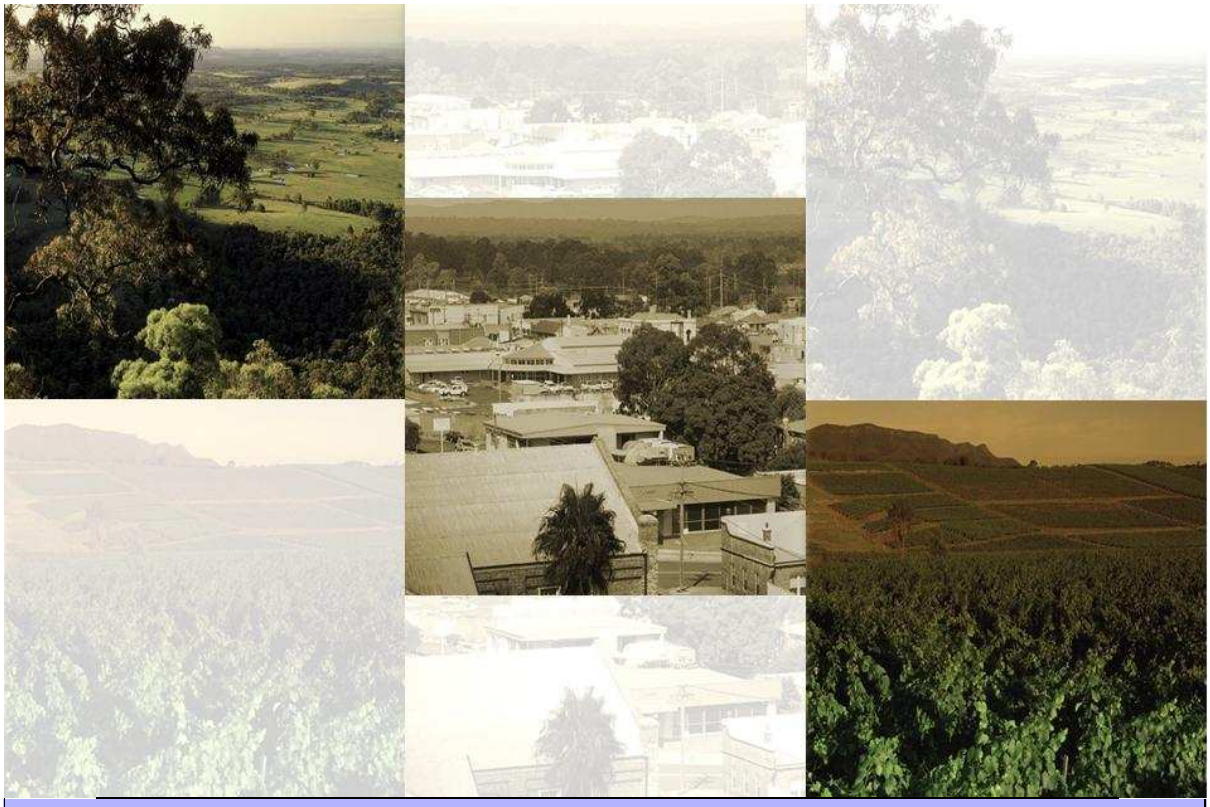
CESSNOCK

DEVELOPMENT CONTROL PLAN

PART E
SPECIFIC AREAS



E.9: Millfield Large Lot Residential Area

Amendment History

Version No.	Nature of Amendment	Date in force
1	Initial adoption by Council on 6 April 2005 (DCP 59)	20 April 2005
2	Consequential amendments to site-specific development control plans arising from the Cessnock DCP 2006	1 December 2006
3	Incorporation into Part E: Specific Areas	30 March 2007
4	Consequential amendments as a result of Cessnock Local Environmental Plan	23 December 2011

TABLE OF CONTENTS

E.9: MILLFIELD LARGE LOT RESIDENTIAL AREA

9.1 INTRODUCTION

The subject land slopes gently from north to south at an average grade of approximately 6 to 7%. The land is bounded on the southern side by wetlands associated with Congewai Creek. The land was formerly cleared of native vegetation and used for grazing purposes. NSW Agriculture rates the land Class 3 Agricultural Suitability.

All of the subject land was formerly contained within DP 13226, being Lots 5 to 19, 26 to 35, 37 to 41, 57 to 69, 71 to 149, 164 to 175, 177 to 183, 226 to 252, 265 to 291 and 305 to 346. The original lots were typically 13.4 metres x 45.7 metres each, with an area of 613 m². The subdivision was carried out in the early 1920's as an addition to Millfield Village. Road construction was carried out at the time, however, following a downturn in the local coal mining industry, only a few lots were sold and developed. Most lots remained in a single ownership for many years.

A 'plan of consolidation' (DP 1069000) was registered 15 June 2004, incorporating Lots 119 to 125, 133 to 148, 231 to 246, 279 to 286 and 305 to 346 DP 13226. The consolidation has resulted in the creation of Lots 1 to 11 DP 1069000, each lot having an area in excess of 4,000 m². Further consolidation of lots in an orderly manner is proposed, with a resulting layout generally in accordance with Figure 2. It is intended that a dwelling house may be constructed on each consolidated lot, subject to approval by Council, under Cessnock Local Environmental Plan (CLEP), Clause 4.2A: Erection of dwellings in rural and environmental zones.

Cessnock City Council issued development consent and a Construction Certificate for civil works (roads and drainage construction) in Third, Sixth, Eighth, Tenth and Eleventh Avenues on 21 August 2003. Condition No.6 of the development consent requires the preparation of a development control plan for the subject land.

In May 1996 and in January 2003 Cessnock City Council also formally resolved not to issue consent to the construction of any dwelling houses on the subject land, until a development control plan is adopted.

9.1.1 Application

This Chapter applies to certain land at Millfield, as illustrated in Figure 1. The land is located on the southern side of Millfield Village, approximately 11 kilometres south-west of Cessnock.

9.1.2 Purpose

This Chapter adds detail to those planning provisions contained in Cessnock Local Environmental Plan. The Chapter provides detailed guidelines for those wishing to develop land within the area, for the purpose of the erection of dwelling houses or other buildings.

9.1.3 Cessnock Citywide Settlement Strategy

The Citywide Settlement Strategy (CWSS) has been prepared by Council in response to an identified need to reconsider current planning policies and to embrace the principles of ecologically sustainable development. It aims to provide landuse recommendations on future directions for population growth, by defining limitations and identifying opportunities for development and conservation.

The CWSS examines the Cessnock Local Government Area (LGA) on a catchment basis, using defined growth management principles, identified key issues and objectives. Recommendations have been formulated for each catchment and for the LGA.

This Chapter and is consistent with the findings and recommendations of the CWSS.

9.1.4 Requirements of State Government Authorities

All relevant State Government Authorities were consulted during the preparation of this Chapter. Any recommendations made have been considered and, where possible, incorporated into the Chapter. Applicants are advised to contact the relevant authorities during the preparation of a development application.

9.2 GENERAL DEVELOPMENT CONSIDERATIONS

The following development considerations apply to development within the area to which this Chapter applies.

9.2.1 Flora and Fauna

A Flora and Fauna Assessment has been prepared by Harper Somers O'Sullivan Pty Ltd (see Appendix 1). The report examines both the land to which this Chapter applies and the adjoining wetland. It assesses the likely impacts that residential development may have on threatened species, populations or ecological communities, with particular emphasis given to the wetlands. Prospective applicants should refer to this report during preparation of development applications.

Objectives

- To ensure that development of the land is carried out in a manner that minimises any adverse impact on threatened species, populations or ecological communities.

- To protect the ecology of the adjoining Congewai Creek wetlands from potentially adverse impacts of development.

Requirements

- All applications are to comply with the requirements of Section 9.2.5: Soil and Water Management.

- All boundaries with adjoining land containing wetlands are to be fenced to a standard acceptable to Council, which prevents access to the wetlands by stock, domestic animals or persons. All fences located below the 1 in 100 year ARI flood level are to comply with the requirements of Section 9.2.8. Full details of proposed fencing are to be submitted for Council's approval with development applications.

9.2.2 Aboriginal Archaeology

The land to which this Chapter applies is adjacent to Congewai Creek and the associated wetland. This area has been identified as being of Aboriginal cultural significance. An Aboriginal Archaeological Report for the site and adjoining lands is included in this Chapter (see Appendix 2).

Objectives

- To ensure that development of the land does not disturb or impact on the Aboriginal archaeological heritage of the adjoining Congewai Creek and associated wetland.

- To advise prospective developers of the natural and cultural values of Aboriginal occupation of the Millfield area and to encourage appreciation and preservation of these values.

Requirements

- Dwelling houses and other structures are to be sited as far as possible from Congewai Creek and the associated wetland.

- Access from residential lots to Congewai Creek and the associated wetland is prohibited without the written consent of the owner.

- Fencing of lots boundaries adjoining Congewai Creek and the associated wetland is to comply with the requirements of Section 9.2.1: Flora and Fauna.

Building Siting and Design

9.2.3 Setbacks

Objectives

- To maximise the privacy and outlook enjoyed by adjoining and adjacent residents.

- To create a visually attractive streetscape.

- To provide flexibility in the imposition of minimum setbacks, where positive environmental outcomes can be achieved.

Requirements

- The minimum setback of dwelling houses and other buildings from roads is 12 metres.

- Buildings on lots within 100 metres of the adjoining wetland are to be sited as far from the wetland as practicable, with a minimum setback of 30 metres to the wetland.

- Variations to the minimum building setbacks may be considered for lots located within 100 metres of the adjoining wetland, where Council is satisfied that:

    - a reduction in the minimum setback is required to enable the dwelling house to comply with a minimum floor level 500mm clear of the 1 in 100 year ARI flood level; or
    - the reduced setback will minimise the need for cut and fill on the site; and
    - the proposed location will not adversely impact on the privacy or outlook for adjoining or adjacent residents; and
    - the proposed location will not disrupt established or desirable streetscape patterns.

Building Design Principles

Millfield is part of the Wollombi Village & Valley Landscape and contributes to the visual and historic significance of the catchment (Boydell, 2000). The design and construction of dwelling houses and other buildings on lots within the subject land should recognise the values of the landscape and not detract from the existing visual amenity and rural character (see also Section 9.2.4, below). The specific following design principles should be considered.

Construction Materials

- Building elevations are to contain at least 2 materials or finishes, in a ratio of not less than 20:80 of the elevation wall area. Glazing is not included in this calculation.

- Glazing shall be not more than 40% of an elevation wall area.

Building Heights

- A point on a roof of a building shall be not more than 9.0 metres above natural ground level, measured vertically at any point over the footprint of the building. Exceptions apply to certain lots (See Section 9.2.4).

Building Form & Appearance

- All site improvements shall be erected within a contiguous building envelope, defined by perpendicular lines, of not more than 800m². This building envelope is to have external dimensions of not less than 15 metres and not more than 40 metres.

- Building elevations are to be not less than 1.0 metre and not more than 8.0 metres long, between variations of not less than 1.0 metre horizontally in the outermost face of the elevation.

- Garage or carport openings shall consist of not more than 30% of the visible width of building/s on the site, viewed from any point on a street boundary.

Roof Form

- Roofs to enclosed spaces shall consist of one or more planes of a constant pitch, of not less than 18° and not more than 45°.

Sun Control

- Between October 17th and February 26th, all vertical glazing facing within 45° of true north shall be fully shaded from 11:00 am until 1:00 pm.

Outbuildings

- All outbuildings shall be contained entirely within the building envelope described above.

- Outbuildings greater than 20m² in floor area, must comply with all the requirements of *Building Form & Appearance* above.

Landscaping

- The maximum impermeable site coverage is to be not more than 60% of the building envelope.

Colour

- Colours are to be natural, non-reflective hues that complement the colours of the Millfield landscape.

9.2.4 Non-Indigenous Heritage Considerations

Council will give consideration to the impact that a proposed development may have on identified items of non-indigenous heritage and on the cultural values of the landscape in which the proposal is set.

Millfield contains the former Rising Sun Inn, No's 95-97 Wollombi Road (Lots 20 & 21, DP 13226), in close proximity to the land to which this Chapter applies. This building is significant in terms of the rarity of its construction type and its historical association with the Great North Road and with pioneering families of the region.

It is listed on the State Heritage Register and is subject of a Permanent Conservation Order, issued 7 August 1987, with the building also listed under CLEP, Schedule 5: Environmental heritage.

Millfield is within the Ellalong Lagoon Cultural Landscape (Boydell, 2000), which comprises most of the Congewai Creek catchment. Important intrinsic qualities of this Landscape relevant to the land to which this Chapter applies include:

- the nature of Millfield, with scattered public buildings, and their outlook over the wetland; and
- the lineal layout of roads, relating to early subdivision patterns.

Appropriate management practices for development of the land include:

- the maintenance of views from Wollombi Road and other parts of Millfield out over the wetland and flood plain;
- the maintenance of existing road patterns;
- the clustering of buildings and landscaping on lots to minimise visual impact; and
- minimising the impact of development on the water quality of the wetland.

<u>Objectives</u>

- To ensure that development does not detract from the significance of an item of environmental heritage and its setting.

- To ensure that development is designed and located in a manner that minimizes any impact on the cultural significance of the Ellalong Lagoon (Swamp) Landscape.

<u>Requirements</u>

- Buildings on the lots indicated on Figure 2 are to have a maximum height of 6.0 metres, measured from the highest point of the building to the natural ground level vertically below that point.

- Buildings on the lots indicated on Figure 2 are to be located such as to minimise any disruption of views down the valley from the Rising Sun Inn and its curtilage.

- All applications for development of land within the vicinity of the former Rising Sun Inn must satisfy Council that the development will have negligible impact on the historic, scientific, cultural, social, archaeological, natural or aesthetic significance of the building and its setting.

- Buildings must be designed and located to create minimal disruption of views from Wollombi Road and other parts of Millfield over the wetland and floodplain.

- Buildings are to be clustered on lots in a visually acceptable manner within a reasonable curtilage.

- Building materials and external finishes are to be of natural tones with low reflective qualities.

9.2.5 Soil and Water Management

Soil type is identified as Kutting Yellow Podzolic. These soils are described as being shallow, of low fertility, acidic with poorly constructed topsoil. Their erodibility is considered variable, mostly high to very high. The land to which this Chapter applies was found to have no appreciable erosion over the majority of the site, however some minor gully erosion was identified at the eastern end. (Soil Conservation Service of NSW, 1982).

Development of lots must be carried out in a manner that ensures mitigation of soil erosion and control of sediment, nutrients and other pollutants to lands and/or waterways.

Intending residents are advised that access to the wetlands from adjoining lots or roads without owner's consent is not permissible and may constitute trespass. Access gates are not to be constructed in fences along boundaries with Lot 176 DP 13226 or Lot 5 DP 1055477, without the written permission of the adjoining owner and Council.

The dumping of rubbish, grass clippings or the like over boundary fences is prohibited.

Objectives

- To provide mechanisms for the protection of the environment through minimisation of erosion and sedimentation.

- To protect the quality of water in receiving streams, particularly the adjoining Congewai Creek wetlands.

Requirements

- All applications for development involving a site disturbance of up to 2,500m², are to be accompanied by a Preliminary Erosion and Sediment Control Plan.

- All applications for development involving a site disturbance of over 2,500 m², must be accompanied by a Preliminary Soil and Water Management Plan.

- Soil and water management measures should be designed for a 1 in 5 year ARI storm event.

- Applications for the development of land within 50 metres of the wetland must be accompanied by a Stormwater Management Plan demonstrating that stormwater can be disposed of in a manner that minimises impact on the wetland. This plan must address quality control measures and means to eliminate point discharges.

- Surface runoff from lots adjoining the Congewai Creek wetlands is to be collected in a grassed swale or similarly approved diversion and directed to a gross pollutant trap, prior to discharge into the wetlands at approved locations.

Erosion and Sediment Control Plans and Soil and Water Management Plans should be prepared in accordance with the procedures set out in *Managing Urban Stormwater: Soils and Construction (4th ed., Landcom).* This publication includes Model Plans for various development scenarios

Plans should clearly indicate the following:

The following matters may need to be addressed in the preparation of Erosion and Sediment Control Plans and Soil and Water Management Plans. All listed matters may not apply in respect to every development proposal:

- timing of proposed works;
- locations of land where a protective groundcover will, as far as practicable, be maintained;
- access protection measures;
- nature and extent of earthworks, including the amount of any cut and fill;
- where applicable, the diversion of runoff from upslope lands around the disturbed area;
- location of all soil and other material stockpiles including topsoil storage, protection and reuse methodology;
- location and type of proposed erosion and sediment control measures;
- site rehabilitation proposals, including schedules;
- frequency and nature of any maintenance program; and
- other site-specific soil or water conservation structures.

9.2.6 Bushfire Hazard Control

The southern portion of the land to which this Chapter applies, has been identified as being bushfire prone. Applicants should consult with Council to ascertain the category applying to their lot, alternatively go to www.cessnock.nsw.gov.au

Objectives

- To ensure that all new dwelling house have measures sufficient to minimise impacts of bushfires.

- To minimise the impact of fire protection measures on vegetation, fauna, views, watercourses and soil erosion, amenity and access.

- To identify potential bushfire threats to individual sites.

- To ensure that bushfire protection is provided to all new dwelling houses and future improvements.

General Requirements

- A bushfire threat assessment must form part of all development applications for new dwelling houses, or modification of existing dwelling houses in a Bushfire Prone Area.

- Assessment of threat from bushfire must examine impacts of the proposal within and external to the site, including dwelling construction materials and existing road networks serving the site to accommodate traffic in emergency situations.

- Preparation of assessment of threat from bushfire should include reference to:
  - NSW Rural Fire Service: Planning for Bushfire Protection 2006;
  - NSW Rural Fire Service: Single Dwelling Application Kit;
  - AS 3959 – 1999: Construction of Buildings in Bushfire Prone Areas; and
  - Consultation with Council and the Rural Fire Service.

- Fire protection measures must be capable of being maintained by owners and users.

- Asset protection zones (APZ) must be contained wholly within the subject site, and may incorporate fire trails, cleared road verges and fixed building lines.

- In instances where the balance between bushfire protection and environmental and social impacts cannot be achieved, the proposal may not be supported.

Specific Requirements for Dwelling Houses

- Appropriate asset protection zones (APZ) shall be provided around all dwelling houses (refer to Planning for Bushfire Protection 2006 for APZ information). For lots adjoining the western and southern boundaries of the subject land, a minimum APZ of 20 metres is required to managed grasslands on the adjoining land.

- A minimum 20,000 litre water storage tank specifically for fire fighting purposes is to be provided on each lot prior to dwelling house occupation. This does not include swimming pools or dams.

- The provision of appropriate APZs for future dwelling houses, is to be assessed with each development application.

- Future dwelling houses, shall be located to allow access by RFS vehicles, as is appropriate.

- The provision of appropriate construction level material is to be in accordance with AS 3959-1999 and shall be assessed with each development application.

9.2.7 Management of Domestic Sewage and Wastewater

The Hunter Water Corporation (HWC) has confirmed with Council that certain land at Millfield will not be serviced under the Priority Sewerage Program and that the HWC does not have plans to construct reticulated sewer services within this area.

However, the sewerage system includes allowance for flows from anticipated development within the designated area at Millfield and properties may still connect to the reticulated sewerage system after it has been constructed. The full cost of connecting to the sewerage scheme would be borne by the owners.

The following alternative solutions have been identified for the purpose of providing sustainable long-term effluent disposal systems for allotments yet to be developed and dwelling houses that have been approved and constructed within the Millfield designated area since 2005. :

Prior to Applicants preparing applications for either on-site effluent disposal or pressure sewer systems it is recommended that Council's Building Services Team be consulted for further information.

Onsite Effluent Disposal

The minimum lot size for on-site effluent disposal is the minimum area shown on the Lot Size Map, as per CLEP, Clause 4.1 – Minimum subdivision lot size. Note, this may require that land be consolidated prior to issue of the construction certificate in order to meet the minimum lot size applicable.

In determining an application for approval to install an onsite sewage management facility, Council is required to take into consideration the provisions of the Environment & Health Protection Guidelines – Onsite Sewage Management for Single Households.

There are twelve (12) properties within the designated area that have been identified as being unsuitable for onsite effluent disposal These allotments will need to utilize a pressure sewer system as described below. For more information on these properties and a Locality Plan please refer to Figure 4.

The remaining properties that are 4,000 m^2 in area or greater would be capable of accommodating the installation of an onsite effluent disposal system in accordance with the Council's Guidelines.

An on-site effluent disposal system is permitted with consent on Lot 1016 DP 1121795, 5 Eighth Street, Millfield.

Typically, the installation costs for an aerated wastewater treatment system with sub-surface irrigation would be in the vicinity of $10,000 to $12,000.

Pressure Sewer System

There are **twelve (12)** properties comprising the Millview residential development that have been identified as being unsuitable for onsite effluent disposal:

- **Lots 1006 – 1007 DP 1112552;**
- **Lots 1001 - 1005 DP 1102332;**
- **Lots 1 – 4 DP 1069000; and**
- **Lot 1017 DP 1121795.**

These properties are unsuitable as a result of physical constraints such as proximity to the adjacent wetland, proximity to a natural drainage course located in the east, site slope and irregular lot shape. This includes two of the properties with existing pump-out systems. Refer to Figure 4 for the location of land suitable for pressure sewer systems.

Pressure sewer systems (PSS) incorporate an on-property pumping station which pumps sewage wastewater from the property to a point of connection into the Hunter Water Corporation's sewer via small diameter pipelines. A PSS would be suitable for the twelve (12) properties that have been identified as unsuitable for onsite effluent disposal.

A PSS consists of:

- A small pump mounted in a tank installed on each individual property. The pump is run by an alarm/control panel.
- Pipe work to and from the pump, including boundary kit.
- Pressure reticulation main laid in the road reserve.

The installation of a PSS involves:

- Hunter Water approval for the proposed system.
- Design and construction of the pressure reticulation main.
- Granting of an easement over the tank and associated works. This is required as Hunter Water Corporation is responsible for maintenance on individual units.
- Installation of the pump, alarm panel and delivery pipe work up to the boundary kit.
- Connection of the house plumbing to the tank.

The estimated cost of a PSS is set below. It must be noted that all of the costings provided are indicative only and exclude GST:

- $8,000 per property for Hunter Water to supply and install the pump unit and associated works.
- $1,000 per property for supply of the boundary kit and connection to the pressure reticulated main.
- $100 per lineal metre for the pressure reticulation main along the house frontage and extending the main to the nearest gravity sewer for discharge. This equates to an estimated 920 lineal meters at a cost of $92,000.
- $5,000 to $10,000 for the design of the system and acquisition of easements over the unit and associated pressure pipe work where located in private property.

A further twenty to forty thousand dollars ($20,000 to $40,000) could be required for chemical dosing should odour control become an issue. This would need to be identified at the design stage.

9.2.8 Flooding

The land is affected by flooding as follows:

- 1 in 100 year ARI flood event to RL 110.6 metres AHD; and

- 1 in 20 year ARI flood event to RL 110.25 metres AHD.

Objectives

- To ensure that residential development of flood affected land is constructed with the floor level of all habitable rooms at least 500mm clear of the 1 in 100 year ARI flood level.

- To ensure that dwelling houses constructed on flood affected land are constructed to withstand the impact of flooding.

- To ensure that development on flood affected land does not unduly impeded the flow of floodwater.

- To ensure that development of flood affected land is carried out in accordance with the

relevant requirements of the Floodplain Development Manual (NSW Government January 2005).

Requirements

- The minimum floor level of any habitable space in a dwelling house is RL 111.1 metres AHD.
- Any portion of a building or structure at or below the 1 in 100 year ARI flood level is to be constructed of flood compatible materials.
- Development applications for buildings or structures located at or below the 1 in 100 year ARI flood level, must be accompanied by a detailed report from an appropriate consulting structural engineer, demonstrating that the building or structure can withstand the force of flowing flood waters, including debris and buoyancy forces, as appropriate.
- Filling on lots at or below the 1 in 100 year ARI flood level is to be confined to the perimeter of the residential building on that lot.
- All fencing located at or below the 1 in 100 year ARI flood level is to be constructed in a manner that does not unduly impede the movement of floodwaters. Full details of proposed fencing are to be submitted with development applications.

9.2.9 Road Construction

Figure 2 shows sections of existing road intended for construction and closure.

Objectives

- To identify and establish an efficient road network providing adequate access to all proposed building sites.
- To ensure that road construction standards satisfy Council's requirements.
- To ensure that runoff from roads does not adversely impact on the quality of water in the adjoining Congewai Creek wetlands.

Requirements

- All road and drainage works within the site are to be carried out in accordance with Council's 'Engineering Requirements for Development'. Full design plans are to be submitted, prior to issue of a Construction Certificate for the works.
- Stormwater runoff from roads and other areas is to be collected and discharged at an approved location/s. A gross pollutant trap is to be provided at each final discharge point into the wetlands.
- An Erosion and Sediment Control Plan is to be submitted, prior to issue of a Construction Certificate for the works. The plan must be prepared in accordance with the procedures set out in *Managing Urban Stormwater: Soils and Construction (4th ed., Landcom)* and *Urban Erosion and Sediment Control (Department of Conservation and Land Management - 1992).*

REFERENCES

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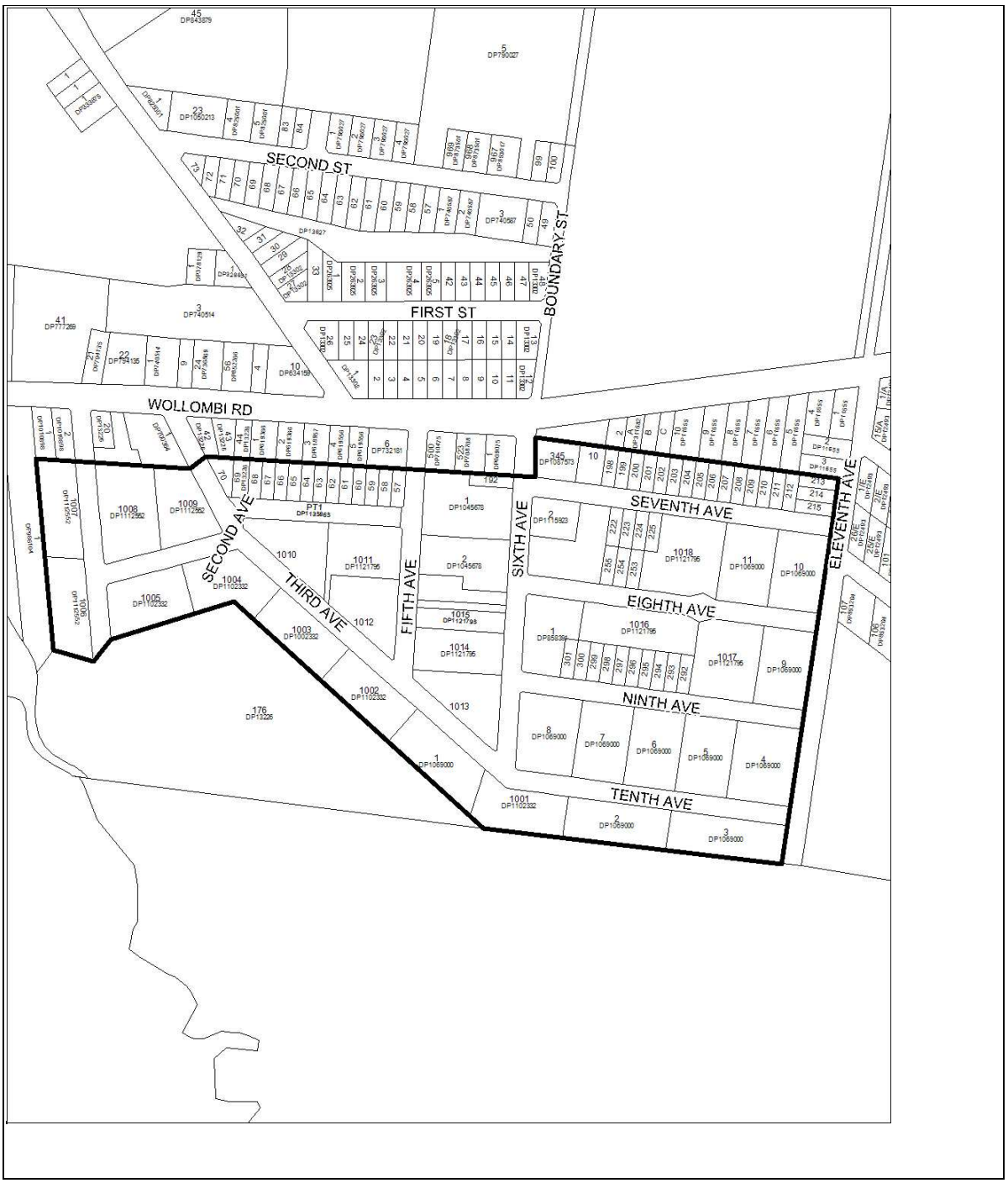


FIGURE 1

LAND TO WHICH THIS PLAN APPLIES (bounded by heavy line)

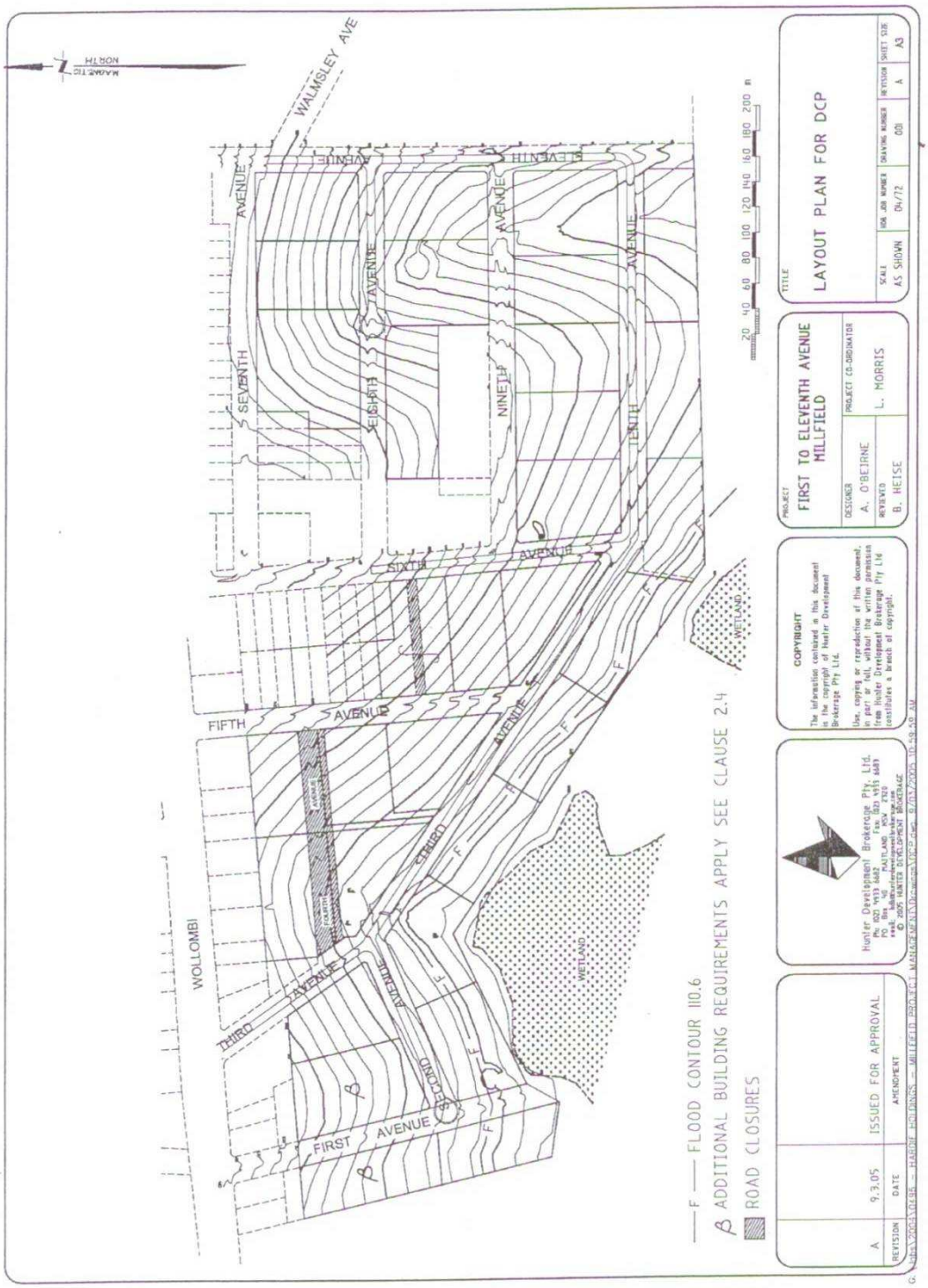


FIGURE 2
CONCEPT LOT LAYOUT
Not to Scale

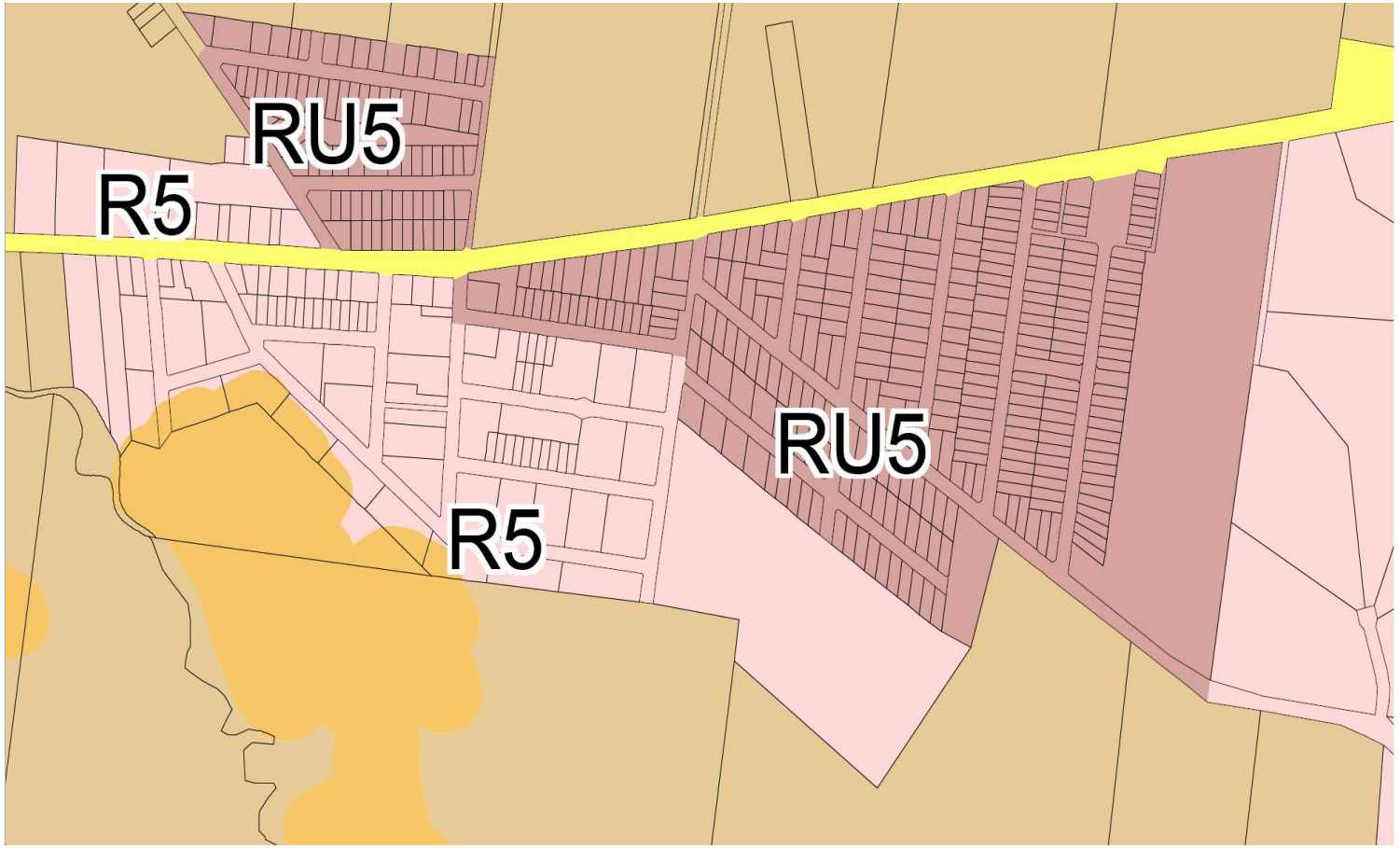
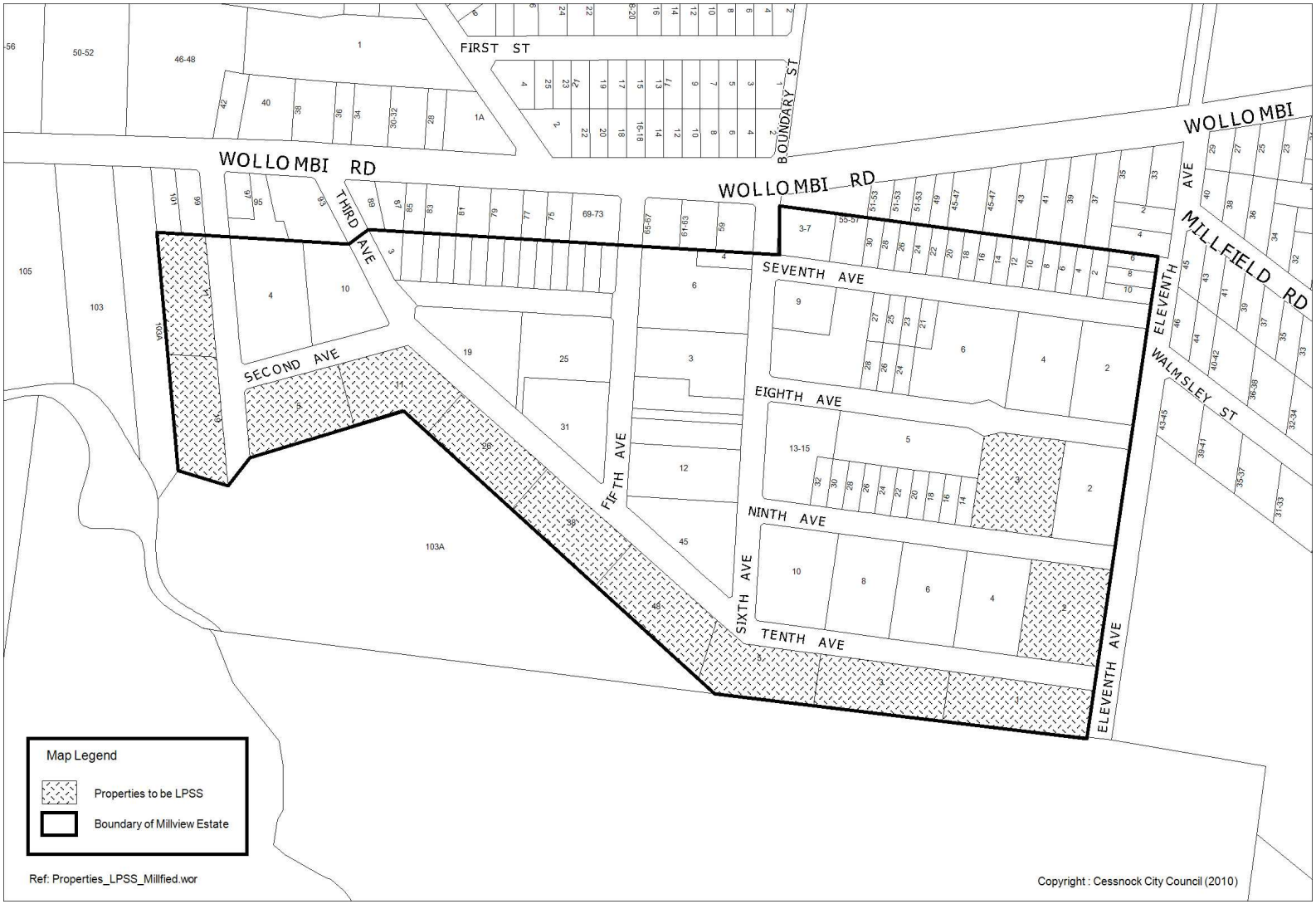


FIGURE 3 **LAND USE ZONING**
RU5 VILLAGE ZONE
R5 LARGE LOT RESIDENTIAL ZONE

FIGURE 4 LOCATION OF LAND SUITABLE FOR PRESSURE SEWER SYSTEMS



APPENDIX A

FLORA AND FAUNA ASSESSMENT

APPENDIX B

REPORT
ON
ABORIGINAL ARCHAEOLOGY

Flora and Fauna Assessment

FOR PROPOSED RURAL RESIDENTIAL DEVELOPMENT

AT

Lots 5 to 19, 26 to 35, 37 to 41, 57 to 69, 71 to 149, 164 to 175, 177 to 183, 226 to 252, 265 to 291 & 305 to 346, DP 13226
THIRD AVENUE, MILLFIELD

Job Reference No. 22061

SEPTEMBER 2004

Prepared for:

HARDIE HOLDINGS PTY LTD

C/- HUNTER DEVELOPMENT BROKERAGE

PO BOX 40

MAITLAND NSW 2320

1 INTRODUCTION

A Flora and Fauna Assessment has been undertaken over land located off Third Avenue, Millfield. The study area comprises an existing 'paper subdivision' and a wetland area to the south of the existing subdivision. It is now proposed to construct a rural residential development within the subdivided land under the current zoning and to rezone the wetland area to the south for environmental protection purposes. Cessnock City Council have requested further information pertaining to the ecology of the study area and surrounding areas and that the proposed construction of the subdivision be assessed in terms of potential ecological impacts. Of particular interest are potential impacts upon the wetland habitat located within the study area, which in turn connect with similar wetland areas to the south in association with Congewai Creek.

This report aims to examine the likelihood of the proposal to have a significant effect on any threatened species, populations or ecological communities listed within the *Threatened Species Conservation Act 1995* (*TSC Act 1995*) or within the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (*EP&BC Act 1999*). For the purposes of this assessment, the following definitions apply:

'Study Area' refers to the existing subdivision and wetland area (being the total area subject to this assessment).

'Site' refers to the area proposed for subdivision only.

Figure 1-1 shows the study area locality.

1.1 Scope of the Study

This study was designed to:

- identify any remnant native vegetation within the study area and make an assessment of conservation significance;
- identify any threatened flora and fauna species or presence of potentially important habitat attributes;
- assess the suitability of the habitat(s) present for native species in general;
- address the possibility of the site, or parts thereof, being significant for any threatened species, populations or ecological communities and if necessary, provide appropriate recommendations to prevent or mitigate any potential impacts on threatened flora and fauna; and
- identify the potential for environmental impacts upon the adjacent wetland habitats and recommend impact mitigation or prevention measures.

This study has been structured on the guidelines laid down in the *EP&A Act 1979*, which requires consideration of the impact of the proposed development upon any protected fauna but particularly on 'Threatened' species, Endangered Populations or Endangered Ecological Communities expected or occurring on the site. Consideration of potential constraints has also been undertaken in relation to the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (*EP&BC Act 1999*).

A site inspection was carried out by an ecologist on the 23rd August 2004.

Figure 1-1 Study Area Location.

2 EXISTING ENVIRONMENT

The site has been cleared for grazing and contains only pasture grasses and species associated with the wetland located in the southern portion of the site. The site is currently used for the grazing of cattle.

Vegetation

The cleared areas were found to be dominated by a range of pasture grasses such as *Cynodon dactylon* (Common Couch), *Axonopus affinis* (Narrow-leaf Carpet Grass) and *Pennisetum clandestinum* (Kikuyu). Herbaceous weeds such as *Verbena bonariensis* (Purple Top) and *Sida rhombifolia* (Paddy's Lucerne) were found scattered throughout the cleared areas. In general, the vegetation within the cleared areas was found to be completely modified and contained no attributes reminiscent of a native vegetation community.

Congewai Creek was found to be located along the western most boundary of the study area (see Figure 1-1). The remnant vegetation here was found to be highly degraded, with an upper stratum comprised of scattered *Casuarina glauca* (Swamp She-oak) and *Eucalyptus teretecornis* (Forest Red Gum) trees. Historically this community may have represented Central Hunter Riparian Forest (LHCCREMS Map Unit 13 as per House 2003, NPWS 2000). which has been recorded along Congewai Creek on adjacent land (Harper Somers O'Sullivan 2004).

There was little understorey of note aside from juvenile dominants and problematic accumulations of the opportunistic weed *Ligustrum* spp. (Privetts). Further to the Privetts, a myriad of weed species were also recorded and included *Conyza* spp. (Fleabanes), *Cestrum parqui* (Green Cestrum), *Solanum nigrum* (Blackberry Nightshade), *S. mauritianum* (Wild Tobacco), *Hydrocotyle bonariensis* (Kurnell Curse) and *Onopordum acanthium* (Scotch Thistle).

Along the edge of Congewai Creek and within small billabongs along its length, species such as *Juncus* spp. (Rushes), *Phragmites australis* (Native Reed), *Paspalum paspaloides* (Water Couch) and *Eleochaeris sphacelata* (Tall Spike Rush) were typically found. Within the creek itself, water plants such as *Alisma plantago-aquatica* (Water Plaintain), *Triglochin procera* (Water Ribbons) and *Myriophyllum* spp. (Water Milfoils)were found.

Close inspection of the wetland on the site found a relatively low diversity of flora species and included those commonly found in similar wetland associations throughout the area. Emergent species included *Juncus* spp. (Rushes), *Typha orientalis* (Bull Rush) and *Eleochaeris sphacelata* (Tall Spike Rush).

Habitat

The wetland and riparian areas may provide habitat for a number of riparian and aquatic species, including amphibians, birds, mammals and some reptiles. The wetland could provide habitat and foraging resources for amphibians and water birds, including threatened / significant species know from the locality. The vegetation along Congewai Creek may provide some habitat for wetland avifauna as well as habitat for bird species that prefer denser foliage cover. It may also provide habitat for aquatic or semi-aquatic fauna species, including amphibious reptiles, fish and macro-invertebrates.

The cleared areas provide little habitat for native species aside from potential foraging habitat for Macropods or granivorous birds.

Fauna Recorded on the Study Area

Avifauna recorded on the study area included a composition of species commonly encountered in similar habitats throughout the region. Such species included *Anas superciliosa* (Pacific Black Duck) and *A. gracilis* (Grey Teal), *A. rhynchotis* (Australasian Shoveler), *Pelecanus conspicillatus* (Australian Pelican) and *Threskiornis spinicollis* (Straw-necked Ibis).

Crinia signifera (Eastern Common Froglet) was also heard calling in the vicinity of the wetland. This species is very common within the Lower Hunter Valley.

3 ASSESSMENT OF THE PROPOSAL

The investigations undertaken have revealed that the site subject to the subdivision offers little opportunity for native species other than those preferring open spaces or tolerant of highly disturbed / modified habitats.

No threatened or regionally significant flora or fauna species were recorded within the study area and nor are any considered likely to exist on a regular basis. This is given the highly disturbed and modified nature of the habitats therein. It is possible that some threatened wetland birds known to occur within the broader area could utilise the wetland habitat during appropriate periods when local conditions are favourable. Such species could include Black-necked Stork (*Epphipiorhynchus asiaticus*), Blue-billed Duck (*Oxyurus australis*) or Freckled Duck (*Stictonetta naevosa*). However, any such species would be considered likely to occur only on a transient basis and would not rely on the habitats within the study area for critical habitat resources or as breeding habitat.

A record of the Green and Golden Bell Frog (*Litoria aurea*) exists from the nearby Ellalong Lagoon (R. Wellington *pers. comm.*). The habitats found within the wetland on the study area are considered unsuitable for this species due to the paucity of fringing and/or emergent vegetation and it is not considered likely that this species would exist within the study area. Indeed, the habitats found within wetland areas in broader locality (such as those found within Ellalong Lagoon), offer far greater potential habitat for significant wetland fauna species known from the area.

Notwithstanding, the riparian / wetland area, although highly degraded, represents potential habitat for several native species, including potential transient habitat for threatened species known from the vicinity. As such, any development on the adjacent land should be conducted with due regard to the existing and potential future ecological values of this habitat. These values should be maintained and improved through implementation of appropriate impact prevention / mitigation measures. Recommendations for such are provided in Section 5 below.

In terms of environmental assessment, it is considered that no considerations are required under the relevant state and Commonwealth threatened species legislation (*TSC Act 1995* and *EP&BC Act 1999*).

4 CONCLUSION AND RECOMMENDATIONS

Conclusion

The study area is highly disturbed and, with the exception of the wetland and riparian habitats, contains few ecological features of note. The report has described and highlighted these ecological features and considers that should the recommendations contained within this report be duly considered it is feasible that the ecological attributes on the site can be maintained and enhanced for the benefit of the local community and the natural environment.

No pertinent considerations are deemed necessary under the relevant state and Commonwealth threatened species legislation (*TSC Act 1995* and *EP&BC Act 1999*).

Recommendations:

The following recommendations are suggested to prevent and minimise the potential ecological impacts of any development on the site:

- All drainage and run-off into both Congewai Creek and the associated wetland within the study area (and ultimately areas outside of the study area) should be controlled via the implementation of strict erosion, stormwater runoff, water quality and pollution control measures. These measures should take into account existing wetland features such as promoting native vegetation regrowth, habitat for native fauna etc.

- Rehabilitation of riparian vegetation could potentially be undertaken outside of the subdivision area in order to reintroduce a higher diversity of endemic vegetation and in doing so provide a greater variety of habitats for native flora and fauna.

- An erosion control plan should be produced prior to any works on the site.

- Fencing off the wetland from the subdivision area (or upgrading existing fencing) to control grazing, stock and public access to the sensitive wetland habitat.

- Appropriate plants should be selected within any landscape strategies, including native (ideally endemic) species.

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APPENDIX A - SITE PHOTOGRAPHS

Photo 1 – taken looking south-west from within the study area, towards the riparian trees of Congewai Creek

Photo 2 –taken looking south-west from within the study area towards Congewai Creek

Photo 3 – Taken from within the study area looking west towards Congewai Creek

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Aboriginal Cultural Heritage recommendations for a Development Control Plan - Millfield.

This report has been written at the request of Hunter development Brokerage for the purpose of incorporating Aboriginal Heritage considerations in a Development Control Plan over residential land at Millfield.

The land is adjacent to Congewai Creek which has been identified as of Aboriginal Cultural Significance. An Aboriginal Archaeological Assessment was undertaken on adjacent property (Rosehill) which found several Aboriginal Objects and identified Congewai creek as a Potential Archaeological Deposit (PAD).

SITE CONTEXT

The main catchment of the study area is Congewai Creek that flows directly through neighbouring property some 20 metres to the south. The billabongs and wetlands associated with Congewai Creek are a significant catchment for the local area.

According to Horton (1994), the Band that would be of interest to this survey, would be the family groupings of the Darkinjung. The boundary distinction between the Darkinjung and Awabakal is not clear, as they had a very close relationship. The historical record links the Wollombi Aboriginals with those of Millfield and shows that the Darkinjung were the Band around Wollombi. They probably had various base camps along Congewai Creek. The camps would have been near reliable watercourses on high ground away from mosquitoes and for safety. The watercourses on the subject site are smaller creeks and lagoons associated with Congewai Creek, the main watercourse on the site. Congewai Creek commences in the hills to the west, flows through Ellalong Lagoon and wetlands, where it is joined by the Quorrabolong Creek and eventually flows directly into Wollombi Brook to the west.

- ***Past Land Use***

European

The area around Millfield was initially part of the Wollombi district and generally used for agricultural and mining pursuits as well as timber getting. The subject site was part of a rural holding since Europeans first settled the area. Millfield was established as a corn and wheat area changing over time to fruit, wine, dairying and grazing.

It is believed that Millfield received its name from the flourmill established in the area to take advantage of the abundant crops.

Millfield was subjected to a catastrophic flood in 1893 which affected virtually the whole town and in 1943 a devastating tornado.

The subject site was once part of a larger holding known as, 'Rosehill', which was an integral part of the early establishment of Millfield. In 1845 Rosehill was an established 320-acre farm that was sold to a John McDougall. Over the years the size and development of Rosehill changed with the economic conditions. Rosehill has a long history of experimental agricultural pursuits. In the 1870's the wheat crops were no longer viable (due to rust) and many farmers subdivided their land into smaller lots, sold them and moved to the Clarence River area. The average size of the farm was 40 to 100 acres. In the 1920's Rosehill as well as other farms were subdivided for residential development as it was believed, that with the development of coalmining, Millfield was to be the next big city. By 1938 Rosehill once again was consolidated from smaller portions and was heavily pasture improved and well renowned for its mixed farming pursuits. Tung oil trees were also grown. Since then, Rosehill has been subdivided from time to time.

The current study area is not part of Rosehill and is zoned for residential purposes.

The current land use has changed from very recent pastoral to residential building blocks with associated infrastructure.

Aboriginal

The known archaeological evidence tends to suggest that base camps were probably along the ridgeline following Congewai Creek, probably up to12k (8 miles) apart and close to freshwater sources. It would appear that the subject site was used for hunting and gathering.

By 1836 a smallpox epidemic and other introduced diseases had decimated the Aboriginal population. Many of the Local Aboriginals had moved to Sydney Town or into Newcastle for labouring work. Being Aboriginal was not a barrier for labouring work. Others found employment as timber getters, or worked in local mills or on the farms.

Implications

Past Aboriginal activities are not well manifested by archaeological record because many activities did not leave material evidence or because the material evidence was not durable. Many of the implements were organic material, such as wood and bone and readily decayed when exposed to the elements. Even burials, are subject to the acidic condition of the soil.

Durable evidence, such as stone and rock implements, is affected by European landuse. Easily recognisable implements such as stone axes, have found their way into many private collections, well before it became illegal to do so, with no record of the location of the find. Cultivation, with the associated stick raking and stone gathering also tended to destroy surface evidence. However cultivation and pastoral landuse also helped preserve the archaeological record. In some cases cultivation would expose evidence in others, cover the evidence.

In general, the archaeological record is dependent on the exposure of sites through erosion, weathering, fire, drought and anthropogenic activities.

The land in the study area has been disturbed by European activities for approximately 200 years. This disturbance plus extensive pastoral activities, lessens the possibility for an archaeological field survey being productive in obtaining above ground evidence of Aboriginal occupation.

Apart from Congewai Creek which is discussed in greater detail later in the report, only 4 sites are within 5-kilometre radius of the subject site.

1. A rockshelter with art on a small hill of 146 metres in height, north of the subject site, but still within the Congewai Creek Valley. The artwork is hand stencils in white ochre and also a potential archaeological deposit (PAD).

2. Ellalong Lagoon, is a mythical site known as "Catch-a-boy Swamp", some 3km to the east. A bunyip is said to have lived in the lagoon and taken a young boy who was swimming or playing in the lagoon. Parents to reinforce the danger to their children of playing in the lagoon used the story.

3. An isolated find also 3km to the east at Paxton in a road cutting at the junction of the Main Road and Millfield Road. The artefact was a flaked piece of yellow-cream metamorphosed sedimentary rock, probably used as a scraper.

4. Open campsite and artifact scatter at Paxton recorded by Besant in 1999, at Paxton.

It is probable that the Darkinjung who frequented the ranges and slopes to the west and towards Wollombi utilised this area as a resource zone as their primary food source. Resource availability is a major if not the main factor in the location of base or main campsites and resource location is the major factor in the location of transitory activity or open campsites. From the research and in particular the work by Besant it is obvious the study site was used as a transient area, with campsites on the less exposed ridges and hills offsite a little to the north.

Given, the nature of the floodplain of Congewai Creek, its changing nature over time and the deposition of soil, the Congewai floodplain would probably contain substantial archaeological deposits Given the landscape, vegetation and previous landuse, the subsurface would not have been greatly disturbed, but as the area is a floodplain / wetland with a continuing deposition of silt, it is not possible to accurately predict subsurface disturbance and archaeological potential. This is because rate of deposition, water flow and frequency of flooding needs to be taken into account. The lack of pebbles and rock tends to suggest that the velocity of flow in flood times is quite great. It was observed that the current in the creek on the days of inspection was quite fast.

Congewai Creek and the lagoons would have been significant to Aboriginal people in the past

The potential for subsurface deposits is always a possibility near watercourses, which change over time. The major creekline has significant potential for substantial deposits given it's proximity to and flow into Wollombi Brook. It also is a major source of bush tucker and would have been easy access for foraging parties. It is believed that the creekline in particular is an area of Potential Archaeological Deposit (PAD).

The Aboriginal Objects located along Congewai Creek indicated strong significance of the area. The scattered artefacts were not observed on the first examination, but were observed on a subsequent occasion. This was because the area containing the scatter was covered in water and was only observable 3 weeks later when the water cover had retreated and eroded the lagoon margin to some degree. The scatter was longitudinal and at a consistent height, indicating either a 'bathtub ring' effect or a stratum exposure. The scatter is in the floodplain and the location is shown on the map of archaeological finds in the appendix.

The scatter was located on the northern edge of a small rise sloping north towards the lagoon, approximately on the same level, scattered longitudinally east to west, for some 60 metres. There were 5 distinct pieces and a close scatter of 6 pieces. As the artefacts were sitting on top of the exposed soil rather than in situ it was more probable that they were deposited rather than exposed by the water.

However, the landscape would tend to suggest the possibility of the slight rise being used as a knapping floor. A strong possibility exists that the artefacts are indicative of a subsurface knapping floor. Only the one conjoined artefact, which had only recently been separated by natural or animal means, was from the same piece.

Technically, as each artefact was different, the scatter could not be considered a knapping floor, but none-the-less a subsurface knapping floor could not be ruled out, nor could the possibility of exposure through erosion.

The report made several recommendations, where it was agreed, by Mindaribba Local Aboriginal Land Council and the Lower Wannaruah Tribal Council and the applicant, that the wetland/floodplain area is a Potential Archaeological Deposit, and the best way to conserve the significance was to allow the wetland area to remain undisturbed from development. This was achieved by not allowing development in the floodplain area.

The subdivision of the land does not disturb or impact on the archaeological heritage as building and development were confined to designated building envelopes.

Further it was recommended that Cessnock Council should indicate to the Community and the Aboriginal people in particular, through some form of planning instrument, that, the Congewai Creek floodplain (onsite and offsite) from Ellalong Lagoon (Catch-a-boy swamp) through to Wollombi Brook is of Aboriginal heritage significance.

Hence the requirement for such consideration to be undertaken in the Development control Plan for the study area.

This archaeologist in conjunction with Gordon Griffiths representing MLALC and Kim Smailes representing LWTC visited the study area on 13th august 2004.

The study area was not on the same parcel of land as Congewi Creek and in private ownership and therefore limited the potential protection of Aboriginal cultural significance. If Congewai creek was in public ownership other recommendations would be suggested. If Council has the opportunity, Congewai Creek should be in public ownership under the care control of the Aboriginal Community or under Aboriginal community ownership.

Given that the study area is adjacent to Congewai Creek it is agreed and recommended that:

1. Houses be sited as far back from the Congewai Creek as is possible.
2. No access from the residential blocks be allowed to Congewai Creek.
3. Fencing, landscaping should be in such manner as to enhance the Congewai Creek area and deter rubbish dumping.
4. When and if possible access to Congewai creek should be made available to the aboriginal community to enhance the Cultural significance of the Creek

Len Roberts 3/9/04