessment | Coffey Geosciences |
| Appendix 16 | Bushfire Hazard Assessment | Barry Eadie Consulting |

1.1 BACKGROUND

In May 1999, the site was rezoned from 1(d) Rural (Urban Investigation) to predominantly 2(a) Living Area allowing for residential development. A development application (DA) for 54 lots was subsequently lodged with Ballina Council in January 2000. The DA was refused in June 2000 and an appeal to the Land and Environment Court also dismissed.

A revised DA for 42 lots was submitted to Council in 2002 addressing the requirements of the Land and Environment Court. However, with the introduction of State Environmental Planning Policy No 71 – *Coastal Protection* (SEPP 71) in November 2002, the Minister for Planning was made the consent authority and a Master Plan for the site was required. The DA and a Master Plan were then lodged with the Minister for Planning but were subsequently refused on the basis that the Master Plan lacked the necessary detail required under SEPP 71.

Recognising the need to improve the subdivision design and better address the concerns of Council, government agencies and the community, a new project team was appointed with the aim of achieving a “best practice” and environmentally sustainable approach to the development. The current development proposal reflects this ambition.

1.2 STATUTORY CONTEXT

The Major Projects SEPP identifies development that is of State significance. Clause 6 of SEPP 2005 provides that development, that in the opinion of the Minister for Planning (‘the Minister’) is development of a kind referred to in Schedule 2, is declared to be a project to which Part 3A of the EP&A Act applies.

Clause 1 of Schedule 2 of the Major Projects SEPP 2005 identifies the residential subdivision of land in the coastal zone into more than 25 lots as a project to which Part 3A applies. The subject land is located within the coastal zone as defined in the *Coastal Protection Act 1979* (refer Figure 1).

The Director-General of the DOP, as a delegate of the Minister, formed the opinion on 27 January 2006 that the proposal is a Major Project and that Part 3A applies. A copy of the letter from the DOP confirming this action is provided at Appendix 1.

In accordance with Section 75E of the Act, an application to carry out the project was submitted to the DOP on 16 March 2006. In accordance with Section 75F, the Director-General issued the requirements for the Environmental Assessment on 15 May 2006. A copy of the Director-General’s advice is provided at Appendix 2.

DEPARTMENT OF URBAN AFFAIRS
AND PLANNING

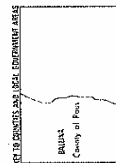
NEW SOUTH WALES COASTAL POLICY 1997

COASTAL ZONE
LANDWARD BOUNDARY : ■■■■■■■■■■
THREE NAUTICAL MILES
SEAWARD OF THE
MAINLAND AND
OFFSHORE ISLANDS

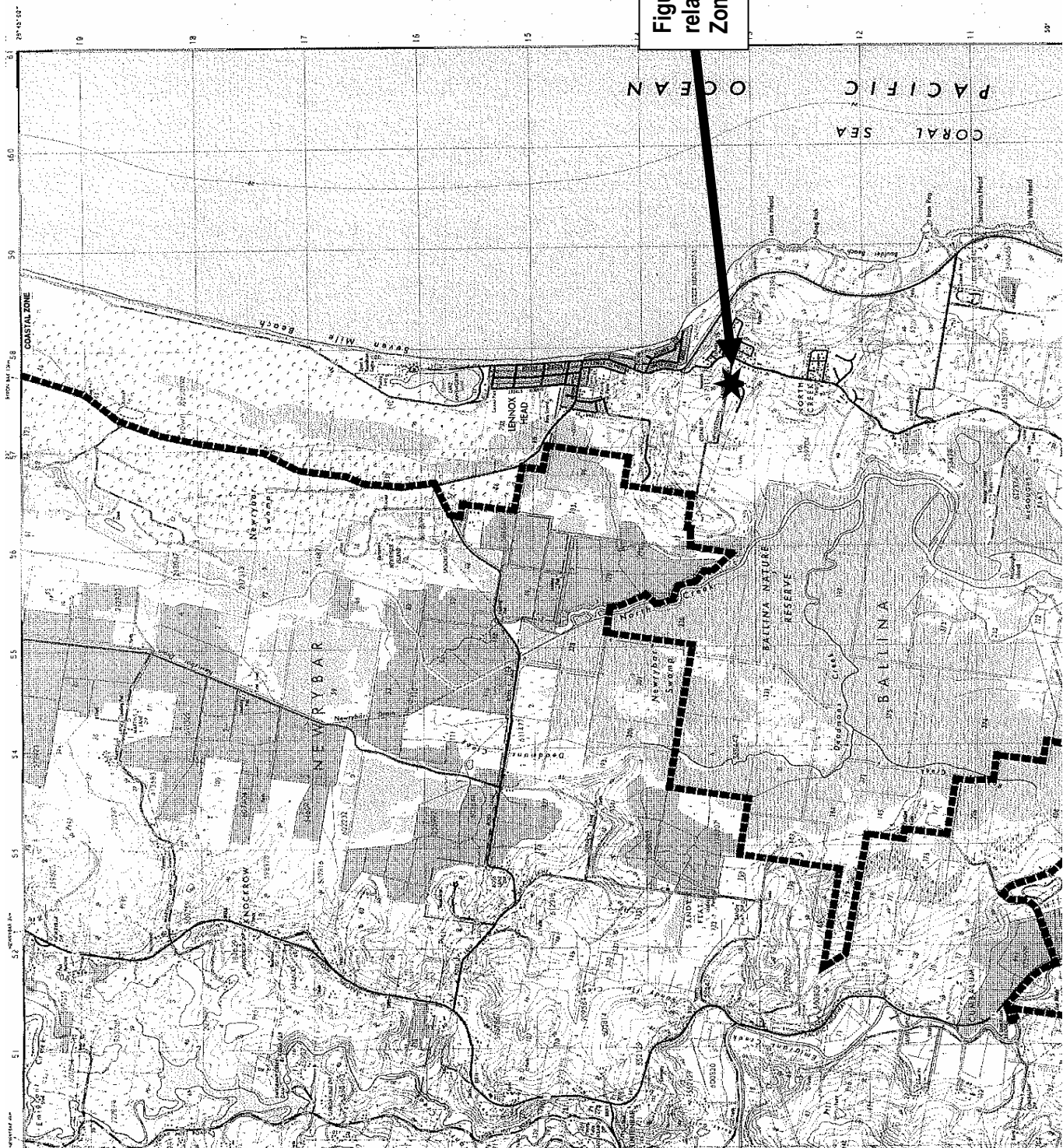
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BASE MAP PRODUCED FROM
1:25000 TOPOGRAPHIC MAP SERIES
AND COASTAL ZONE MAP SERIES
N.S.W. DEPARTMENT OF LAND AND WATER CONSERVATION
TOPOGRAPHIC BRANCH
AFFAIRS AND PLANNING

Figure 1: Site in
relation to Coastal
Zone



KEY TO ADJOINING MAPS



2. DIRECTOR-GENERAL'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

The Director-General's EA Requirements for the proposal are detailed in Appendix 2. This report has been prepared in accordance with those requirements.

The requirements have been addressed in the report as follows:

Section 5 – Heads of Consideration

Section 6 – Consultation

Section 7 – Statutory Requirements

Section 8 - Key Issues

- impacts on waterways, stormwater management and water quality, including erosion and sediment control
- flora and fauna impacts, including aquatic habitats
- geotechnical
- bushfire
- traffic
- contamination and remediation
- Aboriginal and cultural heritage
- landscaping and revegetation/rehabilitation
- design, visual impacts and design quality principles
- noise
- provision of public services and infrastructure
- construction management

Section 9 – Draft Statement of Commitments

Table 1 below indicates where each of the Director-General's requirements is addressed in the EA.

Table 1: Director-General's EA Requirements

| Director-General's Requirements | Report Location |
|--|---------------------------|
| General Requirements | |
| Executive Summary | Page vii |
| Description of the Proposal | Section 4 |
| Assessment of Environmental Impacts | Section 8 |
| Statement of Validity | Page vi |
| Heads of Consideration | |
| Site suitability | Section 5.1 |
| Project justification | Section 5.2 |
| Environmental impacts | Section 5.3 and Section 8 |
| Social impacts | Section 5.4 |
| Economic impacts | Section 5.4 |
| Consideration of alternatives | Section 5.5 |
| Consultation | |
| Ballina Shire Council | Section 6.1 |
| NSW Department of Natural Resources | Section 6.3 |
| NSW Department of Planning (Grafton Regional Office) | Section 6.3 |
| NSW Department of Environment and Conservation | Section 6.3 |
| NSW Department of Primary Industries | Section 6.3 |
| NSW Rural Fire Service | Section 6.3 |
| NSW Roads and Traffic Authority | Section 6.3 |
| Northern Rivers Catchment Management Authority | Section 6.3 |
| Telstra | Section 6.3 |
| Country Energy | Section 6.3 |
| Local Aboriginal Land Council/s | Section 6.3 |
| Local Community | Section 6.2 |
| Statutory Requirements | |
| Planning provisions applying to the site | Section 7.1 |
| Consideration of any non-compliances with specified EPIs | Section 7.1 |
| Staging of development | No staging applicable |
| Key Issues | |
| Impact on waterways, stormwater management and water quality | Section 8.1 |
| Flora and fauna impacts | Section 8.2 |
| Aquatic habitats | Section 8.2 |
| Geotechnical | Section 8.3 |
| Erosion and sediment control | Section 8.1 |
| Bushfire | Section 8.4 |
| Traffic | Section 8.5 |
| Contamination and remediation of site | Section 8.6 |
| Aboriginal and cultural heritage | Section 8.7 |
| Landscaping and Revegetation/Rehabilitation | Sections 4 and 8.2 |
| Design, visual impacts and design quality principles | Section 8.8 |
| Noise | Section 8.9 |
| Provision of public service and infrastructure | Section 8.10 |
| Construction Management | Section 8.11 |
| Draft Statement of Commitments | Section 9 |

3.0 SITE DESCRIPTION

3.1 SITE LOCATION

The site is located at the eastern end of Survey Street at Lennox Head on the north coast of New South Wales. The site is approximately 1km south of the Lennox Head township and some 20km south of Byron Bay and 10km north of Ballina. The major regional centre of Lismore is located 30km to the west.

The site's location is shown in Figure 2.



Figure 2: Locality Plan

3.2 SITE DESCRIPTION

The site is known as Coastal Grove and is located at 1 Survey Street, Lennox Head. Access to the site is currently via Blue Seas Parade.

The real property description is Lot 2 in DP 622475. The site covers an area of 14.71 hectares (excluding the adjoining road reservation) and is owned by D M and R D Dosser. The land has a maximum north-south dimension of 570m and an average east-west dimension of 195m. A copy of the site survey plan is provided at Appendix 3. In addition Figure 3 below shows the site in relation to surrounding natural and man-made features.

LEGEND

- DEVELOPMENT SITE
- OPEN SPACE / PUBLIC RECREATION
- COMMUNITY FACILITIES
- WATER BODIES, CREEK AND DRAINAGE LINES
- EXISTING VEGETATION (MAJOR STANDS)
- RETAIL / COMMERCIAL ZONES
- SUBURBAN HOUSING
- SCHOOLS AND CHILD CARE FACILITIES
- SEPP 26 LITTORAL RAINFOREST (INTERPRETED)
- SEPP 14 COASTAL WETLANDS (INTERPRETED)
- EXISTING BUS ROUTES AND SHELTERS
- EXISTING PEDESTRIAN ROUTES

Sources:
 - Department of Lands, Ballina 9640-3N Third Edition
 - Topographic Map 9640-3N
 - Ballina Shire Council, Lennox Head Structure Plan,
 Figure 7 - Existing Pedestrian Network, 2004.



PSL 3394 / PA01 Lennox Head Locality Plan

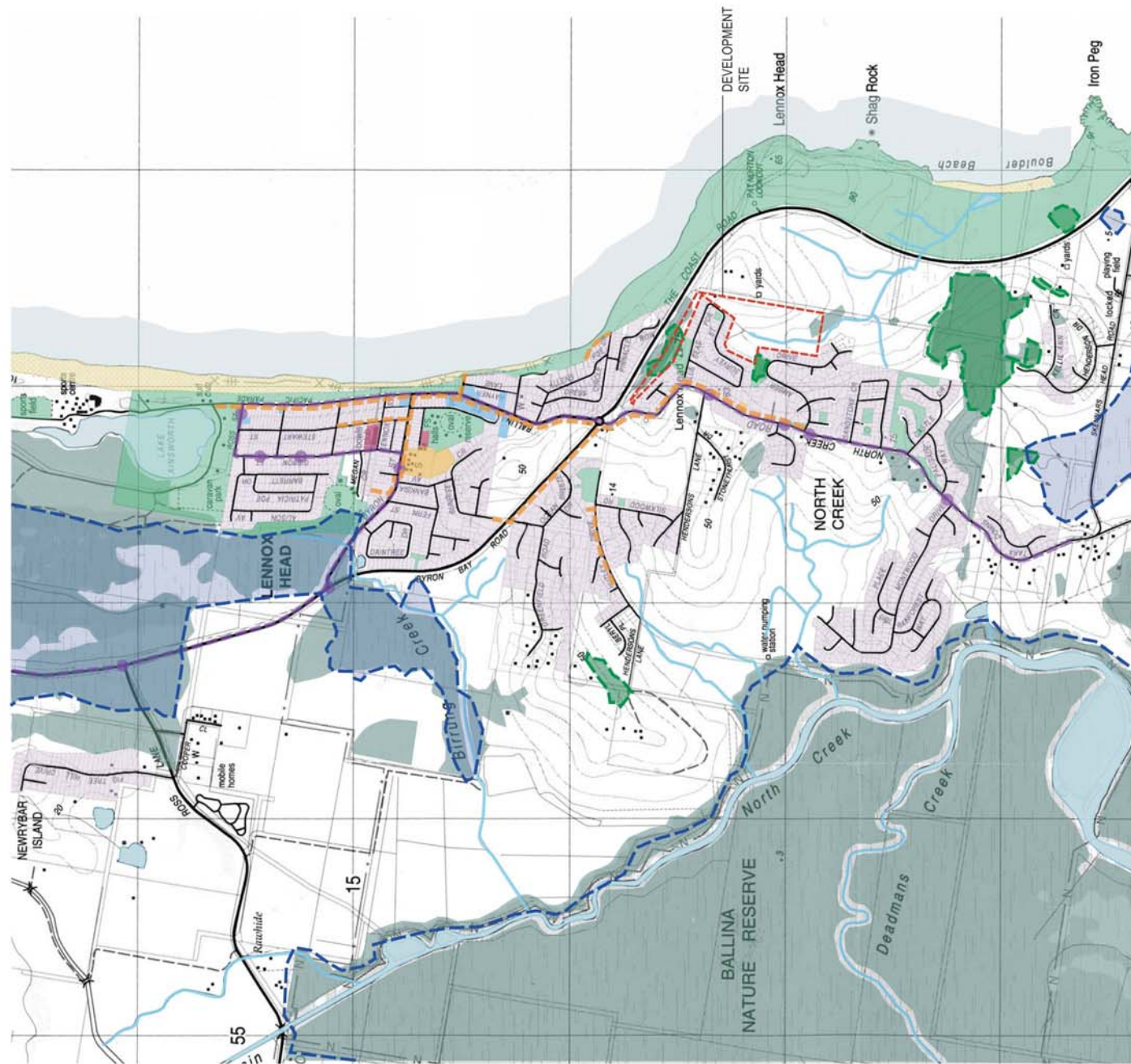
Scale 1:10,000 @ A1 / 1:20,000 @ A3

19 September 2006

FIGURE 3 - SITE MAP

COASTAL GROVE DEVELOPMENTS

Lennox Head



The site can be divided into two distinct parcels, the main developable area with access from Blue Seas Parade and the northern escarpment which is steep and heavily treed. This escarpment will not be developed as it is zoned environmental protection (scenic/escarpment) and includes a patch of littoral rainforest identified in State Environmental Planning Policy No 26 – *Littoral Rainforest* (SEPP 26).

The developable area within the site is currently vacant cleared land and used for low scale cattle grazing. A small area of regrowth littoral rainforest is located on the flats in the south of the site, which is zoned for environmental protection purposes. No development is proposed in the environmental protection zone.

The site lies within a basin with the site's highest point at RL 55. The highest point of the ridge is RL 60 which is located on the neighbouring property to the east.

The site broadly falls from the ridge located along the road reserve on the eastern boundary in a southerly direction.

Hills slopes on the ridges are generally moderate, varying from around 18° to 20° on the upper slopes to 12° to 15° on the lower slopes. The base of the valley is occupied by a broad, gently sloping area with slope angles of typically around 3° to 5°.

An unnamed ephemeral creek corridor runs north-south towards the western side of the site and there is evidence of boggy ground adjacent to the creek line to the south of the site.



Photo 1: View from north of site looking towards south-west



Photo 2: View from north of site



Photo 3: View over site looking to west showing adjoining residential development and Amber Reserve to left of photo



Photo 4: View towards south of site showing existing remnant rainforest



Photo 5: Revegetation along Crown road reserve with neighbouring shed in background



Photo 6: View looking southwards towards northern escarpment containing SEPP 26 rainforest (development site not visible)

3.3 SURROUNDING LAND USES

The site is located in a typical low density residential neighbourhood. Adjoining the site to the west along Survey Street, Blue Seas Parade and Amber Drive are existing detached houses.

To the north of the site adjacent the escarpment is the Coast Road which connects Ballina, Lennox Head and the coastal villages to Byron Bay.

Land to the south is largely undeveloped, with the area of remnant vegetation located in the south of the site extending beyond the property's boundary.

Immediately to the east of the site is a road reservation 20.11m wide that runs the length of the eastern boundary. The road reservation has been planted with coastal native plantings. Beyond the road reservation to the east the land continues as undulating grassland and contains a large homestead and shed.



Photo 7: View from site towards Blue Seas Parade



Photo 8: Existing residential development to west



Photo 9: Driveway entrance to neighbouring property to east

3.4 SITE OPPORTUNITIES AND CONSTRAINTS.

An analysis of the site's constraints and opportunities has been undertaken by Hassell to inform the design of the proposed subdivision. The key opportunities and constraints are shown in Figures 4 and 5.

The key considerations in developing the site are identified as follows:

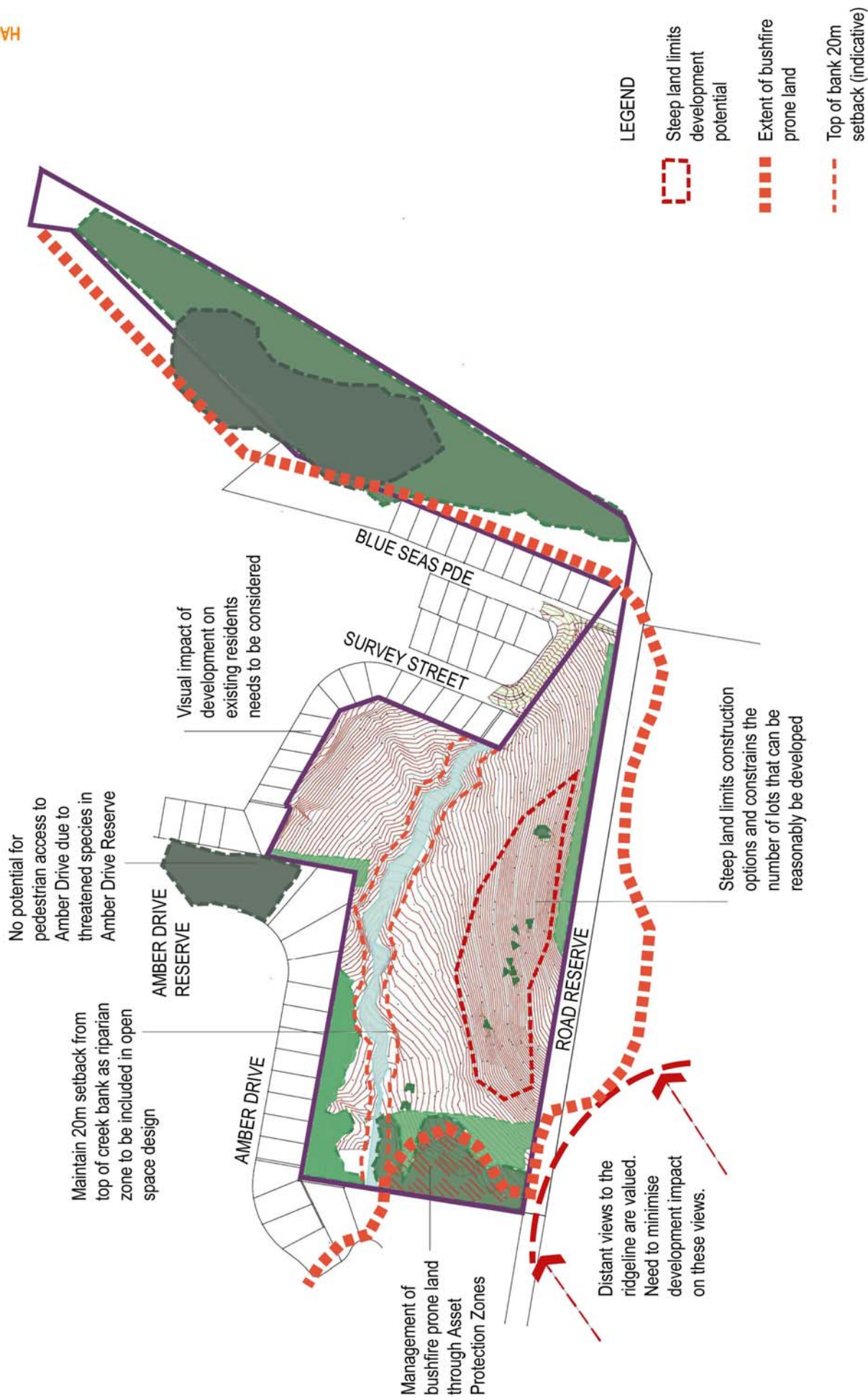
- the need to maintain a 20m setback either side of the top of the creek banks;
- the steeper parts of the site where slope and visual impact limit the number of lots that can be developed;
- the need to provide an asset protection zone to the south of the site;
- the need to protect areas of littoral rainforest; and
- distant views from the coast towards the ridgeline need to be protected.

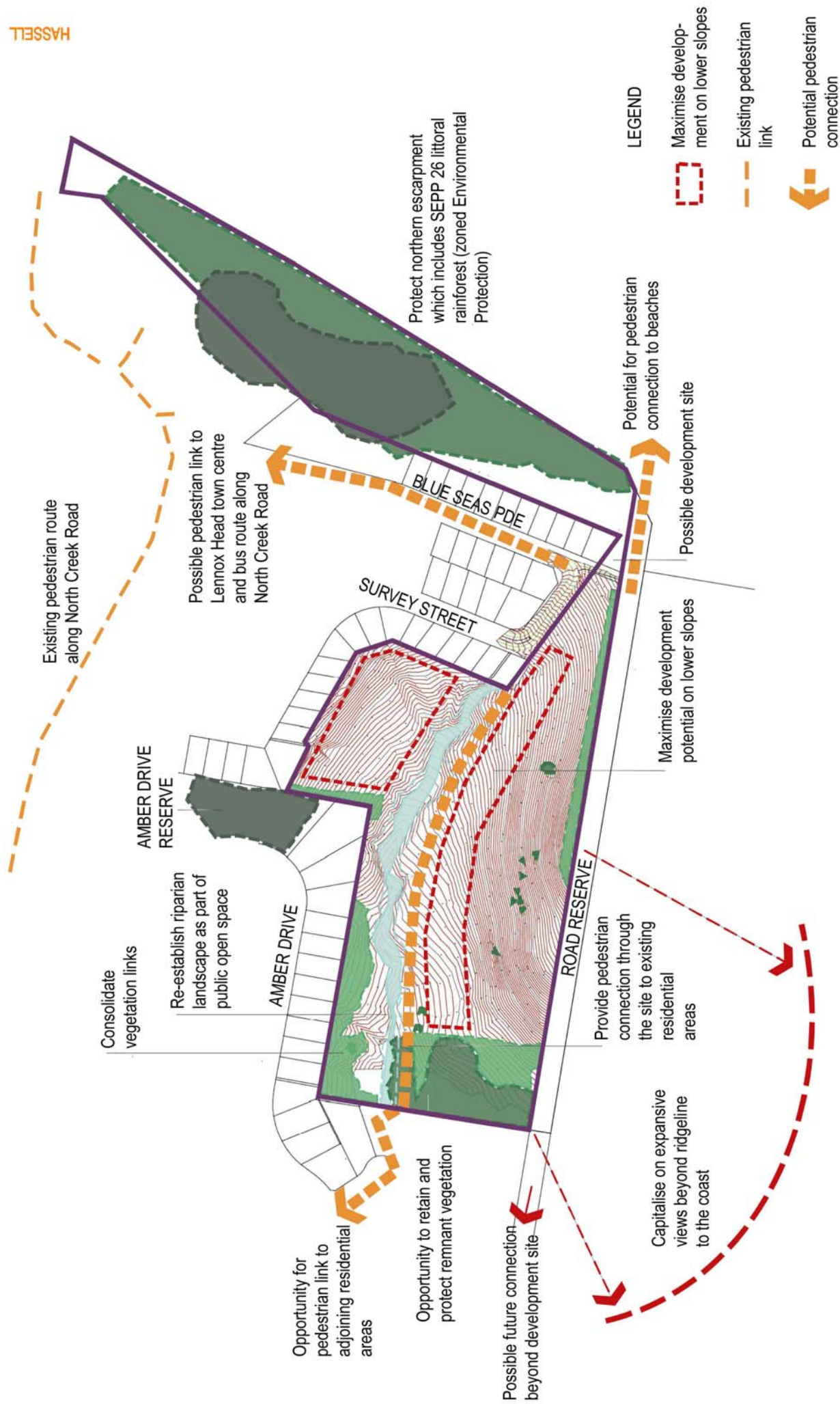
At the same time, the site offers a number of opportunities including:

- the re-establishment of a riparian landscape and consolidate vegetation links;
- potential improvements to stormwater management as no existing stormwater quality or quantity control measures currently exist on the site;
- the provision of children's play equipment as no facilities exist in the locality;

- dwelling design that responds to ESD principles with the potential to integrate future dwellings with the existing landscape character;
- a pedestrian link between the open space and Seamist Place and other possible connections;
- retention and protection for remnant littoral rainforest within the site; and
- the control of weeds which are beginning to infest the site.

Further details are provided in the following Opportunities and Constraints drawings.





4. PROJECT DESCRIPTION

4.1 PROJECT OVERVIEW

This section of the report provides a detailed description of the proposed development for which consent is sought under Section 75H of the EP&A Act. It is based on the information prepared by Hassell and Patterson Britton and Partners, as well as other supporting technical documentation attached to this report.

The Coastal Grove development involves the following:

- subdivision of the site into 45 residential lots ranging in size from 519m² to 1987m², fronting a new loop road (described as Roads No 1 and No 2) and cul-de-sac (described as Road No 3);
- the establishment of a landscaped open space corridor (lot 47) either side of the creek, including a children's playground; and
- the creation of two residue lots, one to the south of the site (lot 46) and one within the northern escarpment area (lot 48). These residue lots will provide for the protection and enhancement of significant remnant vegetation within the site.

The development has been designed having regard to the constraints and opportunities provided for the site, as shown on the plans at Figure 4 and 5 above.

The design and construction of housing do not form part of this application, although proposed building envelopes and design guidelines are set out in the draft DCP at Appendix 4 and discussed in Section 8.8 of this report.

The subdivision plan and landscape plans are provided in the Hassell report submitted under separate cover

4.2 RESIDENTIAL SUBDIVISION

The proposed residential subdivision comprises 45 lots ranging in size from 519m² to 1,987m², as detailed in Table 2. It should be noted that lot sizes are approximate and will be confirmed upon registration of the subdivision plan.

Table 2: Breakdown of lot sizes

| Lot Size | No. of Lots | Lot Description |
|----------------------------|-------------|--|
| 500-600m ² | 1 | Lots 10,11 |
| 601-700m ² | 3 | Lots 9,18 |
| 701-800m ² | 18 | Lots 2, 14-17, 19-22, 25-29, 32, 43-45 |
| 801-900m ² | 5 | Lots 23, 24, 30, 31, 42 |
| 901-1,000m ² | 6 | Lots 1, 3, 6-8, 33 |
| 1,001-1,100m ² | 3 | Lots 4, 5, 13 |
| 1,101-1,1200m ² | 1 | Lots 12 |
| 1,201-1,500m ² | 0 | |
| 1,501-2,000m ² | 8 | Lots 34-41 |

All residential lots have frontage to a road. The proposed roads are intended to be public roads within the meaning of the Local Government Act 1993.

The layout of the lots has been designed to maximize solar access and passive ESD design, with almost all lots running east-west or north-south.

The subdivision layout provides for a reduced number of lots in the south-east corner of the site, due to slope and visual sensitivity. As a result, the lots in this part of the site are very large, ranging from around 1,500m² to almost 2,000m².

On the lower part of the site fronting Road No 2, the land is less steep. As a result, the design provides for a greater number of lots in this area, ranging in size from 700m² to 955m². These lots have been designed to take advantage of views into the adjoining open space.

The area fronting the cul-de-sac (Road No 3) is generally level. The lots in this location have generally been designed as large lots to minimise any adverse impacts on the existing neighbours to the rear.

Lots 12, 13, 33 and 34 have been designed to accommodate attached dual occupancy development. Although it is feasible that dual occupancy development could occur elsewhere within the subdivision, it is considered appropriate that dual occupancy should be limited on the site to those lots which can best accommodate such development in a way that minimises visual impact.

Proposed lot 11 at the end of Blue Seas Parade is a logical extension to the existing row of houses and will not cause any adverse impacts as a result.

Most lots have a minimum frontage of 18m, with the exception of some of the lots along the cul-de-sac (Road 3) where the frontages are constrained by the road configuration.

4.3 ACCESS

The proposed road layout for the subdivision comprises a loop road (Road Nos 1 and 2) which will encircle the main residential precinct, together with a cul-de-sac (Road No 3) accessed from the loop road and crossing the open space.

The proposed roadway pattern is relatively regular with slight curvilinear alignment, although the regularity is arranged to assist in restraining vehicle speeds and avoiding cross intersections.

All new roads are proposed as 9m wide carriageways with 3.5m wide verges. 1.2m wide sealed footways will be provided on one side of the road (refer Hassell report under separate cover.).

Conceptual road design drawings are provided in the Coastal Grove Infrastructure Strategy prepared by Patterson Britton and Partners (September 2006) provided at Appendix 5.

The access connections to the existing road system will comprise two 'T' junction connections, one at Blue Seas Parade and the other at Survey Street.

In the future, the new eastern roadway running along the Crown Land Reserve may be extended southwards in conjunction with development of the adjoining lands.

Further details regarding access arrangements are detailed in the Coastal Grove *Assessment of Traffic and Parking Implications* (August 2006) prepared by Transport and Traffic Planning Associates and provided at Appendix 6.

4.4 WATER MANAGEMENT

The design of the water components of the development has been based on an integrated water cycle management approach in order to promote an environmental sustainable outcome for water. The water cycle management approach deals with all aspects of the cycle including stormwater runoff, groundwater, potable water and sewage.

The water cycle management strategy is detailed in the Water Cycle Management Report prepared for the development by Patterson Britton and Partners (September 2006) and provided at Appendix 7.

4.5 OPEN SPACE AND LANDSCAPING

A substantial component of the Coastal Grove development is the major open space spine which runs through the site (proposed lot 47). This park not only provides an attractive recreation space for local residents, but will also serve as an important riparian corridor which will assist in protecting the existing creek that runs through the site.

The total area to be provided as open space and the proposed landscape design for the open space is shown in the Hassell report submitted under separate cover.

The park is 3.47ha in area and is located within easy walking distance of both existing and future residents. The park has been designed with extensive road frontage and pedestrian links maximising connectivity between the park and surrounding residential areas.

A children's playground is to be provided on the north-western side of the Road No 2/Road No 3 intersection. The playground area will include play equipment, safety surface, shade structure and seating. The playground has been located in a central position to the development, on the lower slopes so that it has maximum accessibility.

The playground complies with Council's Draft Open Space Strategy as follows:

- Playground area is 505m² set within 2517m² of open space grass and planting (standards require a minimum of 2000m²);
- playground is integrated with pathway and cycleway connections;
- the park is sited to take advantage of shallower slopes, as the development site is on generally steeper slopes;

- the playground is central to the development with every proposed lot within 300m radius of the playground (minimum 500m radius achieved); and
- the playground is linked to the riparian corridor pathway network, but is separated by a road so that high activity in the playground does not impact on riparian corridor planting and rehabilitation.

In accordance with the recommendations of the Department of Natural Resources, a 20m setback from either side of the top of the creek bank is provided as a riparian corridor.

The landscape concept plan (refer Hassell report submitted under separate cover) shows the indicative planting proposed for both the open space and street trees.

Extensive street tree planting is proposed, comprising a combination of local tree species i.e. Tuckeroo (*Cupaniopsis anacardiodes*), Brush Box (*Lophostemon confertus*), Broad Leaved Paperbark (*Melaleuca quinquenervia*) and Weeping Lilly Pilly (*Waterhousia floribunda*).

A small strip of reafforestation plantings which were planted along the eastern ridge line some 5 years ago will need to be removed to allow for road construction in this location. The species planted in this strip are dominated by coast banksia, *Banksia integrifolia* var. *integrifolia*, sweet pittosporum, *Pittosporum undulatum*, blue lilly pilly, *Syzygium oleosum*, tuckeroo, lantana, bitou bush, *Chrysanthemoides monilifera* subsp. *rotundata* and kikuyu. Species similar to the littoral rainforest species will be planted within the road reserve (refer discussion in Flora and Fauna Report at Appendix 8 for further details).

Wherever possible, existing trees have been retained to protect habitat and provide an attractive setting for the future development of the site. Reafforestation and weed control will be undertaken as part of the development. Further discussion on this issue is provided in Section 8.2 of the report.

4.6 LANDSCAPE AND URBAN DESIGN PRINCIPLES

The proposed subdivision layout and open space have been informed by the following landscape and urban design principles:

- Design of proposed roads to include a pedestrian path on the housing side of the street which connects into the open space path network;
- Connection to existing residential areas with pedestrian and cycleway network through open space;
- Location of the majority of lots in the lower, flatter slopes in order to retain development below the hilltop where possible;
- Creation of lots sizes of at least 600m² with 18m frontage where possible;
- Provision of open space bounded by public roads to increase accessibility to the park;

- Provision of native street tree canopy in the verge of Roads 2 and 3 to screen development housing from existing residential areas where possible, as well as to create shade for the pathways; and
- Provision of native small tree and shrub vegetation along the Crown Road Reserve verge (Road 1) to provide a buffer between the road and adjoining property.

4.7 RESIDUE LOTS

Two residue lots are proposed which will be set aside for environmental protection. Lot 46 is located to the south of the site and contains remnant rainforest. Lot 48 comprises the escarpment to the north of the site which contains littoral rainforest under SEPP 26.

4.8 SERVICES

An Infrastructure Strategy has been prepared by Patterson Britton and Partners, and is provided Appendix 5 and discussed in Section 8.10.

4.9 CONSTRUCTION

A Construction Environmental and Waste Management Plan has been prepared by Patterson Britton and Partners (September 2006) and is provided at Appendix 9.

A number of management measures are proposed in the construction management plan to minimise potential environmental impacts during construction. These include:

- dust suppression
- stockpile protection
- erosion and sediment control
- noise control through appropriate mufflers on construction equipment
- funding for chemical storage
- appropriate working hours
- best practice waste management

5 HEADS OF CONSIDERATION

5.1 SITE SUITABILITY

The site is currently vacant and used for grazing. It has been earmarked for residential development since it was rezoned in 1999.

The site is moderately undulating and has a similar topography to the adjoining existing residential suburbs to the west. The Slope Stability Assessment for the development undertaken by Coffey (August 2006) indicates that the geotechnical stability and slope of the site are suitable for residential development, subject to appropriate design/construction measures (refer Appendix 10).

There are small pockets of remnant native vegetation, including SEPP 26 Littoral Rainforest, however these areas will not be developed but instead will be set aside for environmental protection purposes.

As demonstrated in the drawings contained in the Hassell report submitted under separate cover, the site is of sufficient size and configuration to comfortably accommodate the proposed residential subdivision as well as the required 40m riparian buffer and environmental protection/open space areas.

The site is located adjacent to existing residential suburbs. The proposed residential subdivision is complementary and compatible with the density, form, scale and orientation of existing residential development in the neighbourhood.

A number of detailed analyses have been undertaken in relation to the proposal and its associated impact on the site, which are discussed below. These studies clearly indicate that the site is suitable for the proposed use and that there will be no significant environmental impacts associated with the development that would adversely affect the values of the site. Any impacts that do occur can be readily managed through appropriate mitigative measures.

5.2 PROJECT JUSTIFICATION

There is a strong demand for housing on the North Coast which is acknowledged in the *Draft Far North Coast Regional Strategy 2006-31* (Department of Planning, 2006). The Strategy estimates that approximately 51,000 new dwellings will be needed to house an additional 60,400 people in the region over the next 25 years (p.15). At the same time, the Strategy highlights the need to promote a settlement pattern:

... that protects and enhances environmental values and natural resources by utilizing and developing the existing network of major urban centres, reinforcing village character, and through the efficient use of existing services and major transport routes.(p.16)

To this end, the Strategy identifies land which is suitable for residential development and which is largely contained within defined towns and villages. The subject site is located within the Town and Village Growth

Boundary for Lennox Head and is specifically identified as a new residential release area.

Consultation with local real estate agents also indicates that there is very strong demand for residential land and housing, especially close to the coast. The proposed development provides the opportunity to help meet this demand in an area which is largely cleared and where there are no major environmental or other impediments to its development (refer discussion below).

5.3 ENVIRONMENTAL IMPACTS

The key potential environmental impacts associated with the development are:

- stormwater management and water quality
- slope and stability
- flora and fauna
- visual impact
- traffic

The environmental impacts have been determined by reference to the findings of the Land and Environment Court decision of 01 August 2001, discussions with agencies including Ballina Shire Council, Department of Environment and Conservation and Department of Natural Resources, and consultation with the local community. The environmental impacts have also been identified by the specialist technical experts engaged on the project.

These potential impacts, together with other less significant environmental issues, are discussed in detail in Section 8. The assessment of environmental issues in Section 8 indicates that there will be no significant environmental impacts associated with the development and that all impacts can be adequately mitigated through appropriate design and construction measures.

5.4 SOCIAL AND ECONOMIC IMPACTS

The proposed development will have a positive and beneficial social and economic impact in that it will:

- provide land for high quality and sustainable housing in an area that is growing and where there is high demand for new residential land,
- provide for the dedication of embellished public open space, including the provision of a local children's playground,
- ensure that areas of significant environmental value are protected,
- provide for a riparian buffer to protect and enhance the creek,
- provide for a bushland regeneration and weed eradication program over a two year period,
- generate economic and employment opportunities during construction,
- generate additional demand for local retail and business services, and

- provide for cycleways and improved pedestrian linkages between the site and adjoining residential areas.

No significant adverse social or economic impacts have been identified which would result from the development.

5.5 CONSIDERATION OF ALTERNATIVES

Possible alternative options for the site are:

- no development
- low density residential
- higher density residential.

No development

This option would mean leaving the site as is and continuing to use it for agricultural purposes. This option is not considered feasible as:

- the site is zoned Residential and has been earmarked by both Council and the Department of Planning as a suitable site for the release of land for housing, and
- the site is currently weed infested and there is evidence of scouring from poor drainage from adjoining areas. At the same time, the site contains threatened flora species which, without appropriate protection and regeneration, could potentially be lost from the site. Without development of the site proceeding there is no impetus to remedy this situation.

Low density residential

The proposed development is already low density at less than 5 dwellings per hectare (gross). However, during community consultation a number of residents raised concern regarding the number of lots proposed, arguing that the number of lots should be reduced for environmental impact reasons. However, there would appear to be no particular benefit in reducing the number of lots as:

- The lots proposed are already large, with the majority of lots significantly larger than the minimum 600m² lot size that applies in this location,
- Reducing the number of lots is unlikely to make a noticeable difference in terms of traffic impact as the increased traffic volumes associated with the subject proposal are already well below the established environmental capacity level (refer Traffic Assessment at Appendix 6),
- reducing the number of lots will not result in the economic use of the land nor will it achieve the objective of both Council and the State Government to make the best use of suitable land within established coastal villages
- the visual impact of residential development in this location will not be noticeably improved by reducing the number of lots as the visual appearance of the site will change regardless. The more important consideration with visual impact is the appropriate design of future

housing and the provision of adequate landscaping, both within private lots and the public domain.

Determining the appropriate housing yield on the site is a balancing act between environmental capacity and economic return. Most importantly, there are substantial costs involved in not only constructing the subdivision, but in providing for the very significant environmental improvements on the site. By reducing the number of lots, the opportunity for environmental enhancements and other community benefits (eg children's playground) would be noticeably diminished.

Higher density residential

As the minimum lot size in this location is 600m² it is feasible that potentially almost 100 lots could be accommodated on the site. The density could be even greater if dual occupancy development were considered on the site. However, higher density residential development on the site was ruled out in view of the findings of the Land and Environment Court case which set clear parameters for any future development. These parameters included the need for a riparian buffer of 20m either side of the creek and the provision of open space within the site. Under these circumstances, higher density development is not feasible.

6 CONSULTATION

In accordance with the Director-General's EA Requirements, the following section of the report details consultation with nominated government agencies and other stakeholders. It also identifies how the proposal has been refined as appropriate to respond to any issues raised.

A stakeholder consultation and communications plan has been prepared and finalised with input from the Department of Planning and Ballina Shire Council. A summary of the government and community consultation is as follows.

6.1 BALLINA SHIRE COUNCIL

Four meetings were held with Ballina Shire Council during the preparation of the project application, including:

- Project inception meeting;
- Information gathering and data collection;
- Interactive workshop regarding the proposed subdivision plan and discussion of key issues;
- Meeting to discuss the proposed dedication and maintenance of the open space corridor and road design.

Notes were taken at these meetings and are found at Appendix 11. Generally, Council considers that the key issues were those that emerged in the Land and Environment Court case, including stormwater management, visual impact and built form, geotechnical constraints and open space management.

A number of changes to the design were made in response to concerns raised by Council following the meetings. Notably, the proposed wetlands were removed from the project and replaced with raingardens (discussed further in Section 8.1). Council was concerned about the future maintenance of the wetlands, the potential for mosquito habitat, and safety aspects particularly for children with permanent water bodies.

In response to Council concerns regarding controls for future housing on the site, a draft Development Control Plan (DCP) has been prepared (provided at Appendix 4) which addresses future housing design and provides guidelines for future development including building envelope controls (heights and setbacks), dual occupancy provisions, visual impact, building materials and colours. The draft DCP is proposed as an annexure to the comprehensive Lennox Head DCP which is currently being prepared. This is similar to other development sites which fall under the "master plan" category (Survey Street, Pacific Pines etc), and is considered by Council as an appropriate tool to govern the future development of these sites.

Further discussion regarding the draft DCP is provided in Section 8.8.

The proposed dedication and future maintenance of open space was discussed with Council's Manager of Open Space and Reserves on 25 July 2006. At the meeting, Council supported the proposed dedication of both land zoned open space (approximately 1.3ha) and additional areas of land

within the open space corridor currently zoned residential and part environmental protection (some 2.2ha). The proposed dedication excludes the northern escarpment area and part of the land zoned Environmental Protection to the south.

Council noted that it will require a maintenance period (approximately two years) prior to the dedication of open space for the development. Further, Council requested as part of the Statement of Commitments, the application outline maintenance measures for the proposed raingardens and swales; and that the project team work with Council in the design of the children's play equipment (including shade structures). These matters have been included in the Draft Statement of Commitments in Section 9.

6.2 LOCAL COMMUNITY

6.2.1 Community Information Night

A community information night was held on Monday 24 July 2006 from 4:30pm – 7:30pm in the Lennox Head Country Women's Association Hall (CWA) regarding the proposal. The information night was attended by members of the project team enabling residents and others to view the proposed plans, ask questions of the project team and discuss the development process.

Ballina Shire Council officers and councillors were invited to attend the information night via letter. A letterbox drop of adjoining streets surrounding the development site invited neighbours to attend the information night. The letterbox drop extended from Blues Seas Parade and Henderson Place in the north to Sandstone Crescent in the south and the Coast Road in the east. Over 300 flyers were distributed to the local community and Council.

Thirty one people attended the information night. Information sheets were available for residents to complete on the night. Nine feedback sheets were completed on the evening and one was received following the information night (refer Appendix 12 for a copy of the feedback sheet).

Further consultation occurred between the project director and one person who was unable to attend the information night.

Key issues raised in the responses are as follows:

- Four responses (40%) generally supported some form of residential development, five responses did not support any form of residential development (50%) and one person did not respond to this question (10%).
- Positive aspects of the development were maintenance of the rainforests, provision of community space and a reduction in the number of lots from the original plan.
- Concerns related to traffic generation and the capacity of both Survey Street and Blues Seas Parade to accommodate traffic; too many lots; noise and light pollution; need for buffer zone between houses on Survey Street or planting in rear gardens; building on steeper slopes; ground water seepage; drainage and maintenance of open space corridor; and potential for dual occupancy. The concerns raised by residents are addressed in Section 8.

- Features that residents would like to see in the draft plan include substantial tree planting before building houses, and facilities for young people.

6.2.2 Lennox Head Monitoring Committee

A presentation was made to the Lennox Head Monitoring Committee on Monday 7 August 2006. The role of the Monitoring Committee is to:

- Monitor the implementation of the Lennox Head Strategic Plan and Lennox Head Structure Plan;
- Facilitate/enable community input and information sharing on the implementation of the Strategic Plan;
- Provide and prioritise actions pertaining to the Lennox Head Strategic Plan and Structure Plan; and
- Assist Council to source funding for prioritised Actions.

Coastal Grove is identified as Area N in the Strategic Plan.

Key issues that emerged at the meeting included:

- Comments and a request for further information regarding the design and function of the rain gardens. In this regard, further information was sent to the Committee following the presentation including sections and photographs.
- The need for a public open space link to Seamist Place, as part of the land is not included in this application, but is owned by the Dossors. In response, a right-of-way is proposed over this land to link the open space with Seamist Place (refer Landscape Plan contained in Hassell report submitted under separate cover). In discussions with the Department of Planning it was suggested that the right-of-way would be secured by means of a condition of consent.
- Impacts of the development upon the rainforest, an endangered ecological community. A seven part test will need to be carried out as part of the development (seven part test provided in Flora and Fauna Report at Appendix 8 and discussed in Section 8.2 of this report).
- Proximity to the endangered *Fontainea oriara*, located in the adjoining reserve and the need for appropriate buffers. (Refer discussion in Section 8.2).
- Protection of the rainforest along the escarpment and any regeneration. No development is proposed in the SEPP 26 littoral rainforest escarpment area.

6.3 STATE GOVERNMENT

In terms of State Government agencies, the DGRs required consultation with:

- Department of Natural Resources
- Department of Planning (Grafton)
- Department of Environment and Conservation

- Department of Primary Industries
- Rural Fire Service
- NSW Roads and Traffic Authority
- Northern Rivers Catchment Management Authority
- Aboriginal Land Council
- Service providers (Telstra, Country Energy)

Consultation with all agencies occurred throughout preparation of the project application including written correspondence (letter and email), site meetings and telephone conversations.

6.3.1 Department of Natural Resources

A letter was sent to both the Department of Natural Resources and Catchment Management Authority (CMA) on 18 May 2006 inviting a site visit to review the preliminary subdivision plan and provide comment. The Department declined the invitation to review the site.

Patterson Britton and Partners discussed the proposed development with the CMA who advised that the proposal would not require further consultation provided the existing significant vegetation located in the areas zoned environmental protection and open space is retained. Further, it was considered that the proposed development is expected to comply with the Northern Rivers CMA requirements. The proposed subdivision does not affect areas zoned environmental protection or open space, apart from regeneration works, extensive plantings and rehabilitation of the riparian corridor.

6.3.2 Department of Planning (Grafton)

A letter was sent to the Department on 18 May 2006 seeking input to the proposed Project Application and preliminary subdivision plan. The Department advised via email (Jon Finlay) that they had already provided comments from the regional office for inclusion in the DGRs. The issues that needed to be addressed from the regional office point of view included:

- *A suitable buffer needs to be provided around the SEPP 26 Littoral Rainforest in the southern part of the land. This needs to be in addition to any other buffer requirements, ie: bushfire protection zones.*

The only SEPP 26 rainforest is located on the adjoining parcel of land, within the Amber Drive Reserve to the south of the site. The owners planted a buffer to the reserve following the LEC proceedings in 2001. Further plantings are proposed as part of this application that will result in a 20metre vegetated buffer to the Reserve boundary.

The rainforest located along the southern boundary is both remnant vegetation and recent plantings by the landowners (approximately 2001). The recent plantings provide a significant buffer to the remnant vegetation. The road acts as a bushfire asset protection zone.

- *The residential and any other development on the site needs to be designed to ensure the integrity of the Littoral Rainforest is maintained.*

Planted setbacks and buffers are provided to both the Amber Drive reserve and the remnant vegetation located to the south. Bush regeneration works are proposed to the rainforest to the south and

along the creek corridor to remove weeds and monitor these works for a period of up to two years.

- *Substantial parts of the site are fairly steep. Any development needs to be designed having regards to the steep slopes and the potential for slip.*

The subdivision layout has been designed in consultation with Coffey's geotechnical engineers and design guidelines have been prepared for future housing on the steeper lots. Large lots are proposed on the steeper slopes (1,500-2,000sqm) and the geotechnical requirements have been incorporated into the Draft DCP to ensure they have statutory weight. Controls for the steep lots (known as zone 3) include:

- Flexible structures of timber, steel, brick veneer or similar construction should be adopted. Split level and suspended design should be considered to limit slope modification.
- Foundations should be designed and constructed in accordance with AS2870-1996
- Cut and fill should be limited to 1.5m in depth/height unless subject to a site/development specific geotechnical assessment.

- *The eastern edge of the site particularly in the northern part is fairly prominent from the coastal road. Development needs to have regards the scenic quality of the location.*

A detailed visual assessment has been prepared for the proposed subdivision. Lots 41 – 45 and Lots 12-15 to the north along the eastern boundary all sit behind the top of the ridge (RL 60). Design guidelines have also been prepared which require all dwellings in this location to sit below the ridgeline at RL 60.

For the larger lots (lots 34-40) located toward the southern end of the site, these have the potential to be partly visible from the Coast Road. Again, design guidelines have been prepared to minimise impacts including single storey dwellings to the front of the houses and controls regarding colours, materials and landscaping to blend with the coastal urban landscape. These seven dwellings will sit in a backdrop of an urban landscape with housing visible in the background. The visual impact has therefore been assessed as low because the view behind is of housing.

- *Any scale of development needs to be compatible with the capacity of the land and the various constraints on the land.*

The number of allotments has been reduced from 54 in the original scheme to 45, a 17% reduction. The size of the allotments, location and overall landscaping is proposed in context of visual impacts, slope analysis, environmental impacts including impacts upon the littoral rainforest and endangered *Fontainea oraria*. Stormwater management has been a key consideration with a water sensitive urban design approach adopted with the objective of improving the quality of receiving waters and mimicking the existing quantity of stormwater runoff.

- *Stormwater Management is sensitive to the site due to the steepness of the land and the SEPP 26 area.*

A number of stormwater runoff treatment measures are proposed with respect to the site constraints and characteristics including areas of littoral rainforest and slope. These include:

- Raingardens
- Gross pollutant traps
- Vegetated swales
- Infiltration trenches

Water quality monitoring completed by Patterson Britton and Partners indicates that predicted stormwater runoff from the site is expected to be of a better quality compared to the current situation. The proposed development is therefore likely to improve the quality of receiving waters downstream.

6.3.3 Department of Environment and Conservation

A letter was sent to the Department of Environmental and Conservation on 21 May 2006 requesting a site visit be held and with the opportunity for comment on the proposed subdivision plan. The Department declined due to a lack of available resources and noted they had provided input into the DGRs and their key concern was protection of the endangered *Fontainea oraria* located in the adjoining Amber Drive Reserve. Currently, the Department recommends that a “buffer of at least 50 metres be provided to protect the *Coastal Fontainea* and be in accordance with the Council’s draft Plan of Management for Bush Regeneration in the Amber Creek Reserve”.

A phone discussion was held with Jon Keats, Head Regional Operations Unit North Coast, on 29 May 2006. In the discussion it was noted a 15 metre vegetated buffer had been planted by the landowners along the property boundary to the *Fontainea oraria* in 2001. The owners planted this buffer following the court decision to safeguard the tree.

The Department was not aware of the Land and Environment Court proceedings and asked that in the application, this matter be addressed. Further, the Department advised that their key objective is to protect this tree species and ensure threats and impacts are minimized including bushfire protection, stormwater management and minimizing changes to local hydrology to ensure conservation of the *Fontainea oraria*.

The setback to the *Fontainea oraria* to Lot 1 is greater than 50 metres (as shown in Figure 6 at section 7.1.2 below). There is also the existing landscape buffer of 15 metre which will be extended to 20 metres as part of this proposal, providing a substantial landscaped buffer between the Reserve and Lot 1. There is no change to the hydrological regime that will affect the *Fontainea* and there are no increased bushfire threats.

6.3.4 Department of Primary Industries

The Department of Primary Industries (DPI) accepted the invitation to review the site and a site tour was held on Thursday 1 June with Patrick Dwyer from Department of Primary Industries (Fisheries) with key member of the Coastal Grove project team including Peter Parker from Peter Parker Environmental Consultants (flora/fauna), Richard Baker from Patterson Britton (stormwater management) and Sarah Kelly from SAKE Development. The key issues raised by DPI to be addressed in the Project Application were minuted (see Appendix 13) and include:

- Illustrate SEPP 14 wetlands on a site plan or location plan (to demonstrate they are not in close proximity to the proposed development). The nearest SEPP 14 wetlands are located further south on the Coast Road.
- Upstream at the northern end of the site (near allotment 10), the 20 metre riparian corridor buffer is adequate, and the buffer may need to increase further to the south (say to 25 metres). The buffer downstream is not so descriptive.
- Minor reshaping of the creek line to provide conveyance and stormwater treatment measures would be satisfactory.
- Maintain a low flow channel to allow conveyance of any groundwater that discharges to the surface.
- Look at dry basins instead of wetlands. As long as basins are outside the low flow channel (off line) they would not be an issue.
- Bridge crossing and culvert is considered satisfactory as this area is not a fish passage and therefore a series of pipes would be satisfactory.

A copy of the revised subdivision plan was sent to the Department on 31 July 2006 and the following email advice was received on 9 August 2006:

Thanks for the copy of the subdivision plan and your phone call this morning confirming that pedestrian paths over the watercourse will be bridges (timber bridges). Cognisant of this, the DPI have no objection and no further need to be involved in assessment of the project unless there are significant changes in the design that impact directly on the watercourse"

6.3.5 NSW Rural Fire Service

Consultation with the RFS occurred by telephone on 9 May 2006 and email on 10 May 2006. A detailed conversation was held with Ashley West located at Homebush. The RFS's general comments in terms of the proposed residential subdivision included the following:

- The site is located in a low bushfire hazard area.
- There is approximately three hectares of vegetation along the northern boundary of the site (the escarpment) and the RFS noted that no development is proposed in this area and therefore they have no concern.
- There is a small area along the eastern boundary, behind the ridgeline that is identified as Bush Fire Prone Land Category 2 Vegetation (low hazard area) on the Bush Fire Prone Land Map for Ballina Shire in NSW. On further examination of the aerial photography by the RFS, it was noted that this land was actually cleared and there were no dwelling houses on or in close proximity to this category of land. It would

therefore appear to be an error in the bushfire constraints mapping and the RFS did not object to any residential subdivision or proposed allotment in this location.

- There is also vegetation to the south, which again is not being developed for residential purposes and no concern was raised by the RFS.

It was noted that generally all allotments would be setback from vegetated areas including the rainforest to the north and the south. Asset protection zones may be required and a bushfire consultant Barrie Eadie had been engaged to determine the location and need for any asset protection zones

The RFS sent a response by email which stated that as the land was located in a low hazard bushfire prone area, bushfire risk was not a key issue and no further consultation with the RFS would be necessary for the proposed residential subdivision of 1 Survey Street Lennox Head.

6.3.6 The Roads and Traffic Authority

A letter was sent to the Roads and Traffic Authority (RTA) seeking their input into the proposal. However, due to resourcing constraints, the RTA has advised that it will not be providing comments at this time (refer advice in Traffic and Parking Assessment at Appendix 6).

6.3.7 Northern Rivers Catchment Management Authority

As noted, a letter was sent to the Catchment Management Authority (CMA) on 18 May 2006 inviting a site visit to review the preliminary subdivision plan and provide comment. The CMA declined the invitation to review the site.

An email was received from the Department of Natural Resources noting that they had provided input into the Director-General's EA Requirements and reiterated those requirements with respect to stormwater management, environmental protection zones and clarification if any clearing is occurring for asset protection zones, erosion and sediment controls and requirements under the *Rivers and Foreshores Improvement Act 1948*.

The stormwater management strategy has been discussed elsewhere in this report and no clearing is proposed in the environmental protection zone to the south, apart from bush regeneration works. An erosion and sediment control plan has been prepared.

6.3.8 Jali Aboriginal Land Council

An Aboriginal Cultural Heritage Assessment has been prepared by Dominic Steele Consulting Archaeology for the Project Application and provides further detail on Aboriginal consultation including management policies introduced by the DEC.

An Aboriginal Cultural Heritage Survey was held on Saturday 22 July with Mr Artie Ferguson from the Jali Local Aboriginal Land Council and the project team archaeologist Mr Daniel Tuck. No objection was raised to the proposed development during the survey and a copy of the Heritage Assessment was provided to the Land Council. A letter of support has been received from the Land Council which is appended to the Heritage Assessment.

6.3.9 Service Providers (Telstra, Country Energy)

Refer to Infrastructure Strategy prepared by Patterson Britton and Partners at Appendix 5 for details on consultation with service providers.

7 STATUTORY REQUIREMENTS

The following section addresses the key statutory planning requirements and strategic planning policies applying to the site.

7.1 RELEVANT PLANNING INSTRUMENTS

The following planning instruments are relevant to the proposed development:

- State Environmental Planning Policy No 71 – Coastal Protection (SEPP 71)
- State Environmental Planning Policy No 26 – Littoral Rainforest (SEPP 26)
- State Environmental Planning Policy No 55 – Remediation of Land (SEPP 55)
- North Coast Regional Environmental Plan 1988 (North Coast REP)
- Ballina Local Environmental Plan 1987 (LEP 1987)
- Ballina DCP No 1 – Urban Land
- Ballina DCP No 11 – Mosquito Management
- Ballina DCP No 13 – Stormwater Management

An assessment of the proposal against the relevant provisions of the planning instruments is provided below.

7.1.1 SEPP 71 – Coastal Protection

SEPP 71 applies to certain development within the coastal zone, including the subdivision of residential land where 25 or more lots are proposed. For such development the Minister for Planning is the consent authority.

SEPP 71 was gazetted prior to the Part 3A changes to the EP&A Act. Residential subdivision of the scale referred to above now falls within the ambit of Part 3A, however, consideration of the provisions of SEPP 71 are still required as part of this project application.

Clause 7 Matters for Consideration

Clause 7 of the Policy requires the Minister to consider a number of matters (set out in Clause 8) when determining a development application. An assessment of the proposed development against these matters for consideration is provided in Table 3 below.

Table 3: SEPP 71 Matters for Consideration

| MATTER FOR CONSIDERATION | RESPONSE |
|---|---|
| (a) The aims of the Policy set out in Clause 2, viz: | |
| To protect and manage the natural, cultural, recreational and economic attributes of the New South Wales Coast | The site is approximately 200m from the coast at its nearest point but is separated from the coast by the escarpment to the north and the ridge to the east and is therefore not readily visible from the coast (refer discussion in Section 8.8). The development incorporates a range of environmental protection measures, as discussed in Sections 8 and 9, which will ensure that the development will not impact on the natural, cultural, recreational and economic attributes of the coast. |
| To protect and improve existing public access to and along coastal foreshores to the extent that this is compatible with the natural attributes of the coastal foreshore | There is currently no existing public access between the site and the coastal foreshore and the development does not impact on any existing public access. |
| To ensure that new opportunities for public access to and along coastal foreshores are identified and realised to the extent that this is compatible with the natural attributes of the coastal foreshore | The opportunity for providing access to the coastal foreshore from the site was investigated as part of the development. However, this would have involved crossing the northern escarpment which is very steep in this location and contains important littoral rainforest. As a result, the provision of public access between the site and the coastal foreshore was not considered feasible. |
| To protect and preserve Aboriginal cultural heritage, and Aboriginal places, values, customs, beliefs and traditional knowledge | There are no known Aboriginal relics on the site nor is the site a place of Aboriginal cultural value (refer Aboriginal Archaeological Assessment at Appendix 14). |
| To ensure that the visual amenity of the coast is protected | There will be no adverse impact on visual amenity, as discussed in Section 8.8. |
| To protect and preserve beach environments and beach amenity | The proposed development is not located near any beach environments and therefore will not impact on beach amenity. |
| To protect and preserve native coastal vegetation | Native coastal vegetation will be protected and enhanced, as discussed in the Flora and Fauna Report at Appendix 8 and in Section 8.2 of this report. |
| To protect and preserve the marine environment of New South Wales | Not applicable. |
| To protect and preserve rock platforms | Not applicable |
| To manage the coastal zone in accordance with the principles of ecologically sustainable development (within the meaning of section 6(2) of the Protection of the Environment Administration Act 1991) | The proposed development incorporates a range of environmentally sustainable development (ESD) elements, including solar passive lot design, provision for dual reticulated water supply for recycled water use, riparian plantings and reforestation, and water sensitive urban design measures. The future housing on the site will be required to comply with the Building Sustainability Index (BASIX) in terms of reducing energy and water usage. |
| To ensure that the type, bulk, scale and size of development is appropriate for the location and protects and improves the natural scenic quality of the surrounding area | The bulk, scale and size of future housing will be controlled through a site specific development control plan (DCP) aimed at ensuring that the visual impact of the development is consistent with the existing surrounding residential neighbourhood. It will also ensure that there will be no adverse visual impact on the scenic quality of the coastal foreshore. (Refer discussion in Section 8.8.) |

| MATTER FOR CONSIDERATION | RESPONSE |
|---|--|
| To encourage a strategic approach to coastal management | The proposed development is compatible with existing development and is located within an area zoned for residential development. |
| (b) existing public access to and along the coastal foreshore for pedestrians or persons with a disability should be retained and, where possible, public access to and along the coastal foreshore for pedestrians or persons with a disability should be improved. | There is currently no existing public access between the site and the coastal foreshore and the development does not impact on any existing public access. |
| (c) opportunities to provide new public access to and along the coastal foreshore for pedestrians or persons with a disability | The opportunity for providing access to the coastal foreshore from the site was investigated as part of the development. However, this would have involved crossing the northern escarpment which is very steep in this location and contains important littoral rainforest. As a result, the provision of public access between the site and the coastal foreshore was not considered feasible. |
| (d) the suitability of the development given its type, location and design and its relationship with the surrounding area | The development is adjacent to existing residential development and has been designed to be of a similar density to that adjoining. |
| (e) any detrimental impact that development may have on the amenity of the coastal foreshore, including any significant overshadowing of the coastal foreshore and any significant loss of views from a public place to the coastal foreshore | The site is located away from the coastal foreshore and will not have any detrimental impact on the foreshore's amenity. It will not result in any overshadowing of the coastal foreshore or result in loss of views. |
| (f) the scenic qualities of the New South Wales coast, and means to protect and improve these qualities | There will be no adverse impact on the scenic qualities of the coast, as discussed in Section 8.8. |
| (g) measures to conserve animals (within the meaning of the Threatened Species Conservation Act 1995) and plants (within the meaning of that Act), and their habitats | The development provides for the protection of important species and their habitats. It also provides for reforestation and weed reduction. |
| (h) measures to conserve fish (within the meaning of Part 7A of the Fisheries Management Act 1994) and marine vegetation (within the meaning of that Part) and their habitats | Refer discussion in Section 8.2. |
| (i) existing wildlife corridors and the impact of development on these corridors | Existing wildlife habitats will be enhanced with reforestation measures and weed reduction. Wildlife corridors will be consolidated as a result of the development. |
| (j) the likely impact of coastal processes and coastal hazards on development and any likely impacts of development on coastal processes and coastal hazards | The development will not impact on, or be impacted by, coastal hazards or processes. |
| (k) measures to reduce the potential for conflict between land based and water based coastal activities | There is no potential for conflict due to the site's location |
| (l) measures to protect the cultural places, values, customs, beliefs and traditional knowledge of Aboriginals | There are no known Aboriginal relics on the site nor is the site a place of Aboriginal cultural value (refer Aboriginal Archaeological Assessment at Appendix 14). |

| MATTER FOR CONSIDERATION | RESPONSE |
|--|--|
| (m) likely impacts of development on the water quality of coastal waterbodies | Measures have been incorporated into the development to achieve appropriate water quality standards |
| (n) the conservation and preservation of items of heritage, archaeological or historic significance | The site does not contain any items of heritage, archaeological or historic significance. |
| (o) only in cases in which a council prepares a draft local environmental plan that applies to land to which this Policy applies, the means to encourage compact towns and cities | No draft local environmental plan has been prepared in relation to the site, however the proposal is consistent with the objective of encouraging compact towns as it is within the area identified as part of the Lennox Head village. |
| (p) (i) the cumulative impacts of the proposed development on the environment, (ii) measures to ensure that water and energy usage by the proposed development is efficient | <p>The cumulative effects of residential development have been considered in the broader strategic considerations undertaken by Council as part of the Ballina Urban Land Release Strategy 2000 and by the Department of Planning for the Draft Far North Coast Regional Strategy. In both instances, the proposed site has been identified as suitable for residential development. Environmental protection measures incorporated into the development will ensure that the development's impact will be appropriately managed.</p> <p>The proposed development incorporates a range of measures to ensure efficient water and energy usage, including solar passive lot design, provision for dual reticulated water supply for recycled water use, and water sensitive urban design measures.</p> <p>The future housing on the site will be required to comply with the Building Sustainability Index (BASIX) in terms of reducing energy and water usage.</p> |

Clause 14 Public Access

This clause states that development should not impede or diminish public access to the coastal foreshore. The proposed development will not affect existing or proposed public access to the foreshore.

Clause 16 Stormwater

This clause prohibits the discharge of untreated stormwater into a coastal waterbody. [Insert details from PB Report]

Part 5 Master Plans

This Part requires that subdivision of residential land into more than 25 lots may not be approved unless a master plan for the site has been adopted by the Minister. However, the Minister may waive the need for a master plan because of the nature of the development concerned, the adequacy of other planning controls that apply to the proposed development or for other such reasons considered sufficient by the Minister.

It is considered that in relation to the proposed subdivision, the Minister should waive the requirement for a master plan to be prepared under Part 5 of SEPP 71 for the following reasons:

- this Part 3A Environmental Assessment addresses those matters that are required to be covered by a master plan, as shown in Table 4 below
- the preparation of this Environmental Assessment has involved extensive consultation with Ballina Council, relevant Government agencies and the community
- this Environmental Assessment is accompanied by a draft Development Control Plan which will guide the future development of housing on the site. The DCP essentially replaces the requirement for a master plan as master plans are no longer provided for under the Environmental Planning and Assessment Act.

Table 4: Comparison of Master Plan/Environmental Assessment

| DRAFT MASTER PLAN REQUIREMENTS | RESPONSE IN ENVIRONMENTAL ASSESSMENT |
|--|--|
| Design Principles drawn from an analysis of the site and its context | Design of proposed subdivision drawn from analysis of opportunities/constraints, as shown in plans at Figures 4 and 5 of this report. |
| Desired future locality character | The future character for the area is identified as predominantly residential, as reflected in the rezoning of the site to residential in 1999. Site is also identified within the Draft Far North Coast Regional Strategy as part of the Lennox Head village. Refer Section 5 for further discussion. |
| The location of any development, considering the natural features of the site, including coastal processes and coastal hazards | <p>The subdivision has been designed having regard to the existing topography and relative steepness of parts of the site. A detailed geotechnical assessment has been prepared (refer Environmental Site Assessment at Appendix 15), which indicates that the proposed development is satisfactory subject to appropriate construction measures.</p> <p>The proposed development will not impact on any coastal processes/coastal hazards</p> |

| | |
|--|--|
| The scale of any development and its integration with the existing landscape | The proposed residential subdivision is complementary and compatible with the density, form, scale and orientation of existing residential development in the neighbourhood. The subdivision has been designed to integrate with the surrounding landscape, and the incorporation of extensive riparian and street tree planting will assist in achieving this integration. Refer Landscape Plan contained in Hassell report submitted under separate cover. |
| Phasing of development | As the subdivision is for only 45 lots, it is anticipated that the development will not be staged. |
| Public access to and along the coastal foreshore | Refer assessment in Table 3 |
| Pedestrian, cycle and road access and circulation networks | Refer Traffic and Parking Assessment at Appendix 6, Landscape Plan in Hassell report (under separate cover) and discussion in Section 8.5. The proposed subdivision will have an access road system which accords with Council's Development Design Specification and suitably encourages/facilitates walking and cycling. |
| Subdivision pattern | A detailed discussion regarding the subdivision pattern is provided in Section 3.2 and shown in the plans contained in the Hassell report (under separate cover). |
| Infrastructure provision | Infrastructure provision is considered in the Infrastructure Strategy at Appendix 5. |
| Building envelopes and built form controls | A draft DCP has been prepared which identifies appropriate building envelopes and built form controls for future housing. The draft DCP is provided at Appendix 4 and discussed in Section 8.8. |
| Heritage conservation | There are no items of heritage significance on the site and no Aboriginal relics. |
| Remediation of the site | A Site Assessment has been undertaken for the development and is provided at Appendix 15 (refer discussion at Section 8.6). |
| Provision of public facilities and services | The need for public facilities and services arising from the residential development has been considered in the broader strategic considerations undertaken by Council as part of the Ballina Urban Land Release Strategy 2000 and by the Department of Planning for the Draft Far North Coast Regional Strategy. Specific discussion on this issue is provided in Section 8.10. |
| Provision of open space, its function and landscaping. | The proposal incorporates a substantial open space area which will be dedicated to Council. The open space is to incorporate a children's playground, riparian protection buffers and pedestrian pathways and will be extensively landscaped. The landscaping strategy will also provide for protection and enhancement of threatened species (refer discussion in Section 8.2). A landscaping concept for the open space is shown in the plan contained in the Hassell report (under separate cover). |

| | |
|--|---|
| Conservation of water quality and use | The Water Cycle Management Report at Appendix 7 provides a detailed strategy for the conservation of water quality and use. |
| Conservation of animals (within the meaning of the <i>Threatened Species Conservation Act 1995</i>) and plants (within the meaning of that Act), and their habitats | Refer discussion in Section 8.2 |
| Conservation of fish (within the meaning of Part 7A of the <i>Fisheries Management Act 1994</i>) and marine vegetation (within the meaning of that Part) and their habitats | Refer discussion in Section 8.2 |

7.1.2 SEPP 26 – Littoral Rainforest

There are two areas of SEPP 26 Littoral Rainforest in the vicinity of the site, one located on the escarpment within the site boundaries, and the other located to the west of the site off Amber Drive, as shown in Figure 6 below.

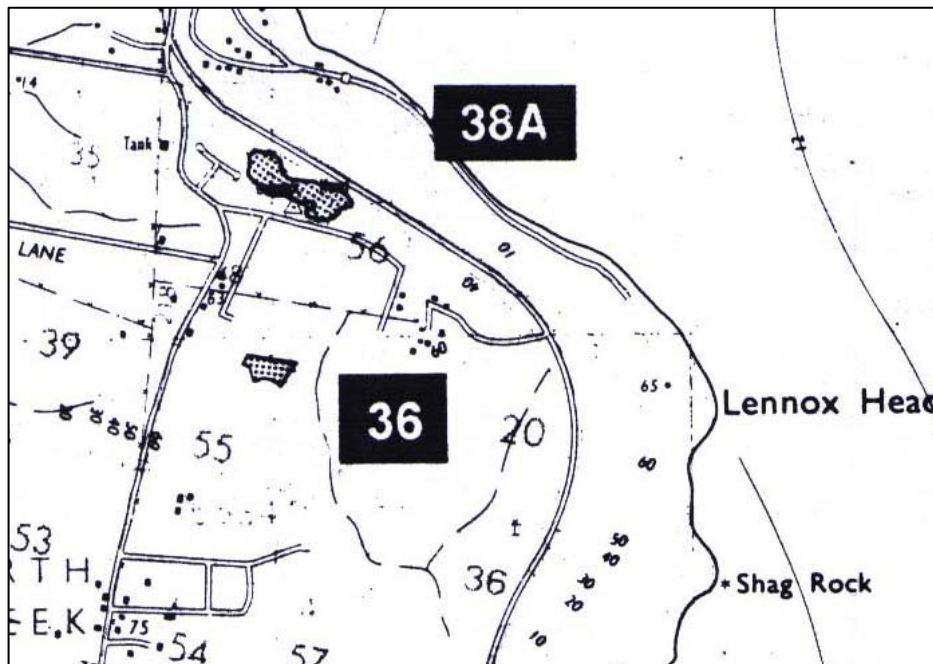


Figure 6: Areas of SEPP 26 Littoral Rainforest in the vicinity of the site

Clause 7 Development consent and concurrence

In the case of development within an area of SEPP 26 Littoral Rainforest, Clause 7(1) states that the consent of Council is required to erect a building, carry out work, use land for any purpose, subdivide it, or otherwise disturb it. However, no development or disturbance is proposed within the area of SEPP 26 Littoral Rainforest (Area 38A) therefore this provision does not apply.

In the case of development within 100m of an area of SEPP 26 Littoral Rainforest (excluding residential land within SEPP 14 Coastal Wetland), Clause 7(2) states that the consent of Council is required to erect a building

or otherwise disturb, change or alter any landform, disturb or destroy native flora or dump any waste. As the riparian corridor is within 100m of SEPP 26 Area 36 and involves the construction of rain gardens and the restoration of creek lines etc, this provision applies.

In both cases, the concurrence of the Director-General is required.

Clause 8 Matters for consideration-concurrence

Clause 8 states those matters for consideration by the Director-General in deciding whether to grant concurrence. These are:

- a) *Any representation made by or on behalf of the Director of National Parks and Wildlife about the likely impact of the proposal on the environment,*
- b) *the objectives and major goals of a National Conservation Strategy for Australia published by the Australian Government Publishing Service, Canberra, in 1984, and*
- c) *if the carrying out of the proposal and the use (if any) thereafter of the land concerned for the purpose for which it will be used may cause destruction or disturbance of the natural environment, the public interest (if any) in the carrying out of the proposal in relation to the public interest in the preservation of little rainforest in its natural state.*

The issues raised by National Parks and Wildlife Service (the DEC) have been addressed with the provision of a 50 m buffer between the nearest lot and the Fontainea (refer discussion in section 8.2).

The proposal is consistent with the objectives and major goals of the National conservation strategy in that it will not impact on littoral rainforest but instead will provide for its regeneration and protection (refer discussion in section 8.2).

7.1.3 SEPP 55 – Remediation of Land

Clause 7 of State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55) states that a consent authority must not consent to the carrying out of any development on land unless:

- (a) *it has considered whether the land is contaminated, and*
- (b) *if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable after remediation) for the purpose for which the development is proposed to be carried out, and*
- (c) *if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.*

Before determining an application for a change of use, the consent authority must consider a report specifying the findings of a preliminary investigation of the land concerned. Accordingly, an Environmental Site Assessment consistent with the requirements of SEPP 55 has been prepared by Coffey Geosciences Pty Ltd (refer Appendix 15). A detailed discussion of the report and its findings is provided at section 8.6.

7.1.4 SEPP 14 – Coastal Wetlands

SEPP 14 contains provisions relating to development in and near Coastal Wetlands. As the nearest SEPP 14 wetland is located over 1km to the south of the site, this policy does not apply to the development.

7.1.5 North Coast Regional Environmental Plan

The North Coast Regional Environmental Plan provides the regional planning framework for development in the North Coast Region, including Ballina Shire. The key relevant provisions are considered below.

Clause 12 Development Control – Impact of Development on Agricultural Activities

This clause states that a council should not consent to development on rural land unless it has first considered the implications for the agricultural use of the land and whether it will cause a loss of prime crop or pasture land.

The subject land is zoned for residential development and is currently used for low scale grazing purposes. The site does not contain any prime crop or pasture land. The proposed development will therefore not result in any adverse impacts on agriculture.

Clause 15 Wetlands or fishery habitats

This clause identifies a number of matters for consideration by the consent authority where development is proposed upstream of a river, wetland or fishery habitat, as detailed in Table 5 below.

Table 5: Clause 15 Assessment

| MATTER FOR CONSIDERATION | ASSESSMENT OF PROPOSAL |
|---|---|
| <i>The need to maintain or improve the quality or quantity of flows of water to the wetland</i> | A water management strategy is proposed for the site which aims to improve receiving water quality through Water Sensitive Urban Design, and utilise design elements to allow runoff from the proposed development to mimic the existing stormwater runoff regime (refer Section 8.1 for further discussion). |
| <i>The need to conserve the existing amateur and commercial fisheries</i> | As the proposed water management elements for the site will result in improved water quality and will not affect water flows, existing amateur and commercial fisheries will not be impacted by the development. |
| <i>Any loss of habitat which will or is likely to be caused by the carrying out of the development</i> | There will be no loss of habitat as a result of the development (refer Section 8.2 for detailed discussion). |
| <i>Whether an adequate public foreshore reserve is available and whether there is adequate public access to that reserve</i> | Not applicable |
| <i>Whether the development would result in pollution of the wetland or estuary and any measures to eliminate pollution</i> | The development will not result in the pollution of any downstream wetland or estuary, as detailed in the Water Cycle Management report at Appendix 7. |
| <i>The proximity of aquatic reserves dedicated under the Fisheries Management Act 1994 and the effect the development will have on these reserves</i> | There are no aquatic reserves located in the vicinity of the proposed development. |
| <i>Whether the watercourse is an area of protected land as defined in section 21AB of</i> | This provision no longer exists in the Soil Conservation Act. Measures to prevent soil |

| | |
|---|--|
| <i>the Soil Conservation Act 1938 and any measures to prevent soil erosion</i> | erosion are detailed in the Water Cycle Management Report and Erosion and Sediment Control Plan (which forms part of the Construction, Environmental and Waste Management Plan) at Appendix 7 and 9 respectively. |
| <i>The need to ensure that native vegetation surrounding the wetland or fishery habitat area is conserved</i> | There are no wetlands or fishery habitat areas within the vicinity of the site however the proposal involves extensive riparian planting and reforestation of littoral rainforest which will improve water quality and provide native flora and fauna habitat. |
| <i>The recommendations of any environmental audit or water quality study prepared by the Department of Water Resources or the Environment Protection Authority and relating to the river, stream, wetland, area or catchment.</i> | <p>The following agencies were consulted during the course of preparing the stormwater management strategy:</p> <ul style="list-style-type: none"> ▪ Department of Natural Resources ▪ Department of Primary Industries ▪ Northern Rivers Catchment Management Authority ▪ Ballina Council <p>Their recommendations have been incorporated into the Water Cycle Management strategy at Appendix 7.</p> |

Clause 29A Development Control – Natural Areas and Water Catchment

This clause relates to the clearing of vegetation in environmental protection and escarpment protection zones. As no clearing of vegetation in the environmental protection zones is proposed, this clause does not apply.

Clause 32B Development Control – Coastal Lands

This clause requires consideration of the NSW Coastal Policy 1997, the Coastal Management Manual and the North Coast Design Guidelines. The proposed development is consistent with the relevant provisions of these documents, as discussed in Section 7.2..

Clause 43 -- Residential Development

This clause identifies a number of matters for consideration by the consent authority in relation to residential development, as shown in Table 6 below.

Table 6: Clause 43 Assessment

| MATTERS FOR CONSIDERATION BY CONSENT AUTHORITY | ASSESSMENT |
|--|--|
| <i>It is satisfied that the density of the dwellings has been maximised without adversely affecting the environmental features of the land.</i> | The number of lots in the proposed development reflects a balanced approach designed to achieve a reasonable dwelling yield whilst at the same time protecting the environmental values of the site. The overall maximum yield for the site represents a 17% reduction in overall yield as compared to the previous proposal. The proposed yield of 45 lots enables the provision of large lots on the steeper and more prominent parts of the site. |
| <i>It is satisfied that the proposed road widths are not excessive for the function of the road</i> | The proposed road widths comply with Ballina Council's standards. |
| <i>It is satisfied that, where development involves the long-term residential use of caravan parks, the normal criteria for the location of dwellings such as access to services and physical suitability of land have been met.</i> | Not applicable |
| <i>It is satisfied that the road network has been designed so as to encourage the use of public transport and minimise the use of private motor vehicles</i> | Complies. Refer Traffic and Parking Assessment at Appendix 6. |
| <i>It is satisfied that site erosion will be minimised in accordance with sedimentation and erosion management plans.</i> | Complies. Refer Water Cycle Management Report at Appendix 7. |

7.1.6 Ballina Local Environmental Plan 1987

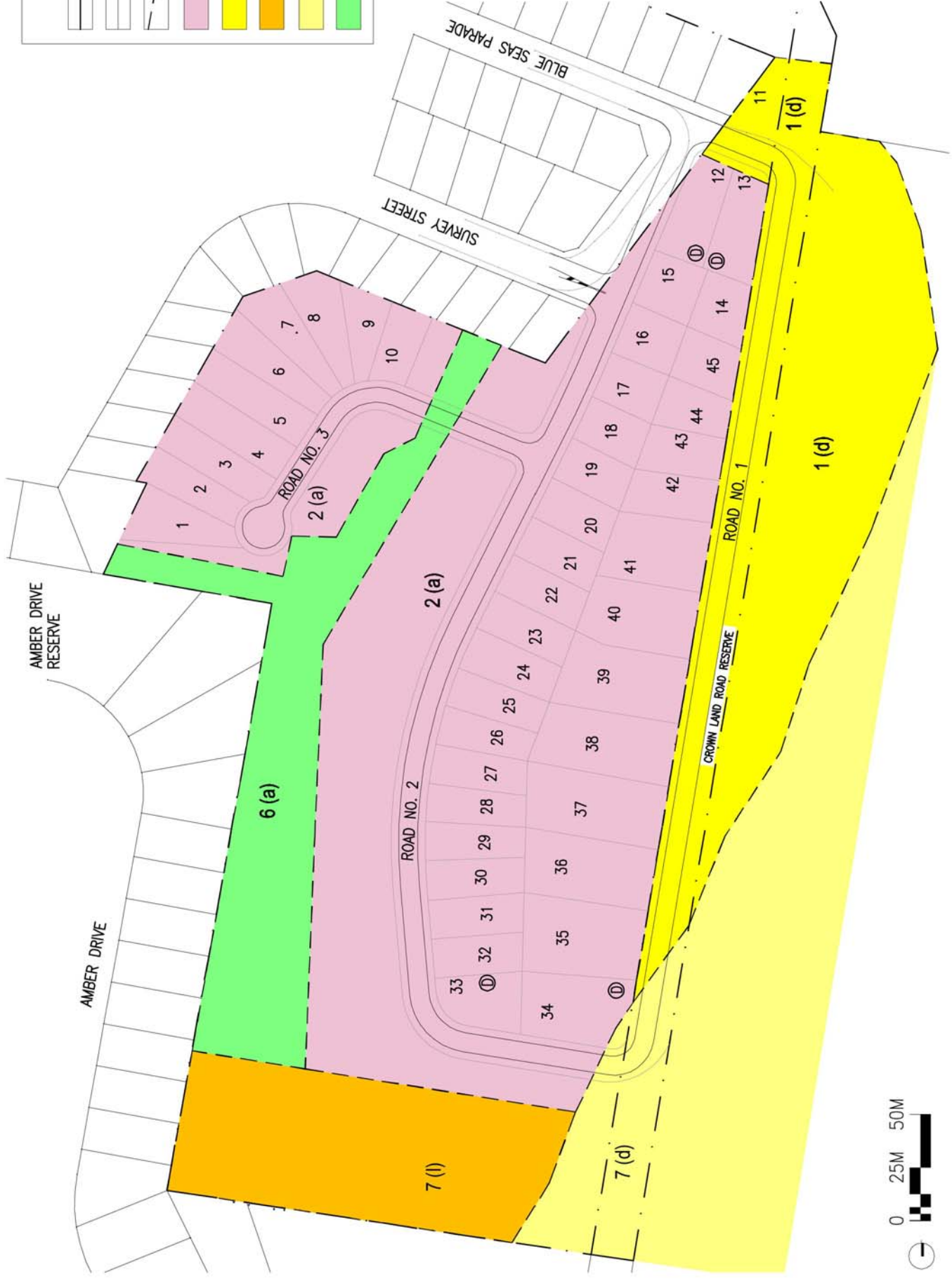
Zoning

The majority of the site is zoned 2(a) - Living Area under the Ballina LEP 1987, as shown in Figure 7. The northern and south eastern portions of the site are zoned 7(d) - Environmental Protection (Scenic/Escarpment) and there is a 7(l) - Environmental Protection Habitat zone located along the southern boundary of the site. Land zoned 6(a) - Open Space is located on the western side of the site.

The majority of the existing road reserve running along the eastern boundary of the site is zoned 1(d) – Rural Urban Investigation, with a small portion of the site to the north, shown as proposed Lot 11 on the subdivision plan, also designated 1(d).

An assessment of the development against the various zone objectives is provided in Table 7. No development is proposed in either of the environmental protection zones therefore an assessment against those zone objectives is not required.

| LEGEND | |
|--------|--------------------------------|
| | SITE BOUNDARY |
| | 20M TO OF BANK OFFSET |
| | LEP ZONING BOUNDARY |
| | LEP ZONE: 2(A) LIVING AREA |
| | LEP ZONE: 1(D) INVESTIGATION |
| | LEP ZONE: 7(L) ENV. PROTECTION |
| | LEP ZONE: 7(D) ENV. PROTECTION |
| | LEP ZONE: 6(A) OPEN SPACE |



PSL 3394 / PA05 Existing Zoning Plan

Scale 1:2500 @ A4

19 September 2006

FIGURE 7 - ZONING MAP

Table 7: Assessment Against Zone Objectives

| Proposed Use | Zone Objectives | Assessment of Proposal |
|---|--|--|
| Zone 1(d) Rural (Urban Investigation Zone) Road, Utility Installations, Residential Lot (Lot in 11) | <ul style="list-style-type: none"> ▪ To identify land which may be needed in the future and will be thoroughly investigated with respect to its suitability or otherwise for urban land uses and the environmental consequences associated with the plans released for urban purposes ▪ to regulate the subdivision and use of land so as to prohibit development which could prejudice the possible future release of land within this zone for urban purposes ▪ to ensure that the release of land for urban purposes, by rezoning, shall not take place unless – <ul style="list-style-type: none"> - urban structure planning has been completed by the council - the council reviews urban suitability investigations for individual planning units, and detailed land use allocations for each planning unit have been determined by the council - sufficient demand exists for the release of urban land - appropriate urban infrastructure and facilities are available to the land or can be provided to the land in a manner which does not create an unreasonable or uneconomic demand, or both, for the provision or extension of such services ▪ the secondary objective is to regulate the subdivision and use of land to permit development for agriculture and a range of other purposes complementary to the prime objectives, particularly tourist facilities, recreation establishments and recreation facilities, subject to these developments – <ul style="list-style-type: none"> - maintaining the semi-rural character of the locality - by their nature, being compatible with the possible urban development, particularly residential uses, of the land in the locality, in the future - not creating an unreasonable and uneconomic demands, or both, for the provisions or extension of public amenities or services ▪ the exception to these objectives is development of land within the zone for public works and services, outside the parameters specified in the primary and secondary objectives. | <p>Only a small portion of the site to the east is zoned 1(d) relating primarily to the road reserve. It is not envisaged that the construction of a road in this reserve will impact on the future urban use of the remaining land zoned 1(d).</p> <p>A small portion of the 1(d) land to the north of the site is proposed for subdivision for future residential development. Proposed lot 11 at the end of Blue Seas Parade is a logical extension to the existing row of houses and will not cause any adverse impacts as a result.</p> |

| Proposed Use | Zone Objectives | Assessment of Proposal |
|--|---|--|
| Zone 2(a) Living Area Zone Residential subdivision, roads, utility installations, open space | <ul style="list-style-type: none"> ▪ The primary objectives are -- <ul style="list-style-type: none"> - to regulate the subdivision and use of land to permit housing and ancillary development where the scale, type and traffic generating characteristics of the ancillary development are compatible with the character and amenity of the surrounding residential area - to permit development which is considered by the council to be an essential land use within the urban living area, but not including a shop (other than the general store) - to allow detailed provision to be made, by means of a development control plan, to set aside specific areas within the zone for varying housing densities as well as other associated urban and tourist facilities. ▪ The secondary objective is to allow a variety of housing types and designs and to encourage greater visual amenity by requiring site landscaping ▪ The exception to these objectives is development of land within this zone for public works and services, outside the parameters specified in the primary objectives. | <p>The proposed residential subdivision is of a similar scale and design to the adjoining existing residential neighbourhoods. A draft development control plan has been prepared (Appendix 4) which identifies appropriate design and landscape controls to ensure that housing types and designs achieve appropriate visual amenity and are of a compatible character to that of the surrounding housing.</p> <p>The open space land within the residential zone adjoins the 6(a) open space zone and is an essential land use within the urban living area. It is envisaged that the open space land within the residential zone will be dedicated to council and rezoned 6(a) in the future.</p> |
| Zone 6(a) Open Space Zone Children's playground, riparian buffer, rain gardens, roads and landscape planting | <ul style="list-style-type: none"> ▪ The primary objectives are -- <ul style="list-style-type: none"> - to identify land that is used or capable of being used for active or passive recreation purposes - to encourage the development of open spaces in a manner which maximises the satisfaction of the community's diverse recreation needs - to enable development associated with, ancillary to, or supportive of recreation use - to enable development that assists in meeting the social and cultural needs of the community. ▪ The exception to these objectives is development of land within this zone for public works and services, outside the parameters specified in the primary objectives. | <p>The range of uses proposed in the open space are all consistent with the objectives for the zone. The open space corridor will provide an attractive focal point for the community and assist in meeting local recreation needs.</p> |
| Zone 7(d) Environmental Protection (Scenic/ Escarpment) Road | <ul style="list-style-type: none"> ▪ The primary objectives are -- <ul style="list-style-type: none"> - to protect and enhance those in areas of particular scenic value to the Shire of Ballina; and | <p>A small portion of the Road No 1 is located within Zone 7(d). Roads are permissible in this zone provided that they comply with the zone objectives.</p> |

| Proposed Use | Zone Objectives | Assessment of Proposal |
|--------------|--|---|
| | <ul style="list-style-type: none">- to minimise soil erosion from escarpment areas and prevent development in geologically hazardous areas.▪ The secondary objective is to enable development as permitted by the primary and secondary objectives for Zone 1(b), except for development which could conflict with the primary objectives of this zone. | <p>The road will not be readily visible from important viewpoints and will be landscaped with low native species to ensure that it fits in with the coastal landscape (refer discussion in Section 8.8. regarding visual impact of proposal). Further, the road will be constructed in accordance with the recommendations of the Slope Stability Assessment (refer Appendix 10).</p> |

Permissibility

All of the proposed residential lots, apart from the proposed lot 11, are located entirely within the 2(a) zone. The proposed residential subdivision is permissible in this zone.

The proposed lot 11 is located on land zoned 1(d). The Minister's "in principle" approval is sought to the use of this lot for residential purposes however it is acknowledged that lot 11 will need to be rezoned to 2(a) – Living Area at the same time Council undertakes its review of LEP 1987.

The remaining use of the site for open space and environmental protection purposes is permissible in accordance with the various zonings. Similarly, roads and utility installations are permissible with consent.

Subdivision of Land

No minimum lot size is specified for subdivision of land within the residential zone.

The minimum lot size for subdivision of the land within the 1(d) zone is 40 ha. As noted above, one residential lot is proposed within the 1(d) zone (lot 11). The Minister's "in principle" approval is sought to the subdivision of this lot subject to future rezoning by Ballina Council. It is considered that this lot is a logical extension to the existing row of houses and will not cause any adverse impacts as a result.

Dual Occupancy

Clause 14 provides for attached dual occupancy development on land zoned 2(a). Four possible sites for dual occupancy development have been identified on the subdivision plan. These are proposed lots 12, 13, 33 and 34. Although it is feasible that dual occupancy development could occur elsewhere within the subdivision given the size of lots, it is considered appropriate that dual occupancy should be limited on the site to those lots which can best accommodate such development in a way that minimises visual impact.

Development within Zone 1(d)

Clause 23 states that a person shall not remove trees within Zone (1d) without the consent of the Council.

Part of the road reservation to the east of the site which is zoned 1(d) has been planted with native species. This vegetation will need to be removed to accommodate the future road for the subdivision. The impact of the vegetation removal is discussed in the Flora and Fauna Assessment at Appendix 8 and in Section 8.2 of this report.

Development within Zone 6(a)

Clause 26A identifies those matters for consideration by Council when considering development within land zoned 6(a). The matters for consideration are:

- (a) *The need for the proposed development on land*
- (b) *the likely impact of the proposed development on the existing or likely future use and character of the land*
- (c) *the need to retain the land for its existing or likely future use*

- (d) *whether any proposed building or use will be secondary and complementary to the existing or the proposed use of the land as open space*
- (e) *whether the proposed development will substantially diminish the use of the land for open space*
- (f) *whether the proposed development is compatible with the adjacent uses in relation to height, bulk, noise generation and any other aspects which the council considers may conflict with surrounding land uses*
- (g) *the proposed development's consistency with any plan of management relating to land.*

The proposed development involves the provision of a major open space spine which runs through the site. This park not only provides an attractive recreation space for local residents and a children's playground, but will also serve as an important riparian corridor which will assist in protecting the existing creek that runs through the site. The open space corridor is consistent with the objectives of the zone, does not involve the construction of any buildings and is compatible with the surrounding residential development.

7.1.7 Ballina DCP No 1 – Urban Land

Ballina DCP No 1 provides the detailed controls for development within the 2(a) zone. Under the DCP most of the site is identified within Control Plan Area P1 with a small portion also within Control Plan Area L2.

No specific development standards are identified for urban development within the P1 area. DCP 1 states that development standards will be determined after a full site analysis for the total area and consultation with Council has been undertaken.

In the case of development within the L2 area, a number of key development standards apply:

- Subdivision -- minimum lot size 600 square metres
- Building height -- two storey
- Site coverage -- maximum 67%
- Building line -- generally 6 m
- Dual occupancy -- 1 dual occupancy per lot greater than 400 square metres

The proposed subdivision design has been undertaken following a full site analysis and having regard to the nature of surrounding residential development. In general, the development standards applying in the L2 area have been considered an appropriate basis for both the subdivision design and future housing on the site. The draft DCP at Appendix 4 also incorporates the key development standards provided for the L2 area.

The proposed subdivision complies with the minimum lot size of 600m², with the exception of lot 11 which is 519m². This is considered reasonable as this area of land is effectively the residue between the Crown road reserve and the existing lots to the west. The existence of the escarpment land to the north and the Crown Road reserve to the east will ensure that this lot does not appear undersized in relation to the surrounding development.

A draft development control plan has been prepared (Appendix 4) which is intended to supplement the provisions of DCP 1 in relation to the subject land. It is envisaged that DCP 1 will be amended to incorporate the draft DCP. Further discussion regarding the provisions of the draft DCP is provided in Section 8.8.

7.1.8 Ballina DCP No 11 – Mosquito Management

The proposed development has been formulated to conform to DCP No. 11. The use of wetlands in the development has been avoided due to the mosquito risk posed to residents. The stormwater measures have included features which are mainly dry and only pond water for matters of hours not days, and are not permanent water bodies. Special drainage media has been incorporated into all the stormwater measures to promote infiltration and avoid longer term ponding of water which might promote mosquito breeding. The drainage system has been designed with reasonable grades to be free draining and to avoid accumulation of silt. Minor works would be undertaken in the drainage corridor where possible to minimise the extent of water ponding. Extensive works are not possible given flora and fauna constraints.

7.1.9 Ballina DCP No 13 – Stormwater Management

The objectives of DCP No. 13 – Stormwater Management are:

- no net increase in the average annual load of key stormwater pollutants compared with existing conditions;
- no net increase in peak discharge flowrates compared with existing conditions;
- minimum of industry best practice stormwater treatment to achieve the following reductions:
 - 80% suspended solids;
 - 45% total phosphorus and total nitrogen;
 - retention of litter greater than 5mm for flows up to 25% of the 1 year ARI peak flow;
 - retention of coarse sediment above 0.125mm for flows up to 25% of the 1 year ARI peak flows;
 - no visible oils for flows up to 25% of the 1 year ARI peak flow.
- for the construction phase, erosion and sediment controls sufficient to achieve:
 - 50 percentile suspended solid concentration of 50mg/L
 - treatment of 90% of daily rainfall events ie up to 4 month ARI.

The DCP promotes the use of a water sensitive urban design approach in the stormwater management strategy. It promotes use of stormwater management measures such as infiltration trenches, vegetation swales, infiltration basins and gross pollutant traps.

The proposed stormwater management strategy is based on a water sensitive urban design approach and would achieve the peak flow and water quality objectives. The inclusion of GPTs in the stormwater system would achieve the objectives for removal of the litter, coarse sediment and oils/greases.

7.2 RELEVANT STRATEGIC POLICIES

7.2.1 New South Wales Coastal Policy

Under Section 92 of the Environmental Planning and Assessment Regulation 2000, relevant provisions of the Government Coastal Policy must be considered for this project. An assessment of the proposal against the relevant provisions of this policy is provided in Table 8.

7.2.2 Coastal Design Guidelines for New South Wales

The Coastal Design Guidelines were released on 4 March 2003 by the Minister for Planning. The guidelines provide advice on a design framework for the public domain and private development in the coastal zone including residential subdivision, open spaces, the natural environment and buildings. The design guidelines address:

- The local hierarchy of settlements from coastal cities to hamlets
- Design principles for coastal settlements
- Implementation strategies.

The Guidelines define coastal villages as small centres with a population of up to 3,000 people. Coastal towns are small centres that vary in size with a population of 3,000 to 20,000 people. Lennox Head had a population of 5,300 people in 2001 with a projected population of some 7,000 people by 2006/7. Whilst the guidelines identify Lennox Head as a coastal village, the population suggests the centre is actually a coastal town.

Issues identified for the future development of towns include ribbon development that reduces the separation of settlements, degradation of coastal lakes and water quality, protection of heritage values and degradation of the town centres. Opportunities include creating functional urban areas in close proximity to areas of natural beauty, regeneration of degraded natural assets and the consolidation of future growth.

The guidelines outline a range of desired future character statements and design principles which are consistent with the proposed development at Coastal Grove:

- Accommodating growth in the urban boundary to ensure they have clearly defined and contained boundaries to avoid continuous linear urban development
- The development of compact settlement footprints interspersed with rural and natural settings.
- The urban settlement sits within the landscape maintaining public views
- Enhancing and upgrading the open space network
- Predominant building types in suburban areas are to include apartment buildings, town houses, semi detached and detached dwelling to provide housing choice. Opportunity is provided at Coastal Grove for some dual occupancy development (four dwellings) with the remainder providing detached housing.

Table 8: Coastal Policy Assessment

| Strategic Action Number | Provision | Response |
|--------------------------------|--|---|
| 1.1.8 | The implementation of SEPP 14 - Coastal Wetlands and SEPP 26 - Littoral Rainforest will continue | Refer the discussions in Section 7.1. |
| 1.2.7 | Threatening processes (such as clearing, noxious weeds, feral animals), being processes which threaten or have the capacity to threaten the survival or evolutionary development of species, populations or ecological communities, will be identified for coastal species in accordance with the Threatened Species Conservation Act 1995 and where possible controlled. Threat abatement plans will be prepared to assist the process. | A detailed assessment has been undertaken in relation to the impact of the proposal on threatened species and measures have been incorporated into the proposal to ensure the long-term protection of threatened species on the site. Refer Flora and Fauna Assessment at Appendix 8 and discussion in Section 8.2. |
| 1.3.2 | Problems of non-point source pollution (e.g. resulting from urban development) will be addressed through a range of actions including the setting of ambient water quality objectives; the development of stormwater management plans; the promulgation of environmental guidelines; and encouraging the adoption and implementation by industry and developers of "best management practices" for minimising pollution. | An assessment of the proposal's impact on water quality and quantity has been undertaken (refer Appendix 7), and a range of measures have been incorporated into the development to ensure best management practices for minimising pollution. |
| 1.3.8 | The discharge of contaminated stormwater to coastal waters will be minimised, with the aim being to ensure environmentally sound management of stormwater and prevent contamination in the future | Refer discussion in 1.3.2 of this table |
| 1.3.13 | The reuse of treated bio solids and effluent will continue to be investigated and promoted where ecologically sustainable. Trials of reuse in industry, agriculture and domestic uses will be extended as appropriate. | Provision has been made for dual reticulation to enable connection to recycled water supply in the future. |
| 2.1.3 | Physical and ecological processes and hazards will be considered when assessing development applications | A detailed assessment of physical and ecological processes and hazards has been undertaken for this EA. Refer Section 8 for details. |
| 4.1.4 | Planning instruments, development control plans and design guidelines will identify and consider significant views and vistas within and from towns, including street patterns and layout and items of heritage significance, in planning for towns. | An assessment of the proposal's impact on significant views and vistas has been undertaken for this EA by Hassell Pty Ltd and is provided under separate cover and discussed in Section 8.8 of this report. |
| 4.2.3 | Criteria and procedures to enable the identification of coastal sites of significance to Aboriginal heritage will be established | An assessment of the proposal's impact on Aboriginal heritage is provided at Appendix 14 and discussed in Section 8.7 of this report. There are no sites of Aboriginal significance identified on the site. |
| 6.1.1 | Coastal urban planning/settlement strategies prepared by the DUAP will ensure recognition of environmentally sensitive areas or natural and cultural heritage resources when identifying suitable areas for urban growth | Residential development of the site is in accordance with the Draft Far North Coast Regional Strategy prepared by the Department of Planning |
| 6.1.2 | Local councils will prepare urban land release/settlement strategies prior to major rezonings of rural land for urban expansion or will ensure that any such rezonings are consistent with endorsed regional settlement strategies. | Refer 6.1.1 of this table |
| 6.2.2 | The design of towns and buildings should have regard to energy efficient principles, for example compact town form related to transport networks, in order to reduce energy dependency | The proposed development incorporates a range of measures to ensure efficient water and energy usage, including solar passive lot design, provision for dual reticulated water supply for recycled water use, and water sensitive urban design measures. |

| | | |
|-------|---|---|
| 6.4.2 | Higher density residential development, in close proximity to coastal town centres, should be encouraged through the use of planning instruments and development control plans, to provide easy access to services and employment and create a sustained and stimulating town centre environment without strain on existing infrastructure. | The site is located on the edge of the Lennox Head village and is therefore less suited to higher density residential development than sites which are immediately adjoining the town centre. The subdivision has been designed to be consistent with the surrounding residential areas and in light of the environmental parameters of the site. |
|-------|---|---|

Coastal Grove has been identified in Ballina Council's Structure Plan as Area N, identified to accommodate future urban development. The site is also located within the Town and Village Growth Boundary of the draft Far North Coast Regional Strategy. The site is surrounded by low density residential development and supports future growth and development occurring in a compact manner on the North Coast. The open space corridor will be regenerated with weed removal and significant indigenous plantings including rainforest species and a water sensitive urban design approach for stormwater management. The future urban development of the site is therefore consistent with a range of local, regional and state policies and strategies.

In terms of open space, the guidelines aim for interconnected open space networks that

- Create identity and character
- Contribute to improved water quality
- Provide adequate setbacks to protect natural areas
- Provide amenity for residents
- Implement and improve water sensitive urban design

The proposed open space network for Coastal Grove achieves these objectives. Water quality will be improved prior to and upon entering the creek and downstream waters through a treatment train approach with landscaped swales, rain gardens and gross pollutant traps. The children's play equipment is located in an accessible location that can be utilized by not only future residents but existing residents. No children's play equipment is currently located in vicinity of the site. Pedestrian and cycle crossings are proposed along the open space corridor providing opportunities for play and exploration, particularly for children.

In terms of appropriate buildings for a coastal context, the guidelines note:

- Buildings are sensitively designed within their existing context so as to positively contribute to the local character in terms of height, footprint, massing, materials
- Reinforce the clarity of settlement structure
- Maintain consistent setbacks and street edge configurations

A Visual Assessment and Design Guidelines have been prepared for Coastal Grove that examine in detail the character of Lennox Head from suburban character, streetscapes through to housing and landscaping. A visual assessment has been carried out from public and prominent coastal areas (such as the Coast Road and Shag and Boulders Beaches) and from local streets. Site specific controls have been developed addressing building heights (with some single storey frontages), setbacks, dwelling design including colours, materials, roofs, garages and landscaping; and building heights / envelopes. The design guidelines seek to ensure that a consistent high quality infill residential subdivision is developed responsive to the urban coastal context.

7.2.3 Draft Far North Coast Regional Strategy

The Strategy has been prepared to manage expected growth in the region in a sustainable manner whilst at the same time protecting the region's environmental assets, cultural values and natural resources.

To accommodate population growth in the region the draft strategy proposes to contain housing development to within town and village growth boundaries. The suitability of land identified for future urban release in local council land release strategies was reviewed by the Department of Planning in accordance with the following principles:

- proximity to existing infrastructure, services and employment opportunities
- land suitability including environmental constraints
- protection of high-quality agricultural land
- protection of water quality in rivers and estuaries
- supporting the settlement hierarchy, including major centres
- maintaining the integrity and character of existing towns and villages.

The strategy contains a series of maps showing town and village growth boundaries, including those relating to the Lennox Head village.

The subject site is identified as part of the existing urban footprint for Lennox Head. As such it is within the area identified as suitable for residential development, subject to environmental assessment.

7.2.4 Lennox Head Community Aspirations Strategic Plan

The Lennox Head Community Aspirations Strategic Plan was adopted in November 2002 and was prepared in close consultation with the Lennox Head community. It reflects the ambitions of the community and is intended to be an umbrella document which provides guidance for future council activities.

The Lennox Head community identified a number of key planning issues. Consideration of the proposed development in relation to these key planning issues is provided below.

- *The community places a very high value on the existing "lifestyle" and "village atmosphere" of Lennox Head and wishes to ensure that these qualities are protected and enhanced in the future.*

The lifestyle and village atmosphere for Lennox will not be adversely affected from the proposal. The subdivision has been designed to be consistent with the surrounding neighbourhood, and the incorporation of a significant open space/environmental corridor will protect those elements of value to the local community.

- *Lennox Head is located in close proximity to a number of important environments which need to be adequately protected into the future. Many of these environments are degraded and require restoration.*

The important environments on the site, that is, the littoral rainforest and riparian corridor, will be protected as part of the development. At

present the riparian corridor in particular is degraded and the proposed landscaping and restoration works will substantially improve their long-term viability.

- *There are concerns about significant future population growth in Lennox Head and its impact on the village atmosphere and environment currently enjoyed. There are also concerns regarding the rate of population growth in the area.*

The Draft Far North Coast Regional Strategy has been prepared in response to concerns about population growth on the North Coast. Limits on the expansion of Lennox Head have been determined as discussed in 7.1.12 above. The subject site is located within the identified urban footprint.

- *Community infrastructure, such as playing fields and community halls, are inadequate to meet the current needs of the community.*

The proposed development incorporates an open space spine, including a children's playground, which will help in meeting the local communities open space needs. The area to be dedicated as open space is notably larger than the area within the site zoned for that purpose.

7.2.5 Lennox Head Structure Plan

The Lennox Head Structure Plan provides the framework for the development of new urban release areas in the Lennox Head district. The need for the structure plan was identified in the Lennox Head Community Aspirations Strategic Plan.

The Lennox Head Structure Plan outlines Council's broad strategy for growth and development of Lennox Head. All development of new release areas in the Lennox Head need to comply with the framework established by the Structure Plan.

The subject site is identified as "Area N" under the Structure Plan. The Structure Plan notes that the site is identified for residential development and that any future development of the site will need to comply with the development principles contained in the Structure Plan. An assessment of the development proposal against these principles is provided in Table 9 below.

Table 9: Assessment Against Structure Plan Principles

| DEVELOPMENT PRINCIPLES | ASSESSMENT |
|--|--|
| <u>Housing Design</u> <ul style="list-style-type: none"> ▪ provide for range of housing types and densities ▪ provide for housing choice, including a range of housing densities, designs and construction materials ▪ provide for a style and scale of development which is sensitive to the character, climate and topography of the area ▪ promote "energy smart" design and construction of dwellings and subdivisions | <p>The proposed subdivision has been designed to take account of the sloping topography, with larger lots proposed for the steep areas on the site, and the majority of lots concentrated on the lower, more level areas of the site. In addition, the majority of lots have been oriented to maximise solar access for future dwellings.</p> <p>A draft development control plan has been prepared (Appendix 4) to guide the future design and siting of housing on the site.</p> |
| <u>Transportation and Walkability</u> <ul style="list-style-type: none"> ▪ plan for a settlement pattern which | <p>The proposed subdivision has been designed to allow for ready access by walking, cycling</p> |

| DEVELOPMENT PRINCIPLES | ASSESSMENT |
|---|--|
| <p>encourages walking, cycling and public transport usage where practicable</p> <ul style="list-style-type: none"> ensure that road infrastructure is planned having regard to future population, employment locations, the environment and community views provide for improved access to, and interpretation of, the beach and foreshore areas. | <p>and public transport, both within the subdivision and between the site and adjoining residential areas. A pedestrian/cycle path is to be provided along the eastern boundary of the open space spine which will connect in to Sea Mist Place by means of a right-of-way. Another pedestrian pathway is to be provided between Road No 3 and Road No 2, crossing the open space.</p> <p>The roads within the subdivision have been designed to comply with Council's standards and connect into both Blue Seas Parade and Survey Street. In addition Road No 1 has been designed to extend to the south in the future if required.</p> <p>The issue of providing access to the beach and foreshore areas from the site was investigated, however it was found not to be feasible. Further discussion on this issue is provided in Table 8.</p> |
| <p><u>Visual Character</u></p> <ul style="list-style-type: none"> integrate future development with the landscape rather than substantially modify the landscape to accommodate development protect views and vistas to and from prominent ridge lines, headlands, beaches and other coastal areas by maintaining heights, bulk, scale, materials and detailing consistent with the local context recognise the close relationship of the urban areas of Lennox Head to nearby coastal, rural and environmental landscapes. maintain Lennox Head as a place where the natural environment dominates in terms of use, environmental systems and vegetation types. recognise the desire for Lennox Head to remain physically and visually separate from other urban areas design new development in a manner which is sympathetic to the privacy and amenity of existing residents. | <p>The subdivision has been designed to minimise modification to the landscape by cut and fill or by removal of vegetation. Instead, larger lots are proposed in those areas that are more visually prominent and extensive landscaping is proposed both within the open space corridor and road reserves to soften the impact of the development.</p> <p>A detailed analysis of the impact of the proposal on views and vistas from the coast has been undertaken by Hassell Pty Ltd and is provided under separate cover. The analysis indicates that there will be minimal impact on views from the coast as a result of the development. In addition, the draft development control plan is intended to ensure that future housing bulk, scale and design is complementary to the local context.</p> <p>The privacy and amenity of existing residents has been taken into account in the design of the subdivision with the majority of lots located on the eastern side of the open space spine away from existing residents. The number of lots on the western side of the open space spine has been reduced from previous schemes and all lots are of sufficient size to ensure no adverse impacts on amenity or privacy of adjoining residents in Survey Street.</p> |
| <p><u>Community Involvement</u></p> <ul style="list-style-type: none"> provide for active and timely community consultation in council decision-making processes | <p>As noted in Section 6, the community has been consulted on the project. Further opportunity for community comment will be provided once the environmental assessment is exhibited.</p> |
| <p><u>Environment</u></p> <ul style="list-style-type: none"> ensure that future urban development does not impact negatively on environmental qualities of the area protect and enhance high conservation habitats by providing appropriate buffers between such areas and urban development and provide corridors linking these ecosystems maintain and enhance habitat for native | <p>A detailed assessment of the environmental impact of the proposed development is provided in section 8. This assessment includes consideration of flora and fauna, water quality and quantity, site stability and contamination, noise, bushfire hazard and the like.</p> <p>In relation to signage, no signage is proposed on the site.</p> |

| DEVELOPMENT PRINCIPLES | ASSESSMENT |
|---|------------|
| <p>fauna and flora -- particularly that which is designated endangered, vulnerable or rare, or is otherwise protected</p> <ul style="list-style-type: none"> ▪ maintained ground, water and air quality ▪ maintain low ambient noise levels ▪ maintain an environment which is not deleteriously affected by inappropriate signage and other forms of visual pollution ▪ retain existing native vegetation ▪ protect and enhance public health and safety by providing appropriate buffers between urban development and areas identified as being key mosquito habitats or at high risk of bushfire hazard ▪ manage new development in a manner which ensures that it does not significantly increase stormwater run-off or lead to contamination of groundwater ▪ recognise that land may have attributes which limit or preclude its suitability for a range of land uses. These constraints include acid sulphate soils, bushfire hazard, flooding, proximity to land or waterways having significant environmental values, slope stability, soil suitability and susceptibility to airport noise or other such impacts. | |

8 KEY ISSUES

This section of the report has been structured to address the following key issues as detailed in the Director- General's EA Requirements, as follows:

- impacts on waterways, stormwater management and water quality, including erosion and sediment control
- flora and fauna impacts, including aquatic habitats
- geotechnical
- bushfire
- traffic
- contamination and remediation
- Aboriginal and cultural heritage
- landscaping and revegetation/rehabilitation
- design, visual impacts and design quality principles
- noise
- provision of public services and infrastructure
- construction management

8.1 IMPACTS ON WATERWAYS, STORMWATER MANAGEMENT AND WATER QUALITY

A Water Cycle Management Report has been prepared for the development by Patterson Britton and Partners (September 2006) and is provided at Appendix 7. A summary of the report is provided below.

8.1.1 Existing Site Conditions

The site is located within a minor valley falling generally to the south. The drainage line at the base of the valley conveys stormwater runoff from both the site and external subcatchments.

The site receives untreated stormwater runoff from the external residential areas around its boundary. This runoff is discharged from pipes at the site boundary and has caused extensive erosion and formation of a large gully on the western slope. This erosion would cause significant sedimentation in downstream creek lines leading to destruction of aquatic habitats and increased bank erosion.

There are a number of sub catchments which contribute to stormwater runoff through the site. These sub catchments are shown on the plan at Appendix B to the Water Cycle Management Report. Stormwater runoff from the external subcatchments and the site contribute runoff that is conveyed in the existing drainage corridor traversing the site.

There are two existing piped outlets that discharge to the drainage corridor, one which discharges to the site through a stormwater easement from the southern of Survey Street, and another which discharges flow to the northern end on the site. Flow that exceeds the existing pipe networks capacity would flow overland to the existing overland flow path on the site.

8.1.2 Water Cycle Management

The design of the water components of the development has been based on an integrated water cycle management approach in order to promote an environmental sustainable outcome for water. The water cycle management approach deals with all aspects of the cycle including stormwater runoff, groundwater, potable water and sewage.

The aims of the water cycle management strategy formulated for this development to achieve a sustainable outcome are to:

- maintain peak flow rates of stormwater runoff as the same as for existing conditions – this would ensure no adverse impacts on flooding behaviour downstream and on bank stability in drainage lines;
- mimic the existing stormwater runoff frequency as closely as possible to control impacts on creek stability and aquatic habitats in downstream creeks;
- maintain or improve stormwater runoff water quality to contribute to the long term improvement in receiving water quality;
- maintain infiltration quantities to groundwater in order to maintain contribution to baseflows in the downstream creeks and aquatic habitats;
- minimise potable water use to reduce the pressure on the limited water resources and extraction of water from existing water bodies;
- maximise reuse of recycled water (either effluent or stormwater) to minimise use of potable water and discharge of effluent to water bodies.

8.1.3 Stormwater Management Strategy

The proposed stormwater management strategy has been based on principles of water sensitive urban design with a treatment train approach which emphasises control of runoff from the source to the outlet.

A number of stormwater run-off treatment measures have been proposed. These include:

- Infiltration trenches
- Bioretention/vegetated swales
- Gross pollutant traps
- Raingardens/bioretention basins

The stormwater run-off treatment train consists of:

- Run-off from the lots and the road is initially directed to either an infiltration trench or vegetated swales in which treatment and infiltration occurs;
- overflow from the infiltration trenches is directed to the vegetated swales which further treat the runoff and promote infiltration;
- flow from the swales is treated in gross pollutant traps;
- flow is then treated in raingardens which also promote infiltration;

- excess flow overtops the basin along a long weir to promote distributed discharge (rather than concentrated discharge) into the drainage corridor.

The stormwater treatment measures have special drainage media underlying the surface to promote infiltration for storage and treatment. The measures do not rely on infiltration into the surrounding existing subsoil for their performance. However, the storage of low flows will provide further opportunities for infiltration to occur into the subsoil.

Further details regarding the stormwater management strategy is provided in the Water Cycle Management Report.

8.1.4 Stormwater Quality

As with the stormwater management strategy, measures to treat stormwater quality will reflect best practice water sensitive urban design. The water quality aspect of this strategy includes measures such as gross pollutant traps, raingardens/bioretention basins, bioretention/vegetated swales and infiltration trenches.

The water cycle management report provides details of water quality modelling that has been undertaken for the proposed development. The report shows that water quality targets to improve runoff water quality from the site will be readily met through the implementation of the proposed water treatment strategy. The expected improvements when compared to the existing state are:

- Total Suspended Solids (TSS) – 64% reduction
- Total Phosphorus (TP) – 72% reduction
- Total Nitrogen (TN) – 32% reduction

These expected reductions would therefore contribute to a long term improvement in receiving water quality.

DEC require that best management practice stormwater treatment measures are implemented in development. The DEC targets require a minimum reduction in the urban runoff pollution load (comparison of developed state with and without treatment). These targets and the performance proposed in the development are presented in Table 10. The proposed runoff management measures achieve reductions in runoff pollutant loads better than the DEC best management practice targets.

Table 10: Annual Pollutant Export Loads and DEC Targets

| | TSS | TP | TN |
|-------------------------------|----------------|----------------|----------------|
| | kg/year | kg/year | kg/year |
| Development without Treatment | 12,800 | 26 | 231 |
| Development with Treatment | 2,610 | 9 | 119 |
| % Reduction | 80 | 65 | 48 |
| DEC Targets | 80 | 45 | 45 |

Measures to manage runoff water quality during the construction phase are discussed in Section 8.1.

Monitoring of runoff water quality will be undertaken during construction and for two years after construction of the subdivision to verify the veracity of the proposed controls.

8.1.5 Runoff Quantity and Flooding

The proposed development would include stormwater runoff retention and detention measures to allow existing runoff regimes to be mimicked as closely as possible in the post development conditions. This would be achieved by using a combination of infiltration trenches located on each lot and extended detention in swales and on raingardens.

It is envisaged that during small storm events surface runoff from each lot would be captured in the proposed infiltration trenches and infiltrate into perforated drainage pipes. Flow would then be directed to the street drainage system which would discharge to the proposed rain gardens. In addition to stormwater treatment, the rain gardens would perform a second function as an infiltration and detention basin, allowing storm flows to pond to approximately 500mm depth. Runoff from some of the roads would drain to swales which would also incorporate temporary ponding or detention storage.

Runoff from the lower road would be captured in swales further promoting infiltration and subsurface flow. The combination of these measures would promote infiltration thereby assisting to mimic the existing runoff frequency. This would have significant beneficial impacts for the hydrology, stability of the creek banks and the response of the aquatic fauna, both on and downstream of the site.

The pipe and overland flow path components of the stormwater drainage system would be designed to provide safe access by pedestrians and vehicles during a severe storm (up to 100 yr ARI). Also, a flood evacuation route would be available in extreme floods up to the PMF event.

The pedestrian and cycleway crossing of the drainage corridor would be designed in accordance with the DNR Guidelines for the Design and Construction of Paths and Cycleways along Watercourses and Riparian Areas and the DG's requirements.

The site is relatively steep in nature and located high in the catchment. The closest major water body is the Pacific Ocean which is approximately 1 km east of the site. Therefore there will be no regional flooding effects on the site, and hence local rainfall events will govern flood levels across the site. All of the proposed lots will be flood free during the 100 year ARI storm event.

The Probable Maximum Flood (PMF) levels were estimated to ensure that residents located on the western portion of the site would have safe egress during extreme storm events. It has been estimated that during the PMF Road 3 would not be overtopped and therefore all residents would have safe egress from the site even during extreme storm events such as the PMF events.

The proposed development will incorporate detention storage to ensure that peak flows in storms are maintained at or below those for pre-existing conditions. As such, the peak flows and flood levels downstream of the site will remain unchanged and there will be no adverse impacts on downstream properties.

Further details regarding run off quantity and flood management are provided in the Water Cycle Management Report.

8.1.6 Erosion and Sediment Control

During the construction phase, the runoff water quality would be managed by implementation of control measures in conformance with the *Managing Urban Stormwater: Soils and Construction* (NSW Landcom, March 2004) also known as "The Blue Book". This guideline represents industry best practice and is listed as an appropriate technical and policy guideline in the DG's requirements. The construction phase runoff water quality control measures are discussed in detail in the Patterson Britton Partners *Construction Environmental and Waste Management Plan*, Issue 2 (September 2006) provided at Appendix 9.

The Water Cycle Management Report contains an Erosion and Sediment Control Plan for the development.

Specific controls have been incorporated into the Erosion and Sediment Control Plan to protect the hairy-joint grass in the "ecological polygon" in the riparian corridor and the rainforest trees at the southern boundary. These controls include fencing, earth bund to prevent entry of surface flows, a silt fence and hay bales to filter any flows beyond the bund. No earth works would be undertaken in the riparian corridor in the vicinity of the "ecological polygon". Surface runoff from the eastern side of the riparian corridor adjacent to the "ecological polygon" will be diverted to downstream of this polygon.

8.2 FLORA AND FAUNA IMPACTS

A Flora and Fauna Report has been prepared by Peter Parker Environmental Consultants for the Coastal Grove development and is provided at Appendix 8. The Flora and Fauna Report has specifically addressed the requirements issued by the Director-General. The following is a summary of the key findings of the report.

8.2.1 Surveys

A number of surveys were undertaken for the report. A flora survey was previously undertaken on the site on 6 March 2003. The site was revisited in relation to the subject proposal on the 1 June 2006 where the survey concentrated along the banks of the unnamed creek for the vulnerable hairy-joint grass, *Arthraxon hispidus*. More intensive surveys were undertaken on 14 and 15 August 2006. These surveys included traversing the site and adjoining areas of conservation interest, including the Amber Drive public reserve, the littoral rainforest fronting Lennox Head, the littoral rainforest south of the site and areas at the site which had been reafforested with littoral rainforest species. In addition to these surveys, vegetation was mapped over a coloured aerial photograph, supplied by Council.

A fauna trappings survey was not undertaken given the degraded nature of the habitat on the site and the availability already of suitable form of database records.

8.2.2 Vegetation Associations and Communities

Six vegetation associations in four communities were recorded. An additional association comprising of rainforest reafforestation plantings, which were planted approximately 5 years ago, was also recorded and mapped (refer Figure 3 in Flora and Fauna Report). The vegetation associations are shown in Table 11.

Table 11: Vegetation Associations

| | |
|----------------------------|---|
| Littoral rainforest | ▪ <i>Guioa semiglauc</i> (guioa), <i>Cupaniopsis anarcardioides</i> (tuckeroo), mid-high microphyll littoral rainforest |
| Riparian complex | ▪ <i>Wedelia trilobata</i> (Singapore Daisy), <i>Eleocharis equisitina</i> (a spike-rush), <i>Paspalum distichum</i> (water couch) +/- low to mid-high closed grassland |
| Sedgeland | ▪ <i>Eleocharis equisitina</i> (a spike-rush), <i>Periscaria decipiens</i> (slender knotweed), low to mid-high close to sedgeland |
| Grassland | <ul style="list-style-type: none"> ▪ <i>Stenotaphrum secundatum</i> (buffalo grass), low closed grassland ▪ <i>Pennisetum clandestinum</i> (kikuyu), <i>Paspalum dilatatum</i> (Paspalum), low closed grassland ▪ <i>Axonopus affinis</i> (broad-leaved carpet grass), <i>Chloris gayana</i> (Rhodes grass), <i>Digitaria dactylon</i> (Queensland blue couch), low closed sod grassland |
| Reafforestation | ▪ Littoral rainforest plantings emphasising locally sourced rainforest species along the western boundary and rainforest species in combination with Coast Banksia along the eastern boundary |

Two major areas of littoral rainforest are located on the site, the most significant of which is the escarpment littoral rainforest identified under SEPP 26. In addition a remnant area of littoral rainforest known as the Amber Drive Public Reserve adjoins the site mid-way along its western boundary. This reserve is particularly significant as it contains the endangered littoral rainforest species coastal fontainea, *Fontainea oraria*. Other threatened species located within this reserve include the vulnerable rough-shelled bushnut, *Macadamia tetraphylla*. Substantial reafforestation works buffer the proposed development from this remnant area although weed control is required in the vicinity of the reserve.

Extensive reafforestation plantings of littoral rainforest origin have been undertaken at the site. They are more than five years old and contain a species mix which is characteristic of local rainforest remnants.

The riparian complex is characterised by the presence of a number of grasses, sedges as well as environmental weeds. The vulnerable hairy-joint grass, *Arthraxon hispidus*, was recorded in the riparian complex on the western bank of the unnamed creek in the south of the site. This species occupied a small ecotone between the grassland and the sedgeland where the soil was damp but not saturated (approximately 3.6m x 3.3m).

A small area of sedgeland was recorded where the unnamed creek forms a gently sloping pool in the south of the site. Sedgeland extends up-slope to the east where a continuous supply of spring fed water provides suitable soil moisture conditions.

The upper slopes of the site generally contain buffalo grass. This exotic pasture species forms a thick dense canopy which retards the regenerative ability of other native or exotic plants. It is of little conservation value.

8.2.3 Fauna

A number of common fauna species were recorded on the site during survey work. These included the eastern grass skink, *Lampropholis delicate*, the eastern brown snake, *Pseudonaja textiles*, the common froglet, *Crinia signifera*, the cane toad, *Bufo marinus*, eastern rosella, *Platycercus eximius*, rainbow lorikeet, *Trichoglossus haematodus*, cattle egret, *Egretta ibis*, and the straw-necked ibis, *Threskiornis spinicollis*.

Few mammals are expected to occur at the site due to the degraded nature of the habitat and continual maintenance. However, flying foxes are expected to periodically utilise flowering trees and shrubs and insectivorous microbats are expected to forage over the site opportunistically. Based on local records, vulnerable bats which may occur at the site include the grey-headed flying fox, the black flying fox, the common blossom bat and the little bent-wing bat.

8.2.4 Threatened Species

A number of threatened plant species were recorded both at the site and in the immediate environs. Those recorded at the site include hairy-joint grass, rough-shelled bushnut, and duobby and those recorded in adjoining lands include coastal fontainea, hairy-joint grass, rough shelled bushnut, xylosma, stinking cryptocarya and arrowhead vine.

Although no threatened fauna species has been recorded on the site, a number of threatened species are considered likely to periodically occur amongst the landscape species planted at the site, or in the case of the little bent-wing bat, forage opportunistically over the site.

Section 6 of the Flora and Fauna Report includes an assessment of the impact of the development on threatened species, populations or ecological communities, or their habitats, as required by the Threatened Species Conservation Act 1995 and the EP&A Act. The assessment concludes that there would be no significant effect on threatened species, populations or ecological communities or their habitats due to the conservation and management of their habitats. Conservation and management measures are discussed below.

Coastal fontainea

A buffer of over 50 m will be provided between coastal fontainea known from Amber Reserve and the closest proposed house on Lot 1. This buffer will meet the requirements of the Department of Environment and Conservation. Currently 15m of littoral rainforest plantings adjoin Amber Reserve on the northern side and it is proposed that additional littoral rainforest plantings of approximately 20 m in width will be added to this area.

To counteract the problem of weed invasion into the reserve, a two-year program of bushland maintenance and weed control is proposed.

Hairy-joint grass

A small area of hairy-joint grass containing 24 stems was recorded in the riparian corridor. No development is proposed in this location apart from reafforestation. However as livestock is intended to be removed from the site it is possible that this will result in a greater spread of exotic grasses and weeds. To avoid weed invasion it is proposed that:

- the current mowing regime will be maintained in the 5 m grass strip located between hairy joint grass and littoral rainforest plantings and all mulch will be removed from the vicinity of hairy joint grass.
- a two-year program of weed control (particularly aggressive grasses) is proposed. A two-year monitoring program is also proposed.

A surveyed polygon has been identified in the Flora and Fauna Report which will serve as a buffer to hairy-joint grass where no bank shaping or works are proposed.

Rough shelled bushnut and durobby

Both these species are confined to the planted area which will be buffered by further littoral rainforest plantings as identified in the landscape plan. Vegetation within this reserve is well buffered both spatially and by reafforestation plantings. Moreover, additional littoral rainforest species will be densely planted and weed control will be undertaken by experienced bushland regenerators to further protect this rainforest remnant.

Threatened fauna

As noted above, no threatened terrestrial fauna have been recorded on the site although there are vulnerable that species may opportunistically use the flowering trees and shrubs on the site. The assessment in the Flora and Fauna Report notes that none of the bat species will be impacted by the proposal as no potential habitat will be removed or disturbed.

The recommendations in the Flora and Fauna Report regarding conservation and management measures for flora and fauna have been incorporated into the Draft Statement of Commitments in Section 9 of this report.

8.2.5 Vegetation Removal

The area of planting which was undertaken some five years ago along the site's eastern boundary will need to be substantially removed to accommodate the new road. The species planted in the strip are dominated by coast banksia, *Banksia integrifolia* var. *integrifolia*, sweet pittosporum, *Pittosporum undulatum*, blue lilly pilly, *Syzigium oleosum*, tuckeroo, lantana, bitou bush, *Chrysanthemoides monilifera* subsp. *rotundata* and kikuyu.

This area of planting will be compensated for by extensive reafforestation and landscaping adjacent to the littoral rainforest remnants. The importance of the eastern reafforestation plantings as habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the localities is negligible.

Consent under the Native Vegetation Act 2003 is not required as this vegetation falls under the definition of "regrowth" which is exempt.

8.2.6 Environmental Protection and Biodiversity Conservation Act, 1999 (EPBC Act)

An assessment of the proposed development in relation to the EPBC Act is provided in the Flora and Fauna Report. The assessment concludes that the Coastal Grove proposal does not significantly affect World Heritage properties, wetlands of international importance, listed threatened or endangered species, any endangered community, any listed migratory species, any Commonwealth land and any bilateral agreement between the State and Commonwealth. Thus, the proposal does not need referral to the Commonwealth.

8.2.7 Aquatic Habitats

The Director-General's Requirements required consultation with the Department of Primary Industry regarding appropriate buffers to the watercourse. Any requirements under the Fisheries Management Act 1994 are also required to be addressed.

The Department of Primary Industry was consulted, as detailed in Section 6. The Department advised that it had no objection to the proposed subdivision.

An assessment of the proposal in relation to the Fisheries Management Act is provided in the Flora and Fauna Report. The assessment indicates that the proposed development will not affect any relevant listed threatened species or result in an increase in any of the listed threatening processes.

8.3 SLOPE STABILITY (GEOTECHNICAL ASSESMENT)

A Slope Stability Assessment has been carried out by Coffey Geosciences Pty Ltd for the proposal. A copy of the report is provided at Appendix 10. A summary of the key findings of the report is provided below.

Coffey has previously conducted investigation and assessment work which included or was specific to the site of the proposed subdivision. This work was conducted in 1986, 1999 and 2002. In addition, Coffey provided expert witness and geotechnical consultancy services in 2001 and 2002. A discussion of the previous work is provided in their report at Appendix 10.

8.3.1 Existing Surface and Subsurface Conditions

Topographically, the site lies in a broad, north-south trending valley, open to the south and bounded on the east, west and north side by low ridges. Hill slopes on the ridges are generally moderate, varying from around 18° to 20° on the upper slopes to 12° to 15° on the lower slopes.

Localised areas of rock outcrop were identified along the bed of the creek and scattered basalt cobbles were noted on the upper slopes of the ridges.

The gently sloping area between the base of the lower slopes and the creek were noted to be wet and boggy, with widespread surface water and ground water seepage. Groundwater seepage was inferred where surface water, wet/boggy surface soils and variations in vegetation were observed in the mid-slopes of the hills near proposed lots 27 to 32 on the eastern side of the creek.

Localised soil erosion/scour was evidence near the outlet of a stormwater drain on the western side of the site near proposed lots one and two, and nearer pump station/stormwater drain out as near the northern end of the site.

The generalised subsurface conditions observed on the site are shown in Table 12.

Table 12: Summary of Subsurface Conditions Observed In Test Pits

| Unit | Observed Thickness | Description |
|---------------|--------------------|---|
| Topsoil | 0.1 to 0.4 | Generally comprising Gravelly Silt Clay, high plasticity, red-brown and grey, typical unit thickness observed was 0.2m. |
| Residual Soil | 0.7 to >3 | Gravelly Clay, high plasticity, fine to coarse grained gravel, orange-brown and grey, extent of gravel depends on the topographic location on site, refer to geological descriptions in report. |
| Bedrock | - | Basalt, highly weathered, low to medium strength, highly to slightly fractured, fine to cobble size particles in matrix, red-brown and grey-brown, refer descriptions in report. |

Groundwater inflows were observed in lower sections of the site.

8.3.2 Slope Stability and Hazards

The Coffey Geosciences report notes that the assessment of risk should consider two factors, namely the likelihood of an event occurring and the consequences should it occur. In terms of slope stability risk, the likelihood and consequences of instability would depend on the nature, location and type of the development at the site. Without details of the proposed developments (e.g. specific locations and types of residential housing and details of site earthworks such as the location and depth of excavations, filling), the assessment of slope stability is limited to consideration of hazards for the site in its undeveloped state, and an assessment of the relative likelihood of occurrence of these hazards.

The consideration of likelihood of slope instability is based on a number of factors including slope angle, subsurface conditions, groundwater levels and the existence of indicators of past instability. Coffey has divided the site into three zones, as follows:

- **Zone 1 (Lots 9-18 and 45):** Areas of flatter ground along the base of the valley and on the lower slopes of the ridges. Slope angles in this area are generally less than about 10° to 12°. Previous reports indicated wet boggy surface soils but with no evidence of slope instability.
- **Zone 2 (Lots 1-8, 19-33 and 42-44):** Areas of steeper slopes above the valley floor forming the middle slopes of the ridge lines on the eastern and western sides of the valley. Slope angles in this zone are typically in the range of 15° to 18°. Groundwater seepages were evident in parts of this zone and there are some signs of soil creep. No evidence of significant past instability was observed in this zone.
- **Zone 3 (Lots 34-41):** Areas of steep slopes on the upper areas of the eastern ridge with slope angles typically in the range of 18° to 22°. No water inflows were observed however the ground surface in this area shows some more widespread signs of soil creep. No evidence of significant past instability was observed.

These three zones are shown in Figure 8 below.

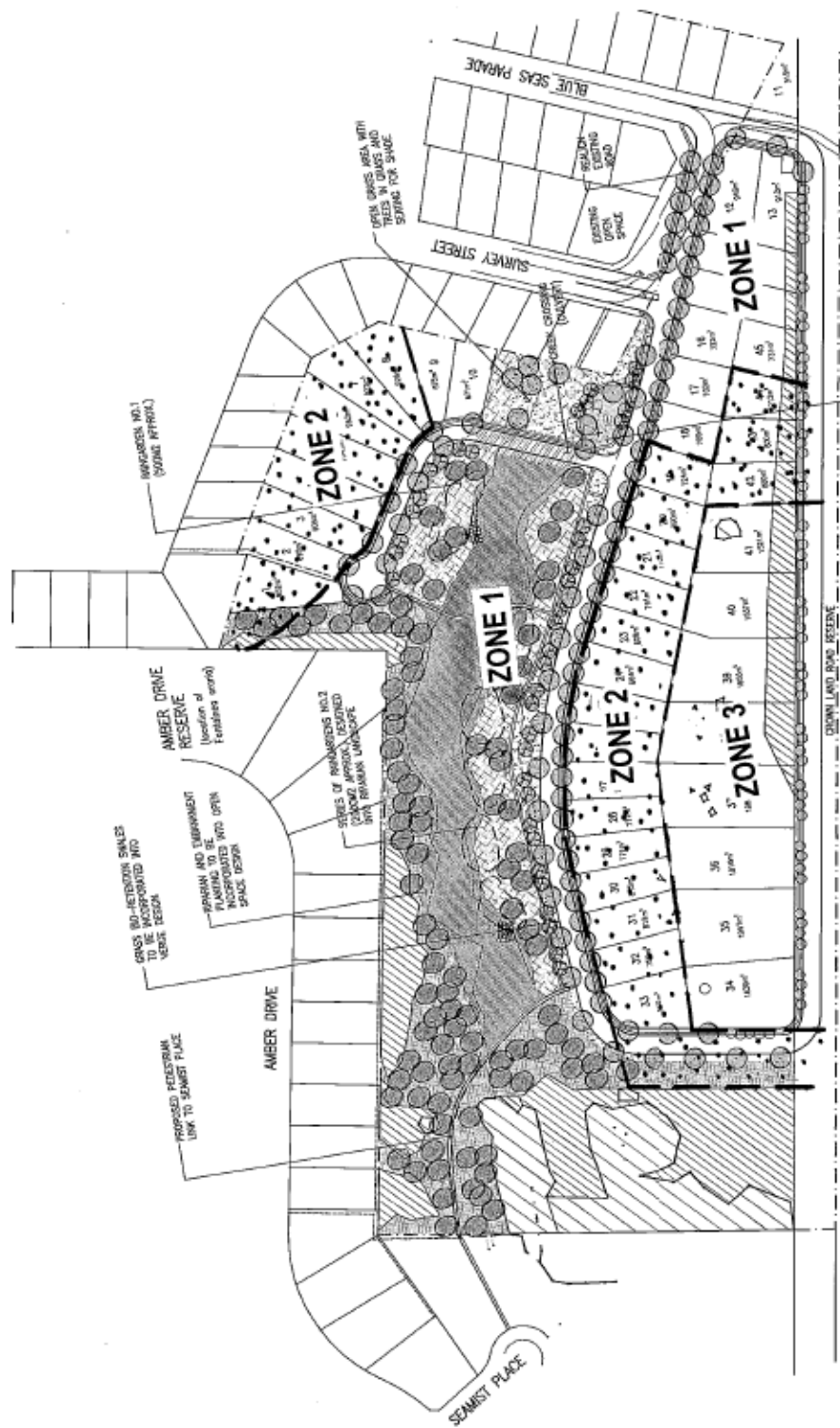


Figure 8: Assessed Slope Stability Zoning Plan (Source: Coffey Geosciences, August 2006)

The hazards considered in the risk assessment for the site are as follows:

- Hazard 1: Shallow seated instability of the natural and altered slopes in the vicinity of the proposed developments. This failure might take the form of relatively minor slips and/or slumping of site soils.
- Hazard 2: deep seated instability of the natural and altered slopes in the vicinity of the proposed developments. This failure might take the form of a significant slip/slump, with a relatively large amount of soil and/or rock material displaced
- Hazard 3: Instability of appropriately battered and treated slopes or failure of engineer designed retaining walls

8.3.3 Assessed Risk

For the hazards indicated above, the assessed likelihood and consequences of each hazard and the associated risk is presented in Table 13.

Table 13: Assessed Risk for Slope Instability Hazards

| ZONE | HAZARD | ASSESSED LIKELIHOOD | ASSESSED CONSEQUENCES | ASSESSED RISK |
|--------|----------|------------------------|--------------------------|------------------|
| Zone 1 | Hazard 1 | Rare | Minor | Very Low |
| | Hazard 2 | Not credible | Major | Very Low |
| | Hazard 3 | Rare | Medium to Major | Low |
| Zone 2 | Hazard 1 | Unlikely | Minor | Very Low to Low |
| | Hazard 2 | Not credible to rare | Major | Low |
| | Hazard 3 | Rare | Medium to Major | Low |
| Zone 3 | Hazard 1 | Possible | Minor | Low to Moderate |
| | Hazard 2 | Rare | Major | Low to Moderate |
| | Hazard 3 | Rare | Medium to Major | Low |

Based on the above, the highest assessed risk for each of the zones is shown below:

- Zone 1: very low to low risk of slope instability
- Zone 2: low risk of slope instability
- Zone 3: low to moderate risk of instability

The Coffey Report makes a number of recommendations regarding guidelines for construction. These recommendations have been incorporated into the draft development control plan at Appendix 4. Subject to these recommendations, the report concludes that the site is appropriate for residential subdivision development.

8.4 BUSHFIRE

A Bushfire Hazard Assessment has been undertaken by Barry Eadie Consulting Pty Ltd (September 2006) and is provided at Appendix 16. The following is a summary of the key findings of the report.

The current Council Bushfire Prone Land Map shows the only area of the site identified as bushfire prone is the littoral rainforest in the southern portion of the site. This is the only area that constitutes a bushfire hazard.

In terms of slope, the slope that impacts upon bushfire development and behaviour is flat as the only vegetation that constitutes a bushfire hazard is the littoral rainforest to the south. The more undulating land does not constitute a bushfire hazard.

Where a bushfire hazard is identified an asset protection zone (APZ) is provided to act as a buffer zone between the development and hazard. The primary purpose of the APZ is to ensure that a progressive reduction of bushfire fuel occurs between a bushfire hazard and any habitable structures. The APZ consists of an inner protection area (IPA) and an outer protection area (OPA).

The New South Wales Rural Fire Service document, ***Planning for Bushfire Protection*** (2001) specifies the minimum APZ required in bushfire prone areas. In relation to the Coastal Grove development, the only APZ that is required is between the littoral rainforest area to the south and lots 33 and 34. The width of the APZ in this area is recommended at 20 m. This APZ buffer has been incorporated into the subdivision and landscape design.

In terms of bushfire attack, the development's category is low, and therefore there are no construction requirements for future dwellings on the site.

Access to the development would be via sealed public road which will be capable of supporting fully loaded firefighting vehicles. The access from Survey Street and Blue Seas Parade will comply with the requirements in the *Planning for Bushfire Protection* document.

8.5 TRAFFIC

An Assessment of Traffic and Parking Implications for the proposed development has been undertaken by Transport and Traffic Planning Associates (August 2006) and is provided at Appendix 6. The following is a summary of the key findings of the report.

8.5.1 Existing Traffic Conditions

The road network serving the area comprises:

- Byron Bay Road -- the Coast Road: a State Road (SR 545) connecting between Byron Bay and Ballina which is classified as an Urban Arterial Road
- North Creek Road -- Ballina Street: a collector road route
- Blue Seas Parade and Survey Street: a local access route.

Average daily traffic counts for this area were undertaken by Council in 2003 as follows:

| | Av Daily Traffic |
|---|------------------|
| North Creek Road, north of Blue Seas Parade | 3045 |
| Blue Seas Parade, east of Survey Street | 412 |
| Survey Street, south of Blue Seas Parade | 374 |

The results of more recent surveys (2006) undertaken during the morning and afternoon peak periods at the North Creek Road and Blue Seas Parade intersection are summarised as follows:

Table 14: Peak Traffic Volumes (2006)

| | | AM | PM |
|------------------|------------|-----------|-----------|
| North Creek Road | Northbound | 266 | 164 |
| | Right-turn | 5 | 6 |
| | Southbound | 103 | 287 |
| Blue Seas Parade | Left-turn | 17 | 39 |
| | Right-turn | 46 | 23 |
| | Left-turn | 10 | 5 |

The operational performance of this intersection indicated a satisfactory level of service (Level of Service A).

In terms of public transport, there is a regular bus service along North Creek Road operated by Blanches Bus Service and Kirkland Bus Company and a limited number of school special services circulate through Blue Seas Parade and Survey Street.

There are no existing dedicated cycle paths in the vicinity of the site.

8.5.2 Proposed Road System

The proposed roadway pattern is relatively regular with slight curvilinear alignment, although the regularity is arranged in order to assist in restraining vehicle speeds and avoid cross intersections. All roads have 9 m wide carriageways with 3.5m wide verges and mountable kerbing. Sealed footways 1.2m wide will be provided along one side of the road circuit. The road design is in accordance with the Development Design Specification adopted by Northern Rivers Local Government.

The road system has been designed to facilitate the movements of service vehicles, particularly garbage removal, and large rigid trucks.

The access connections to the existing road system will comprise T-junction connections with both Survey Street and Blue Seas Parade. In the future the new eastern roadway running along the Crown land reserve may be extended southwards. The proposed T-junction are simple where 'right of way' will be clearly understood in accordance with the statutory regulations.

As with other local residential streets, a statutory 50 km per hour speed limit will apply. Speeds will be contained by not only the bends and intersections but also by the provision of two "slow way" narrowings located centrally on the two straight sections. These measures will essentially constrain vehicle speeds to 40 km per hour.

8.5.3 Traffic Impact

Based on the traffic generation characteristics of the existing adjoining residential development, the assessed traffic generation outcome for the development is as follows:

| AM PEAK | | PM PEAK | |
|---------|-----|---------|-----|
| IN | OUT | IN | OUT |
| 10 | 30 | 24 | 15 |

In relation to the North Creek Road/Blue Seas Parade intersection, a comparison of peak volumes under existing conditions as compared to additional traffic flowing from the proposed development is provided in Table 15. below.

Table 15: Comparison of North Creek Rd/Blue Seas Parade intersection under existing and proposed traffic conditions

| | | AM | | PM | |
|------------------|------------|----------|----------|----------|----------|
| | | Existing | Proposed | Existing | Proposed |
| North Creek Road | Northbound | 266 | 266 | 164 | 164 |
| | Right-turn | 5 | 7 | 6 | 10 |
| | Southbound | 103 | 103 | 287 | 287 |
| Blue Seas Parade | Left-turn | 17 | 25 | 39 | 63 |
| | Right-turn | 46 | 68 | 23 | 34 |
| | Left-turn | 10 | 17 | 5 | 8 |

The Traffic and Parking Assessment indicates that even under that these post development circumstances the intersection will still be operating at a satisfactory level (Level of Service A).

The RTA Guide to Traffic Generating Developments identifies for local roads a maximum peak hour volume of 200 vehicles as an appropriate environmental goal. Blue Seas Parade and Survey Street are local access streets and the relativity of the traffic volume outcome with the new subdivision development as a proportion of the environmental goal (200 vph) is shown in Table 16.

Table 16: Traffic Generation on Proposed Roads in Relation to RTA Environmental Goal

| | AM | PM |
|-------------------------------------|-------|-----|
| Blue Seas Parade east of Survey St | 37.5% | 35% |
| Survey St south of Blue Seas Parade | 19.5% | 19% |
| Blue Seas Parade west of Survey St | 59% | 57% |

Table 16 clearly indicates that the increased traffic volumes generated by the proposed subdivision will be well below the established environmental capacity level.

8.5.4 Pedestrians and Cyclists

A range of measures have been put in place to maximise pedestrian and cycle movements within the site and between the site and adjoining residential neighbourhoods. These measures include:

- verges on both sides of the roads
- footpath along one side of the road circuit
- 'slow ways' and bends to contain vehicle speeds at the principal crossing points
- suitable site distances

- pedestrian pathways along the length of the open space spine and crossing the open space
- suitable streetlighting

At present there is no bicycle path which would connect to the subdivision. However, the proposal makes suitable and appropriate provisions for cyclists with:

- the shared cycle/pedestrian pathway
- slow way in and bends to constrain vehicle speeds
- suitable site distances
- suitable streetlighting

8.5.5 Public Transport

As noted above there is currently a regular bus service which runs along North Creek Road as well as school bus services which run through Blue Seas Parade and Survey Street.

It is not expected that a bus service will be introduced along the road system within Coastal Grove. However, the road geometry has been designed to suitably provide for potential future bus movements.

8.6 CONTAMINATION AND REMEDIATION

An Environmental Site Assessment (September 2006) was completed by Coffey Geosciences Pty Ltd to assess the potential for contamination to exist on the site from previous and current land uses, and to provide recommendations on the need for remediation as required (refer Appendix 15). A summary of the scope of work, key findings and recommendations are provided below.

8.6.1 Phase 1 Site Assessment

A Phase 1 environmental site assessment was initially carried out. Information about the site was obtained from:

- A site walk over by an experienced geotechnician to observe site conditions;
- A historical land title search to review previous landowners and possible past uses of the site;
- Review of aerial photographs;
- A search of NSW DEC records;
- A review of Ballina Shire Council records;
- WorkCover Dangerous Goods Licenses;
- Interviews with available personnel familiar with the history of the site; and
- Collation of the above.

The site history revealed a low risk that the site had been exposed to contamination from current and past land uses. On this basis, it was

considered that the shed located to the north of the site was the main area of environmental concern and therefore sampling was targeted to this area.

The number of sampling locations occurred on an approximate 70m grid and 22 sample locations were selected (see Figure 1 in the Environmental Site Assessment). As the shed was identified as an area of environmental concern, it was targeted with a further seven samples. Soil samples were tested for a suite of common contaminants including:

- Heavy Metals (arsenic, cadmium, chromium, copper, lead, nickel, zinc, and mercury);
- Organochlorine Pesticides (OCPs);
- Total Petroleum Hydrocarbons (TPH);
- Benzene, Toluene, Ethyl-benzene, Xylene (BTEX);
- Poly-Aromatic Hydrocarbons (PAH).

Assessment criteria was based on the NSW DEC Guidelines for the NSW Site Auditor Scheme and the National Environment Protection (Assessment of Contamination) Measure. The adopted standard was residential use with gardens and accessible soil (home grown produce contributing less than 10% fruit and vegetable intake, no poultry) including children's day care centres, preschools and the like.

The Phase 1 samples indicated that concentrations of the chemicals of concern were below the adopted guideline criteria for human health. One sample, G1, had a zinc concentration which exceeded the provisional phytotoxicity criteria. This sample was taken near the shed.

8.6.2 Phase 2 Site Assessment

Based on the localised concentration of zinc for sample G1, a Phase 2 Environmental Assessment was completed targeting the shed. Further field investigations were carried out including 28 samples that were tested for a range of heavy metals including zinc, arsenic, copper, lead and mercury. The samples were collected using hand tools and conducted in accordance with industry accepted standards and Coffey's Environmental Field Manual.

The results of the testing indicated that relevant concentrations of zinc extended to at least 20 – 28m distance from the G1 sample location, however concentrations tended to decrease with distance indicating contamination was not widespread but was localised.

Based on the results of the heavy metal and toxicity characterization leachability testing, the soils classify as inert waste in accordance with the NSW DEC (2004) guidelines and can be disposed of to landfill licensed to accept this waste

8.6.3 Site Remediation Recommendations

The Coffey Environmental Assessment identifies two remediation options for the localised elevated concentrations of zinc (refer to Figure 3 in the Environmental Site Assessment):

- 1 Excavation and removal off site to landfill. Soils in the location of G1 (refer to Figure 3 of the Environmental Site Assessment) to a depth of about 0.2m should be removed to a landfill that can accept inert waste.

- Validation testing of the excavation should be carried out by a qualified environmental consultant to assess the effectiveness of the remediation.
- 2 Containment of the soils on site under pavements or residential slabs. The soils could be removed from their current position and moved to an appropriate place within the site where pavements are planned. Validation testing as in Option 1 would still be required. This option would also require the preparation of a Site Management Plan that may include sampling of the groundwater depending on the final resting place of the soil.

These recommendations have been incorporated in the Statement of Commitments with respect to remediation works required near the shed prior to development.

8.7 ABORIGINAL AND CULTURAL HERITAGE

An Aboriginal Cultural Heritage Assessment (2006) has been undertaken by Dominic Steele Consulting Archaeology and is provided at Appendix 14.

8.7.1 Site Survey

The Aboriginal Cultural Heritage Assessment was undertaken between May to August 2006 and commenced with background research into previous Aboriginal archaeological studies undertaken in the local landscape and an evaluation of the findings. A subsequent survey and assessment of the proposed development area was completed in partnership with the Jali Local Aboriginal Land Council (JLALC) which represents Aboriginal cultural heritage interests in this area of Ballina Shire.

Generally, recording concentrated on the topography (whether sites, features or areas of potential archaeological sensitivity were located on slopes or flats etc), context, vegetation, ground exposures, the nature of ground visibility and the presence and extent of disturbance. Although the surface visibility was limited by pasture grass, the site has been disturbed by grazing activity and run-off erosion and no stone artefacts or other evidence of Aboriginal use was found in the course of the survey.

8.7.2 Survey Results

The proposed development area at Lennox Head was originally subject to an Aboriginal cultural heritage assessment that was undertaken in 1997. This previous study did not result in the location of any Aboriginal sites or objects, or in the identification of any 'clear and obvious' areas of potential sensitivity or significance. It was therefore concluded that there were no Aboriginal cultural heritage constraints to the future development of the land.

The current study has revealed similar results to those of the original 1997 investigations. Namely, no previously undocumented sites or items of Aboriginal cultural heritage have been located, and no new areas of Aboriginal archaeological potential have been identified. Furthermore, the site contains no areas of known Aboriginal historical association or cultural significance based on background research and input from JLALC during the course of the current assessment.

Although it is likely that the general area was used by Aboriginal people making use of the Lennox Head coastline and hinterland, the subject land is unlikely to have been used intensively and there is little likelihood that any

remains of occasional or incidental use exist *in situ*, given the grazing history and slope erosion.

The study concludes that no Aboriginal archaeological constraints have been identified during the completion of the study that would prevent the proposed residential subdivision proceeding. No further Aboriginal archaeological work is required to be undertaken prior to the commencement of development works should consent be granted. The site is assessed to have low archaeological potential with the remote possibility to contain (at best) an extremely sparse number of undetected Aboriginal finds that would most likely be present within disturbed context.

In the unexpected circumstances that any Aboriginal objects were unearthed during future development works, the study recommends that activities should temporarily cease within the immediate vicinity of the find locality, be relocated to other areas of the site (allowing for a cartilage of at least 50 m), and that the Department of Environment and Conservation be contacted to advise on the appropriate course of action to allow the JLALC to record and collect the identified item(s).

8.8 VISUAL IMPACT AND DESIGN QUALITY

A Visual Assessment and associated Design Guidelines have been prepared by Hassell and is provided under separate cover. The following is a summary of the findings of that report.

8.8.1 Visual Character

Lennox Head is dominated by suburban areas dotted between an essentially rural landscape. The dominant visual character is coastal, lush, predominantly rural land occupying the expensive, open rolling hills with pockets of development scattered in between. The coast is dominated by headlands, providing many vantage points for vistas and views up and down the coast.

Low growing grasses and heath vegetation occur along the immediate coastal edge, occasionally interrupted by native rainforest with a windblown, rugged character. In many places weeds such as Bitou Bush and Lantana have taken hold amongst the native vegetation. The scenic Coast Road, a major connection from Ballina to Lennox Head, weaves behind the headlands, providing an opportunity for motorists to enjoy this coastal, rural landscape.

Suburban development of Lennox Head is characterised by a variety of house types, sizes and styles which reflect the coastal town location and the ad hoc development of the town.

8.8.2 Visual Assessment

The methodology chosen for the visual assessment takes into account the surrounding context of the site in terms of texture, colour and vegetation and also the distance from various public vantage points including foreground, middleground and background views.

Visual impact is greatest in the areas where there is a significant change to the homogeneity of the landscape character. Homogenous landscape units will have less capacity to absorb change associated with the new development in this homogeneous landscape setting.

A number of vantage points were chosen from which views were assessed, as follows:

- 1 **Coast Road near Skennars Head** – A distant view of the site is available from the Coast Road. From this view the site is tucked behind the ridge line and visually sits within existing urban development. Development above the hilltop would be visible from this point.
- 2 **Coast Road at low point adjacent to wetlands** - Minimal views of the site on the ridge line are available from this vantage point, with urban development in the background. Development above the hilltop would be visible from in this position (approximately 900 m).
- 3 **Iron Peg and Boulders Beach** – A very distant view of the western slope tucked below existing urban development. Development above the hilltop would be visible from this position (approximately 1.8 km).
- 4 **Public land between Shag Rock and Coast Road** - No view behind the ridge with minimal views on the lower ridge with urban development behind. Development above the hilltop would be visible from this position (approximately 650 m).
- 5 **Amber Drive** – A typical close view of the site with views to the coast beyond the ridge line and site boundary. Development above the ridge will block out distant views to the south of the site (approximate 350 m).
- 6 **Survey Street** - Typical close view of the site from the road through housing with views of the coast beyond the ridge line. Development above the ridge will block out distant views to the south of the site (approximately 200 m).
- 7 **Beach front at the end of Circle Drive** - Middleground view of the northern escarpment rainforest. The area of proposed lot number 11 at end of existing of housing is visible, however one additional house on this escarpment will have minimal impact.

A map and photographs showing the specific vantage points and views are provided in the Visual Assessment (under separate cover).

8.8.3 Visual Impact

The Visual Assessment indicates that the visual impact of the proposed development will be minor from vantage points 1 to 4 provided that houses are kept below the top of the ridge line.

In the case of the foreground views, that is views from vantage points 5 and 6, the visual impact is considered to be moderate because the changing view will be significantly contrasting from that which exists now however the view is not seen by many people. In the case of the view from vantage point 7, the visual impact is considered minor as proposed Lot 11 sits at the end of an existing row of housing.

Future housing on the proposed southern lots, that is lots 34 to 40, will be visible in the distance from Iron Peg, Boulder Beach and the Coast Road. However, these houses will be viewed against a backdrop of existing suburban development and therefore will not be any more noticeable than surrounding urban development. The remaining lots will not be visible from these regional vantage points. The new housing will also not be visible against the skyline above the hilltop when viewed from Pat Morton Lookout and the Coast Road. Sections have been provided in the Visual Assessment which demonstrate the impact on these views of future housing.

8.8.4 Design Principles

The Visual Assessment contains a number of recommendations regarding the future siting and design of housing to ensure that the visual impact of the development is minimised, particularly in terms of protecting regional views from the coast.

The desired future character for the site requires that any development on the site:

- be of high quality
- be appropriately sited within the natural context. No built form is to be visible above the existing hillside ridge line. The only new development to be seen will be on the downward slope in the context of existing suburban development beyond.
- be architecturally appropriate to the natural, sensitive coastal site.

Architecture should:

- be of lightweight structure and materials, prefabricated where possible.
- be visually harmonious with existing built and natural features
- have minimum physical impact on the site by minimising cuts and fill and hard paved surfaces.

In order to protect to the rural coastal character of the site, controls on site coverage and height are proposed. The aim of these controls is to ensure that any development protruding above the existing ridge line is minimised. In so doing, the natural grassed hilltop running along the eastern edge of the site can be preserved and views towards and from the site can be maintained.

The key design principles are as follows:

- Generally housing is to sit below RL 60 so that housing is not visible against the skyline.
- Special setback and height restrictions are proposed on lots 34 to 40 to minimise visual impacts of the development above the hilltop.
- The proposed road along the Crown Road reserve is to have low coastal shrub planting in the verges on either side to screen the road from the coast, especially where the land slopes downhill from RL 60 onwards.
- The lots located on the lower slopes will not be visible from the coast. Street tree and open space planting is proposed to screen development from Amber Drive and Survey Street vantage points.
- The proposed house on Lot 11 is to be setback to be in line with the existing houses so as to minimise visual impact from the coast.

8.8.5 Draft Development Control Plan

A draft Development Control Plan has been prepared and is provided at Appendix 4. The draft DCP provides strategies and controls to guide the design, construction and management of the built environment of the site. The intention of the DCP is to ensure a cohesive, high-quality development and to ensure that the natural views and topography of the site are preserved.

In relation to dwelling design, the draft DCP addresses the following matters:

- siting
- setbacks
- height and scale
- roof design
- dual occupancy
- fencing
- landscaping
- garages and driveways
- private outdoor space
- architectural character and materials

The draft DCP also contains provisions relating to slope stability.

8.9 NOISE

Acoustic consultants Wilkinson Murray were asked to consider the potential noise impacts from the proposed development. They advised that there would be no noise impacts from the development, even in relation to additional traffic on the local road network.

In addition an assessment of the potential noise from traffic was considered in the Traffic and Parking Assessment prepared by Transport and Traffic Planning Associates (Appendix 6). In general, the EPA noise level for new residential developments is taken as $L_{A\text{ eq}} - 55\text{dB(A)}$. The assessment in the report indicates that the noise created by the traffic generated from the development will (quite expectedly) be less than $L_{A\text{ eq}} - 55\text{dB(A)}$ for

residences both in the new subdivision and on the immediate local access roads of Blue Seas Parade and Survey Street. Consequently, noise mitigation measures will not be required.

Further detail regarding the assessment of traffic noise is provided in the Traffic and Parking Assessment.

8.10 PUBLIC SERVICES AND INFRASTRUCTURE

An Infrastructure Strategy (September 2006) has been prepared for the development by Patterson Britton and Partners and is provided at Appendix 5. The preparation of the report involved consultation with various service providers and Ballina Council to assess existing infrastructure surrounding the site and new infrastructure required to service the site. Essentially the report indicates that all services, apart from gas, are available to the site subject to appropriate augmentation where required.

8.10.1 Water

44 lots in the proposed development can be serviced by the existing potable water supply system. Only Lot 11 does not meet the Council specified minimum pressure requirements. Lot 11 can be serviced with the addition of a pressure booster system for the water supply connection at this point.

The proposal makes provision for dual reticulation. Ballina Council proposes to construct a common effluent treatment and reuse system within the Shire. Accordingly, recycled water reticulation will be installed within the development in anticipation of future provision of a recycled water trunk main to the area. The proposed effluent reuse system, together with a combination of water saving devices, is expected to reduce potable water demand by at least 40% as required by BASIX.

8.10.2 Sewer

The development can be serviced by sewer through upgrade of the SP 3107 pumping station and rising main to the Lennox STW. These upgrades are in accordance with Council's plans to upgrade infrastructure for the surrounding area and would therefore attract section 94 credits if implemented by the developer.

8.10.3 Power

Country Energy has confirmed that power is available to service the site. A connection would be made to the high-voltage line that exists in Survey Street on the property frontage.

8.10.4 Telecommunications

Telstra would extend standard communications services into and throughout the development. This service would be reticulated throughout the development in shared trenching accommodating pits and 100 mm conduits.

8.10.5 Gas

It is understood that gas is not readily available to the site and as such does not represent a viable investment.

8.10.6 Section 94

As the proposed development will generate the need for additional services and facilities in Ballina Shire, it will be subject to the levying of section 94 contributions. Section 94 contributions for residential development are currently levied for:

- Public gardens and recreation space enhancement
- Community facilities
- Roads
- Section 94 administration and studies

It is understood that under certain circumstances Council may accept an offer by a developer to make a contribution by way of a "material public benefit" in lieu of paying section 94 contributions. In the case of Coastal Grove, it is considered that there are circumstances which warrant consideration of acceptance by Council of a material public benefit in lieu of part payment of section 94 contributions. These circumstances relate to the provision of the open space network through the site. The area to be dedicated as open space is notably larger than the area zoned for that purpose, that is, 3.47ha as opposed to 1.3ha. In addition, a number of other significant improvements will be made:

- the open space is to be extensively landscaped;
- a children's playground is to be provided;
- stormwater management measures are to be incorporated into the open space to significantly improve water quality and bank stability in the riparian corridor;
- bushland regeneration and weed removal will be undertaken over a two-year period;
- pedestrian/cycle pathways will be provided which will connect the open space to the adjoining existing residential areas, including the provision of a right-of-way across Lot 88, DP 802588 to provide a linkage between the open space and Seamist Place.

Accordingly, it is considered that the provision of the open space through the site constitutes a material public benefit and should be taken into account when calculating section 94 contributions for the site. Initial discussions have been held with Council regarding this matter and it is understood that Council is willing to consider entering into any deed of agreement to facilitate this undertaking.

8.11 CONSTRUCTION

A Construction Environmental and Waste Management Plan has been prepared by Patterson Britton and Partners (September 2006) and is provided at Appendix 9.

A number of management measures are proposed in the construction management plan to minimise potential environmental impacts during construction. These include:

- dust suppression
- stockpile protection
- erosion and sediment control
- noise control through appropriate mufflers on construction equipment
- funding for chemical storage

- appropriate working hours
- best practice waste management

In addition to the construction management plan, an erosion and sediment control plan has been prepared as discussed in Section 8.11.

The works have been designed to minimise the excess of excavated soil across the entire site and to minimise waste by maximising the reuse and recycling of materials. It is therefore expected that the proposed works will not have a significant adverse impact on the existing surrounding environment during the construction period and that the disposal of waste materials will be minimised.

9 DRAFT STATEMENT OF COMMITMENTS

In accordance with the Director-General's EA requirements, the following draft statement of commitment identifies the proposed mitigation measures, environmental management of residual impacts and monitoring for the proposed development. The draft Statement of Commitments identifies those measures that will need to be implemented during the pre-construction and construction phases as well as once the development is complete in order to minimise impacts on the environment. The applicant undertakes to carry out the development in accordance with the commitments given below.

GENERAL

- A. The proponent will undertake the development in accordance with the Environmental Assessment report prepared by MG Planning Pty Ltd dated September 2006 including:
- Subdivision Plan PA02, Landscape Plan PA03, Landscape Sections PA04 dated 19 September 2006, prepared by Hassell, provided under separate cover;
 - The Civil Drawings prepared by Patterson Britton and Partners in the Coastal Grove Infrastructure Strategy (September 2006);
 - This Statement of Commitments.

STATUTORY REQUIREMENTS

- B. In relation to any obligations under other Acts, the proponent will ensure that all licences, permits and approvals are obtained and kept current, as required throughout the construction and post construction phases of the development.

OPEN SPACE

- C. The open space is to be dedicated to Council as a public reserve and embellished in accordance with the Landscape Plan PA03 and Landscape Sections PA04 prepared by Hassell and provided under separate cover. The embellishment and dedication of the open space is to be undertaken prior to release of subdivision certificate.
- D. The pedestrian and cycleway crossing of the drainage corridor within the open space area will be designed in accordance the Department of Natural Resources Guidelines for the Design and Construction of Paths and Cycleways Along Watercourses and Riparian Areas. This work will be done prior to the issue of the subdivision certificate.
- E. The proponent will work with Council on the detailed design of the children's playground, including the provision of a shade structure and the provision of appropriate play equipment.
- F. Where possible, landscaping in the open space and road reserves will be from locally sourced plant species.

ROADS

- G. The proposed roads will be constructed and dedicated to Council for the full frontage of all proposed lots. Roads will be designed in accordance with the drawings prepared by Patterson Britton and Partners in the Coastal Grove Infrastructure Strategy (September 2006).

FLORA AND FAUNA

- H. The threatened grass species, hairy-joint grass (*Arthraxon hispidus*) is to be retained and protected with an ecological buffer within the riparian corridor, as detailed in the Flora and Fauna Assessment.
- I. The current mowing regime will be maintained for two years in the 5 m grass strip located between hairy-joint grass and the littoral rainforest plantings and all mulch will be removed from the vicinity of hairy joint grass. The two-year period will commence from the date of issue of the Construction Certificate.
- J. Monitoring of the hairy-joint grass population will be undertaken for a period of two years at three monthly intervals (six visits in total) and an annual report will be provided to Council regarding the monitoring program. Monitoring will commence from the date of issue of the Construction Certificate.
- K. Within the ecological polygon identified on the landscape drawing (PA03), there will be no change in hydrology, no reshaping of the creek banks, no landscape plantings or any other in activity undertaken which may impact on hairy-joint grass.
- L. A buffer of over 50 m will be provided between the Coastal Fontainea known from Amber Reserve and the closest proposed house on Lot 1.
- M. A two-year program of bushland maintenance and weed control using trained personnel will be implemented to manage invasions of weed species. This program will involve weed control along the creek lines, the littoral rainforest remnants and where reafforestation has been completed. The program of bushland maintenance/weed control will commence from the date of issue of the Construction Certificate.
- N. Additional littoral rainforest species will be planted adjacent to the existing rainforest species in the riparian corridor, and weed control will be undertaken for a period of two years by experienced bushland regenerators to further protect this rainforest remnants.
- O. All new planting will be undertaken prior to the issue of the subdivision certificate.

VISUAL IMPACT

- P. The proponent will work with Ballina Council in finalising the draft Development Control Plan for the subdivision to ensure that appropriate controls are put in place to guide the design and construction of future housing.

- Q. Dual occupancy developments will be confined to lots 33, 34, 12 and 13.

FIRE MANAGEMENT

- R. An Asset Protection Zone will be provided to the south of the site, south of the proposed roadway within the open space area. Landscaping in the Asset Protection Zone will be in accordance with the *Planning for Bushfire Protection* (Rural Fire Service, 2001) or as otherwise specified by the NSW Rural Fire Service.

CULTURAL HERITAGE

- S. If any artefacts or sites relating to Aboriginal heritage are uncovered during site works, all work will cease and the NSW Department of Environment and Conservation will be contacted to advise on what action must occur prior to recommencing works.
- T. All site contractors will be briefed prior to the commencement of future works about the statutory responsibilities and obligations concerning Aboriginal cultural heritage according to the National Parks and Wildlife Act 1974.

SERVICES

- U. Water reticulation will be provided to each lot in accordance with the recommendations of the *Infrastructure Strategy* prepared by Patterson Britton and Partners (September 2006) and prior to the issue of the construction certificate..
- V. Recycled water reticulation will be installed within the development in preparation for future provision of a recycled water trunk main to the area.
- W. Satisfactory arrangements will be made with Telstra Australia prior to the release of the construction certificate, for the provision of standard communications services into and throughout the development. This service will be reticulated throughout the development in shared trenching accommodating pits and 100 mm conduits.
- X. Satisfactory arrangements will be made with Country Energy prior to the release of the construction certificate, for the supply of electricity to each lot.
- Y. Upgrade to the sewer and reticulation to each of the lots will be undertaken in accordance with the Coastal Grove Infrastructure Strategy prepared by Patterson Britton and Partners (September 2006).

WATER CYCLE MANAGEMENT

- Z. Water quality control measures will be designed and installed in accordance with the recommendations of the Coastal Grove Water Cycle Management Report prepared by Patterson Britton and Partners (September 2006). The water cycle management strategy will be undertaken prior to the release of the subdivision certificate. Specific

measures to be undertaken include, but are not limited to, the following:

- construction of raingardens/bioretention basins
 - installation of three gross pollutant traps, as shown in Figure 1 of the Water Cycle Management Report
 - provision of bioretention/vegetated swales alongside roadways in accordance with Figure 1 of the Water Cycle Management Report
 - installation of infiltration trenches along the rear of lots located on the eastern side of the site as shown in Figure 1 of the Water Cycle Management Report
- AA. All construction works will be undertaken in accordance with the Erosion and Sediment Control Plan prepared by Patterson Britton and Partners dated September 2006 and provided within the Construction, Environmental and Waste Management Plan at Appendix 9.
- BB. Monitoring of runoff water quality will be undertaken during construction and for two years after construction of the subdivision to verify that the veracity of the proposed controls. An annual report will be provided to Council detailing the results of the monitoring.

GEOTECHNICAL

- CC. All civil works required for the subdivision will be carried out in accordance with the recommendations of the Slope Stability Assessment prepared by Coffey (August 2006).

CONTAMINATION

- DD. The proponent will remediate the site in accordance with the recommendations contained within the Environmental Site Assessment (Coffey, September 2006).

SECTION 94

- EE. The proponent will pay Section 94 developer contributions in accordance with Council's Section 94 plans, subject to negotiation with Council regarding material public benefit associated with the provision and embellishment of additional open space.
- FF. The development will be serviced by sewer through upgrade of the SP3107 pumping station and rising main to the Lennox STW. These upgrades are in accordance with Council's DSP to upgrade infrastructure for the surrounding area and as such the proponent will seek credits for the provision of the upgrade.

CONSTRUCTION

- GG. The subdivision will be constructed in accordance with the Construction Environmental and Waste Management Plan prepared by Patterson Britton and Partners (September 2006).

10 CONCLUSION

This Environmental Assessment Report is submitted to the Department of Planning under Part 3A of the *Environmental Planning and Assessment Act 1979* and State Environmental Planning Policy (Major Projects) 2005.

The application proposes the residential subdivision of land at 1 Survey Street, Lennox Head, known as Coastal Grove, into 45 lots together with public open space, areas set aside for environmental protection and civil works.

The Coastal Grove site has been earmarked for residential development since 1999 when it was rezoned from Rural 1(d) - Urban Investigation to predominantly Residential 2(a) - Living Area. Various schemes have been proposed for the site but have lacked the necessary detail and consideration of environmental issues required for development in this area.

Recognising the need to improve the subdivision design and better address the concerns of Council, government agencies and the community, a new project team was appointed with the aim of achieving a "best practice" and environmentally sustainable approach to the development. The current development proposal reflects this ambition.

This Environmental Assessment provides a detailed description of the proposed development and the site, as well as an extensive evaluation of the potential environmental impacts of the development and measures to mitigate any impacts. The Environmental Assessment has been prepared in accordance with the requirements of the Director-General of the Department of Planning, which are detailed in the letter at Appendix 2.

The key potential environmental impacts associated with the development were identified as follows:

- stormwater management and water quality
- slope and stability
- flora and fauna
- visual impact
- traffic

A range of other issues are also addressed in the environmental assessment as required by the Director-General of the Department of Planning, such as aboriginal archaeology, noise and construction impacts. None of these issues raises significant environmental concerns or will result in adverse social or economic consequences.

A draft statement of commitments has been prepared which identifies the proposed mitigation measures, environmental management of residual impacts and monitoring for the proposed development. The draft statement of commitments identifies those measures that will need to be implemented during the preconstruction and construction phases as was once a development is complete in order to minimise impact on the environment. The applicant undertakes to carry out the development in accordance with these commitments.

In summary, it is considered that the proposed development will have a positive and beneficial environmental, social and economic impact in that it will:

- Provide land for high quality and sustainable housing in the area that is growing and where there is high demand for new residential development,
- provide for the dedication of embellished public open space, including the provision of a local children's playground,
- ensure that areas of significant environment of value are protected,
- provide for a riparian buffer to protect and enhance the creek,
- provide for a bushland regeneration and weed eradication program over a two-year period,
- generate economic and employment opportunities during construction,
- generate additional demand for local retail and business services, and
- provide for cycleways and improved pedestrian linkages between the site and adjoining residential areas.

No significant adverse environmental, social or economic impacts have been identified which would preclude the site being developed for residential development.