

BUSHFIRE CONSTRAINTS REPORT

FOR THE

**THIRLMERE, TAHMOOR & PICTON PLANNING
PROPOSAL**

**PREPARED ON BEHALF OF THE PICTON
TAHMOOR THIRLMERE ACTION GROUP
[PTTAG]**



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B121717 - 1	Final	15.9.2012	25.10.2012	<i>G.L. Swain</i>

EXECUTIVE SUMMARY

A Planning Proposal has been lodged, by Rein Warry & Co Pty Ltd on behalf of the Picton Tahmoor Thirlmere Action Group (PTTAG) with Wollondilly Council and the Department of Planning and Infrastructure (DOP & I) in relation to a rezoning of an area of land located in the Wollondilly Shire Council (hereafter described as the Study Area).

The extent of the Study Area encompasses areas in the townships of Thirlmere and Tahmoor and is generally bound by Redbank Creek to the north, Myrtle Creek to the south, and a small frontage to the Main Southern Rail Line to the east.

At its Ordinary Council meeting (20.6.2011) Wollondilly Shire Council has resolved the following:

- That the Picton Tahmoor Thirlmere New Urban Lands project be forwarded to the Minister as a Planning Proposal for Gateway Determination;
- That subject to Gateway Determination, Council support a change to the Planning Proposal project that would involve the preparation of an LES for public exhibition;
- That Council commit to progressing the Planning Proposal project in a manner that is efficient, timely and legislatively correct.

The Planning Proposal for the rezoning of land has been the subject of a Gateway Determination by the Director General of the DPI in accordance with section 56 of the EPA Act 1979, for the Planning Proposal for the 'Picton Tahmoor Thirlmere New Urban Lands' project.

The determination requires that additional Specialist Studies be undertaken, including the preparation of a Bushfire Constraints Report.

This 'Specialist Bushfire Constraints Report' will be used by the client to revise the current Planning Proposal which will then be submitted to Wollondilly Shire Council.

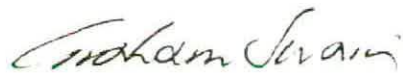
Subsequent to Council's approval, the revised Planning Proposal will be submitted to the DOP & I for comments and/or approval.

Australian Bushfire Protection Planners Pty Limited has been commissioned to prepare a Bushfire Constraints Report for the proposed rezoning of the land within the Study Area.

The Wollondilly Bushfire Prone Land Map records that the Study Area is impacted by bushfire prone vegetation therefore future residential development within the precinct will be required to address the provisions of Sections 79BA, 79C and Section 91 of the *Environmental Planning & Assessment Act 1979* or the provisions of Section 100B of the *Rural Fires Act 1997* [for the future residential subdivision of the land which is deemed to be bushfire prone].

This report undertakes an assessment of the bushfire protection measures required to address the bushfire risk to the future residential development on the proposed R2 Low Density Residential zoned land, consistent with the Residential Development specifications of *Planning for Bushfire Protection 2006*, and the requirements of Section 44 of the Rural Fires Regulation 2008.

The characteristics of the site, as discussed in this report, together with the fire protection measures recommended, provide that the proposed R2 Low Density Residential Zoning is suitable in terms of its intended residential land use.



Graham Swain

Managing Director,

Australian Bushfire Protection Planners Pty Limited

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SECTION 1

INTRODUCTION

1.1 Objectives, Scope and Output of this Study.

The objectives and scope of this study are:

Objectives:

1. To assess the ability of the study sites as a whole to satisfy the requirements of existing legislation;
2. To assess whether the statutory requirements of bushfire protection and management are capable of being met;
3. To identify bushfire management needs that developer contributions should address.

Scope:

- Assess and identify the bushfire hazard and risk for future development of the land;
- Assess whether the future development of the study area is capable of compliance with the Wollondilly Bushfire Risk Management Plan, Section 117 Ministerial Direction No A.4 Planning for Bushfire Protection, NSW Rural Fires Act 1997 and RFS Planning for Bushfire Protection Guidelines 2006;
- The Bushfire hazard and risk assessment needs to give due consideration to the likely rehabilitation of riparian corridors and the recommendations of the biodiversity study to preserve and enhance ecological communities on the study area;
- Identify the potential risk and solutions to minimise the impact that bushfire protection/hazard reduction/asset management may have on threatened species and biodiversity values of the study area having regard to the Bushfire Environmental Assessment Code for NSW and Bushfire Hazard Reduction Assessment Guidelines.

Output:

- Broadly examine the level of bushfire risk posed to the future development of the study area with reference to Rural Fire Services mapping;
- A review of the existing road network and available reticulation water supply network suitability for fire fighting;
- A review of the necessity for fire trails around the study area.

1.2 Development Proposal.

A Planning Proposal has been lodged by the Client's representative, Rein Warry & Co Pty Ltd, on behalf of the Picton Tahmoor Thirlmere Action Group (PTTAG) in relation to a rezoning of the Study Area – refer to Figure 1.

The Planning Proposal has been lodged with Wollondilly Council and the Department of Planning and Infrastructure (DOP & I) and proposes the rezoning of the land within the Study Area to R2 Low Density Residential, in accordance with the Standard Instrument [Local Environmental Plans Order 2006].

The boundaries of the Study Area are depicted in Figure 1.

Figure 1 – Location of the Study Area.



1.2 Statutory Requirements.

This report has been prepared having regard to the following legislative and planning requirements:

1.2.1 Legislation.

(a) Environmental Planning and Assessment Act (EPA Act)

Planning and development within NSW is regulated by the *Environmental Planning & Assessment Act, 1997* (EPA Act).

In relation to the rezoning of land for the construction of residential buildings and the protection against the impacts of bushfires, Ministerial Direction No. 4.4 – *Planning for Bushfire Protection* issued 1st July 2009 [under Section 117 of the *Environmental Planning & Assessment Act – 1979*] applies to all Councils that are required to prepare a bushfire prone land map under Section 146 of the *Environmental Planning & Assessment Act 1979*.

Pursuant to Ministerial Direction No. 4.4 – Planning for Bushfire Protection, the relevant planning authority must consult with the Commissioner of the NSW Rural Fire Service following receipt of a gateway determination under Section 56 of the Act, and prior to undertaking community consultation in satisfaction of Section 57 of the Act, and take into account any comments so made:

A planning proposal must:

- Have regard to Planning for Bushfire Protection 2006;
- Introduce controls that avoid placing inappropriate developments in hazardous areas, and;
- Ensure that bushfire hazard reduction is not prohibited within the Asset Protection Zone.

Pursuant to Ministerial Direction No. 44, a planning proposal must, where development is proposed, comply with the following provisions, as appropriate:

(a) Provide an Asset Protection Zone [APZ] incorporating at a minimum:

- An Inner Protection Area bounded by a perimeter road or reserve which circumscribes the hazard side of the land intended for development and has a building line consistent with the incorporation of an APZ, within the property, and
- An Outer Protection Area managed for hazard reduction and located on the bushland side of the perimeter road.

- (b) For infill development [that is development within an already subdivided area], where an appropriate APZ cannot be achieved, provide for an appropriate performance standard in consultation with the NSW Rural Fire Service. If the provisions of the draft LEP permit Special Fire Protection Purposes [as defined under Section 100B of the *Rural Fires Act 1999*], the APZ provisions shall be complied with;
- (c) Contain provisions for two-way access roads which link to perimeter roads and/or to fire trail networks;
- (d) Contain provisions for adequate water supply for fire fighting purposes;
- (e) Minimise the perimeter of the area of land interfacing the hazard which may be developed;
- (f) Introduce controls on the placement of combustible materials in the Inner Protection Area, and;

A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Director General of Planning [or an officer of the Department nominated by the Director-General] that Council has obtained written advice from the Commissioner of the NSW Rural Fire Service, to the effect that, notwithstanding the non-compliance, the NSW Rural Fire Service does not object to the progression of the planning proposal.

1.2.2 Planning Policies.

Planning for Bushfire Protection – 2006. (NSW Rural Fire Service)

This document provides guidance on the planning and development control processes in relation to bushfire protection measures for residential subdivision, Special Fire Protection and Industrial Developments in bushfire prone areas.

The Commissioner may determine, under Section 100B of the *Rural Fires Act*, additional measures that are considered necessary to protect the development against the impact of bushfire.

1.3 Documentation reviewed in this assessment.

- Wollondilly Community Strategic Plan;
- Sustainable Wollondilly Report;
- Wollondilly Economic Development Strategy;
- Wollondilly Town + Village Centre Study;
- PTTAG Study Area Plan prepared by Rein Warry & Co. Pty Ltd;
- 2007 – 2008 Comprehensive Sustainable Wollondilly Report;

- Draft Biodiversity Study for a Planning Proposal in Wollondilly Shire, prepared for the Picton Tahmoor Thirlmere Action Group by ACS Environmental Pty Ltd – July 2012;
- *Planning for Bushfire Protection 2006* prepared by the NSW Rural Fire Service/Planning N.S.W;
- Australian Standard AS3959 *Construction of Buildings in Bushfire Prone Areas*;
- *Rural Fires Regulation 2008*;
- Wollondilly Shire Bushfire Prone Land Map.

1.4 Site Inspection.

Graham Swain of *Australian Bushfire Protection Planners Pty Limited* inspected the Study Area and adjoining lands on the 27th April 2010, the 3rd November 2010 and the 25th April 2012.

SECTION 2

DESCRIPTION OF STUDY AREA

2.1 Location of Study Area.

The Study Area incorporates approximately 232 hectares comprising 87 allotments of land as shown in Figure 2.

The Study Area is located between the townships of Tahmoor and Thirlmere in the Wollondilly Shire. The Study Area is generally bound by and includes Redbank Creek, Thirlmere to the north, Myrtle Creek, Tahmoor, to the south and a small frontage to the Main Southern Rail Line to the east. Figure 2 is an aerial depiction of the Study Area.

Figure 2 – Location of the rezoning precinct showing existing road network.



2.2 Existing Land Use.

The Study Area occurs largely within rural allotments with much of the area having been cleared for grazing with remnant trees remaining. Grazing by cows, horses, sheep, goats etc is currently occurring on various allotments.

2.3 Surrounding Land Use.

The adjoining land to the east of the Study Area contains agricultural grazing land which extends to the east and beyond the Railway corridor.

To the north of Redbank Creek existing rural/rural residential development has frontage onto Bridge Street. The land to the west of the Study Area consists of a mixture of residential and rural residential development.

To the southwest rural landuse extends to the southwest and contains existing farm dwellings and associated sheds whilst to the south of Myrtle Creek the land contains residential development, a retirement village and the Wollondilly Pony Club grounds.

2.4 Topography.

a) Within the Study Area.

Tickle Drive and the western section of Brundah Road are aligned along a ridgeline from east to west through the Study Area. The general terrain along the central section of the Study Area is a relatively narrow ridge-top sloping gently to the south and north respectively. Generally the hill slope gradients vary from 1 – 5°.

Section 2.3 of the ACS Report states that the Soil Landscape series associated with Ashfield Shale sedimentology is largely the residual 'Blacktown' Soil Landscape Series (Hazelton, Bannerman & Tille 1990). This soil landscape is characterised by gently undulating rises on Wianamatta Shale on broad rounded crests and ridges with gently inclined hill-slopes having gradients of < 3° (Hazelton, Bannerman & Tille 1990).

The report also states that to the east and south-east of the Study Area along Tickle Drive, patches of the erosional 'Luddenham' Soil Landscape Series occur. This soil landscape is also characterised by undulating to low rolling hills on Wianamatta Shale, often associated with the upper layers of Minchinbury Sandstone, occurring along narrow ridges, hillcrest and valleys with gradients from 3 - 10° (Hazelton, Bannerman & Tille 1990).

Gradients in excess of 18 degrees occur on the side slope of the ridgeline located at the eastern terminus of Tickle Drive.

Refer to Figure 3 – Extract from ACS Report showing Soil Types within the Study Area.

Figure 3 – Extract from ACS Report showing Soil Types within the Study Area.

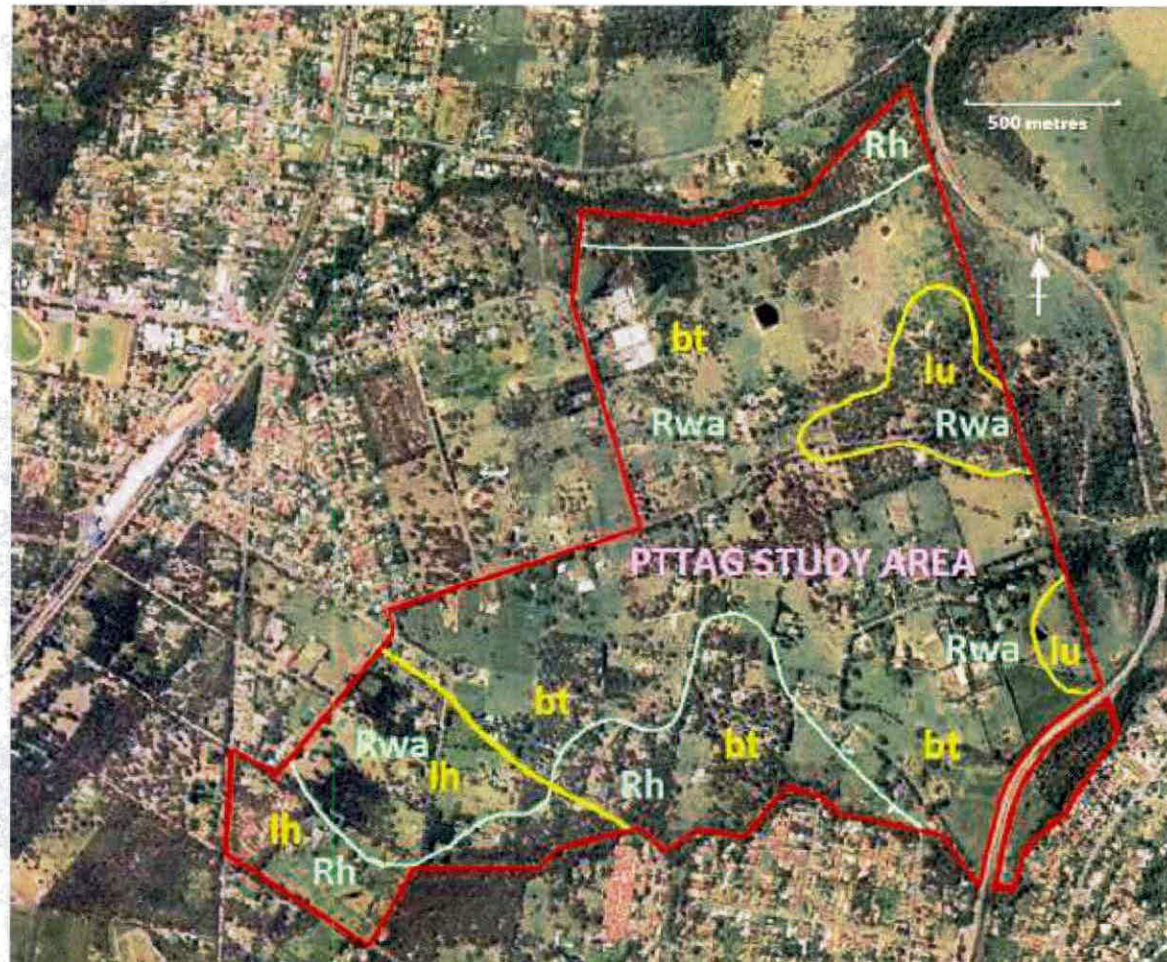


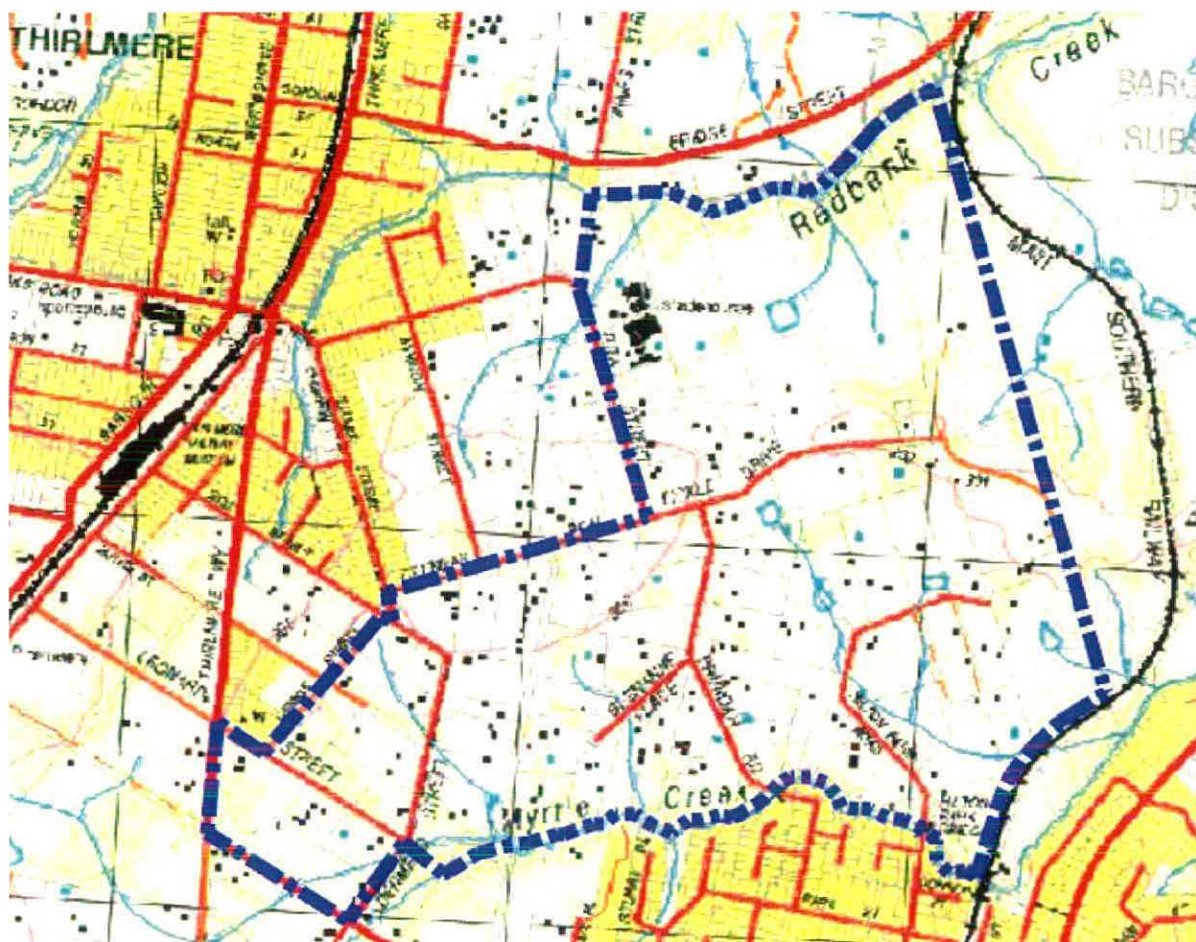
Figure 3 – Study Area showing geological distribution of the Ashfield Shale Formation of the Wianamatta Group of Shales (Rwa) and Hawkesbury Sandstone (Rh) parent material overlain by indicative Soil Landscape groups ('bt' – 'Blacktown' and 'lu' – 'Luddenham' Soils Landscapes primarily derived from Wianamatta Shale sediments and 'lh' – 'Lucas Heights' primarily derived from Hawkesbury Sandstone parent material).

b) Beyond the Study Area.

The rural land to the east of the Study Area falls steeply to the east toward the Railway corridor with gradients exceeding 18 degrees in some locations.

The rural residential land to the north of Red Bank Creek rises to the north at < 5 degrees. The residential land and the land containing the Retirement Village and Pony Club to the south of Myrtle Creek rise to the south at < 5 degrees.

Figure 4 – Topographic Map



2.5 Vegetation within the Study Area.

The vegetation within the East Thirlmere rezoning precinct has been assessed by ACS Environmental Pty Ltd. The Biodiversity Study states:

"Four relatively distinct vegetation communities could be recognized over the broad Study Area. Floristically discrete ecological communities occurring over the landscape include three Endangered Ecological Communities that are described in DECCW (2009) as follows:

- *Cumberland Shale Hills Woodland (CEEC);*
- *Cumberland Shale-Sandstone Ironbark Forest (varying degree of shale: sandstone influence) (EEC);*
- *Hinterland Sandstone Transition Grey Gum Forest (EEC), and Degraded mixed Riparian Forest at Myrtle Creek where natural vegetation has been extensively cleared and degraded but some canopy trees remain.*

The natural vegetation of the Study Area has mostly been partially cleared, disturbed, grazed or otherwise degraded, though some patches of relatively weed-free, full-structured vegetation remain. These occur mostly along the edges of Redbank Creek, at the eastern end of Tickle Drive, Thirlmere, and to the south below Glenanne Place, Tahmoor.

Many areas of bushland have been modified for grazing with mid-storey and understorey strata removed though with a significant tree canopy retained. Many of these modified woodland areas also retain a ground stratum that is rich with indigenous species of grasses, twiners and herbs.

Large sections of the Study Area have been cleared of most of the upper canopies with only a scattering of trees remaining, but still retaining a relatively high number of indigenous species in a grassy ground layer. Other areas have been extensively landscaped with some scattered indigenous trees remaining and lawn grass established in a managed curtilage.

The extant vegetation of the Study Area incorporating distributions of these three endangered ecological communities was further classified into three discrete conservation classes: high, moderate and low, depending on the extent of local retention of natural vegetation, the degree of historical clearing and disturbance, and the resultant structural and floristic attributes of the remnant vegetation.

Three corresponding rankings of recovery and ecological potential, largely reflecting the patterns of conservation significance, were also identified for the vegetation.

Figure 5 indicates the distribution of the EEC communities in relation to extent of structural modification. The degree of structural and floristic modification of patches of an ecological community directly reflects their conservation significance status as also depicted in Figure 5. Figure 6 indicates previous mapping of the subject area in relation to ecological community terminology as described in DEC (2002).

Figures 5 & 6 indicate that patterns in the intrinsic ecological distributions of plant communities are closely associated with patterns in the physical environment. Distributions of Cumberland Shale Hills Woodland on ridgelines and crests appear associated with deeper erosional soils of the Luddenham Soil Landscape Series derived from the Ashfield Shale Subgroup of the Wianamatta Group of Triassic Shales.

As the landscape slopes away to the west, the mantle of Ashfield Shale-derived soil of the Blacktown Soil Landscape Series becomes thinner overlying sandstone-derived soils. Here the woodland floristics change to that more associated with Cumberland Shale-Sandstone Ironbark Forest, a transitional community type occurring on shale-derived soils that overlie sandstone-derived soils, but where the shale influence is still relatively high.

In the north of the Study Area, the mantle of shale-derived soils overlying sandstone-derived soils thins as the gradient slopes downhill towards Redbank Creek. Here the sandstone subsoil has a higher influence compared to that occurring upslope, and as such the floristics resemble that of transitional Cumberland Shale-Sandstone Ironbark Forest where the sandstone influence is higher than that of shale.

Figure 5 – Extract from the ACS Report showing the distribution of ecological communities in the Study Area with reference to conservation value assessment.

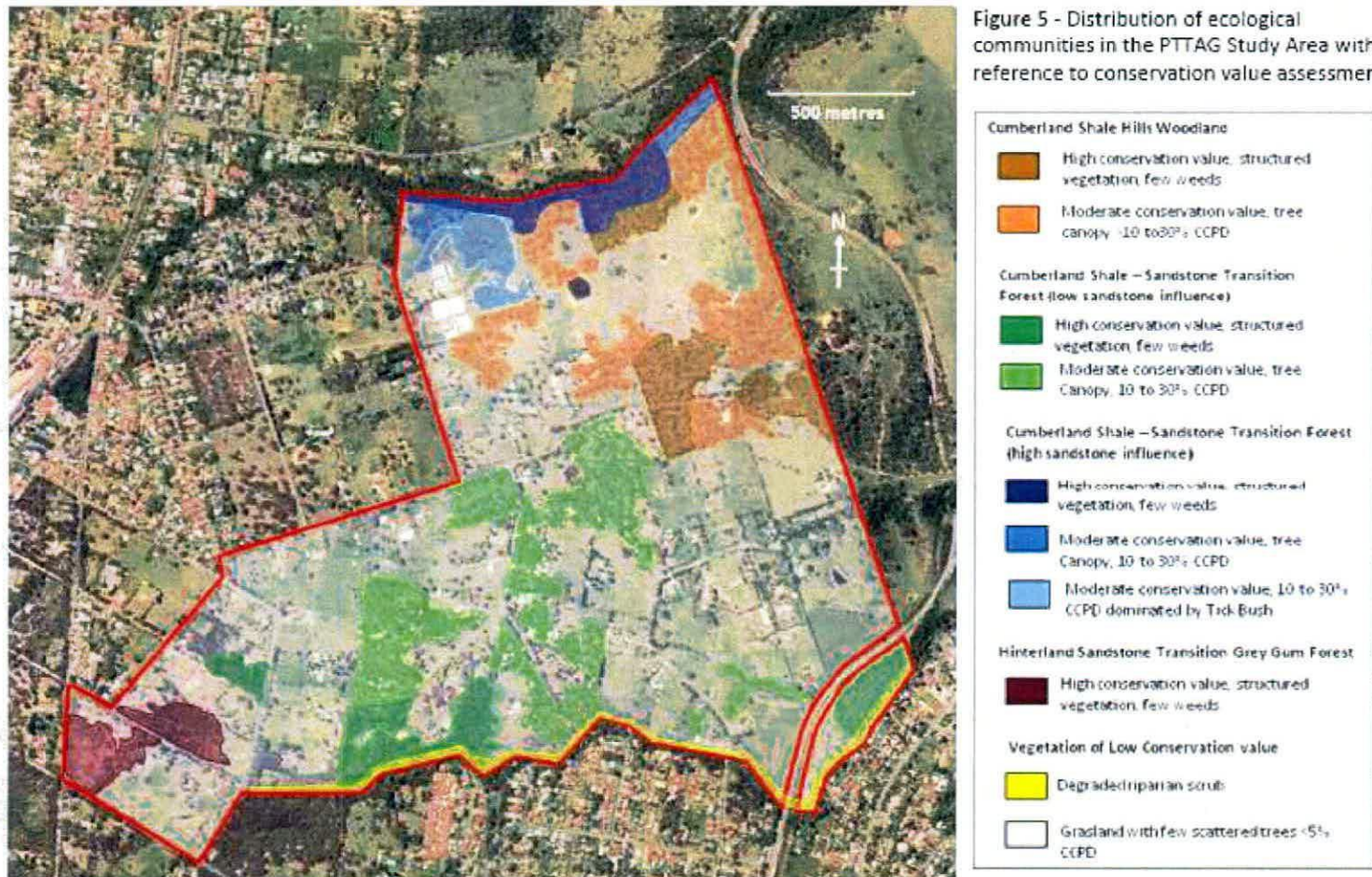
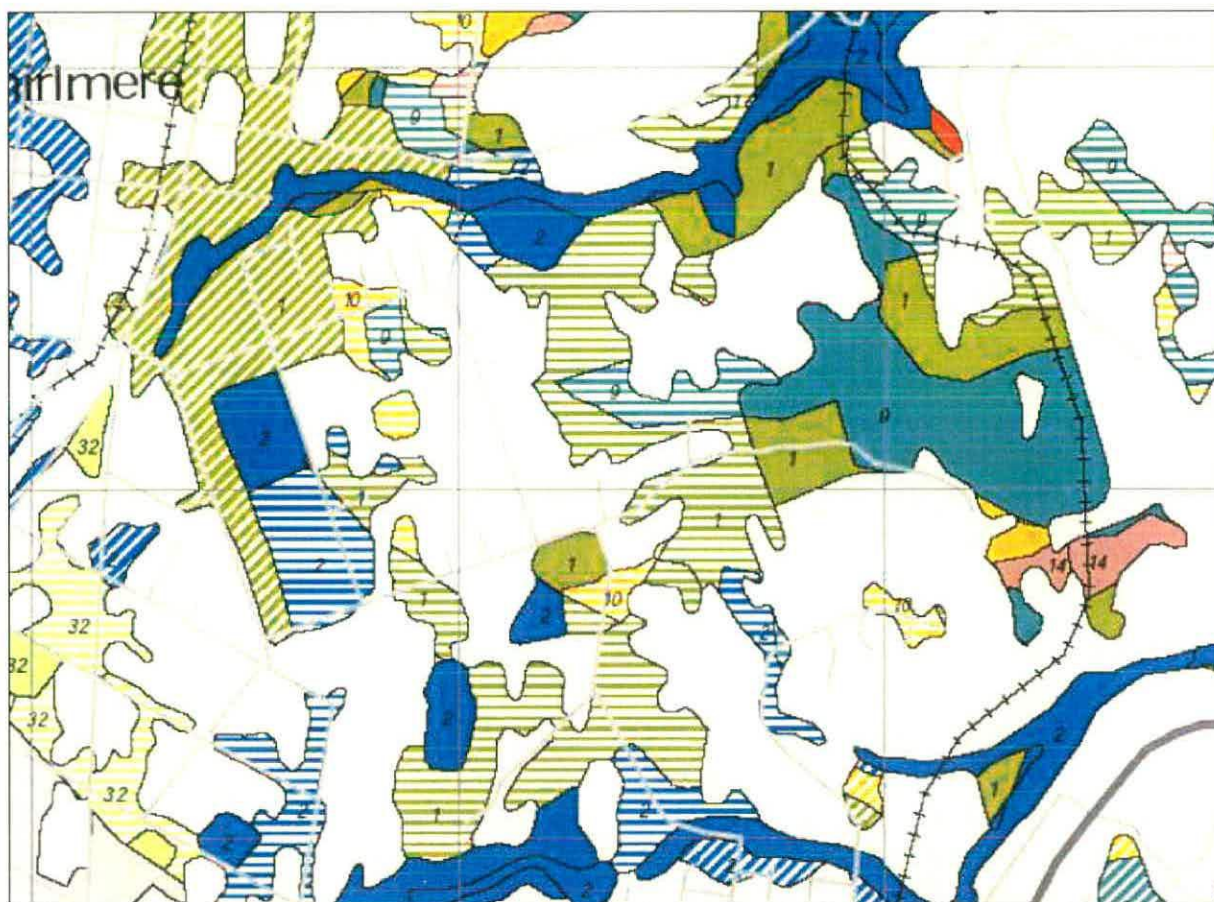


Figure 6 – Mapping of ecological communities over the locality including the Study Area



Mapping Code: No. 1 & 2 are 'Shale-Sandstone Transition Forests' on low sandstone and high sandstone influence respectively; No. 9 is 'Shale Hills Woodland' and No. 32 is 'Upper Georges River Sandstone Woodland'. Hatched polygons represent less crown canopy projective densities of woodland assemblages.

To the south-west towards Thirlmere Way, the mantle of shale soil gives way to sandstone-derived soils, probably associated with the transitional Mittagong Formation that occurs between the Hawkesbury Sandstone and Wianamatta Shale sediments. The floristics associated with this landscape closely resembles that of vegetation associated with Hawkesbury Sandstone-derived soils. As the area is proximal to the shale-sandstone boundary, the vegetation in this location is likely to represent Hinterland Sandstone Transitional Grey Gum Forest (DECCW 2009).

The drainage line of Myrtle Creek that forms the southern boundary of the Study Area is proximal to established residential development.

As such, these vegetation assemblages contain a high incursion of woody noxious weeds and other exotic species, though with a canopy cover of indigenous eucalypt species. Dominant eucalypt species indicate that the drainage line vegetation formerly appeared representative of Cumberland Shale-Sandstone Transition Ironbark Forest but with current extensive weed incursion does not appear to closely represent any particular remnant riparian ecological community.

The vegetation aligned along Redbank Creek is assessed as Cumberland Shale-Sandstone Transition Ironbark Forest with high sandstone influence. This community is a component of Shale-Sandstone Transition Forest listed as an 'Endangered Ecological Community' under Part 3 of Schedule 1 of the NSW TSC Act (1995). This community is also listed as an 'Endangered Ecological Community' as a component of Shale-Sandstone Transition Forest under the EPBC Act (1999)".

2.6 Fauna within the Study Area.

The terrestrial fauna within the East Thirlmere rezoning precinct has been assessed by ACS Environmental Pty Ltd. The Biodiversity Study states:

"Opportunistic fauna were recorded at locations throughout the Study Area as shown in Figure 7 and include 5 amphibian species, 4 reptiles, 66 birds and 5 native and 6 introduced mammals.

Two threatened fauna species listed were recorded during this current survey. These were the Varied Sittella and Little Lorikeet.

Other threatened species identified as having potential to occur within the Study Area were also assessed. These included the Koala, Swift Parrot, Regent Honeyeater, Hooded Robin, Scarlet Robin, Diamond Firetail, Gang-gang Cockatoo, Brown Tree-creeper and Eastern Bentwing Bat. Assessment of habitats concluded that potential exists for these species to forage within the Study Area.

The diverse array of avifauna present throughout the Study Area reflects the varied structure and vegetation assemblages present. The presence of fallen tree trunks and branches, which serve as nesting structures and protective hides, in the floristically denser riparian areas, would be expected to support a high diversity of small mammals. This was not found to be the case; however, as only a relatively low diversity of small ground dwelling mammalian fauna was recorded. Factors influencing this low diversity possibly include predation by the European Fox. Currently there is easy access along the Nepean River for Fox to enter the Study Area and the presence of Rabbit ensures a continual food source".

Figure 6 – Fauna Habitats within the PTTAG Study Area.



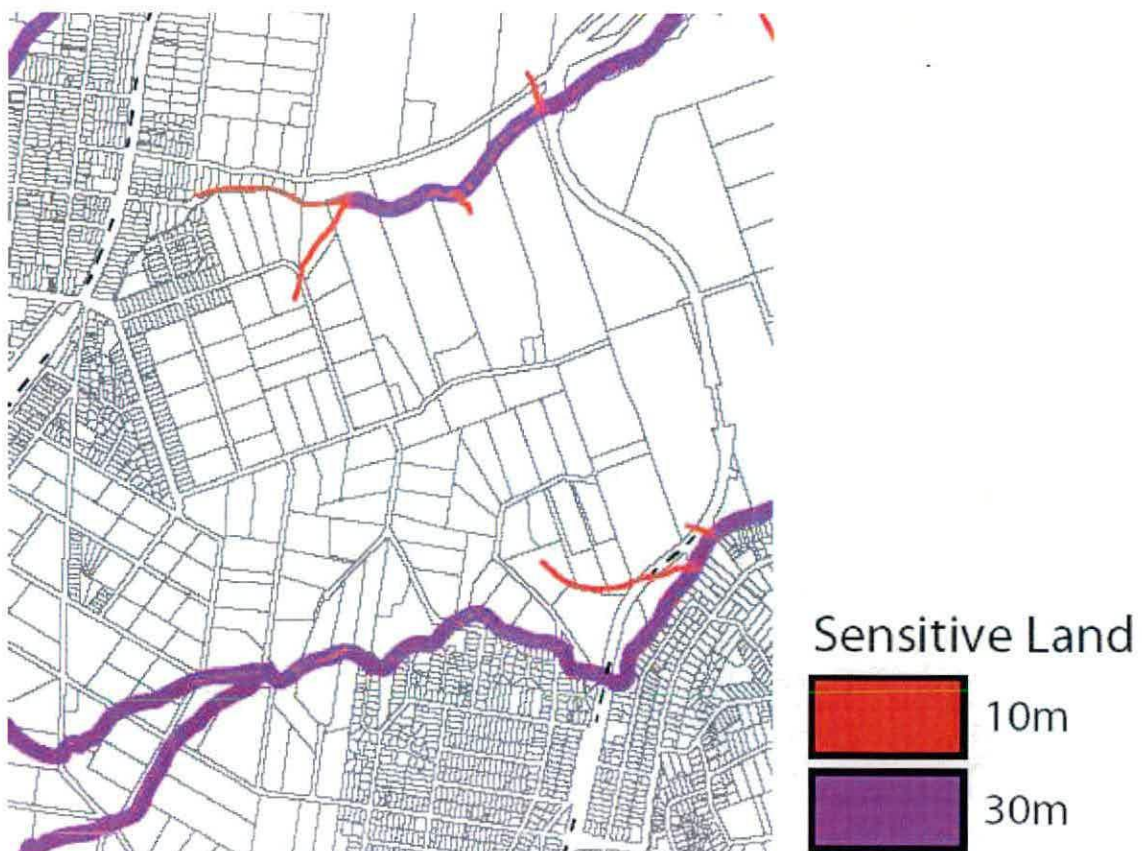
2.7 Riparian Corridors within the Study Area.

The Biodiversity Study prepared by ACS Environmental Pty Ltd examines the Wollondilly Local Environmental Plan 2011 Maps as to indicative criteria of conservation significance in the Study Area.

The Natural Resource – Water Resource map indicates that the buffer zones along the banks of Redbank and Myrtle Creeks are indicated as 'Sensitive Land'. This buffer zone allows the retention of natural, or no longer readily disturbed vegetation, along these creek-banks conferring an extent of filtration and buffering of animal and other run-off waste from entering the stream channels. The upper sections of the creeks have a buffer area of 10m while the majority of the drainage lines maintain a 30m buffer area (Refer to Figure 7 below).

For the purpose of determining bushfire protection offsets it is assumed that these buffer zones will remain unmanaged vegetation within the riparian corridors to the creek lines.

Figure 7 – Buffer Zones to Redbank Creek and Myrtle Creek.



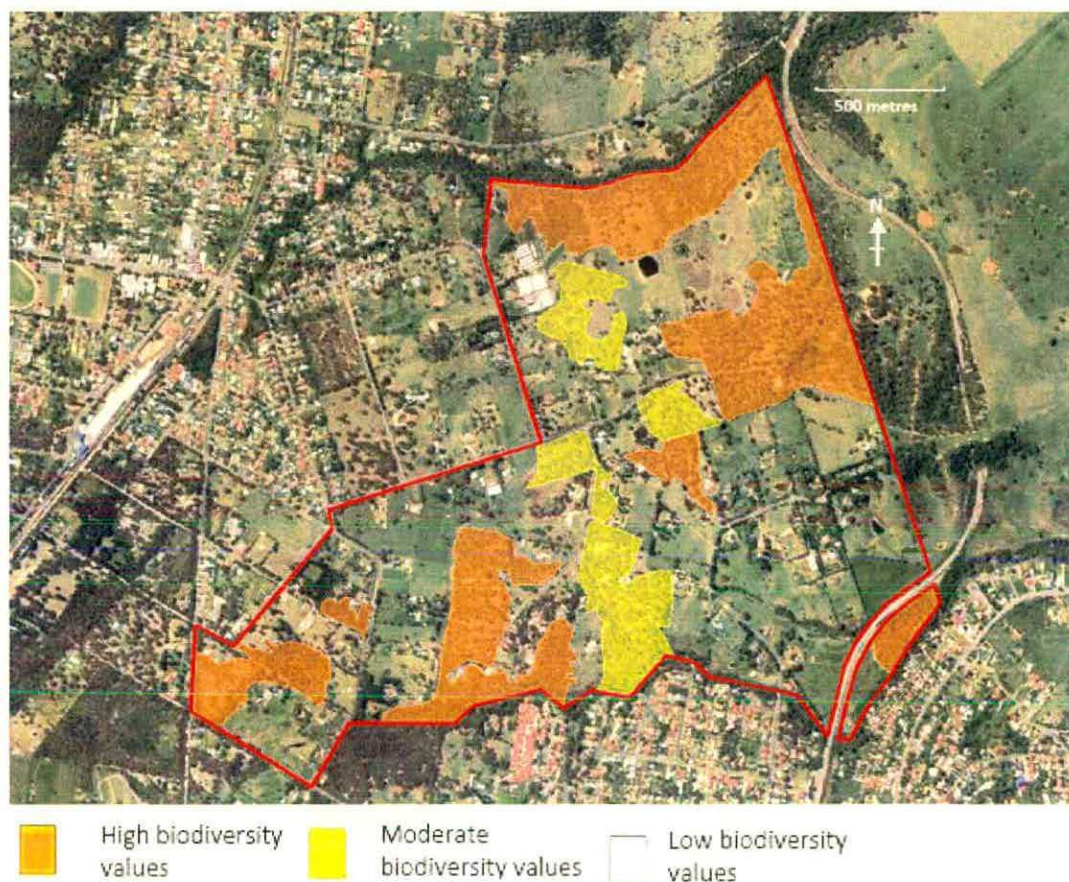
2.8 Summary of Ecological Constraints.

The Biodiversity Study undertaken by ACS Ecological Pty Ltd provides advice on the potential lot numbers and allotment size distribution in relation to the rezoning of the land within the Study Area and would strategically combine the principles of integration of rural/residential living development with support and maintenance of the biodiversity and ecological values of the Study Area.

The Biodiversity Study states:

"Potential lot number and allotment size distribution can be assessed by consideration of the cumulative and generalized pattern of the range of biodiversity values of the Study Area as shown on Figure 8 below). The biodiversity value assessment incorporates an assessment of recovery potential in patches of natural vegetation, as well as the pattern of assessed conservation significance value of the mosaic of vegetation variation, and also includes an assessment of the potential occurrence of threatened species of flora and fauna habitat within the Study Area".

Figure 8 – Plan of Biodiversity Values



For the purpose of determining bushfire protection measures to future residential development within the Study Area the constraints will be identified having regard to the high conservation areas as shown on Figure 8.

SECTION 3

WOLLONILLY BUSHIFRE PRONE LAND MAP

Figure 9 provides an extract from the Certified Wollondilly Shire Bushfire Prone Land Map for the land within and surrounding the PTTAG Study Area.

The map records the extent of the tree canopy within the Study Area and does not accurately record the extent of fully structured vegetation communities which are deemed to be bushfire prone vegetation. Therefore, the map does not accurately record vegetation which could be deemed to be bushfire prone as defined by the NSW Rural Fire Service's *'Guide to Bushfire Prone Land Mapping'*.

The Bushfire Prone Land Map accurately records vegetation on the land to the east of the Study Area as Category 1 Bushfire Prone Vegetation.

Irrespective of the accuracy of the map, rehabilitation of the vegetation in the Redbank Creek/Myrtle Creek corridors, as shown on Figure 7, and the rehabilitation of the vegetation in high conservation areas, as recommended in the Biodiversity Study undertaken by ACS Ecological Pty Ltd, as identified in Figure 8, will maintain and/or create potential areas of bushfire prone vegetation within the Study Area.

The Rural Fire Service's *'Guide to Bushfire Prone Land Mapping'* identifies forest and woodland vegetation which is fully structured, which has an area of more than one [1] hectare and is not managed for permanent, on-going fuel reduction as Category 1 Bushfire Prone Vegetation.

The document also identifies unmanaged, fully structured forest and woodland vegetation which has an area of less than one [1] hectare and which is located more than 100 metres from adjacent bushfire prone vegetation as NOT constituting Category 1 Bushfire Prone Vegetation.

A review of the areas of high biodiversity value vegetation, as recommended by ACS Ecological Pty Ltd [refer to Figure 8 above] identifies that the retention/rehabilitation of the vegetation adjacent to Redbank Creek will create an area of vegetation deemed to be Category 1 Bushfire Prone Vegetation. Similarly, the large area of retained vegetation around the eastern end of Tickle Drive, if rehabilitated and unmanaged will become bushfire prone.

The larger areas of retained forest vegetation on the properties on Thirlmere Way/Dennis Street and to the west and southwest of Glenanne Place and within the riparian corridor to Myrtle Creek will constitute Category 1 Bushfire Prone Vegetation with a smaller pocket on Hilton Park Drive – refer to Figure 10 – Plan of Bushfire Prone Vegetation.

Figure 9 is an extract from the Certified Wollondilly Shire Bushfire Prone Land Map showing the extent of mapped bushfire prone vegetation within the Study Area and on adjoining lands.

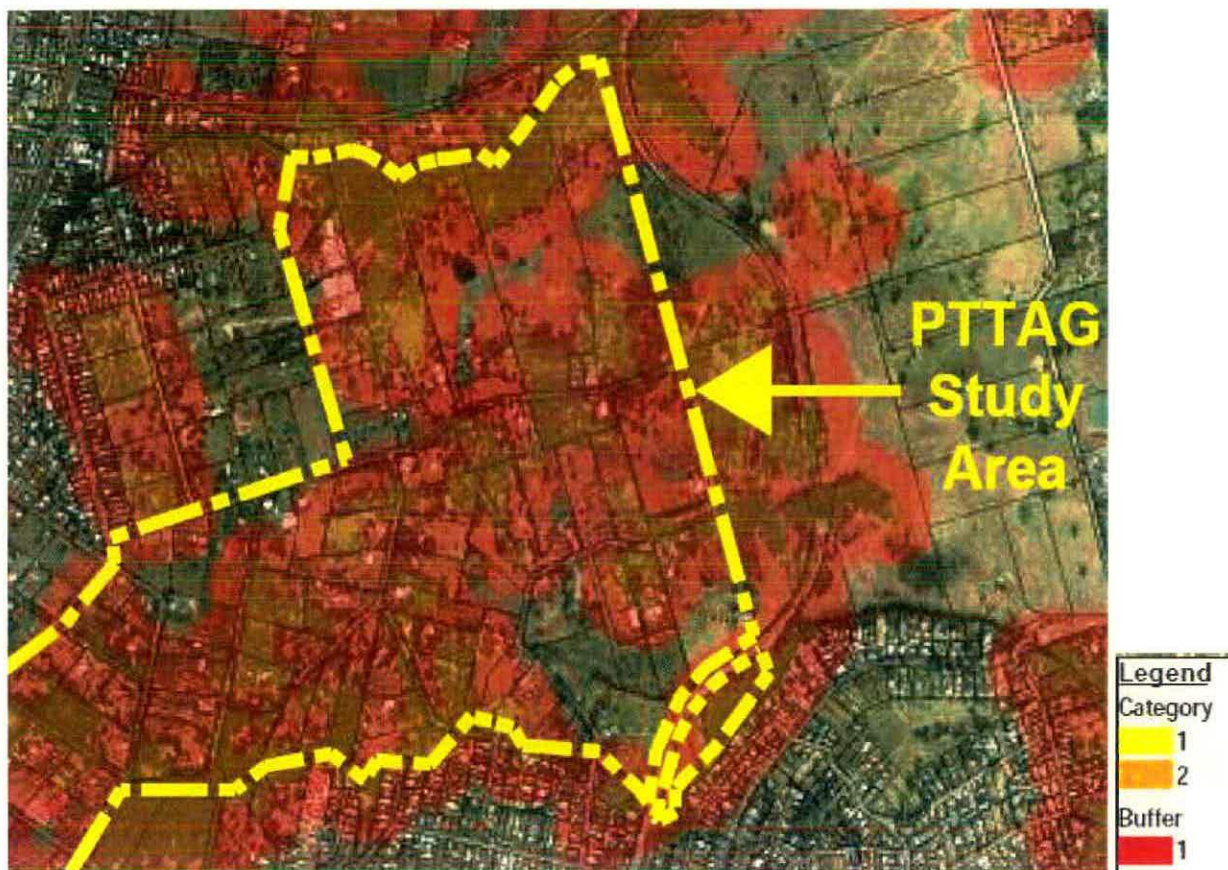
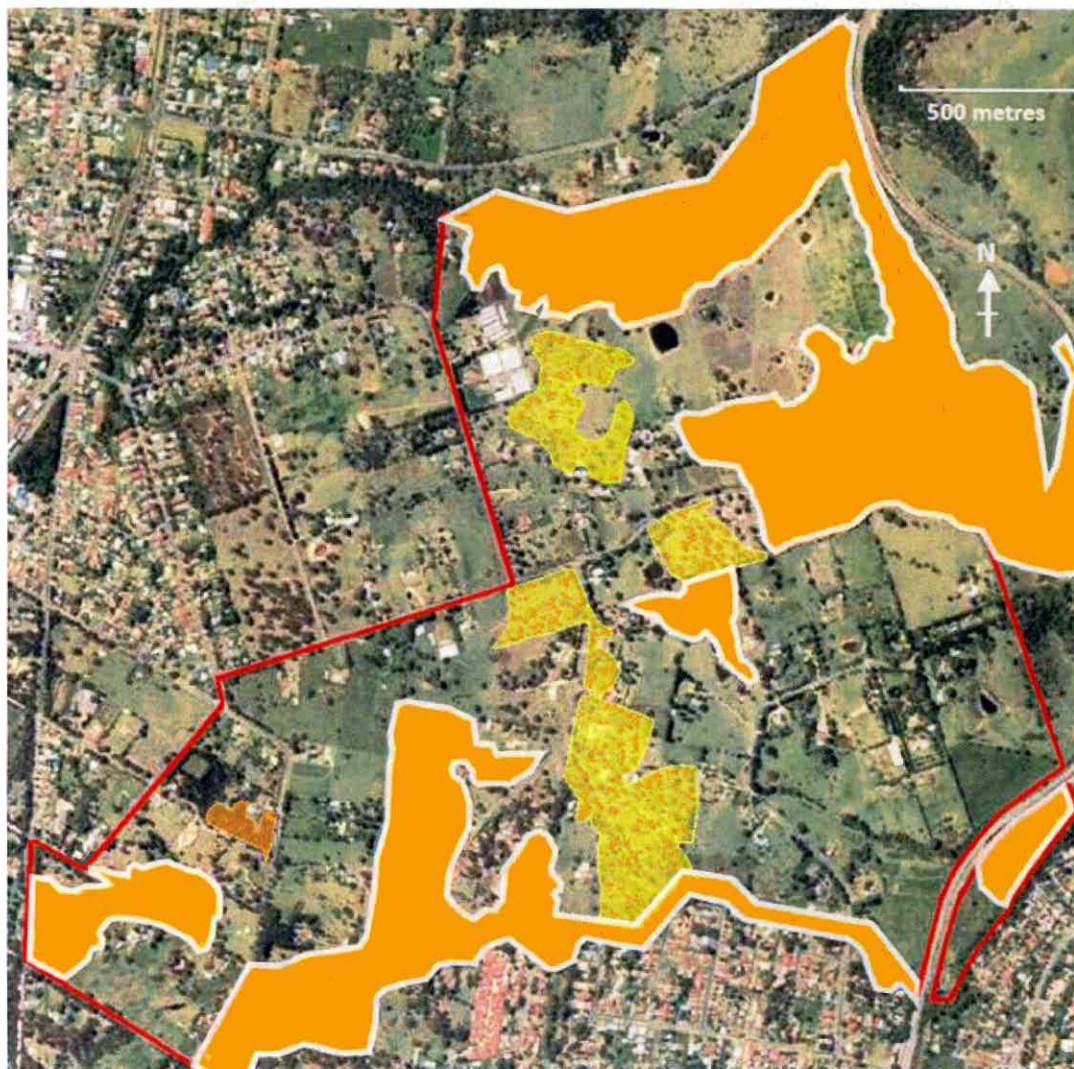


Figure 10 is an extract from the ACS Ecological Study showing the extent of bushfire prone vegetation within the Study Area and on adjoining lands – derived from the vegetation identified as high biodiversity value.



SECTION 4

BUSH FIRE PROTECTION ASSESSMENT

4.1 Asset Protection Zones.

Figure 10 above identifies the extent of the high value biodiversity vegetation within the Study Area and overlays this mapping to show the extent of vegetation which could be deemed to be Category 1 Bushfire Prone Vegetation, as defined by the NSW Rural Fire Service's *'Guide to Bushfire Prone Land Mapping'*, and therefore a potential bushfire hazard to any future residential development created by the subdivision of the land.

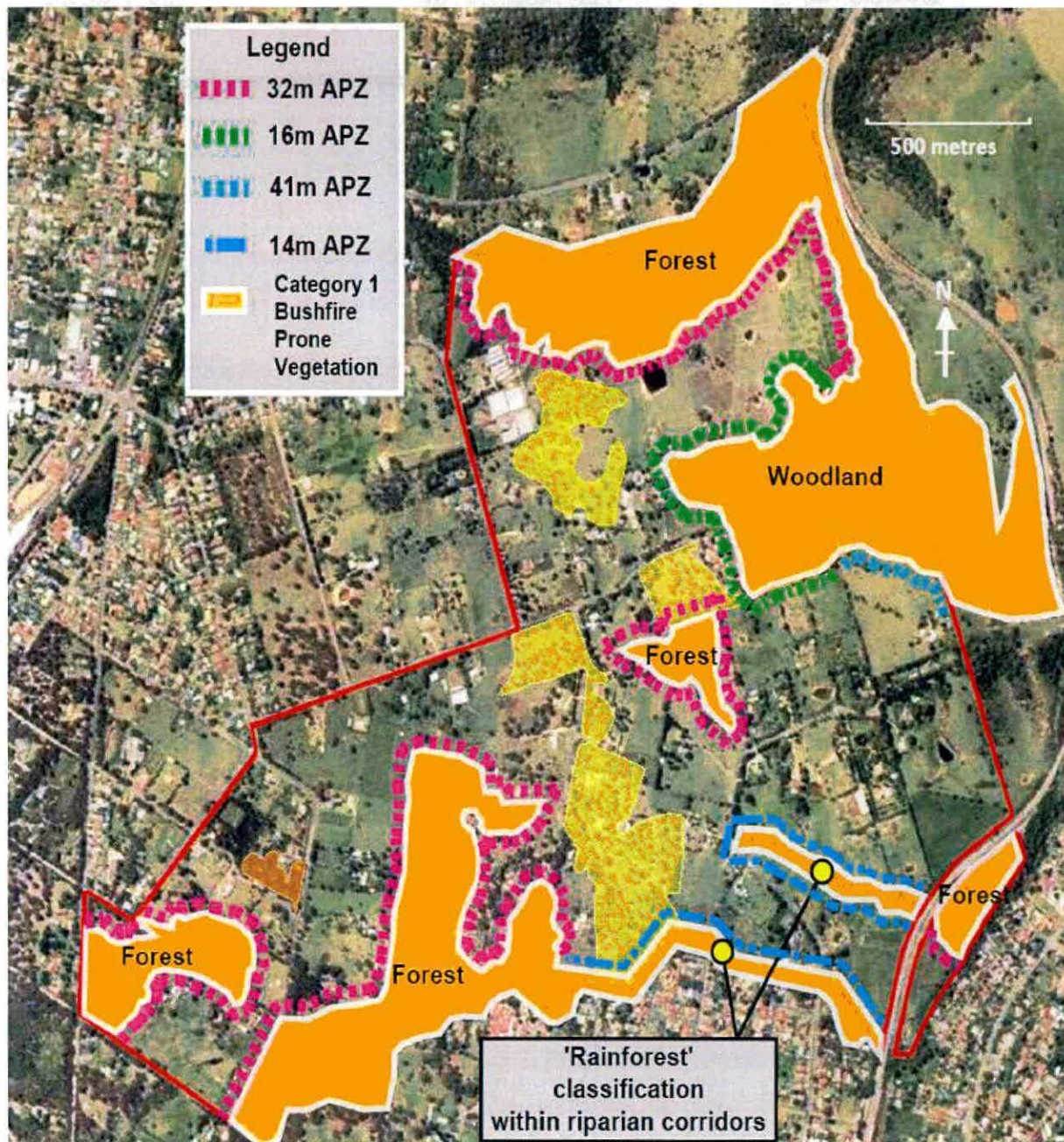
The information contained within this report relating to the landform and within the Biodiversity Study undertaken by ACS Ecological Pty Ltd relating to the vegetation types within the Study Area has been examined to determine the extent of Asset Protection Zone requirements necessary to address the potential bushfire hazard and to comply with the deemed-to-satisfy provisions of *Planning for Bushfire Protection 2006*.

In addition, there will be a need to provide a 14 metre wide Asset Protection Zone to any rehabilitated vegetation within the critical riparian corridor along the northern side of Myrtle Creek and the riparian corridor which is shown on Wollondilly Local Environmental Plan 2011 Maps that cross the properties to the northeast of Hilton Park Drive – refer to Figure 7.

It is noted that the extent of the retained/rehabilitated vegetation may change from that identified by ACS Ecological Pty Ltd and therefore site specific investigations will be required to further refine the extent of Asset Protection Zones required.

In addition to the provision of mandatory perimeter Asset Protection Zones the Rural Fire Service will require the provision of a complying perimeter road to the bushfire hazard. This road is required to have a pavement width of 8.0 metres.

Figure 11 – Asset Protection Zones to future residential development.



4.2 Construction Standards to the future dwellings.

The provision of construction standards to the future dwellings within the rezoning precinct will be dependent on the bushfire risk created by the mapped bushfire prone vegetation and any rehabilitated/retained vegetation which has been identified as an Endangered Ecological Community or established in riparian corridors and will require further assessment as part of the subdivision process.

The construction standards required shall comply with the standards provided by A.S. 3959 – 2009 – ‘Construction of buildings in Bushfire Prone Areas’.

4.3 Access for Firefighting Operations.

Future subdivision of the land within the PTTAG Study Area will utilise the existing public road network as the main access to the development precincts.

These roads, except for the eastern section of Tickle Drive, provide safe escape routes from the potential bushfire threat. The eastern section of Tickle Drive is likely to be affected by a bushfire occurring in the vegetation to the north and south of the road. This threat will remain with the retention of this vegetation as recommended in the ACS Ecological Pty Ltd report.

The subdivision of the land for residential/rural residential landuse will require the addition of perimeter roads to future lots which adjoin bushfire prone vegetation. The NSW Rural Fire Service will not accept the provision of perimeter fire trails in this circumstance or the use of cul-de-sac roads with future lots backing onto areas of bushfire prone vegetation.

It is therefore recommended that a public access road Master Plan be developed which addresses the deemed-to-satisfy provisions of the Public Road access requirements of Section 4.1.3(1) of *Planning for Bushfire Protection 2006* with an 8.0 metre wide perimeter road provided between bushfire prone vegetation and the future dwellings.

Internal public roads shall have a minimum paved width of 6.5 metres and ‘No Parking’ to one side. Cul-de-sac design shall incorporate a turning circle of 24 metres for Category 1 NSW Rural Fire Service Tankers and NSW Fire Brigade Composite Appliances.

Where existing lots are retained, without subdivision, and the conservation areas recommended in the ACS Ecological Pty Ltd report are set aside and rehabilitated, fire trail access shall be provided for fire operational access. These trails shall link to the public road network and shall be designed and constructed to comply with Section 4.1.3(3) – Fire Trails – of *Planning for Bushfire Protection 2006* with a pavement width of 4.0 metres within a carriageway of 6.0 metre width.

4.4 Water Supplies for Firefighting Operations.

The future subdivision of the PTTAG Study Area for residential/rural residential landuse shall provide a reticulated fire-fighting water supply, complying with the specifications of Australian Standard A.S. 2419.2 - 2005.

Examination of the existing water supply shall be undertaken to determine the adequacy of the system to meet the deemed-to-satisfy provisions of Australian Standard A.S. 2419.2 – 2005.

The design of the street mains shall enable Hydrants to have a flow rate of 10 litres / second, in accordance with specifications of Australian Standard A.S. 2419.2 - 2005.

Hydrant locations shall be delineated by blue markers placed on the hydrant side of the centreline of the road pavement.

SECTION 5

CONCLUSION

A Planning Proposal has been lodged, by Rein Warry & Co Pty Ltd on behalf of the Picton Tahmoor Thirlmere Action Group (PTTAG) with Wollondilly Council and the Department of Planning and Infrastructure (DOP & I) in relation to a rezoning of an area of land located in the Wollondilly Shire Council.

The extent of the PTTAG Study Area encompasses areas in the townships of Thirlmere and Tahmoor and is generally bound by Redbank Creek to the north, Myrtle Creek to the south, and a small frontage to the Main Southern Rail Line to the east.

The Planning Proposal for the rezoning of land has been the subject of a Gateway Determination by the Director General of the DPI in accordance with section 56 of the EPA Act 1979, for the Planning Proposal for the 'Picton Tahmoor Thirlmere New Urban Lands' project.

The determination requires that additional Specialist Studies be undertaken, including the preparation of a Bushfire Constraints Report.

The brief for the preparation of this Specialist Bushfire Study required:

1. Examination of the level of bushfire risk posed to the future development of the study area with reference to the Rural Fire Service's mapping;
2. A review of the existing road network and available reticulated water supply network suitability for fire fighting; and
3. A review of the necessity for fire trails around the study area.

Response:

The Study has examined the level of bushfire risk posed to the future development and has also examined the extent of vegetation recommended to be conserved and provided advice on the establishment of complying Asset Protection Zones to the existing bushfire prone vegetation and the hazard created by the rehabilitation/retention of vegetation within the riparian corridors to Redbank Creek and Myrtle Creek and the conservation areas – refer to Figure 11.

The Study has reviewed the existing road network and has found that the public roads, except for the eastern section of Tickle Drive, provide safe access/egress for fire-fighters and the public during fire events in the local area.

The Study recommends that future subdivision of the land will require the preparation of a road master plan which provides perimeter road access to allotments which adjoin the existing/future bushfire hazard and that, except for lots not subdivided perimeter fire trails will not be accepted by the NSW Rural Fire Service.

The Study also recommends that a study be undertaken into the provision of a reticulated water supply for fire-fighting operations.

The objectives and scope of the Specialist Bushfire Study were to:

1. To assess the ability of the study sites as a whole to satisfy the requirements of existing legislation:

Response:

Future residential development within the study sites can satisfy the requirements of existing legislation provided that specific bushfire protection measures, including the provision of complying Asset Protection Zones, fire-fighting access and water supply provisions which comply with Planning for Bushfire Protection 2006 are met and construction standards to the future dwellings in accordance with A.S. 3959 – 2009 are applied.

2. To assess whether the statutory requirements of bushfire protection and management are capable of being met:

Response:

The statutory requirements of bushfire protection and management, pursuant to the deemed-to-satisfy provisions of Planning for Bushfire Protection 2006, are capable of being met.

3. To identify bushfire management needs that developer contributions should address:

Response:

Developer contributions may be required for the fuel management of conservation areas transferred into public ownership and upgrade of facilities/equipment of the fire-fighting authority.

4. Assess and identify the bushfire hazard and risk for future development of the land:

Response:

Refer to Figure 11 – Asset Protection Zones to future residential development.

5. Assess whether the future development of the study area is capable of compliance with the Wollondilly Bushfire Risk Management Plan, Section 117 Ministerial Direction No A.4, Planning for Bushfire Protection, NSW Rural Fires Act 1997 and RFS Planning for Bushfire Protection Guidelines 2006:

Response:

The future development of the study area is capable of compliance with the Wollondilly Bushfire Risk Management Plan, Section 117 Ministerial Direction No A.4, Planning for Bushfire Protection, NSW Rural Fires Act 1997 and RFS Planning for Bushfire Protection Guidelines 2006.

6. The Bushfire hazard and risk assessment needs to give due consideration to the likely rehabilitation of riparian corridors and the recommendations of the biodiversity study to preserve and enhance ecological communities on the study area:

Response:

Refer to Figure 11 and Section 4

7. Identify the potential risk and solutions to minimise the impact that bushfire protection/hazard reduction/asset management may have on threatened species and biodiversity values of the study area having regard to the Bushfire Environmental Assessment Code for NSW and Bushfire Hazard Reduction Assessment Guidelines:

Response:

Asset Protection Zones have been recommended in Section 4. These include separation from existing bushfire prone vegetation and rehabilitated conservation areas, including riparian corridors to Redbank Creek and Myrtle Creek.

The reference to having regard to the Bushfire Environmental Assessment Code for NSW and Bushfire Hazard Reduction Assessment Guidelines is not relevant as the recommended fire protection measures [APZs] are not located within areas of vegetation recommended for conservation and, for the purpose of providing protection to future dwellings, fuel management of the conservation areas is not required, therefore ensuring threatened species and biodiversity values of the study area are not impacted.

Further studies are required to identify:

- The extent of the retention of the identified Endangered Ecological Communities in order to determine whether this vegetation will present a bushfire hazard in the future;
- The extent of the Asset Protection Zones required to be implemented to address the hazard from the retained/rehabilitated EEC vegetation;
- The future subdivision pattern in order to refine the provision of Asset Protection Zones to the 'edge' of any retained and rehabilitated EEC vegetation;
- The road layout within the future residential development in order to provide satisfactory emergency service access, including the provision of perimeter roads and an internal road network which meets the access requirements of the NSW F.B. and the NSW Rural Fire Service;
- Investigation into the adequacy of the existing reticulated water supply in order to satisfy the provisions of A.S. 2419.1 – 2005.

Future subdivision proposals undertaken on Bushfire Prone Land will be required to comply with the deemed-to-satisfy provisions of *Planning for Bushfire Protection 2006* and will require a *Bushfire Safety Authority* issued by the Commissioner of the NSW Rural Fire Service pursuant to Section 100B of the *Rural Fires Act 1997*.



Graham Swain
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REFERENCES:

- N.S.W Rural Fire Service – *Planning for Bushfire Protection* 2006;
- *Environmental Planning & Assessment Act* – 1979;
- *Rural Fires Act* – 1997;
- *Rural Fires Regulation* 2008;
- NSW Rural Fire Service – *Guideline for Bushfire Prone Land Mapping* 2006;
- *Threatened Species Conservation Act* 1995;
- *Native Vegetation Act*;
- *Bushfire Environmental Assessment Code* 2006;
- Building Code of Australia;
- Australian Standard A.S 3959- 2009 "*Construction of Buildings in Bushfire Prone Areas*";
- *Biodiversity Study* – ACS Ecological Pty Ltd;
- *Wollondilly Bushfire Prone Land Map*.