BIOSIS
RESEARCH

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

Section D:

Appendix 6

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APPENDIX 6

Opportunities for Vegetation Retention and Biodiversity Management

A6.1 Defining Key Areas

The future proposed land use within Section D 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 popoulations into genetically and geographically isolated smaller populations;
- changes to wildlife behaviour;
- soil disturbance; and
- landscape level changes to water supply, movement and quality.

A number of aspects were considered when considering 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 and 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 Natural Temperate Grasslands, Spiny Rice-flower *Pimelea spinescens* subsp. *spinescens* and Golden Sun Moth *Synemon plana* (all listed as critically endangered), Grassland Earless Dragon *Tympanocryptis pinguicolla* and Swift Parrot *Lathamus discolor* (listed as endangered), Striped Legless Lizard *Delma impar*, Plains-wanderer *Pedionomus torquatus*, Australian Painted Snipe *Rostratula australis*, Large-fruit Fireweed *Senecio macrocarpus*, River Swamp Wallaby-grass *Amphibromus fluitans* and Growling Grass Frog *Litoria raniformis* (listed as vulnerable). 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 inspection and habitat hectare assessments as part of the original Melton/Wyndham Investigation. Areas within Section D where a site inspection was not conducted due to access restrictions 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. This data will provide some indication of likely Key Areas within the reconnaissance survey sites.

A6.2 Management Zones

Areas shown as Management Zones on Figure 6 are areas that would be practical to incorporate into any reserve system to protect the values present within Key Areas. Ecologically sound and practical reserve design 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.

Management Zones indicated on Figure 6 include more degraded areas contained 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, are identified as necessary inclusions for protection and management of any Key Areas which may be retained for conservation.

A6.3 Management of Key Areas

The Key Areas identified within Section D consist of both larger remnants and smaller remnants supporting specific conservation values.

Maintaining viable populations of both common and threatened species and landscape scale examples of the threatened grassland 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

of constituent species and allows active ecological management to occur without introducing significant threats to sensitive species. It is only in the context of large scale reserves that 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.

However, relatively small areas are also capable of supporting significant values not otherwise found in larger remnants, reflecting the broad range of management activities and intensities which have influenced the ecosystems of the region.

Unlike the larger Key Areas, the size and context of these smaller Key Areas may limit their suitability to conserve a wide range of species. While such areas do have ecological value and should be retained if possible, they require relatively high management inputs due to their often isolated context and high edge effect. Management in these reserves should primarily be focused on the persistence of a target species and improving vegetation community values. The use of these reserve areas to highlight conservation and promote listed taxa can be invaluable in creating awareness of conservation issues within the local community.

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 (VHCS) vegetation into the conservation estate as this generates significantly more gains than retaining native vegetation within private ownership.

Two development scenarios are outlined below, the complete loss of all native vegetation within Section D 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 D 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 within Section D are documented in Table 1. In summary the Framework

prescribes an offset of **51.22 hha** of High conservation significance (HCS) and **35.49 hha** of VHCS vegetation.

The 'like-for-like' criteria prescribed under the Framework to offset permitted clearing require 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 D

EVC	HHa	Conservation Significance	Reason*	Offset Multiplier	Prescribed Offset (hha)
Low Rainfall Plains Grassland	33.16	High	Vegetation Types	1.5	49.74
	13.03	Very High	Vegetation Types	2	26.07
	3.34	Very High	Best 50% *Cullen parvum*	2	6.67
	0.17	Very High	Best 50% *Delma impar*	2	0.33
	0.05	Very High	Best 50% *Dianella* sp. aff. *longifolia* (Benambra)	2	0.11
Heavier Soils Plains Grassland	0.40	High	Vegetation Types	1.5	0.60
Plains Sedgy Wetland	0.05	High	Vegetation Types	1.5	0.07
Stony Knoll Shrubland	0.44	High	Vegetation Types	1.5	0.65
	0.24	Very High	Vegetation Types	2	0.50
Brackish Wetland	0.11	High	Vegetation Types	1.5	0.16
Plains Grassy Wetland	0.91	Very High	Vegetation Types	2	1.82
Total	**51.90**				**86.72**

*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 HCS vegetation with VHCS vegetation will reduce the offset prescription for this vegetation by one quarter.

The lowest like-for-like offset prescription for the complete loss of native vegetation within Section D is therefore as follows:

- 38.42 hha of VHCS from any EVC;
- 26.07 hha of VHCS *Low Rainfall* Plains Grassland;
- 0.50 hha of VHCS Stony Knoll Shrubland;
- 1.82 hha of VHCS Plains Grassy Wetland;
- 6.67 hha of VHCS habitat for Small Scurf-pea *Cullen parvum*
- 0.33 hha of VHCS habitat for Striped Legless Lizard *Delma impar*
- 0.11 hha of VHCS habitat for Arching Flax-lily *Dianella* sp. aff. *longifolia* (Benambra)

A6.5.2 Scattered Tree Offsets

No remnant indigenous trees were recorded within the properties accessed. Therefore no scattered tree offsets would apply to any development of this area. Further survey of areas not accessed as part of the Melton/Wyndham investigation may identify some scattered LOTs. If present, they should be considered in line with the requirements of the Framework (NRE 2002).

A6.6 Key Area Protection

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

A6.6.1 Habitat Hectare Offsets

The habitat hectare offsets prescribed for the loss of native vegetation outside of the Key Areas and Management Zones within Section D are documented in Table 2 and Appendix 4. In summary the Framework prescribes an offset of **51.22 hha** of HCS and **13.40 hha** of VHCS (Appendix 4).

TableA6.2: Prescribed offsets for the loss of native vegetation, excluding the Key Areas and Management Zones within Section D.

EVC	HHa lost	Conservation Significance	Reason*	Offset Multiplier	Prescribed Offset (hha)
Low Rainfall Plains Grassland	33.16	High	Vegetation Types	1.5	49.74

EVC	HHa lost	Conservation Significance	Reason*	Offset Multiplier	Prescribed Offset (hha)
	5.01	Very High	Vegetation Types	2	10.01
	0.32	Very High	Best 50% *Cullen parvum*	2	0.63
	0.17	Very High	Best 50% *Delma impar*	2	0.33
	0.05	Very High	Best 50% *Dianella* sp. aff. *longifolia* (Benambra)	2	0.11
Heavier Soils Plains Grassland	0.40	High	Vegetation Types	1.5	0.60
Plains Sedgy Wetland	0.05	High	Vegetation Types	1.5	0.07
Stony Knoll Shrubland	0.44	High	Vegetation Types	1.5	0.65
	0.24	Very High	Vegetation Types	2	0.50
Brackish Wetland	0.11	High	Vegetation Types	1.5	0.16
Plains Grassy Wetland	0.91	Very High	Vegetation Types	2	1.82
Total	**40.86**				**64.62**

*Vegetation Types = Conservation Status x Habitat Score

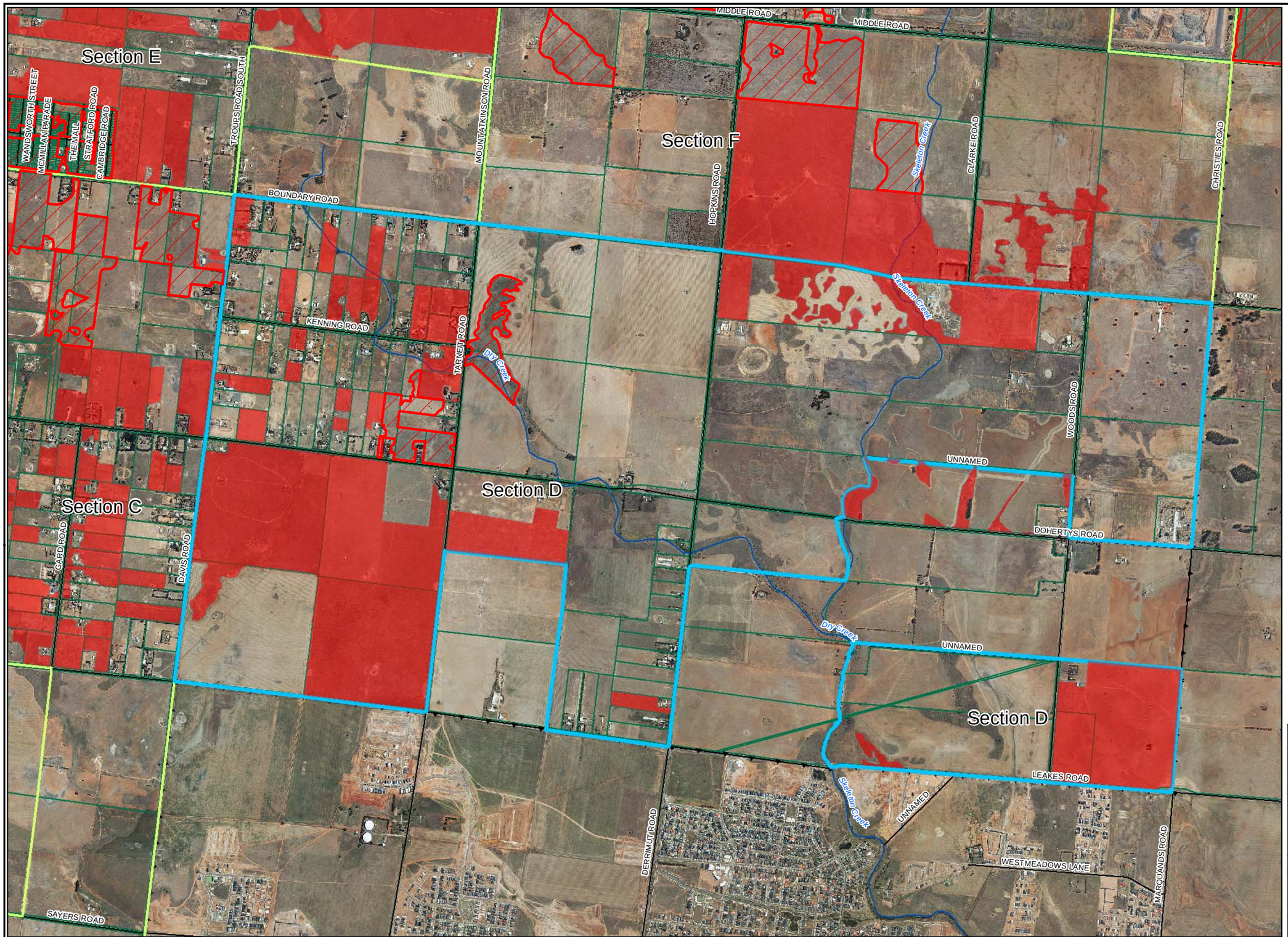
The lowest like-for-like offset prescription for the loss of native vegetation, excluding the Key Areas and Management Zones within Section D is therefore as follows:

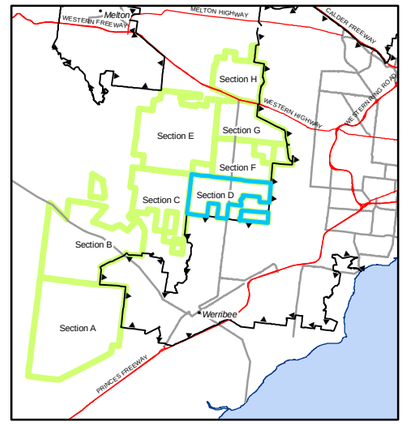
- 38.42 hha of VHCS from any EVC;
- 10.01 hha of VHCS *Low Rainfall* Plains Grassland;
- 0.50 hha of VHCS Stony Knoll Shrubland;
- 1.82 hha of VHCS Plains Grassy Wetland;
- 0.63 hha of VHCS habitat for *Cullen parvum*
- 0.33 hha of VHCS habitat for *Delma impar*
- 0.11 hha of VHCS habitat for *Dianella* sp. aff. *longifolia* (Benambra)

Retention of all Key Areas within Section D would reduce the offset prescription associated with clearing all vegetation in this section by **16.06 hha** of VHCS *Low Rainfall* Plains Grassland and **6.04 hha** of VHCS habitat for Small Scurf-pea.

Figures for Appendix 6

Significant vegetation or Key Areas within assessed areas of Section D





Legend

- Key Ecological Areas
- Management Zones

Reconnaissance Assessment

- Highly Likely Native Vegetation - Grassy
- Melton/Wyndham Investigation Area
- Section D
- Section boundary
- Urban Growth Boundary
- Parcels

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

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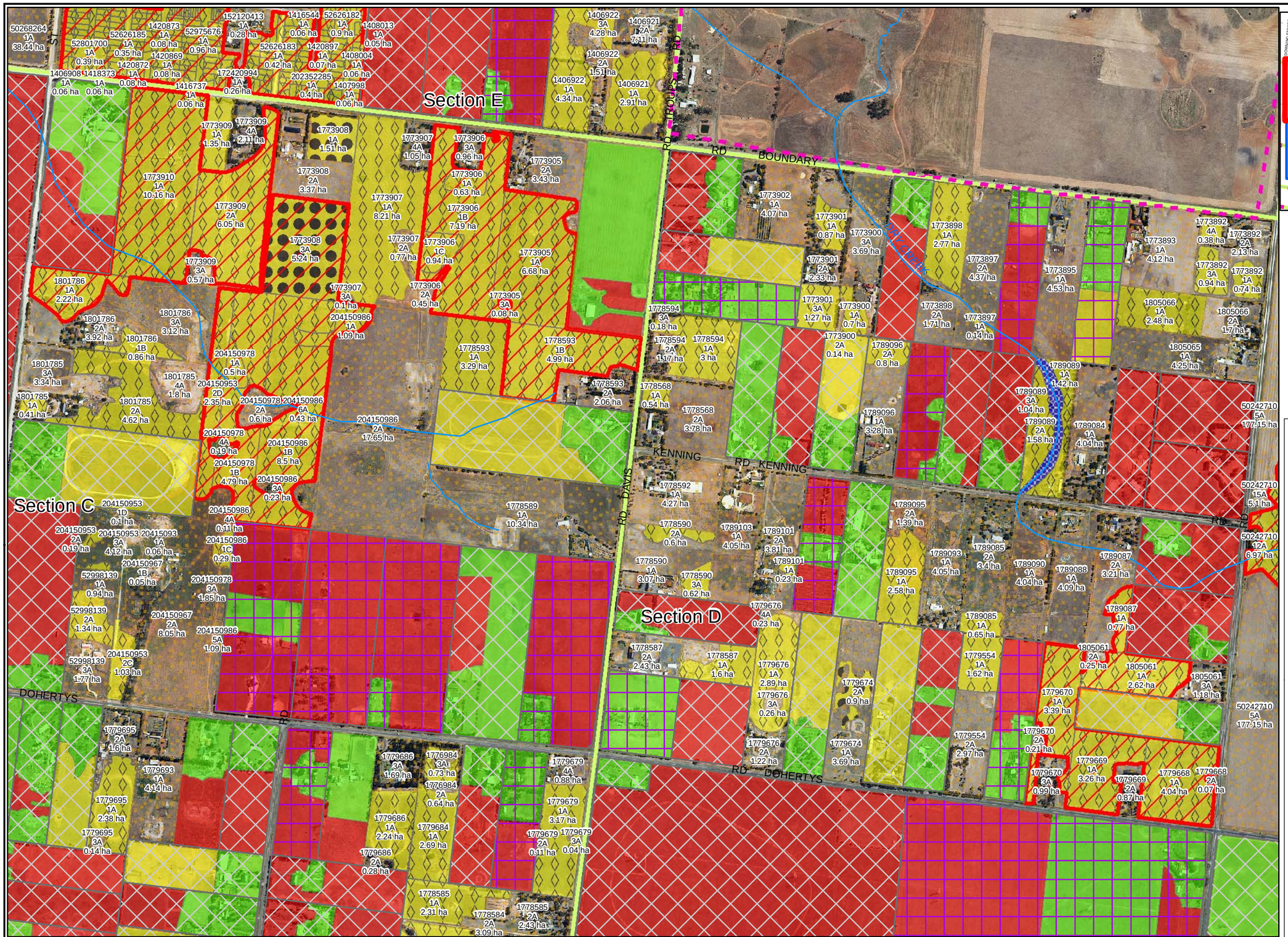

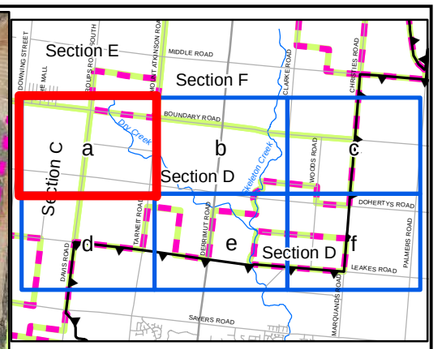

Legend

- Key Ecological Area
- Management zone

EVC

- 125 Plains Grassy Wetland
- 132_61 Heavier-soils Plains Grassland
- 132_63 Low-rainfall Plains Grassland
- 647 Plains Sedgy Wetland
- 649 Stony Knoll Shrubland
- 656 Brackish Wetland
- 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 D.

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

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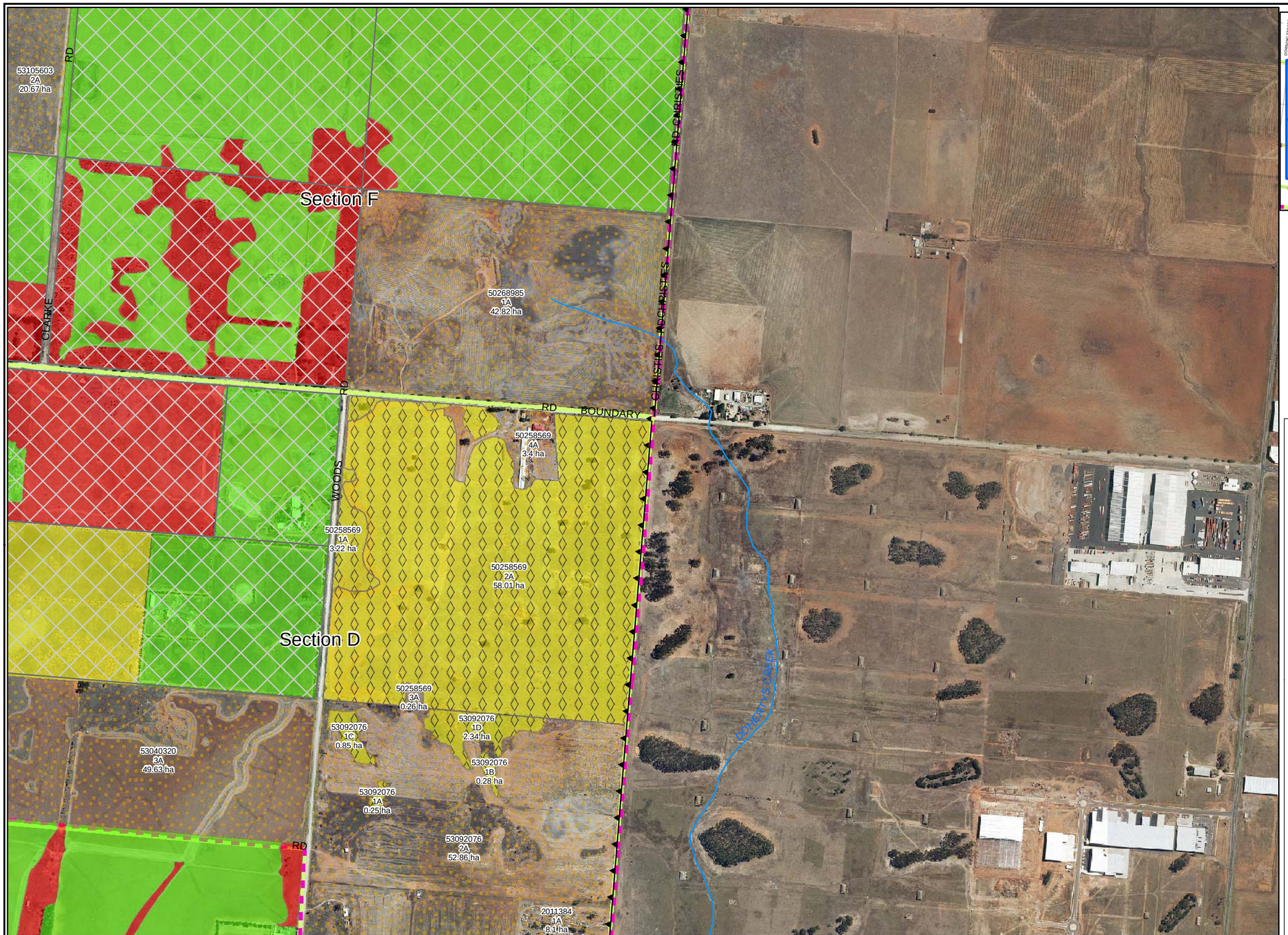

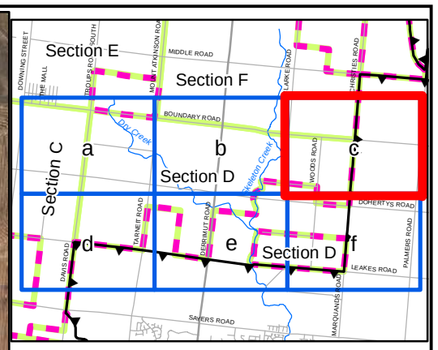

Legend

- Key Ecological Area
- Management zone

EVC

- 125 Plains Grassy Wetland
- 132_61 Heavier-soils Plains Grassland
- 132_63 Low-rainfall Plains Grassland
- 647 Plains Sedgy Wetland
- 649 Stony Knoll Shrubland
- 656 Brackish Wetland
- 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 2c : Significant Vegetation or habitat - Key ecological areas , Section D.

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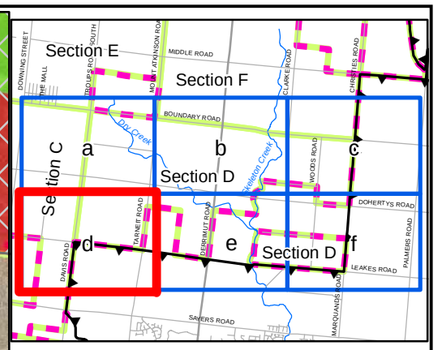

Legend

- Key Ecological Area
- Management zone

EVC

- 125 Plains Grassy Wetland
- 132_61 Heavier-soils Plains Grassland
- 132_63 Low-rainfall Plains Grassland
- 647 Plains Sedgy Wetland
- 649 Stony Knoll Shrubland
- 656 Brackish Wetland
- 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 2d: Significant Vegetation or habitat - Key ecological areas , Section D.

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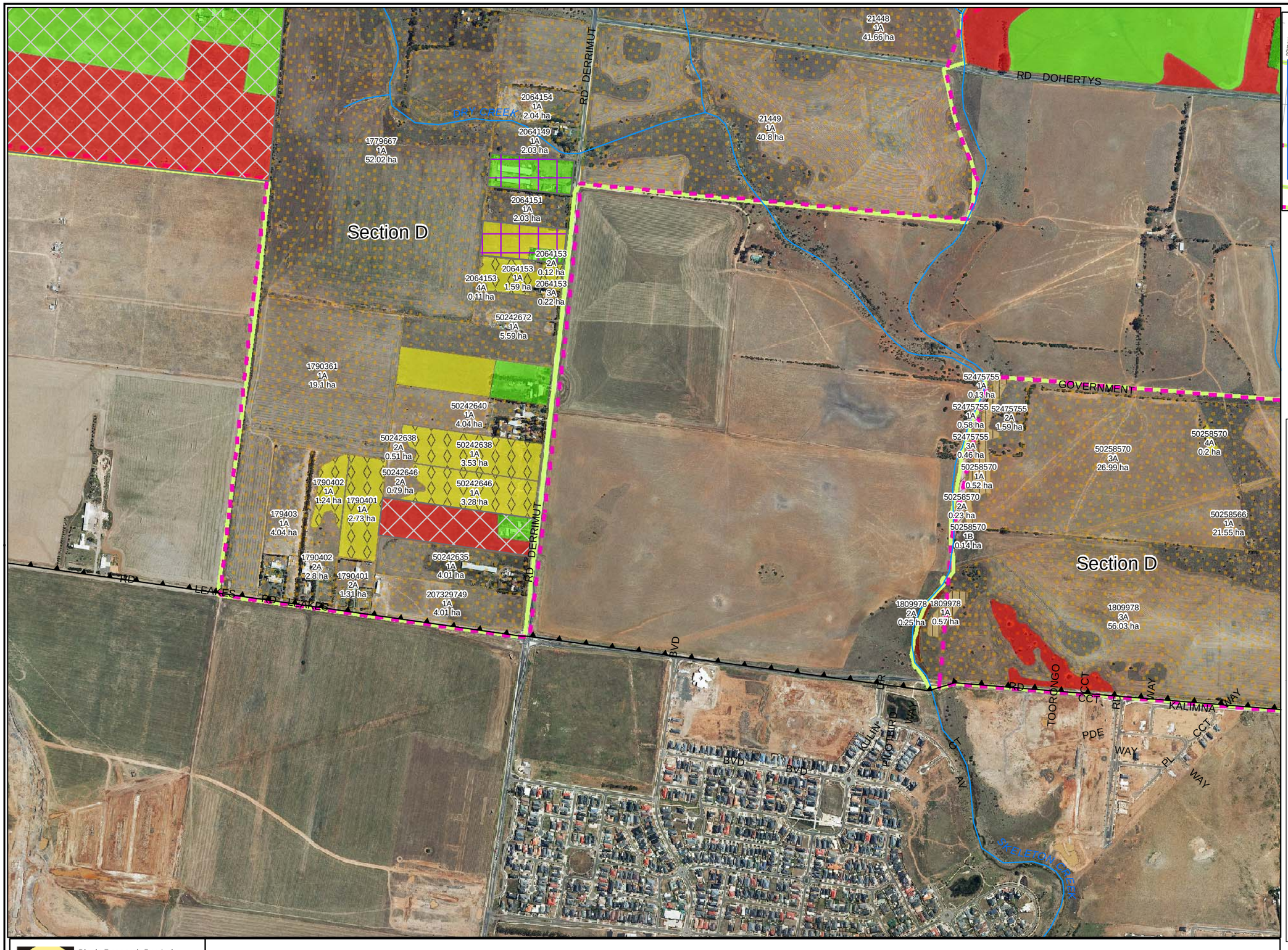

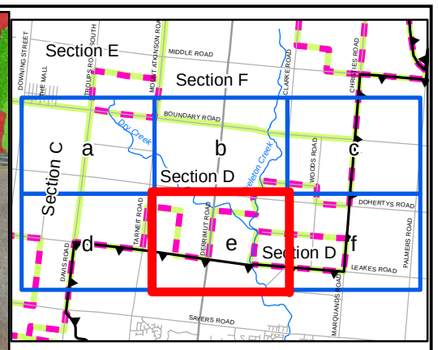

Legend

- Key Ecological Area
- Management zone

EVC

- 125 Plains Grassy Wetland
- 132_61 Heavier-soils Plains Grassland
- 132_63 Low-rainfall Plains Grassland
- 647 Plains Sedgy Wetland
- 649 Stony Knoll Shrubland
- 656 Brackish Wetland
- 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 2e : Significant Vegetation or habitat - Key ecological areas , Section D.

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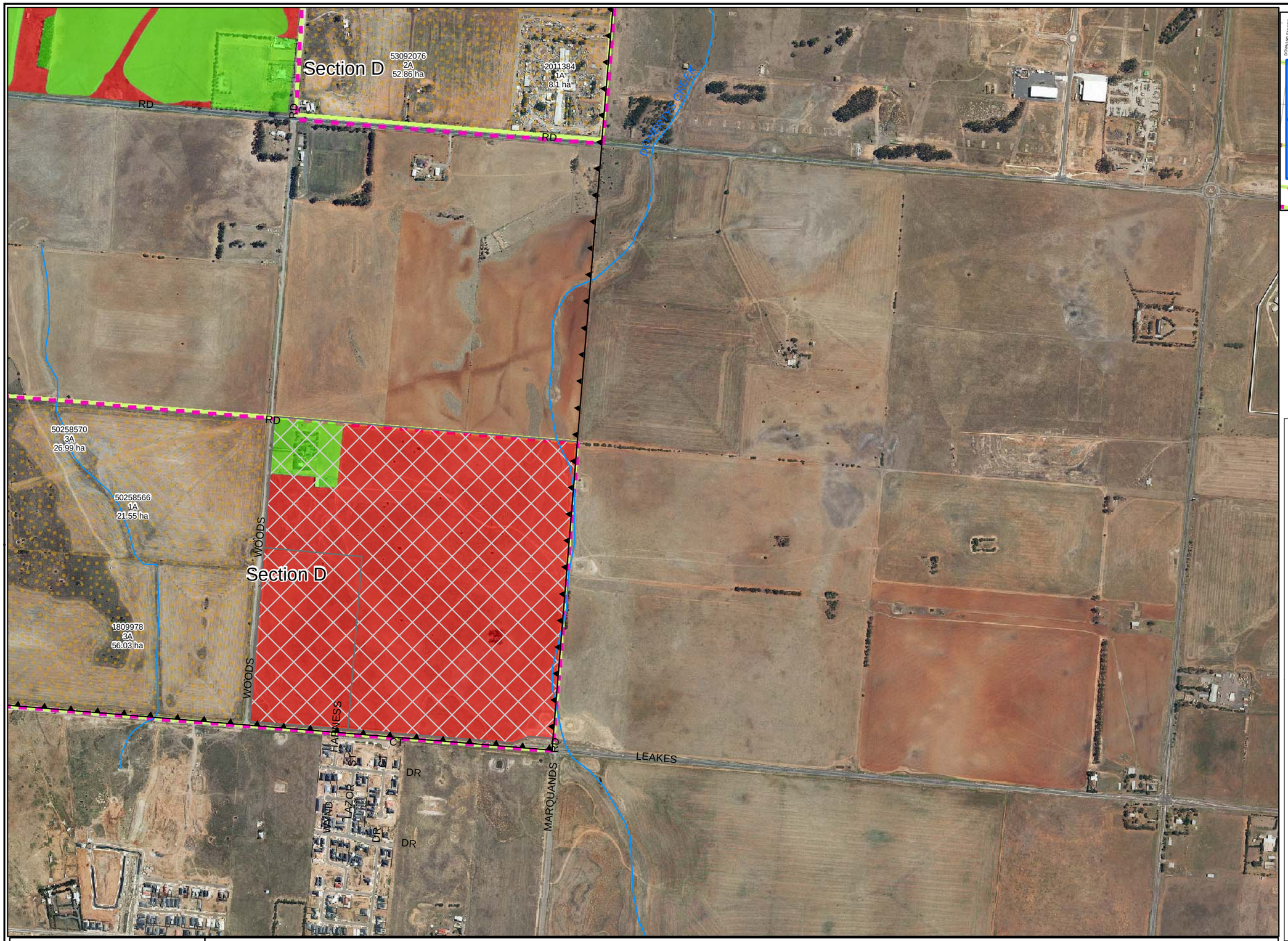

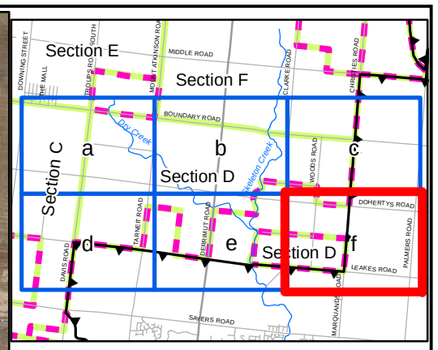

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- Key Ecological Area
- Management zone

EVC

- 125 Plains Grassy Wetland
- 132_61 Heavier-soils Plains Grassland
- 132_63 Low-rainfall Plains Grassland
- 647 Plains Sedgy Wetland
- 649 Stony Knoll Shrubland
- 656 Brackish Wetland
- 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

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

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