

SECTION 79C ASSESSMENT

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STATE SIGNIFICANT DEVELOPMENT

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

PROPOSED SUBDIVISION

**LOT 30 DP 1198692
GEORGE EVANS ROAD
AND JONSSON ROAD
MUNDAMIA**

Prepared for

**Allen Price and Associates
and Jemalong Mundamia Pty Ltd**

June 2015



Prepared by:

COWMAN STODDART PTY LTD

Town Planning, Agricultural & Environmental Consultants

PROPOSED SUBDIVISION

LOT 30 DP 1198692

GEORGE EVANS ROAD AND JONSSON ROAD

MUNDAMIA

Ref. 08/64

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Prepared under the Environmental Planning and Assessment Act 1979

Section 79C Assessment prepared by

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State Significant Development

Proponent Name

Allen Price & Associates on behalf of
Jemalong Mundamia Pty Ltd

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Land on which activity
to be carried out

George Evans Road, Mundamia

Project

Subdivision Comprising 319 Residential Lots,
One Commercial Lot and 4 Open Space Lots

Declaration

I declare that I have prepared this Section 79C
Assessment to the best of my knowledge:

- It has been prepared in accordance with the relevant provisions of the Environmental Planning and Assessment Regulation 2000;
- The information which it contains is neither false nor misleading information.

Signature



Name

Stuart Dixon

Date

29 June 2015

CONTENTS

EXECUTIVE SUMMARY	(i)
1.0 INTRODUCTION.....	1
1.1 OVERVIEW AND BACKGROUND	1
1.2 THE PROPONENT	2
1.3 NEED AND JUSTIFICATION	2
1.4 ALTERNATIVES	3
2.0 SITE AND SURROUNDS.....	4
2.1 SUBJECT SITE	4
2.2 LOCAL CONTEXT	5
2.2.1 Existing Land Uses	6
2.3 LANDSCAPE CHARACTER	6
2.4 BUILT ENVIRONMENT.....	7
2.4.1 Likely Future Character.....	7
2.5 REGIONAL CONTEXT.....	7
2.5.1 Topography.....	8
2.5.2 Climate.....	9
2.5.3 Soils	9
3.0 THE PROPOSAL	10
3.1 RESIDENTIAL ALLOTMENTS.....	11
3.2 DUAL OCCUPANCY ALLOTMENTS.....	11
3.3 MULTI DWELLING HOUSING ALLOTMENTS.....	11
3.4 COMMERCIAL ALLOTMENT	11
3.5 ON SITE DETENTION AREAS.....	11
3.6 ROAD ALIGNMENT	12
3.7 PUBLIC RESERVES.....	12
3.8 BUS ROUTES AND STOPS	13
3.9 DRAINAGE.....	13
3.10 SERVICING.....	14
3.10.1 Water and Sewerage Services.....	14
3.10.2 Electricity.....	14
3.10.3 Telecommunications	14
3.10.4 Gas	14
3.10.5 Telephone Services	14
3.11 MANAGEMENT AND MAINTENANCE OF OPEN SPACE AREAS.....	15
3.12 STAGING OF DEVELOPMENT	15
4.0 STATUTORY SITUATION	16
4.1 COMMONWEALTH LEGISLATION.....	16
4.1.1 Environment Protection and Biodiversity Conservation Act	16
4.2 STATE LEGISLATION	17
4.2.1 Environmental Planning & Assessment Act	17
4.2.2 Threatened Species Conservation Act 1995.....	18
4.2.3 Native Vegetation Conservation Act.....	18

4.3	STATE POLICIES AND STRATEGIES.....	19
4.3.1	NSW Coastal Policy	19
4.3.2	Coastal Design Guidelines 2003	20
4.4	REGIONAL STRATEGIES	23
4.4.1	South Coast Regional Strategy	23
4.4.2	Shoalhaven Housing Strategy	24
5.0	ASSESSMENT	25
5.1	SECTION 79C(1)(A) – ENVIRONMENTAL PLANNING PROVISIONS	25
5.1.1	Environmental Planning Instruments.....	25
5.2	PRESCRIBED MATTERS UNDER THE REGULATIONS.....	45
5.3	THE LIKELY IMPACTS OF THE DEVELOPMENT, INCLUDING ENVIRONMENTAL IMPACTS ON BOTH NATURAL AND BUILT ENVIRONMENTS, AND SOCIAL AND ECONOMIC IMPACTS IN THE LOCALITY	46
5.3.1	Soil and Water Quality	46
5.3.2	Acid Sulfate Soils	48
5.3.3	Noise	49
5.3.4	Visual Impact	50
5.3.5	Services	51
5.3.6	Traffic and Transport.....	52
5.3.7	HAZARD MANAGEMENT AND MITIGATION	58
5.4	CULTURAL HERITAGE	61
5.4.1	Non Indigenous Heritage	62
5.4.2	Indigenous Heritage	62
5.5	FLORA AND FAUNA.....	63
5.6	THE SUITABILITY OF THE SITE FOR DEVELOPMENT	65
5.7	SUBMISSIONS	65
5.8	THE PUBLIC INTEREST	66
6.0	STATEMENT OF COMMITMENTS.....	68
7.0	CONCLUSION	76

FIGURES

- | | |
|-----------------|---|
| Figure 1 | Regional Context Plan |
| Figure 2 | Shoalhaven LEP Zoning Plan 2014 |
| Figure 3 | SLEP 2014 – Terrestrial Biodiversity Map |
| Figure 4 | SLEP 2014 – Riparian Land and Watercourse Map |
| Figure 5 | SLEP 2014 – Scenic Protection Map |

ANNEXURES

- | | |
|--------------------|---|
| Annexure 1 | Series of Plans including Subdivision Sketch Plan
prepared by Allen Price & Associates |
| Annexure 2 | Water Quality Report
prepared by Martens Consulting Engineers |
| Annexure 3 | Flora & Fauna Assessment
prepared by SLR Consulting |
| Annexure 4 | Aircraft and Traffic Noise Impact Assessment
prepared by day Design |
| Annexure 5 | Bushfire Protection Assessment
prepared by Eco Logical Australia |
| Annexure 6 | Acid Sulfate Soils Assessment
prepared by Martens Consulting Engineers |
| Annexure 7 | Aboriginal Heritage Assessment
prepared by South-East Archaeology Pty Ltd |
| Annexure 8 | Response to Submissions
prepared by Cowman Stoddart |
| Annexure 9 | Assessment of Shoalhaven DCP 2014
prepared by Cowman Stoddart Pty Ltd |
| Annexure 10 | Response to Submissions concerning Ecological Issues
prepared by Gunninah |
| Annexure 11 | Correspondence from Shoalhaven City Council |

EXECUTIVE SUMMARY

This Section 79C Assessment has been prepared in support of an application for a residential subdivision at Mundamia, located in Shoalhaven City Council (SCC) to the west of the Nowra township. The application is made pursuant to the Environmental Planning and Assessment Act, 1979.

The proposed subdivision plan provides for the development of 319 residential allotments, 4 public reserves, and one commercial allotment, in a traditional Torrens Title scheme.

The proposal follows the commencement of the Shoalhaven LEP 2014 which has zoned the site a combination of R1 General Residential and E2 Environmental Conservation. This LEP followed the identification of the locality as a residential release area in the *Nowra Bomaderry Structure Plan* (NBSP) adopted by SCC and endorsed by the Department of Planning.

The development will be undertaken in 11 stages, developed over a number of years dependent on market conditions.

The application was originally being considered under the subsequently repealed provisions of Part 3A as a Major Project, however has recently been declared State Significant Development. That earlier application was the subject of an Environmental Impact Assessment (EIA), and following public and government authority consultation having regard to that application, the preparation of a Preferred Project Report (PPR). The proposal has subsequently been declared State Significant Development. The current application is generally consistent with the subdivision the subject site of the PPR.

In preparing this Section 79C Assessment, the following separate reports have been prepared to consider the proposal and are relied upon:

- *Series of Plans* prepared by Allen Price & Associates *including Subdivision Sketch Plan*;
- *Water Quality Report* prepared by Martens Consulting Engineers;
- *Flora & Fauna Assessment* prepared by SLR Consulting;
- *Aircraft and Traffic Noise Impact Assessment* prepared by Day Design;
- *Bushfire Protection Assessment* prepared by Eco Logical Australia;
- *Acid Sulfate Soils Assessment* prepared by Martens Consulting Engineers;
- *Aboriginal Heritage Assessment* prepared by South-East Archaeology Pty Ltd; and
- *Response to Submissions* concerning *Ecological Issues* prepared by Gunninah

Site and Surrounds

The subject site is legally described as Lot 30 DP 1198692 and has a total area of some 41.39 ha. The site is bounded generally by an unformed Crown Road reserve to the west, Jonsson Road to the north-west, private property to the north and east, Crown land to the south-east and an undeveloped portion associated with the University of Wollongong to the south-west.

The site is located approximately 2.7 km to the west of the Nowra township.

The site is adjacent to residential and rural allotments to the north, and the Shoalhaven Campus of the University of Wollongong and TAFE sited to the south west of the property.

The site is within the coastal zone as it is within one kilometre of the Shoalhaven River, however in practice, the site does not have a strong relationship with the riverine environment as a sandstone escarpment is a significant physical barrier which prevents access, and the site is not visible from the Shoalhaven River.

Strategic Planning

SCC and the Department of Planning (DoP) have adopted the NBSP in order to plan for the further growth of the Nowra Bomaderry urban area for the next 20-30 year period. The NBSP is also acknowledged by the DoP in the *South Coast Regional Strategy* (SCRS). The NBSP, in addition to identifying certain lands for a variety of land uses, also addresses the release of residential expansion areas.

The NBSP has identified the site as being within New Living Area No. 5, to be known as Mundamia, and this has been designated as an area to provide for residential development. Having regard to the release of land in the Mundamia area, the NBSP has identified it as being favoured for development in the short term due to its location south of the Shoalhaven River with this development not adding to traffic congestion at the existing river crossing.

This strategic planning document has been implemented in the provisions of Shoalhaven LEP 2014 which has zoned the majority of the site for residential purposes.

Subdivision Design, Layout and Desired Future Character

The site and proposed development are subject to a number of State Environmental Planning Policies, Shoalhaven Local Environmental Plan 2014, and the Shoalhaven Development Control Plan 2014.

Of particular note, the proposal is affected by the provisions of Chapter G11 which deals with the subdivision of land, and Chapter NB1 which deals with the Mundamia new release area.

The proposal is generally consistent with the relevant provisions.

Visual Impact

The site is not considered to be visually prominent due to the nature of the site, its location, and the topography of the site and surrounding lands.

Contained within the earlier EIA was a visual assessment to consider the visual impacts of the development, and in consideration of this matter, long sections have been produced along potential sight lines, and photographic analysis has been undertaken. This analysis demonstrates that the site is not prominent and is not visible from any waterbody, and visual impacts are generally internal.

Infrastructure Provision

The development proposes the establishment of residential allotments in a new living area which is planned for urban expansion. Accompanying the earlier EIA was a “*Utilities Investigation Report*” prepared by Allen Price and Associates (APA) which has identified all relevant infrastructure that is required for residential development. This has included an analysis of existing infrastructure, consultation with the relevant supply authorities, monetary contributions that may be applicable, and pre-notification of development where applicable.

This assessment has concluded that there are no impediments to development based on the supply of infrastructure.

Traffic and Access

The proposed subdivision includes vehicular access to the public road network via an extension to George Evans Road. Accompanying the earlier EIA was a “*Transport Report for Proposed Residential Subdivision, Mundamia*” prepared by Colston Budd Hunt & Kafes Pty Ltd. That report examined the impacts of the development having regard to the suitability of the proposed road system, and the impacts associated with the wider road network. The assessment included appropriate traffic modelling and included consideration of peak traffic volumes, existing traffic volumes and 10 year projected traffic volumes which concluded that the proposal is suitable, with the established road network able to accommodate additional traffic flows, subject to the provision of separate left and right turns at the intersection of Yalwal Road and Albatross Road at some time in the next 10 years to accommodate growth in traffic numbers over the 10 year horizon.

The recommendations of this report are supported in this Section 79C Assessment.

Hazard Management and Mitigation

The subject site, although within the coastal zone, is on lands which are not subject to coastal processes or hazards such as shoreline erosion or tidal inundation, or general flooding.

Martens Consulting Engineers, in a report supporting the EIA, undertook a “*Stage 1 Contamination Assessment*” which indicated that a Stage 2 assessment was recommended to be carried out prior to the issue of a construction certificate through a condition of consent and outlined the sampling regime to follow in any further investigations. The Stage 2 assessment was subsequently prepared and which identified remediation works required, culminating in the preparation of a Remedial Action Plan.

Martens Consulting Engineers also undertook an assessment entitled *Preliminary Geotechnical and Constraints Assessment* which included an assessment of the geotechnical constraints and the presence of acid sulfate soils and which accompanied the original EIA. This assessment confirmed that the site is unlikely to contain problematic acid sulfate soils and that there are no geotechnical constraints to development.

The subject site is identified as being bushfire prone by mapping prepared by Shoalhaven Council and endorsed by the Rural Fire Service. An assessment of the bushfire threat has been conducted by Eco Logical Australia which recommends the provision of Asset Protection Zones, various levels of construction dependent on proximity to unmanaged bushland, along with staging and access requirements.

The recommendations of the various assessments are supported in this Section 79C Assessment.

Water Cycle Management

The site drains generally to the west and north-west and Storm Consulting Pty Ltd and Martens Consulting Engineers were engaged to investigate water cycle management and the impact of the proposed development on surface and groundwater, and on Flat Rock Creek and other ecologically sensitive areas. The reports also gave consideration to changing hydrological conditions due to climate change. The reports included recommendations to maintain water quality including bio-filtration trenches, along with measures to maintain flows within existing catchments.

The recommendations of this report are supported in this Section 79C Assessment.

Heritage and Archaeology

An Aboriginal Heritage Assessment has been undertaken by South-East Archaeology (SEA) to investigate the heritage significance of the site and the presence of indigenous and non-indigenous cultural items.

The assessment undertaken by SEA revealed that the site does not contain any identified heritage items, and nor are there any within the vicinity of the site. Further, field work undertaken in accordance with established protocol failed to detect any items of aboriginal significance.

SEA conclude that the impacts on Aboriginal heritage are very low and they have provided recommendations for management of archaeological and heritage items if they are found during development works.

Flora and Fauna

Development of the subject site and the subdivision design in particular, has been the subject of significant ecological assessments over many years.

The current proposal has been assessed by SLR Consulting in the report entitled *“Flora and Fauna Assessment Report”* and Gunninah’s *“Responses to Agency Comments on Mundamia Flora and Fauna Assessment Report and Updated Assessment”*.

The assessment undertaken by SLR Consulting and Gunninah have included consideration of Section 5A Assessments of Significance and consideration of government agency comments made through the earlier Part 3A assessment. The assessment have made a number of recommended measures to mitigate the impact of the subdivision. The measures recommended are supported in this Section 79C.

Noise

The Section 79C Assessment is accompanied by an Aircraft and Traffic Noise Intrusion Report prepared by Day Design. The assessment of Day Design did not identify any issues of significance having regard to noise impacts.

Conclusion

The Section 79C Assessment has assessed the proposed subdivision having regard to the relevant environmental, ecological, natural hazards and social constraints that apply to the site and surrounds.

The Section 79C Assessment and the various sub-consultants reports that have been prepared address matters raised during the Part 3A assessment process preceding the current application.

The design of the subdivision has been undertaken in accordance with the requirements of, and results in a sustainable layout that will provide good levels of solar access, and views to nearby bushland or Mount Cambewarra which is a feature of the district. Further, the subdivision centrally locates the commercial and open space precincts, as well as having a permeable layout, which will enhance the sustainability of the subdivision and encourage active transport options for local trips.

The relevant infrastructure agencies are aware of the proposal, and the plans of SCC to facilitate further residential development in accordance with its growth strategies. To this end,

preparatory work is being undertaken to provide all necessary infrastructure for the development and to expedite its delivery.

Given compliance with the Statement of Commitments, which includes the preservation of the ecologically constrained land in the conservation zoning, provision of water quality control measures, payment of monetary contributions for public facilities and water and sewerage infrastructure and the implementation of suitable landscaping, the subdivision is considered suitable for approval.

1.0 INTRODUCTION

1.1 OVERVIEW AND BACKGROUND

This Section 79C Assessment has been prepared in support of an application proposing a residential subdivision of the subject site into 319 residential allotments, 4 public reserve allotments and 1 commercial allotment. The site is located within Mundamia which is sited to the west of the Nowra Township, and has been identified by SCC in the *Nowra Bomaderry Structure Plan* (NBSP) as a New Living Area, and recently zoned under Shoalhaven LEP 2014 to enable the subdivision to proceed.

In preparing this Section 79C Assessment, consideration has been given to the following plans and specialist consultant reports:

- *Series of Plans* prepared by Allen Price & Associates including *Subdivision Sketch Plan* (**Annexure 1**);
- *Water Quality Report* prepared by Martens Consulting Engineers (**Annexure 2**);
- *Flora & Fauna Assessment* prepared by SLR Consulting (**Annexure 3**);
- *Aircraft and Traffic Noise Impact Assessment* prepared by Day Design (**Annexure 4**);
- *Bushfire Protection Assessment* prepared by Eco Logical Australia (**Annexure 5**);
- *Acid Sulfate Soils Assessment* prepared by Martens Consulting Engineers (**Annexure 6**);
- *Aboriginal Heritage Assessment* prepared by South-East Archaeology Pty Ltd (**Annexure 7**);
- *Response to Submissions* prepared by Cowman Stoddart (**Annexure 8**);
- *Assessment of Shoalhaven DCP 2014* prepared by Cowman Stoddart Pty Ltd (**Annexure 9**);
- *Response to Submissions concerning Ecological Issues* prepared by Gunninah (**Annexure 10**); and
- *Correspondence from Shoalhaven City Council* as **Annexure 11**.

In addition, this report has given consideration to consultation that has been undertaken with a variety of persons and agencies, including State Government Agencies, SCC, and the local community.

The Section 79C Assessment has been prepared in accordance with the requirements of the Environmental Planning and Assessment Act, 1979. These include matters relating to

strategic planning, subdivision layout and future character, visual impacts, traffic and access, hazard management and mitigation, water cycle management, heritage and archaeology, flora and fauna, noise, aviation and defence considerations.

The application is considered to comply with the relevant State and Regional environmental planning policies that apply to the site. Furthermore, the proposal is consistent with the strategic aims of SCC, the provisions of the Shoalhaven LEP 2014 and the relevant provisions of the Shoalhaven DCP 2014.

The proposal includes an appropriate lot layout and other measures to mitigate the impacts of the subdivision, including the preservation of those areas deemed to have significant ecological values, appropriate road layout to properly edge the subdivision and provide bushfire mitigation, and a well sited commercial precinct which will act as a focal point for future residents within the living area.

The proposed development builds upon established social infrastructure provided in the locality in the form of the Shoalhaven Campus of the University of Wollongong and TAFE, whilst the site will be serviced with all other essential infrastructure including reticulated water and sewer services, underground electricity and telephone services.

The proposal is recommended for support.

1.2 THE PROPONENT

The proponent is Allen Price and Associates (APA), acting on behalf of Jemalong Mundamia Pty Ltd who are the developers of the proposal.

1.3 NEED AND JUSTIFICATION

The proposal seeks consent to a subdivision proposing the development of 319 residential allotments at Mundamia to the west of the Nowra township. Mundamia is a new living area identified by SCC in order to provide for residential expansion consistent with its growth strategy, and as identified in the NBSP and the *South Coast Regional Strategy* (SCRS). The NBSP has demonstrated a need to provide additional lands for urban development to accommodate the continuous growth rate which has been experienced, and anticipated to occur in the future.

SCC in conjunction with the DoP, and the relevant infrastructure supply agencies have planned for the development of Mundamia as evidenced by the various growth strategies, and the preparatory planning and design work that is currently being undertaken.

1.4 ALTERNATIVES

In the consideration of Mundamia as a residential growth area, SCC has previously undertaken a number of studies in order to identify constraints and opportunities. Of particular note is the ecological analysis that has been prepared which has identified those areas which have higher ecological values and which are deemed unsuitable for urban development.

The result of the above is that constraints and opportunities were identified at an early stage, and whilst alternative subdivision layouts are available, by and large, the major constraints and overarching subdivision footprint and pattern have been pre-determined. Notwithstanding this, separate assessment undertaken as part of this Section 79C Assessment has reconfirmed the constraints and opportunities which have been previously identified.

2.0 SITE AND SURROUNDS

2.1 SUBJECT SITE

The subject site is legally described as Lot 30 DP 1198692 and which has an area of 41.39 ha. The site has been created following the re-subdivision of Lots 3 DP 568613 and Lot 384 DP 755952.

The subject site is located within Mundamia, within the City of Shoalhaven Local Government Area. Mundamia is identified within the Nowra Bomaderry Structure Plan as Living Area No. 5.

The site ranges in height from 36 m to 70 m AHD and is mostly level to gently undulating however it does steepen towards the eastern section.

The site adjoins the following:

- undeveloped forested lands to the east and includes land which contains Flat Rock Creek;
- undeveloped lands to the west which are owned by SCC and the NSW Aboriginal Land Council are also contained within the Mundamia Living Area No. 5 and are likely to be the subject of further residential development in time;
- the Shoalhaven Campus of the University of Wollongong and TAFE (see **Plate 1**) to the south-west;



Plate 1: Shoalhaven Campus of University of Wollongong and TAFE.

- undeveloped Crown Land which also contain Flat Rock Dam are sited along the eastern end of the southern boundary of the site;
- along the western end of the southern boundary of the site are undeveloped lands owned by the NSW Department of Education;
- to the north are privately owned lands developed for rural and rural residential purposes (refer **Plates 2 and 3**).



Plate 2: View of adjoining site.



Plate 3: View of adjoining site.

The site is largely cleared and used for agricultural purposes, however some forest vegetation is located within the eastern and northern portion of the site, identified as Grey Gum – Blue-leaved Stringybark Forest Woodland.

Vehicular access to the site is provided via George Evans Road and Jonsson Roads.

2.2 LOCAL CONTEXT

Mundamia effectively is a new area, identified in the NBSP as the site for future residential growth. Mundamia is sited approximately 2 km west of the township of Nowra, which is the nearest major regional town.

At present, Mundamia is largely undeveloped apart from established rural and rural residential properties; however it is close to the site of the Shoalhaven Campus of the University of Wollongong/TAFE.

Access to Mundamia is provided via Yalwal Road which is a sealed public road maintained by SCC and links with Albatross Road to the south of the Nowra Township.

Nowra is provided with a wide range of commercial, retail, medical and social infrastructure to service the 30,000 strong local population and surrounding rural areas and small coastal villages.

The Shoalhaven River physically separates North Nowra and Bomaderry from the Nowra CBD and southern localities. The Shoalhaven River meanders its way to the coast and the site is located approximately 250 metres south of a bend in the River. Although located in relative close proximity to the site, its relationship with this water course is restricted due to substantial sandstone cliff faces which impede physical connectivity.

2.2.1 Existing Land Uses

In the vicinity of the site, existing land uses comprise predominantly rural and rural residential development, with the exception of the education precinct formed by the Shoalhaven Campus of the University of Wollongong and TAFE.

The current provisions of Shoalhaven LEP zone land in the vicinity of the site a variety of rural, open space, special use and environmental protection purposes.

2.3 LANDSCAPE CHARACTER

Regional

The regional landscape is dominated by relatively flat coastal and riverine plains associated with the Shoalhaven River, grading to the steep slopes of the Cambewarra Range to the west. The Shoalhaven River meanders through the Shoalhaven Floodplain and it joins the Crookhaven River as it approaches the Shoalhaven Bight.

The actual coastline is dominated by prominent headlands, long sandy beaches and dunal wetlands.

Regionally significant topographic features include the Cambewarra Range to the north of the site, and Nowra Hill to the south.

Mundamia

The area of Mundamia is sited to the south of the Shoalhaven River. The local landscape is gently undulating and vegetated with tall forest in areas not subject to historical clearing for residential development or grazing activities.

Prominent features in the local landscape include the Shoalhaven River and Thomsons Point to the north of the site.

2.4 BUILT ENVIRONMENT

In the vicinity of the site, built development is very limited due its rural character.

The area displays no particular built character or architectural style.

To the south of the site is the education precinct comprising the Shoalhaven campus of the University of Wollongong and TAFE campus. This development is contained within the one complex and consists of a single building having a contemporary design.

2.4.1 Likely Future Character

Development within Mundamia is expected to be undertaken in accordance with Chapter N21 of the Shoalhaven DCP which affects the Mundamia new urban release area specifically.

2.5 REGIONAL CONTEXT

SCC is situated on the south coast some 2 hours south of Sydney. **Figure 1** identifies the Shoalhaven in a regional context. The Shoalhaven is connected to the north by the Princes Highway which provides access to Wollongong and Sydney.

Heavy rail transport is provided to the Region via the South Coast Railway Line.

The area is well regarded due to its close proximity to Sydney and the ACT, and for its high scenic qualities and natural environments, and includes a number of National Parks, State Conservation Areas and the Jervis Bay Marine Park.

The Shoalhaven features a wide variety of environments, including beaches, native forests, estuaries, coastal floodplains, and escarpment.

The Shoalhaven has a population in excess of 80,000 and provides a variety of industries including tourism, agriculture, aquaculture, aviation and defence, and education.



Figure 1: Regional Context Map

2.5.1 Topography

The site, for the most part, is relatively flat to gently undulating however with a fall across the site from south to north and north east. Site topography is more pronounced in the eastern section of the site.

For that part of the site subject to residential development, maximum site elevations are approximately 70 m AHD whilst the minimum site elevations are 46 m AHD.

The site drains to the north-east towards Flat Rock Creek, which flows to the Shoalhaven River to the north.

In the area, other topographical features include Thompson's Point, which has a relative height of 30 m, Cambewarra Mountain, which is the southern extent of the Cambewarra

Range, and is located to the north of the site with a peak elevation of 600 m AHD. To the south is Nowra Hill which has a peak elevation of 197 m AHD.

2.5.2 Climate

Nowra and surrounds has a temperate climate with four distinct seasons. Average maximum and minimum summer temperatures are 26 and 16 degrees Celsius respectively, and winter maximum and minimum averages are 16 and 6 degrees Celsius respectively. Average annual rainfall is 1,143 mm.

2.5.3 Soils

The 1:100 000 Soils Landscape Map for Kiama identifies the site as comprising Nowra Landscape soil. Soil conditions are moderately deep, brown podsolc soils on the upper slopes and crests, with the mid and lower slopes and drainage depressions consisting of yellow earths or yellow podsolics.

3.0 THE PROPOSAL

The proposed subdivision is detailed in the Subdivision Sketch Plan prepared by Allen Price and Associates (Referenced 25489-11 Rev 9) dated 2nd June 2015 and is attached as **Annexure 1**. The Subdivision Sketch Plan has been prepared following detailed consideration of government agency issues and concerns raised during the earlier exhibition of the project.

The Subdivision Sketch Plan has the following features:

- total of 319 residential allotments with the following characteristics:
 - 304 traditional residential allotments,
 - 9 allotments suitable for dual occupancy development,
 - 6 multi dwelling allotments (suitable for further higher density residential development); and
- four (4) public reserve allotments;
- one (1) commercial allotment;
- identification of a proposed bus route and bus stop locations;
- identification of areas for on-site detention of stormwater.

The following table (**Table 1**) outlines the proposed subdivision.

Table 1
Subdivision Details

Single Dwelling Allotments	304
Dual Occupancy Allotments	9 (allowing 18 dwellings)
Multi dwelling Allotments	6 (allowing 29 dwellings)
Total Residential Allotments	319
Number of Dwellings	351 dwellings
Subdivision Yield	30.02 ha /351 dwellings = 11.69 dwellings per ha
Commercial Allotments	1
Area of drainage reserves	12,900 m² with a volume of 9,700 m³
Area of public open space	4, 607 m²
Areas of bushland	10.49 ha

The following sections deal with the proposal in greater detail.

3.1 RESIDENTIAL ALLOTMENTS

The proposed allotments vary in size from a minimum of 516 m², to a maximum of 1041 m². A total of 304 single dwelling allotments are proposed.

The majority of allotments proposed have a site area of between 600 and 700 m².

The breakdown of lot sizes and numbers is proposed as follows:

- Lot Type 1 (< 600 m²) – 114
- Lot Type 2 (600 – 700 m²) – 181
- Lot Type 3 (700 – 800 m²) – 6
- Lot Type 4 (> 800 m²) – 3

3.2 DUAL OCCUPANCY ALLOTMENTS

The Subdivision Sketch Plan prepared by APA shows the provision of 9 dual occupancy allotments with area of at least 703 m². Development of these allotments will result in the provision of eighteen residential dwellings.

The dual occupancy allotments are sited in relatively close proximity to the Mundamia “Hub” being generally within a 250 to 300 m radius.

3.3 MULTI DWELLING HOUSING ALLOTMENTS

The Subdivision Sketch Plan prepared by APA shows the provision of multi dwelling lots/medium density sites. It is anticipated that the development of these will result in up to 29 separate dwellings. These allotments are sited in the vicinity of the “Hub” commercial precinct, and also opposite a proposed public reserve.

3.4 COMMERCIAL ALLOTMENT

The Subdivision Sketch Plan prepared by APA shows the creation of one (1) commercial allotment having an area of 163 m² which is to be available for integration with adjoining lands to enable development of the “Hub” precinct.

3.5 ON SITE DETENTION AREAS

The Subdivision Sketch Plan prepared by Allen Price and Associates includes the siting of four areas where on site detention can be located. These allotments are sited at the lower level of the site and have the following characteristics:

- Southern site within bushland public reserve with potential detention area of 1,000 m² and volume of 600 m³;
- central site within public reserve allotment with potential detention area of 2,900 m² and volume of 2,500 m³;
- central site within bushland reserve allotment with potential detention area of 2,000 m² and volume of 1,200 m³; and
- northern site within bushland reserve with detention area of 7,000 m² and volume of 5,400 m³.

Total detention area of 12,900 m² is proposed for the entire estate, with a detention volume of 9,700 m³.

3.6 ROAD ALIGNMENT

The subdivision pattern is based on a grid design, with a main road which will be centrally located when other lands are also developed. This provides access up the spine of the residential lands, and provides an ideal opportunity to centrally site commercial and communal facilities to service the locality.

The grid pattern provides a very permeable layout, which encourages active transport options for local trips from residences to the commercial and public open space facilities.

The subdivision pattern has a clear hierarchy with appropriate emphasis given to the central access road, and relevant weight given to lesser roads. One roundabout is proposed within the site to control traffic flows, sited within the main central accessway.

The road network rings the residential lands in order to facilitate good public access to the network of public open space which is proposed as part of the subdivision.

The orientation of the main access road has been sited in order to enable views towards Mt Cambewarra to the north of the locality.

The main access corridor has a road reserve of 20 metres in width, reinforcing its primary status in the overall local road hierarchy. In addition, perimeter roads are wider in order to facilitate access by larger vehicles and fire tankers, as well as increase the buffer (APZ) to the bush fire threat.

3.7 PUBLIC RESERVES

The Subdivision Sketch Plan prepared by Allen Price and Associates includes the provision of public reserve allotments as follows:

- A public reserve allotment, which is generally regular in shape and has an area of 3207 m², and which is centrally sited fronting roads four, ten and eleven;
- A public reserve allotment with an area of 1400 m² adjacent the main spine road at the entry to the estate
- a natural area of public open space is proposed along the north eastern edge of the site with an area of 7.39 ha; and
- a natural area along the eastern edge of the site and which has an area of 3.1 ha.

The Subdivision Plan prepared by Allen Price and Associates shows a total of 4,607 m² of public reserve being proposed within the estate. This is in addition to the 8,644 m² of public reserve proposed by Shoalhaven City Council in the development of land adjoining (MP 09_0056) which amounts to a total of 13,251 m² of public reserve within the Mundamia Estate to complement the natural bushland areas.

Shoalhaven City Council have agreed to the inclusion of the public reserves in the public reserve pool, as outlined in correspondence contained in **Annexure 11**.

3.8 BUS ROUTES AND STOPS

The Subdivision Sketch Plan prepared by Allen Price and Associates identifies a bus route and location for bus stops to service the Mundamia Living Area. The proposal incorporates a clockwise route (highly desired by bus industry as it minimises more restrictive left turn manoeuvres) and three bus stops, two of which are located within the subject site.

The bus route has been carefully selected to ensure that all allotments are well within a 500 m radius of a designated bus stop, thus providing good walkability to ensure accessibly for all future residents.

3.9 DRAINAGE

Stormwater is proposed to be conveyed via piped drains and biofiltration systems to the lower reaches of the site. To this end, a series of wider road reserves and drainage corridors are to be provided to assist in the conveyance of stormwater.

The relatively level nature of the site precludes the use of drainage swales and wetland areas in the carriage and storage of stormwater due to potential water-logging and extent of exposed bedrock apparent at the site. Instead, a series of biofilter systems are to be provided for all catchments.

3.10 SERVICING

Submitted in support of the earlier EIA was a *"Utilities Investigation Report"* prepared by Allen Price and Associates (APA) which has examined the provision of all infrastructure necessary to support the proposed subdivision.

3.10.1 Water and Sewerage Services

SCC, through Shoalhaven Water, is the supply authority for water and sewerage services throughout the entire City.

Investigations have been undertaken and SCC are fast-tracking the supply of water and sewerage services to the locality in order to meet the development targets scheduled by the NBSP.

All allotments are intended to be supplied with reticulated water and sewerage services.

3.10.2 Electricity

Electricity services are to be provided underground in accordance with Shoalhaven Council requirements, and to provide a level of visual amenity expected in contemporary subdivision design. In addition, lines protected underground are preferable in areas identified as being bushfire prone, as is the site.

Electricity is proposed to be provided by way of underground supply.

3.10.3 Telecommunications

The supply of telecommunications services is the statutory responsibility of Telstra. Telecommunications services are to be provided to each allotment in the subdivision by way of underground lines, usually sharing common trenching with electrical services. The proposal has been registered with Telstra in order to ensure the timely provision of services as needed.

3.10.4 Gas

The availability of reticulated gas to residential areas is limited in the Shoalhaven with this dependent on feasibility assessments undertaken by Jemena Pty Ltd who obtain gas from Actew AGL.

Notwithstanding this, bottled gas is readily available, and resultant development will be able to be serviced.

3.10.5 Telephone Services

Telecommunication services are readily available in the locality and connection to the proposed subdivision is expected.

3.11 MANAGEMENT AND MAINTENANCE OF OPEN SPACE AREAS

The proposal provides for the provision of open space allotments as follows:

- 7.39 ha area in the north-eastern corner of the site,
- 3.1 ha area in the south-eastern edge of the site,
- Public reserve having an area of 3207 m² central to the subdivision,
- Public reserve of 1400 m² adjacent the entry to the site.

The design and siting of the public reserves has been the subject of much consideration by Shoalhaven City Council having regard to their acceptance of their dedication.

Shoalhaven Council by letter dated 1st May 2015 has agreed to the dedication of the public reserves (see **Annexure 11**).

3.12 STAGING OF DEVELOPMENT

The development will be completed in 11 stages and included on the subdivision sketch plan (plan Reference 24532-11 as **Annexure 1**).

The staging commences in the south western corner and continuing along the western boundary generally in a northerly direction. The central and eastern portions of the development are to be undertaken generally from north to south in order to allow the infrastructure that is to be provided in conjunction with the development.

The staging pattern is a logical one that is mindful of the need to provide relevant services for residential development, particularly having regard to water supply pressure and sewerage service, along with appropriate maintenance of Asset Protection Zones in order to mitigate bushfire risk to enable the development of lots upon their release.

Release of land will be contingent on the buoyancy of the residential market and take up rates.

4.0 STATUTORY SITUATION

4.1 COMMONWEALTH LEGISLATION

4.1.1 Environment Protection and Biodiversity Conservation Act

The Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* specifies that approval is required from the Commonwealth Minister for the Environment for actions that have, will have or are likely to have a significant impact on a matter of “national environmental significance”, including:

- (i) declared World Heritage Areas;
- (ii) declared Ramsar wetlands;
- (iii) listed threatened species and ecological communities;
- (iv) listed migratory species;
- (v) nuclear actions; and
- (vi) the environment of Commonwealth marine areas.

Actions on or outside Commonwealth land that have, will have or are likely to have a significant impact on the environment on or outside Commonwealth land must also be referred to the Commonwealth Minister for assessment and approval.

The Department of Environment and Heritage (2005) has published guidelines to assist in determining whether an action will have or is likely to have a significant impact on a matter of national environmental significance and, hence, whether a referral should be submitted to the Department for a decision by the Minister on whether assessment and approval is required under the EPBC Act.

The Section 79C Assessment is supported by a Flora and Fauna Assessments prepared SLR Consulting (**Annexure 3**).

With respect to the provisions of the EPBC Act the Flora and Fauna Assessment concludes that:

“There is no likelihood of a “significant impact” being imposed on any biota listed in the EPBC Act as a result of the proposed development of the site at Mundamia.

In summary, the proposed development is not likely to have a significant impact on matters of national environmental significance listed under the Environment Protection and Biodiversity Conservation Act. Referral to the Commonwealth Minister for the Environment for assessment and approval is therefore not warranted.

4.2 STATE LEGISLATION

4.2.1 Environmental Planning & Assessment Act

Matters for Consideration

Section 79C(1) of the Environmental Planning & Assessment Act 1979 outlines those matters that a consent authority must take into consideration when it considers and determines a development application. Section 79C(1) stipulates:

79 Evaluation

(1) *Matters for consideration - general In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application:*

(a) *the provisions of:*

- (i) *any environmental planning instrument, and*
- (ii) *any draft environmental planning instrument that is or has been placed on public exhibition and details of which have been notified to the consent authority (unless the Director-General has notified the consent authority that the making of the draft instrument has been deferred indefinitely or has not been approved), and*
- (iii) *any development control plan, and*
- (iiia) *any planning agreement that has been entered into under section 93F, or any draft planning agreement that a developer has offered to enter into under section 93F, and*
- (iv) *the regulations (to the extent that they prescribe matters for the purposes of this paragraph),*
- (v) *any coastal zone management plan (within the meaning of the Coastal Protection Act 1979),*

that apply to the land to which the development application relates,

- (b) *the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,*
- (c) *the suitability of the site for the development,*
- (d) *any submissions made in accordance with this Act or the regulations,*
- (e) *the public interest.*

The above matters are addressed in detail in Section 5.0 of this SEE.

State Significant and Regional Development

Section 89C to the Environmental Planning & Assessment Act 1979, and the introduction of *State Environmental Planning Policy (State & Regional Development (the "State & Regional Development SEPP"))*, have brought about a change in the regime concerning the assessment of state significant development (SSD). Pursuant to Section 89C of the

Act, development that is declared to be SSD is referred within the State and Regional Development SEPP. The Minister for Planning is the consent authority for SSD. The provisions of the State and Regional SEPP as they apply to this proposal are addressed in Section 5.1.1.1. In this instance, the proposal has been declared a State Significant Development and the Department of Planning is therefore the consent authority for the project.

Integrated Development

Pursuant to Section 89J of the Act, proposals for SSD do not trigger the need for certain approvals that apply to development applications. These include bushfire safety authorities under the Rural Fires Act and controlled activity permits under the Water Management Act. Consequently, the integrated development provisions have no implications for the proposal.

4.2.2 Threatened Species Conservation Act 1995

This legislation was introduced with the objectives of conserving threatened species, populations and ecological communities of animals and plants. The Act amends the Environmental Planning & Assessment Act and the National Parks & Wildlife Act. With respect to this proposal, the legislation introduces the need for a proposal to address certain matters in respect of threatened species and their habitats.

The seven part test is the informal title for the process set out in Section 5A of the *Threatened Species Conservation Act 1995*. It details how to determine where there is likely to be a 'significant effect' on threatened species, endangered populations or communities or their habitats. If a 'significant effect' is forecast, a more specific Species Impact Statement report will be required.

The SEE is supported by an ecological assessment carried out by SLR Consulting (**Annexure 3**) and Gunninah (**Annexure 10**). These reports address the requirements of this legislation.

Appendix L of **Annexure 3** includes assessments of significance for the species relevant to the proposal. These assessment conclude that the proposal will not result in a significant impact on threatened species or their habitats, or endangered ecological communities.

4.2.3 Native Vegetation Conservation Act

The Native Vegetation Conservation Act 2003 (NVC) came into force on 11th December 2003 to control the removal of native vegetation. The Native Vegetation Act essentially seeks the conservation and management of native vegetation.

The definition of “native vegetation” under the Act is quite broad, it includes; trees, understorey plants, groundcovers and plants occurring in a wetland. To be considered native, indigenous species must cover more than 50% of the area.

The proposal involves the subdivision of land to create four residential allotments.

Schedule 1 of the Act states that the following land is excluded from the operation of the Act:

“Land within the following zones (not being land to which a property vegetation plan applies):

- (a) in the case of land to which an environmental planning instrument made pursuant to section 33A of the Environmental Planning and Assessment Act 1979 applies—Zone RU5 Village, Zone R1 General Residential, Zone R2 Low Density Residential, Zone R3 Medium Density Residential, Zone R4 High Density Residential, Zone B1 Neighbourhood Centre, Zone B2 Local Centre, Zone B3 Commercial Core, Zone B4 Mixed Use, Zone B5 Business Development, Zone B6 Enterprise Corridor, Zone B7 Business Park, Zone IN1 General Industrial, Zone IN2 Light Industrial, Zone IN3 Heavy Industrial, Zone IN4 Working Waterfront, Zone SP2 Infrastructure or Zone W3 Working Waterways,*
- (b) in any other case—a zone designated “residential” (but not “rural-residential”), “village”, “township”, “industrial” or “business” under an environmental planning instrument or, having regard to the purpose of the zone, having the substantial character of a zone so designated.”*

The subject land, where the subdivision is proposed, is zoned R1 under the provisions of the Shoalhaven LEP 2014. Under these circumstances, the proposal is exempt from the provisions of the Native Vegetation Act.

4.3 STATE POLICIES AND STRATEGIES

4.3.1 NSW Coastal Policy

The NSW Coastal Policy applies:

- three nautical miles seaward of the mainland and offshore islands;
- one kilometre landward of the open coast high water mark;
- a distance of one kilometre around:
 - ⇒ all bays, estuaries, coastal lakes, lagoons and islands;
 - ⇒ tidal waters of coastal rivers to the limit of mangroves, as defined by NSW Fisheries (1985) maps or the tidal limit whichever is closer to the sea.

The subject site is located within the coastal zone and as such the NSW Coastal Policy 1997 applies. The Policy guides the management and planning of the coastal zone and has a strong emphasis on ecologically sustainable development. The Policy essentially

brings together all policies, programs and standards that apply to the coastal zone into the one document. In addition, the Policy seeks to co-ordinate the multiple agencies and authorities, and various levels of government, to ensure consistency in application of the Policy, outlining who is responsible for implementing the Policy, and at what stage in the development process.

The requirements of the NSW Coastal Policy were considered in the information accompanying the original Part 3A application.

4.3.2 Coastal Design Guidelines 2003

The Coastal Design Guidelines for NSW were prepared by the NSW State Government with reference to the NSW Government's Coastal Policy 1997 and complement the Government's Coastal Protection Package (which included SEPP No. 71). The Coastal Design Guidelines are based upon the principles of ecologically sustainable development. The Guidelines provide additional direction to supplement the limited design matters contained in the Coastal Policy and are broad brush guidelines that support the place-based planning approaches espoused in PlanFirst, the NSW Government's plan making reform package released in 2002.

The Guidelines operate by applying the hierarchy of coastal settlements, which provides seven different settlement types ranging in size from Coastal Cities down to isolated coastal dwellings on large rural allotments.

Part 1 of the Guidelines outlines the relevant issues, opportunities, and desired future character which apply to each of the seven settlement types.

Part 2 of the Guidelines outlines the 5 Design Principles that should apply to each of the Settlements, providing a series of 'desirable' and 'undesirable' practices that are to be applied to coastal settlements. The 5 Design Principles relate to:

- defining the footprint and boundary of settlements;
- connecting open spaces;
- protecting the natural edges;
- reinforcing the street pattern;
- appropriate buildings in a coastal context.

Part 3 concludes the document and outlines how the Guidelines are to be implemented.

The following addresses the 5 Design Principles contained within the NSW Coastal Design Guidelines that are considered to have relevance to this proposal:

Principle 1 - Defining the Footprint and Boundary of Settlements

The project has been designed following extensive assessment of the relevant constraints and opportunities, along with the strategic assessment undertaken by SCC in the NBSP.

Such has resulted in the identification of land which is considered suitable for urban development, and those lands which are constrained by topographical features, natural hazards, or are of ecological importance and therefore, are not considered suitable for more intensive development.

This process has determined the extent of development, and the footprint and boundaries of Mundamia.

The proposal allows for the following:

- Retention of vegetation within the site along riparian corridors;
- Provision of a permeable subdivision pattern allowing for pedestrian and cycle movements both within and beyond the site to places of importance, such as the community facilities and future neighbourhood shopping site;
- Connection of all relevant services.

Principle 2 - Connecting Open Space Networks

The subdivision provides for the provision of open space along the eastern edge of the site, and near the central commercial precinct, linked by a wide road reserve which is to be appropriately landscaped.

The open space network provides passive recreation opportunities, as well as maintaining visual amenity through the provision of a large expanse of green space and streets have been oriented such that bushland views are available to motorists and pedestrians as they travel the road network, thereby providing a distinct character for Mundamia.

In addition to the open space areas, a series of pathways providing cycling and walking opportunities is to be provided to link the network of open spaces, commercial facilities and the identified desire lines.

Principle 3 - Protecting the Natural Edges

The subject site does not have direct frontage to the actual coastline or foreshore areas. At present, the site has no identifiable edge, however it is noted that the land does slope more steeply to the east away from the site. As such, the edge will be defined by this subdivision layout. In this regard, the subdivision has been the subject of assessment to

determine constraints and opportunities, and this has formed the subdivision layout the subject of the major project.

The natural edges will be protected by the subdivision layout, which proposes a new perimeter road to contain all of the proposed residential allotments. This is considered an appropriate manner in which to protect the natural edge and prevent incursions into natural or ecologically sensitive areas.

Principle 4 - Reinforcing the Street Pattern

As this is a new area, there is no established street pattern. The Masterplanning process and the guiding principles adopted by SCC have determined the street pattern.

The layout is generally of a grid pattern which is readily legible to the travelling public and also permeable thereby encouraging pedestrian and cycling movements to access local facilities and open space.

Further, the road pattern is orientated such that distant views are obtained of the Cambewarra Mountain Range or adjoining bushland to provide the desired character.

Finally, the street pattern is provided with appropriate street width to enable bus movements, emphasise more prominent streets and enable provision of suitable Asset Protection Zones.

Principle 5 - Appropriate Buildings for a Coastal Context

Although no buildings are proposed as part of this Major Project application, it is crucial that the allotments that are created allow for the development of appropriate buildings in accordance with that espoused in the Coastal Design Guidelines. In this regard, it is considered that the proposal allows for suitable residential development due to:

- suitably sized residential allotments;
- the proposed orientation of lots;
- suitable road pattern;
- due regard to natural hazards; and
- preservation of reasonable native vegetation within the site.

It is considered that the proposal is generally consistent with and will result in development that will comply with the requirements of the NSW Coastal Design Guidelines 2003.

4.4 REGIONAL STRATEGIES

4.4.1 South Coast Regional Strategy

The primary purpose of the South Coast Regional Strategy 2006-2031 (SCRS) is to ensure that adequate land is available and appropriately located to sustainably accommodate projected housing and employment needs for the South Coast Region for the next 25 years.

In summary the aims of the strategy include:

- *Protect high value environments including pristine coastal lakes, estuaries, aquifers, threatened species, vegetation communities and habitat corridors by ensuring that no new urban development occurs in these important areas and their catchments.*
- *Cater for a housing demand of up to 45,600 new dwellings by 2031 to accommodate the additional 60,000 people expected in the Region over the next 25 years.*
- *Increase the amount of housing in existing centres to ensure the needs of future households are better met, in particular the needs of smaller households and an ageing population.*
- *Prioritise and manage the release of future urban lands to ensure that new development occurs in and around existing well serviced centres and towns.*
- *Use the recommendations of the Sensitive Urban Lands Panel to guide the finalisation of the development form and environmental management of the 17 'sensitive urban lands'.*
- *Manage the environmental impact of settlement by focusing new urban development in existing identified growth areas such as Nowra-Bomaderry, Milton-Ulladulla, Batemans Bay and Bega.*
- *Only consider additional development sites if it can be demonstrated that they satisfy the Sustainability Criteria (Appendix 1).*
- *No new towns or villages will be supported unless compelling reasons are presented and they can satisfy the Sustainability Criteria.*
- *No new rural residential zones will be supported unless as part of an agreed structure plan or settlement strategy.*
- *Ensure an adequate supply of land to support economic growth and provide capacity to accommodate a projected 25,800 new jobs, particularly in the areas of finance, administration, business services, health, aged care and tourism.*
- *Limit development in places constrained by coastal processes, flooding, wetlands, important primary industry resources and significant scenic and cultural landscapes.*
- *Protect the cultural and Aboriginal heritage values and visual character of rural and coastal towns and villages and surrounding landscapes.*

Where development or rezoning increases the need for State infrastructure, the Minister for Planning may require a contribution to the provision of such infrastructure, having regard to the State Infrastructure Strategy and equity considerations.

According to this Regional Strategy an additional 26,300 dwellings will be required within the Shoalhaven over the next 25 years, of which approximately 15,800 can potentially be accommodated within existing urban land.

Comment

The proposal represents an appropriate density residential subdivision that will increase the housing supply for the local community upon land that is zoned for Residential purposes and which allows the proposed development.

4.4.2 Shoalhaven Housing Strategy

The Shoalhaven Housing Strategy was adopted by Shoalhaven City Council on the 27th June 2006. The Strategy has six broad objectives:

- I. Increase the supply of housing appropriate for people whose needs are poorly met by the existing stock (eg aged, disabled, youth);*
- II. Manage local housing supply to minimise unsustainable peaks and troughs in dwelling prices;*
- III. Support local providers to increase the supply of housing for special needs groups;*
- IV. Increase the supply of affordable housing in the Shoalhaven and retain existing affordable housing.*
- V. Ensure maximum accessibility of available community services and facilities to Shoalhaven residents, particularly those with special needs.*
- VI. Pursue an active housing strategy for the Shoalhaven.*

Comment

The proposal represents an appropriate density residential subdivision that will increase the housing supply upon within this new urban release area on land that is appropriately zoned to provide residential development.

The proposal is therefore not inconsistent with the overall aims and objectives of the Shoalhaven Housing Strategy.

5.0 ASSESSMENT

5.1 SECTION 79C(1)(A) – ENVIRONMENTAL PLANNING PROVISIONS

5.1.1 Environmental Planning Instruments

5.1.1.1 *State Environmental Planning Policies (SEPPs)*

SEPP No. 14 – Coastal Wetlands

SEPP 14 ensures coastal wetlands are preserved and protected for environmental and economic reasons. Land clearing, levee construction, drainage work or filling may only be carried out within these wetlands with the consent of the local council and the agreement of the Director General of the Department of Planning. Such development also requires an environmental impact statement to be lodged with a development application.

There are no SEPP 14 Coastal Wetlands located within the subject land and therefore the provisions of this policy do not apply to the proposal.

SEPP No. 44 – Koala Protection

The Shoalhaven is one of the local government areas in which *State Environmental Planning Policy No. 44 - Koala Habitat Protection* (SEPP 44) (New South Wales 1995) applies. SEPP 44 encourages the conservation and management of natural vegetation that provides habitat for Koalas, to ensure a permanent free-living population over the species' present range and to reverse the current trend of Koala population decline.

SEPP 44 aims to identify “*potential Koala habitat*”, which means “*areas of native vegetation where the trees of the types listed in Schedule 2 [of SEPP 44] constitute at least 15% of the total number of trees in the upper or lower strata of the tree component*”. If no Schedule 2 tree species are present or if they constitute less than 15% of the total number of trees present, then no further provisions of the Policy apply.

If more than 15% of the trees in the area are Schedule 2 tree species, then an assessment must be made by a qualified person to determine whether the area contains “*core Koala habitat*”, a term applied to “*an area of land with a resident population of koalas, evidenced by attributes such as breeding females (that is, females with young) and recent sightings of and historical records of a population*”.

The Flora and Fauna Assessment Report carried out by SLR Consulting includes an assessment of the subject site in terms of this policy (refer **Annexure 3**). According to SLR Consulting:

The subject land does not represent “potential koala habitat” as defined in SEPP 44, or “core koala habitat” as defined in the SEPP. Given those

circumstances, there is no requirement pursuant to SEPP 44 for the preparation of a Koala Plan of Management (KPoM) for the subject land.

SEPP No. 71 – Coastal Protection

The provisions of SEPP 71 apply to the coastal zone and are intended to provide a consistent approach to planning within this area. Clause 8 identifies additional matters for consideration where SEPP 71 applies which are to be assessed by an authority when it determines developments to be carried out on lands within the Coastal Zone. The site is located within the Coastal Zone, and is therefore subject to these additional considerations. The following table (**Table 2**) addresses these requirements:

Table 2
Clause 8 – Matters for Consideration

Clause 8 – Matters for Consideration	Compliance
(a) The aims of this Policy set out in clause 2.	<p>The proposal is considered to comply with the aims of the SEPP as it is considerate of ecological and social constraints of the site and surrounds.</p> <p>The proposal includes the conservation of areas having ecological significance or subject to natural hazards.</p> <p>The site does not have direct frontage to any watercourse, beach or other foreshore location.</p>
(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.	<p>Although the site is located within the coastal zone, it does not have direct frontage or access to the coastal foreshore.</p> <p>As such, this has no further relevance to the proposal.</p>
(c) Opportunities to provide new public access to and along the coastal foreshore for pedestrians or persons with a disability.	<p>The site is within the coastal zone as it is located within 1km of the Shoalhaven River however its relationship with the River is limited due to local topography which does not permit access. Consequently, no impacts are expected.</p>
(d) The suitability of development given its type, location and design and its relationship with the surrounding area.	<p>The design of the subdivision has followed an extensive environmental assessment featuring an analysis of ecological and social matters, and the constraints to development.</p> <p>This assessment demonstrates the site is suitable for the proposed development.</p> <p>Additionally, this was preceded by studies undertaken by SCC as part of the NBSP process. This identified land suitable for further urban expansion of Nowra Bomaderry.</p> <p>The site is considered to be suitable for the subdivision now proposed.</p>

Table 2 (continued)

Clause 8 – Matters for Consideration	Compliance
(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.	Due to the location of the site, there will be no impacts on the coastal foreshore. The site is well removed from the foreshore and will not result in any view loss or overshadowing. Further visual assessment is undertaken in Section 5.3.4.
(f) The scenic qualities of the New South Wales coast, and means to protect and improve these qualities.	As outlined above, the subject site is well clear of any waterway and is not visible. As such, direct scenic impacts are largely avoided. Visual impact is further addressed in Section 5.3.4
(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.	A Flora and Fauna Assessment has been undertaken by SLR Consulting (Annexure 3) and Gunninah (Annexure 10) which has built upon preliminary assessment undertaken on behalf of SCC and this has identified an area of land which has higher conservation values and this is not to be developed, being retained in public reserves.
(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.	As the site is well removed from any watercourse, no direct impacts are expected. According to SLR Consulting and Gunninah, it is unlikely that the proposal will adversely impact on native fish or fish habitat (refer Annexures 3 and 10 respectively). Consequently, impacts on fish species, marine vegetation and habitats are unlikely.
(i) Existing wildlife corridors and the impact of development on these corridors.	The assessment by SLR Consulting (Annexure 3) has concluded that: <i>The proposed development will not adversely affect the protection and maintenance of any “wildlife corridors”, or other vegetated linkages, through the general landscape or in the immediate vicinity.</i>
(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 site, due to its location, is not subject to coastal hazards or processes such as flooding, tidal inundation or shoreline erosion.
(k) Measures to reduce the potential for conflict between land-based and water-based coastal activities.	While the site is located within the coastal zone, it is not directly adjacent to a coastal foreshore area and as such, conflict between land and water based coastal activities are unlikely.
(l) Measures to protect the cultural places, values, customs, beliefs and traditional knowledge of Aboriginals.	The proposal has been the subject of an assessment undertaken by South East Archaeology Pty Ltd (SEA) (Annexure 7) which has assessed the site as having low to very low probability of containing artefacts or other indigenous heritage evidence.

Table 2 (continued)

Clause 8 – Matters for Consideration	Compliance
(m) Likely impacts of development on the water quality of coastal waterbodies.	Storm Consulting were engaged to provide a Water Cycle Management Report (WCMR) for the original EIA. Stormwater quality modelling undertaken as part of the WCMR utilising MUSIC modelling demonstrates that the benchmark 85% removal of Suspended Solids, and 65% removal of Total Phosphorus loads, and 45% removal of Total Nitrogen is achieved. This has been further considered by Martens Consulting Engineers in the Water Quality assessment included as Annexure 2 .
(n) The conservation and preservation of items of heritage, archaeological or historic significance.	There are no identified heritage items located on the subject site, or in its vicinity. Consequently, no impacts arise. Heritage matters are further considered in Section 5.4.
(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.	Not applicable to this proposal, which concerns land already zoned for residential purposes. Notwithstanding this, the proposal encourages a compact town by conforming to Chapter N21 of the Shoalhaven DCP 2014 prepared for the locality, with residential development centred on an identified commercial precinct, with suitable walking distances and appropriate infrastructure being provided, in order to encourage active transport options.
(p) Only in cases in which a development application in relation to proposal is determined: (i) The cumulative impacts of the proposal on the environment. (ii) Measures to ensure that water and energy usage by the proposal is efficient.	Cumulative adverse impacts are not anticipated given the acceptable impacts arising from the subdivision, and the mitigation measures being implemented including: <ul style="list-style-type: none">• Protection of most sensitive lands and dedication to Shoalhaven Council; and• Provision of suitable drainage to ensure water quality impacts are minimised including bio swales, on site detention basins, Having regard to water and energy usage, the proposal itself will not result in the inefficient use of energy and water, whilst the proposed layout encourages efficient use of resources through:- <ul style="list-style-type: none">• Providing good orientation of allotments to enable suitable design of dwellings to optimise solar access;• Layout of subdivision surrounds the commercial hub encouraging active transport options for local trips; and• Future dwellings require compliance with BASIX requirements.

SEPP State and Regional Development 2011

The aims of this SEPP are:

- a) To identify development that is State significant development,*
- b) To identify development that is State significant infrastructure and critical State significant infrastructure,*
- c) To confer functions on joint regional planning panels to determine development applications.*

The proposal has been declared State Significant Development and therefore, the consent authority for this development application is the Departmental Planning.

SEPP Infrastructure 2007

SEPP (Infrastructure) was made by the NSW Government on the 21st December 2007. The stated aims of the SEPP are to facilitate the effective delivery of infrastructure across the State by:

- (a) improving regulatory certainty and efficiency through a consistent planning regime for infrastructure and the provision of services, and*
- (b) providing greater flexibility in the location of infrastructure and service facilities, and*
- (c) allowing for the efficient development, redevelopment or disposal of surplus government owned land, and*
- (d) identifying the environmental assessment category into which different types of infrastructure and services development fall (including identifying certain development of minimal environmental impact as exempt development), and*
- (e) identifying matters to be considered in the assessment of development adjacent to particular types of infrastructure development, and*
- (f) providing for consultation with relevant public authorities about certain development during the assessment process or prior to development commencing.*

Traffic Generating Development

Clause 104 of the SEPP deals with traffic generating development and reads:

- (1) This clause applies to development specified in Column 1 of the Table to Schedule 3 that involves:*
 - (a) new premises of the relevant size or capacity, or*
 - (b) an enlargement or extension of existing premises, being an alteration or addition of the relevant size or capacity.*
- (2) In this clause, “relevant size or capacity” means:*

- (a) *in relation to development on a site that has direct vehicular or pedestrian access to any road – the size or capacity specified opposite that development in Column 2 of the Table to Schedule 3, or*
 - (b) *in relation to development on a site that has direct vehicular or pedestrian access to a classified road or to a road that connects to a classified road where the access (measured along the alignment of the connecting road) is within 90 m of the connection – the size or capacity specified opposite that development in Column 3 of the Table to Schedule 3.*
- (3) *Before determining a development application for development to which this clause applies, the consent authority must:*
- (a) *give written notice of the application to the RTA within 7 days after the application is made, and*
 - (b) *take into consideration:*
 - (i) *any submission that the RTA provides in response to that notice within 21 days after the notice was given (unless, before the 21 days have passed, the RTA advises that it will not be making a submission), and*
 - (ii) *the accessibility of the site concerned, including:*
 - (A) *the efficiency of movement of people and freight to and from the site and the extent of multi-purpose trips, and*
 - (B) *the potential to minimise the need for travel by car and to maximise movement of freight in containers or bulk freight by rail, and*
 - (iii) *any potential traffic safety, road congestion or parking implications of the development.*
- (4) *The consent authority must give the RTA a copy of the determination of the application within 7 days after the determination is made.”*

<i>Purpose of Development</i>	<i>Column 2 Size or capacity-- site with access to any road</i>	<i>Column 3 with access to classified road or a road that connects to a classified road (if access within 90 m of the connection)</i>
Subdivision of Land	200 or more allotments where the subdivision includes the opening of a public road	50 or more allotments

Comment

The proposal makes provision for a total of 319 residential allotments plus public reserves and a commercial allotment. The project was the subject of traffic assessment prepared by Colston Budd Hunt and Kafes lodged in respect of the original EIA.

Traffic matters are further addressed in Section 5.3.6 of this Section 79C Assessment Report.

5.1.1.2 Deemed SEPP (former Regional Planning Provisions)

Illawarra Regional Environmental Plan No. 1

The subject site was located within the area affected by the provisions of the Illawarra Regional Environmental Plan No. 1. Clause 1.9 of the Shoalhaven LEP 2014 outlines that the provisions of the Illawarra Regional Environmental Plan No. 1 no longer apply to the subject land.

5.1.1.3 Shoalhaven Local Environmental Plan 2014

Under Shoalhaven LEP 2014, the subject site is zoned partly R1 General Residential and partly E2 Environmental Conservation (refer **Figure 2**).

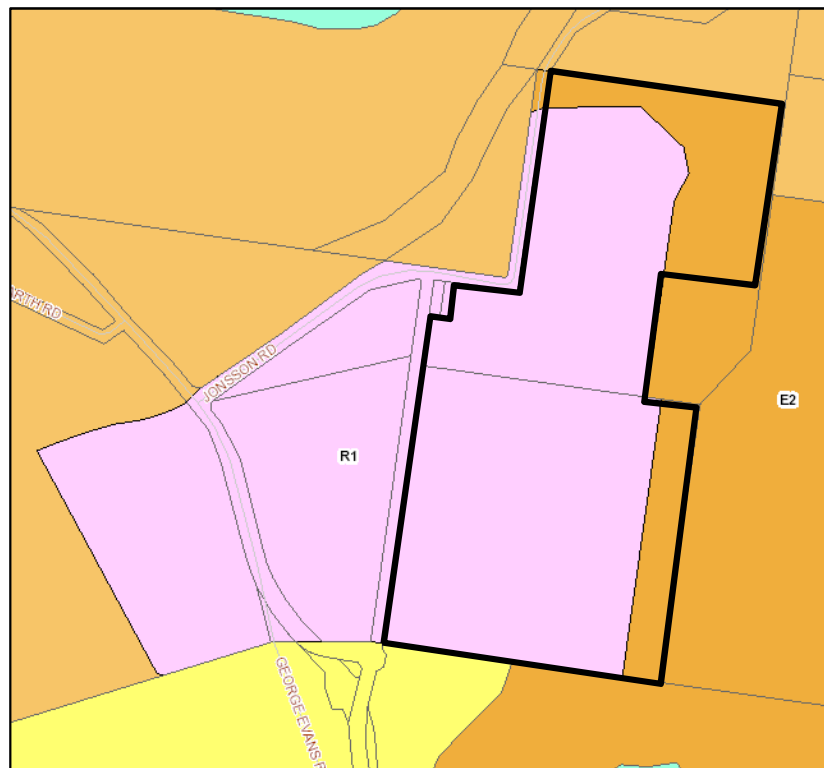


Figure 2: Zoning under SLEP 2014.

The objectives of the R1 General Residential zone are:

- *To provide for the housing needs of the community.*
- *To provide for a variety of housing types and densities.*
- *To enable other land uses that provide facilities or services to meet the day to day needs of residents.*
- *To identify land suitable for future urban expansion.*

The objectives of the E2 Environmental Conservation zone are:

- *To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values.*
- *To prevent development that could destroy, damage or otherwise have an adverse effect on those values.*
- *To protect water quality and the ecological integrity of water supply catchments and other catchments and natural waterways.*
- *To protect the scenic, ecological, educational and recreational values of wetlands, rainforests, escarpment areas and fauna habitat linkages.*
- *To conserve and, where appropriate, restore natural vegetation in order to protect the erosion and slippage of steep slopes.*

It is considered that the proposal is consistent with these objectives as it:

- results in the development of a residential subdivision providing additional housing opportunities;
- provides for a variety of housing choices due to the creation of allotments suitable for single residential dwellings, dual occupancies and multi-dwelling housing;
- provides a suitable design consistent with the Shoalhaven DCP - Chapter NB1 applying to the Mundamia urban release area;
- provides Asset Protection zones within road reserves and front setbacks to mitigate bushfire risk and maintain ecologically sensitive areas;
- has been designed to ensure the protection of environmentally sensitive lands through the provision of:
 - public reserve allotments; and
 - suitable drainage including bio swales and on site detention basins.

Principal Development Standards

Within the subject site, the following principal development standards apply:

- minimum lot size – 500 m²;
- height of buildings – no maximum building height has been identified on the Height of Buildings mapping, and therefore Clause 4.3 prescribes a maximum height of 11 m;
- FSR – no maximum floor space ratio is identified for the subject land on the Floor Space Ratio Mapping.

The proposed residential allotments exceed the minimum lot size required by Shoalhaven LEP 2014.

Other Relevant Provisions

The SLEP 2014 also has a number of specific provisions that apply to the land. The implications that these provisions have in relation to this proposal are discussed in **Table 3** below.

Table 3
Shoalhaven LEP 2014 Provisions

SLEP 2014 Clause	Provisions	Comments
5.5 <i>Development within the coastal zone</i>	<p>(1) <i>The objectives of this clause are as follows:</i></p> <ul style="list-style-type: none"> (a) <i>to provide for the protection of the coastal environment of the State for the benefit of both present and future generations through promoting the principles of ecologically sustainable development,</i> (b) <i>to implement the principles in the NSW Coastal Policy, and in particular to:</i> <ul style="list-style-type: none"> (i) <i>protect, enhance, maintain and restore the coastal environment, its associated ecosystems, ecological processes and biological diversity and its water quality, and</i> (ii) <i>protect and preserve the natural, cultural, recreational and economic attributes of the NSW coast, and</i> (iii) <i>provide opportunities for pedestrian public access to and along the coastal foreshore, and</i> (iv) <i>recognise and accommodate coastal processes and climate change, and</i> (v) <i>protect amenity and scenic quality, and</i> (vi) <i>protect and preserve rock platforms, beach environments and beach amenity, and</i> (vii) <i>protect and preserve native coastal vegetation, and</i> (viii) <i>protect and preserve the marine environment, and</i> (ix) <i>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, and</i> (x) <i>ensure that decisions in relation to new development consider the broader and cumulative impacts on the catchment, and</i> (xi) <i>protect Aboriginal cultural places, values and customs, and</i> (xii) <i>protect and preserve items of heritage, archaeological or historical significance.</i> <p>(2) <i>Development consent must not be granted to development on land that is wholly or partly within the coastal zone unless the consent authority has considered:</i></p>	<p>The subject land is located within the coastal zone and Clause 5.5 applies to the proposal.</p> <p>The provisions of Clause 5.5 replicate the requirements of SEPP 71 which have been dealt with above.</p>

Table 3 (continued)

SLEP 2014 Clause	Provisions	Comments
5.5 continued	<p>(a) existing public access to and along the coastal foreshore for pedestrians (including persons with a disability) with a view to:</p> <p>(i) maintaining existing public access and, where possible, improving that access, and</p> <p>(ii) identifying opportunities for new public access, and</p> <p>(b) the suitability of the proposed development, its relationship with the surrounding area and its impact on the natural scenic quality, taking into account:</p> <p>(i) the type of the proposed development and any associated land uses or activities (including compatibility of any land-based and water-based coastal activities), and</p> <p>(ii) the location, and</p> <p>(iii) the bulk, scale, size and overall built form design of any building or work involved, and</p> <p>(c) the impact of the proposed development on the amenity of the coastal foreshore including:</p> <p>(i) any significant overshadowing of the coastal foreshore, and</p> <p>(ii) any loss of views from a public place to the coastal foreshore, and</p> <p>(d) how the visual amenity and scenic qualities of the coast, including coastal headlands, can be protected, and</p> <p>(e) how biodiversity and ecosystems, including:</p> <p>(i) native coastal vegetation and existing wildlife corridors, and</p> <p>(ii) rock platforms, and</p> <p>(iii) water quality of coastal waterbodies, and</p> <p>(iv) native fauna and native flora, and their habitats, can be conserved, and</p> <p>(f) the cumulative impacts of the proposed development and other development on the coastal catchment.</p> <p>(3) Development consent must not be granted to development on land that is wholly or partly within the coastal zone unless the consent authority is satisfied that:</p> <p>(a) the proposed development will not impede or diminish, where practicable, the physical, land-based right of access of the public to or along the coastal foreshore, and</p>	

Table 3 (continued)

SLEP 2014 Clause	Provisions	Comments
5.5 continued	<p>(b) if effluent from the development is disposed of by a non-reticulated system, it will not have a negative effect on the water quality of the sea, or any beach, estuary, coastal lake, coastal creek or other similar body of water, or a rock platform, and</p> <p>(c) the proposed development will not discharge untreated stormwater into the sea, or any beach, estuary, coastal lake, coastal creek or other similar body of water, or a rock platform, and</p> <p>(d) the proposed development will not:</p> <p>(i) be significantly affected by coastal hazards, or</p> <p>(ii) have a significant impact on coastal hazards, or</p> <p>(iii) increase the risk of coastal hazards in relation to any other land.</p>	
5.10 Heritage Conservation	<p>(1) The objectives of this clause are:</p> <p>(a) to conserve the environmental heritage of Shoalhaven; and</p> <p>(b) to conserve the heritage significance of heritage items and heritage conservation areas including associated fabric, settings and views; and</p> <p>(c) to conserve archaeological sites; and</p> <p>(d) to conserve Aboriginal objects and Aboriginal places of heritage significance.</p> <p>(2) Development consent is required for any of the following:</p> <p>(a) demolishing or moving any of the following or altering the exterior of any of the following (including, in the case of a building, making changes to its detail, fabric, finish or appearance):</p> <p>(i) a heritage item,</p> <p>(ii) an Aboriginal object,</p> <p>(iii) a building, work, relic or tree within a heritage conservation area,</p> <p>(b) altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item,</p> <p>(c) disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,</p> <p>(d) disturbing or excavating an Aboriginal place of heritage significance,</p> <p>(e) erecting a building on land:</p>	<p>There are no heritage items within the subject land nor within the immediate vicinity of the subject land.</p> <p>The provisions of this clause therefore do not apply to the subject site.</p>

Table 3 (continued)

SLEP 2014 Clause	Provisions	Comments
5.10 continued	<ul style="list-style-type: none"> (i) on which a heritage item is located or that is within a heritage conservation area; (ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance, (f) subdividing land: <ul style="list-style-type: none"> (i) on which a heritage item is located or that is within a heritage conservation area, or (ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance. 	
6.1 Arrangements for designated State public infrastructure	<ul style="list-style-type: none"> (1) The objective of this clause is to require satisfactory arrangements to be made for the provision of designated State public infrastructure before the subdivision of land in an urban release area to satisfy needs that arise from development on the land, but only if the land is developed intensively for urban purposes. (2) Development consent must not be granted for the subdivision of land in an urban release area if the subdivision would create a lot smaller than the minimum lot size permitted on the land immediately before the land became, or became part of, an urban release area, unless the Director-General has certified in writing to the consent authority that satisfactory arrangements have been made to contribute to the provision of designated State public infrastructure in relation to that lot. (3) Subclause (2) does not apply to: <ul style="list-style-type: none"> (a) any lot identified in the certificate as a residue lot, or (b) any lot to be created by a subdivision of land that was the subject of a previous development consent granted in accordance with this clause, or (c) any lot that is proposed in the development application to be reserved or dedicated for public open space, public roads, public utility undertakings, educational facilities or any other public purpose, or (d) a subdivision for the purpose only of rectifying an encroachment on any existing lot. (4) This clause does not apply to land in an urban release area if all or any part of the land is in a special contributions area (as defined by section 93C of the Act). 	<p>The site is within an identified urban release area.</p> <p>Consultation has commenced with the NSW State government who are currently considering the provision of state infrastructure and have yet to provide the final position with respect to the proposal.</p>

Table 3 (continued)

SLEP 2014 Clause	Provisions	Comments
6.2 Public utility infrastructure	<p>(1) Development consent must not be granted for development on land in an urban release area unless the Council is satisfied that any public utility infrastructure that is essential for the proposed development is available or that adequate arrangements have been made to make that infrastructure available when it is required.</p> <p>(2) This clause does not apply to development for the purpose of providing, extending, augmenting, maintaining or repairing any public utility infrastructure.</p>	<p>The provision of infrastructure is the subject of the Utilities Investigations Report prepared by APA and Associates lodged in respect of the original EIA.</p> <p>The subdivision will be connected to all relevant essential services.</p>
6.3 Development control plan	<p>(1) The objective of this clause is to ensure that development on land in an urban release area occurs in a logical and cost-effective manner, in accordance with a staging plan and only after a development control plan that includes specific controls has been prepared for the land.</p> <p>(2) Development consent must not be granted for development on land in an urban release area unless a development control plan that provides for the matters specified in subclause (3) has been prepared for the land.</p> <p>(3) The development control plan must provide for all of the following:</p> <ul style="list-style-type: none"> (a) a staging plan for the timely and efficient release of urban land, making provision for necessary infrastructure and sequencing, (b) an overall transport movement hierarchy showing the major circulation routes and connections to achieve a simple and safe movement system for private vehicles, public transport, pedestrians and cyclists, (c) an overall landscaping strategy for the protection and enhancement of riparian areas and remnant vegetation, including visually prominent locations, and detailed landscaping requirements for both the public and private domain, (d) a network of active and passive recreation areas, (e) stormwater and water quality management controls, (f) amelioration of natural and environmental hazards, including bush fire, flooding and site contamination and, in relation to natural hazards, the safe occupation of, and the evacuation from, any land so affected, (g) detailed urban design controls for significant development sites, (h) measures to encourage higher density living around transport, open space and service nodes, (i) measures to accommodate and control appropriate neighbourhood commercial and retail uses, 	<p>Development within the Mundamia URA is affected by Chapter NB1 of the Shoalhaven DCP 2014.</p> <p>The provision of Chapter NB1 are considered in Section 5.1.1.4 of this Section 79C Assessment report and Annexure 9.</p>

Table 3 (continued)

SLEP 2014 Clause	Provisions	Comments												
6.3 continued	<p>(j) suitably located public facilities and services, including provision for appropriate traffic management facilities and parking.</p> <p>(4) Subclause (2) does not apply to development for any of the following purposes:</p> <p>(a) a subdivision for the purpose of a realignment of boundaries that does not create additional lots,</p> <p>(b) a subdivision of land if any of the lots proposed to be created is to be reserved or dedicated for public open space, public roads or any other public or environment protection purpose,</p> <p>(c) a subdivision of land in a zone in which the erection of structures is prohibited,</p> <p>(d) development on land that is of a minor nature only, if the consent authority is of the opinion that the carrying out of the development would be consistent with the objectives of the zone in which the land is situated.</p>													
7.1 Acid sulfate soils	<p>(1) The objective of this clause is to ensure that development does not disturb, expose or drain acid sulfate soils and cause environmental damage.</p> <p>(2) Development consent is required for the carrying out of works described in the Table to this subclause on land shown on the Acid Sulfate Soils Map as being of the class specified for those works, except as provided by this clause.</p> <table><tr><th>Class of Land</th><th>Works</th></tr><tr><td>1</td><td>Any works.</td></tr><tr><td>2</td><td>Works below the natural ground surface. Works by which the watertable is likely to be lowered.</td></tr><tr><td>3</td><td>Works more than 1 metre below the natural ground surface. Works by which the watertable is likely to be lowered more than 1 metre below the natural ground surface.</td></tr><tr><td>4</td><td>Works more than 2 metres below the natural ground surface. Works by which the watertable is likely to be lowered more than 2 metres below the natural ground surface.</td></tr><tr><td>5</td><td>Works within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum by which the watertable is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.</td></tr></table>	Class of Land	Works	1	Any works.	2	Works below the natural ground surface. Works by which the watertable is likely to be lowered.	3	Works more than 1 metre below the natural ground surface. Works by which the watertable is likely to be lowered more than 1 metre below the natural ground surface.	4	Works more than 2 metres below the natural ground surface. Works by which the watertable is likely to be lowered more than 2 metres below the natural ground surface.	5	Works within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum by which the watertable is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.	<p>Mapping supporting the SLEP 2014 identifies the subject land as being affected by Class 5 acid sulphate soils.</p> <p>The proposal is supported by an Acid Sulfate Soils Assessment prepared by Martens (Annexure 6) and is considered in Section 5.3.2 of this Section 79C Assessment Report.</p>
Class of Land	Works													
1	Any works.													
2	Works below the natural ground surface. Works by which the watertable is likely to be lowered.													
3	Works more than 1 metre below the natural ground surface. Works by which the watertable is likely to be lowered more than 1 metre below the natural ground surface.													
4	Works more than 2 metres below the natural ground surface. Works by which the watertable is likely to be lowered more than 2 metres below the natural ground surface.													
5	Works within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum by which the watertable is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.													

Table 3 (continued)

SLEP 2014 Clause	Provisions	Comments
7.1 continued	<p>(3) Development consent must not be granted under this clause for the carrying out of works unless an acid sulfate soils management plan has been prepared for the proposed works in accordance with the Acid Sulfate Soils Manual and has been provided to the consent authority.</p> <p>(4) Despite subclause (2), development consent is not required under this clause for the carrying out of works if:</p> <p>(a) a preliminary assessment of the proposed works prepared in accordance with the Acid Sulfate Soils Manual indicates that an acid sulfate soils management plan is not required for the works, and</p> <p>(b) the preliminary assessment has been provided to the consent authority and the consent authority has confirmed the assessment by notice in writing to the person proposing to carry out the works.</p> <p>(5) Despite subclause (2), development consent is not required under this clause for the carrying out of any of the following works by a public authority (including ancillary work such as excavation, construction of access ways or the supply of power):</p> <p>(a) emergency work, being the repair of the works of the public authority required to be carried out urgently because the works have been damaged, have ceased to function or pose a risk to the environment or to public health and safety,</p> <p>(b) routine management work, being the periodic inspection, cleaning, repair or replacement of the works of the public authority (other than work that involves the disturbance of more than 1 tonne of soil).</p> <p>(c) minor work, being work that costs less than \$20,000 (other than drainage work).</p> <p>(6) Despite subclause (2), development consent is not required under this clause to carry out any works if:</p> <p>(a) the works involve the disturbance of less than 1 tonne of soil, and</p> <p>(b) the works are not likely to lower the watertable.</p>	
7.5 Terrestrial Biodiversity	<p>(1) The objective of this clause is to maintain terrestrial biodiversity, by:</p> <p>(a) protecting native flora and fauna,</p> <p>(b) protecting the ecological processes necessary for their continued existence, and</p> <p>(c) encouraging the recovery of native flora and fauna, and their habitats.</p>	<p>Mapping supporting the SLEP 2014 identifies land adjacent the eastern boundary of the site that is affected by Clause 7.5 (See Figure 3 below).</p> <p>This land is however located outside of the subject site and is unaffected by the proposed subdivision being adjacent to proposed public reserves.</p>

Table 3 (continued)


SLEP 2014 Clause	Provisions	Comments
7.5 continued	<p>(2) This clause applies to land:</p> <p>(a) identified as “Biodiversity—habitat corridor” or “Biodiversity—significant vegetation” on the Terrestrial Biodiversity Map, and</p> <p>(b) situated within 40m of the bank (measured horizontally from the top of the bank) of a natural waterbody.</p> <p>(3) Before determining a development application for development on land to which this clause applies, the consent authority must consider:</p> <p>(a) whether the development is likely to have:</p> <p>(i) any adverse impact on the condition, ecological value and significance of the fauna and flora on the land, and</p> <p>(ii) any adverse impact on the importance of the vegetation on the land to the habitat and survival of native fauna, and</p> <p>(iii) any potential to fragment, disturb or diminish the biodiversity structure, function and composition of the land, and</p> <p>(iv) any adverse impact on the habitat elements providing connectivity on the land, and</p> <p>(b) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.</p> <p>(4) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that:</p> <p>(a) the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or</p> <p>(b) if that impact cannot be reasonably avoided by adopting feasible alternatives—the development is designed, sited and will be managed to minimise that impact, or</p> <p>(c) if that impact cannot be minimised—the development will be managed to mitigate that impact.</p> <p>(5) For the purpose of this clause:</p> <p>bank means the limit of the bed of a natural waterbody.</p> <p>bed, of a natural waterbody, means the whole of the soil of the channel in which the waterbody flows, including the portion that is alternatively covered and left bare with an increase or diminution in the supply of water and that is adequate to contain the waterbody at its average or mean stage without reference to extraordinary freshets in the time of flood or to extreme droughts.</p>	 <p style="text-align: center;">Figure 3: SLEP 2014 – Terrestrial Biodiversity Map</p>

Table 3 (continued)


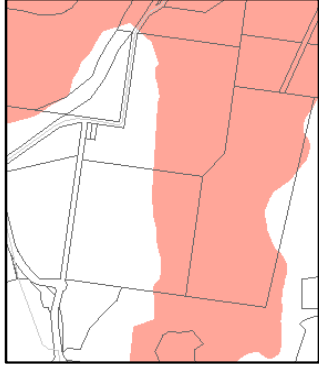
SLEP 2014 Clause	Provisions	Comments
7.6 <i>Riparian land and watercourses</i>	<p>(1) <i>The objective of this clause is to protect and maintain the following:</i></p> <ul style="list-style-type: none"> (a) <i>water quality within watercourses,</i> (b) <i>the stability of the bed and banks of watercourses,</i> (c) <i>aquatic and riparian habitats,</i> (d) <i>ecological processes within watercourses and riparian areas.</i> <p>(2) <i>This clause applies to all of the following:</i></p> <ul style="list-style-type: none"> (a) <i>land identified as "Riparian Land" on the Riparian Lands and Watercourses Map,</i> (b) <i>land identified as "Watercourse Category 1", "Watercourse Category 2" or "Watercourse Category 3" on that map,</i> (c) <i>all land that is within 50 metres of the top of the bank of each watercourse on land identified as "Watercourse Category 1", "Watercourse Category 2" or "Watercourse Category 3" on that map.</i> <p>(3) <i>Before determining a development application for development on land to which this clause applies, the consent authority must consider:</i></p> <ul style="list-style-type: none"> (a) <i>whether or not the development is likely to have any adverse impact on the following:</i> <ul style="list-style-type: none"> (i) <i>the water quality and flows within the watercourse,</i> (ii) <i>aquatic and riparian species, habitats and ecosystems of the watercourse,</i> (iii) <i>the stability of the bed and banks of the watercourse,</i> (iv) <i>the free passage of fish and other aquatic organisms within or along the watercourse,</i> (v) <i>any future rehabilitation of the watercourse and its riparian areas, and</i> (b) <i>whether or not the development is likely to increase water extraction from the watercourse, and</i> (c) <i>any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.</i> <p>(4) <i>Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that:</i></p> <ul style="list-style-type: none"> (a) <i>the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or</i> (b) <i>if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or</i> 	<p>The <i>Riparian Lands and Watercourses Map</i> that accompanies the SLEP 2014 identifies riparian land within the subject site. Refer Figure 4 below.</p>  <p style="text-align: center;">Figure 4: SLEP 2014 – Riparian Land and Watercourse Map</p> <p>Water quality matters are discussed in the separate Water Quality Report prepared by Martens Consulting Engineers (Annexure 2).</p>

Table 3 (continued)

SLEP 2014 Clause	Provisions	Comments
7.6 continued	<p>(c) if that impact cannot be minimised—the development will be managed to mitigate that impact.</p> <p>(5) For the purpose of this clause:</p> <p>bank means the limit of the bed of a watercourse.</p> <p>bed, of a watercourse, means the whole of the soil of the channel in which the watercourse flows, including the portion that is alternatively covered and left bare with an increase or diminution in the supply of water and that is adequate to contain the watercourse at its average or mean stage without reference to extraordinary freshets in the time of flood or to extreme droughts.</p>	
7.7 Landslide risk and other land degradation	<p>(1) The objective of this clause is to maintain soil resources and the diversity and stability of landscapes, including protecting land:</p> <p>(a) comprising steep slopes, and</p> <p>(b) susceptible to other forms of land degradation.</p> <p>(2) This clause applies to the following land:</p> <p>(a) land with a slope in excess of 20% (1:5), as measured from the contours of a 1:25,000 topographical map, and</p> <p>(b) land identified as “Sensitive Area” on the Natural Resource Sensitivity—Land Map.</p> <p>(3) Before determining a development application for development on land to which this clause applies, the consent authority must consider any potential adverse impact, either from, or as a result of, the development in relation to:</p> <p>(a) the geotechnical stability of the site, and</p> <p>(b) the probability of increased erosion or other land degradation processes.</p> <p>(4) Before granting consent to development on land to which this clause applies, the consent authority must be satisfied that:</p> <p>(a) the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or</p> <p>(b) if that impact cannot be reasonably avoided – the development is designed, sited and will be managed to minimise that impact, or</p> <p>(c) if that impact cannot be minimised – the development will be managed to mitigate that impact.</p> <p>(5) In this clause, topographical map means the most current edition of a topographical map, produced by Land and Property Information, a division of the Department of Finance and Services, that identifies the Council’s local government area and boundary.</p>	<p>The subject land does not have a slope in excess of 20% and is <u>not</u> identified as a “Sensitive Area” by Natural Resource Sensitivity - Land Mapping supporting the SLEP 2014.</p> <p>The provisions of this clause therefore do not apply to the subject site.</p>

Table 3 (continued)

SLEP 2014 Clause	Provisions	Comments
7.8 Scenic protection	<p>(1) The objective of this clause is to protect the natural environmental and scenic amenity of land that is of high scenic value.</p> <p>(2) This clause applies to land identified as "Scenic Protection" on the Scenic Protection Area Map.</p> <p>(3) In deciding whether to grant development consent for development on land to which this clause applies, the consent authority must:</p> <p>(a) consider the visual impact of the development when viewed from a public place and be satisfied that the development will involve the taking of measures that will minimise any detrimental visual impact, and</p> <p>(b) consider the number, type and location of existing trees and shrubs that are to be retained and the extent of landscaping to be carried out on the site, and</p> <p>(c) consider the siting of the proposed buildings.</p>	<p>The Scenic Protection Area Map that accompanies the SLEP 2014 does identify the subject land as being located within a "Scenic Protection" area. Refer Figure 5 below.</p>  <p>Figure 5: SLEP 2014 – Scenic Protection Map</p> <p>Visual impacts associated with development are considered in Section 5.3.4 of this Section 79C Assessment Report.</p>

5.1.1.4 Shoalhaven Development Control Plan 2014

The proposal is affected by the provisions of the Shoalhaven DCP 2014, and specifically the following chapters:

- Chapter G11 - Subdivision of Land; and
- Chapter NB1 – Mundamia Urban Release Area.

Having regard to Chapter G11 – Subdivision of Land, this provides general controls to the subdivision of land. The controls contained in Chapter G11 are largely overridden by the provisions of Chapter NB1 which apply specifically to development in the Mundamia locality, as is proposed. The requirements of Section 5.13 dealing with residential allotment layout are considered in **Annexure 9** and this shows that the proposal complies.

With respect to Chapter NB1 – Mundamia URA, **Annexure 9** of this Section 79C Assessment Report provides a comprehensive assessment of the proposal against the requirements. This demonstrates that predominantly, the proposal complies with the objectives and performance criteria. However, it is noted that certain provisions do not receive strict compliance. The following section of this Section 79C Assessment deals with the departures to the requirements of Chapter NB1.

The following table (**Table 4**) identifies the departures to requirements and provides justification.

Table 4
Departures to Chapter NB1

<i>Required</i>	<i>Proposed</i>	<i>Comment</i>
<p>Minimum Residential Density of</p> <ul style="list-style-type: none"> • medium density of 20 dwellings/ ha • detached dwellings of 12 dwellings/ha 	Overall yield of 11.4 dwellings/ha.	This appropriately considers the requirements of Chapter NB1, reflecting the significant constraints (ecological / bushfire / stormwater detention ponds) that restrict the extent of developable land within the subject site.
Minimum of 20% of all dwellings in the URA to be medium density, which includes dual occupancies. Therefore, 70 medium density units required (352 @ 20%).	Total of 47, representing 13.3 %.	The proposal provides for 47 dual occupancy and multi dwelling houses, representing 13.3 % of the total housing stock. This represents a reasonable proportion and exceeds the 9% currently attained in the Shoalhaven LGA (based on 2011 census) by 50%.
Provide for dual occupancy developments with a minimum of 5% of single residential lots to be assigned for dual occupancy.	Proposal provides 3% of allotments for dual occupancy purposes. Dual occupancy allotments are well sited, being close to the Neighbourhood Hub, as an offset to the greater density, by improving access the facilities to be provided within the Estate.	It is considered undesirable to provide additional dual occupancy allotments as the shape of the site will see them located further away from the "Hub" in areas having reduced access to the Estate facilities.
Local Public Reserves must comply with the requirements of the Shoalhaven Council Public Open Space Plan of 12 m ² per person. Compliance would result in some 10, 560 m ² of open space.	Preferred Project includes a total of 4, 607 m ² of public open space within the Estate, plus in excess of 10 ha of bushland reserve.	<p>The open space that is proposed in this subdivision will combine with that provided in the adjoining subdivision proposed by Shoalhaven Council and will result in the provision of open space that generally accords with the overall requirements. The Contributions Plan which has been adopted by Shoalhaven Council includes a significant contribution per allotment towards the provision and embellishment of the Central Open Space, and as such, it is only reasonable that this is considered in the provision of open space attributed to this project.</p> <p>This is in addition to the significant expanse of bushland open space on the perimeter of the site.</p> <p>Consequently, within the entire Mundamia Estate, substantial public open space will be provided.</p>
Vehicles will gain access from service lanes to the rear at the Gateway to the site	Traditional subdivision layout has been proposed with vehicular access being available via the Gateway road.	The nature of the subdivision and traffic safety does not warrant prohibition on vehicular access via the main spine road.

5.2 PRESCRIBED MATTERS UNDER THE REGULATIONS

Clause 92 of the Environmental Planning & Assessment Regulations sets out those additional matters that a consent authority must take into account when determining a development application.

Clause 92 reads:

92 What additional matters must a consent authority take into consideration in determining a development application?

(cf clause 66 of EP&A Regulation 1994)

(1) For the purposes of section 79C(1)(a)(iv) of the Act, the following matters are prescribed as matters to be taken into consideration by a consent authority in determining a development application:

(a) in the case of a development application for the carrying out of development:

(i) in a local government area referred to in the Table to this clause, and

(ii) on land to which the Government Coastal Policy applies,

the provisions of that Policy,

(b) in the case of a development application for the demolition of a building, the provisions of AS 2601.

(c) in the case of a development application for the carrying out of development on land that is subject to a subdivision order made under Schedule 5 to the Act, the provisions of that order and of any development plan prepared for the land by a relevant authority under that Schedule.

NSW Coastal Policy

The subject site is identified by mapping supporting the NSW Coastal Policy as being affected by the provisions of the Policy. The Coastal Policy requirements have been addressed in the EIA submitted with respect to the original Part 3A Major Project Application.

Demolition of a Building

The minor demolition works of redundant rural sheds are necessary. Compliance with AS2601 can be achieved.

Subdivision Order

The subject land is not the subject of a subdivision order.

5.3 THE LIKELY IMPACTS OF THE DEVELOPMENT, INCLUDING ENVIRONMENTAL IMPACTS ON BOTH NATURAL AND BUILT ENVIRONMENTS, AND SOCIAL AND ECONOMIC IMPACTS IN THE LOCALITY

5.3.1 Soil and Water Quality

The original Part 3A Major Project EIA was accompanied by a Water Cycle Management Report prepared by Storm Consulting. In addition, accompanying this Section 79C Assessment Report is a Stormwater Management Assessment prepared by Martens Consulting Engineers as **Annexure 2**.

The assessment of Martens Consulting Engineers has included consideration of the conceptual stormwater management system (rainwater tanks, individual OSD, roadside bio-infiltration swales, site pit and pipework networks, OSD basins) and has included DRAINS modelling to examine the quantity of stormwater and MUSIC modelling to assess water quality impacts.

The assessment of Martens Consulting Engineers makes the following recommendations:

Design Recommendations

- *Stormwater runoff from all site roofs is to be directed to rainwater tanks on individual lots for non-potable re-use purposes (e.g. irrigation, toilet flushing, laundry, etc.). Rainwater tanks are to have a minimum volume of 3 KL/lot for individual residential lots and 1.5 KL/dwelling for medium density and dual occupancy lots.*
- *A dedicated OSD (with appropriately designed orifice controlled outlet) of 3KL/lot is also to be provided as either a standalone OSD tank or as dedicated additional OSD volume within the rainwater tank.*
- *Stormwater runoff from lots and roads is to be directed to roadside bioretention swales. Swales are to have a minimum top width of 3.0 m and a minimum base width of 2.0 m. Swales are to be a minimum of 0.1 m deep with 1V:2.5H side slopes. Bioretention filters are to be a minimum depth of 0.52 m and are to be unlined to allow groundwater recharge. Swales are to have an underdrain and overflow system connected to an appropriately sized pit and pipe drainage system.*
- *A stormwater system including pits, pipes and associated infrastructure is to be constructed within road reserves to direct flows from bioretention swales to site OSD basins and discharge control structures. Detailed sizing and location of all pits and pipes is to be completed prior to the issue of a construction certificate.*
- *Runoff from site areas is to be directed to proposed OSD basins located as shown in Attachment A and primarily consistent with properties as outlined in Table 6. Basin C2a is to incorporate a bioretention filter with parameters as outlined in Table 12.*

- *Preliminary OSD basin design consists of a discharge pit with low level, mid-level and high flow pipes that discharge to an outlet headwall. Pipe outlets are summarised in Table 6. Basin 2a pipe discharge is to be located east of the proposed development in the vicinity of the outlet for Basin C2.*
- *Detailed design of OSD basins is to be completed prior to the issue of a construction certificate. Site stormwater outlets will require appropriate level spreader(s) / energy dissipater(s) to replicate existing flow conditions. An appropriate setback should be established between site stormwater outlets and areas of sensitive vegetation.*

System Implementation Recommendations

The proposed solution includes works both in future public lands (road side swales and end-of-line OSD basins within public reserves to be vested to Council) and on private lands (rainwater and OSD tanks). The following section provides initial comments on matters to be considered to ensure the solution is appropriately implemented on the site.

The construction of end of pipe and roadside structures would be undertaken as a condition of future sub-division consent and would occur as the development road system is constructed. On completion, these systems may be maintained for a period by the developer or be transferred to Council for their management. It is anticipated that the specifications for the system shall form a condition of future sub-division consent.

Future allotments shall be burdened with the need for stormwater management infrastructure to achieve the objectives of this study. The infrastructure required shall include a rainwater tank (as is generally required throughout NSW due to BASIX), and dedicated OSD storage, both with minimum volume as detailed in this report. Martens

System Management Recommendations

- *To ensure that the proposed stormwater systems continue to perform as designed, the following management and maintenance measures are required:*
- *Road side bioretention swales and OSD basins should be inspected and cleaned routinely to ensure litter accumulation does not become excessive.*
- *Periodic removal of accumulated silts from bioretention swales, beds, and OSD basins may be required to ensure ongoing hydraulic performance. System monitoring is to be undertaken to ensure that adequate infiltration into filter media is maintained. Where infiltration deteriorates, the owner of the infrastructure shall be required to replace filter media.*
- *Vegetation management is required to ensure that systems do not become clogged with dead and decaying vegetation and to ensure that vegetation does not block water flow through the systems. Maintenance requirements for vegetation shall depend on the nature of the plants and is to be developed in detail as part of the final project landscape management plan.*

Martens Consulting Engineers have made the following conclusions:

- *The completed analysis indicates that, even with best practice water quality and quantity control solutions as developed in this assessment it is not feasible to achieve a post development surface water regime which exactly mimics the predevelopment condition.*
- *However, the proposed development does not have an adverse impact on downslope areas (in terms of increased peak discharge rates and pollutant loads) based on detailed hydrological and water quality modelling completed.*
- *Site OSD basins are designed to mitigate peak discharges for the range of storm durations for recurrence intervals from the 1 in 3 month ARI to the 1 in 100 year ARI.*
- *Results indicate that post-development water quality objectives, in terms of pollutant retention and change in mean annual loads, will be met by the proposed stormwater treatment train.*
- *Site roads are to be designed as single cross-fall pavements with bioretention swales located within the verge of the low side (Attachment B).*
- *Nominated road bioretention swale base areas achieve minimum prescribed groundwater recharge area requirements (125 m²/ha) as per the hydrogeological assessment (MA, 2011a).*
- *Rainwater tanks (for non-potable reuse) and dedicated OSD storages are to be included on all lots in accordance with report water quality and OSD findings."*

The recommendations of Martens Consulting Engineers are supported by this Section 79C Assessment.

5.3.2 Acid Sulfate Soils

Martens Consulting Engineers prepared a Preliminary Acid Sulfate Soils Assessment and this is reproduced as **Annexure 6**. The assessment of Martens involved the excavation of a total of 11 boreholes and the laboratory analysis of a total of 16 samples. The assessment of Martens Consulting Engineers lead to the following conclusion:-

Soils meeting the ASSMAC (1998) tests for AASS and PASS are present on the site. If it is accepted ASSMAC (1998) applies, then a detailed management plan is required. Importantly, the site soils are residual and overly sandstone, therefore the origin of soil acidity is likely the underlying geology. Consultation with NSW OEH's ASS expert Dr Mitch Tulau (per communication, 24.03.2014) suggests that ASSMAC (1998) guidelines do not apply to this site with residual soil landscapes. Given the fact that soils are presently in the aerobic zone of the soil profile, it is unlikely that disturbance of those soils will result in any environmental impacts. Given these considerations it is not reasonable to assume disturbance of the soils on the site will result in any impacts. It is therefore recommended that, while application of ASSMAC (1998) may conclude a management plan is required,

further to recent consultation with NSW OEH ASS expert, the site context of a residual soil leads to the conclusion that excavation of the material will not lead to adverse impacts and therefore a management plan is not essential to ensure protection.

Based on the assessment of Martens Consulting Engineers, no impacts are expected to arise and a management plan is not required.

5.3.3 Noise

Accompanying this Section 79C Assessment Report is an Aircraft and Traffic Noise Intrusion Report prepared by Day Design (**Annexure 4**). Such assessment has been prepared to review noise impacts derived from:

- aircrafts given the site is in the general vicinity of HMAS Albatross (although outside of any identified buffer area and the relevant ANEF contour);
- road traffic from outside the proposed subdivision;
- on road traffic generated within the subdivision and adjacent lands.

The following section of this Section 79C Assessment is based on the findings of Day Design.

Having regard to aircraft noise, Day Design advise that the proposed siting of the subdivision is some 3.8 km outside of the 20 ANEF contour determined for HMAS Albatross. Based on this, AS 2021:2000 – Aircraft Noise Intrusion – Building Siting and Construction imposes no requirements for the proposed subdivision and according to Day Design, no further assessment of aircraft noise intrusion is necessary.

Having regard to traffic noise intrusion, Day Design have advised that the extent of traffic noise is not significant and does not warrant a traffic noise assessment under the provisions of SEPP Infrastructure. Notwithstanding this, Day Design have reviewed expected traffic generation from the proposed subdivision based on the traffic assessment of Colston, Budd, Hunt & Kafes that accompanied earlier assessments. Day Design have subsequently calculated traffic noise levels based on the expected traffic to be generated, and have advised that traffic noise is anticipated to generate noise at 57 dBA during daytime periods, and 51 dBA during night time periods. Day Design have subsequently modelled the façade of a typical dwelling to determine the intrusiveness of road noise through the walls, roof, windows and doors. Day Design have advised that acceptable internal noise limits can be met through standard construction methods such as:

- Brick veneer or fibre cement composite clad external walls;

- pitched, tiled or sheet metal roof with sarking, one layer of 10 mm standard plasterboard on the underside of timber ceiling joists lined with standard thermal insulation; and
- Minimum 4 mm float glass throughout.

In consideration of aircraft and road traffic noise intrusion, Day Design conclude that:

- *The site is located approximately 3.8 kilometres beyond HMAS Albatross' Australian Noise Exposure ANEF 20 contour. Therefore standard building construction may be used in the construction of residential dwellings in the subdivision, in accordance with AS2021.*
- *The site is not located near any road way with existing or future annual traffic volumes of more than 40,000 vehicles per day. Consequently a road traffic noise intrusion assessment is not required in accordance with Clause 102 (Road) of the State Environment Planning Policy (Infrastructure) 2007.*
- *However, an assessment of the potential noise intrusion from road traffic generated by the proposed subdivision combined with future proposals in the area has been undertaken to determine the potential impact on future dwellings within the subdivision.*
- *The internal noise level recommendations set by the Department of Planning and Infrastructure, in their "Development Near Rail Corridors and Busy Roads – Interim Guidelines" (2008) can be achieved for all future dwellings within the development using standard construction methods"*

Based on the findings of Day Design, the proposed subdivision is not expected to be unreasonably impacted by aircraft or traffic noise.

5.3.4 Visual Impact

The EIA prepared for the Part 3A Major Project included a detail visual assessment which considered the impacts of the development from varying locations within the district and locality.

This assessment concluded that:

The visual impacts anticipated by this proposal are not unexpected given the intended zoning of the land for residential purposes. Despite this, it is considered that the impacts will be localised in their effects, and will in no way affect the visual amenity of the locality or the coast. It is considered that the nature of the subdivision proposal will ensure that the locality maintains a distinctive character.

Furthermore, it is considered that the controls already adopted by SCC should ensure that the local impacts are not unreasonable.

It is reasonable to conclude that the proposal will not be visible from the immediate north of the site, including from the Shoalhaven River, or the North Nowra urban area.

Impacts on sight lines are avoided as the site itself is not visible due largely to the nature of topography and the extent and height of existing vegetation.

These findings remain valid with the current subdivision layout and the subsequent controls imposed by Shoalhaven Council under Shoalhaven DCP Chapter NB1.

5.3.5 Services

Allen Price and Associates (APA) were engaged to prepare a Utilities Investigation Report to examine the proposed development and the ability of relevant infrastructure service providers to cater for the demands generated by the proposed development in conjunction with the earlier EIA.

APA examined the following:

- Existing capacity and requirements of the development for sewerage, water, electricity, waste disposal, telecommunications and gas, in consultation with relevant agencies;
- Identify and describe staging of infrastructure works; and
- Address and provide the likely scope of a planning agreement and /or developer contributions with Council/government agencies.

APA undertook their assessment based on review of relevant documentation such as Shoalhaven Water's Development Servicing Plans for Sewerage and Water Supplies, investigations with relevant agencies such as Integral Energy and Telstra.

According to APA, there are no constraints to development due to the provision of sewerage infrastructure, water infrastructure, electricity, waste disposal, telecommunications services, gas or general infrastructure.

The subject site, along with the Mundamia Living Area has planned for further urban expansion to meet the needs of the Shoalhaven. The relevant infrastructure agencies are mindful of the need to undertake works to provide, or augment, relevant supplies and consultations are already underway in order that the infrastructure needs of this development will be met.

The provision of infrastructure is not anticipated to be a constraint in the development of the site.

5.3.6 Traffic and Transport

5.3.6.1 Introduction

Colston Budd Hunt and Kafes Pty Ltd (CBHK) were engaged to undertake a transport report for the proposed residential subdivision of the site in consideration of the earlier Part 3A Major Project and EIA.

This section of the Section 79C Assessment is based on the report by CBHK and considers the impacts of the project on the surrounding road network, and assesses traffic and transport issues that affect the site and proposal.

5.3.6.2 Methodology

In order to consider transport and traffic issues, CBHK identified the surrounding road network, considered previous work undertaken in relation to the site, undertook traffic surveys at various intersections that may be affected by the proposal to determine existing traffic flows, assessed existing transport and traffic conditions, undertook a number of surveys and modelling utilising the SIDRA program to evaluate the capacity of intersections to cater for peak period traffic flows.

Assessment of the implications of the subdivision on traffic and transport situations in the local area were also investigated, including the potential for increased public transport services, proposed access and internal layout and traffic generation and associated effects as a result of the development.

Proposed traffic generation figures and intersection operations analyses were based on RMS standards and modelled using the SIDRA program.

5.3.6.3 Existing Conditions

Road Network

The site is located to the west of Nowra and the road network in the immediate vicinity of the site servicing Mundamia includes Albatross Road, Yalwal Road, George Evans Road, Jonsson Road and Stonegarth Road.

Albatross Road provides Nowra with access to the Flinders Industrial Estate and this also forms part of a network that ultimately connects Nowra with Braidwood via Main Road 92.

Yalwal Road connects with Albatross Road at West Nowra to the east of the subject site, with Burrier and Yalwal in the west. Yalwal Road is provided with a sealed surface, and to the west of Mundamia, Yalwal Road has a 100 km per hour speed limit, whilst to the east, a 60 km per hour speed limit prevails. Yalwal Road intersects with Albatross Road with an unsignalised t-intersection, with Albatross Road having priority.

George Evans Road extends off Yalwal Road to the north via an unsignalised T-intersection, where give way signs provide Yalwal Road with priority. At this intersection, turning via Yalwal Road into George Evans Road, there are two marked westbound lanes, enabling westbound traffic to pass a vehicle turning right into George Evans Road. George Evans Road provides one traffic lane in each direction, with a sealed surface to the south of the University of Wollongong campus, and beyond this complex (to the north) the road is unsealed.

Both Jonsson and Stonegarth Roads are unsealed, and connect surrounding rural properties with George Evans Road.

Traffic Flow Counts

According to CBHK, traffic generated by the proposed subdivision will have the greatest impacts during weekday morning and afternoon peak periods. In order to assess these impacts, traffic counts were undertaken at various intersections during these periods to establish existing traffic movements. The intersections included:

- Albatross Road/Yalwal Road;
- Yalwal Road/George Evans Road;
- George Evans Road/university access.

The results of these surveys are summarised in **Table 5** below and show the greatest traffic flows occurring along Albatross Road, with some 1050 to 1150 vehicles per hour two-way during the morning and afternoon peak periods. Significantly lower flows were recorded on Yalwal Road, George Evans Road, and the University access.

Table 5
Existing Two-Way (sum of both directions) Peak Hour Traffic Flows (CBHK, 2008)

<i>Road</i>	<i>Location</i>	<i>AM Peak Hour</i>	<i>PM Peak Hour</i>
Albatross Road	North of Yalwal Road	1050	1130
	South of Yalwal Road	595	710
Yalwal Road	West of Albatross Road	605	630
	East of George Evans Road	275	280
	West of George Evans Road	175	155
George Evans Road	North of Yalwal Road	120	145
	North of University access	15	15
University Access	West of George Evans Road	105	130

Intersection Operations Analysis

The capacity of the existing intersections around the site were analysed using the SIDRA program in order to ascertain the ability of the intersections and road networks to cater for peak period traffic flows. SIDRA is an analytical tool to evaluate alternative intersection designs in terms of capacity, level of service, a wide range of performance measures including delay, queue length and the like. A useful measure is the average delay per vehicle which results in the allocation of a level of service (LOS), ranging from A to F with A representing a good LOS, and F indicating an unsatisfactory LOS that requires additional capacity.

Based upon the above modelling, the analysis undertaken by CBHK indicates that all existing intersection currently operate with an average delay of less than 15 seconds per vehicle on both the morning and afternoon peaks periods, which represents a LOS of A/B, which is a good LOS.

Public Transport

A bus service is currently provided in the area by Nowra Coaches which services the University of Wollongong Campus, and connects with the Bomaderry Railway Station via the Nowra town centre.

5.3.6.4 Assessment of Proposal

Access and Internal Layout

Vehicular access to the site will be provided via George Evans Road which will require some realignment to the south of the site, and extension to the north to service the proposed subdivision. In addition, a new roundabout will be provided to facilitate access to the University of Wollongong Campus, and other properties to the west.

According to CBHK, the new roundabout will function with average delays of less than 15 seconds per vehicle during peak periods, which represents a LOS of A/B which is good.

Internal road layout and access provisions will be designed in accordance with Council's DCP Chapter G11 – Subdivision of Land, a document which is based on AMCORD requirements. AMCORD identifies two levels of streets, being local streets and collector streets.

- Local streets are those where the residential environment dominates. Traffic volumes and speeds are low and pedestrian and cycle movements are encouraged, with cycle movements on street. According to AMCORD, vehicle speeds should be restricted

by street length, parked cars, landscape design, built form and activity along the frontage.

- Collector streets carry higher traffic volumes as they collect traffic from access streets. Residential amenity and safety is to be maintained to a good standard by restricting traffic volumes and vehicular speeds. Speeds are to be controlled through street alignment, parked cars, street length, intersection design and built form.

CBHK consider that use of Council's DCP and AMCORD guidelines provides an appropriate assessment base in order to promote alternative travel modes to private vehicle trips such as cycling and pedestrian movements.

Traffic Generation Impacts

According to CBHK, traffic generation will have its greatest effect during the morning and afternoon peak periods. According to surveys carried out by the RTA, residential subdivisions generate approximately 0.85 two-way vehicular movements per hour per lot during peak hours.

In addition to the proposed lots (330 assessed by CBHK), the project includes a commercial allotment with an area of some 2470 m². According to CBHK, traffic generated by the project will result in some 340 two-way vehicle trips in the morning and afternoon peak hours. Approximately 70 percent of traffic generated in the morning peak period would be outbound, and this is expected to be reversed in the afternoon.

CBHK in their assessment have assigned the additional traffic to the road network, and reassessed the existing conditions utilising SIDRA. A summary of proposed traffic generation as produced by CBHK is reproduced below as **Table 6**.

Table 6
Projected Two-Way Peak Hour Traffic Flow (CBHK 2008)

<i>Road</i>	<i>Location</i>	<i>AM Peak Hour Existing</i>	<i>AM Peak Hour Plus Development</i>	<i>PM Peak Hour Existing</i>	<i>PM Peak Hour Plus Development</i>
Albatross Road	North of Yalwal Road	1050	+ 225	1130	+ 225
	South of Yalwal Road	595	+ 45	710	+ 45
Yalwal Road	West of Albatross Road	605	+ 270	630	+ 270
	East of George Evans Road	275	+ 270	280	+ 270
	West of George Evans Road	175	+ 15	155	+ 15

Table 6 (continued)

<i>Road</i>	<i>Location</i>	<i>AM Peak Hour Existing</i>	<i>AM Peak Hour Plus Development</i>	<i>PM Peak Hour Existing</i>	<i>PM Peak Hour Plus Development</i>
George Evans Road	North of Yalwal Road	120	+ 285	145	+ 285
	North of University Access	15	+ 310	15	+ 310
University access	West of George Evans Road	105	+ 25	130	+ 25

The analysis undertaken by CBHK demonstrates traffic increases of 225 to 310 two way vehicle trips would occur on Albatross Road (north of Yalwal Road), Yalwal Road (east of George Evans Road) and George Evans Road during peak hours.

Increases on Albatross Road (south of Yalwal Street), Yalwal Road (west of George Evans Road) and the university access are likely to be less than 50 vehicles per hour two-way.

Within the subdivision itself, traffic is expected to carry less than 100 trips per hour two-way, apart from the collector road.

SIDRA analysis of these traffic volumes has determined that the existing unsignalised intersections of Yalwal Road with Albatross Road, and George Evans Road, and the roundabout at the intersection of George Evans Road and the University will operate with average delays of less than 20 seconds, representing a LOS of B, which is a reasonable or better LOS.

CBHK have also considered 10 year future traffic flows, along with holiday traffic. According to CBHK, accounting for traffic growth requires an increase in traffic of 2% compound over this 10 year period, and then adding the traffic generated by this project. Consideration of the 10 year future growth, plus additional traffic reveals that existing afternoon peak hour traffic flows would increase by some 30% over current volumes. The intersection of Albatross and Yalwal Roads has been reanalysed by CBHK using SIDRA, and this found that the intersection would benefit from an upgrade at some time in the 10 year horizon encompassing the provision of a separate left and right turn lanes from Yalwal Road into Albatross Road. With this treatment, the SIDRA analysis found that the intersection would perform with average delays of some 25 seconds or less per vehicle, which represents a LOS B, which is a reasonable LOS with acceptable delays and spare capacity.

Local surveys undertaken by CBHK during holiday periods indicate that afternoon peaks experience an increase of some 30% over non holiday periods. During morning peaks,

holiday flows are less than non-holiday periods and as such, it is not necessary to assess this any further. According to CBHK, SIDRA analysis of the additional traffic generated during holiday periods, coupled with the 10 year growth, results in an average delay of less than 28 seconds at the intersection of Albatross and Yalwal Roads, which represents a LOS of B, which is a reasonable LOS with acceptable delays and spare capacity. Consequently, with the separate left and right turn lanes implemented at some time prior to the ten year horizon at the Yalwal Road/Albatross Road intersection, CBHK consider that the road network will have capacity to accommodate traffic from the proposed development, future growth over a 10 year period, plus additional flows generated during holiday periods.

Public Transport

The locality is already provided with a bus service which provides public transport to the nearby University of Wollongong campus. The proposed collector road within the proposed subdivision layout will enable access by buses, and the additional residential population will improve overall demand, and therefore the viability of any service, the result being that this new living area will result in an improved public transport service.

5.3.6.5 Conclusions

CBHK have undertaken a Transport Assessment to assess potential traffic impacts associated with this major project. The analysis undertaken has included an assessment of the existing road network and public transport in the locality, as well as traffic volume counts at relevant intersections, along with surveys and modelling using the specified SIDRA program to evaluate the capacity of intersections to cater for peak period traffic flow. Furthermore, the analysis has included future growth for a 10 year period, and includes an assessment of traffic conditions experienced during holiday periods.

Results of the assessment reveal that the existing road network and intersections currently operate with good LOS, and the addition of traffic expected to be generated by this proposal will not have significant traffic and transport impacts, however provision of separate left and right turn lanes from Yalwal Road into Albatross Road is recommended some time over the ten year horizon to cater for next ten years growth.

Having regard to the provision of public transport, the report acknowledges the existence of a regular bus route servicing the University, and the viability of, and demand for this service is likely to be strengthened by the project. This existing service can readily be extended into the residential subdivision to cater for the new living area and the road network will be designed to cater for this potential bus route.

5.3.7 HAZARD MANAGEMENT AND MITIGATION

5.3.7.1 Coastal processes and flooding

This section of the Section 79C Assessment Report deals with the impacts of coastal processes and flooding and considers the impacts of the proposed subdivision.

Introduction

The subject site is located within the coastal zone due to its proximity to the Shoalhaven River. In this regard, the site is sited well away from the actual coastline being some 16 kilometres (direct line) from the ocean which is to the east of the locality. The site does not form part of the Shoalhaven River floodplain, as it comprises land having an elevation which ranges between RL 36 m and 70 m AHD, separated from the river by a large sandstone cliff face. Developable parts of the property are sited at a level of RL 46 m AHD. The height of the subject site is well above known flood levels identified by SCC. Furthermore, the subject site is not so identified by Shoalhaven LEP 2014 and therefore, is not subject to flooding hazards.

Coastal Processes

The subject site is sited well away from the actual coastline and is not subject to coastal processes and hazards such as beach erosion, shoreline recession, or coastal inundation. Consequently, these processes are unlikely to have any impact on the site or the proposal.

Having regard to sea level rise, the latest information from the International Panel on Climate Change (IPCC) is contained within the document titled "Climate Change 2007", which is the Fourth IPCC Assessment Report. According to this document, projected sea level rise using the worst case scenario modelled would result in a rise of between 0.26 m and 0.59 m for the 2090-2099 period, above the sea level experienced in the period from 1980-1999. Consequently, this is unlikely to result in any impacts on the developable portion of the subject site which has a minimum height of RL 46 m AHD, which is 46 m above sea level.

5.3.7.2 Flooding

The proposed developable portions of the subject land have an elevation that ranges between RL 46 m AHD to RL 70 m AHD. This is well above known flood levels. According to SCC's Flood Mitigation Engineer, the planning level flood (ie. the 1 in 100 year ARI) at the crossing of the Shoalhaven River at Nowra, has a height of RL 6.5 m AHD, whilst the Probable Maximum Flood (PMF) has a height of RL 9.3 m AHD. The proposed site is clearly well above these levels by at least 36 metres. Although the bridge crossing is downstream from the subject site, it is considered reasonable to utilise this information as

flood levels for the Shoalhaven River are not expected to vary significantly and certainly not to the extent that would affect the 36 metre height difference available.

Given the above, it is reasonable to assume that the subject site is not affected by flooding associated with the Shoalhaven River.

The site is in the vicinity of the Flat Rock Creek dam and Flat Rock Creek watercourse and mapping prepared by SCC does not identify this as flood prone. Furthermore, perusal of the 1:25000 topographic map for 'Nowra' shows that Flat Rock Dam has a height of approximately RL 40 m AHD, whilst Flat Rock Creek in the vicinity of the subject site, falls from 40 m AHD to below 20 m AHD to the north of the site. Consequently, it is unlikely that the subject site, and therefore the proposal, would be subject to localised flooding from Flat Rock Creek given the site is well above these levels.

The site itself is not traversed by any existing watercourses that are likely to lead to flooding of the property.

Conclusion

The subject site is remote from the actual coastline and is therefore is unlikely to be affected by coastal processes. Further, the site is of an elevation that is well above known flood levels, or sea level rise predicted by the IPCC, by in excess of 30 metres.

Consequently, it is considered that coastal processes and flooding will not affect the development of the subject site.

5.3.7.3 Site Contamination

The earlier Part 3A Major Project Application was the subject of a Phase 1 and 2 Environmental Site Assessment undertaken by Martens Consulting Engineers to review site contamination. The assessment undertaken by Martens identified areas of concern including:

- Refuse in the area included empty fuel cans, motor oil containers, lubricants and disused motor vehicles;
- TRH (C10-C-36) contamination was identified; and
- Fibrous cement sheeting identified in rubbish piles is likely to include asbestos.

Martens Consulting Engineers recommended rehabilitation of the site in accordance with the Remedial Action Plan which has also been prepared and submitted with the earlier application.

Following remediation of the site and validation by Martens, or other suitably qualified consultant, the site will be suitable for the residential use proposed.

5.3.7.4 Bushfire

The subject site is identified by mapping prepared by Shoalhaven Council and endorsed by the NSW Rural Fire Service (RFS) as being bushfire prone.

In response to this Eco Logical Australia (ELA), were engaged to prepare a Bushfire Protection Assessment to assess the impacts of bush fire risk on the major project application. This is shown as **Annexure 5**.

The following sections of the Section 79C Assessment Report are based on the findings of this report.

This Bushfire Protection Assessment undertaken by ELA has been prepared in accordance with “*Planning for Bushfire Protection*” (PBP guidelines) (NSW Rural Fire Service).

ELA have assessed the relevant vegetation and slopes, and have advised of relevant APZ requirements for implementation. ELA have recommended APZ ranging from 20 m where the hazard is upslope, and between 25 m and 33 m where the hazard is downslope. According to ELA, the APZ is provided without encroaching onto the residential allotments, expecting for within the building line setbacks as is standard practice in subdivision design.

Fuel management within the APZ is to be as follows:

- No tree or tree canopy is to occur within 2 m of the dwelling roofline.
- The presence of a few shrubs or trees in the Inner Protection Area is acceptable provided that they:
 - are well spread out and do not form a continuous canopy;
 - are not species that retain dead material or deposit excessive quantities of ground fuel in a short period or in a danger period; and
 - are located far enough away from the building so that they will not ignite the building by direct flame contact or radiant heat emission.
- Any landscaping or plantings should preferably be local endemic mesic species or other low flammability species.
- A minimal ground fuel is to be maintained to include less than 4 tonnes per hectare of fine fuel (fine fuel means ANY dead or living vegetation of < 6 mm in diameter eg. twigs less than a pencil in thickness. 4 t/ha is equivalent to a 1 cm thick layer of leaf litter); and
- Any structures storing combustible materials such as firewood (eg. sheds) must be sealed to prevent entry of burning debris.

According to ELA, no construction standards ought to apply at the subdivision stage as this will be determined at the development application stage.

Having regard to the staging of the proposed subdivision, ELA recommend that interim staging of the APZ be implemented to allow construction standards for dwellings to be those which would apply at the end stage of development. This will avoid the application of unnecessary construction standards applying to development within the early stages.

The subject site is to be serviced with reticulated water supply which will be available for use by the RFS for fire fighting purposes. ELA have made recommendations relating to the provision and design of such supply and in particular the location of hydrants. The proposal can comply with the provisions of PBP in relation to supply of water.

The site is to be provided with underground electricity supply which will be reasonably protected in the event of bushfire.

In relation to gas supplies, ELA have advised that any gas supply be installed and maintained in accordance with AS 1596, and metal piping be used in its installation. The proposal can comply with respect to these matters.

ELA have examined the proposed road network and have concluded that these will comply with the requirements of PBP.

The Bushfire Protection Assessment prepared by ELA concludes with respect to this proposal:

“In the author’s professional opinion the bushfire protection requirements listed in this assessment provide an adequate standard of bushfire protection for the proposed development, a standard that is consistent with the Planning for Bushfire Protection guidelines (RFS 2006) and appropriate for the issues of a Bushfire Safety Authority.”

5.4 CULTURAL HERITAGE

This Section of the EA deals with cultural heritage matters, considering both indigenous and non-indigenous heritage, and considers the impacts of the proposed subdivision the subject of this Section 79C Assessment.

Having regard to impacts associated with Aboriginal Heritage, this section of the Section 79C Assessment is based on the Aboriginal Heritage Assessment prepared by South East Archaeology (SEA) (**Annexure 7**) which deals specifically with indigenous heritage matters.

5.4.1 Non Indigenous Heritage

The subject site is predominantly undeveloped, being cleared and used for agricultural purposes, mostly restricted to grazing. The site contains no significant structures, with buildings being restricted to ancillary dwellings and rural sheds.

A review of mapping including the NSW State Heritage Inventory/Register and Shoalhaven LEP, and the Commonwealth Australian Heritage on-line database found that the subject site is not identified as containing an item of environmental heritage.

Beyond the subject site, there are no properties within its vicinity which have been identified as having heritage significance.

Given there are no identified heritage items located on, or in the vicinity of the site, it is anticipated that the proposed subdivision of the property, and future development for residential purposes, will not have an impact on any heritage items.

5.4.2 Indigenous Heritage

An Aboriginal Heritage Assessment of the subdivision was undertaken in 2007/08 by South East Archaeology Pty Limited (SEA) for submission with the original Part 3A Major Project Application. At that time, SEA found that:

- Relevant registers and environmental planning instruments did not identify the site as containing sites of Aboriginal heritage or cultural significance;
- The field work undertaken by SEA did not detect any evidence of Aboriginal heritage;
- Potential for sub-surface deposits of artefacts having research value is very low;
- Other types of heritage evidence are not anticipated to occur within the study area;
- Consultation with the relevant Aboriginal community did not identify the site as having any significance;
- No further subsurface testing is required;
- The management and mitigation measures proposed are limited to retrieval of artefacts if they are found during construction works and normal DECC procedures associated with the finding of heritage items as the impacts on Aboriginal heritage are expected to be very low.

SEA undertook further assessment of the proposal to ensure that the earlier assessment and recommendations remain valid, and this is shown as **Annexure 8**. This assessment concluded that:

- *No new AHIMS sites have been identified to be present in the subdivision area.*
- *The report search did not result in any modification of the relevant predictive model for the subdivision area.*
- *It is concluded that the original conclusions and recommendations as outlined in the South East Archaeology Pty Ltd (2008) report are sound and remain relevant.*
- *It is noted that NSW OEH has made an explicit recommendations regarding the preparation and implementation of an Aboriginal Heritage Management Plan and that this should be included as a specific condition in the Statements of Commitments (set out on pages 5-6 of the correspondence from OEH dated 12.6.2013).*

The recommendations of OEH have been included in the Statement of Commitments affecting this project.

5.4.3 Conclusion

Given the above, it is considered that the proposal is unlikely to impact on any heritage matters.

5.5 FLORA AND FAUNA

The original Part 3A Major Project Application was the subject of an Environmental Flora and Fauna Assessment undertaken by Whelan InSites Pty Ltd, lodged with the original EIA. This assessment has been supplemented by additional ecological assessments undertaken by SLR Consulting and Gunninah lodged with the PPR, and which addressed issues raised by relevant agencies during the consideration of the proposal.

Accompanying this Section 79C Assessment Report is a Flora and Fauna Assessment prepared by SLR Consulting (**Annexure 3**) and a Responses to Agency Comments on Mundamia Flora and Fauna Assessment Report (SLR) and Updated Assessment" (**Annexure 10**) prepared by Gunninah. The various reports follow extensive assessment by both SLR Consulting and Gunninah, supplementing ecological assessments undertaken by and on behalf of Council in consideration of the Shoalhaven LEP 2014 defining suitable developable land.

The proposal has been modified from that originally considered, principally by refining the eastern edge of development to reduce the extent of developed land to ensure that mitigation measures (asset protection zones, on-site detention) minimised impacts on these lands.

The assessment of SLR Consulting concludes that:

The Nowra-Bomaderry Structure Plan was adopted by Shoalhaven City Council (SCC) on 24 October 2006 and endorsed by the then Department of

Planning (DoP) on 26 February 2008. The Structure Plan anticipated the development of the subject land (essentially as currently proposed), with an array of other lands identified for retention as biodiversity offsets. As a consequence of the Structure Plan, the development of inter alia the subject land at Mundamia has already been offset and no further additional provision of land for biodiversity offsets is considered necessary.

With respect to relevant threatened biota, the proposed development will remove only a small proportion of the population of the Nowra Heath-myrtle and a very small proportion of the habitat for threatened species from the subject site. Relevantly, the area of vegetation to be removed from the subject site represents only a minute proportion of suitable habitat for the threatened biota known or likely to occur on the subject site at Mundamia.

There are very substantial areas of suitable habitat and resources in the immediate vicinity and general locality, including in extensive reserves in the locality and region. None of the threatened biota recorded on the site are likely to be reliant or dependent on the habitat and resources present in the areas to be affected by the proposal. Given those considerations, the proposed development is not likely to impose a substantial adverse effect on any of the relevant threatened biota identified at Mundamia.

The proposed retention, rehabilitation and management of the Public Reserves on the subject land, and their subsequent dedication to Council for permanent biodiversity conservation purposes, is considered an appropriate 'offset' for the proposed development of part of the subject land (essentially in accordance with the Structure Plan and SLEP 2014).

The proposed residential development of the subject land at Mundamia, addressed in this Report, achieves the goals established in the Nowra-Bomaderry Structure Plan. Most of the development area is located in previously highly disturbed agricultural land, and the most significant elements of the natural landscape (including threatened biota and their habitats) are to be retained and protected. In addition, the stormwater management regime has been designed inter alia to ensure the maintenance of soil moisture conditions and the maintenance of water quality in Flat Rock Creek and the Shoalhaven River.

The proposed residential development at Mundamia achieves an appropriate balance between development opportunities and conservation aspirations and goals which satisfy both expectations for biodiversity conservation in the landscape generally and the requirements (economic, social and recreational) of the local and wider community.

The assessment of Gunninah responds to the issues outlined by agencies as part of the assessment associated with the original EIA and subsequent PPR.

Given the assessment of SLR Consulting and Gunninah, it is considered that the proposal will not unreasonably impact on flora and fauna existent at the site.

5.6 THE SUITABILITY OF THE SITE FOR DEVELOPMENT

In our view the site is suitable for the proposed development:

- The proposal is consistent with R1 General Residential and E2 Environmental Conservation zone objectives that apply to the land.
- The proposal is generally consistent with the provisions of Chapter NB1 of the Shoalhaven DCP 2014 applying to the site.
- The proposal will not have a significant adverse effect on flora and fauna as outlined in the Flora and Fauna Assessments undertaken by SLR Consulting and Gunninah.
- The development will not result in any significant adverse effects on local amenity.
- The development includes bushfire protection standards that are consistent with PBP.
- The proposal will not result in any significant adverse scenic or visual impacts within this locality beyond that anticipated by the zoning of the land under the provisions of Shoalhaven LEP 2014.

Given these circumstances it is our view that the subject site is suitable for the proposed development.

5.7 SUBMISSIONS

In preparing the EIA the subject of the earlier Part 3A Major Project application, consultation was had with the following government agencies and stakeholders:

- Shoalhaven City Council;
- then Department of Environment and Climate Change;
- Department of Primary Industry;
- Rural Fire Service;
- then Department of Water and Energy;
- then Roads and Traffic Authority;
- Department of Defence;
- Wollongong University;
- Local Aboriginal Land Councils (LALC) including the Nowra LALC, Jerrinja LALC, Merrimans and Ulladulla LALC;
- Shoalhaven Water having regard to water and sewer infrastructure;

- then electricity provider Integral Energy;
- Telstra;
- Jemema Pty Ltd who supply reticulated gas to the Shoalhaven.

Furthermore, the earlier Part 3A Major Project was publicly exhibited by the Department of Planning from 8th May 2013 to June 2013 and a total of 11 submissions were made.

Of the total submissions that were made, 10 were from government agencies and educational institutions. The remaining submission was from the resident owner of an adjoining privately held allotment.

Having regards to government agencies and educational institutions, submission were received from the following:

- NSW Rural Fire Service;
- Roads and Maritime Services;
- NSW Trade and Investment – Resources and Energy;
- NSW Office of Environment and Heritage;
- NSW Department of Primary Industries (Crown Land and Fisheries);
- Shoalhaven City Council – Shoalhaven Water;
- NSW Education and Communities;
- Australian Government – Department of Defence;
- Shoalhaven City Council – Director of Development and Environmental Services; and
- University of Wollongong.

Issues raised in the submissions were addressed in the PPR, and are included in **Annexure 8** supporting this Section 79C Assessment.

5.8 THE PUBLIC INTEREST

It is our view that the proposal is in the public interest:

- The proposal is consistent with the zoning objectives that apply to the land.
- The proposal is consistent with state, regional and local planning policies that apply to this locality.
- The proposal will result in the provision of an urban release area, implementing the provisions of the Nowra Bomaderry Structure Plan, a broad strategic planning policy of Shoalhaven Council.

- The proposal is generally consistent with the provisions of Chapter NB1 of the Shoalhaven DCP 2014 applying to the site.
- The proposal will provide new housing options for the local community and wider area in a locality that has been identified for this purpose.
- The proposal will result in the provision of a wide variety of housing choices including single dwellings, dual occupancies and multi-dwelling housing.
- The proposal will not adversely affect the visual amenity of the locality.
- The application is supported by various expert assessments which address the impacts of the development including:
 - Flora and Fauna Assessment,
 - Soil and Water Management,
 - Aboriginal Cultural Heritage,
 - Bushfire Protection Assessment,
 - Acid Sulfate Soils,
 - Aircraft and Traffic Noise Intrusion Report,all of which conclude that the proposal is suitable for development.

6.0 STATEMENT OF COMMITMENTS

The commitments listed below have been compiled based on the EIA, PPR and separate specialist assessments which have been undertaken and the constraints and opportunities available at the site. They provide a commitment from the developer indicating their responsibilities in developing the site as proposed to ensure that the development is environmentally, socially, and economically sustainable. In developing the subdivision, the developer gives the following commitments in order to minimise the impact on the environment:

Item	Commitment	Timing
General	1. The developer will carry out the development in accordance with the Environmental Assessment (EA), prepared by Cowman Stoddart dated January 2009, Preferred Project Report (PPR) dated December 2014, this Section 79C Assessment Report and plans prepared by Allen Price & Associates and supporting reports.	For the duration of the subdivision.
Legislative Controls/Requirements	2. The developer will obtain and maintain the following licences, permits and approvals for the residential subdivision: <ul style="list-style-type: none"> • Shoalhaven City Council - Construction Certificates for engineering works for each stage of the subdivision. The application for Construction Certificates will contain Design Drawings submitted containing, where relevant, detailed designs relating to earthworks, drainage, soil erosion and sediment control, site remediation, tree clearing, site stability, roadworks, footpaths/cycleways, water supply (both potable and use of reclaimed water) and sewerage works, and landscaping; • Shoalhaven City Council - Section 138 Consent for roadworks (Roads Act 1993); • Endeavour Energy - Design Certification; • Endeavour Energy - Notification of Arrangement; • Telstra/NBN - Compliance Certificate; • Shoalhaven Water - Certificate of Compliance; • Shoalhaven City Council – Subdivision Certificates for each stage; • Department of Land and Property Information - registration of the subdivision. 	For the duration of the subdivision.

Section 79C Assessment

Jemalong Mundamia Pty Ltd – George Evans Road and Jonsson Road, Mundamia

Item	Commitment	Timing
Final Plan of Subdivision	3. The developer will prepare a final plan of subdivision for each stage of the development in accordance with the recommendations of the Environmental Assessment, as amended by the Preferred Project Report and requirements of Shoalhaven City Council.	Prior to the release of Subdivision Certificates.
Public Open Space	4. The developer will prepare a detailed landscape design plans to be approved by Shoalhaven Council as part of the Construction Certificate documentation. 5. The developer will dedicate all public reserves to Shoalhaven City Council within the appropriate stage of the development.	Prior to release of Construction Certificate for subdivision for each stage/s containing public reserve. Prior to release of Subdivision Certificate and dedicated upon registration.
Waste Minimisation and Management	6. The developer will prepare a Waste Minimisation and Management Plan for subdivision construction works in accordance with Shoalhaven DCP 2014 for approval by Shoalhaven City Council for implementation.	Prior to the release of the Construction Certificate for each stage.
Construction	7. The developer will prepare a detailed Construction Management Plan for approval by Shoalhaven Council including education of workers in the approvals and conditions requiring compliance (including soil erosion and sediment controls, flora and fauna and aboriginal archaeological issues, waste management), details of the environmental management procedures during the development and measures relating to waste minimisation and management. 8. The CMP shall include a management regime for the construction process to ensure that no other wastes (including building rubble, garbage, contaminants, fuels, oils, paints or other chemicals) are discharged from the construction area, and that all such wastes and contaminants are contained within the construction footprint and are appropriately managed. 9. The use of sediment fences and other appropriate control measures during construction activities to manage and/or avoid erosion and sediment discharge or the discharge of other contaminants.	Prior to the commencement of construction and for the duration of the development. Prior to the commencement of construction and for the duration of the development Prior to the commencement of construction and for the duration of the development

Section 79C Assessment

Jemalong Mundamia Pty Ltd – George Evans Road and Jonsson Road, Mundamia

Item	Commitment	Timing
Bushfire Management	Provision of Asset Protection Zones 10. The developer will establish Asset Protection Zones (APZs) in accordance with Figure 2 of the Bushfire Assessment, prepared by Eco Logical Australia. 11. All public reserves within the internal boundary of the subdivision shall be designed to be maintained as an APZ. 12. Reticulated water and fire hydrants shall be provided as per Section 7 of the Ecological Bushfire Protection Assessment submitted with the PPR. 13. The developer will install relevant road and fire trail infrastructure to comply with Planning for Bushfire Protection 2006. 14. 0.5 m clearance will be maintained between any trees and overhead electrical conductors. 15. Gas service shall be maintained in accordance with AS/NZS 1596:2008. 16. Staging is to include provision for alternative access, fire trails and temporary APZs of a width of 100 m or to the perimeter of the site. 17. The developer will create Section 88B Restrictions as necessary implementing the temporary alternative access, fire trail, and APZ requirements for each stage of the subdivision.	Prior to the release of the Subdivision Certificate for each stage. Prior to the release of the Construction Certificate for the relevant stage. Prior to the release of the Subdivision Certificate for each stage. Prior to the release of the Subdivision Certificate for each stage. Prior to the release of the Subdivision Certificate for each stage. Prior to the release of the Subdivision Certificate for each stage. Prior to the release of the Subdivision Certificate for each stage.
Water Quality Management and Soil Control	18. The management of stormwater discharge volumes and water quality from the development area, both during construction activities and following completion and occupation of the site, according to current 'best practice' principles and as outlined in the Martens Consulting Engineers' "Stormwater Management Assessment", November 2014.	Prior to the release of the Subdivision Certificate for each stage.

Section 79C Assessment

Jemalong Mundamia Pty Ltd – George Evans Road and Jonsson Road, Mundamia

Item	Commitment	Timing
<i>Water Quality ... cont'd</i>	<p>19. Detailed design and construction of the peripheral bioretention swale system to maintain soil moisture and groundwater regimes.</p> <p>20. The developer will design, install and maintain water quality control measures in accordance with the Construction Certificate Plans approved by Shoalhaven City Council.</p> <p>21. The developer will prepare a soil and water management plan to control runoff during construction in accordance with the principles of the Landcom publication Managing Urban Stormwater (MUS); Soils and Construction Volume 1, 4th Edition and Construction Certificate Plans approved by Shoalhaven City Council and DCP 100.</p> <p>22. The developer will create restrictions-as-to-user on future allotments to ensure the required lot level WSUD facilities are provided by future home owners.</p>	<p>Prior to the release of the Subdivision Certificate for each stage.</p> <p>Prior to the release of the Subdivision Certificate for each stage.</p> <p>Prior to the release of the Subdivision Certificate for each stage.</p> <p>Prior to the release of the Subdivision Certificate for each stage.</p>
Cultural Heritage	<p>23. The developer will implement the management and mitigation measures recommended in the report prepared by South East Archaeology Pty Ltd and NSW Archaeology including the preparation and implementation of an Aboriginal Heritage Management Plan (AHMP). The AHMP shall:-</p> <ol style="list-style-type: none"> Describe the procedures that would be implemented if any Aboriginal objects or other archaeological sites were discovered during the development; Outline the procedure required if any development or any ancillary works are proposed for areas outside of those areas already surveyed as part of the current design which has been assessed; Describe a contingency plan and reporting procedure should damage to Aboriginal objects or sites occur at the development; Describe the measures that would be implemented if any Aboriginal skeletal remains are discovered during the project; Outline the process that will be followed for continuing consultation with the Aboriginal stakeholders. <p>24. The developer will inform the Nowra Local Aboriginal Land Council of progress of the development.</p>	<p>For the duration of the development.</p> <p>Ongoing through the construction of the subdivision.</p>

Section 79C Assessment

Jemalong Mundamia Pty Ltd – George Evans Road and Jonsson Road, Mundamia

Item	Commitment	Timing
Infrastructure	Roads	
	25. The developer will construct all roads and fire trails in accordance with DCP 100 and approved Construction Certificates.	Prior to the release of the Subdivision Certificate for each relevant stage.
	26. The developer will provide a minor street drainage system to accommodate the 5 year A.R.I. storm event in accordance with plans approved by Shoalhaven City Council with the Construction Certificate.	Prior to the release of the Subdivision Certificate for each relevant stage.
	27. The developer will provide a major street drainage system to accommodate the 100 year A.R.I. storm event in accordance with plans approved by Shoalhaven City Council with the Construction Certificate.	Prior to the release of the Subdivision Certificate for each relevant stage.
	28. The developer will construct footpaths and cycleways as shown on the plans prepared by Allen Price and Associates and approved Construction Certificates.	Prior to the release of the Subdivision Certificate for each relevant stage.
	29. The developer will provide street signs in accordance with the requirements of Shoalhaven City Council.	Prior to the release of the Subdivision Certificate for each stage.
	30. The developer will provide street lighting in accordance with the requirements of SCC and Endeavour Energy.	Prior to the release of the Subdivision Certificate for each stage.
	Electricity and Telecommunications	
	31. The developer will provide underground power to each residential lot in the subdivision in accordance with the requirements of Endeavour Energy.	Prior to the release of the Subdivision Certificate for each stage.
	32. The developer will provide street lighting to the requirements of Endeavour Energy and Shoalhaven City Council.	Prior to the release of the Subdivision Certificate for each stage.
	33. The developer will provide underground telecommunications infrastructure to each lot in the subdivision in accordance with requirements of Telstra/NBN Co.	Prior to the release of the Subdivision Certificate for each stage.

Section 79C Assessment

Jemalong Mundamia Pty Ltd – George Evans Road and Jonsson Road, Mundamia

Item	Commitment	Timing
Infrastructure continued	Drainage	
	34. The developer will install street and interallotment drainage as necessary in accordance with plans approved by Shoalhaven City Council.	Prior to the release of the Subdivision Certificate for each stage as applicable.
	35. The developer will design and construct the various WSUD features as outlined in the Martens Consulting Engineers report entitled "Stormwater Management Assessment" dated November 2014.	Prior to the release of the Subdivision Certificate for each stage as applicable.
	Water and Sewer Services – Residential Allotments	
	36. The developer will provide reticulated water and sewerage services to each lot in the subdivision in accordance with the requirements of Shoalhaven Water.	Prior to the release of the Subdivision Certificate for each stage.
Landscaping Plans	37. The developer will use native species, endemic to the locality in the preparation of landscaping plans, and subsequent works undertaken in conjunction with this subdivision as shown on plans prepared by Peter Phillips Landscape Architecture.	For the duration of the subdivision
Geotechnical	38. The developer will provide a lot classification geotechnical report to Shoalhaven City Council for each stage of development prior to the release of the final plan of subdivision for that stage.	Prior to the release of the Subdivision Certificate for each stage.
	39. The developer will include a Section 88B Restriction as to User on each allotment preventing the development of dwellings with strip footings being constructed to rock.	
Site Contamination	40. The site shall be rehabilitated in accordance with the Remedial Action Plan prepared by Martens Consulting Engineers and a site validation report will be prepared at the completion of remediation works	Prior to the release of the Subdivision Certificate for the first stage.
Staging	41. The developer will construct the subdivision in accordance with the staging details prepared by Allen Price and Associates or as otherwise approved in Construction Certificate plans approved by Shoalhaven City Council.	For the duration of the subdivision.
Developer Contributions	42. The developer will pay Section 94 developer contributions in accordance with Shoalhaven City Council's Section 94 Contributions Plan on a "per ET" basis for each stage of the residential subdivision.	Prior to the release of the Subdivision Certificate for each stage.

Section 79C Assessment

Jemalong Mundamia Pty Ltd – George Evans Road and Jonsson Road, Mundamia

Item	Commitment	Timing
Developer continued	43. The developer will pay Section 64 water and sewer developer contributions in accordance with the development servicing plan applicable at the time of payment.	Prior to the release of the Subdivision Certificate for each stage.
Signage	44. The developer will provide estate marketing signs in accordance with the provisions of DCP 89 – Exempt and Complying Development or as otherwise approved by Shoalhaven City Council.	For the duration of the subdivision.
Voluntary Planning Agreement	45. The developer will enter into a Voluntary Planning Agreement with Shoalhaven Council having regard to the dedication of areas of Public Open Space, subject to agreement with Shoalhaven Council ¹ .	Prior to the release of the Subdivision Certificate for the first stage.
Ecological	46. The developer will implement the mitigation and amelioration measures recommended by SLR Consulting as follows: <ul style="list-style-type: none"> the use of sediment fences and other appropriate control measures during construction activities to manage and/or avoid erosion and sediment discharge or the discharge of other contaminants; the ongoing management of stormwater discharge volumes and water quality from the development area, both during construction activities and following completion and occupation of the site (see Martens 2014); the ongoing management of the peripheral bioretention swale system to maintain water quality, soil moisture and groundwater regimes, and to provide supplementary habitat for native biota; the ongoing management of the APZs to ensure that habitat and resources for, and individuals of, threatened species are protected; the implementation of a management regime during the construction process to ensure that no wastes (including building rubble, garbage, contaminants, fuels, oils, paints or other chemicals) are discharged from the construction area, and that all such wastes and contaminants are contained and are appropriately managed; 	Prior to the release of the Subdivision Certificate for each stage.

¹ At this stage, Shoalhaven Council has agreed to the dedication of certain public reserves, and negotiation have commenced and will continue in relation to the outstanding areas.

Section 79C Assessment

Jemalong Mundamia Pty Ltd – George Evans Road and Jonsson Road, Mundamia

Item	Commitment	Timing
Ecological continued	<ul style="list-style-type: none"> management of APZs, where required, around the development to retain specimens of and habitat or resources for the relevant threatened biota, including <i>inter alia</i>: <ul style="list-style-type: none"> the preferential and selective retention of hollow-bearing trees; the preferential and selective retention of identified Yellow-bellied Glider and Glossy Black Cockatoo feed trees; slashing and thinning of understorey vegetation to achieve APZ fuel loads at selected locations to avoid the Nowra Heath-myrtle (which will be flagged for identification purposes); the implementation of a <i>Vegetation Management Plan</i> (VMP) for the proposed <i>Public Reserve</i>, in accordance with the attached <i>Vegetation Management Principles Plan</i> (Appendix I) to ensure the long-term viability of flora and fauna populations which utilise the land, particularly the Glossy Black Cockatoo, Yellow-bellied Glider and Nowra Heath myrtle. the collection of native vegetation removed from development areas and its re-use within the Public Reserve for bushland rehabilitation and/or landscaping purposes and/or the provision of that material to Council for bushland management and rehabilitation purposes; the destruction or appropriate removal of weeds from the development footprint and from the Public Reserve, with specific weed management measures to be included in the VMP; and the implementation of a Hollow-bearing Tree Protocol, involving: <ul style="list-style-type: none"> the segmental 'dismantling' by professional tree experts of hollow-bearing trees in order to salvage tree-hollows, wherever possible; the placement of salvaged tree-hollows on existing large trees or dedicated poles in the Public Reserve; alternatively, the placement of salvaged tree-hollows on the ground as hollow log habitat, where placement in existing trees is not practical; and the use of artificial nest boxes to replace tree-hollows which cannot be salvaged and to supplement that resource on the site. 	

7.0 CONCLUSION

This Section 79C Assessment Report considers the impacts of a residential subdivision at Mundamia within the City of Shoalhaven on the south coast of NSW.

The Mundamia area has been specifically identified by Shoalhaven Council as an area suitable for residential development in order to meet the expected population growth over the next 20 to 30 year period and followed an extensive consultation phase with the community and relevant government agencies.

The proposed subdivision provides for the development of 319 residential allotments, a commercial allotment which will form part of a neighbourhood community and local convenience centre, and various public reserve allotments for recreation and conservation purposes. The development supports the aims of SCC to provide for urban expansion of the Nowra urban area in a planned manner considerate of relevant ecological and social impacts that supports the essential and social infrastructure invested in this locality.

The proposed subdivision layout and accompanying reports are the result of extensive assessment undertaken on behalf of our clients, Jemalong Mundamia Pty Ltd and Shoalhaven Council over a number of years. The proposed development is consistent with the ecological constraints applicable to the site.

This Section 79C Assessment Report considers the impacts of the development as required by the Environmental Planning and Assessment Act 1979.

In preparing this assessment, separate reports have been prepared addressing Aboriginal Heritage Impacts; Ecological Flora and Fauna; Bushfire; Water Quality; Acid Sulfate Soils; and Aircraft and Traffic Noise Impact; and these have been considered in this Environmental Assessment.

Key mitigation measures of this development include an appropriate subdivision design which will ensure that the development has a distinctive character, retention and conservation of ecologically sensitive areas, use of best practice Stormwater management and consideration of natural hazards.

Support for the development is recommended.