

- As Council has contributed to the water and sewerage capacity, the Council land will be serviced first with spare capacity.
- The internal subdivision roads should provide rural views at end to the buffer zone.
- Solar access will need to be considered for all lots.
- Larger lots may be required on steeper slopes.
- Easements will be required for existing services, including the water pipeline.
- Pedestrian/bicycle paths should be strengthened along the major spine road.
- The acquisition of land from the Department of Education needs to be undertaken for the main spine road during Stage 1.
- Staging and implementation of the subdivision should radiate from the central Commercial/Community focal point where possible.
- Drainage should be dissipated rather than concentrated and downstream approvals need to be given for staging.
- Lot sizes need to be determined at master planning stage and relate to solar access, views, drainage.
- Consideration be given to architectural covenants over lots, to create a theme or standard.
- The ultimate boundary of the precinct to be defined by diversity certification.

In addition, SCC already has a number of established Development Control Plans and development policies affecting the development of residential development and future development of the proposed allotments is expected to be undertaken in accordance with these.

## **2.5 REGIONAL CONTEXT**

SCC is situated on the NSW south coast some 2 hours south of Sydney. **Figure 3** 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 high scenic qualities and natural environments, which includes a number of National Parks, State Conservation Areas and the Jervis Bay Marine Park, and also for its close proximity to Sydney and the ACT.

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

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 3: 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 this proposed 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 podsollic 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 DESCRIPTION OF PROPOSAL

### 3.1 INTRODUCTION

The design of the subdivision has followed an extensive environmental assessment which has considered a range of environmental issues and constraints, along with development opportunities.

The development of Mundamia follows the principles of a Masterplan which has been prepared for the area which has identified key design principles that are to be applied to the site design having regard to the location and site characteristics. The Masterplan requirements are outlined below in Section 3.4.3.3.

Furthermore, the *Coastal Design Guidelines* also provide recommendations for the further development of coastal lands and this is addressed in Section 4.2.4.2.

### 3.2 THE PROPOSAL

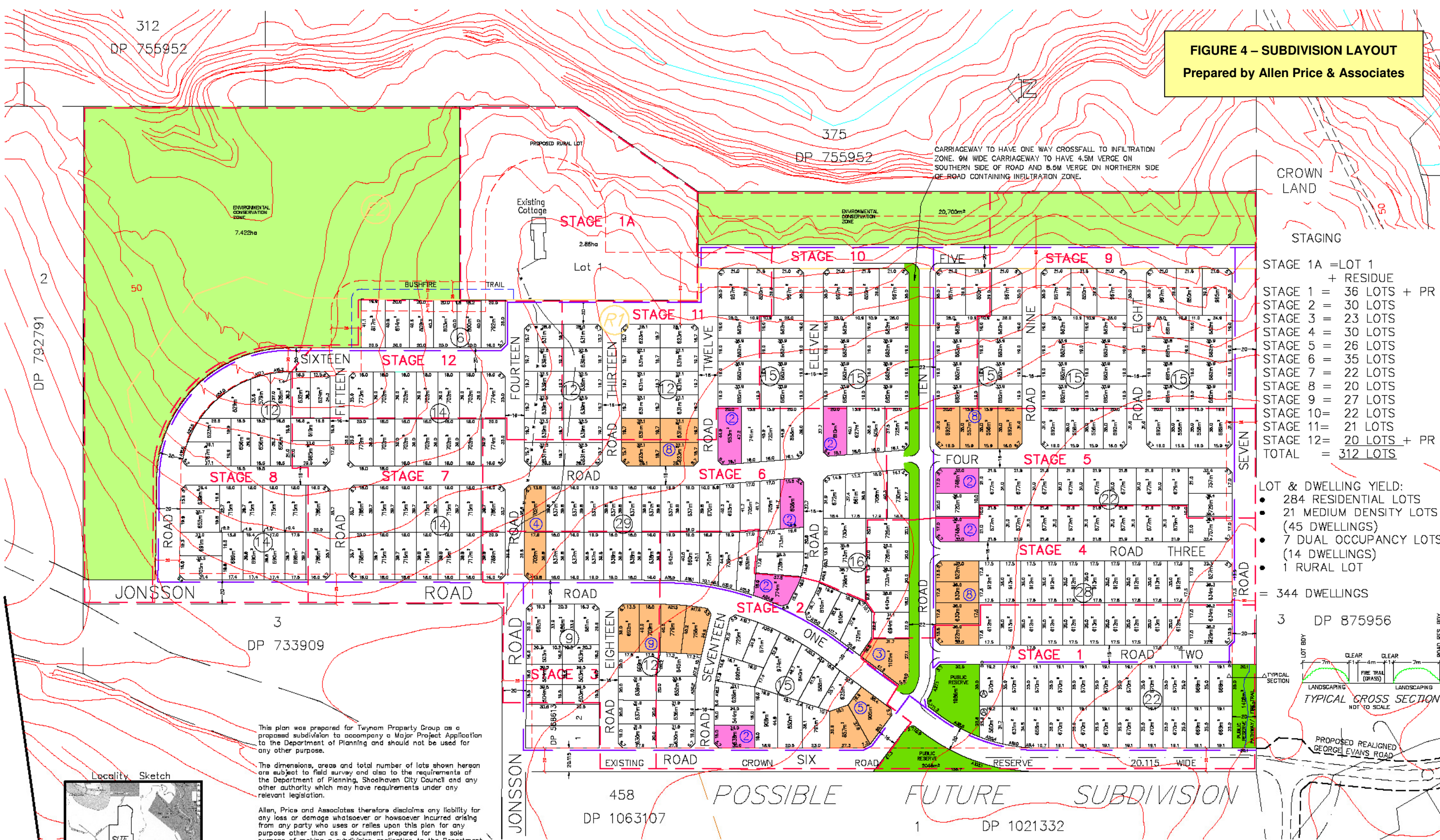
The subdivision proposal as prepared by Allen Price and Associates (APA) is shown in **Annexure 1** (Plan No 25489-01) and **Figure 4** of this EA over page. The subdivision layout has been derived in consideration of the opportunities and constraints provided by the site and surrounds.

#### 3.2.1 Lot Size and Layout

The proposal seeks approval for the subdivision of the site in a Torrens title fashion and provides for the following:

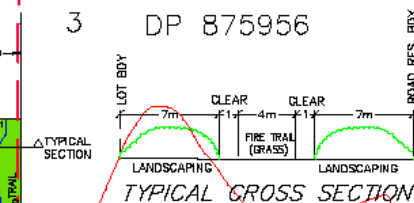
- creation of 312 residential allotments;
- creation of one rural residential allotment to contain an existing rural dwelling and an appropriate curtilage within an area of 2.86 ha;
- creation of one parcel of open space at the entry to the site with an area of 1408 m<sup>2</sup>.
- creation of two public open space allotments with areas of 2612 m<sup>2</sup> and 2048 m<sup>2</sup> centrally located to the Mundamia new living area;
- creation of one parcel of open space on the northern and north-eastern perimeter of the site with an area of 7.422 ha; and
- creation of one parcel of open space on the eastern perimeter of the site with an area of 2.07 ha.

**FIGURE 4 – SUBDIVISION LAYOUT**  
Prepared by Allen Price & Associates



- STAGE 1A = LOT 1**  
+ RESIDUE
- STAGE 1 = 36 LOTS + PR
  - STAGE 2 = 30 LOTS
  - STAGE 3 = 23 LOTS
  - STAGE 4 = 30 LOTS
  - STAGE 5 = 26 LOTS
  - STAGE 6 = 35 LOTS
  - STAGE 7 = 22 LOTS
  - STAGE 8 = 20 LOTS
  - STAGE 9 = 27 LOTS
  - STAGE 10 = 22 LOTS
  - STAGE 11 = 21 LOTS
  - STAGE 12 = 20 LOTS + PR
  - TOTAL = 312 LOTS**

- LOT & DWELLING YIELD:**
- 284 RESIDENTIAL LOTS
  - 21 MEDIUM DENSITY LOTS (45 DWELLINGS)
  - 7 DUAL OCCUPANCY LOTS (14 DWELLINGS)
  - 1 RURAL LOT
- = 344 DWELLINGS**

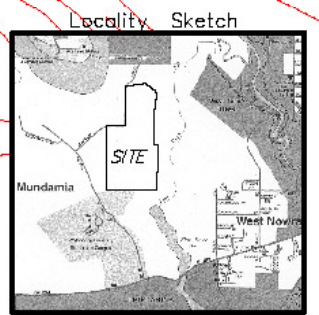


This plan was prepared for Twynam Property Group as a proposed subdivision to accompany a Major Project Application to the Department of Planning and should not be used for any other purpose.

The dimensions, areas and total number of lots shown hereon are subject to field survey and also to the requirements of the Department of Planning, Shadlun City Council and any other authority which may have requirements under any relevant legislation.

Allen, Price and Associates therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred arising from any party who uses or relies upon this plan for any purpose other than as a document prepared for the sole purpose of making a subdivision application to the Department of Planning and which may be subject to alteration for reasons beyond the control of Allen, Price and Associates.

This note is an integral part of this plan.



- LEGEND**
- POSSIBLE DUAL OCCUPANCY LOTS
  - POSSIBLE MEDIUM DENSITY LOTS
  - NUMBER OF LOTS ON BLOCK
  - NUMBER OF POSSIBLE DWELLINGS
  - BUSHFIRE SETBACK
  - STAGING BOUNDARY
  - PROPOSED ZONING BOUNDARY (SLEP 2009)
  - PROPOSED SHARED CYCLEWAY/FOOTPATH (2m WIDE)
  - RESTRICTION – NO FENCING ADJACENT TO PUBLIC RESERVE

RATIO:	DATE:	SURVEY:	APA:	REVISION:	BY:	DATE:
1 : 1500	02.12.11	DESIGN:	MJP	LOT 1 LOTS AMENDED	MJP	10.11.11
(AT A1 SIZE)	08.05.12	DRAWN:	DS	APZ AREAS CLARIFIED	MJP	08.05.12
	15.05.12	CHECKED:	MJP	STAGE 1 LOT LAYOUT REVISED	MJP	15.05.12
	DATE OF PLAN: 29 JUNE 2011					

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PLAN SHOWING PROPOSED SUBDIVISION  
OF LOT 3 DP 568613 & LOT 384 DP 755952  
AT MUNDAMIA GROWTH AREA  
FOR TWYNAM PROPERTY GROUP

REF. No.	25489-01	REVISION:
SHEET	1	OF 1 SHEETS
	04	

### **3.2.2 Residential Allotments**

The proposed allotments vary in size from a minimum of 503 m<sup>2</sup>, to a maximum of 1101 m<sup>2</sup>.

The majority of allotments proposed have a site area of between 600 and 700 m<sup>2</sup>.

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

- Lot Type 1 (500 – 600 m<sup>2</sup>) – 15
- Lot Type 2 (600 – 700 m<sup>2</sup>) – 194
- Lot Type 3 (700 – 800 m<sup>2</sup>) – 70
- Lot Type 4 (> 800 m<sup>2</sup>) – 33

Larger allotments are generally proposed on the perimeter of the site given the need to provide greater separation from forested lands for Asset Protection purposes due to bushfire hazard.

The allotments are provided primarily with an east west orientation, enabling the longest length to enjoy a northerly exposure.

Allotment frontages range upwards from a minimum of 15.8 metres, however the vast majority of lots have widths in excess of 17 metres.

The allotments provide a range of sizes and shapes however principally, allotments are regular in shape. No battle axe lots are proposed, and therefore each lot has a wide street frontage. Appropriate splay corners are proposed to all allotments sited at intersections.

### **3.2.3 Rural Residential Allotment**

The rural residential allotment has an area of 2.86 ha and has been designed in order to accommodate the existing masonry rural dwelling and a reasonable curtilage to enable its ongoing use for rural-residential purposes. The size of this parcel is consistent with rural residential holdings in the City of Shoalhaven.

The rural residential allotment is also the subject of a separate application made by Allen Price and Associates in order to rationalise site boundaries, and enable the early creation of this larger allotment. This is also addressed below in Section 3.3 which deals with the staging of the development.

### **3.2.4 Title**

The proposed subdivision is intended to be subdivided in a conventional Torrens Title fashion involving the creation of separate allotment for individual purchase and further development, with roads and open space reserves to be created for dedication to SCC.

The traditional Torrens title system of subdivision is well accepted in the SCC area and is the most common form of subdivision utilised in existing residential localities and in the creation of new residential living areas.

### **3.2.5 Building Envelope and Built Form**

This Major Project Part 3A application seeks consent to the subdivision of land. It is not intended to further control additional development on the resultant allotments by way of implementing additional rules or requirements.

In this regard, the SCC already has a number of Development Control Plans (DCP No. 91 – Single Dwellings and Ancillary Structures, DCP No. 71 – Medium Density Housing Guidelines, DCP No. 57 – Dual Occupancy Guidelines) which control the development of dwellings, and more dense residential developments, all of which include controls relating to height, setbacks, landscaping, overshadowing, and privacy (refer Section 4.6 of this EA).

It is considered unnecessary and unreasonable to further restrict future owners and home builders with additional requirements to limit design flexibility and potentially increase building costs and thereby reduce housing affordability which is essential in this locality. Further, any additional requirements would further burden SCC's Development Assessment staff with additional controls to consider and enforce when dealing with the proposed allotments in the future.

### **3.2.6 Road Pattern and Network**

The subdivision pattern is based on a grid design, with a main road which will be centrally located when other lands within the new living area 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 on adjoining Council land, to service the locality.

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

The subdivision pattern has a clear hierarchy with appropriate emphasis given to the central access road, and relevant weight given to lesser roads.

The road network generally 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. A small exception to this is six allotments on the eastern edge of the site which are proposed to be contained within a fire trail.

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 (Road No. 1) has a road reserve of 20 metres in width, reinforcing its primary status in the overall local road hierarchy. In addition, perimeter roads (Roads Nos. 5, 7 and 16) have a width of 20 metres in order to facilitate access by larger vehicles and fire tankers, as well as increase the buffer (APZ) to the bush fire threat. A wider road reserve of 22 metres is also proposed along an east-west axis (Road No. 10) in order to cater for drainage and feature landscaping, and this is also strategically located in order to provide a vista to bushland that surrounds the site from the proposed public reserve to the west of the site. Road No. 6 which is sited along an existing Crown Road Reserve maintains the 20.115 m width. Other road corridor widths are 16 m in order to make for the more efficient use of land resources.

A conceptual road layout and sections prepared by APA are included in **Annexure 1**.

### **3.2.7 Public Open Space**

A public reserve allotment, with an area of 2612 m<sup>2</sup> is sited to the east of the proposed main access spine road (Road No. 1). It is expected that this will be embellished to enable its use and enjoyment by residents of the site and surrounds. Furthermore, a public reserve with an area of 2048 m<sup>2</sup> is proposed to the west of the central spine road which will link with the provision of open space on other adjoining lands once these are developed. These areas are to be embellished with plantings, a playground structure and picnic facilities.

A public reserve allotment is proposed at the entry to the subdivision adjoining the main access spine road having an area of 1408 m<sup>2</sup>. This area is proposed to be embellished with landscaping, whilst it will also contain a pathway/fire trail.

In addition, a natural area of public open space is provided along the northern and eastern edges of the site, where the land is forested and steeper, and therefore inappropriate for residential use, yet provides for an open space environment that is attractive and visually interesting, and stimulating for users. This space, with a total in excess of 9.492 ha, represents 21.9% of the whole site. These areas are the most appropriate for the siting of some of the WSUD infrastructure given the lower topography associated with these lands.

### **3.2.8 Footpaths/Cycleways**

The proposal incorporates a series of pedestrian/cycle pathways in order to encourage active transport options for local trips and also to embellish areas of public open space to

maximise liveability within the subdivision. Facilities are proposed in the following locations:

- Skirting the large areas of public reserve to the north and east;
- Along the main spine road;
- Along the widest east-west road (Road No. 10);
- Along the western edge of the subdivision (Road No. 6); and
- Along the southern boundary of the site (Road No. 7).

The pathways are to be finished in concrete, 2.0 m in width, to enable shared use for both pedestrians and cyclists.

### **3.2.9 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 biofiltration systems are to be provided for all catchments.

### **3.2.10 Landscaping**

Landscaping of public reserves and other public areas is to be undertaken in accordance with the Landscape Plan prepared by Peter Phillips Landscape Architecture shown in **Annexure 11**. This plan includes the provision of planting schedules for each of the public roadways, and a typical treatment for the proposed park.

Landscaping of the roadways is to use a variety of species including various gums, lilly-pilly, and bottle-brush species. Tree plantings are to be undertaken in a schematic manner such that individual streets are provided some level of differentiation between the precincts. In all, a total of some 390 trees are proposed in conjunction with the subdivision.

Landscaping of the public reserve to the east of the main spine road is to include a child's play structure, picnic facilities, and strategically placed plantings.

### **3.2.11 Asset Protection Zones (APZ)**

Asset Protection Zones are an effective strategy in the reduction of bush fire hazard by the suitable management of land to ensure appropriate fuel levels are minimised to levels which do not result in threat to people and infrastructure.

Asset Protection Zones (APZ) are proposed for the northern, eastern and southern edges of the site to protect the proposed allotments and resultant urban development. The APZ have been devised following consultation with Eco Logical Australia (ELA) and consideration of the requirements of *Planning for Bushfire Protection (2006)*.

These zones incorporate an Inner Protection Zone and Outer Protection Zone as required in order to address the requirements of Planning for Bushfire Protection and result in the effective management of bushfire risks identified for the locality. Furthermore, the analysis of this hazard has identified that buildings in certain portions of the site will require construction to a certain level in accordance with AS 3959.

### **3.2.12 Safer by Design**

The NSW Department of Planning has produced a guideline under the Environmental Planning and Assessment Act, 1979 (EP&A) entitled *Crime Prevention and the Assessment of Development Applications*. This provides a useful guide in the consideration of this proposal in order to ensure that safety and crime prevention strategies are considered in the design of the proposed subdivision.

Having regard to crime prevention strategies, the guidelines apply four principles as follows:

- surveillance, which relates to the opportunities that are available so that people can see what other people are doing;
- access control, which relates to ensuring that physical and symbolic barriers are in place to attract, channel, or restrict the movement of people;
- territorial reinforcement, which is utilised to send positive signals to the public regarding the use of public space to encourage its use; and
- space management strategies, which are linked to territorial reinforcement and are used to ensure that space is appropriately utilised and maintained such that it used for its intended purpose.

The proposal responds to these principles as the feature public open space area is centrally sited which should result in a public space that residents are attracted to, and will have a sense of ownership. This open space area combines to form the community focal point for the site and this is well defined, with boundaries clearly identified by road reserves and private lands.

Lighting of all roads and public reserves is to be undertaken in accordance with the relevant Australian Standards to ensure that appropriate and safe levels of illumination are available.