Sam Brown
Senior Planning Engineer
VicRoads - Western Region
PO Box 580, Ballarat
VIC 3350

Date: 1st September 2014

Our reference: 6315

Dear Sam,

Re: Environment Effects Statement referral for the Beaufort Bypass - update to flora and fauna information

Ecology and Heritage Partners Pty Ltd was engaged by VicRoads to provide updates to flora and fauna information associated with the Beaufort Bypass for inclusion in the Environment Effects Statement (EES) referral for the project. The proposed Bypass includes two options, each broken down in to several sections for consideration:

- Option B4: Sections A, B and C; and,
- Option B5: Sections A and B.

The following provides the updates required for submission of the EES referral, along with information on additional assessments that may be required.

Methods

The following was undertaken:

- Review the Victorian Biodiversity Atlas (VBA) (DEPI 2014b), Flora Information System (FIS) (Viridans 2013a) and Atlas of Victorian Wildlife (AVW) (Viridans 2013b) for previously documented flora and fauna records within the project locality;
- Review previous ecological assessments undertaken within or adjacent to the study area;
    - Ecology and Heritage Partners Pty Ltd 2012a. Western Highway Project: Section 2, Beaufort to Ararat, Victoria Impact Assessment Report – Flora, Fauna and Ecological Communities. Prepared for VicRoads.
    - Ecology and Heritage Partners Pty Ltd 2012b. Western Highway Project: Section 3, Ararat to Stawell, Victoria Impact Assessment Report – Flora, Fauna and Ecological Communities. Prepared for VicRoads.
    - Ecology Partners Pty Ltd 2010. Targeted Flora, Fauna & Aquatic Surveys of the Western Highway Upgrade: Burrumbeet to Beaufort. Prepared for VicRoads.
    - Ecology Partners Pty Ltd 2010. Flora, Fauna and Net Gain Assessment of the Proposed Western Highway Duplication, Burrumbeet to Beaufort, Victoria. Prepared for VicRoads.

  - Ecology Partners Pty Ltd 2008. Desktop Flora and Fauna Assessment of the Western Highway, Burrumbeet to Stawell, Victoria. Prepared for VicRoads.

- Quantify (in hectares) Ecological Vegetation Classes (EVCs) present within each proposed alignment footprint, along with their status in the Bioregion, based on the Department of Environment and Primary Industry's (DEPI) extant (2005) native vegetation (DEPI 2014a);
- Identify other EVCs, along with their status in the Bioregion, that occur within 500 metres of the alignment footprint; and,
- Provide additional information required as part of the Environment Effects Statement referral.

Limitations

Please note that information relating to EVCs is based on broad scale native vegetation extent data provided by DEPI (DEPI 2014a). The DEPI data (based on data collected in 2005) is a modelled dataset that has been generated by combining a number of DEPI data sources and is designed for use at a large scale (1:25,000 to 1:100,000). A detailed vegetation assessment has not been undertaken.

Information relating to Scattered Trees is not included within DEPI's extant vegetation data and a vegetation assessment would be required to ascertain the number and size of Scattered Trees likely to be impacted.

Results

Vegetation

A summary of vegetation losses for each alignment option is provided in Table 1, with detailed losses by Bioregion, EVC and conservation status provided in Appendix 1 (Figure 1a and 1b).

Table 1. Summary of vegetation losses

Option	Section	EVC Conservation Significance	Hectares	Totals
B4	A	Endangered	13.571	29.201
		Least Concern	13.199	
		Vulnerable	2.431	
	B	Endangered	10.097	23.965
		Least Concern	12.078	
		Vulnerable	1.789	
	C	Endangered	11.045	40.016
		Least Concern	28.971	
B5	A	Endangered	7.273	18.983
		Least Concern	9.433	
		Vulnerable	2.277	
	B	Endangered	26.983	51.303
		Least Concern	24.319	

Additional Information

Additional information required for submission of the EES referral is provided below.

1. *What is the maximum area of native vegetation that may need to be cleared?*

Area to be cleared is dependent on the final alignment chosen. A summary of vegetation losses for each alignment option is provided in Table 1 and Appendix 1.

2. *How much of this clearing would be authorised under a Forest Management Plan or Fire Protection Plan?*

N/A. Clearing would not be authorised under a Forest Management Plan or Fire Protection Plan.

3. *Which Ecological Vegetation Classes may be affected?*

Ecological Vegetation Classes that may be affected are summarised below (Table 2). Quantities of each EVC present within individual alignment options are provided in Appendix 1.

Ecological Vegetation Classes that are potentially present within 250m of the proposed alignment are summarised in Table 3.

Table 2. EVCs present within the proposed alignment footprints

Bioregion	EVC	Conservation Significance
Central Victorian Uplands	Alluvial Terraces Herb-rich Woodland	Endangered
	Grassy Woodland/Heathy Dry Forest Complex	Endangered
	Heathy Dry Forest	Least Concern
	Valley Grassy Forest	Vulnerable
Victorian Volcanic Plain	Alluvial Terraces Herb-rich Woodland	Endangered
	Creekline Grassy Woodland	Endangered
	Grassy Woodland/Heathy Dry Forest Complex	Endangered
	Plains Grassland	Endangered
	Plains Grassy Woodland	Endangered

Table 3. EVCs present in the vicinity of the proposed alignment footprints

Bioregion	EVC	Conservation Significance
Central Victorian Uplands	Alluvial Terraces Herb-rich Woodland	Endangered
	Creekline Grassy Woodland	Endangered
	Grassy Woodland/Heathy Dry Forest Complex	Endangered
	Heathy Dry Forest	Least Concern
	Plains Grassy Woodland	Endangered
	Valley Grassy Forest	Vulnerable
Victorian Volcanic Plain	Alluvial Terraces Herb-rich Woodland	Endangered
	Aquatic Herbland/Plains Sedgy Wetland Mosaic	Endangered

Bioregion	EVC	Conservation Significance
	Creekline Grassy Woodland	Endangered
	Grassy Woodland/Heathy Dry Forest Complex	Endangered
	Heathy Dry Forest	Least Concern
	Plains Grassland	Endangered
	Plains Grassy Woodland	Endangered

4. *Have any threatened or migratory species or listed communities been recorded from the local area?*

Threatened or migratory species or listed communities previously recorded from the local area (VBA) are presented in Appendix 3 and Appendix 4.

5. *List species/communities recorded in recent surveys and/or past observations. Indicate which of these have been recorded from the project site or nearby.*

Surveys undertaken for the Western Highway Project, Section 1 (Ecology Partners 2010a; 2010b) identified numerous significant species and communities in the local area (Figure 2):

- Flora:
    - Three State significant species (Rosemary Grevillea, Wavy Swamp Wallaby–grass and Emerald–lip Greenhood) (Ecology Partners 2010a; 2010b).
- Fauna:
    - Three nationally significant species (Growling Grass Frog; Dwarf Galaxias and Yarra Pygmy Perch, all listed as Vulnerable under the EPBC Act).

Surveys undertaken for the Western Highway Project, Section 2 (Ecology and Heritage Partners 2012a) identified numerous significant species and communities in the local area (Figure 2):

- Flora:
    - Three nationally significant species (Spiny Rice-flower, Button Wrinklewort and Large-headed Fireweed, listed as Critically Endangered, Endangered and Vulnerable under the EPBC Act, respectively).
    - Three State significant species (Yarra Gum, Emerald-lip Greenhood and Golden Cowslips).
- Communities:
    - Two nationally significant ecological communities (Natural Temperate Grassland of the Victorian Volcanic Plain and Grassy Eucalypt Woodland of the Victorian Volcanic Plain).
    - Two State significant ecological communities (Western (Basalt) Plains Grassland and Victorian Temperate Woodland Bird Community).
- Fauna:
    - Two nationally significant species (Dwarf Galaxias and Golden Sun Moth, listed as Critically Endangered and Vulnerable under the EPBC Act, respectively).

- Two State significant species (Brown Toadlet and Brown Treecreeper) recorded, with an additional two species (Powerful Owl and Brush-tailed Phascogale) reported to be present by a local landholder.
- One regionally significant species (Baillon's Crake).

6. *If known, what threatening processes affecting these species or communities may be exacerbated by the project?*

Threatening processes under the *Flora and Fauna Guarantee Act 1988* (FFG Act) applicable to the proposed works are presented below (Table 4).

Table 4. Threatening processes under the FFG Act

Threatening process	Development action	Possible avoidance and/or minimisation measures
The invasion of native vegetation by environmental weeds.	Increase instances of weed invasion into native vegetation remnants adjacent to the road corridor.	Control environmental and noxious weeds in native vegetation. Wash machinery prior to entering the site to remove weed seeds.
Invasion of native vegetation by Blackberry *Rubus fruticosus* L. agg.	Increased disturbance promoting growth and spread of this woody weed	Limit disturbance in native vegetation and conduct regular weed control
The invasion of native vegetation by environmental weeds	Soil disturbance and subsequent weed invasion into native vegetation remnants within the study area	Control environmental and noxious weeds in native vegetation. Wash machinery prior to entering the sites to remove weed seeds
Loss of hollow-bearing trees from Victorian native forests	Potential removal of large-old trees	Identify and attempt to retain all significant habitat trees in the study area, and in areas realign the route to avoid trees.
Habitat fragmentation as a threatening process for fauna in Victoria.	Loss of remnant vegetation along the proposed alignment.	Where practicable, minimise the removal of native vegetation during construction, and connect existing remnants with locally indigenous vegetation.
Increase of sediment input into Victorian rivers and streams due to human activities.	Erosion of soil during construction works.	Ensure that best practice sedimentation control measures (to the satisfaction of EPA) are undertaken at all times
Input of toxic substances into Victorian rivers and streams.	Using toxic substances in or adjacent to the creek.	Ensure that best practice pollution control measures (to the satisfaction of EPA) are undertaken at all times.

7. *Are any threatened or migratory species, other species of conservation significance or listed communities potentially affected by the project?*

Detailed ecological assessments have not been undertaken within the study area. However based on aerial photography and results from previous surveys undertaken in the local area, there is potential habitat for numerous species and communities of conservation significance. These species are summarised in Appendix 3 and Appendix 4.

8. *Indicate which species or communities could be subject to a major or extensive impact (including the loss of a genetically important population of a species listed or nominated for listing). Comment on likelihood of effects and associated uncertainties, if practicable.*

Detailed ecological assessments have not been undertaken within the study area. Species and communities of conservation significance that have potential habitat within the study area are identified in Appendix 3 and Appendix 4. Further assessment would be required to determine whether any could be subject to a major or extensive impact (including the loss of a genetically important population).

9. *Are any of these water environments likely to support threatened or migratory species? ('these' being any waterways, wetlands, estuaries or marine environments that are likely to be affected)*

Several drainage lines are present within the study area, including Yam Holes Creek, Garibaldi Creek and their tributaries. Surveys undertaken in the local area identified numerous significant fauna species in aquatic environments:

- Dwarf Galaxias was identified in Billy Billy Creek, Buangor (Ecology and Heritage Partners 2012a).
- Growling Grass Frog, Dwarf Galaxias and Yarra Pygmy Perch were identified in Mt Emu Creek, Trawalla (Ecology Partners 2010a; 2010b).

As such, there is potential for these species to be present in drainage lines within the study area; however detailed ecological assessments would be required to make this determination.

10. *Overview of potentially significant environmental effects (identify key potential effects and comment on their significance and likelihood, as well as key uncertainties)*

Detailed ecological assessments have not been undertaken within the study area. However numerous species and communities listed under the EPBC Act have been identified in the local area, or have the potential to occur within the study area. Depending on their presence and the extent of impact due to the proposed action, impacts to such species and communities may be considered 'significant' under the EPBC Act.

Species and communities listed under the EPBC Act that have been identified in the local area and have potential habitat within the study area include:

- Flora: Spiny Rice-flower, Button Wrinklewort and Large-headed Fireweed.
- Fauna: Golden Sun Moth, Growling Grass Frog, Dwarf Galaxias and Yarra Pygmy Perch.
- Communities: Natural Temperate Grassland of the Victorian Volcanic Plain and Grassy Eucalypt Woodland of the Victorian Volcanic Plain.

Additional species and communities listed under the EPBC Act that have not been recorded in the local area but that regardless have potential to occur may include:

- Flora: Ben Major Grevillea, White Sunray and Trailing Hop-bush
- Fauna: Southern Brown Bandicoot and Striped Legless Lizard.
- Communities: Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains, White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland.

If you have any questions regarding the forgoing, please don't hesitate to contact me.

Kind regards,

Clio Gates Foale

Senior Ecologist

Ecology and Heritage Partners Pty Ltd

References

DEPI 2014a. Biodiversity Interactive Map [WWW Document]. URL http://mapshare2.dse.vic.gov.au/MapShare2EXT/imf.jsp?site=bim (. Victorian Department of Environment and Primary Industries.

DEPI 2014b. Victorian Biodiversity Atlas. Sourced from: "VBA_FLORA25" and "VBA_FLORA100", February 2014. Victorian Department of Environment and Primary Industries.

DoE 2013. Significant Impact Guidelines 1.1. Matters of National Environmental Significance. Federal Department of the Environment, Canberra.

Ecology and Heritage Partners Pty Ltd 2012a. Western Highway Project: Section 2, Beaufort to Ararat, Victoria Impact Assessment Report – Flora, Fauna and Ecological Communities. Prepared for VicRoads.

Ecology and Heritage Partners Pty Ltd 2012b. Western Highway Project: Section 3, Ararat to Stawell, Victoria Impact Assessment Report – Flora, Fauna and Ecological Communities. Prepared for VicRoads.

Ecology Partners Pty Ltd 2008. Desktop Flora and Fauna Assessment of the Western Highway, Burrumbeet to Stawell, Victoria. Prepared for VicRoads.

Ecology Partners Pty Ltd 2010a. Flora, Fauna and Net Gain Assessment of the Proposed Western Highway Duplication, Burrumbeet to Beaufort, Victoria. Prepared for VicRoads.

Ecology Partners Pty Ltd 2010b. Targeted Flora, Fauna & Aquatic Surveys of the Western Highway Upgrade: Burrumbeet to Beaufort. Prepared for VicRoads.

Viridans 2013a. Flora Information System. Viridans Biological Databases.

Viridans 2013b. Victorian Fauna Database. Viridans Biological Databases.

Figures

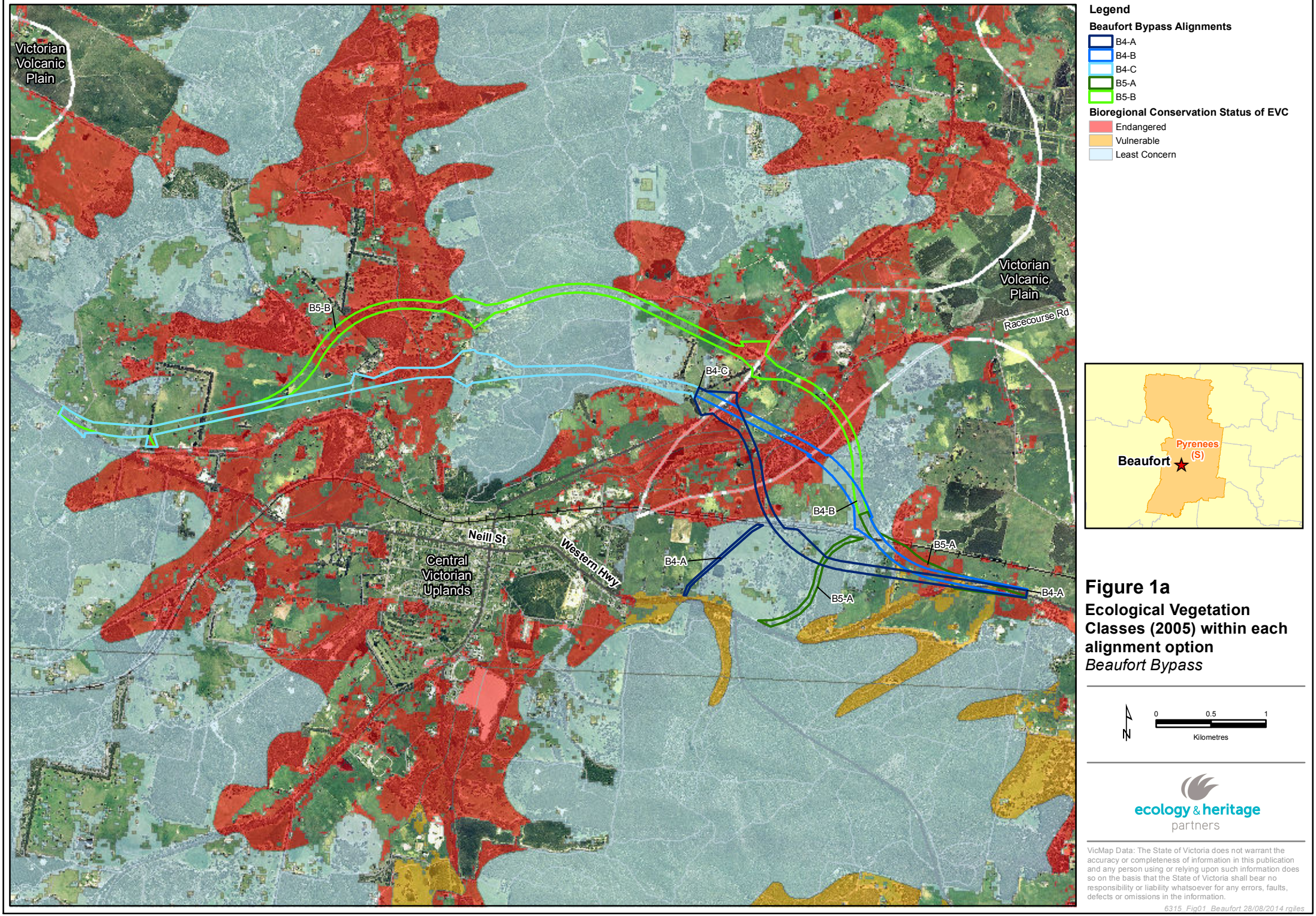

Figure 1a

Ecological Vegetation Classes (2005) within each alignment option

Beaufort Bypass

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Figures

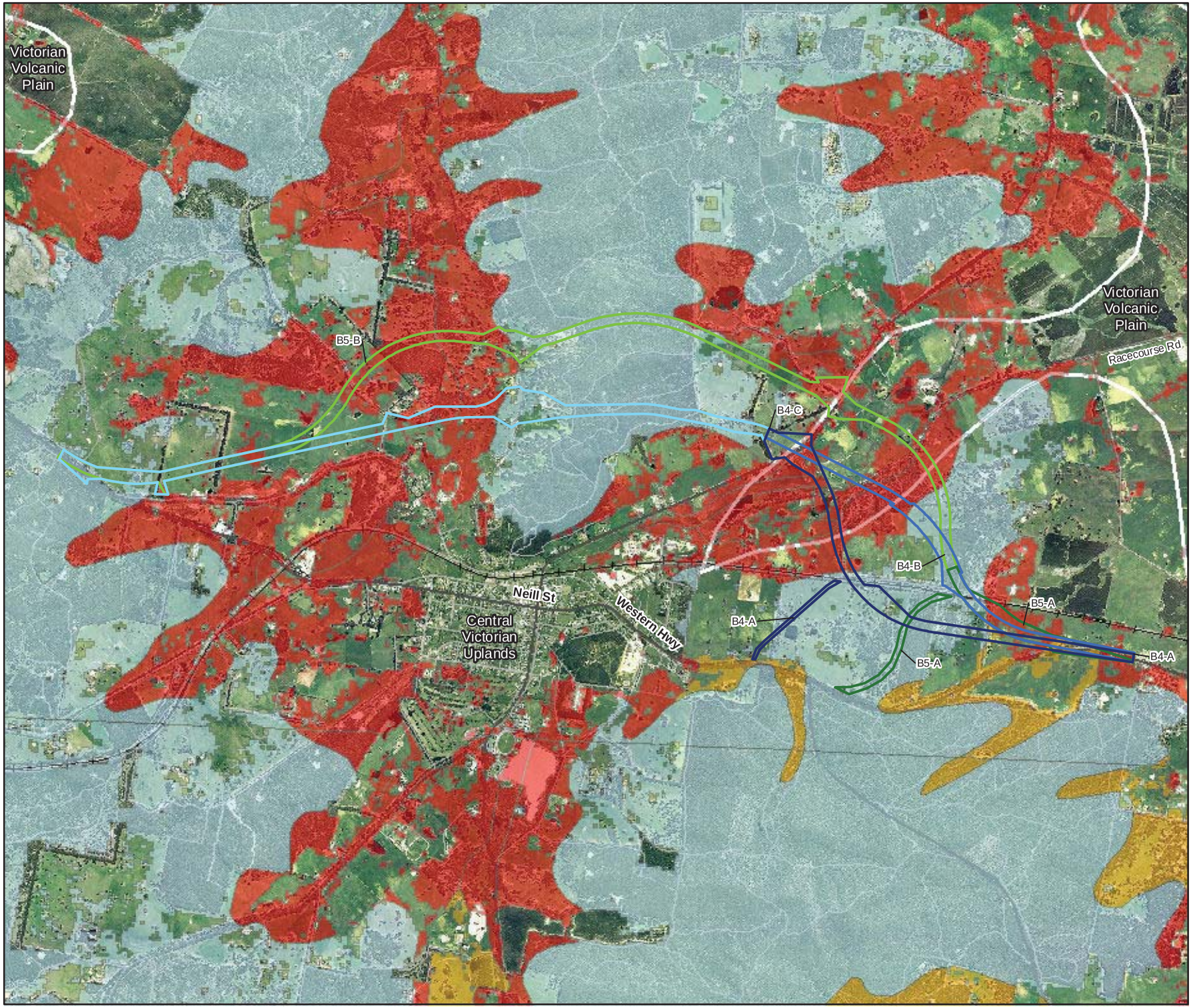

Figure 1a

Ecological Vegetation Classes (2005) within each alignment option

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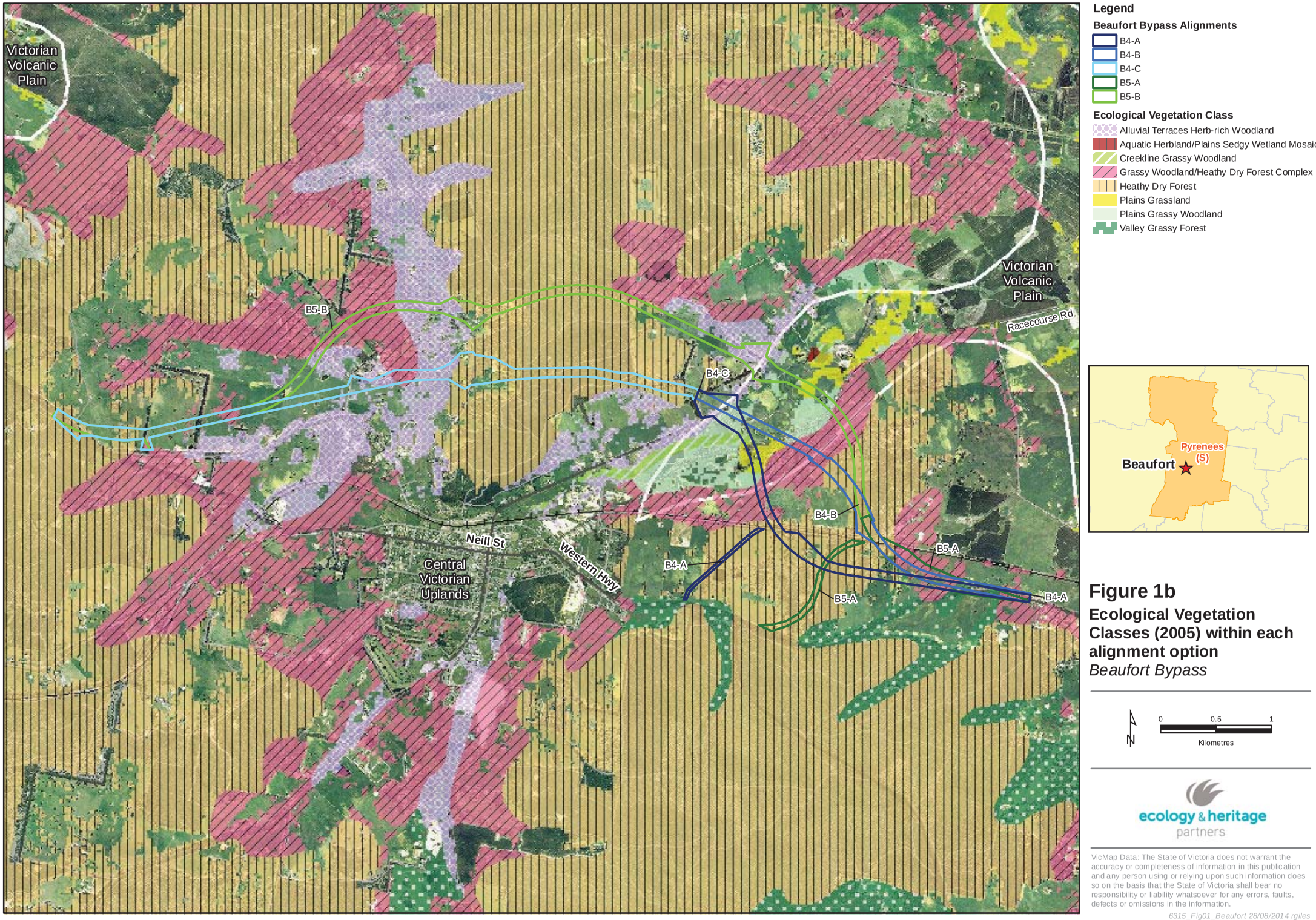

Figure 1b

Ecological Vegetation Classes (2005) within each alignment option

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Legend

Beaufort Bypass Alignments

- B4-A
- B4-B
- B4-C
- B5-A
- B5-B

Threatened Fauna Species (EHP)

- Brown Toadlet
- Dwarf Galaxias
- Golden Sun Moth
- Growling Grass Frog

Threatened Flora Species (EHP)

- Emerald Lip Greenhood

Figure 2

Significant flora and fauna species previously recorded within or nearby the proposed alignments

Beaufort Bypass

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ecology & heritage partners

Appendix 1: Vegetation Losses

Option	Section	Bioregion	EVC	Conservation Significance	Hectares
B4	A	CVU	Alluvial Terraces Herb-rich Woodland	Endangered	0.511
			Grassy Woodland/Heathy Dry Forest Complex	Endangered	5.116
			Heathy Dry Forest	Least Concern	13.199
			Valley Grassy Forest	Vulnerable	2.431
		VVP	Alluvial Terraces Herb-rich Woodland	Endangered	0.594
			Creekline Grassy Woodland	Endangered	0.768
			Grassy Woodland/Heathy Dry Forest Complex	Endangered	0.573
			Plains Grassland	Endangered	1.580
			Plains Grassy Woodland	Endangered	4.430
	B	CVU	Alluvial Terraces Herb-rich Woodland	Endangered	0.004
			Grassy Woodland/Heathy Dry Forest Complex	Endangered	6.071
			Heathy Dry Forest	Least Concern	12.078
			Valley Grassy Forest	Vulnerable	1.789
		VVP	Alluvial Terraces Herb-rich Woodland	Endangered	0.047
			Creekline Grassy Woodland	Endangered	0.013
			Grassy Woodland/Heathy Dry Forest Complex	Endangered	1.913
			Plains Grassland	Endangered	0.223
			Plains Grassy Woodland	Endangered	1.827
	C	CVU	Alluvial Terraces Herb-rich Woodland	Endangered	6.864
			Grassy Woodland/Heathy Dry Forest Complex	Endangered	4.181
			Heathy Dry Forest	Least Concern	28.971
B5	A	CVU	Grassy Woodland/Heathy Dry Forest Complex	Endangered	7.273
			Heathy Dry Forest	Least Concern	9.433
			Valley Grassy Forest	Vulnerable	2.277
	B	CVU	Alluvial Terraces Herb-rich Woodland	Endangered	12.171
			Grassy Woodland/Heathy Dry Forest Complex	Endangered	9.970
			Heathy Dry Forest	Least Concern	24.319
		VVP	Alluvial Terraces Herb-rich Woodland	Endangered	0.994
			Creekline Grassy Woodland	Endangered	0.034
			Grassy Woodland/Heathy Dry Forest Complex	Endangered	1.477
			Plains Grassland	Endangered	1.125
			Plains Grassy Woodland	Endangered	1.212

Notes: CVU = Central Victorian Uplands; VVP = Victorian Volcanic Plain.

Appendix 2: Ecological Significance ratings

Criteria for defining Ecological Significance
NATIONAL SIGNIFICANCE
Flora: National conservation status is based on the EPBC Act list of taxa considered threatened in Australia (i.e. extinct, critically endangered, endangered, vulnerable).
Fauna: National conservation status is based on the EPBC Act list of taxa considered threatened in Australia (i.e. Extinct, Critically Endangered, Endangered, Vulnerable). Fauna listed as Extinct, Critically Endangered, Endangered, Vulnerable, or Rare under National Action Plans for terrestrial taxon prepared for DoE: threatened marsupials and monotremes (Maxwell et al. 1996), rodents (Lee 1995), bats (Duncan et al. 1999), birds (Garnett and Crowley 2000), reptiles (Cogger et al. 1993), amphibians (Tyler 1997) and butterflies (Sands and New 2002).
Communities: Vegetation communities considered critically endangered, endangered or vulnerable under the EPBC Act and considering vegetation condition.
STATE SIGNIFICANCE
Flora: Threatened taxa listed under the provisions of the FFG Act. Flora listed in the State Government's *Advisory List of Rare or Threatened Plants in Victoria* (DSE 2005).
Fauna: Threatened taxon listed under Schedule 2 of the FFG Act. Fauna listed as Extinct, Critically Endangered, Endangered and Vulnerable on the State Government's *Advisory List of Threatened Vertebrate Fauna in Victoria* (DSE 2013). Listed as Lower Risk (Near Threatened, Conservation Dependent or Least concern) or Data Deficient under National Action Plans for terrestrial species prepared for the DoE: threatened marsupials and monotremes (Maxwell et al. 1996), rodents (Lee 1995), bats (Duncan et al. 1999), birds (Garnett and Crowley 2000), reptiles (Cogger et al. 1993), amphibians (Tyler 1997) and butterflies (Sands and New 2002).
Communities: Ecological communities listed as threatened under the FFG Act. EVC listed as threatened (i.e. endangered, vulnerable) or rare in a Native Vegetation Plan for a particular bioregion (DSE 2013c) and considering vegetation condition.
REGIONAL SIGNIFICANCE
Fauna: Fauna with a disjunct distribution, or a small number of documented recorded or naturally rare in the particular Bioregion in which the study area is located. A particular taxon that is has an unusual ecological or biogeographical occurrence or listed as Lower Risk – Near Threatened, Data Deficient or Insufficiently Known on the State Government's *Advisory List of Threatened Vertebrate Fauna in Victoria* (DSE 2013).
Communities: EVC listed as depleted or least concern in a Native Vegetation Plan for a particular bioregion (DSE 2013) and considering vegetation condition. EVC considered rare by the author for a particular bioregion.
LOCAL SIGNIFICANCE
Local significance is defined as flora, fauna and ecological communities indigenous to a particular area, which are not considered rare or threatened on a national, state or regional level.

Appendix 3: Significant flora recorded in the local area (within 10km)

Key:

X	Extinct
e	Endangered
v	Vulnerable
r	Rare
k	Poorly Known
L	Listed
EX	Extinct
CR	Critically endangered
EN	Endangered
VU	Vulnerable
K	Poorly Known (Briggs and Leigh 1996)
#	Records identified from EPBC Act Protected Matters Search Tool.
*	Records identified from the FIS

EPBC	Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)
FFG	Flora and Fauna Guarantee Act 1988 (FFG Act)
DSE	Advisory List of Threatened Flora in Victoria (DSE 2005)
1	*Known Occurrence :* Recorded within the study area recently (i.e. within ten years)
2	*High Likelihood:* Previous records of the species in the local vicinity; and/or, the study area contains areas of high quality habitat.
3	*Moderate Likelihood*: Limited previous records of the species in the local vicinity; and/or, the study area contains poor or limited habitat.
4	*Low Likelihood*: Poor or limited habitat for the species however other evidence (such as a lack of records or environmental factors) indicates there is a very low likelihood of presence.
5	*Unlikely*: No suitable habitat and/or outside the species range.

Scientific name	Common name	Total # of documented records	Last documented record	EPBC	FFG	DSE	
NATIONAL SIGNIFICANCE							
# Amphibromus fluitans	River Swamp Wallaby-grass	-	-	VU	-	-	
# Caladenia tensa	Greencomb Spider-orchid	-	-	EN	-	v	
# Caladenia versicolor	Candy Spider-orchid	-	-	VU	L	e	
# Carex tasmanica	Curly Sedge	-	-	VU	L	v	
Daviesia laevis	Grampians Bitter-pea	1	2008	VU	L	v	
# Dianella amoena	Matted Flax-lily	-	-	EN	L	e	
# Dodonaea procumbens	Tailing Hop-bush	-	-	VU	L	v	
Eucalyptus crenulata	Buxton Gum	1	1982	EN	L	e	
# Glycine latrobeana	Clover Glycine	-	-	VU	L	v	

Scientific name	Common name	Total # of documented records	Last documented record	EPBC	FFG	DSE	
# Grevillea floripendula	Ben Major Grevillea	89	2013	VU	L	v	
# Leucochrysum albicans var. tricolor	White Sunray	5	2007	EN	L	e	
# Pimelea spinescens subsp. spinescens	Spiny Rice-flower	7	2007	CR	L	e	
# Poa sallacustris	Salt-lake Tussock-grass	-	-	VU	L		
Rutidosis leptorhynchoides	Button Wrinklewort	32	2007	EN	L	e	
# Senecio psilocarpus	Swamp Fireweed	-	-	VU	-	v	
# Thelymitra matthewsii	Spiral Sun-orchid	-	-	VU	L	v	
# Xerochrysum palustre	Swamp Everlasting	1	1991	VU	L	v	
STATE SIGNIFICANCE							
Acacia aspera subsp. parviceps	Rough Wattle	10	2000	-	-	r	
Comesperma polygaloides	Small Milkwort	13	2011	-	L	v	
Coronidium scorpioides 'aff. rutidolepis (Lowland Swamps)' v	Pale Swamp Everlasting	1	1990	-	-	v	
Diuris behrii	Golden Cowslips	4	2013	-	-	v	
Eucalyptus diversifolia subsp. megacarpa	Coast Gum	1	1997	-	-	v	
Eucalyptus yarraensis	Yarra Gum	16	2001	-	-	r	
Leptospermum turbinatum	Shiny Tea-tree	1	1982	-	-	r	
Olearia speciosa	Netted Daisy-bush	1	1893	-	-	k	
Podolepis sp. 1	Basalt Podolepis	1	1990	-	-	e	

Appendix 4: Significant fauna recorded in the local area (within 10km)

Habitat characteristics of significant fauna species previously recorded within 10 kilometres of the study area, or that may potentially occur within the study area were assessed to determine their likelihood of occurrence. The likelihood of occurrence rankings for each of the threatened species are:

1	High Likelihood	• Known resident in the study area based on site observations, database records, or expert advice; and/or, • Recent records (i.e. within five years) of the species in the local area (DEPI 2011); and/or, • The study area contains the species' preferred habitat.
2	Moderate Likelihood	• The species is likely to visit the study area regularly (i.e. at least seasonally); and/or, • Previous records of the species in the local area (DEPI 2011); and/or, • The study area contains some characteristics of the species' preferred habitat.
3	Low Likelihood	• The species is likely to visit the study area occasionally or opportunistically whilst en route to more suitable sites; and/or, • There are only limited or historical records of the species in the local area (i.e. more than 20 years old); and/or, • The study area contains few or no characteristics of the species' preferred habitat.
4	Unlikely	• No previous records of the species in the local area; and/or, • The species may fly over the study area when moving between areas of more suitable habitat; and/or, • Out of the species' range; and/or, • No suitable habitat present.

Common Name	Scientific Name	Last documented record	Total # of records	EPBC Act	DSE (2003)	FFG ACT	National Action Plan	
NATIONAL								
Eastern Barred Bandicoot	*Perameles gunnii*	1918	24	EN	RX	L	CR	
Plains-wanderer	*Pedionomus torquatus*	1922	1	VU	CR	L	EN	
Regent Honeyeater	*Anthochaera phrygia*	1971	1	EN	CR	L	EN	
# Growling Grass Frog	*Litoria raniformis*	2013	30	VU	EN	L	VU	
# Australasian Bittern	*Botaurus poiciloptilus*	-	-	EN	EN	L	VU	
# Swift Parrot	*Lathamus discolor*	-	-	EN	EN	L	EN	
# Australian Painted Snipe	*Rostratula australis*	-	-	VU	CR	L	VU	
# Dwarf Galaxias	*Galaxiella pusilla*	-	-	VU	VU	L	VU	
# Golden Sun Moth	*Synemon plana*	-	-	CR	EN	L		
# Southern Brown Bandicoot	*Isoodon obesulus obesulus*	-	-	EN	NT		NT	

# Grey-headed Flying-fox	*Pteropus poliocephalus*	-	-	VU	VU	L	VU	
# Pink-tailed Worm-Lizard	*Aprasia parapulchella*	-	-	VU	EN	L		
# Striped Legless Lizard	*Delma impar*	-	-	VU	EN	L	VU	
STATE								
Australasian Shoveler	*Anas rhynchotis*	1986	5	-	VU	-	-	
Musk Duck	*Biziura lobata*	1980	4	-	VU	-	-	
Hardhead	*Aythya australis*	2001	6	-	VU	-	-	
Blue-billed Duck	*Oxyura australis*	1980	1	-	EN	L	-	
Eastern Great Egret	*Ardea modesta*	1999	6	-	VU	L	-	
Brolga	*Grus rubicunda*	2013	68	-	VU	L	-	
Gull-billed Tern	*Gelochelidon nilotica macrotarsa*	1992	3	-	EN	L	-	
Powerful Owl	*Ninox strenua*	2011	10	-	VU	L	-	
Brown Treecreeper (south-eastern ssp.)	*Climacteris picumnus victoriae*	1999	15	-	NT	-	NT	
Speckled Warbler	*Chthonicola sagittatus*	1979	6	-	VU	L	NT	
Painted Honeyeater	*Grantiella picta*	1972	1	-	VU	L	NT	
Hooded Robin	*Melanodryas cucullata cucullata*	1975	1	-	NT	L	NT	
Diamond Firetail	*Stagonopleura guttata*	1977	1	-	NT	L	NT	
Tussock Skink	*Pseudemoia pagenstecheri*	2012	1	-	VU	-	-	
Brown Toadlet	*Pseudophryne bibronii*	2011	13	-	EN	L	DD	
Southern Toadlet	*Pseudophryne semimarmorata*	1885	4	-	VU	-	-	
Southern Pygmy Perch	*Nannoperca australis*	2002	13	-	VU	-	-	
REGIONAL								
Fat-tailed Dunnart	*Sminthopsis crassicaudata*	1992	2	-	NT	-	-	
Nankeen Night Heron	*Nycticorax caledonicus hillii*	1976	1	-	NT	-	-	
Spotted Harrier	*Circus assimilis*	1982	1	-	NT	-	-	
Latham's Snipe	*Gallinago hardwickii*	2000	3	-	NT	-	-	
Black-eared Cuckoo	*Chrysococcyx osculans*	1971	3	-	NT	-	-	
Long neck tortoise	*Chelodina longicollis*	2012	1	-	DD	-	-	