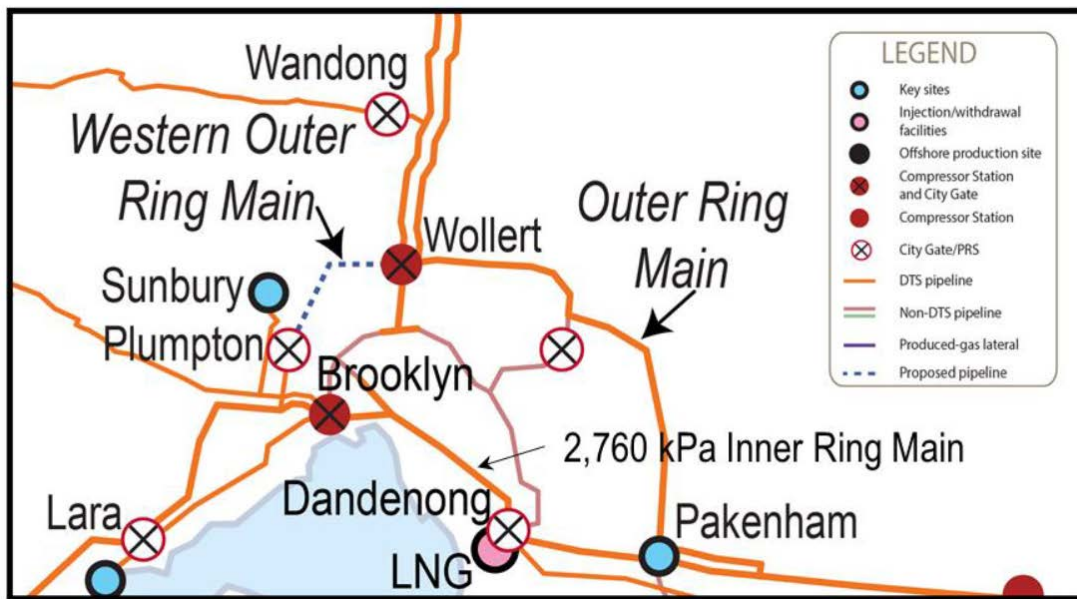


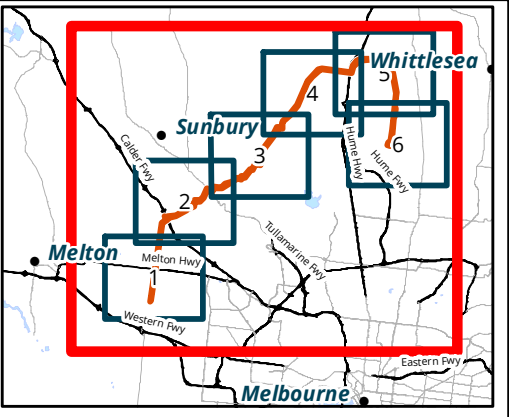
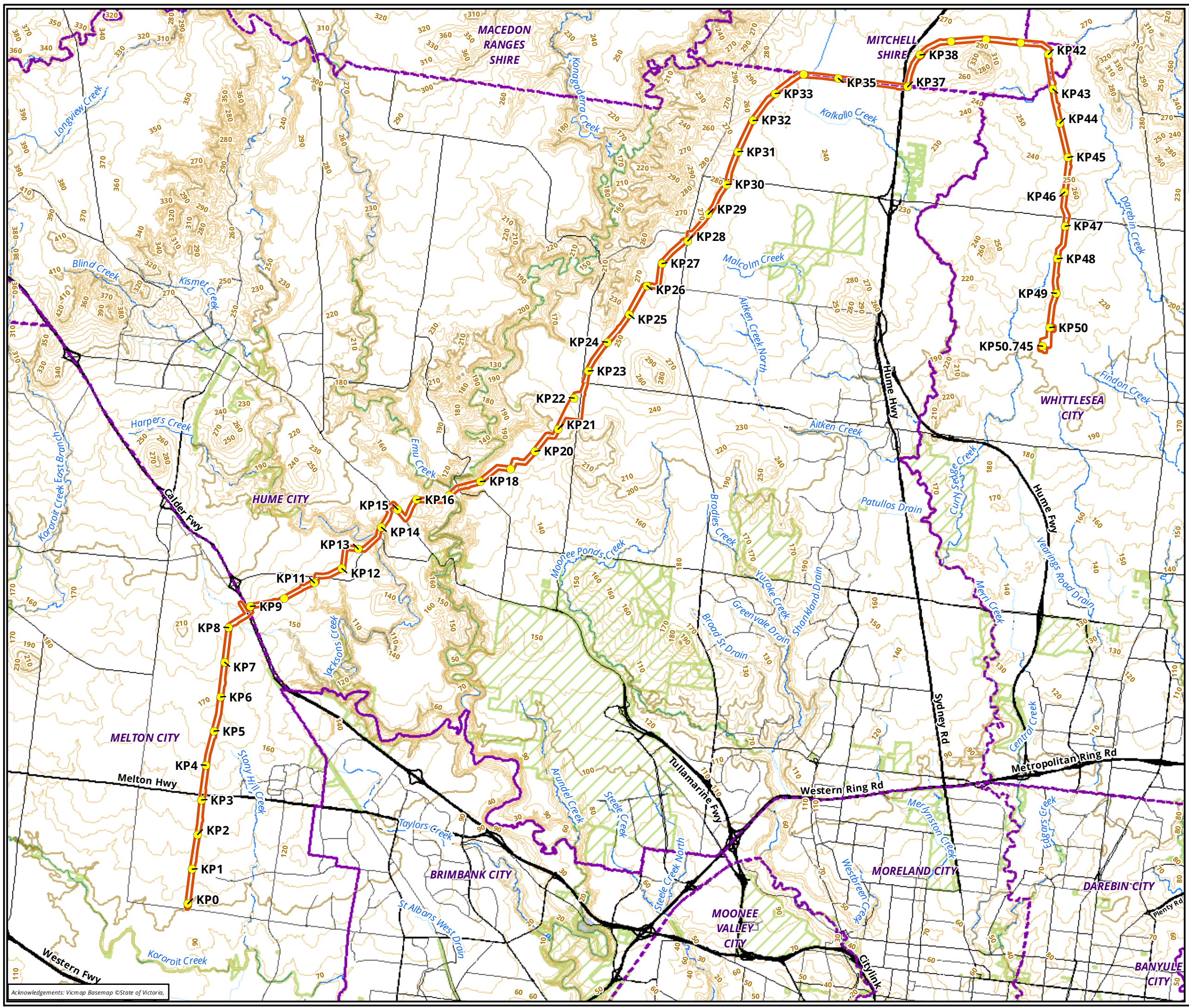
---

## Figures

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**Figure 1 Western Outer Ring Main**



- Legend**
- Study area
  - Kilometre Point
  - Crown land
  - Local government area
- Contour**
- Major
  - Minor
  - contour\_dep

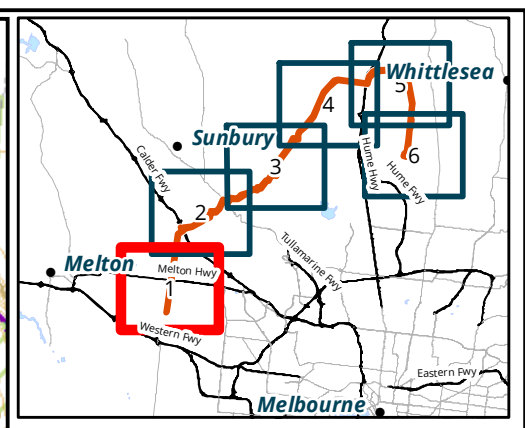
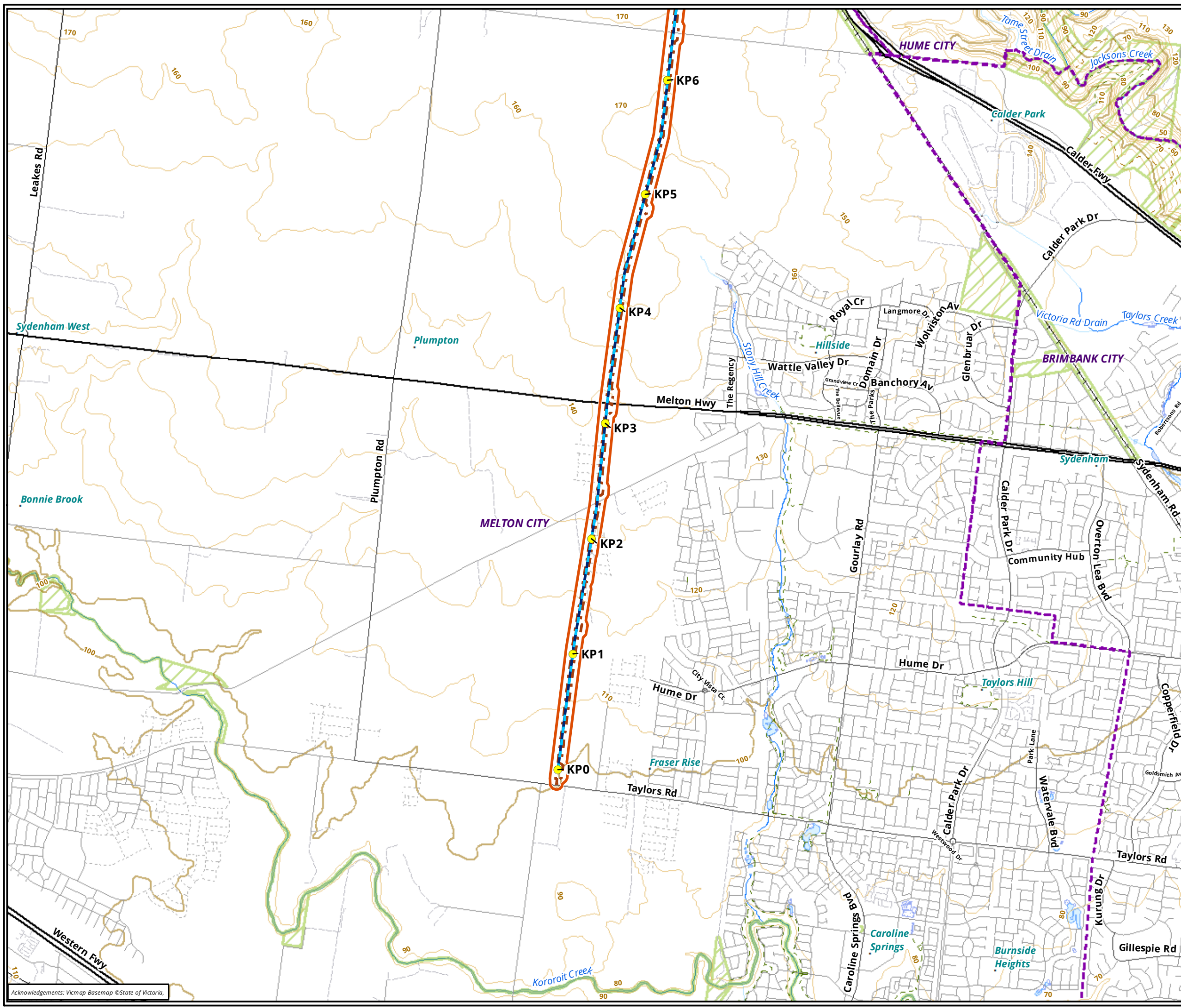
**Figure 2. Overview Study area, Western Outer Ring Main - Preliminary alignment**

0 1 2 3 4 5  
 Kilometres  
 Scale: 1:100,000 @ A3  
 Coordinate System: GDA 1994 MGA Zone 55



Matter: 29801,  
 Date: 11 October 2019,  
 Checked by: SCC, Drawn by: DK, Last edited by: jturner  
 Location: P:\29800s\29802\Maping\29802\_F2\_Study\_area.mxd

Acknowledgements: Vicmap Basemap ©State of Victoria.



- Legend**
- Study area
  - Kilometre Point
  - Preliminary Pipeline Alignment
  - Construction footprint
  - Crown land
  - Local government area
- Contour**
- Major
  - Minor

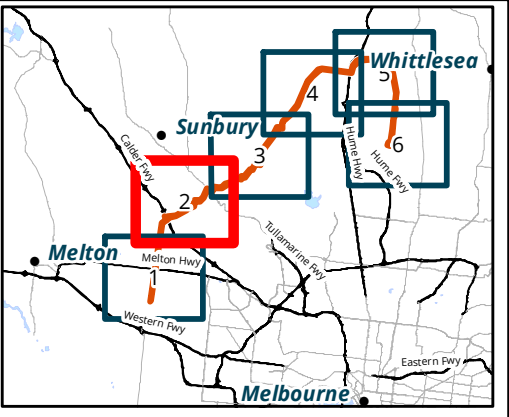
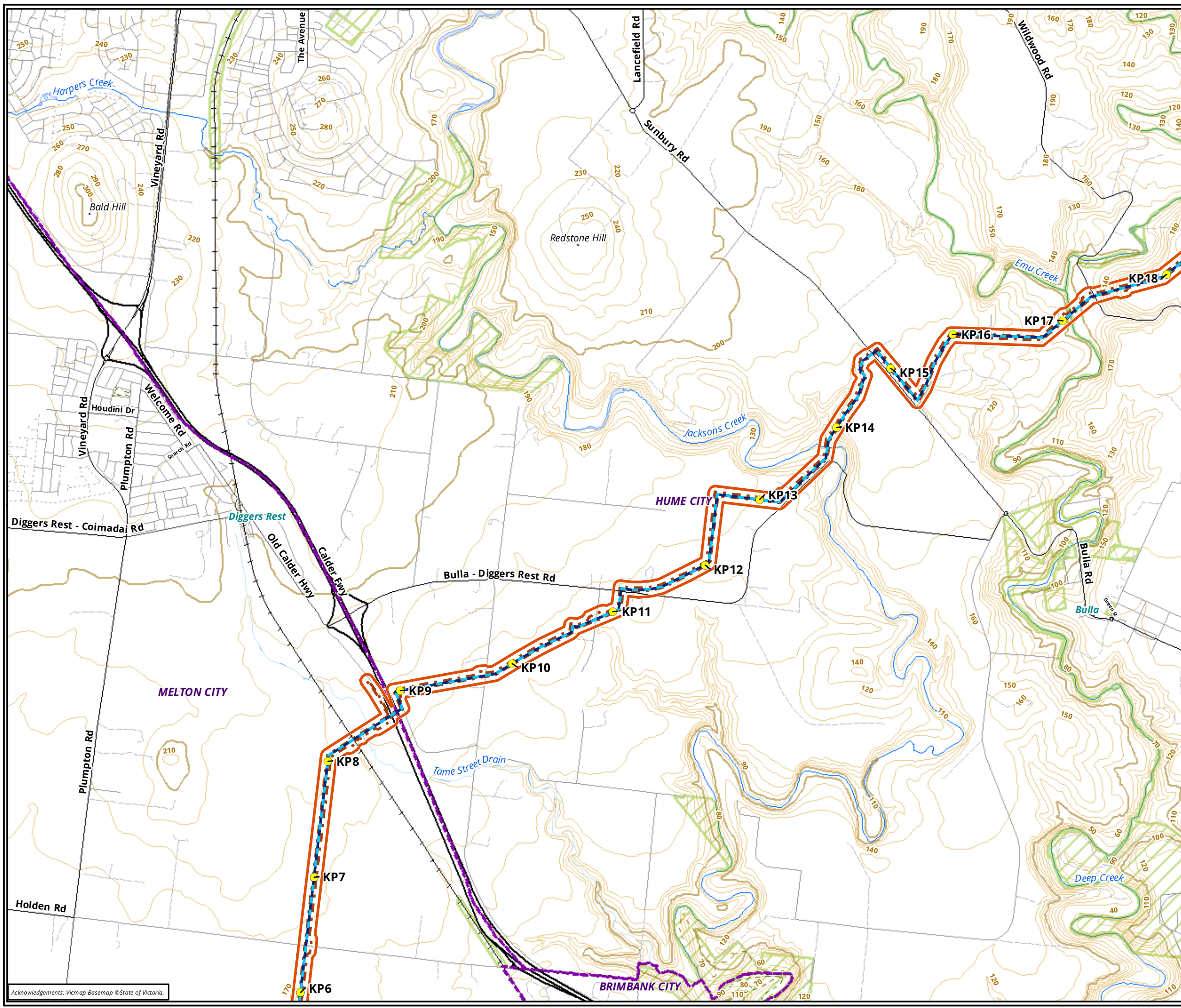
**Figure 2.1 Study area, Western Outer Ring Main - Preliminary alignment**

0 0.3 0.6 0.9 1.2 1.5  
 Kilometres  
 Scale: 1:30,000 @ A3  
 Coordinate System: GDA 1994 MGA Zone 55



Matter: 29801,  
 Date: 11 October 2019,  
 Checked by: SCC, Drawn by: DK, Last edited by: jturner  
 Location: P:\29800s\29802\Mapping\29802\_F2\_Study\_area.mxd

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**Legend**

- Study area
- Kilometre Point
- Preliminary Pipeline Alignment
- Construction footprint
- Crown land
- Local government area

**Contour**

- Major
- Minor

**Figure 2.2 Study area, Western Outer Ring Main - Preliminary alignment**

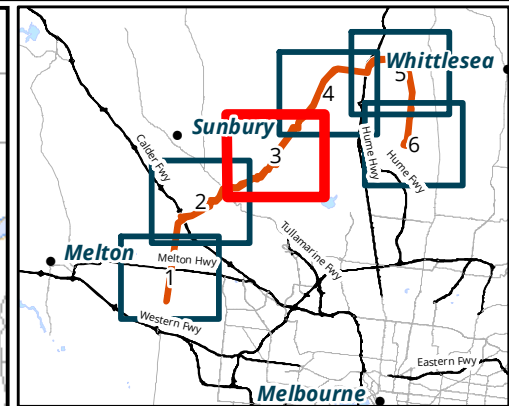
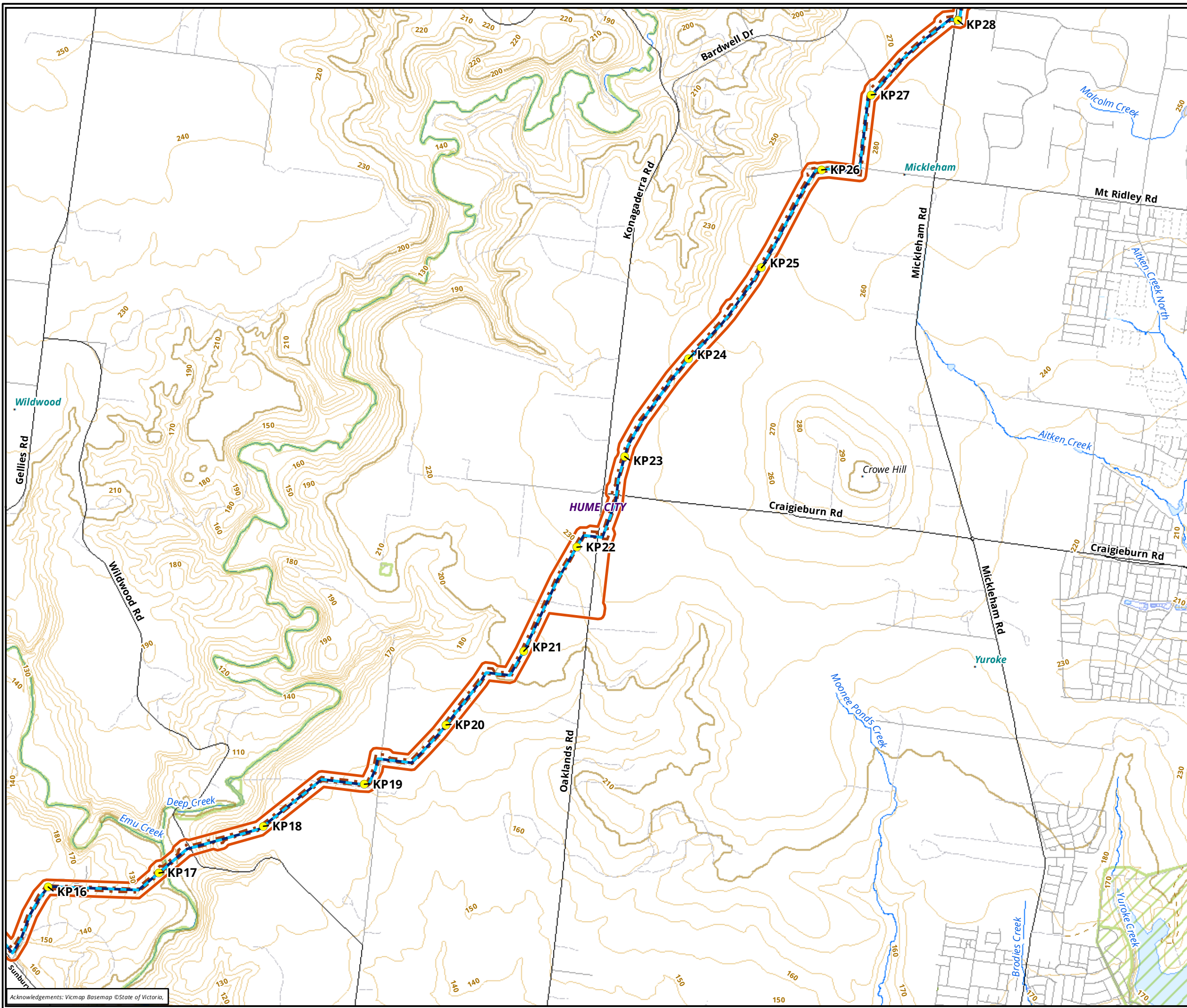
0 0.3 0.6 0.9 1.2 1.5  
 Kilometres  
 Scale: 1:30,000 @ A3  
 Coordinate System: GDA 1994 MGA Zone 55



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**Legend**

- Study area
- Kilometre Point
- Preliminary Pipeline Alignment
- Construction footprint
- Crown land
- Local government area

**Contour**

- Major
- Minor

**Figure 2.3 Study area, Western Outer Ring Main - Preliminary alignment**

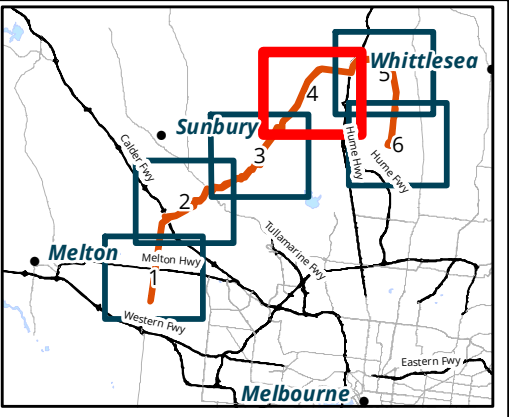
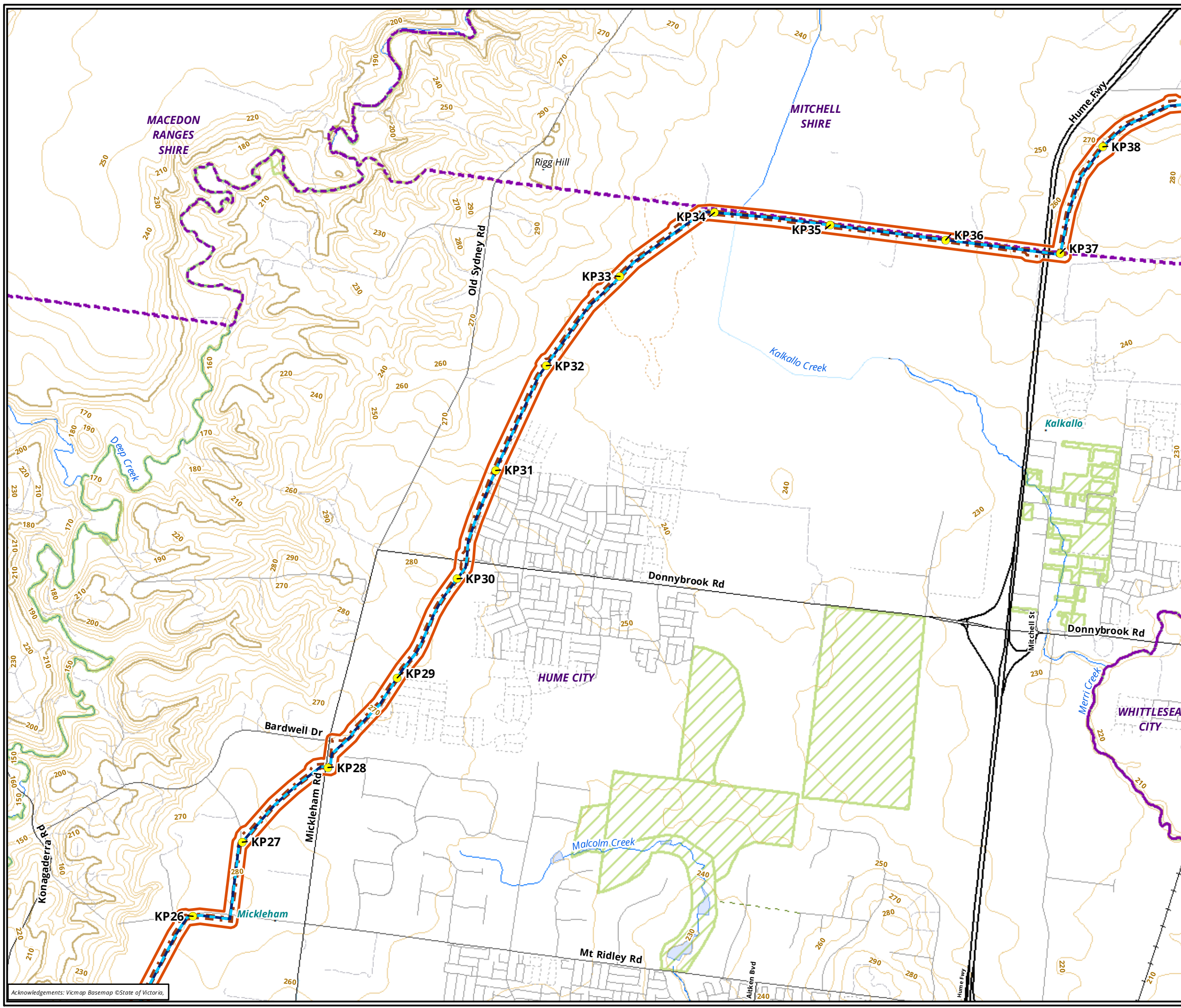
0 0.3 0.6 0.9 1.2 1.5  
 Kilometres  
 Scale: 1:30,000 @ A3  
 Coordinate System: GDA 1994 MGA Zone 55

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 Location: P:\29800s\29802\Mapping\29802\_F2\_Study\_area.mxd



**Legend**

- Study area
- Kilometre Point
- Preliminary Pipeline Alignment
- Construction footprint
- Crown land
- Local government area

**Contour**

- Major
- Minor
- contour\_dep

**Figure 2.4 Study area, Western Outer Ring Main - Preliminary alignment**

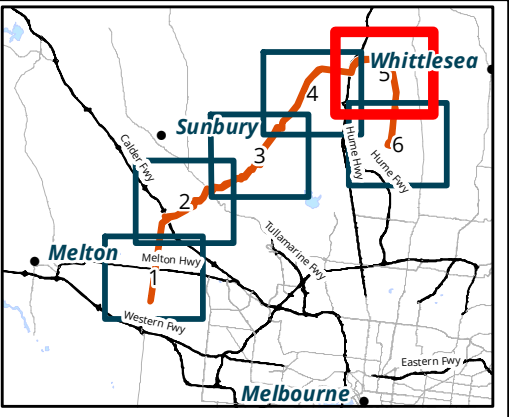
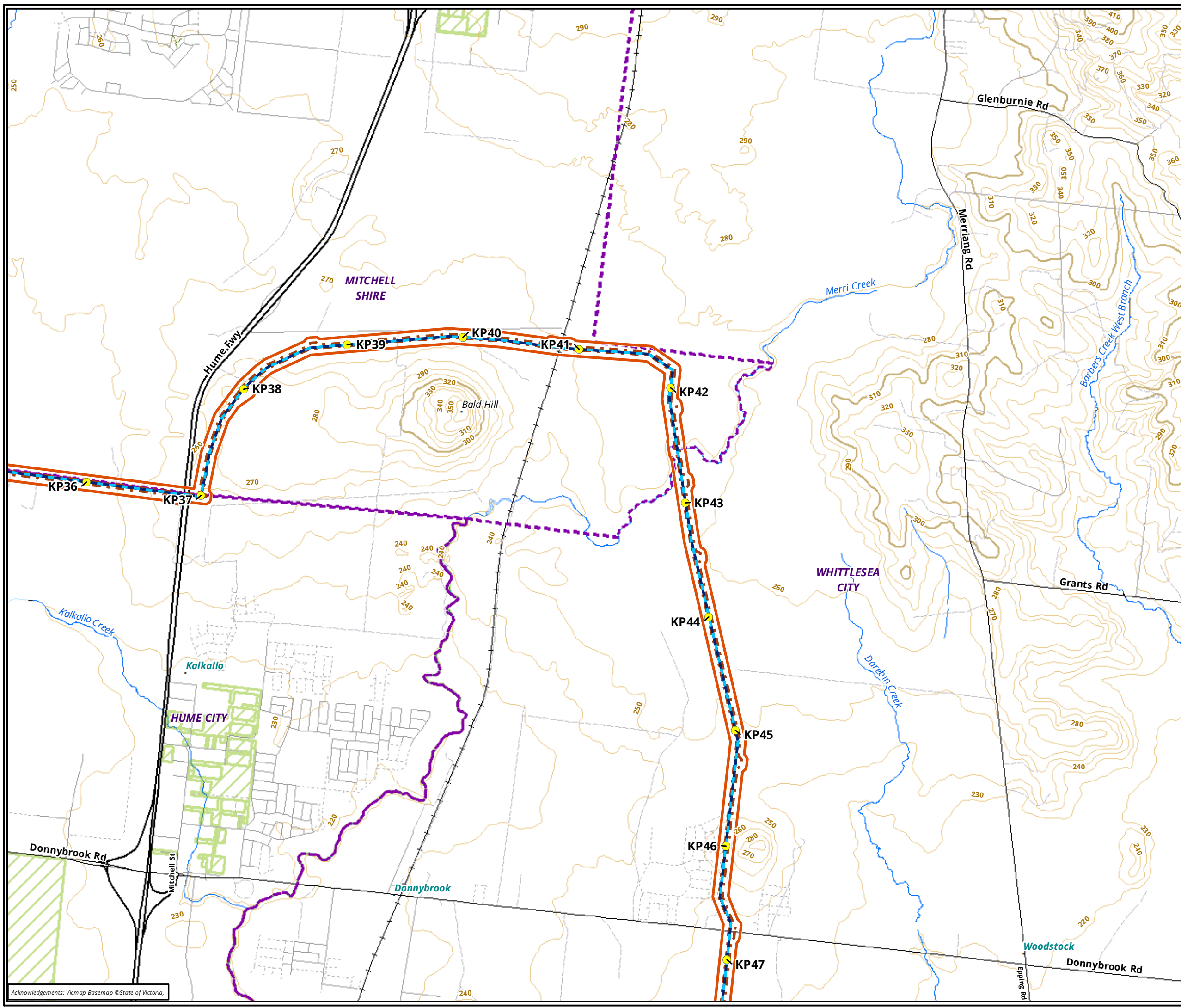
0 0.3 0.6 0.9 1.2 1.5  
 Kilometres  
 Scale: 1:30,000 @ A3  
 Coordinate System: GDA 1994 MGA Zone 55

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 Location: P:\29800s\29802\Mapping\29802\_F2\_Study\_area.mxd

Acknowledgements: Vicmap Basemap ©State of Victoria,



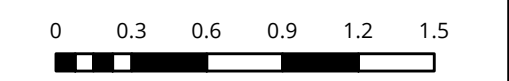
**Legend**

- Study area
- Kilometre Point
- Preliminary Pipeline Alignment
- Construction footprint
- Crown land
- Local government area

**Contour**

- Major
- Minor

**Figure 2.5 Study area, Western Outer Ring Main - Preliminary alignment**



Kilometres  
Scale: 1:30,000 @ A3  
Coordinate System: GDA 1994 MGA Zone 55

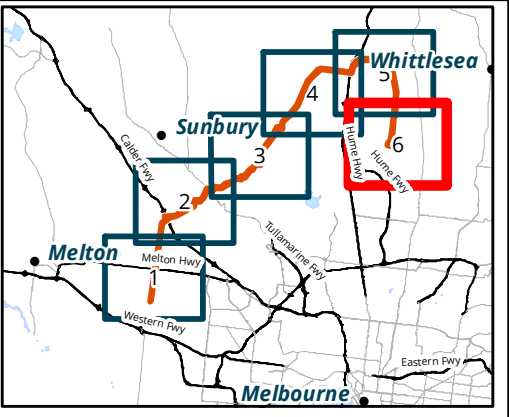
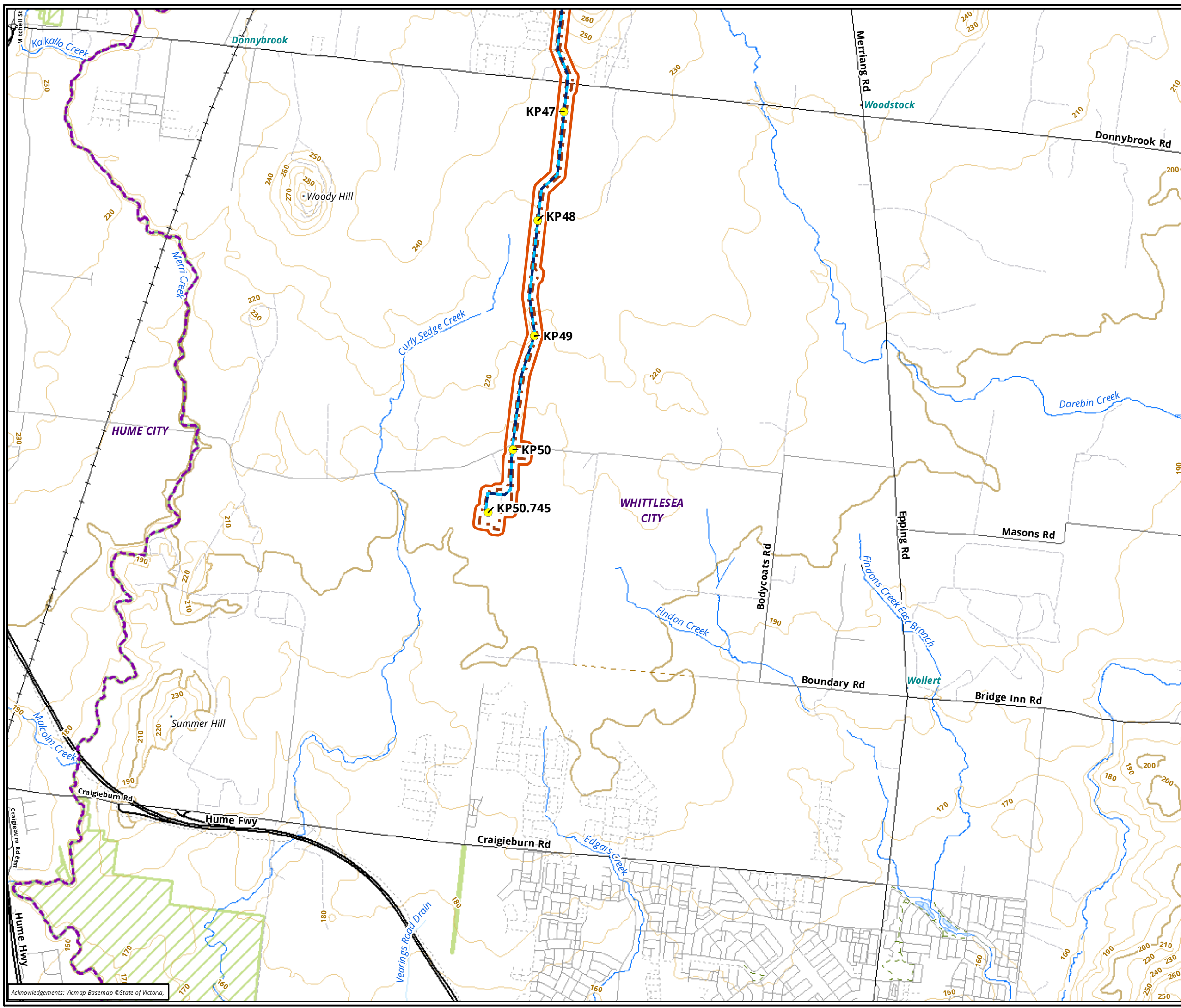
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Matter: 29801,  
Date: 11 October 2019,  
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Location: P:\29800s\29802\Mapping\29802\_F2\_Study\_area.mxd

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**Legend**

- Study area
- Kilometre Point
- Preliminary Pipeline Alignment
- Construction footprint
- Crown land
- Local government area

**Contour**

- Major
- Minor

**Figure 2.6 Study area, Western Outer Ring Main - Preliminary alignment**

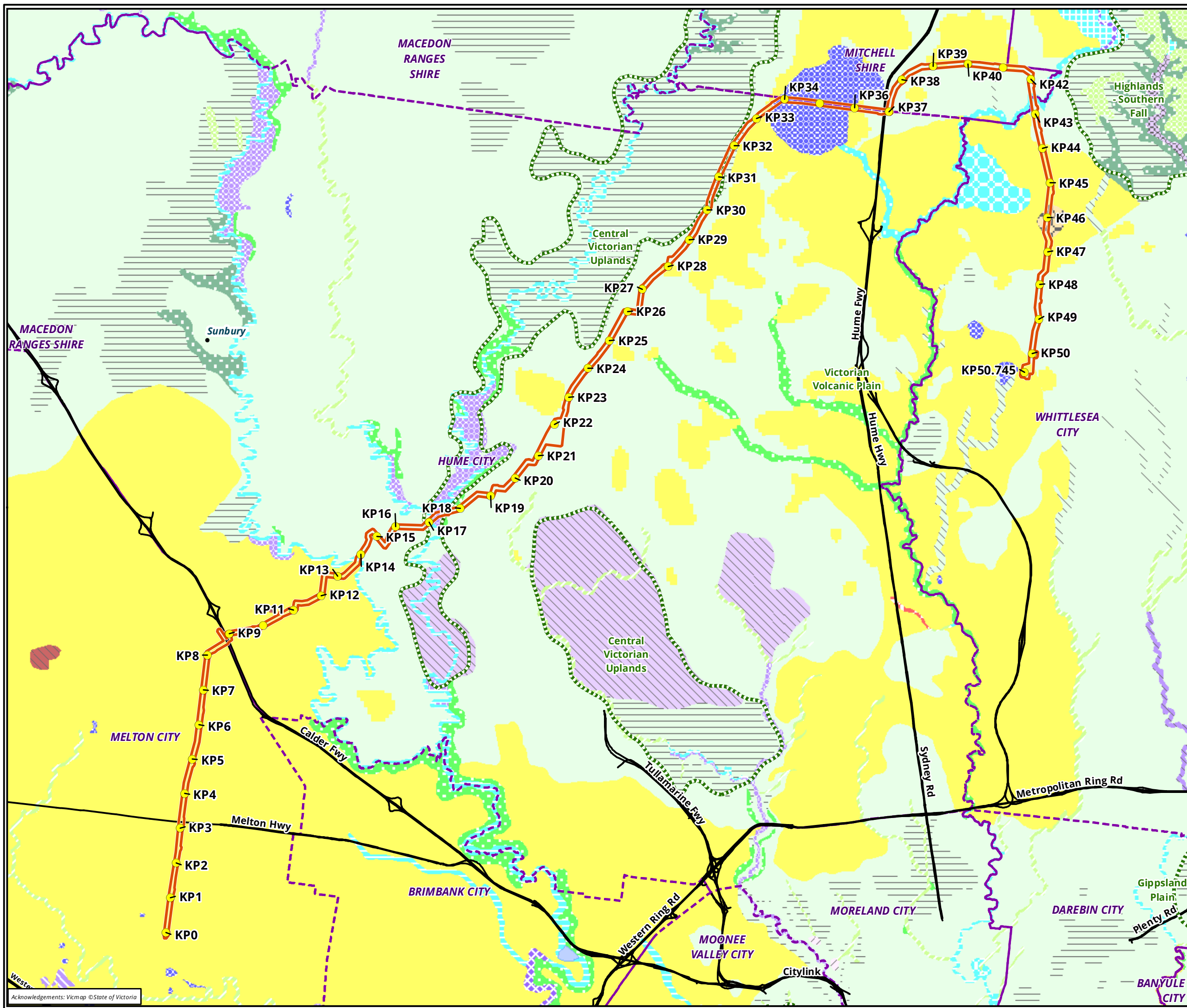
0 0.3 0.6 0.9 1.2 1.5  
 Kilometres  
 Scale: 1:30,000 @ A3  
 Coordinate System: GDA 1994 MGA Zone 55

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 Location: P:\29800s\29802\Mapping\29802\_F2\_Study\_area.mxd





- Legend**
- Study
  - Kilometre
  -
- Pre 1750s**
- 104 Lignum
  - 124 Grey Clay Drainage-line Aggregate
  - 125 Plains Grassy
  - 126 Swampy Riparian
  - 132 Plains
  - 164 Creekline Herb-rich Woodland
  - 17 Scrub/Swampy Riparian Woodland
  - 175 Grassy
  - 191 Riparian
  - 22 Grassy Dry
  - 47 Valley Grassy
  - 55 Plains Grassy
  - 56 Floodplain Riparian
  - 641 Riparian
  - 647 Plains Sedgy
  - 654 Creekline Tussock
  - 656 Brackish
  - 68 Creekline Grassy
  - 71 Hills Herb-rich
  - 851 Stream Bank
  - 894 Scoria Cone
  - 895 Escarpment
  - 928 Riparian Woodland/Stream-bank Shrubland Mosaic
  - 932 Wet Verge
  - 937 Swampy

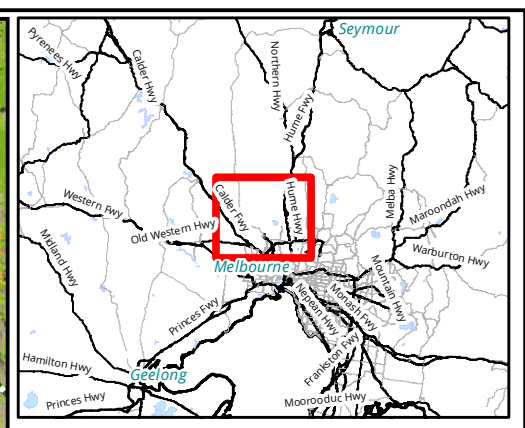
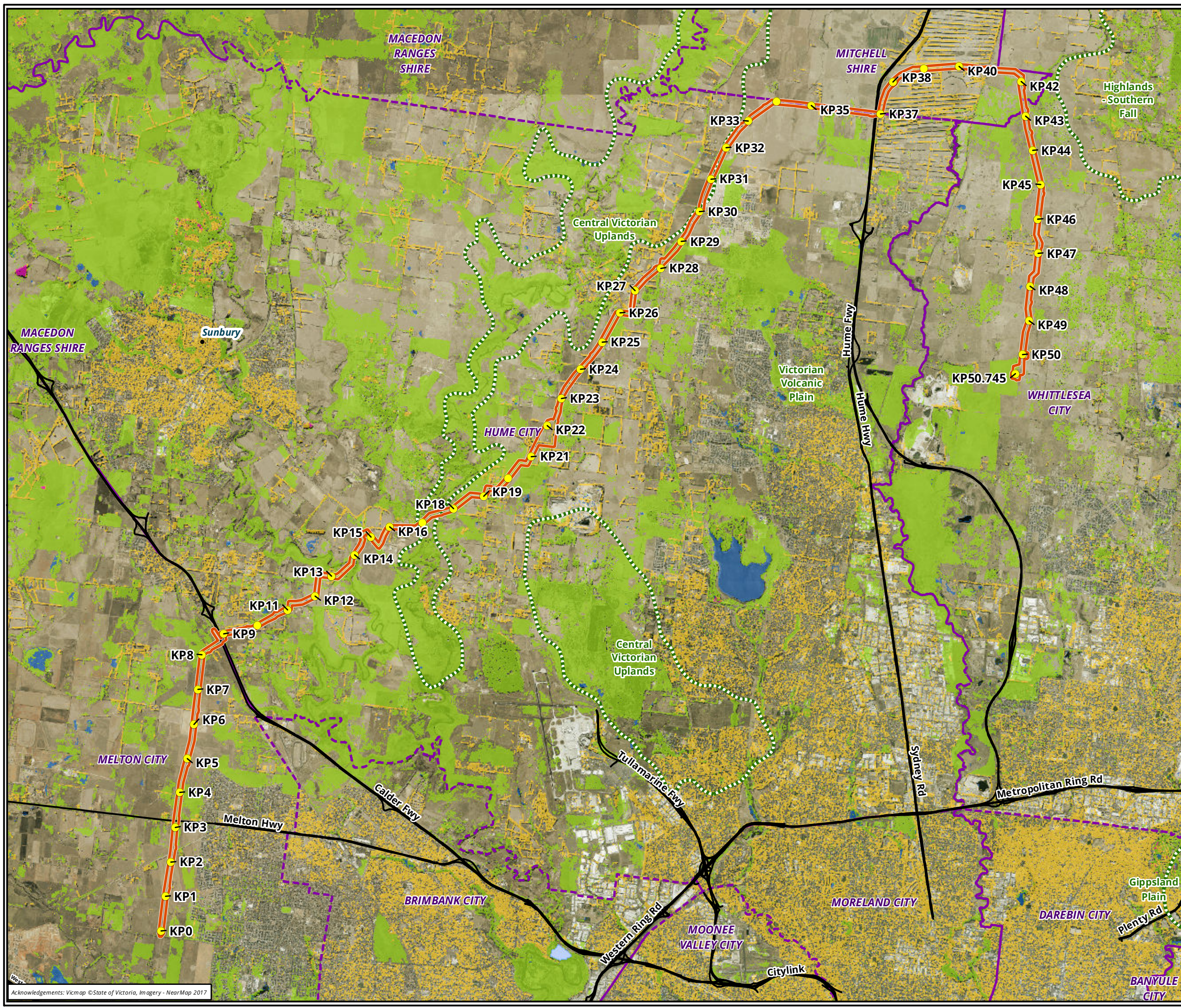
**Figure 4 Pre 1750s Ecological Vegetation Classes near the study area**

0 1 2 3 4 5  
 Kilometers  
 Scale: 1:100,000 @ A3  
 Coordinate System: GDA 1994 MGA Zone 55



Acknowledgements: Vicmap © State of Victoria

Matter: 29802,  
 Date: 11 October 2019,  
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 Location: P:\29800s\29802\mapping\29802\_F4\_Pre1750EVCS.mxd



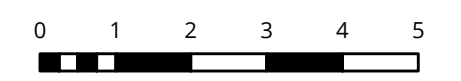
**Legend**

- Study area
- Kilometre Point
- Bioregions

**Native vegetation extent**

- Artificial impoundment
- Exotic largely treeless
- Exotic tree cover
- Native vegetation cover\*
- Natural waterbodies \*\*
- Plantations, exotic and other

**Figure 5 Native Vegetation Extent**



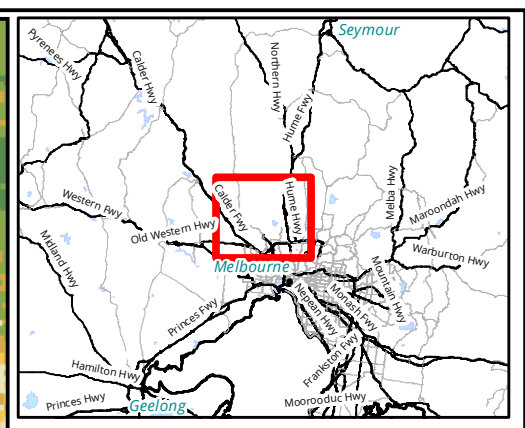
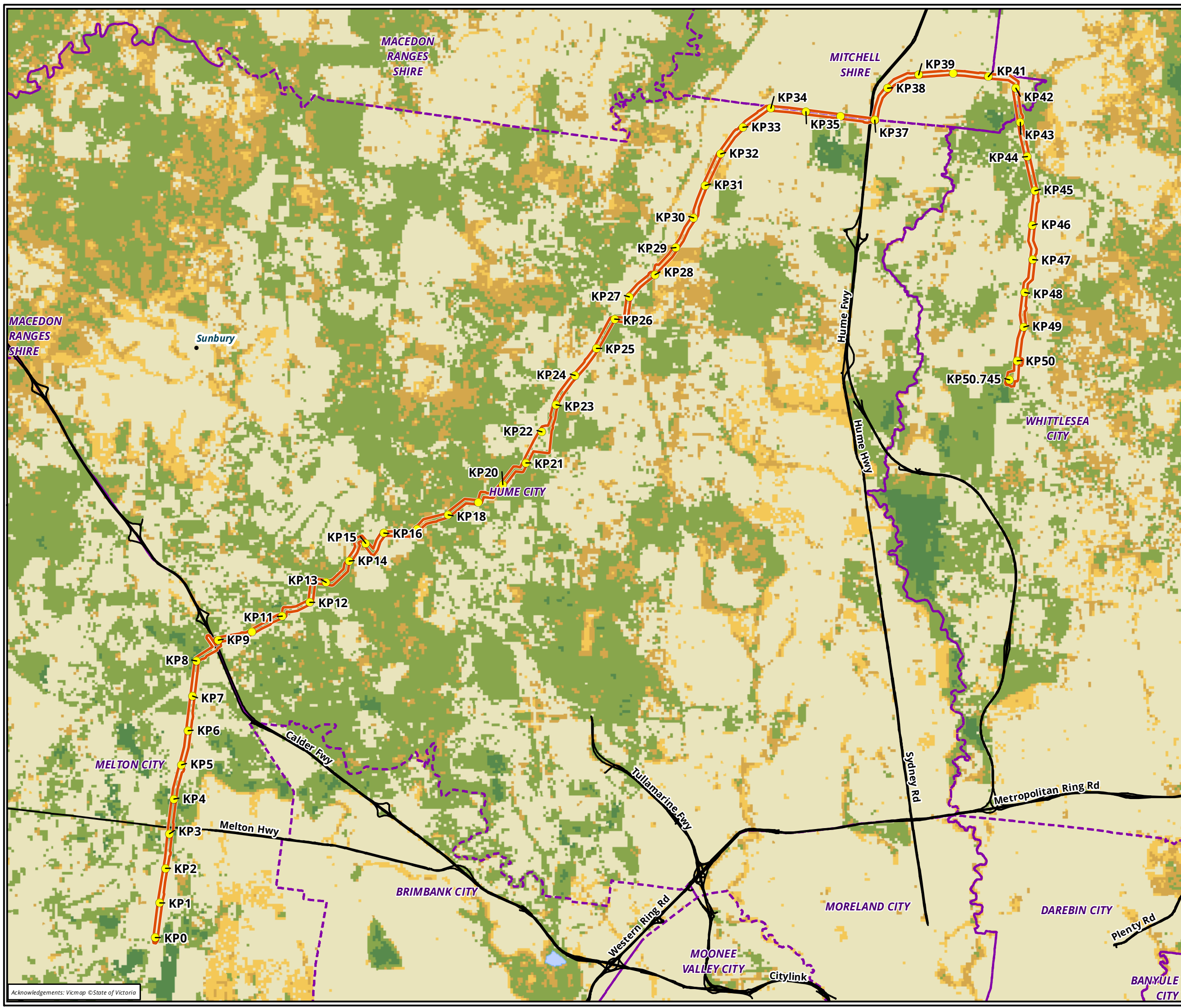
Kilometers  
Scale: 1:100,000 @ A3  
Coordinate System: GDA 1994 MGA Zone 55



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Date: 11 October 2019,  
Checked by: SCC, Drawn by: DK, Last edited by: jturner  
Location: P:\29800s\29802\mapping\29802\_FS\_NativeVegExtent.mxd

Acknowledgements: Vicmap © State of Victoria, Imagery - NearMap 2017



**Legend**

- Study area
- Kilometre Point

**Native Vegetation Condition Score**

	0.00 - 0.20
	0.21 - 0.40
	0.41 - 0.60
	0.61 - 0.80
	0.81 - 1.00

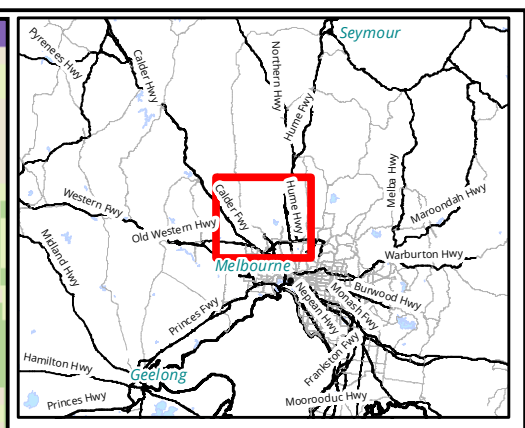
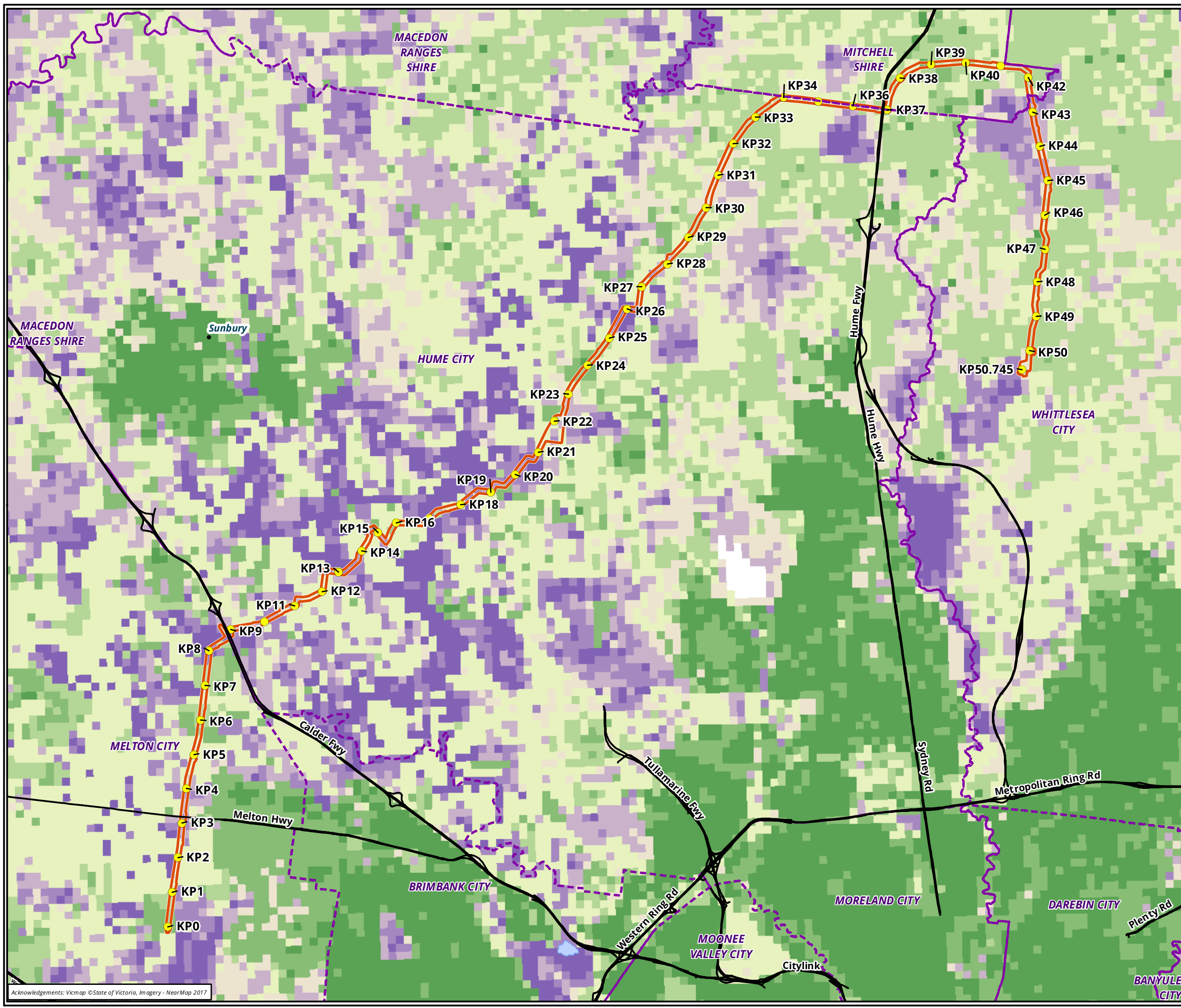
**Figure 6 Modelled Native Vegetation Condition**

0 1 2 3 4 5  
 Kilometers  
 Scale: 1:100,000 @ A3  
 Coordinate System: GDA 1994 MGA Zone 55

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 Location: P:\29800s\29802\mapping\29802\_F6\_NativeVegCondition.mxd



**Legend**

- Study area
- Kilometre Point

**Strategic biodiversity value**

	1 - 15
	>15 - 25
	>25 - 40
	>40 - 50
	>50 - 65
	>65 - 80
	>80 - 90
	>90 - 100

**Figure 7 Strategic Biodiversity Value**

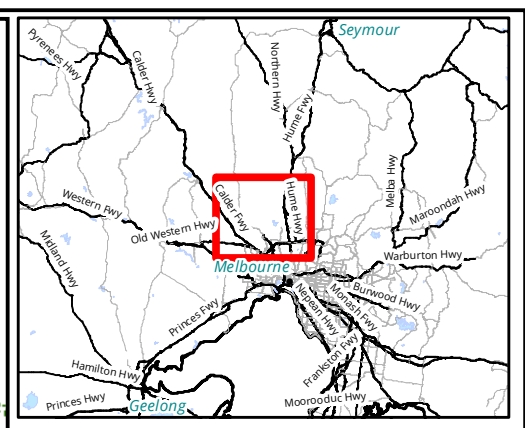
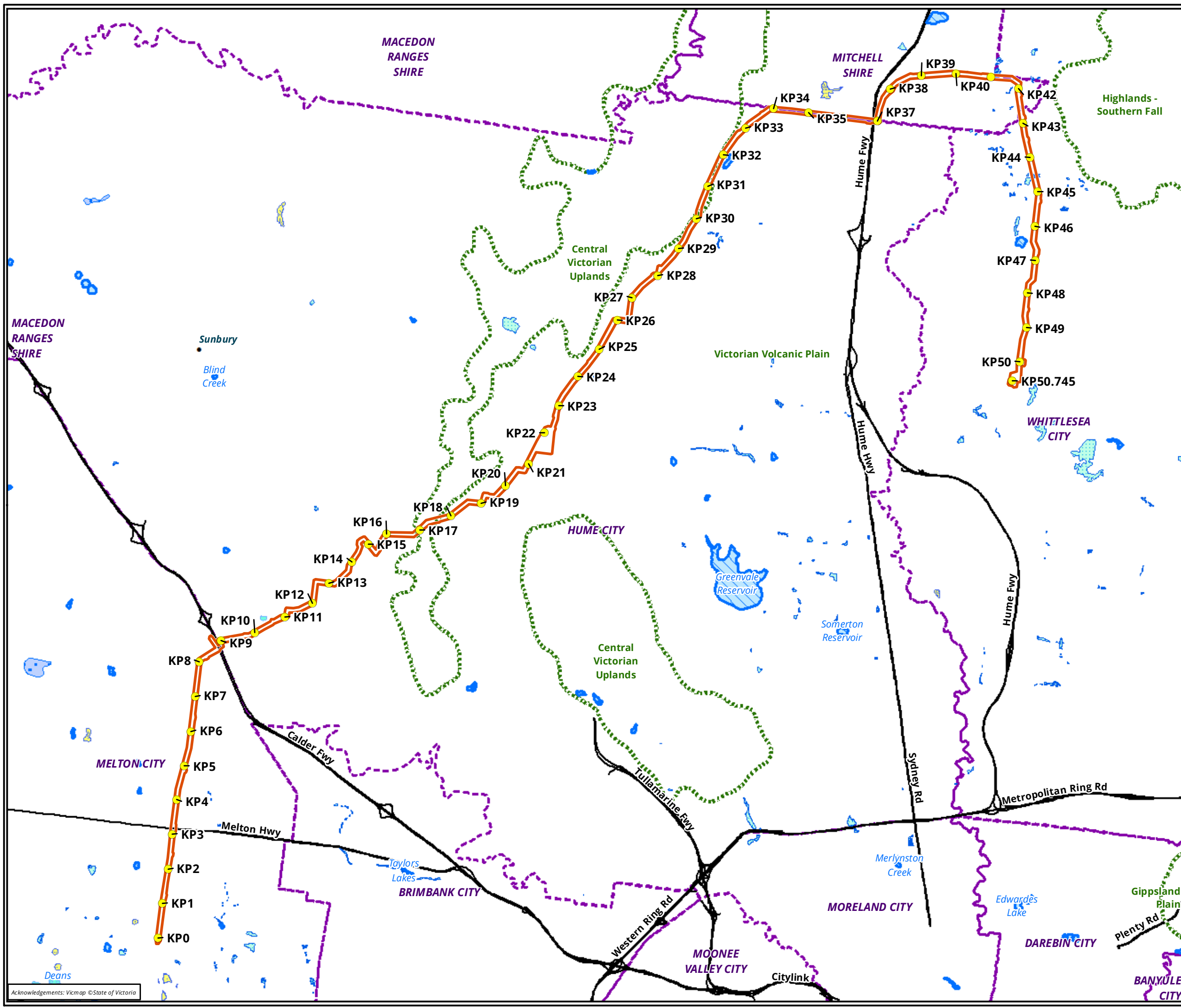
0 1 2 3 4 5  
 Kilometers  
 Scale: 1:100,000 @ A3  
 Coordinate System: GDA 1994 MGA Zone 55

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Matter: 29802,  
 Date: 11 October 2019,  
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 Location: P:\29800s\29802\mapping\29802\_F7\_SBS.mxd

Acknowledgements: Vicmap © State of Victoria, Imagery - NearMap 2017



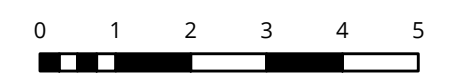
**Legend**

- Study area
- Kilometre Point
- Bioregions

**Wetlands**

- 2 - Freshwater meadow
- 3 - Shallow freshwater marsh
- 4 - Deep freshwater marsh
- 5 - Permanent open freshwater
- 99 - No Category

**Figure 8 Current wetland**



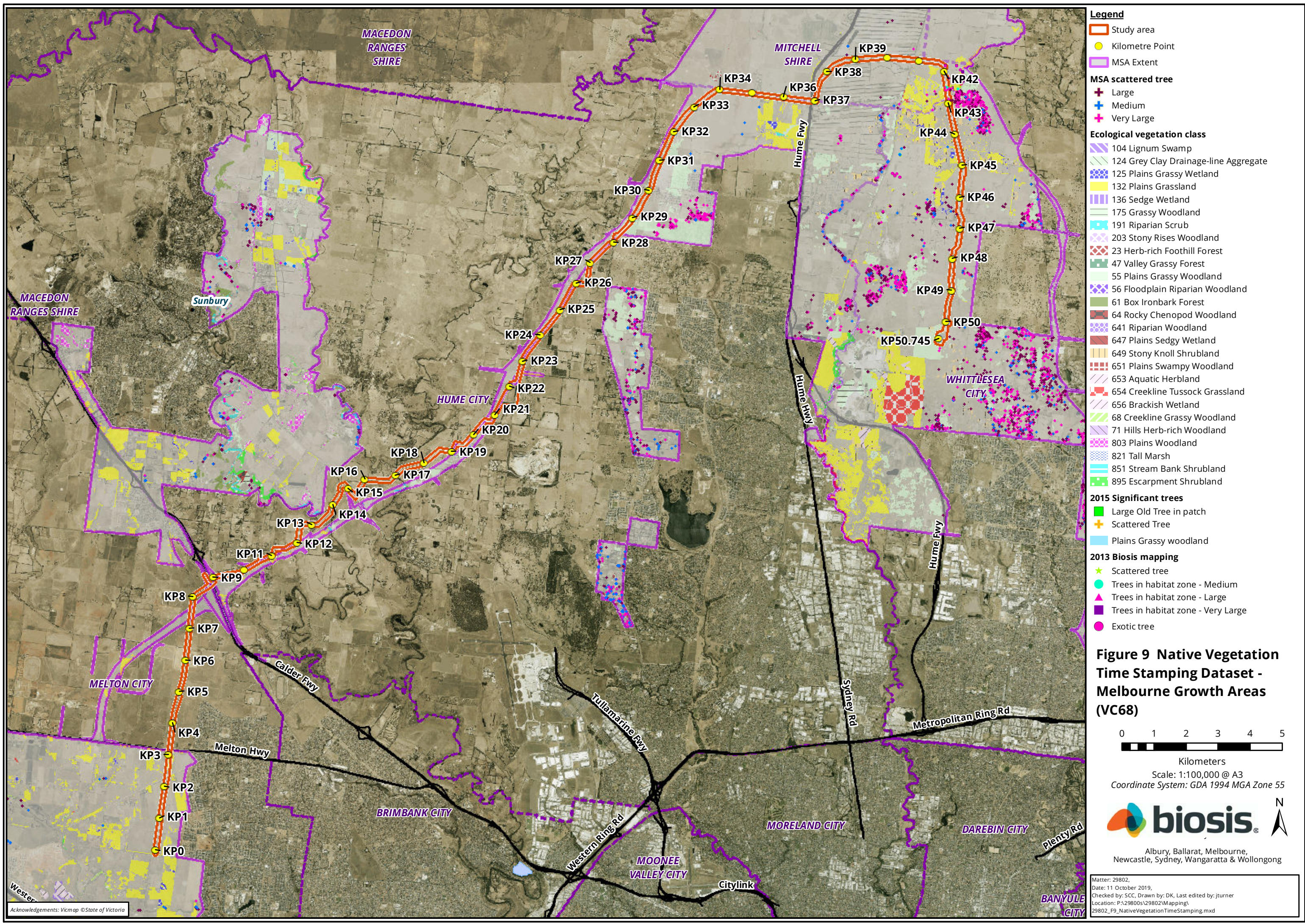
Kilometers  
Scale: 1:100,000 @ A3  
Coordinate System: GDA 1994 MGA Zone 55



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Matter: 29802,  
Date: 11 October 2019,  
Checked by: SCC, Drawn by: DK, Last edited by: jturner  
Location: P:\29800s\29802\mapping\29802\_FB\_Current\_Wetland.mxd

Acknowledgements: Vicmap © State of Victoria



**Legend**

- Study area
- Kilometre Point
- MSA Extent

**MSA scattered tree**

- Large
- Medium
- Very Large

**Ecological vegetation class**

- 104 Lignum Swamp
- 124 Grey Clay Drainage-line Aggregate
- 125 Plains Grassy Wetland
- 132 Plains Grassyland
- 136 Sedge Wetland
- 175 Grassy Woodland
- 191 Riparian Scrub
- 203 Stony Rises Woodland
- 23 Herb-rich Foothill Forest
- 47 Valley Grassy Forest
- 55 Plains Grassy Woodland
- 56 Floodplain Riparian Woodland
- 61 Box Ironbark Forest
- 64 Rocky Chenopod Woodland
- 641 Riparian Woodland
- 647 Plains Sedy Wetland
- 649 Stony Knoll Shrubland
- 651 Plains Swampy Woodland
- 653 Aquatic Herbland
- 654 Creekline Tussock Grassland
- 656 Brackish Wetland
- 68 Creekline Grassy Woodland
- 71 Hills Herb-rich Woodland
- 803 Plains Woodland
- 821 Tall Marsh
- 851 Stream Bank Shrubland
- 895 Escarpment Shrubland

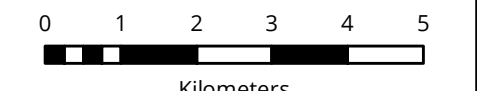
**2015 Significant trees**

- Large Old Tree in patch
- Scattered Tree
- Plains Grassy woodland

**2013 Biosis mapping**

- Scattered tree
- Trees in habitat zone - Medium
- Trees in habitat zone - Large
- Trees in habitat zone - Very Large
- Exotic tree

**Figure 9 Native Vegetation Time Stamping Dataset - Melbourne Growth Areas (VC68)**



Scale: 1:100,000 @ A3  
 Coordinate System: GDA 1994 MGA Zone 55

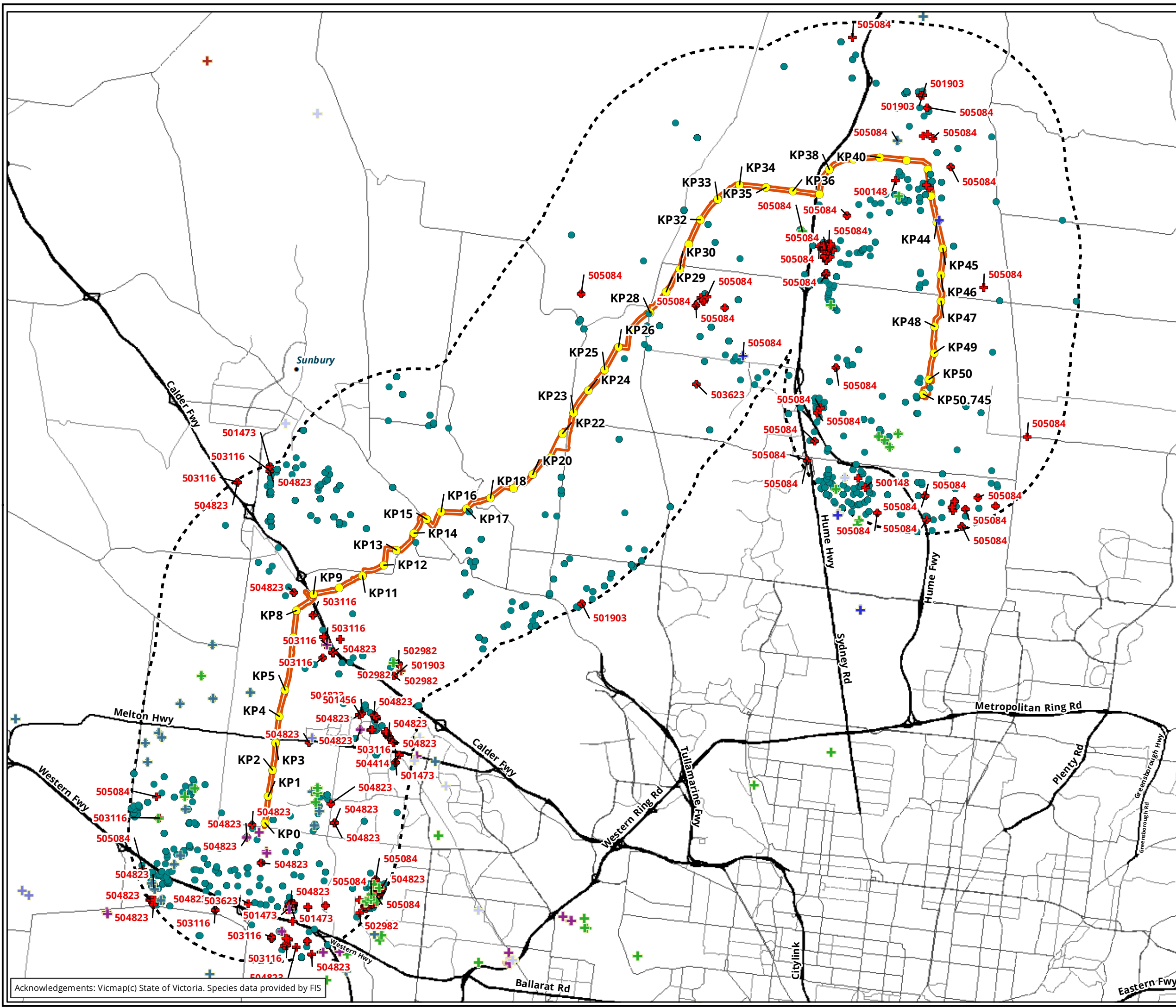


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Matter: 29802  
 Date: 11 October 2019  
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 Location: P:\29800s\29802\mapping\29802\_F9\_NativeVegetationTimeStamping.mxd

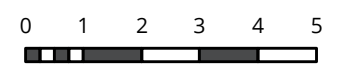
Acknowledgements: Vicmap © State of Victoria





- Legend**
- Study area
  - Search Area
  - Kilometre Point
  - State significant flora (DWELP advisory listed)
- National Significance (EPBC Act listed)**
- + 500148.0 - Lachnagrostis adamsonii
  - + 501456.0 - Glycine latrobeana
  - + 501473.0 - Diuris basaltica
  - + 501903.0 - Lepidium hyssopifolium s.s.
  - + 502982.0 - Rutidosis leptorhynchoides
  - + 503116.0 - Senecio macrocarpus
  - + 503623.0 - Amphibromus fluitans
  - + 504414.0 - Diuris fragrantissima
  - + 504823.0 - Pimelea spinescens subsp. spinescens
  - + 505084.0 - Dianella amoena
- State significant (FFG Act listed)**
- + Allocasuarina luehmannii
  - + Amphibromus pithogastrus
  - + Comesperma polygaloides
  - + Cullen parvum
  - + Cullen tenax
  - + Diuris punctata var. punctata
  - + Pimelea spinescens

**Figure 10 Significant flora within 5km of the study area**



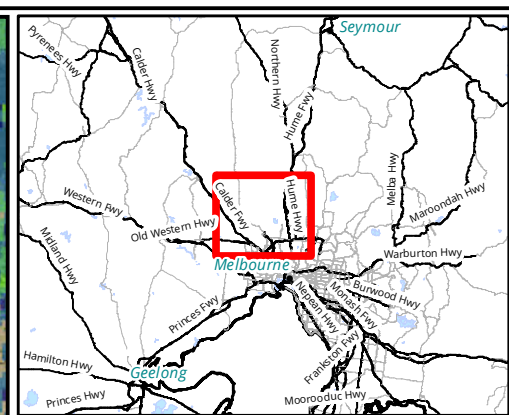
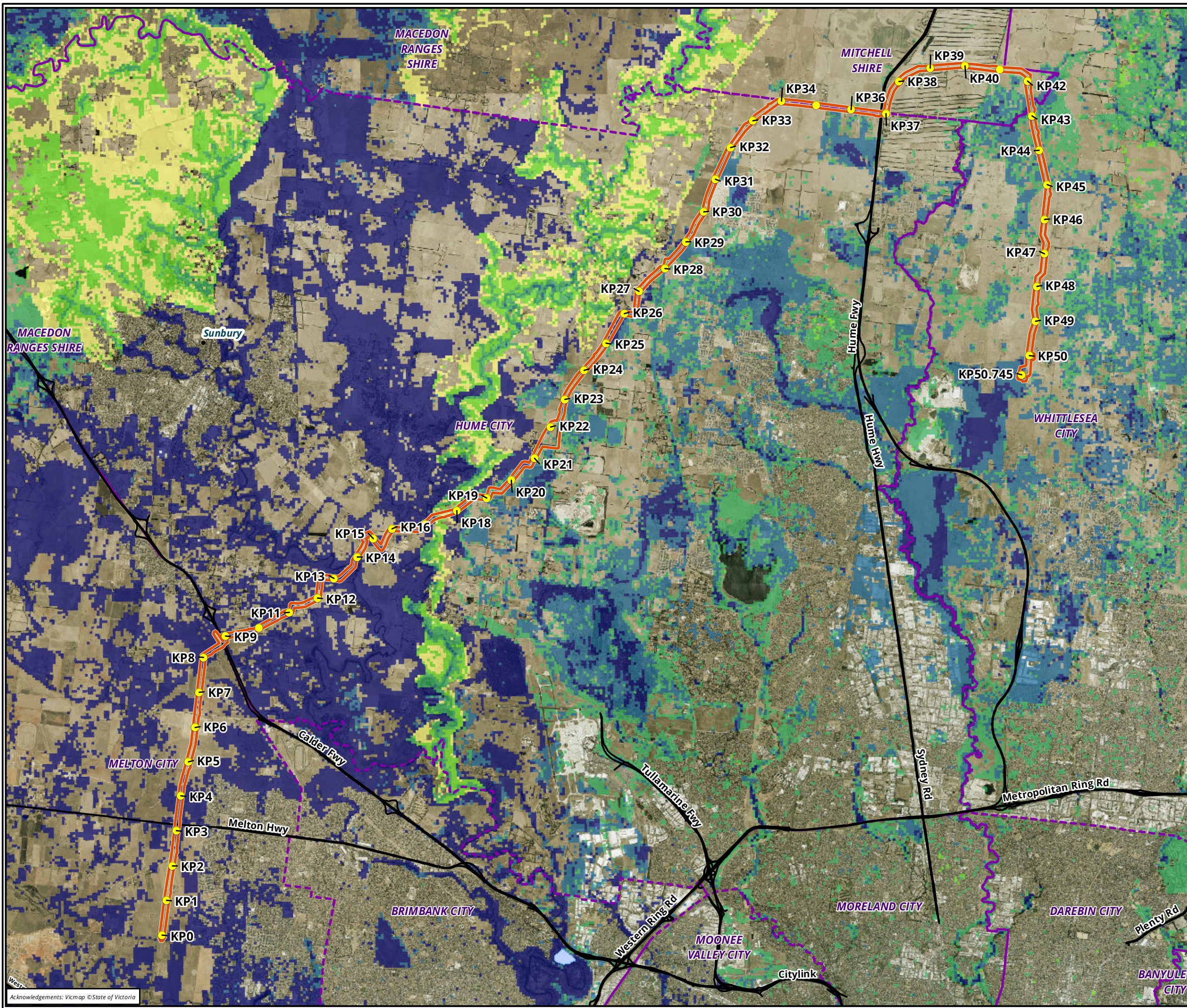
Kilometers  
 Scale: 1:130,000 @ A3  
 Coordinate System: GDA 1994 MGA Zone 55



Acknowledgements: Vicmap(c) State of Victoria. Species data provided by FIS

Matter: 29802  
 Date: 11 October 2019,  
 Checked by: SCC, Drawn by: DK, Last edited by: jtuner  
 Location: P:\29800s\29802\mapping\29802\_F10\_SignificantFlora





**Legend**

- Study area
- Kilometre Point

**Threatened species density**

- ≤ 5
- ≤ 10
- ≤ 20
- ≤ 25
- > 25

**Figure 12 Modelled Threatened species habitat importance mapping**

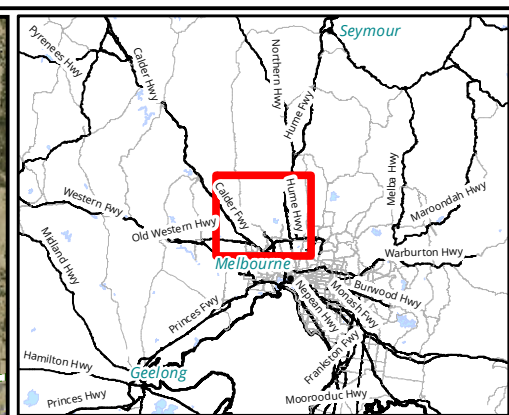
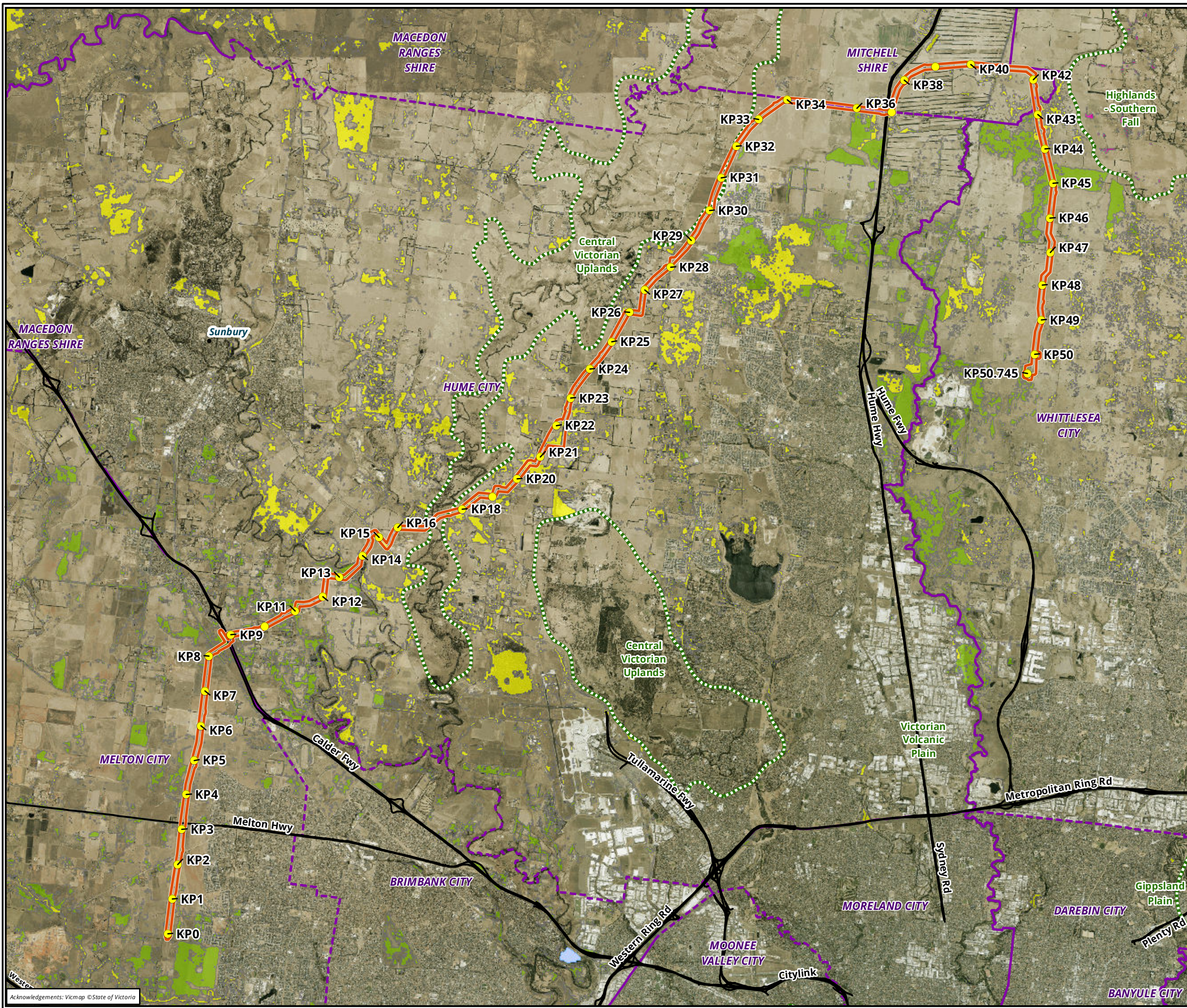
0 1 2 3 4 5  
 Kilometers  
 Scale: 1:100,000 @ A3  
 Coordinate System: GDA 1994 MGA Zone 55

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 Location: P:\29800s\29802\mapping\29802\_F12\_HabitatImportanceModel.mxd

Acknowledgements: Vicmap © State of Victoria



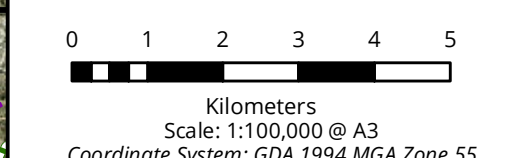
**Legend**

- Study area
- Kilometre Point
- Bioregions

**FFG communities (NV2005)**

- Limestone Grassy Woodland
- Sedge-rich Eucalyptus camphora Swamp
- Western (Basalt) Plains Grasslands
- Western Basalt Plains (River Red Gum) Grassy Woodland

**Figure 13 Modelled Flora and Fauna Guarantee Act threatened communities**

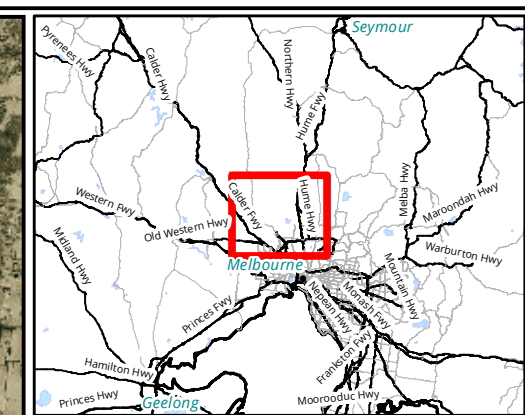
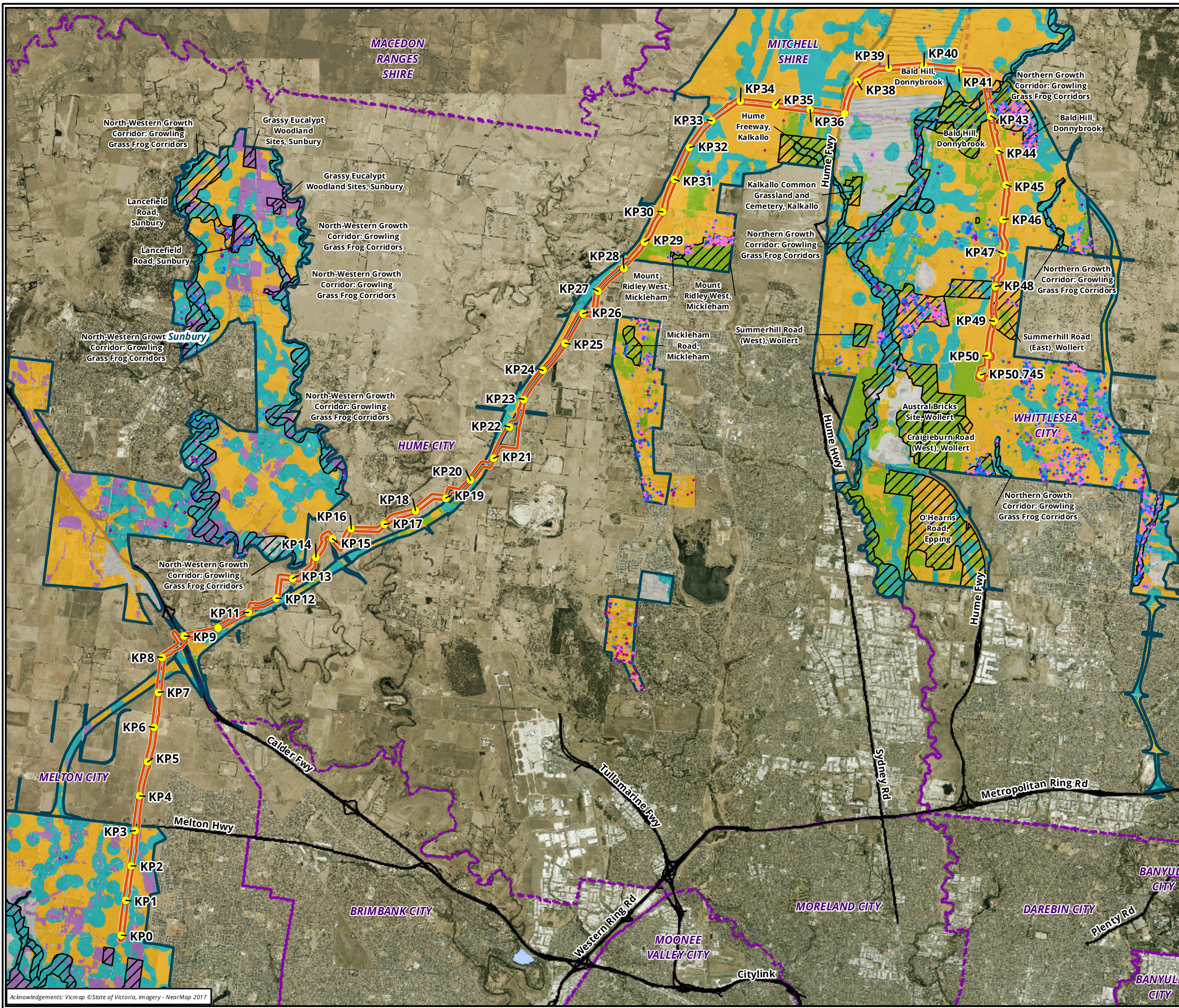


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 Date: 11 October 2019,  
 Checked by: SCC, Drawn by: DK, Last edited by: jturner  
 Location: P:\29800s\29802\mapping\29802\_F13\_FFG\_comm.mxd

Acknowledgements: Vicmap © State of Victoria



**Legend**

- Study area
- Kilometre Point
- MSA extent
- Conservation Areas

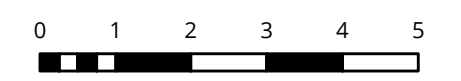
**Scattered tree**

- + Medium
- + Large
- + Very Large

**MSA Environment Mitigation**

- Golden Sun Moth habitat area
- Growling Grass Frog habitat area
- Native vegetation area and Matted Flax-lily habitat area
- Native vegetation area and Spiny Rice-flower habitat area
- None applicable

**Figure 14 Melbourne Strategic Assessment Environmental Mitigation dataset**



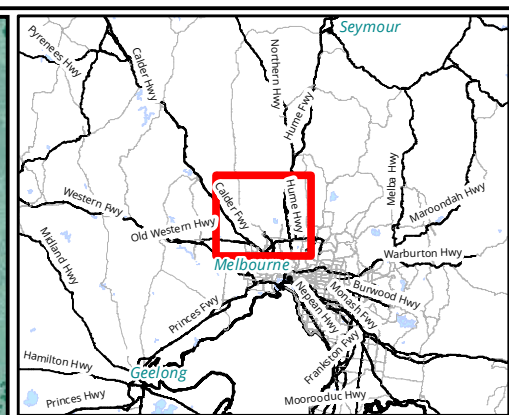
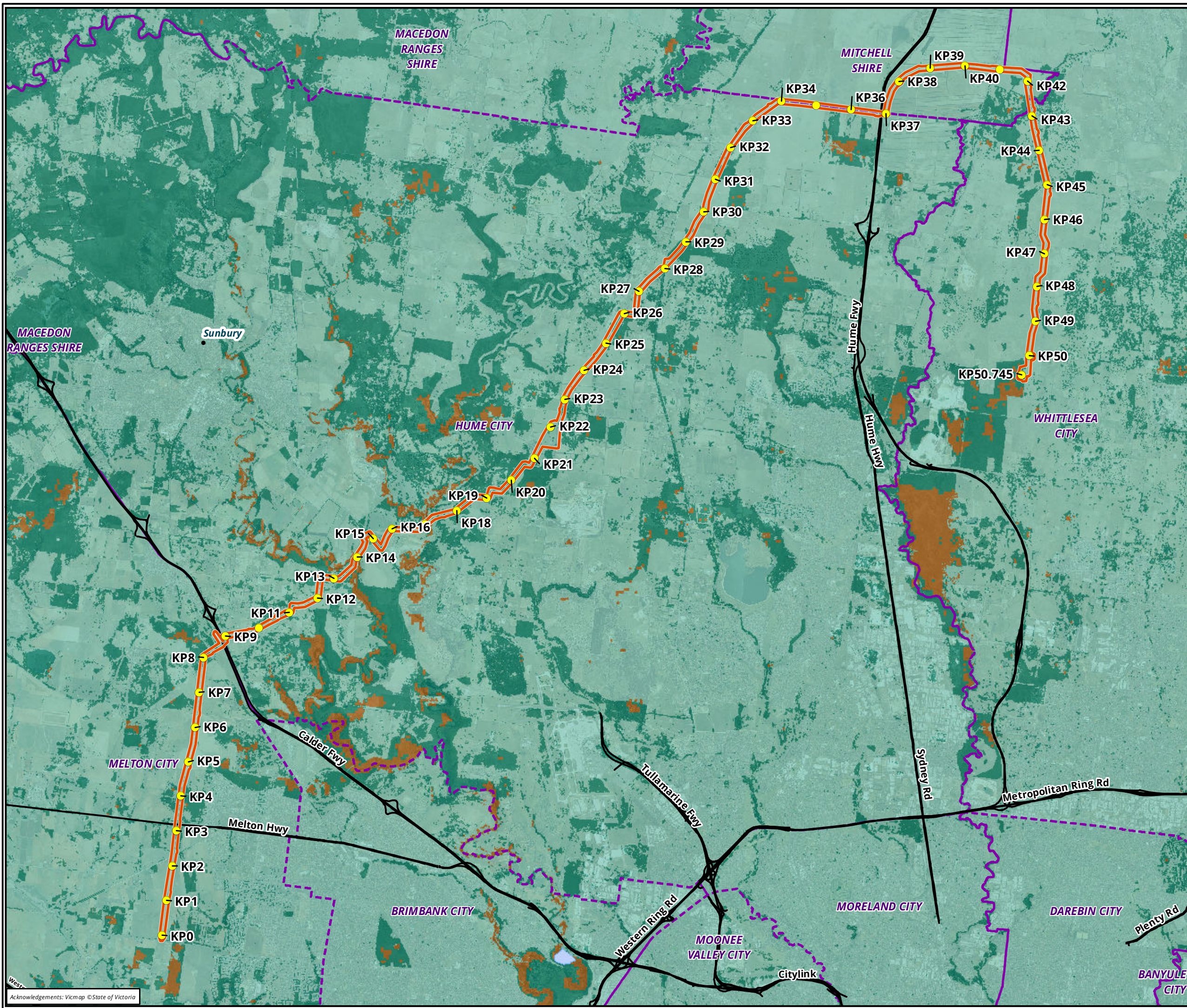
Kilometers  
Scale: 1:100,000 @ A3  
Coordinate System: GDA 1994 MGA Zone 55



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Matter: 29802,  
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Location: P:\29800s\29802\mapping\29802\_F14\_StrategicAssessmentEnvironmentalMitigation.mxd

Acknowledgements: Vicmap © State of Victoria, Imagery - NearMap 2017



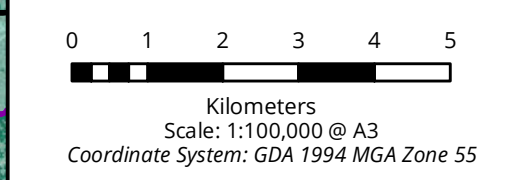
**Legend**

- Study area
- Kilometre Point

**Location category**

- Location 1
- Location 2
- Location 3

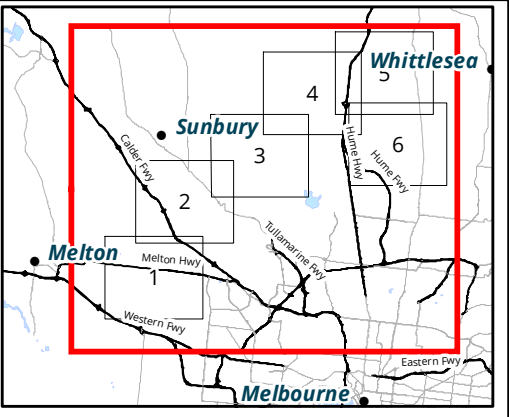
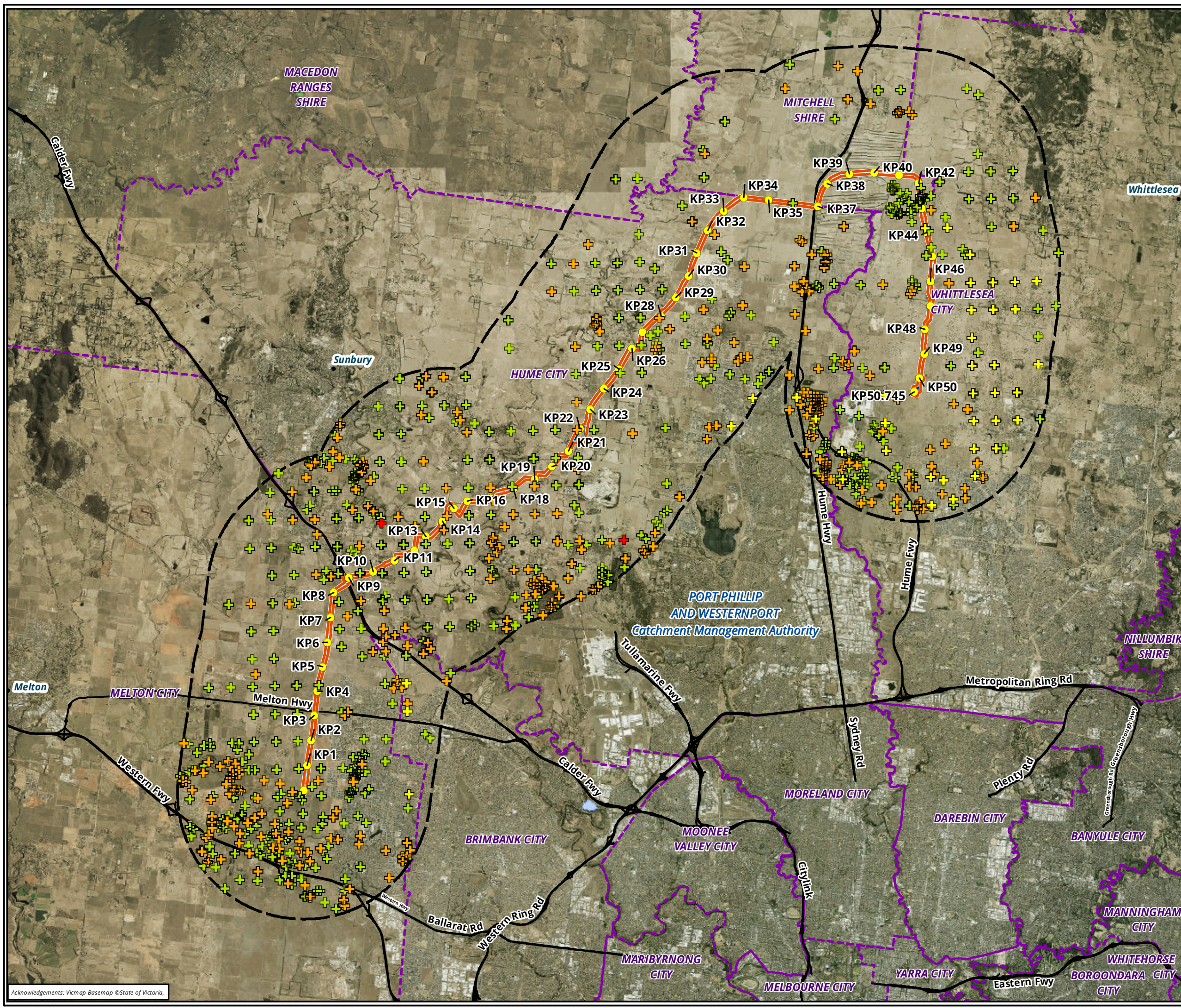
**Figure 15 Location Risk**



Albury, Ballarat, Melbourne, Newcastle, Sydney, Wangaratta & Wollongong

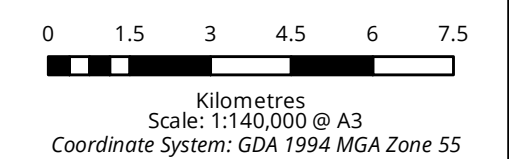
Matter: 29802,  
 Date: 15 October 2019,  
 Checked by: SCC, Drawn by: DK, Last edited by: jturner  
 Location: P:\29800s\29802\mapping\29802\_F15\_LocationRisk.mxd

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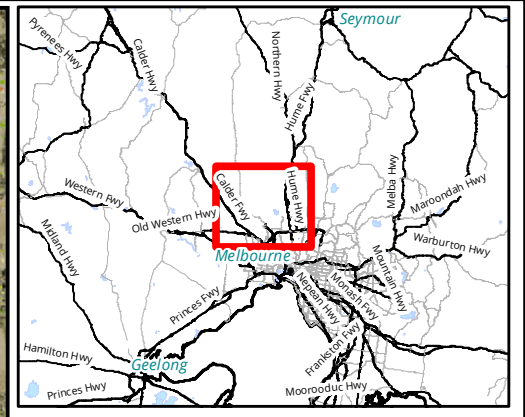
- Legend**
- Study area
  - Kilometre Point
  - Preliminary Pipeline Alignment
  - Construction footprint
  - 5km buffer search area
  - Local government area
- CaLP listed noxious weeds**
- + State Prohibited
  - + Restricted
  - + Regionally Prohibited
  - + Regionally Controlled

**Figure 16. Overview Catchment and Land Protection Act (CaLP) listed noxious weeds**



Matter: 29802,  
 Date: 11 October 2019,  
 Checked by: SCC, Drawn by: DK, Last edited by: jturner  
 Location: P:\29800s\29802\Mapping\29802\_F16\_CaLP\_Weeds.mxd

Acknowledgements: Vicmap Basemap ©State of Victoria.



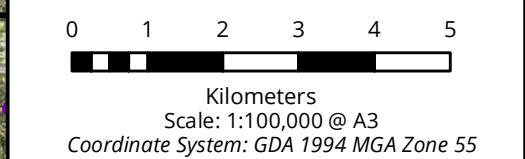
**Legend**

- Study area
- Kilometre Point

**Mean value**

- ≤ 5
- ≤ 10
- ≤ 15
- ≤ 20
- > 20

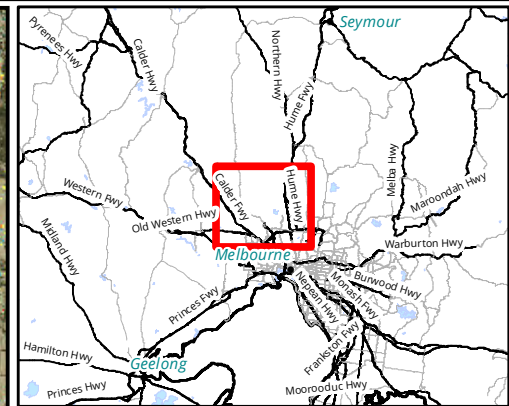
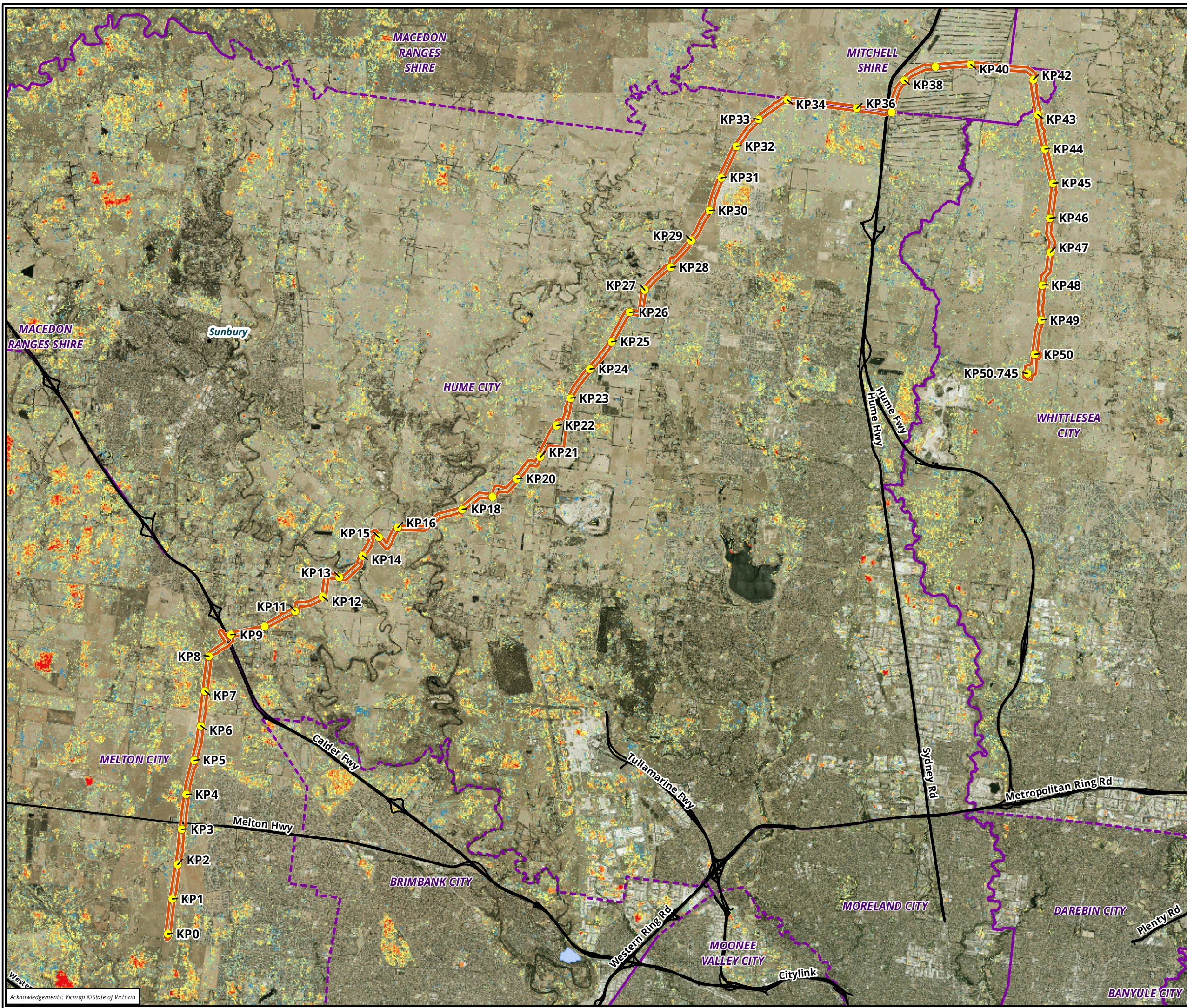
**Figure 17 Seasonal Herbaceous Wetland Likelihood surface model (mean data)**



Acknowledgements: Vicmap © State of Victoria

Matter: 29802,  
Date: 11 October 2019,  
Checked by: SCC, Drawn by: DK, Last edited by: jturner  
Location: P:\29800s\29802\mapping\29802\_F17\_Seasonal\_Herbaceous\_mean.mxd





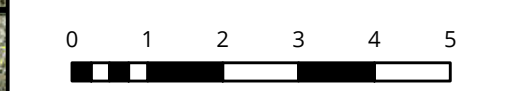
**Legend**

- Study area
- Kilometre Point

**Std value**

- ≤ 10
- ≤ 20
- ≤ 30
- ≤ 40
- > 40

**Figure 18 Seasonal Herbaceous Wetland uncertainty surface model (standard deviations)**

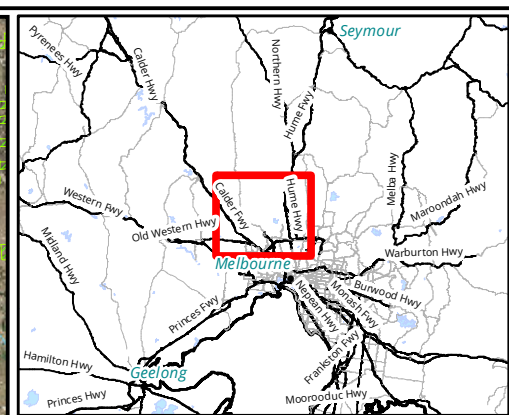
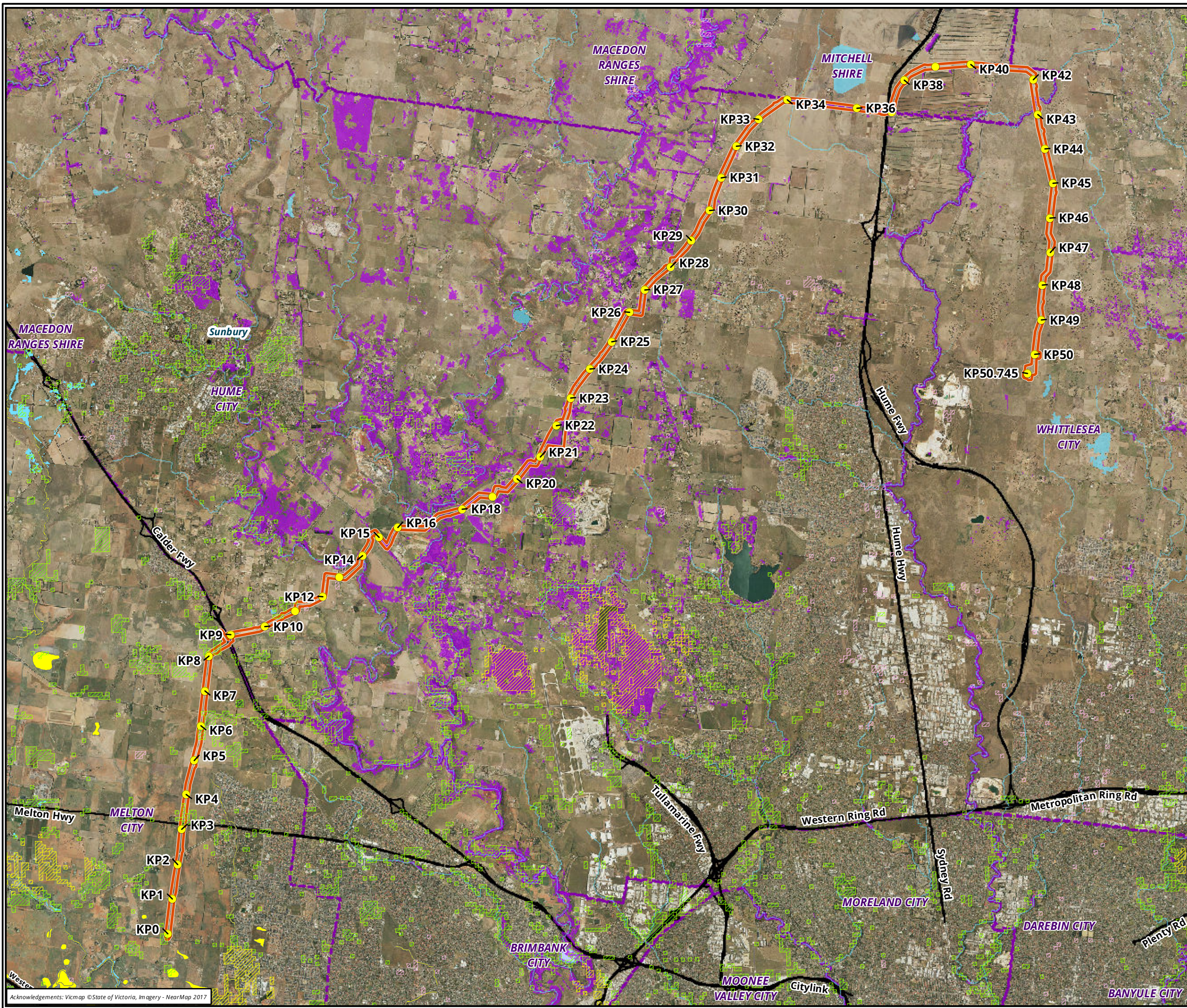


Kilometers  
Scale: 1:100,000 @ A3  
Coordinate System: GDA 1994 MGA Zone 55

Albury, Ballarat, Melbourne, Newcastle, Sydney, Wangaratta & Wollongong

Matter: 29802,  
Date: 11 October 2019,  
Checked by: SCC, Drawn by: DK, Last edited by: jturner  
Location: P:\29800s\29802\mapping\29802\_F18\_Seasonal Herbaceous\_std.mxd

Acknowledgements: Vicmap © State of Victoria



**Legend**

- Study area
- Kilometre Point

**Australian Government Groundwater Dependent Ecosystem Atlas data**

- Aquatic GDE data
- Terrestrial GDE data

**DELWP Terrestrial GDE Density model data**

- 1
- 2
- 3

**Figure 19 Terrestrial and Aquatic Groundwater Dependent Ecosystem (GDE) model data**

0 1 2 3 4 5  
 Kilometers  
 Scale: 1:100,000 @ A3  
 Coordinate System: GDA 1994 MGA Zone 55



Matter: 29802,  
 Date: 11 October 2019,  
 Checked by: SCC, Drawn by: DK, Last edited by: jturner  
 Location: P:\29800s\29802\mapping\29802\_F19\_GDE\_Model.mxd

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