

Assessment of the Growth Areas Authority Investigation Areas in Melbourne's West

Section A:

Appendix 6

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Authors:

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Project No: 7813

APPENDIX 6

Opportunities for Vegetation Retention and Biodiversity Management

A6.1 Defining Key Areas

The future proposed land use within Section A may result in significant impacts to existing biodiversity values by (amongst other factors):

- the permanent removal of some native species and their habitats;
- the division of native species populations into genetically and geographically isolated smaller populations;
- changes to wildlife behaviour;
- disturbance to soil; and
- landscape level changes to water supply, movement and quality.

A number of aspects were considered when determining how Key Areas within the Melton/Wyndham Investigation Area should be defined. It is important that biodiversity values within Key Areas should be viable in the long term and that more mobile species, particularly rare or threatened species should have access to a network of suitable environments connected through a series of habitat corridors.

Designation of Key Areas based on these concepts will minimise the risks of extinction during extreme environmental conditions such as fire and drought, or in association with future climate change.

The Victorian Volcanic Plain supports nationally significant values such as NTGVVP, Spiny Rice-flower and Golden Sun Moth (listed as critically endangered), Grassland Earless Dragon and Swift Parrot *Lathamus discolor* (listed as endangered), Striped Legless Lizard, Plains-wanderer, Australian Painted Snipe, Large-fruit Fireweed, River Swamp Wallaby-grass *Amphibromus fluitans* and Growling Grass Frog. All of these are matters of National Environmental Significance protected under the EPBC Act. These values should remain a conservation focus of ecological reserves within the region.

With the above concepts in mind, Key Areas within the Melton/Wyndham Investigation Area were defined using the following criteria:

- Large areas (more than 10 ha of contiguous native vegetation of Very High conservation significance);

- Areas providing habitat connectivity as either corridors or stepping stones; and
- Smaller areas (less than 10 ha) with a Site Condition score of >50 or areas that support significant populations of threatened species.

This assessment of Key Areas applies only to areas that have been subject to on-ground mapping and habitat hectare assessments as part of the original Melton/Wyndham Investigation. Areas within Section A where on-ground access was unable to be obtained have been subject to reconnaissance level surveys only, and have been excluded from the assessment of Key Areas as outlined above. It must be noted that patches of native vegetation that would meet the Key Area criteria are almost certainly present within these areas.

A6.2 Management Zones

Areas shown as Management Zones on Figure A6 include sites that are necessary to support the viability and protect values present within Key Areas.

Ecologically sound design of conservation reserves requires that patches are buffered from conflicting land uses and the boundary or edge zone is minimised with a view to protecting the good quality vegetation and/or habitat present. Protection of Key Areas through the use of best practice design of development areas, such as designing perimeter single fronted roads rather than the rear boundary of private land to abut all edges of reserves, should also be adopted. Application of these principles also reduces the effort (and cost) required for reserve management, through minimising edge effects such as weed invasion.

With the exception of PFI 52401427 and PFI 52401381, which are areas of highly significant native vegetation, areas mapped as Management Zones indicated on Figure A6 also include more degraded areas and small areas of Highly Likely Native Vegetation embedded within or along the edge of Key Areas. They are variously composed of a mix of native vegetation and Degraded Treeless Vegetation, however regardless of vegetation type, these areas are identified as the minimum necessary inclusions for protection and management of any Key Areas which may be retained for conservation.

Large areas identified as *Highly Likely Native Vegetation* between Key Areas 1 and 2 would provide a link between the two Key Areas.

A6.3 Management of Key Areas

The Key Areas identified within Section A consist of largely contiguous remnants of native vegetation supporting a range of conservation values.

Maintaining viable populations of both common and threatened species and

landscape scale examples of the threatened grasslands community require the protection of large areas supporting the best examples of remnant native vegetation within the broader Melton/Wyndham Investigation Area. In turn this also provides the best opportunity for the protection of large populations and allows active ecological management to occur without introducing significant threats to sensitive species. It is only in the context of large scale reserves the grassland flora and fauna will be able to survive and flourish. As such the process of defining key areas is largely based on a philosophy of bigger is better.

A6.4 Offset prescriptions

With the expansion of the UGB, impacts to threatened native vegetation communities, primarily Plains Grassland, will be unavoidable. The main mitigation measure for any impacts on any EVC will be the implementation of the Framework and generating the prescribed habitat hectare offsets. The most efficient way to generate such offsets is to bring substantial areas of Very High conservation significance vegetation into the conservation estate as this generates significantly more gains than retaining native vegetation within private ownership.

Two scenarios are outlined below, the complete loss of all native vegetation within Section A and the loss of all native vegetation except for the Key Areas identified in Section 5.

A6.5 Losses assuming all vegetation removal

The following offset calculations are based on the assumption that all native vegetation within Section A would be cleared in association with the expansion of the Melbourne UGB.

A6.5.1 Habitat Hectare Offsets

The habitat hectare offsets prescribed for the complete loss of native vegetation assessed during the Melton/Wyndham Investigation within Section A are documented in Table A6.1 and Appendix 4. In summary, the Framework (NRE 2002) prescribes an offset of **11.14 hha** of High conservation significance (HCS) and **2743.51 hha** of Very High conservation significance (VHCS) vegetation within Section A.

The 'like-for-like' criteria prescribed under the Framework to offset permitted clearing requires the vegetation gains from an offset to be commensurate (or equal) to the vegetation loss in terms of habitat and vegetation type, landscape role and quality. In practical terms, this means that if the *highest* significance rating of the native vegetation being removed is triggered by the presence

of habitat for a particular threatened species (or community), then the offset should provide habitat for the same threatened species (or community) (DSE 2007). Advice from DSE (Kim Lowe, Director Ecosystem Services 26/03/09) indicate that the same habitat type should only be considered as a like-for-like offset when habitat for a particular threatened species is driving the *highest* conservation significance rating for the loss. Otherwise, where offsets are sought for vegetation of VHCS, the offset must reflect the same EVC as the approved loss.

Table A6.1: Prescribed offsets for the loss of native vegetation within Section A assessed during the Melton/Wyndham Investigation.

EVC	Hha	Conservation Significance	Reason	Offset Multiplier	Prescribed Offset (hha)
<i>Low-rainfall</i> Plains Grassland	7.23	High	Vegetation Types*	1.5	10.85
	1297.47	Very High	Vegetation Types*	2	2594.94
	4.24	Very High	Best 50% Golden Sun Moth	2	8.48
Creekline Tussock Grassland	0.47	Very High	Vegetation Types*	2	0.94
Stony Knoll Shrubland	0.19	High	Vegetation Types*	1.5	0.29
	20.48	Very High	Vegetation Types*	2	40.96
Plains Grassy Wetland	48.62	Very High	Vegetation Types*	2	97.24
Creekline Grassy Woodland	0.47	Very High	Vegetation Types*	2	0.94
Total	1379.18				2754.64

*Vegetation Types = Conservation Status x Habitat Score

Where provided offsets have a higher conservation significance than that of the vegetation approved for clearing, the offset does not have to be the same vegetation type or provide the same habitat for rare or threatened species. The offset prescription is also proportionally reduced (NRE 2002, Table 6). For example, offsetting losses of High conservation significance vegetation with Very High conservation significance vegetation will reduce the offset prescription for this vegetation by one quarter.

Therefore, the lowest like-for-like offset prescription for the complete loss of native vegetation within Section A is as follows:

- 8.36 hha of VHCS from any EVC;
- 2594.94 hha of VHCS *Low-rainfall* Plains Grassland;
- 0.94 hha of VHCS Creekline Tussock Grassland;

- 40.96 hha of VHCS Stony Knoll Shrubland;
- 97.24 hha of VHCS Plains Grassy Wetland;
- 0.94 hha of VHCS Creekline Grassy Woodland; and
- 8.48 hha of VHCS habitat for Golden Sun Moth

A6.5.2 Large Old Trees within Patches

Offsets for unavoidable tree losses, consisting of Very Large Old Trees (VLOTs) and Large Old Trees (LOTs) both inside and outside patches and all tree size classes outside patches, are calculated according to the Port Phillip and Western Port Native Vegetation Plan (PPWCMA 2006). The permitted clearing of VLOTs or LOTs within VHCS patches of native vegetation require the permanent protection of 8 other Large Old Trees, and recruitment of 40 new trees for each Large or Very Large Old tree removed.

Section A contains 2 VLOTs and 11 LOTs in Creekline Grassy Woodland patches of VHCS (Habitat ID# 52401429 – Sites 7A, 8A & 9A). The offset prescription for the total loss of these trees would be:

- Permanent protection of 104 LOTs; and
- Recruitment of 520 new trees.

Aerial photography analysis indicates the presence of additional LOTs in an adjacent area, which has been identified as *Highly Likely Native Vegetation* in the reconnaissance level survey. These are not included in the above offset prescription, however should also be considered in line with the requirements of the Framework (NRE 2002).

A6.5.3 Scattered Tree Offsets

These guidelines indicate the following offset requirements for loss of each scattered tree of HCS as shown below:

Tree size	Protect and recruit option	Recruit only option
Very Large	Protect 5 Very Large Old Trees (VLOTs) and recruit 30 new plants	Recruit 180 new plants
Large	Protect 4 Large Old Trees (LOTs) and recruit 20 new plants	Recruit 120 new plants
Medium	Protect 2 Medium Old Trees (MOTs) and recruit 20 new plants	Recruit 60 new plants
Small	Not applicable	As per graph (Figure 7) in PPWCMA (2006)

If all scattered trees within Section A were permitted to be cleared, the following

offsets would apply:

Tree size (losses)	Protect and recruit option	Recruit only option
Very Large (0)	None	None
Large (1)	Protect 4 LOTs and recruit 20 new plants	Recruit 120 new plants
Medium (1)	Protect 2 MLOTs and recruit 20 new plants	Recruit 60 new plants
Small (0)	None	None

Further survey of areas not accessed as part of the Melton/Wyndham investigation may reveal the presence of additional scattered Large Old Trees. If present, they should also be considered in line with the requirements of the Framework (NRE 2002).

A6.6 Key Area Protection

Identification of Key Areas within Section A provides opportunities for the precinct planning process to consider and implement the 3-step process of avoid, minimise and offset. Retention of all Key Areas and Management Zones identified in this section would result in an offset prescription saving of 8.36 hha of VHCS from any EVC; 2591.64 hha of VHCS *Low-rainfall* Plains Grassland; 0.94 hha of VHCS Creekline Tussock Grassland; 40.96 hha of VHCS Stony Knoll Shrubland; 97.24 hha of VHCS Plains Grassy Wetland; 0.94 hha of VHCS Creekline Grassy Woodland and 8.48 hha of VHCS habitat for Golden Sun Moth.

Protection of the Key Areas and Management Zones identified in this report would result in significantly lower offset requirements for the development of Section A.

A6.6.1 Habitat Hectare Offsets

The habitat hectare offsets prescribed for the loss of assessed native vegetation outside of the Key Areas and Management Zones within Section A are documented in Table A6.2 and Appendix 4. Almost all native vegetation within Section A is contained within Key Areas or Management Zones, and therefore the loss of native vegetation outside these areas is minimal. In the event that all Key Areas and Management Zones are retained the Framework prescribes an offset of **0.00 hha** of High conservation significance (HCS) and **3.30 hha** of Very High conservation significance (VHCS) for loss of remaining indigenous vegetation within areas assessed during the Melton/Wyndham Investigation (Appendix 4).

Table A6.2: Prescribed offsets for the loss of assessed native vegetation, excluding the Key Areas and Management Zones, within Section A.

EVC	Hha	Conservation Significance	Reason	Offset Multiplier	Prescribed Offset (hha)
<i>Low-rainfall</i> Plains Grassland	0.00	High	Vegetation Types*	1.5	0.00
	1.65	Very High	Vegetation Types*	2	3.30
	0.00	Very High	Best 50% Golden Sun Moth	2	0.00
Creekline Tussock Grassland	0.00	Very High	Vegetation Types*	2	0.00
Stony Knoll Shrubland	0.00	High	Vegetation Types*	1.5	0.00
	0.00	Very High	Vegetation Types*	2	0.00
Plains Grassy Wetland	0.00	Very High	Vegetation Types*	2	0.00
Creekline Grassy Woodland	0.00	Very High	Vegetation Types*	2	0.00
Total	1.65				3.30

*Vegetation Types = Conservation Status x Habitat Score

The lowest like-for-like offset prescription for the complete loss of native vegetation (excluding all Key Areas and Management Zones) within Section A is 3.30 hha of VHCS *Low-rainfall* Plains Grassland.

Retention of all Key Areas and Management Zones within Section A as above would result in an offset prescription saving of 8.36 hha of VHCS from any EVC; 2591.64 hha of VHCS *Low-rainfall* Plains Grassland; 0.94 hha of VHCS Creekline Tussock Grassland; 40.96 hha of VHCS Stony Knoll Shrubland; 97.24 hha of VHCS Plains Grassy Wetland; 0.94 hha of VHCS Creekline Grassy Woodland and 8.48 hha of VHCS habitat for Golden Sun Moth.

A6.6.2 Large Old Trees within Patches

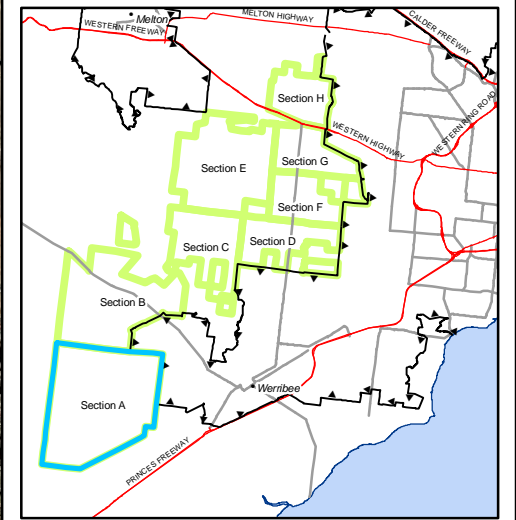
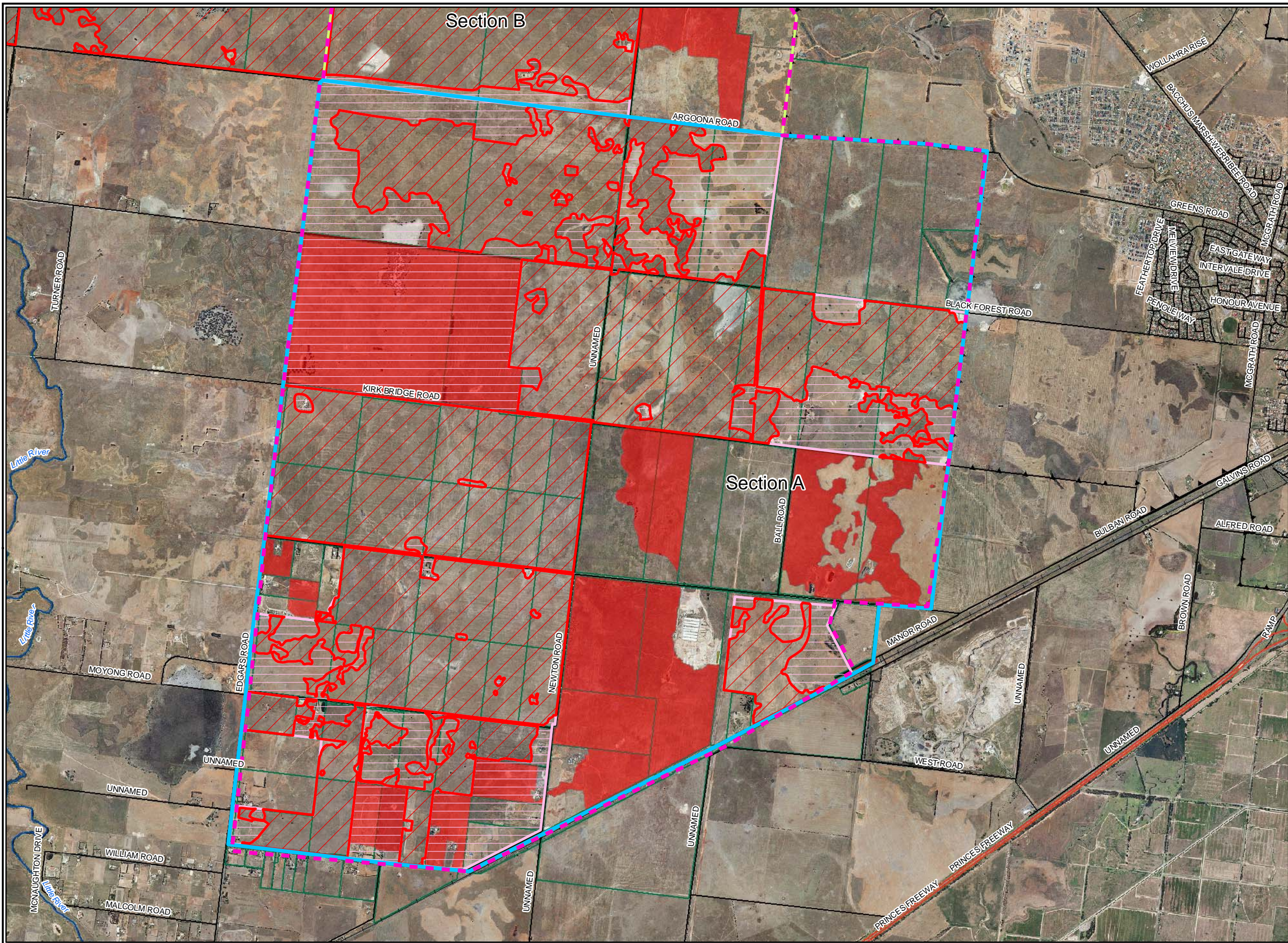
All patches containing LOTs within Section A are contained within Key Areas/Management Zones. Therefore, in the event that all Key Areas and Management Zones are retained, no offsets for loss of LOTs within patches of native vegetation would apply.

A6.6.3 Scattered Tree Offsets

All scattered trees within Section A are contained within Key Areas or Management Zones. Therefore, in the event that all Key Areas and Management Zones are retained no scattered tree offsets would apply.

Figures for Appendix 6

Significant vegetation or Key Areas within assessed areas of Section A



Legend

Key Ecological Areas

Management Zones

Reconnaissance Assessment

Highly Likely Native Vegetation - Grassy

Section A

Section boundary

Urban Growth Boundary

Melton/Wyndham Investigation Area

Parcels



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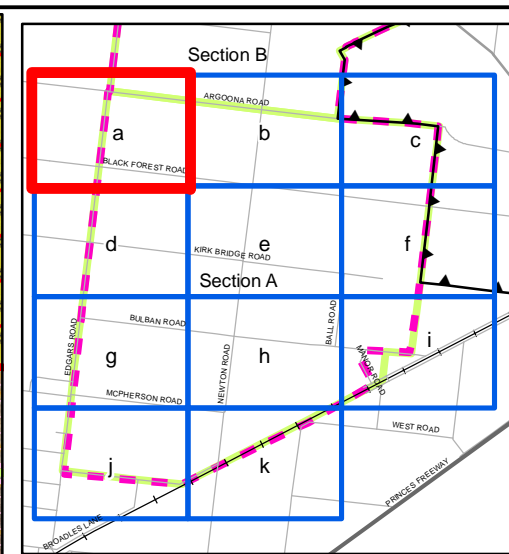
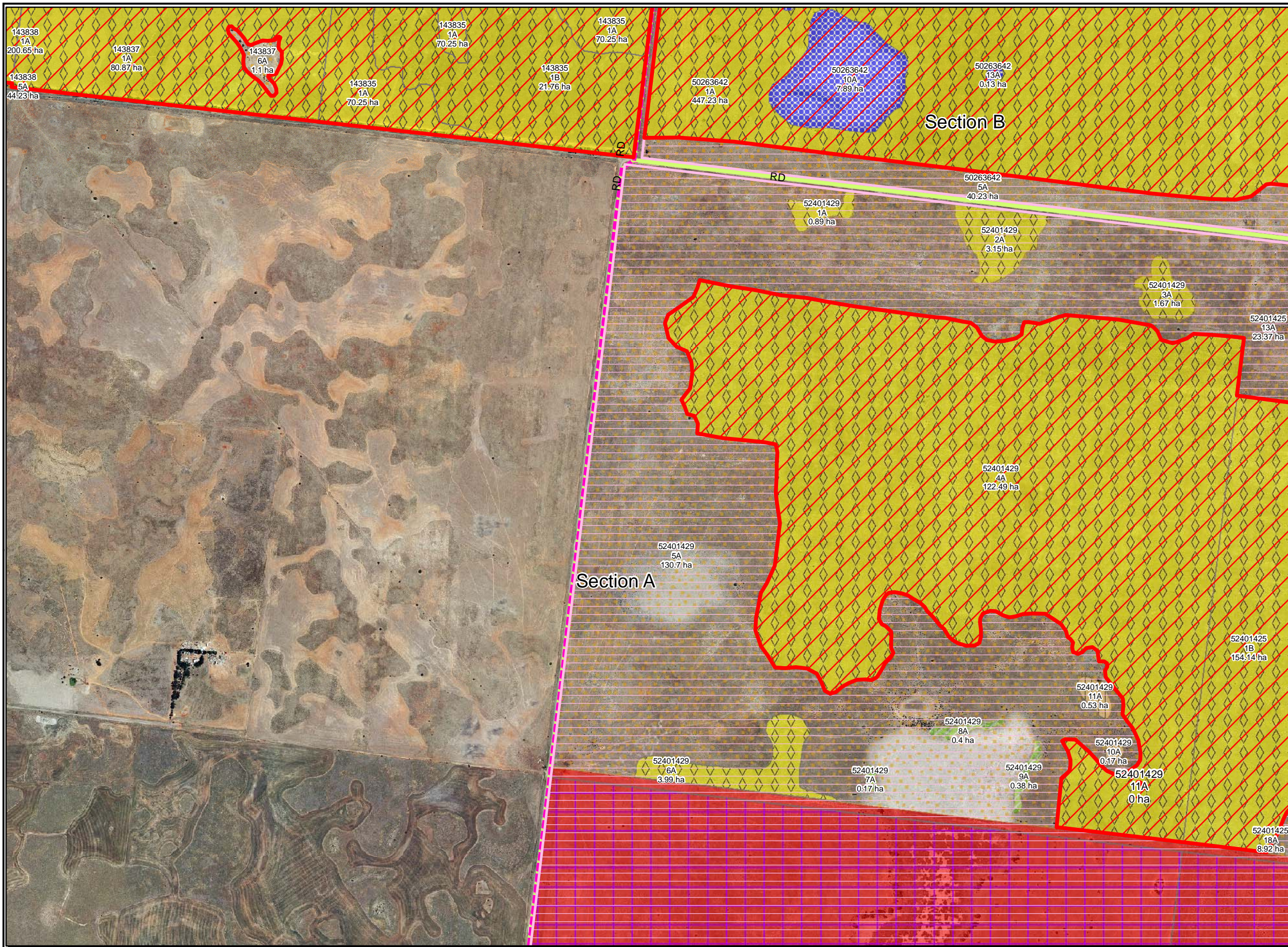
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Appendix 6 - Figure 1: Overview of Key Ecological Areas and areas of Highly Likely Native Vegetation from Reconnaissance Assessment, Section A

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Location: ...7813\Mapping\Section A\7813 A6 Section A Fig 1.mxd





Legend

- Key Ecological Area
- Management zone
- EVC**
 - 125 Plains Grassy Wetland
 - 132_63 Low-rainfall Plains Grassland
 - 649 Stony Knoll Shrubland
 - 654 Creekline Tussock Grassland
 - 68 Creekline Grassy Woodland
 - Degraded Treeless Vegetation
- Reconnaissance Survey**
 - Highly Likely Native Vegetation - Grassy
 - Possible Native Vegetation
 - No Native Vegetation
- Urban Growth Boundary
- Section boundary
- Melton/Wyndham Investigation Area
- Access status for properties not assessed**
 - Access Denied
 - Access unable to be obtained



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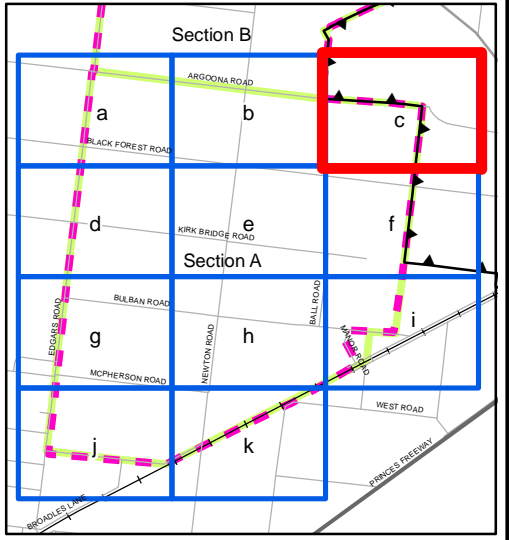
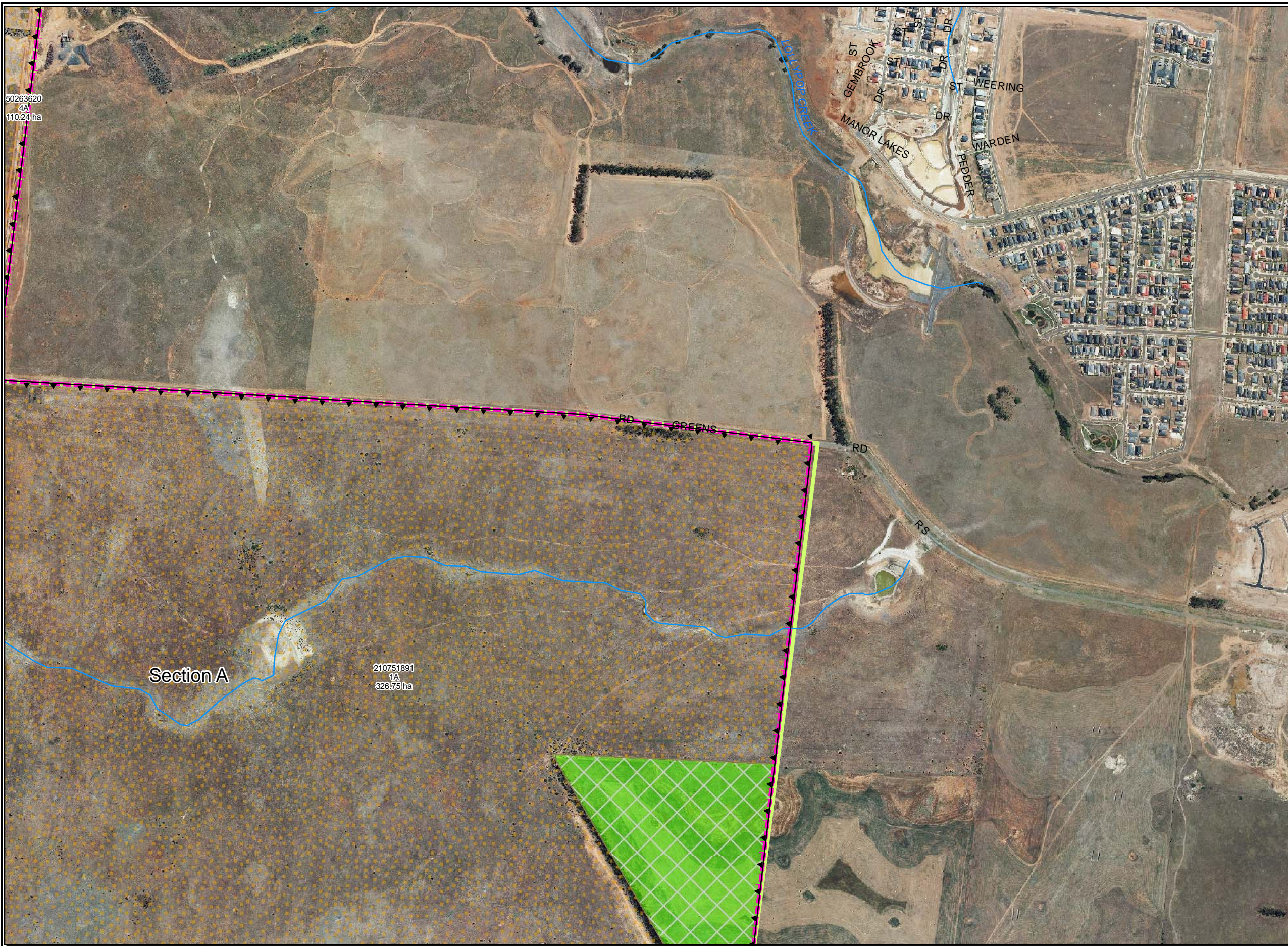
Appendix 6 - Figure 2a : Significant Vegetation or habitat - Key ecological areas , Section A.

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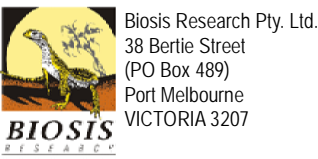
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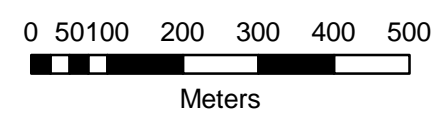
- Legend**
- Key Ecological Area
 - Management zone
 - EVC**
 - 125 Plains Grassy Wetland
 - 132_63 Low-rainfall Plains Grassland
 - 649 Stony Knoll Shrubland
 - 654 Creekline Tussock Grassland
 - 68 Creekline Grassy Woodland
 - Degraded Treeless Vegetation
 - Reconnaissance Survey**
 - Highly Likely Native Vegetation - Grassy
 - Possible Native Vegetation
 - No Native Vegetation
 - Urban Growth Boundary
 - Section boundary
 - Melton/Wyndham Investigation Area
 - Access status for properties not assessed**
 - Access Denied
 - Access unable to be obtained



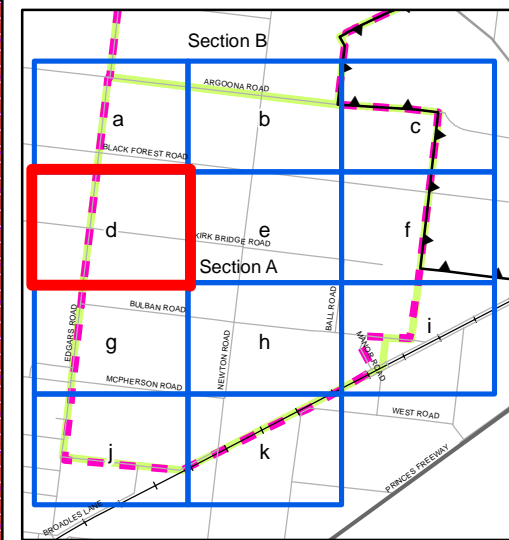
Appendix 6 - Figure 2c : Significant Vegetation or habitat - Key ecological areas , Section A.

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Legend

- Key Ecological Area
- Management zone
- EVC**
 - 125 Plains Grassy Wetland
 - 132_63 Low-rainfall Plains Grassland
 - 649 Stony Knoll Shrubland
 - 654 Creekline Tussock Grassland
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 - Degraded Treeless Vegetation
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 - No Native Vegetation
- Urban Growth Boundary
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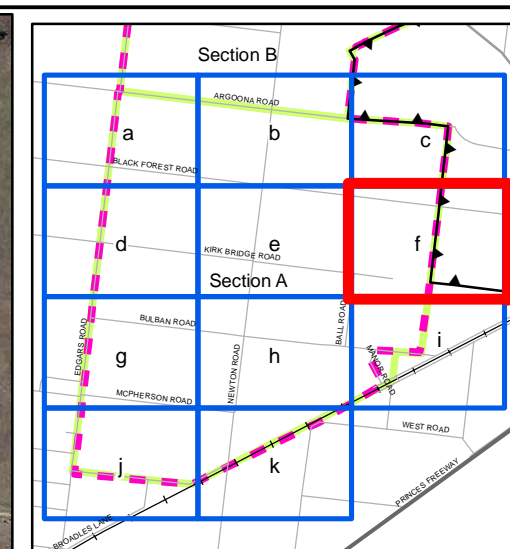
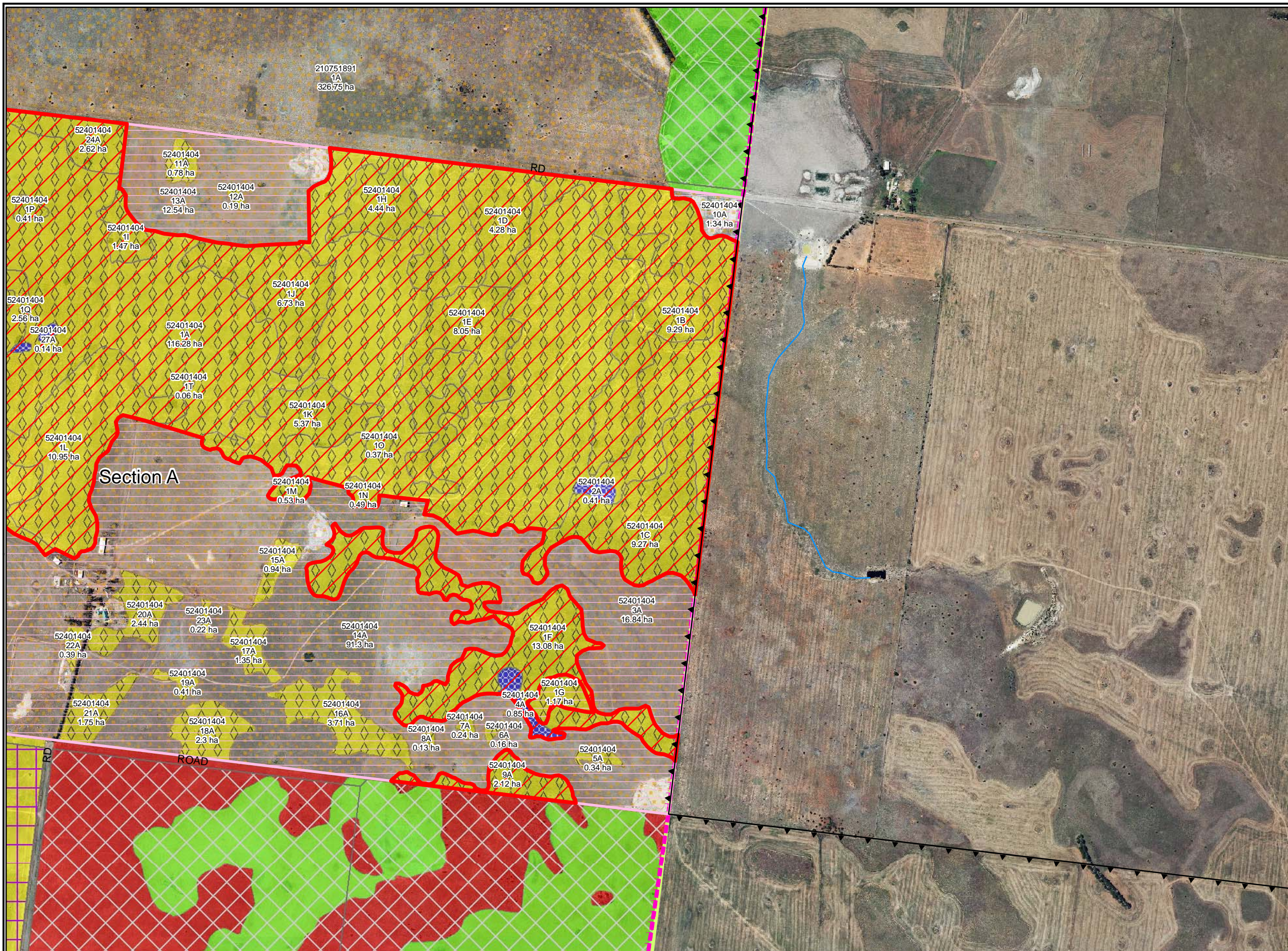
Appendix 6 - Figure 2d : Significant Vegetation or habitat - Key ecological areas , Section A.

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Legend

- Key Ecological Area
- Management zone
- EVC**
 - 125 Plains Grassy Wetland
 - 132_63 Low-rainfall Plains Grassland
 - 649 Stony Knoll Shrubland
 - 654 Creekline Tussock Grassland
 - 68 Creekline Grassy Woodland
 - Degraded Treeless Vegetation
- Reconnaissance Survey**
 - Highly Likely Native Vegetation - Grassy
 - Possible Native Vegetation
 - No Native Vegetation
- Urban Growth Boundary
- Section boundary
- Melton/Wyndham Investigation Area
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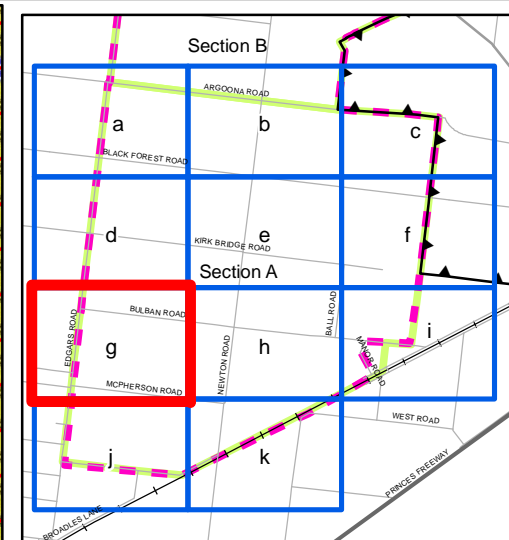
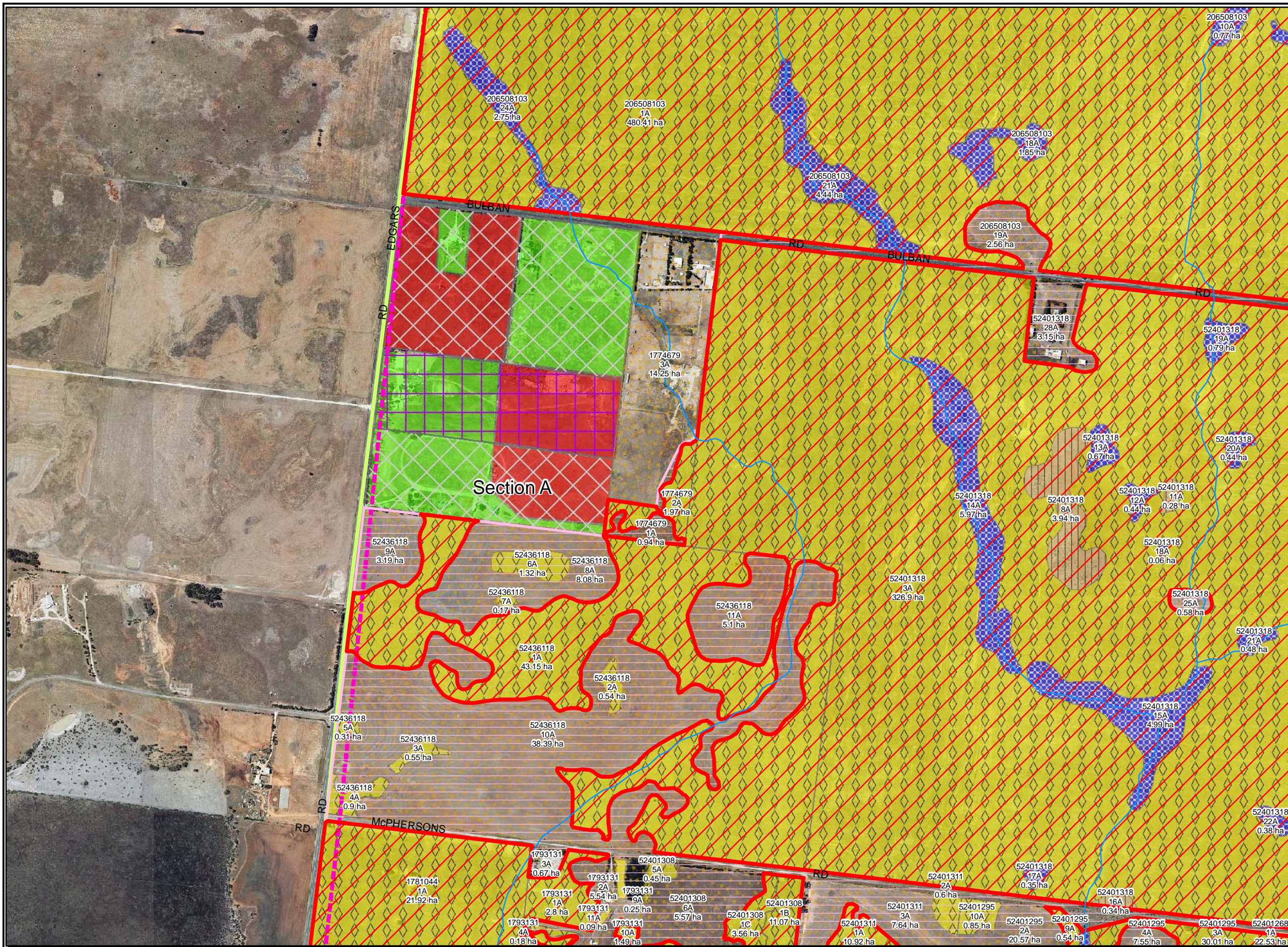
Appendix 6 - Figure 2f : Significant Vegetation or habitat - Key ecological areas , Section A.

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Legend

- Key Ecological Area
- Management zone
- EVC**
 - 125 Plains Grassy Wetland
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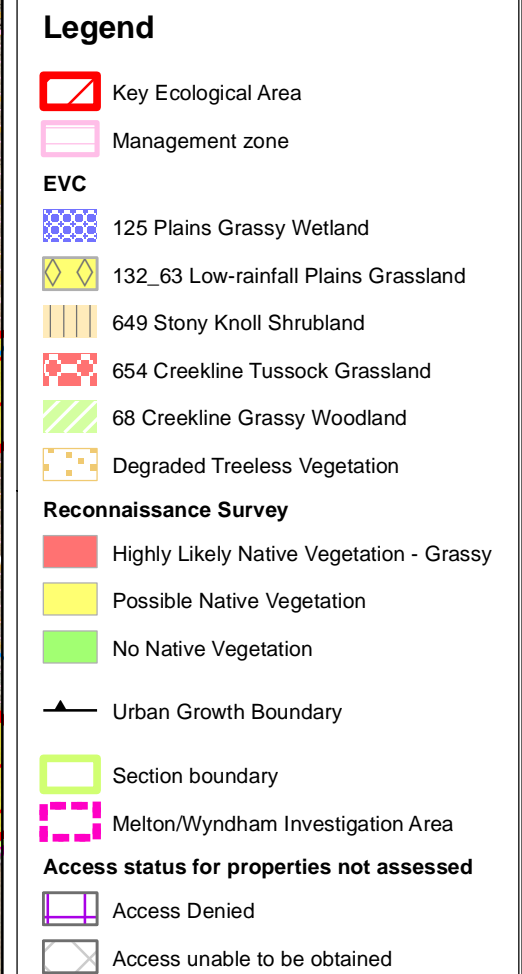
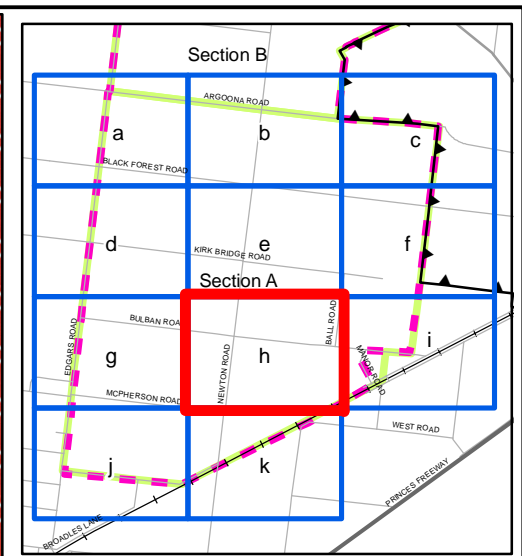
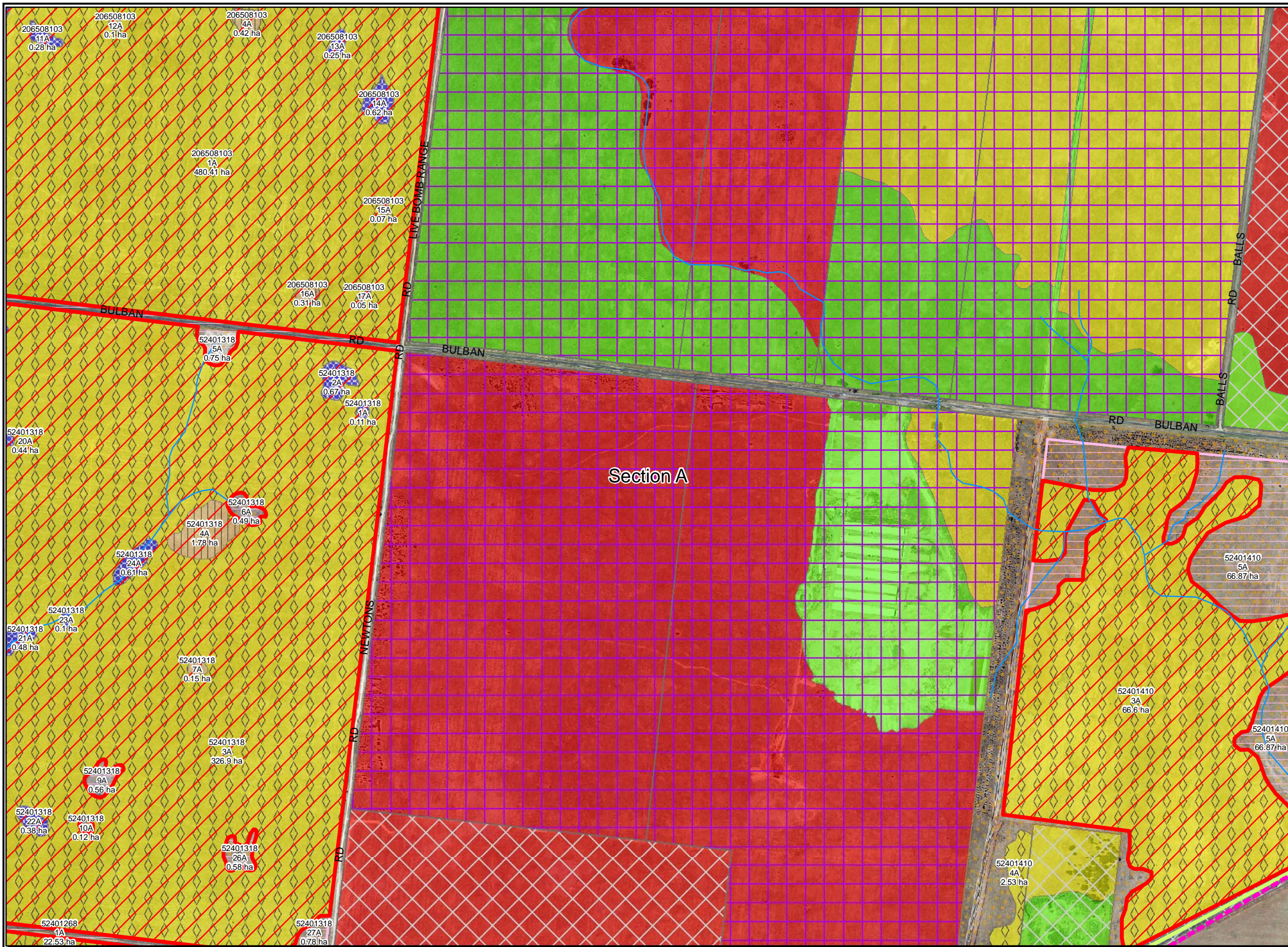
Appendix 6 - Figure 2g : Significant Vegetation or habitat - Key ecological areas , Section A.

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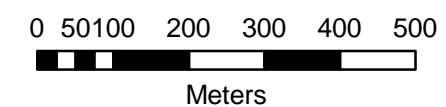
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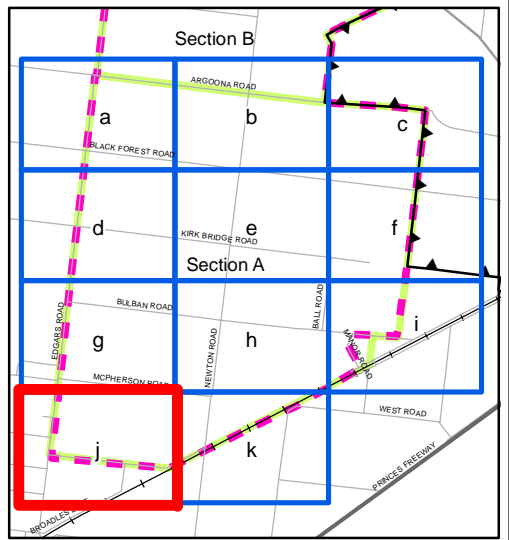
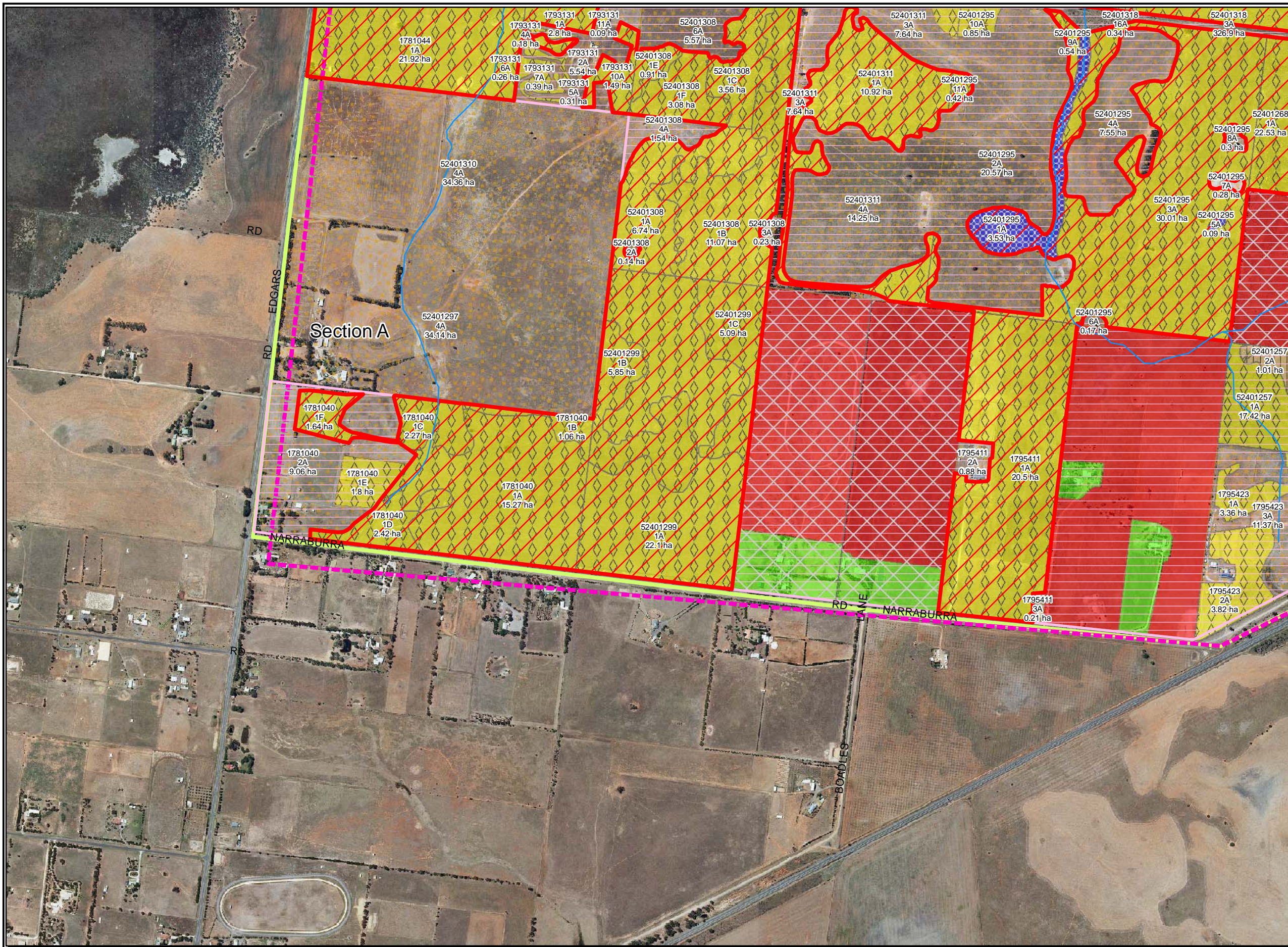
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Appendix 6 - Figure 2h : Significant Vegetation or habitat - Key ecological areas , Section A.

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- Key Ecological Area
- Management zone
- EVC**
 - 125 Plains Grassy Wetland
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- Section boundary
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 - Access unable to be obtained



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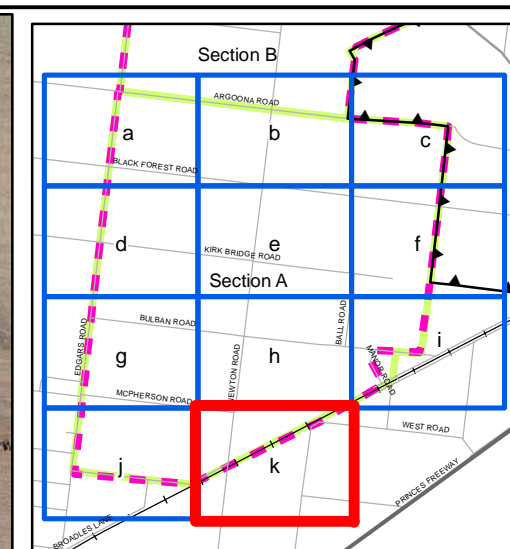
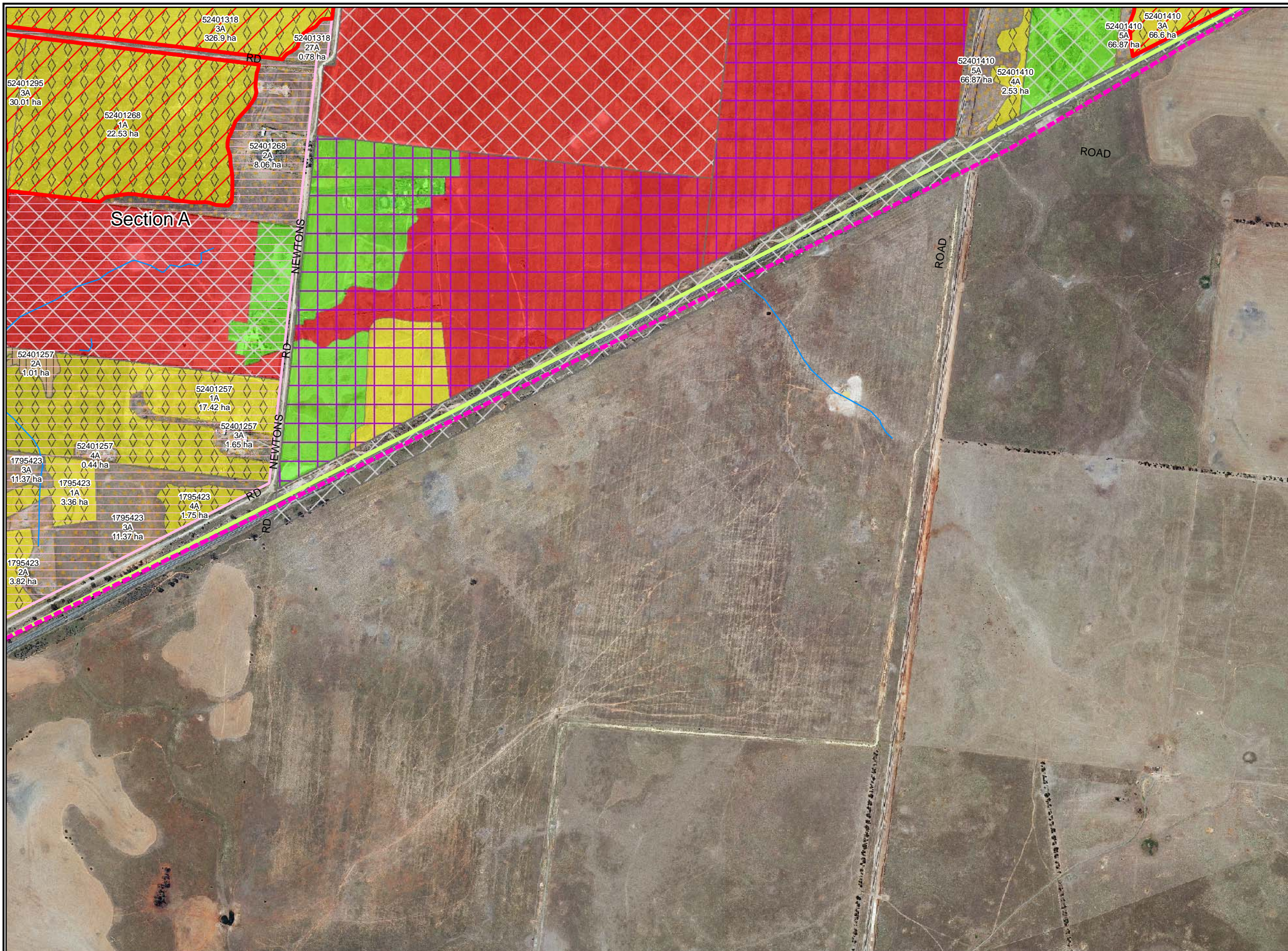
Appendix 6 - Figure 2j : Significant Vegetation or habitat - Key ecological areas , Section A.

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Legend

- Key Ecological Area
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- EVC**
 - 125 Plains Grassy Wetland
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Appendix 6 - Figure 2k : Significant Vegetation or habitat - Key ecological areas , Section A.

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