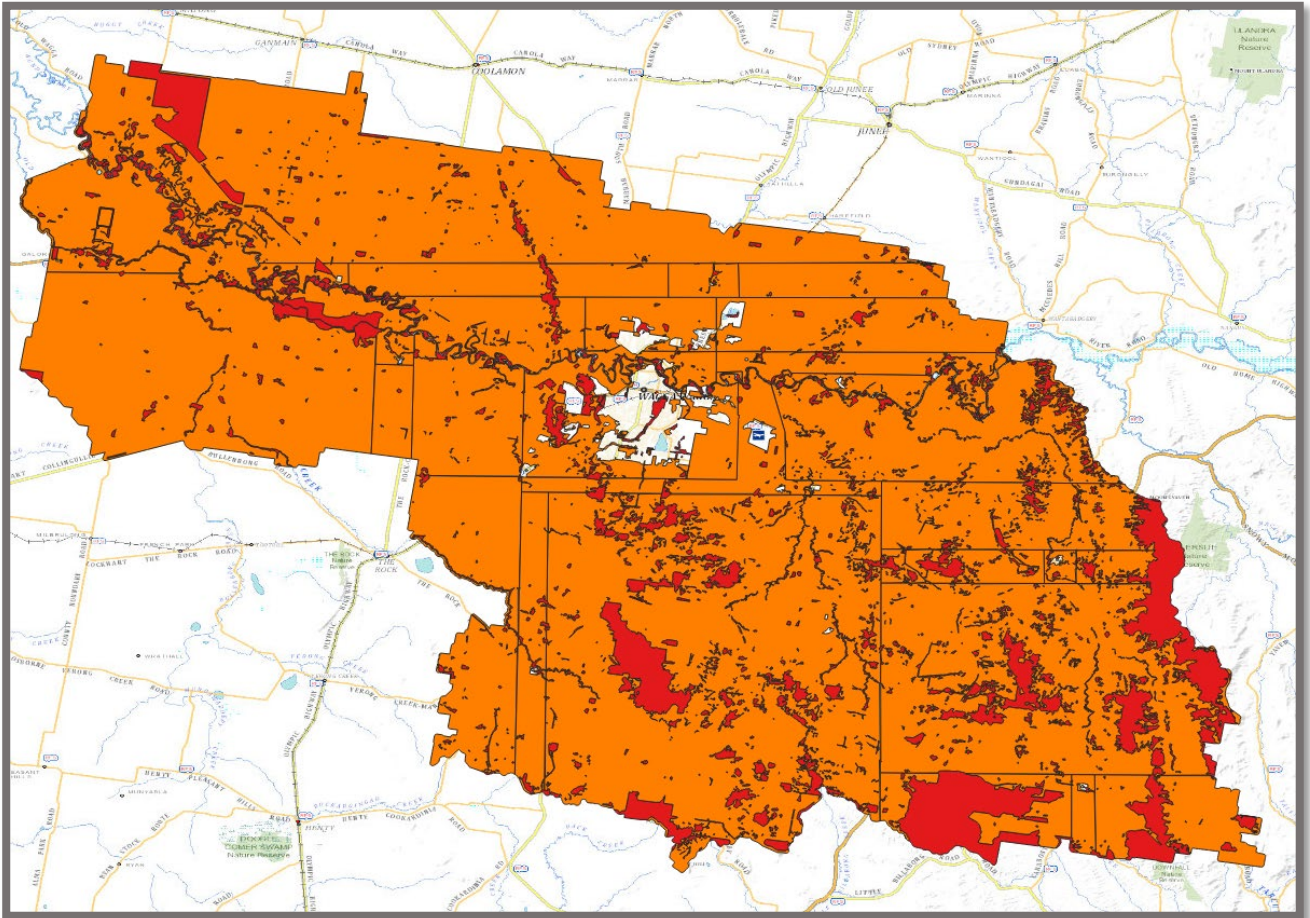


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Wagga Wagga City Council



Bushfire Prone Land Map Review

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The Client agrees that the Consultant shall have no liability in respect of any damage or loss incurred as a result of bushfire.



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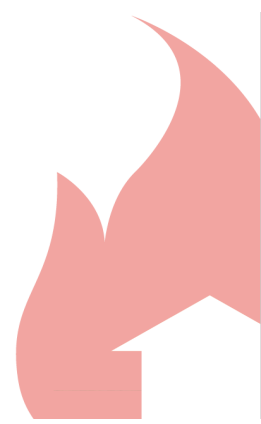
1. Introduction

On 1 August 2002, the *Rural Fires and Environmental Assessment Legislation Amendment Act 2002* amended the *Rural Fires Act 1997* and the *Environmental Planning and Assessment Act 1979* (EP&A Act) to provide significant improvements in bush fire safety. This included a requirement for local councils to prepare a bush fire prone land map identifying vegetation that has the potential to support a bush fire. The bush fire prone land map is the broad area and conservative trigger for the consideration of bush fire protection measures for new development. The actual application of *Planning for Bush Fire Protection* and Australian Standard 3959 – *Construction of buildings in Bushfire Prone Areas* is dependent on a more detailed site-specific assessment of each development to determine bushfire risk.

The Guide for Bushfire Prone Land Mapping (2015) provides councils with the methodology for assessing, mapping and categorising vegetation to achieve an accurate representation of potential bushfire risk. It also outlines the process for amendments to existing Bush Fire Prone Land Maps and certification by the Commissioner of the NSW Rural Fire Service.

Wagga Wagga City Council has undertaken a review of its current Bush Fire Prone Land (BFPL) Map and consulted with NSW Rural Fire Service over the proposed amendments. The Council is now requesting assessment by a qualified bushfire consultant to review its changes and determine if there are any clear inconsistencies between the draft map and the Guide for Bushfire Prone Land Mapping (2015) for the entire LGA, with specific attention given to pre-identified areas within the suburbs of Gumly, Lake Albert, Lloyd and Springvale.

This report provides consideration of the proposed draft Wagga Wagga BFPL map and suggests recommendations with regard to the map in its entirety and the areas specifically identified by Council for review.



2. Methodology

Following receipt of the Wagga Wagga BFPL and Cadastre datasets the entire Local Government Area (LGA), including areas specific to Gumly, Lake Albert, Lloyd and Springvale were assessed via desktop studies using:

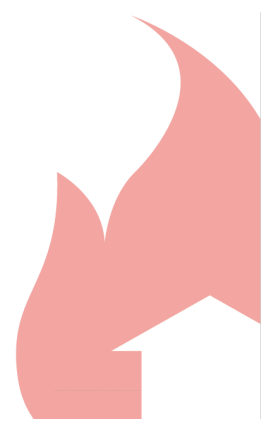
- Aerial imagery provided via Wagga Wagga City Council Intramaps (2020);
- The NSW Imagery Web Service (2017);
- Near Map (2022); and
- Google Maps, including street view (2022).

In order to identify inconsistencies between mapped vegetation categories and state-wide vegetation formations, comparisons were made between the Wagga Wagga BFPL Map and the "Vegetation Central Southern Map Service" (derived from the NSW Government SEED portal).

Comparisons were also made between the BFPL Map and Wagga Wagga LEP 2010 to identify current zoning and understand zoning objectives and land use potential.

A meeting was held with Council Officers Sam Robins and Lachlan Feeney on 29 April 2022 to discuss our recommendations for amendments to the BFPL Map. Following that meeting, the report was finalised and edits to the BFPL shapefile were made in QGIS and saved as "Reviewed Bushfire Prone Land". A buffer was not applied during this review as this is an automated process undertaken by the NSW Rural Fire Service, following confirmation of vegetation categories.

It should be noted that given the nature of the surrounding landscape, local climatic conditions, potential changes in agricultural practices and fast-moving nature of grass fires a more conservative approach was taken to reviewing and mapping bushfire prone land across the Wagga Wagga LGA. Findings and recommendations are examined in Section 3 of this report.



3. Results

3.1 The Broader Local Government Area

Assessment of the Vegetation Central Southern Map identified the presence of a mixture of formations including plantations, grassland and remnant woodland and forest communities (Table 1). These latter communities have been mapped largely in areas where there is the presence of riparian corridors, environmental conservation zones (in accordance with the Wagga Wagga LEP 2010) and agricultural areas which have not been cleared historically for crops or livestock.

Table 1: Vegetation Formations within the Wagga Wagga City Council LGA

Vegetation Central Southern Map	Vegetation Formation	Vegetation Category
Floodplain Transition Woodland	Grassy Woodland	Category 1
Western Slopes Grassy Woodlands	Grassy Woodland	Category 1
Riverine Sandhill Woodlands	Semi-arid Woodlands	Category 3
Inland Rocky Hill Woodlands	Semi-arid Woodlands	Category 3
Inland Riverine Forests	Forested Wetlands	Category 1
Western Slopes Dry Sclerophyll Forests	Dry Sclerophyll Forest	Category 1
Upper Riverina Dry Sclerophyll Forests	Dry Sclerophyll Forest	Category 1
Southern Tableland Dry Sclerophyll Forests	Dry Sclerophyll Forest	Category 1
Timber Plantation	Plantation	Category 1
Riverine Plain Grasslands	Grassland	Category 3
No data	Grassland	Category 3

By overlaying the BFPL Map on top of the vegetation map, it was determined, for the most part, that forest and woodland communities and timber plantations have been mapped as Category 1 vegetation. Smaller discontinuous pockets and linear corridors are excluded from Category 1 mapping but included under the broad brush of Category 3. Category 1 vegetation forms the highest

risk and is represented as red on the BFPL map with a 100m buffer. CR Bushfire concurs with Councils mapping.

Although not thoroughly captured by the SEED Portal, Grassland is considered the most prevalent vegetation community impacting the area and as a result the majority of the larger rural zoned land has been mapped as Category 3. These areas are represented by low open shrubland, isolated and disturbed woodland (consisting of a scattered canopy with grassy understorey), hummock and tussock grasslands, sown pastures and herb fields. Category 3 vegetation carries a medium risk of fire spread and is represented as dark orange on the Bushfire Prone Land Map with a 30m buffer. CR Bushfire concurs with Councils mapping.

With regards to mapping Category 3 vegetation, it was observed that Council had followed the property boundaries of large rural lots, without being more site specific. Assessment of this methodology and comparisons with other LGAs across the state identified that this form of mapping was the most appropriate due to inconsistencies in management regimes across each lot.

There was no Category 2 classification within the proposed Wagga Wagga BFPL map as a result of the lack of rainforests, remnant vegetation (less than 1 hectare in size) and areas of bushland with a shape that does not permit significant fire run and has an associated Plan of Management. CR Bushfire concurs with this result.

Areas excluded from the Wagga Wagga BFPL map include:

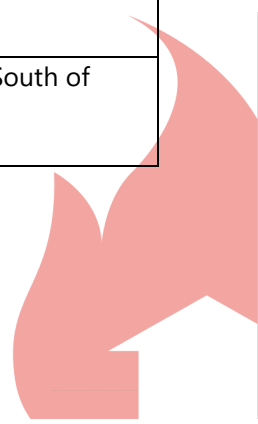
- the built-up environment around the city centre and adjacent suburbs (ie areas zoned Commercial and Industrial and Residential - low, medium, high and for the most part large lot);
- areas identified for urban development within the short term;
- larger blocks with managed garden beds and lawns with grass mown at or below 10cm in height including studs, golf courses, commercial nurseries and areas zoned for public recreation (ie reserves, ovals, parklands, nature strips); and
- non vegetated areas including waterways, roads, footpaths etc.

CR Bushfire concurs with Council's general mapping as this is consistent with the Guide for Bushfire Prone Land Mapping (2015).

3.2 Site Specific Areas

3.2.1 Gumly

Description	Gumly is located 8km northeast of the city centre and adjacent to the Murrumbidgee River. It typically comprises areas of large rural lots with smaller properties and mixed business along the Sturt Highway. Forest vegetation follows the riparian corridors with scattered canopy and grassland occupying the agricultural space.
Recommendation	Following a more in-depth review of the BFPL north of the Sturt Highway and South of Graham Avenue the following recommendations have been provided:

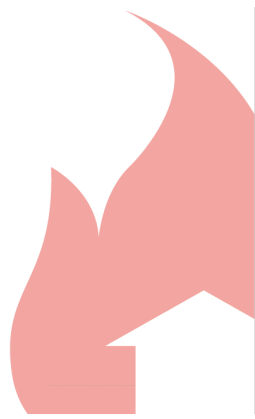
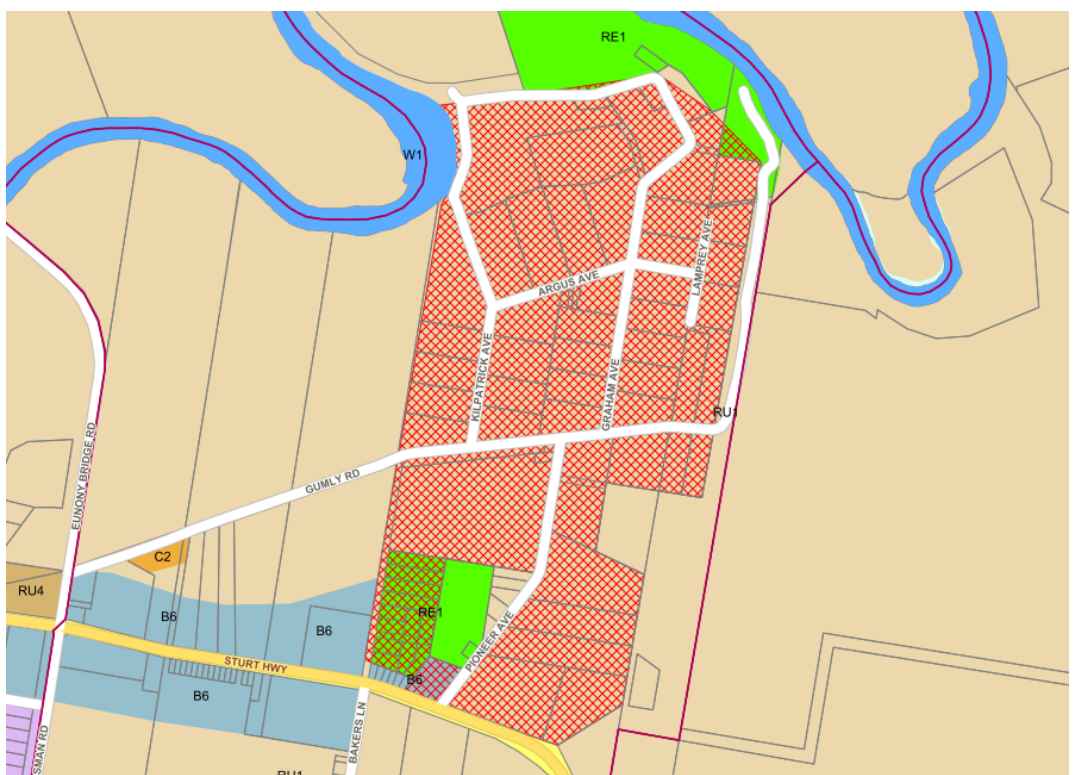


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- Due to inconsistencies in management of grassland along the eastern side of Pioneer Avenue, which are zoned RU1 Primary Production (Wagga Wagga LEP 2010), it is recommended that the properties be mapped as Category 3.
- In line with the vegetation mapping of Inland Riverine Forest north of Graham Avenue it is recommended that the Category 1 vegetation be extended across the riparian corridor.
- It was agreed that the smaller lots on the western side of Pioneer Avenue should remain unmapped. These lots will be captured by the Category 3 buffer applied to properties to the north and east.
- It was agreed that the B6 Enterprise Corridor and RE1 Public Recreation (signifying Gumly Oval Sports Complex) should not be mapped, due to likely management regimes.

Zoning

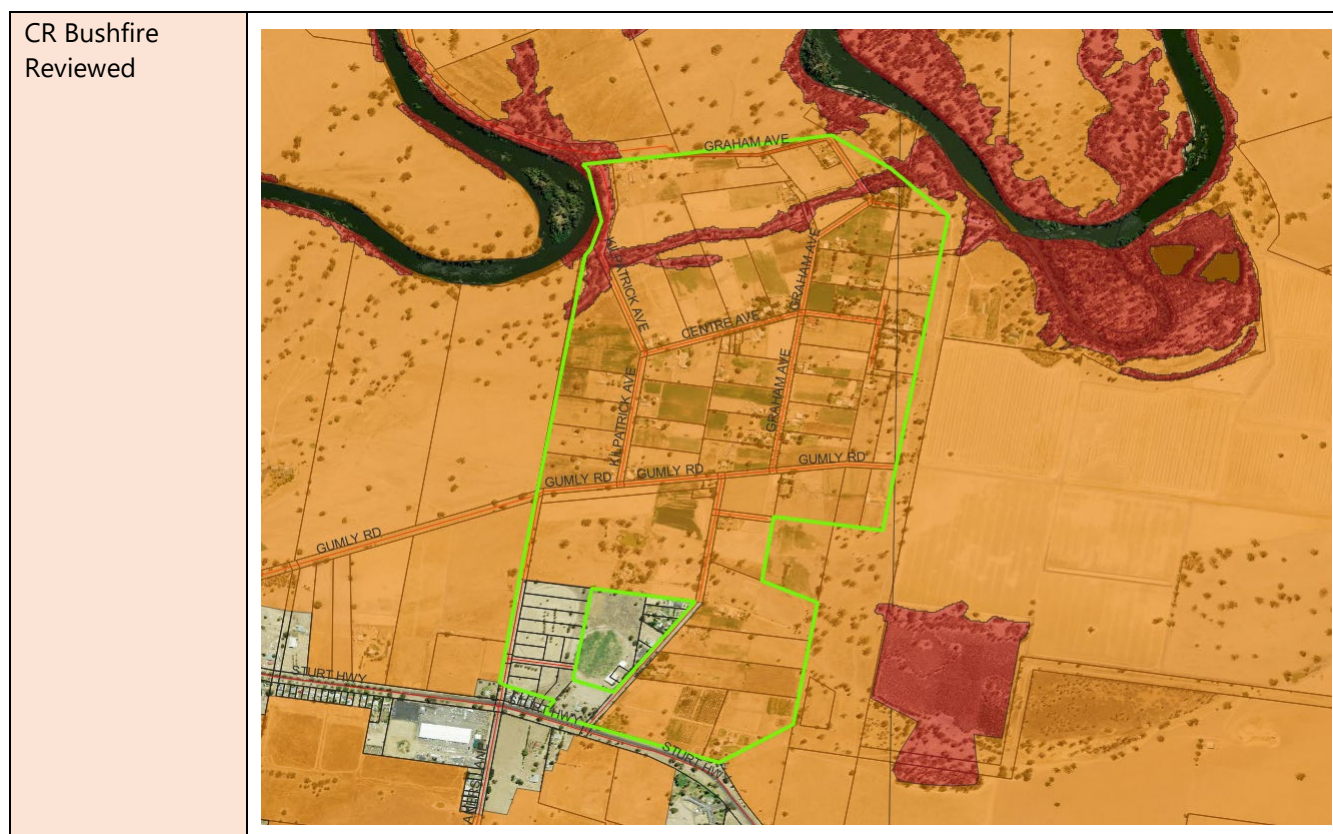


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Vegetation	
Council Reviewed	



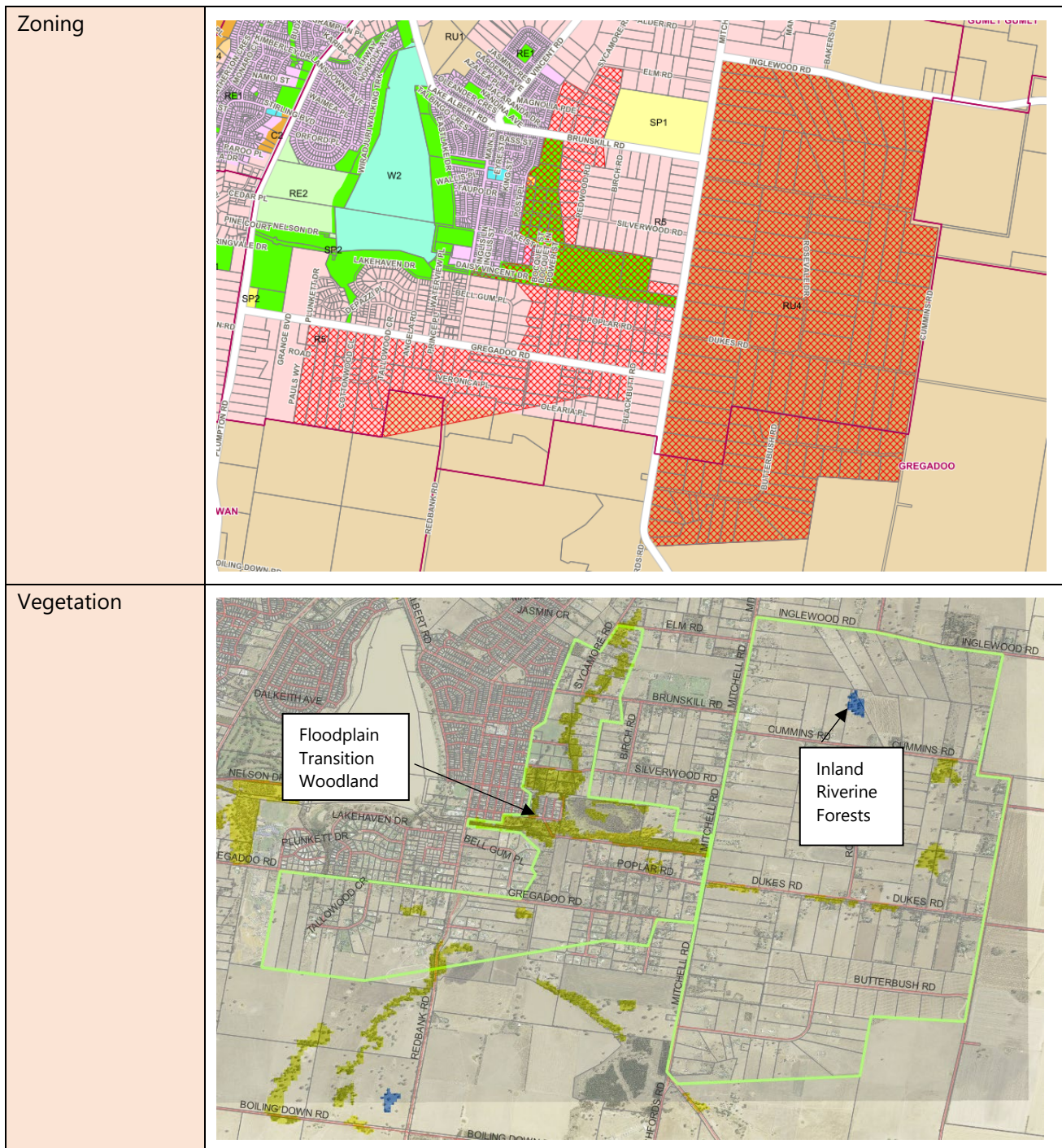


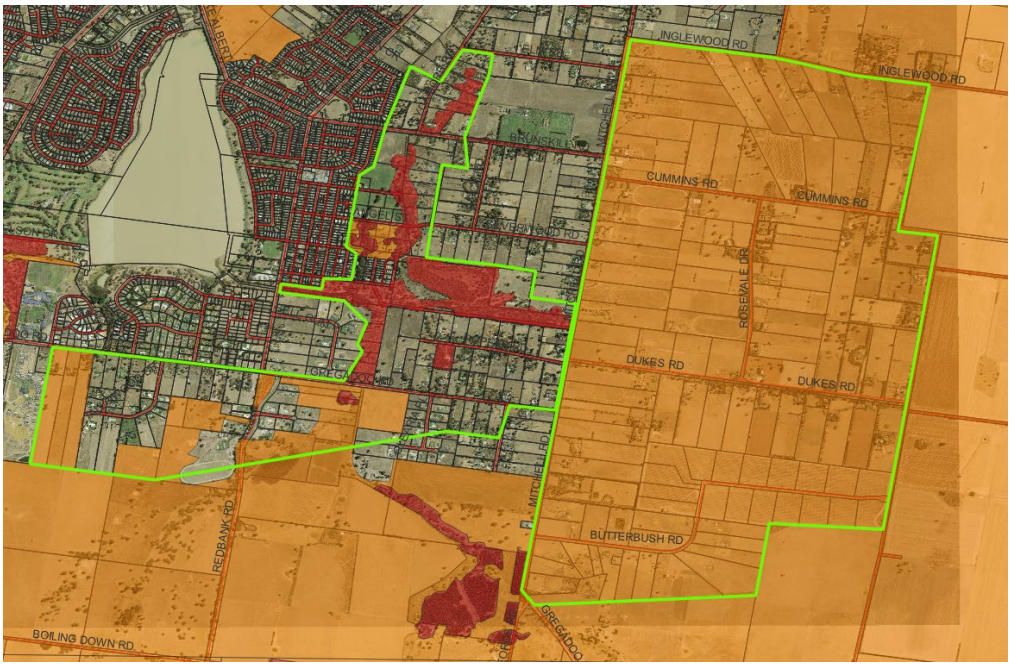
3.2.2 Lake Albert

Description	<p>Lake Albert is located on the eastern fringe of the city centre including the shores of Lake Albert. It is a primarily built-up suburb with mixed land uses including small and large lot residential, public recreation and larger rural properties located to its south and east. Pockets of woodland occupy private property and areas of public recreation with scattered canopy and tussock grasses prevailing on larger rural blocks.</p>
Recommendation	<p>Following a more in-depth review of the BFPL south of Inglewood Road and north of Boiling Down Road the following recommendations have been provided:</p> <ul style="list-style-type: none"> • It was agreed that properties on the eastern side of Mitchell Road that are zoned RU4 Primary Production small lots (in accordance with the Wagga Wagga LEP 2010) should be mapped as Category 3. There is a mixture of maintained paddocks versus unmaintained with long tussock grass (particularly along Cummins Road). • It is recommended that the already mapped Category 1 Vegetation (to the east of properties along Bell Gum Place) is extended further south to Gregadoo Road due to the presence of canopy and tall tussock grass, which appears to follow a natural drainage line. • It was agreed to keep the larger properties south of Gregadoo Road, which are zoned large lot residential, mapped as Category 3. • It was agreed to keep the single lot located on Poplar Road mapped as Category 1 vegetation due to varied management of properties along this road. Application of the 100m buffer will also capture adjacent properties in the same state.

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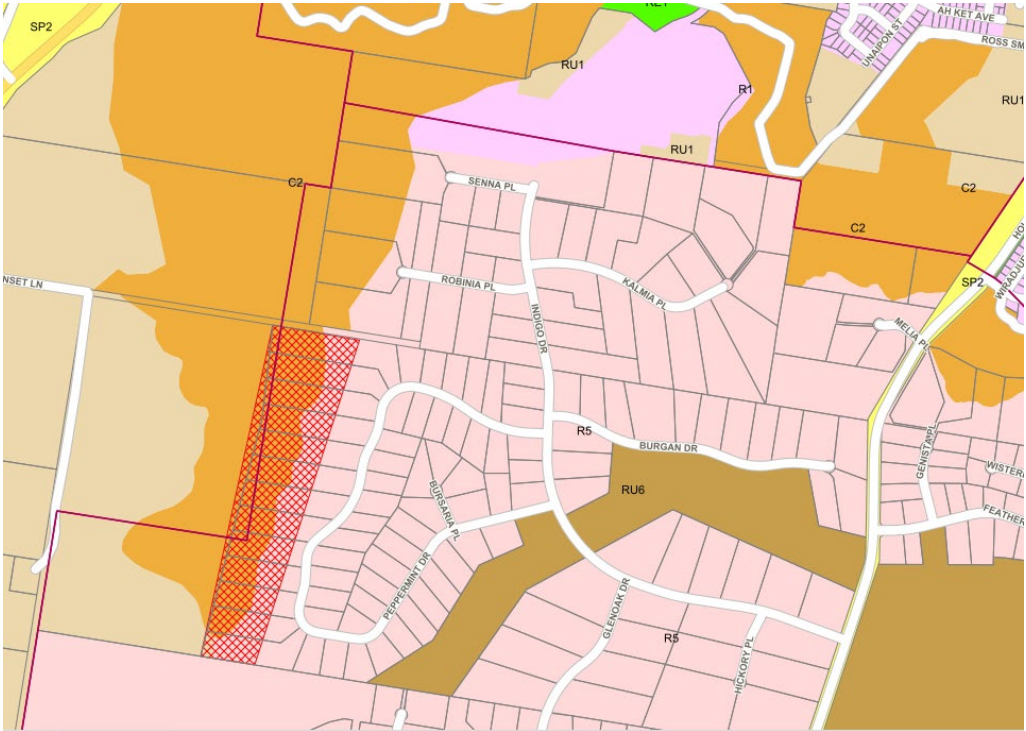
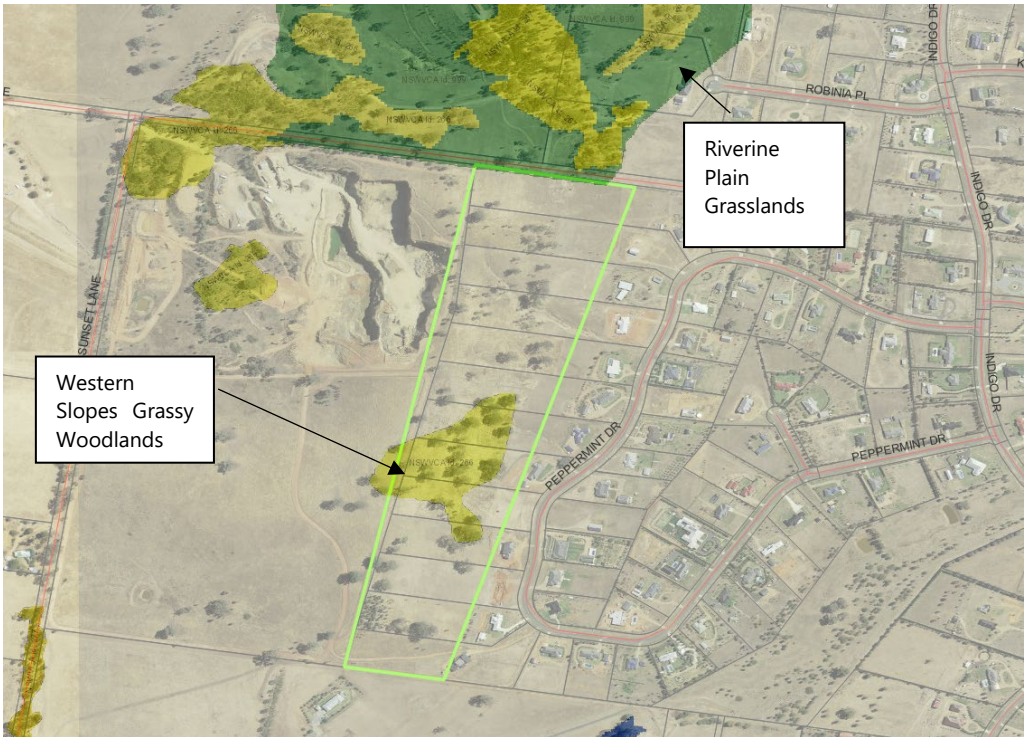
Council Reviewed	
CR Bushfire Reviewed	

3.2.3 Springvale

Description	Springvale is located southwest of the city centre. It is primarily comprised of large lot residential with small pockets of woodland and large areas of environmental conservation.
Recommendation	<p>Following a more in-depth review of the BFPL west of Peppermint and Indigo Drive the following recommendations have been provided:</p> <ul style="list-style-type: none"> It was agreed to extend Category 3 vegetation to the C2 Environmental Conservation Zone located on properties west of Peppermint Drive.

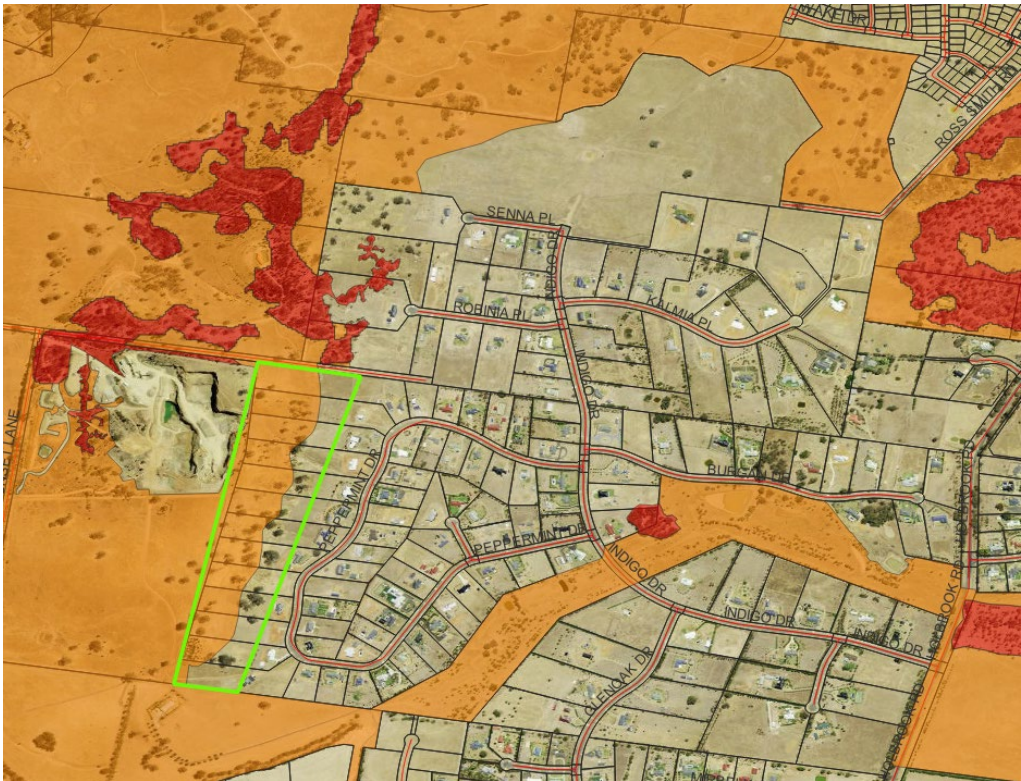
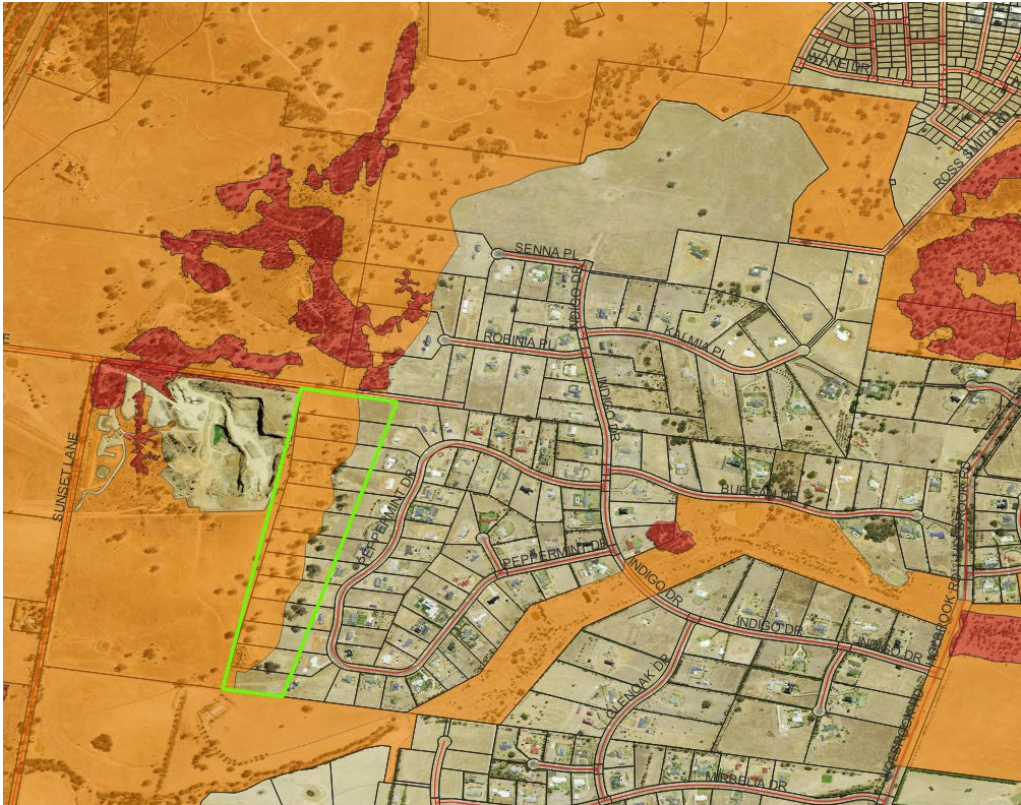
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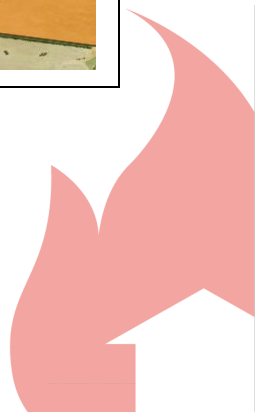
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	<ul style="list-style-type: none"> In order to be consistent, it was also recommended that Council extends the Category 3 vegetation north of Sunset Lane to Senna Place to also follow the C2 Environmental Conservation Zone. The management objectives of C2 are to prevent development and restore the ecological values of the area. By mapping these areas Council is being consistent with the requirements of the Guide for Bushfire Prone Land Mapping (2015).
Zoning	
Vegetation	

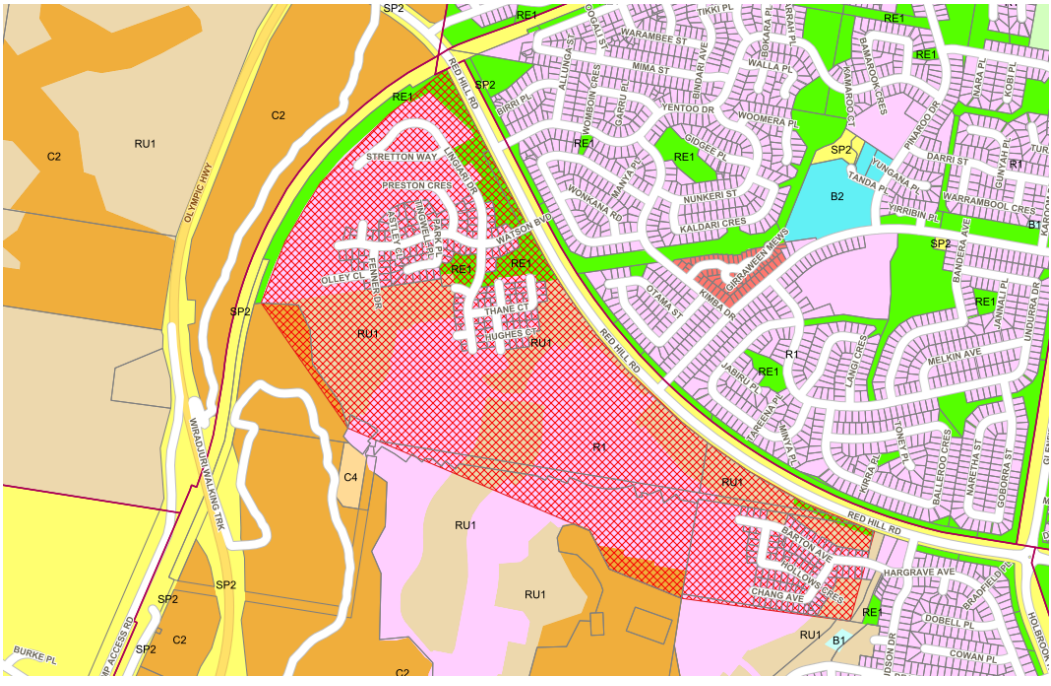
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Council Reviewed	
CR Bushfire Reviewed	

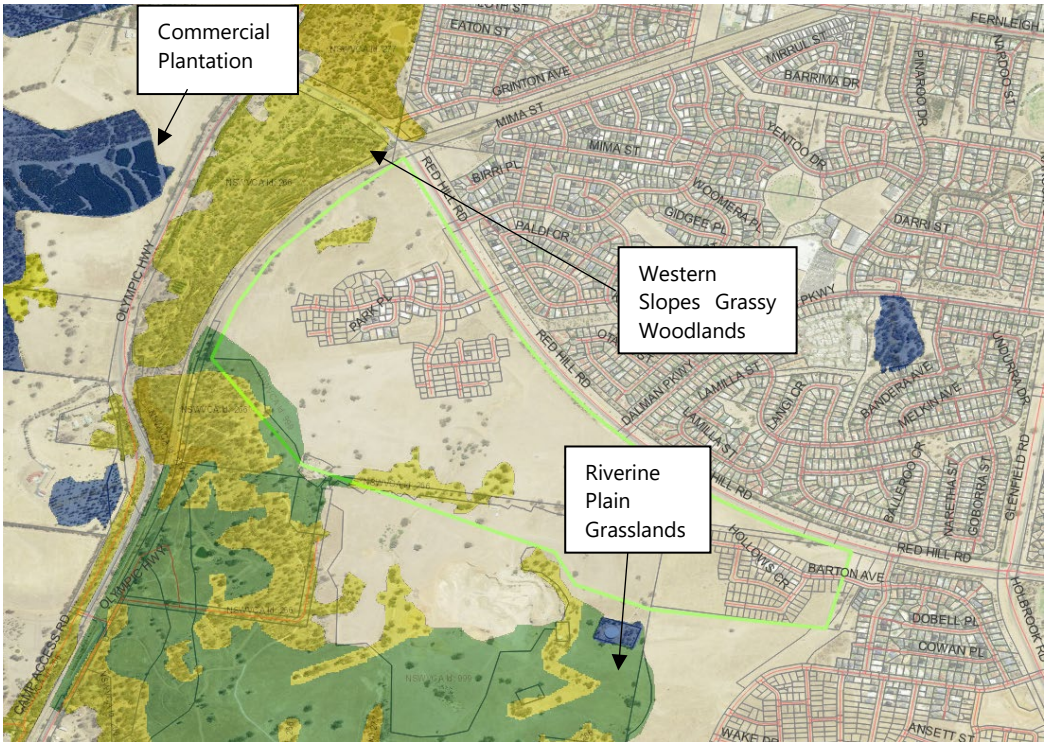
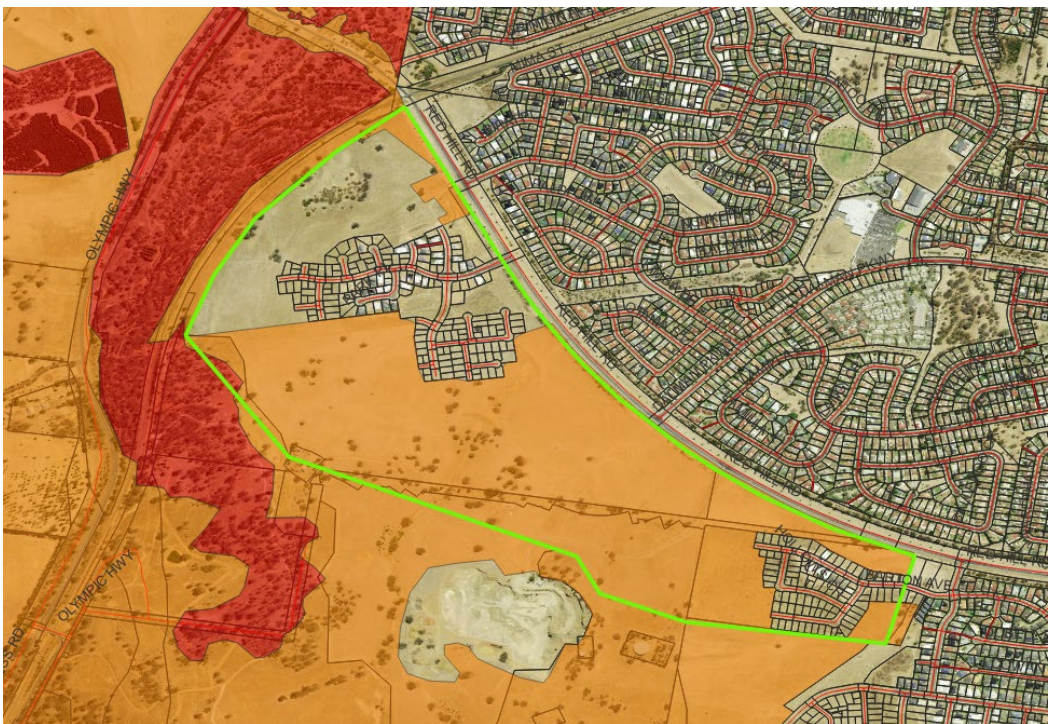


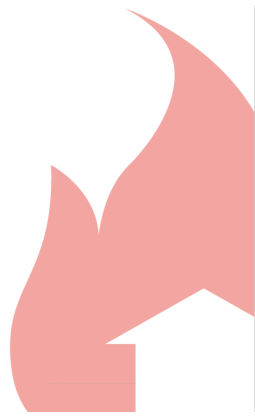
3.3.4 Lloyd

Description	Lloyd is located west of the city centre adjacent to the Olympic Highway. It has a mixture of residential and rural land uses with conservation zoning. Expanding residential development has already begun on urban release areas south of Red Hill Road. Pockets of natural vegetation consisting of mature trees occur throughout the suburb. A quarry and associated infrastructure is located in the Lloyd and Springvale areas.
Recommendation	<p>Following a more in-depth review of BFPL between the Olympic Highway and Red Hill Road the following recommendations have been provided:</p> <ul style="list-style-type: none"> It was recommended to remove the Category 3 vegetation north and east of Stretton Way. Mapping these zoned public recreation areas is inconsistent with other areas of Wagga Wagga City Council where the RE1 Public Recreation has not been mapped as Bushfire Prone. It is understood Council will be responsible for the ownership and future management of these areas. The Category 1 vegetation buffer applied to mapped vegetation north of the railway line will capture development within 100 metres and overlap the original 30 metre buffer that would have been provided in association with the Category 3 mapping.
Zoning	

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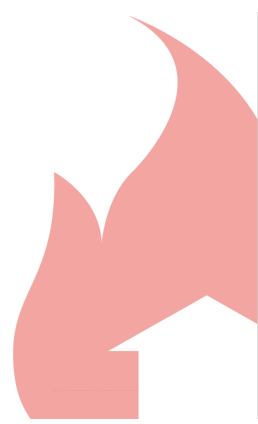
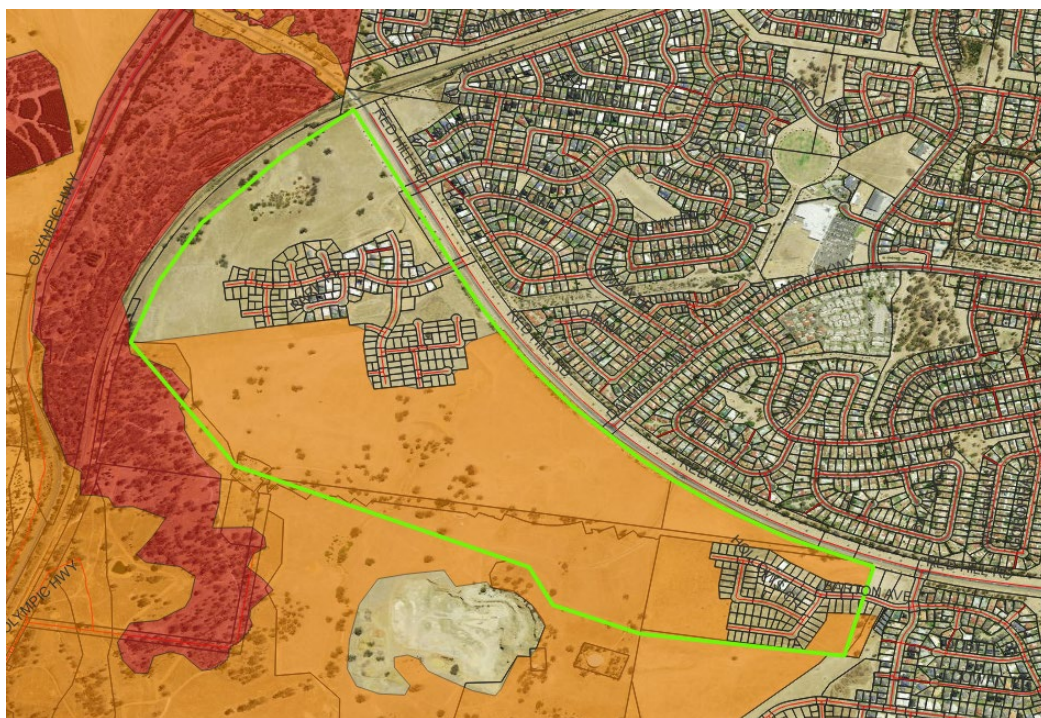
<p>Vegetation</p>	 <p>This map displays three distinct vegetation areas. 'Commercial Plantation' is indicated by a black arrow pointing to a green-shaded area on the left. 'Western Slopes Grassy Woodlands' is indicated by a black arrow pointing to a yellow-green shaded area in the center. 'Riverine Plain Grasslands' is indicated by a black arrow pointing to a light green shaded area at the bottom. The map also shows surrounding residential streets and the Olympic Highway.</p>
<p>Council Reviewed</p>	 <p>This map shows the same area as the first map, but with a large portion of the vegetation area highlighted in red, indicating the council-reviewed zone. The red area covers the western slopes and extends towards the riverine plain. The surrounding residential area and Olympic Highway are also visible.</p>



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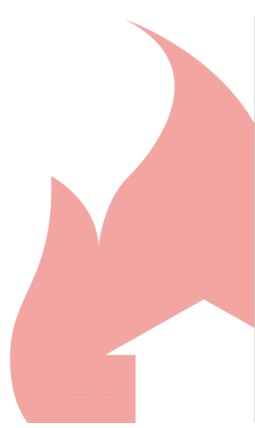
4. Conclusion

Review of the Wagga Wagga City Council BFPL Map revealed no major anomalies in the data nor in the methodology used to map Category 1 and Category 3 vegetation. Use of vegetation maps and determination on Categorisation dependent on vegetation density, riparian corridors and conservation value has provided an accurate assessment and representation of fire risk potential across the LGA and the application of bushfire planning policies for new development.

It was agreed the broad-brush approach of mapping Category 3 vegetation to property boundaries was the only way to ensure appropriate mitigation measures are captured and potential fire risk is addressed, due to the inconsistencies in management regimes across rural zoned land. Review of other LGAs BFPL maps show this methodology to be consistent across the State.

The bush fire prone land map is the broad area and conservative trigger for the consideration of bush fire protection measures for new development. The actual application of *Planning for Bush Fire Protection* and Australian Standard 3959 – *Construction of buildings in Bushfire Prone Areas* is dependent on a more detailed site-specific assessment of each development to determine bushfire risk and appropriate application of bushfire deeming provisions.

Areas excluded from mapping were consistent with the Guide for Bushfire Prone Land Mapping (2015) as they represented residential zoned properties, commercial and industrial zonings, and public recreation that assume managed land with grass mown at or below 10cm in height.



5. References

Google Maps <https://www.google.com.au/maps>

Keith D (2004) *Ocean Shores to Desert Dunes*, Department of Environment and Conservations Sydney.

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Standards Australia and Australian Building Codes Board (2018) *AS 3959 Construction of buildings in bushfire prone areas*.

The Central Resource of Sharing and Enabling Environmental Data in NSW – NSW Government SEED Portal https://geo.seed.nsw.gov.au/Public_Viewers/index.html?viewer=Public_Viewers&locale=en-AU

Wagga Wagga City Council IntraMaps

Wagga Wagga Local Environmental Plan (2010) <https://legislation.nsw.gov.au/view/pdf/asmade/epi-2010-378>

