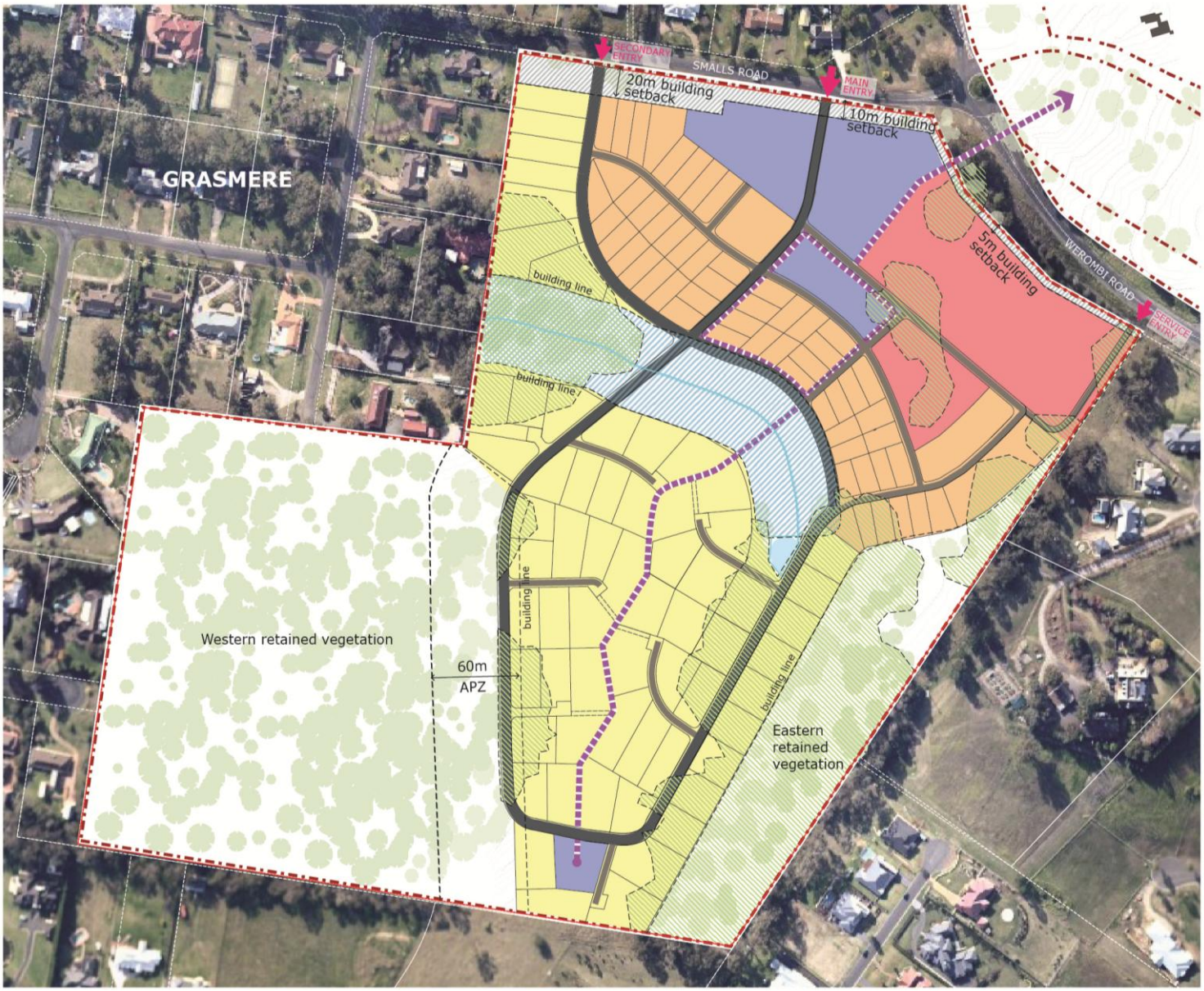
# Planning Proposal – Master Plan Revision

# Grasmere Aged Care Development

Prepared for
Carrington Centennial Care

23rd November 2011



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# Abbreviations

| ABBREVIATION | DESCRIPTION |
|---|---|
| APZ | Asset Protection Zone |
| CEEC | Critically Endangered Ecological Community |
| CLUMP | Conservation and Land Use Management Plan |
| CPW | Cumberland Plain Woodland |
| DCP | Camden Council Development Control Plan 2011 |
| EP & A Act | NSW Environmental Planning and Assessment Act |
| EPBC Act | Commonwealth Environment Protection and Biodiversity Conservation Act |
| FM Act | NSW Fisheries Management Act (1994) |
| LEP | Camden Council Local Environment Plan (2010) |
| NOW | NSW Office of Water |
| PBP / PBP 2006 | NSW Rural Fire Service Planning for Bushfire Protection Guidelines (2006) |
| RF Act | NSW Rural Fires Act (1997) |
| RFS | NSW Rural Fire Service |
| SEWPaC | Commonwealth Department of Sustainability, Environment, Water, Population and Communities |
| SFPP | Special Fire protection Purposes |
| WM Act | NSW Water Management Act |

# 1 Introduction

Carrington Centennial Care has a range of established health and aged care facilities on its existing landholdings along the northern side Werombi Road, Grasmere. Carrington Centennial Care also owns land on the southern side of Werombi Road (between Werombi Road, Grasmere Grove and Smalls Road) which are as yet undeveloped.

Master planning for this portion of the site, known as the Smalls Road Site, has been undertaken in the past decade. However these currently adopted master plans and associated land use zonings are considered to no longer adequately meet Centennial Care's needs, hence the process of re-master planning has begun.

## 1.1 DESCRIPTION OF PROJECT

The current land use zoning for the Small Road Site was adopted by Camden Council in 2006 after a significant master planning and negotiation process. Recent discussions by the Carrington Centennial Care Board have highlighted that the currently approved land use zonings and master plan do not adequately provide for the long term growth of the various aged care facilities that Carrington envisages being required for the area and being able to provide on their sites.

Consequently, Carrington Centennial Care Board has initiated a review of the current master plan for the Smalls Road site. Once agreement has been reached with Camden Council on the contents and direction of the Master Plan, this will be followed by more detailed local environmental studies to inform the subsequent land use rezoning investigations.

Additionally, there have been legislative changes since the 2006 Master Plan which have the potential to significantly influence final land use outcomes realised on the site.

## 1.2 STUDY AREA

The Smalls Road Site is approximately 27ha in size and is bounded essentially between Werombi Road in north-east, Smalls Road to the North, existing residential development to the west and existing and future urban development to the east. The site will has direct access to both Werombi Road and Smalls Road. The site is comprised of one large allotment, Lot 201 DP 734620.

The northern part of the site generally falls from a localised high point near the round-about intersection of Werombi and Smalls Roads, in a south-west direction down toward the small watercourse which traverses the centre of the site, running from east to west. A small part of the northern portion of the site slopes down toward Werombi Road. The southern part of the site essentially falls gradually to the north towards the central watercourse.

The site contains several stands of remnant native vegetation which occupy approximately half of the site. These stands contain Cumberland Plain Woodland vegetation, a critically endangered ecological community. These stands of relatively in-tact vegetation are separated by areas of open grassland, which is comprised of a mixture of native and non-native (pasture) grasses.

The site is shown in Figure 1.


**Figure 1: Site Location**

## 1.3 PREVIOUS STUDIES AND INVESTIGATIONS

A range of investigations were undertaken as part of the original master planning and rezoning project in 2005/06. These included:

- Michael Brown Planning Strategies (2010) Smalls Road – Planning Process Overview – Seniors Housing Proposal. September 2010.
- Conacher Travers (2005) Flora and Fauna Assessment: Carrington Hospital Site – Werombi Road Grasmere. Ref 4418F. Conacher Travers Pty Ltd March 2005.
- Conacher Travers (2006) Conservation and Land Use Management Plan for Carrington Centennial Care Lands.
- Conacher Travers (2006) Bushfire Protection Assessment for Carrington Centennial Care Lands, Werombi Road Grasmere. REF 5223B. Conacher Travers Pty Ltd May 2006.
- Conacher Travers (2006) Vegetation Management Plan for Carrington Centennial Care Lands, Werombi Road, Grasmere. REF 5223. Conacher Travers Pty Ltd May 2006
- PSB Camden Riparian Areas for Management: Basis for Management.

## 1.4 LEGISLATIVE REQUIREMENTS

### *1.4.1 Environment Protection and Biodiversity Conservation Act (1999)*

A critically endangered ecological community (CEEC), Cumberland Plain Woodland (CPW), is present on the subject site and several individual species (Cumberland Land Snail, Grey-headed Flying Fox and Large-footed Myotis) have been recorded either on site or in very close proximity[1]. The CEEC and the fauna listed above are protected under the Commonwealth *Environment and Biodiversity Conservation Act (199*9) (EPBC Act) and any proposal which could be deemed to have a significant impact on them would be required to be reviewed and assessed by the Commonwealth Department of Sustainability Environment, Water, Population and Communities (SEWPaC).

### *1.4.2 NSW Threatened Species Conservation Act (1995)*

Cumberland Plain Woodland is also listed as a CEEC under the *NSW Threatened Species Conservation Act (1995)* (TSC Act). Cumberland Land Snail, Large Footed Myotis and Grey Headed Flying Fox are similarly listed under the TSC Act as endangered and vulnerable respectively. There may be potential for several threatened flora species to be present on site, however none have been reported in the previous studies listed above.

### 1.4.3 *Fisheries Management Act 1994* (FM Act)

The *Fisheries Management Act 1994* (FM Act) replicates the protections of the TSC Act for aquatic (freshwater and marine) species, including fish, insects, molluscs, crustaceans, echinoderms and polychaetes but does not include whales, mammals, reptiles, birds, amphibians or species specifically excluded. Previous field and desktop survey work have not identified any species within the site or surrounding area that are protected under this act, however any activity proposed that occurs that would block or interfere with fish passage will require a permit under this Act.

[1] Conacher Travers (2005) Flora and Fauna Assessment: Carrington Hospital Site – Werombi Road Grasmere. Ref 4418F. Conacher Travers Pty Ltd March 2005

### *1.4.4 NSW Water Management Act (2000)*

The *NSW Water Management Act (2000)* (WM) has replaced the provisions of the *Rivers and Foreshores Improvement Act 1948*. The WM Act 2000 controls the carrying out of activities in or near water courses in New South Wales. The watercourse running through the centre of the site will need to be classified according to the Riparian Corridor Management Study (RCMS) methodology. Subsequently an appropriately sized riparian corridor consisting of a core riparian zone (of between 10 and 40m) and adjacent vegetated buffer has been factored into the final Master Plan and layout.

### *1.4.5 NSW Rural Fires Act (1997)*

In regards to urban development activities, the *Rural Fires Act (1997)* (RF Act) is enacted through the *NSW Environmental Planning and Assessment Act (1979)* and the NSW Rural Fire Services "Planning for Bushfire Protection (PBP) Guidelines (2006)".

The vegetated parts of the site are mapped as Bushfire Prone Land, according to Camden Council's Bushfire Prone Lands Maps (Map 3, 10/11/2009) and therefore the PBP Guidelines apply to the site. The use of the land for aged care facilities, which are deemed "Species Fire Protection Purposes", will require additional setbacks from bushfire hazards and other bushfire protection measures.

### 1.4.6 Camden LEP 2010

Camden Local Environment Plan (2010) applies to the site. The current site zoning is R5 – Large Lot Residential. The objectives of this zone are to provide for rural style residential development while protecting environmentally sensitive locations and scenic quality. It is envisaged that a change to all or part of the site's zoning will be proposed at the completion of the site Master Planning process.

### 1.4.7 Camden DCP 2011

The Camden Development Control Plan 2011 aims to ensure that:

- Camden retains its valued heritage qualities and scenic landscapes,
- New communications are planned are developed in an orderly, integrated and sustainable way,
- Any impacts on the natural environment are minimised and overall improvements to the natural systems within Camden are achieved,
- Appropriate housing choices are provided for existing and future residents,
- New development is designed and located so as to ensure the health, safety and security of people and property, and
- New developments are planned and constructed to contribute to the social, economic and environmental sustainability of the LGA.

In addition to the construction and building controls within the DCP, various environmental controls will apply to future development activities on site including: Erosion and Sedimentation; Earthworks; Salinity Management; Water Management; Trees and vegetation; Environmentally Sensitive Land; Riparian Corridors; Environmental and Declared Noxious Weeds.

# 2 Literature Review

## 2.1 ECOLOGY AND RIPARIAN ISSUES

Conacher Travers completed a Flora and Fauna Assessment of the entire Carrington Hospital Site in 2005 – this included land on both the northern / eastern and southern / western side of Werombi Road. The outcomes of the assessment and report for the southern / eastern site only are summarised below.

***Drainage and Watercourses***

There are 3 watercourses on site. Two watercourses drain north / north-west and join together off-site and drain into Sickles Creek. A third watercourse in the very south of the site drains directly west and then into a tributary of Sickles Creek.

***Slope***

Gradients on the site vary but do not exceed 15 degrees. The elevation on site ranges from 82m in the lowest part within the watercourse along the western boundary to 113m on the southern boundary.

***Vegetation***

The vegetation on site comprises stands of remnant open woodland / forest, riparian vegetation and grasslands with scattered trees. The remnant open woodland was assessed to be Cumberland Plain Woodland, an endangered ecological community under both NSW and Commonwealth legislation, with the condition varying from very poor to fair with all remnants having suffered disturbance from cattle grazing, rubbish dumping and weed invasion. Canopy cover in these remnant patches varies from 10 % to 40%, generally with a sparse mid-storey layer and moderately dense groundcover.

The stretch of riparian vegetation is heavily dominated by African Olive, with occasional emergent remnant native trees. The emergent species listed indicate that it is likely the patch of vegetation is a highly modified stretch of remnant Alluvial Woodland, an endangered ecological community under the TSC Act.

Targeted searches for the Camden White Gum (*Eucalyptus benthamii*) and Spiked Rice Flower (*Pimelea spicata*), both listed as threatened Species under the TSC and EPBC Acts, failed to detect individuals of these species on site, however survey was not undertaken at the most ideal time to detect *Pimelea spicata*.

Weeds detected onsite include African Olive *(Olea europea)*, African Lovegrass (*Eragrostis curvula*), (*Briza subaristata*), Spear Thistle (*Cirsium vulgare*), Flatweed (*Hypochaeris sp*), Red-Flowered Mallow (Modiola caroliana), Paspalum Grass (*Paspalum dilatatum*). Levels of weed infestation vary across the site.

In summary, there were 209 flora species recorded on site, of which 98 were native and 111 were introduced. According to the Urban Bushland Biodiversity Study by NPWS in 1997, 16 of the species recorded on site are considered regionally significant to the Western Sydney area.

***Fauna***

The field survey identified 99 fauna species within or in close proximity to the site, including three threatened species. The threatened species detected were the Cumberland Land Snail (*Meridolum corneovirens*), Grey Headed Flying Fox (*Pteropus poliocephalus*), and Large Footed Myotis (*Myotis adversus*). The Land Snail and Large Footed Myotis are protected under the TSC Act, while the grey headed flying fox is protected under both TSC and EPBC Acts.

Of species listed under State legislation (TSC and FM Acts), it is considered nineteen threatened bird species have the potential to utilise the site.. Of species listed under the EPBC Act, it is considered that eight threatened species and two endangered ecological communities have the potential to occur on or utilise the site.

A range of fauna habitats is present throughout the site including winter flowering eucalypts, sparse to dense shrub layers, fallen timber and hollow logs, loose soil suitable for burrowing with a sparse to moderate leaf litter and fresh water dams with fringing vegetation.

***Impact Assessment***

No planning proposals were developed for the site and hence no impact assessment was carried out. Some general site development constraints were identified, including the presence of the Cumberland Plain Woodland vegetation, the existence of several drainage lines and the need for their restoration and sufficient planning setbacks, and the presence on site of numerous threatened species and associated habitat features.

Numerous recommendations were made for designing future urban development proposals, including:

- Minimising the impact on CPW by limiting development to areas that area already cleared;
- Retention of habitat trees where possible, and pre-clearance surveys of all habitat trees to be removed,
- Retention of on-site dams where possible due to their ability to provide aquatic habitat, or pre-clearance aquatic surveys of any dams to be removed,
- Relocation of any fauna species detected to be utilising the creek areas,
- Completion of further in-season field work to determine:
    - the presence / absence of *Pimelea spicata*,
    - the potential roosting habitat resources for the Large Footed Myotis, and
    - the population size and distribution of the Cumberland Land Snail on site.

## 2.2 BUSHFIRE ISSUES

Conacher Travers completed a Bushfire Protection Assessment for the two parcels comprising the Carrington Centennial Care Lands in May 2006. This assessment was carried out in May 2006, but was conducted in accordance with NSW Rural Fire Service Planning for Bushfire Protection (PBP) Guidelines 2001[2]. The following is a summary of the Conacher Travers 2006 report.

Aged care living is deemed to be Special Protection Development under PBP 2001 and requires additional bushfire protection measures due to the reduced capacity but increasing complexity of site evacuation, the greater vulnerability of residents to the stress and health impacts associated with bushfire emergencies and the increased communication difficulties in managing responses.

Lot 201 contains remnant CPW vegetation, much of which is to be retained and restored on site as well as large areas of cleared un-managed grasslands. Lands surrounding the site have already been cleared for larger and standard lot residential development and present a low threat to the subject site. Vegetation within Carrington's other land holding on the northern side of Werombi Road poses a bushfire threat to this site.

Site slopes were assessed for up to 100m lengths and the dominant vegetation type was assessed over lengths of 140m. All slopes were assessed to be within the 0 - 5° downslope (i.e. where the hazard is downslope of the building site) and vegetation remnants were assessed as comprising vegetation Groups 2 and 3. The site displayed no visible evidence of recent bushfire attack.

The level of bushfire risk from most directions was considered low due to the prevalence of surrounding residential development, however it was acknowledged that the remnant woodland and riparian vegetation does present a higher level of risk.

The report predicted that a fire on site would only develop to low to moderate intensities within the onsite vegetation due to the relatively small total area of vegetation and the relative isolation of the patches. APZs of 50m were calculated as being necessary from the large patch of (Group 2) vegetation in the south-west of the site and APZs of 20m were calculated as being required adjacent to the riparian corridor and the vegetation on adjacent lands. APZs of these dimensions would ensure that no level of higher building construction standard would be required.

Additionally, a range of Bushfire Protection Measures were assessed for the site including;

- the ability of the aged care owners / managers to manage the Asset Protection Zones through regular routine maintenance activities such as mowing,
- the accessibility of the site to two escape routes, namely Werombi Road and Small Road, in the event that a site evacuation is required,
- the proximity of a Rural Fire Service Brigade approximately 1km to the west of the site with a predicted response time of 4 - 7 minutes,

[2] PBP (2001) has since been replaced by PBP 2006, and PBP 2006 is currently under review with a new version expected to be released in early – mid 2012.

- the proximity of a NSW Fire and Rescue Station in Ellis Lane approximately 7km to the south-east, with a 15 – 20 minute emergency response time,
- provision of perimeter roads around future developments and the provision of adequate external site access and egress points,
- the availability of reticulated town water to the site.

## 2.3 CONSERVATION AND LAND USE MANAGEMENT PLAN

In 2006, Conacher Travers produced a Conservation and Land Use Management Plan (CLUMP) for the entire Carrington Centennial Care site to guide the conservation, sensitive development and ongoing management of the lands over the next 20 years. The following is a summary of this plan, primarily as it relates to Lot 201 DP 734620.

The CLUMP nominated the following ***Key Ecological Values*** of the Carrington site:

- Protection and restoration of the CPW vegetation through retention and long term protection and management
- Provision of potential habitat for the threatened flora species Spiked Ricer Flower (*Pimelea spicata)* within the CPW,
- Habitat for 3 threatened fauna species, including Large Footed Myotis (*Myotis adversus*), Grey-Headed Flying Fox (*Pteropus poliocephalus*) and Cumberland Land Snail (*Meridolum corneovirens*),
- Provision of a variety of remnant native vegetation providing seasonally different foraging resources
- High proportion of hollow bearing trees within the remnant vegetation providing a wide range of roosting, foraging and on-ground refugia,
- Ecological functioning of all the existing vegetation communities and habitats,
- Protection of surface water resources and regulation of existing water tables.

The 2006 adopted Master Plan was to deliver the following outcomes:

- Protection of 20ha of CPW vegetation and the restoration of 11ha of CPW
- The protection and restoration of riparian zones within the site, according to the prescriptions in the 2005 Conacher Travers Vegetation Management Plan,
- The protection of significant aboriginal sites, in accordance with the archaeological survey report,
- The creation of northern and southern conservation precincts, which conserve all of the 'good condition' vegetation communities.

# 3 Ecological Values

ELA conducted a brief site walkover in August 2011, to review the current state of ecological values within the Smalls Road Site. Results of this walkover are included below and were combined with previous survey results by Conacher Travers (2005).

## 3.1 VEGETATION COMMUNITIES

The Smalls Road Site contains two stands of remnant vegetation, essentially along the south-eastern site boundary and south-western site boundary. These two stands of relatively intact remnant vegetation are separated by open grassy, unmanaged lands made up of exotic pasture and some native grasses with occasional scattered remnant trees.

The stands of remnant vegetation on site comprise Cumberland Plain Woodland (CPW) (Figure 2). Regional vegetation mapping for the site indicate that the CPW varies in good condition. Conacher Travers (2005) previously surveyed the vegetation on site. Further survey is recommended due to the uplisting of CPW and to ascertain any areas of Native Grassland.

### 3.1.1 Cumberland Plain Woodland

In 2009, the listing of Cumberland Plain Woodland under both the NSW TSC Act and Commonwealth EPBC Acts was 'uplisted' to critically endangered ecological community.

CPW is the most widely distributed community on the Cumberland Plain, predominantly occurring on soils derived from Wianamatta Shale. Conacher Travers (2005) found that the CPW present within the study area consists of a mixture of very poor to fair condition vegetation due to the varying levels of disturbance to the site over recent times.

The canopy is dominated by Grey Box (*Eucalyptus moluccana*), Forest Red Gum (*Eucalyptus tereticornis*), and Narrow-leaved Ironbark (*Eucalyptus crebra*).

The shrub layer over large parts of the study area has been modified through disturbance and essentially consists only of Native Blackthorn (*Bursaria spinosa*). Parts of the site have African Olive (*Olea europaea*) and African Boxthorn (*Lycium ferocissimum*) infestation of the shrub layer.

Groundcover vegetation is typically dominated by a mixture of native and exotic grasses and herbs. Native groundcover species include Weeping Grass (*Microlaena stipoides*), Kangaroo Grass (*Themeda australis*), Blue Trumpet (*Brunionella australis*) and Common Woodruff (*Asperula conferta*). Exotic groundcovers include Spear Thistle (*Cirsium vulgare*), African Lovegrass (*Eragrostis curvula*), Red Flowered Mallow (*Modiola caroliniana*).

### 3.1.2 Grassland

The open, unmanaged grassland area through the centre of the site consists of a dense mix of herbs and grasses with scattered remnant trees, indicative of the woodland species which would have previously covered the site prior to clearing activities. The most common overstorey species are Grey Box *(E. molucanna*) and Forest Red Gum (*E. tereticornis*). Further survey of these areas should be undertaken to determine their conservation status.

### 3.1.3 Flora

The NSW Wildlife Atlas and Commonwealth EPBC Protected Matters searches indicated that records of both Spiked Rice Flower, *Pimelea spicata* and Camden White Gum, (*Eucalyptus benthamii*) have been reported from within 10km of the study site. Previous site surveys have failed to record either species on site, however survey was not undertaken at the best time of year to detect *Pimelea spicata*. Site survey for this report did find an individual adult Eucalypt which may have be a Camden White Gum, but without diagnostic fruiting bodies it is difficult to confirm identification.

### 3.1.4 Aquatic vegetation

Surrounding the dam on land temporarily inundated during heavy or prolonged rain events, an area of moderate to denser aquatic herbs of 1- 2m height exists. Species include Juncus (*Juncus usitatus*), Nardoo (*Marsilea mutica*), Typha (*Typha orientalis*), Tall Spike Rush (*Eleocharis sphacelata*) and Common Couch (*Cynodon dactylon*). Weed sin this part of the site include Tall Fleabane (*Conyza albida*), Umbrella Sedge (*Cyperus eragrostis*), Hairy Birds-foot Trefoil (*Lotus suaveolens*) and Fireweed (*Senecio madagascariensis*).


**Figure 2 Regional Vegetation Mapping**

# 4 Riparian Values

The Smalls Road Site contains three small watercourses, mapped in the Conacher Travers Conservation and Land Use Management Plan (2006) all of which are the headwaters of, and feed into, the larger Sickles Creek downstream (offsite). Sickles Creek feeds into the Nepean River approximately 4km further downstream near Ellis Lane.

These watercourses were categorised by the (former) DWE as Category 3 where the focus of managing these areas is on managing bank stability and water quality (Conacher Travers 2005). Preliminary site assessment in (August 2011 by ELA) of these watercourses suggest that the central watercourse should be considered as a category 2 watercourse with a 30m riparian corridor either side of top of bank (minimum 60m in total width) retained within the future Masterplan for the site.

Two of the watercourses run through the heavily vegetated patch in the south-west corner, and will remain undisturbed. The third watercourse, which runs east to west through the centre of the site will likely be required to remain as a Category 2 watercourse and be restored and rehabilitated accordingly. At present the western most end of this watercourse is contains a reasonable stand of remnant CPW vegetation on each bank. The creek banks appear reasonably stable at present. At the western edge of the subject site, the watercourse is contained within private lands among the large rural allotments.

The eastern half of this central creek has completely cleared banks, exotic pasture grass coverage and unstable banks in parts. There is very little aquatic or riparian habitat along this part of the watercourse at present.


**Figure 3: NSW Office of Water Classifications of Watercourses on Site – not been confirmed with NOW**

# 5 Bushfire

A significant portion of the Smalls Road Site is designated as Bushfire Prone Land according to Camden Council's Bushfire Prone Lands Map 2009. The two patches of remnant CPW vegetation on the eastern and western sides of the lot are classified as Vegetation Category 1, hence all land within 100m of this vegetation is also designated as Bushfire Prone "Buffer".

The CPW vegetation on site is the source of the main bushfire threat to the remainder of the site. The CPW and other vegetated areas on the Carrington Site on the northern side of Werombi Road also poses a bushfire hazard to the Smalls Road Site. CPW vegetation is considered a 'Grassy Woodland' under Keith (2004) for the purposes of determining required Asset Protection Zone setbacks.

The bushfire hazard in the central unmanaged grassland portion of the site is low. The scattered paddock trees and isolated shrubs do not form any kind of continuous canopy layer or fuel ladder into the canopy.

Desktop measurements of the effective slopes across the site for up to 100m have been calculated. The maximum slope on site is a 5-10 Degrees downslope (i.e. where the bushfire hazard is downslope of future building envelopes).


**Figure 4: Bushfire Prone Land (extract from Camden Council Map 2009)**

# 6 Constraints & Opportunities

## 6.1 ECOLOGY

The Cumberland Plain Woodland vegetation is protected by both State and Federal legislation. Any proposal that would negatively impact on this vegetation would require an assessment of the significance of that impact under both the TSC and EPBC Acts.

Where the impact is considered to be significant, under the NSW planning scheme a further level of investigation, being a Species Impact Statement, would be required and the activity would also be referred to the NSW Office of Environment and Heritage for concurrence to approve the development.

Similarly, where a significant impact is predicted, an assessment would be required under the EPBC Act by the Commonwealth Department of Sustainability, Environment, Water, Population and Communities (SEWPaC).

Assessments under the Commonwealth EPBC Act typically pass through a number of stages, depending on the scale of the impact.

***Stage 1: Referral***. During the referral stage, SEWPaC will consider the merits of the proposal and typically make one of four decisions:

1. Non-controlled Action: the proposal is deemed not to constitute a significant impact and can be undertaken with no further assessment required,
2. Non-Controlled Action – Particular Manner. The proposal is deemed to not consitutue a significant impact and can be undertaken in accordance with a series of conditions,
3. Controlled Action: the proposal is considered to result in a significant impact and must move to the 'formal' assessment stage,
4. Refusal – the proposal is refused outright.

ELA has recently received non-controlled action decisions for impacts on CPW vegetation of upto 3ha. From looking at the recent decisions of SEWPaC in regards to impacts on CPW, it appears that 3ha seems to be maximum size of impact that will be "dealt with" by SEWPaC at this initial level of referral.

The revised Master Plan shows that the area of CPW onsite to be impacted by all site development works will exceed 3ha. While the works may be completed in stages, whereby each stage involves an impact of less than this, SEWPaC takes a more strategic and regional approach to conservation and will consider the eventual outcome of the redevelopment. It is therefore likely that at some stage in the future, a referral to SEWPaC will be required, and furthermore, it is likely that the proposed works will be subject to either a Non-Controlled Action – Particular Manner or a Stage 2 Assessment.

***Stage 2: Assessment***. If the proposal is considered to be a controlled action, it will move into the formal assessment stage. This entails a more onerous analysis of impacts, consideration of alternative options, identification of amelioration and offset requirements and direct negotiation with SEWPaC. Formal assessments may take upto 12 months to receive a decision and the field work and reporting requirements can be quite costly.

Technically, rezoning proposals do not require submission to SEWPaC for assessment since there is no 'physical' impact on the environment from this stage. However, we believe that in order to move forward

with the greatest amount of certainty of the acceptability of all future stages and footprints, Carrington Centennial Care should instigate the development of a comprehensive referral package regarding the details of the Master Plan proposal and engage early directly with SEWPAC staff to decrease the likelihood that subsequent Development Applications would be subject to the Stage 2 formal assessment procedure.

## 6.2 RIPARIAN

The three small watercourses on site are likely to be required to be retained as open watercourses which are to be protected, stabilised and restored. Two of the three watercourses exist within the heavily wooded areas of the site which contains CPW vegetation and is unlikely to be cleared for development in the future. Restoration requirements will be minimal on these two stretches and essentially part of general maintenance activities for that remnant bushland.

Only one watercourse extends into the cleared portion of the site into areas likely to be subject to future development activities. The restoration requirements for this watercourse will depend on the Watercourse Categorisation nominated by the NSW Office of Water. We envisage that this watercourse will be designated as a Category 2 and require the establishment of a 20m Core Riparian Zone plus additional 10m Vegetated Buffer areas on each creek bank.

The restoration requirements will impose a cost burden on future development, as well as an ongoing maintenance responsibility for these areas.

Additionally, restoration of the core riparian area of the central watercourse may increase the level of bushfire threat to land adjacent to the waterway. Therefore it is proposed that restoration of the core riparian zone will need to select suitable species and planting densities to maintain the corridor as an Asset Protection Compliant Vegetation formation, thus removing the need for APZ's.

The restored waterways will improve the visual aesthetic of the areas facing these watercourses and also provide an opportunity to incorporate recreational and open space / park facilities for the benefit of residents and visitors.

## 6.3 BUSHFIRE

Developments such as hospitals and aged care facilities are deemed to be Special Fire Protection Purposes (SFPPs) according to PBP 2006, and an additional level of Bushfire Protection Measures apply to SFPPs compared to residential or other development. The nature of SFPPs means that occupants may be more vulnerable to bushfire attack for one or more of the following reasons:

- They may be less aware of the bushfire threats and impacts,
- They may have reduced capacity to evaluate and respond effectively to risk,
- They may represent organisational difficulties for evacuation and management of evacuees,
- They may be more vulnerable through stress, anxiety and other health impacts to the impacts of bushfire,
- There may be significant communication barriers,
- Supervision during a bushfire event may be difficult,
- Logistical arrangements for the numbers of residents may be complicated in terms of transport, alternative accommodation, health care etc.

Adequately addressing bushfire issues for SFPPs still relies on a range of bushfire protection measures, however there is a greater emphasis on the open space provided around buildings, both as defendable spaces and fuel managed areas (APZs) and less reliance on the construction standards of buildings. Accordingly, radiant heat levels of >10kW/$m^2$ must not be experienced by emergency services personnel.

Currently, grassland vegetation communities require a 10m Bushfire Asset Protection Zone (APZ) according to the NSW Rural Fire Service 'Planning for Bushfire Protection' Guidelines 2006 (PBP). However, recent assessments of grassland areas by the NSW Rural Fire Service (RFS) in other locations have resulted in 20m APZs being set adjacent to grassland vegetation, foreshadowing a likely change to required setback distances in the revised version of PBP, due in early - mid 2012.

Additionally, grasslands are currently ***not*** mapped as bushfire prone vegetation in the current system of Bushfire Prone Land Mapping employed by Local Governments and the NSW RFS. However, recent information from the NSW RFS indicates that the new guidelines for the mapping of Bushfire Prone Land (currently in production) will include Grasslands as a type of bushfire prone vegetation. This would have the effect of designating essentially all land within the Smalls Road Site as Bushfire Prone Land. Development on all land that is designated as Bushfire Prone will be required to be assessed in accordance with the requirements of PBP 2006.

Much of the unmanaged grassland on the subject site will be cleared as a result of future developments. However the existing properties to the south of the subject site and the east of the site may continue to contain unmanaged grassland, from which an adequate setback will be required within the subject site.

The average slope across most of the site is within the 0 - 5 º downslope category, whereby the hazard exists at a lower elevation than the future development footprints.

The remnant vegetation on site in the south-west corner is comprised of Cumberland Plain Woodland, considered to be a "Woodland (Grassy)" community according to Keith (2004), for the purposes of determining APZs. Restoration of the core riparian zone will utilise suitable species and planting densities to avoid creating an undue future fire hazard and emulate the alluvial woodland vegetation historically would have occurred on site. This vegetation type is considered to be "Forested Wetland" according to Keith (2004). The remnant vegetation in the eastern part of the site is proposed to be managed as a *Managed Landscape* which is "APZ compliant" in terms of overall fuel load, canopy separation and no fuel connectivity.

The required setback distances adjacent to these types of vegetation are presented in Table 1 below.

**Table 1: Minimum Specifications for Asst Protection Zones for SFPPs to achieve <10kW/$m^2$.**

| Vegetation Formation (Keith 2004) | Effective Slope ° | Required APZ |
|---|---|---|
| Unmanaged Grassland | 0 – 5 downslope | 10 m |
| Woodland (Grassy) | 0 – 5 downslope | 50 m |
| Forested Wetland | 0 – 5 downslope | 60 m |
| Managed Landscape | 0 – 5 downslope | Nil |

Through careful design of the riparian corridor, it is envisaged that the restoration of a natural and vegetated outcome can be achieved whilst maintaining an APZ compliant vegetation. This will remove the need for APZ setbacks for planned surrounding aged care facilities. Further negotiation with NSW Office of Water will be required in planning for this corridor restoration.

# 7 Master Plan Changes

The current adopted Master Plan from 2006 proposed a reasonably similar overall development footprint for the subject site. The majority of development activity was concentrated along the northern and eastern portions of the site with retention of the centrally located east to west running watercourse. The area of remnant CPW vegetation immediately adjacent to the central watercourse at the western property boundary was to be retained as was the much of the remnant CPW in the south-west corner. This Master Plan would have resulted in the clearance of all remnant CPW vegetation from the south-eastern and eastern portions of the site.

The new Master Plan proposes the retention of most of the vegetation in the south-west corner, similar to the 2006 Plan, with small areas at the edge of the bushland to be removed and an APZ of up to 60m to be established along the eastern edge of this patch. The remnant vegetation outside the 30m wide riparian corridor at the western edge of the site is proposed to be removed.

Approximately one third of the remnant CPW vegetation along the south-eastern edge of the site is to be removed for provision of development land, while the remaining two thirds is proposed to be retained but managed in an APZ compliant (and therefore fuel reduced) state. Much of the canopy in this area can remain where there is sufficient separation between tree canopies, however the understorey and mid-storey vegetation will need to be removed so that there is no continuous fuel ladder from the ground into the canopy.

Overall at a broad site level, the new Master Plan will result in a greater total area of remnant CPW vegetation being retained on site and a wider riparian corridor than the previous Master Plan.

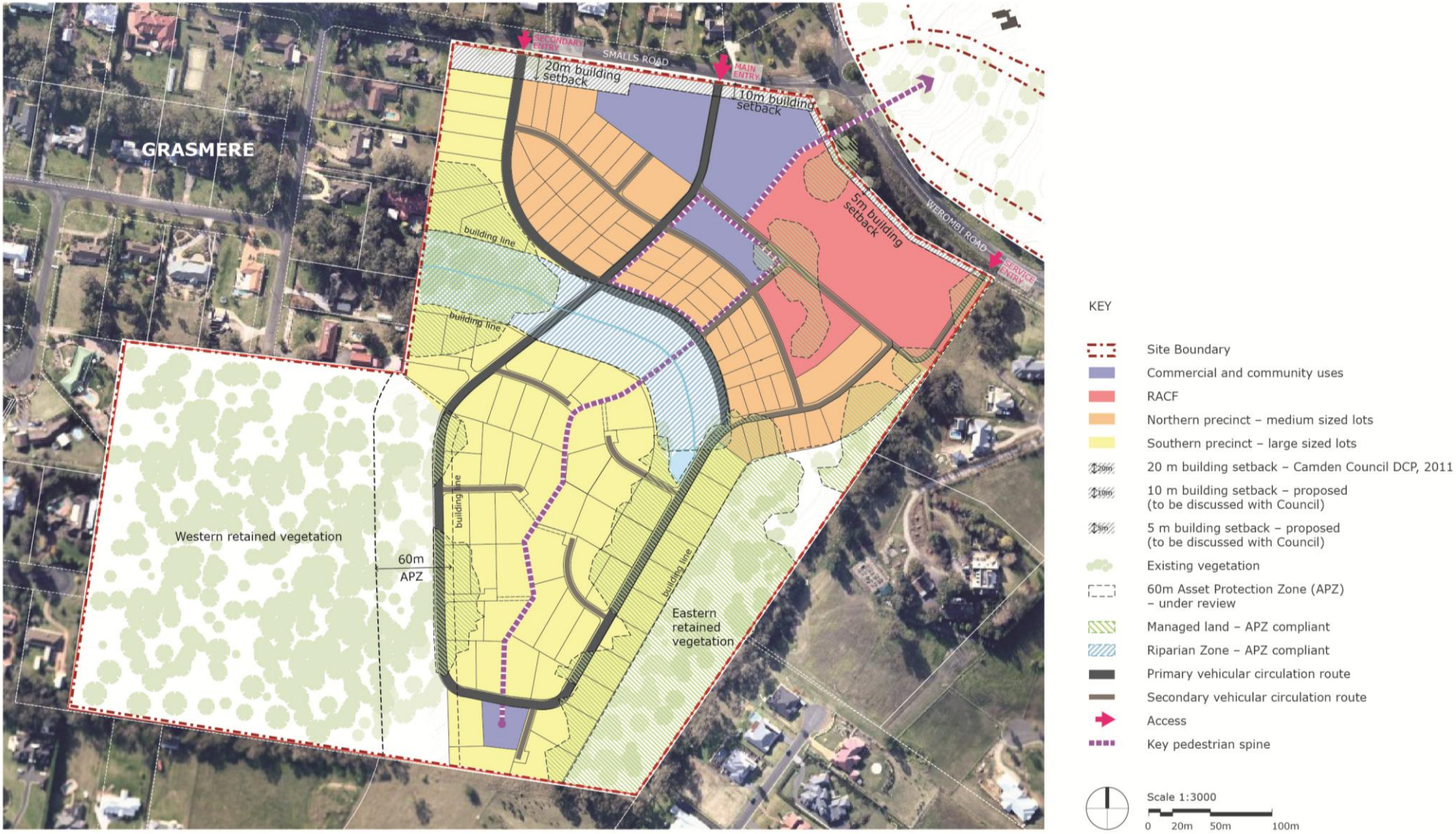


**Figure 3: Proposed Master Plan - Smalls Road Site**

# 8 Future Investigations

The Smalls Road site does contain some sensitive environmental features, upon which it is likely that the proposed Masterplan will have some adverse impacts. These impacts will require further detailed assessment and be appropriately managed. In particular the presence and impact upon the critically endangered ecological community, Cumberland Plain Woodland will need careful and comprehensive assessment.

ELA make the following recommendations for further technical investigations;

- Detailed site survey. This would include, targeted searches for threatened species as well as mapping and validation of existing vegetation communities using the *Biometric* methodology. This terrestrial biodiversity tool will enable the assessment of losses of biodiversity from proposed clearing (including thinning for the APZ), gains in biodiversity from proposed offsets and gains in biodiversity from proposed management actions.

- Specific Impact Assessment. Due to the presence of threatened species and ecological communities, listed both by the State and Federal Government it will be necessary to carry out an assessment of significance in accordance with section 5A of the EP&A Act and the "*Threatened Species Assessment Guidelines*" issued by the former Department of Environment and Climate Change and the EPBC Act.

- Mapping and assessment of the watercourses. To be carried out by a geomorphologist and include the accurate mapping of top of bank, watercourse categorisation and riparian corridor delineation. Correspondence with NSW Office of Water is also recommended as part of the rezoning process in order to confirm the categorisation of the watercourses and obtain their support of the proposed land uses and management options.

- Detailed bushfire hazard assessment, including slope analysis, APZ determination, bushfire attack levels, access and egress requirements and planning for future APZ management across the site.

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