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Metres
Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55



LEGEND
 Project boundary - surface
VBA Flora Records
 Listed under State legislation
 Listed under Commonwealth legislation



North East Link Project
Environment Effects Statement (EES)
Job Number 31-35006
Revision 1
Date 05 Mar 2019

**VBA Threatened
Flora Records**

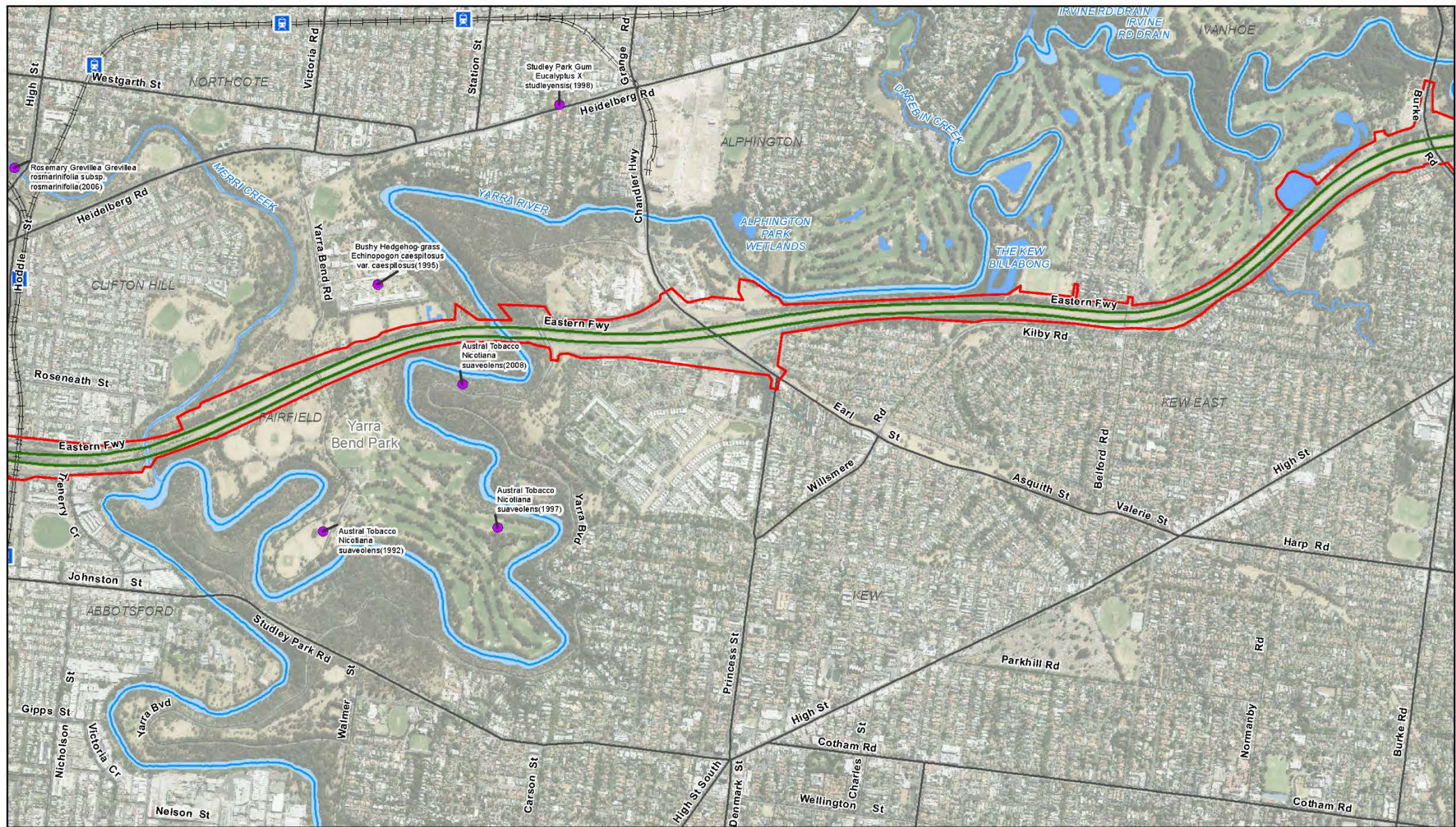
Figure 7-13

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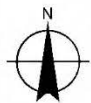
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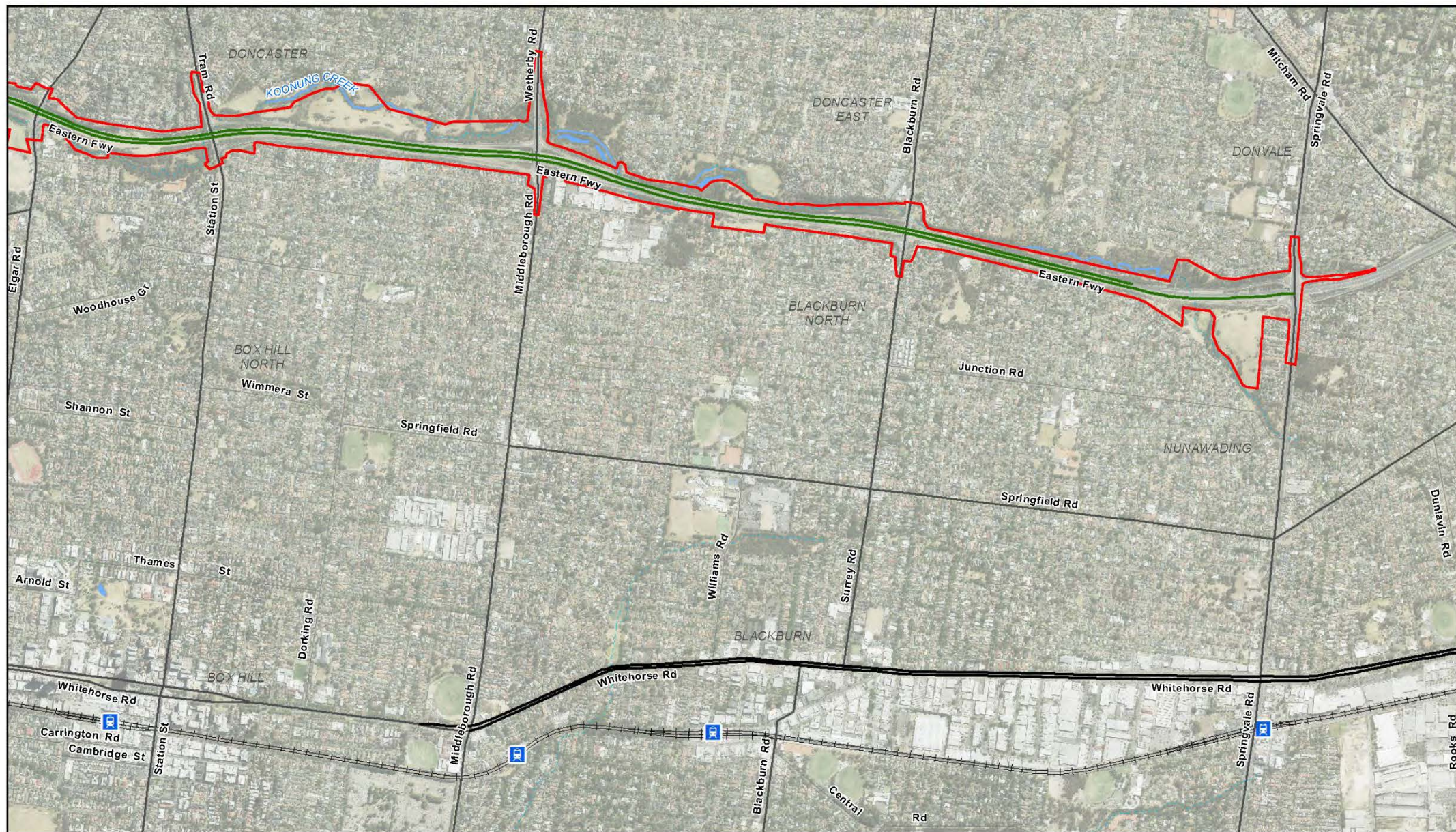
LEGEND
 Project boundary - surface
VBA Flora Records
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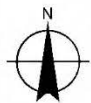
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Job Number 31-35006
Revision 1
Date 05 Mar 2019

**VBA Threatened
Flora Records**

Figure 7-14



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Environment Effects Statement (EES)
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VBA Threatened Flora Records

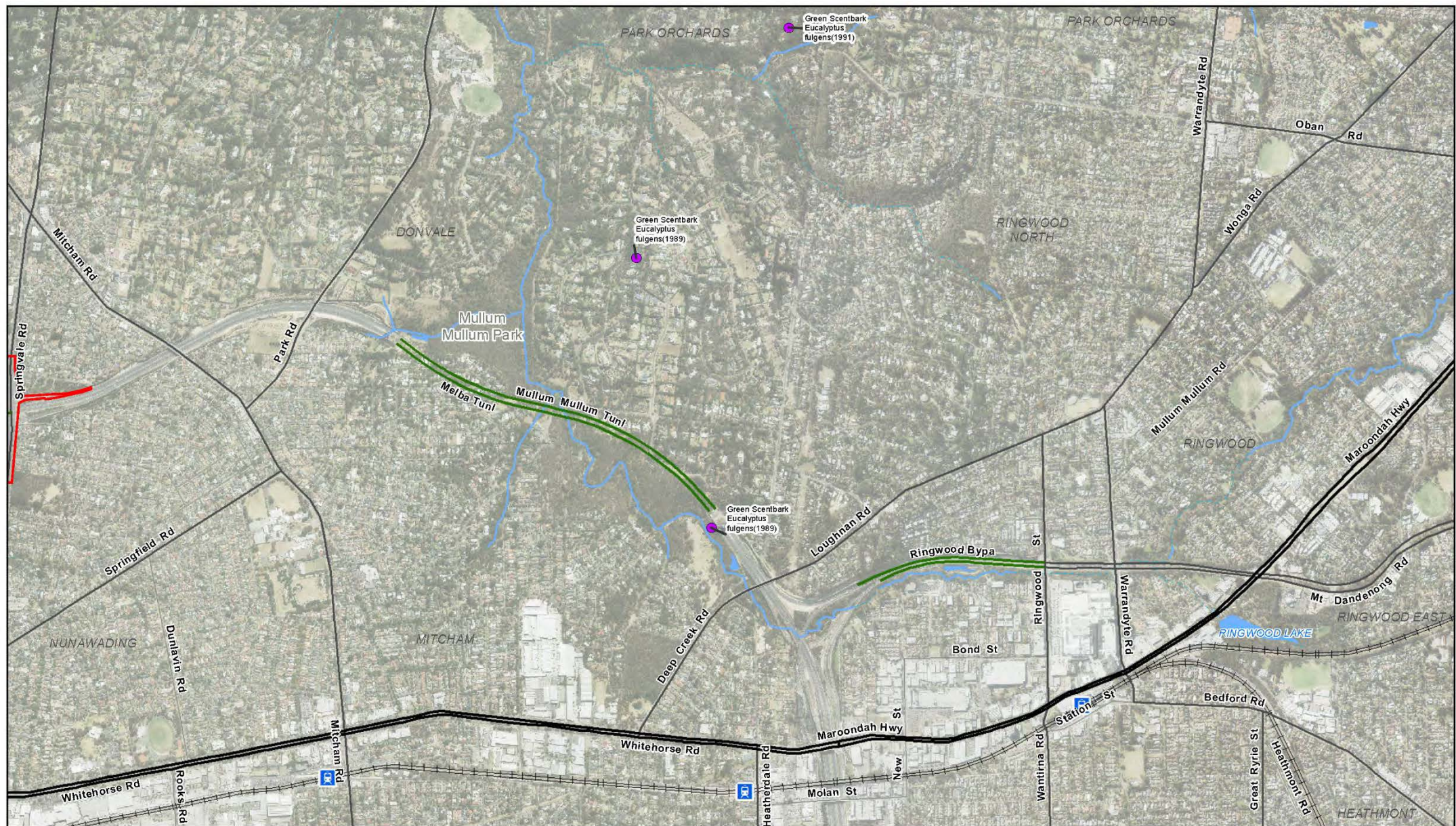
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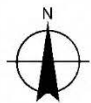
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Environment Effects Statement (EES)

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VBA Threatened
Flora Records

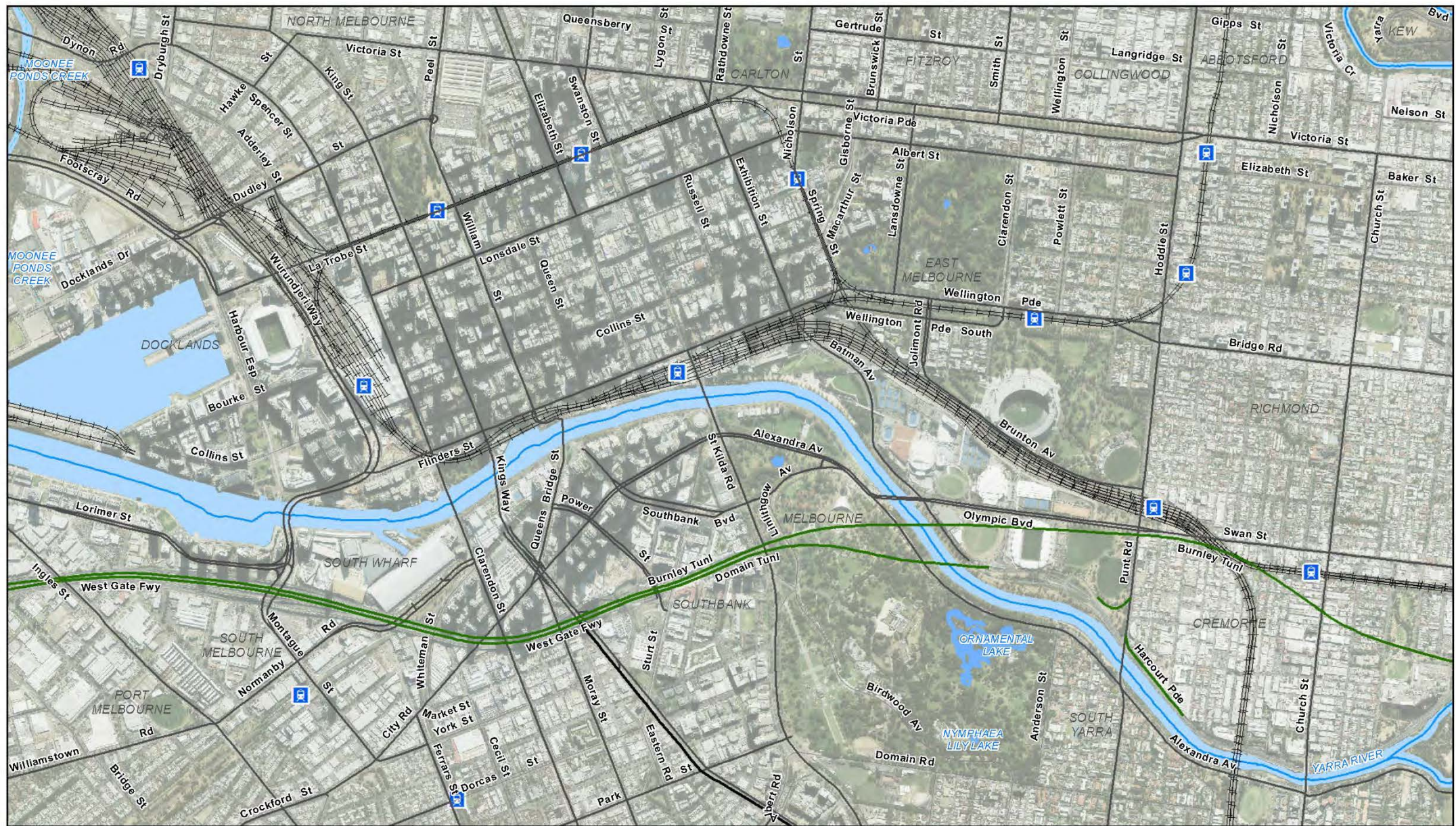
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**VBA Threatened
Flora Records**

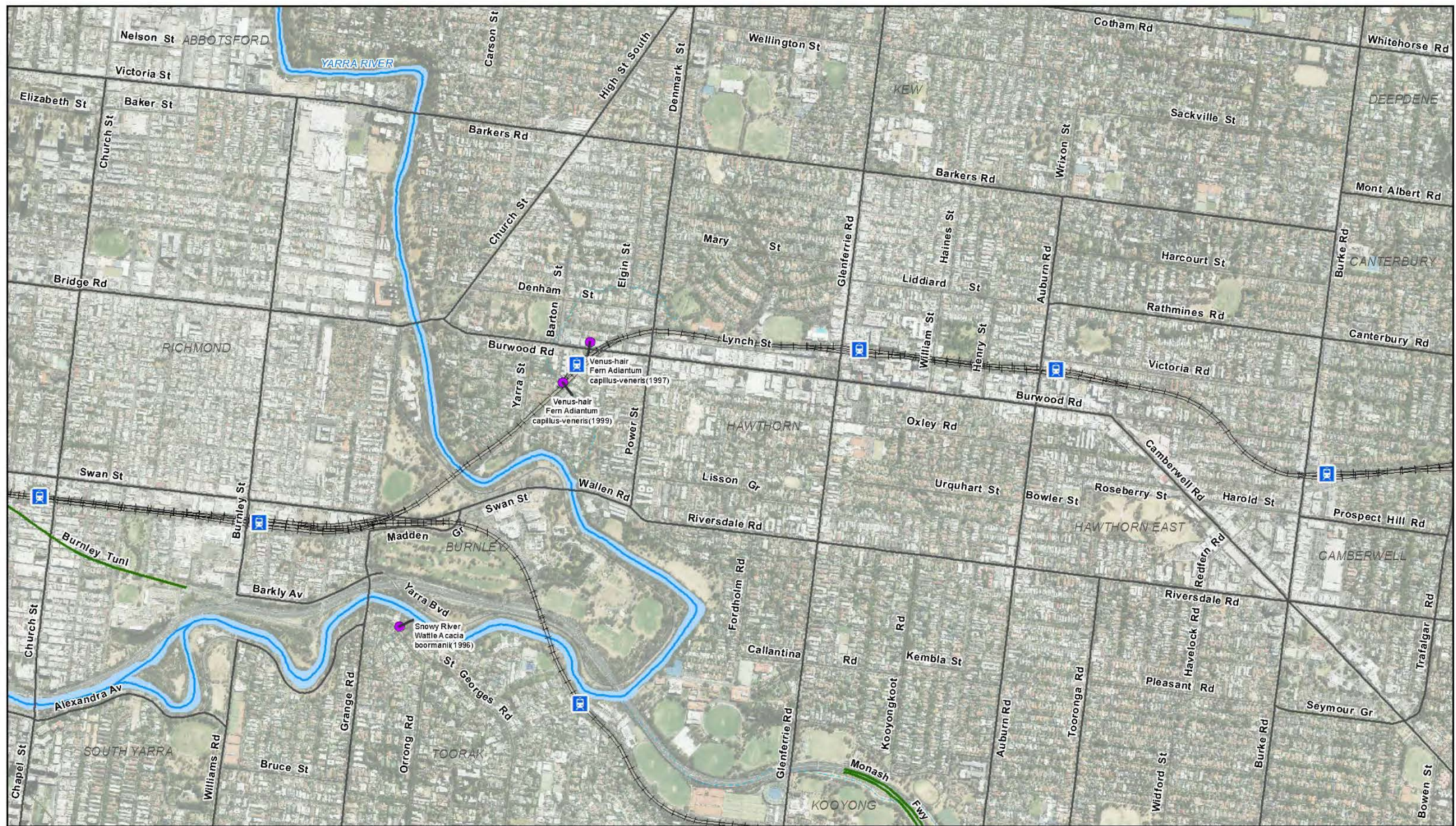
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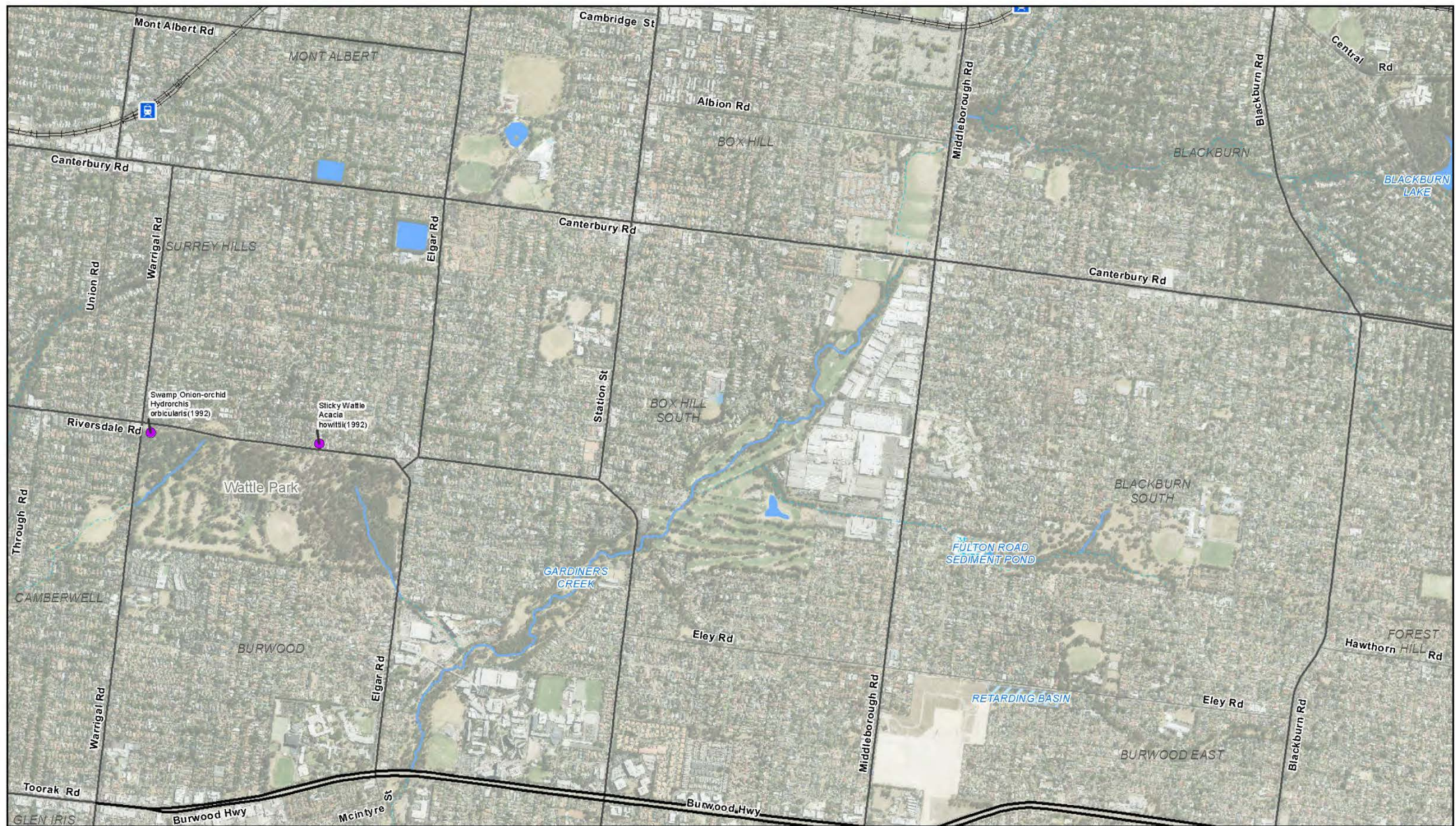


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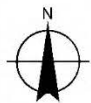
VBA Threatened Flora Records

Figure 7-19



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LEGEND

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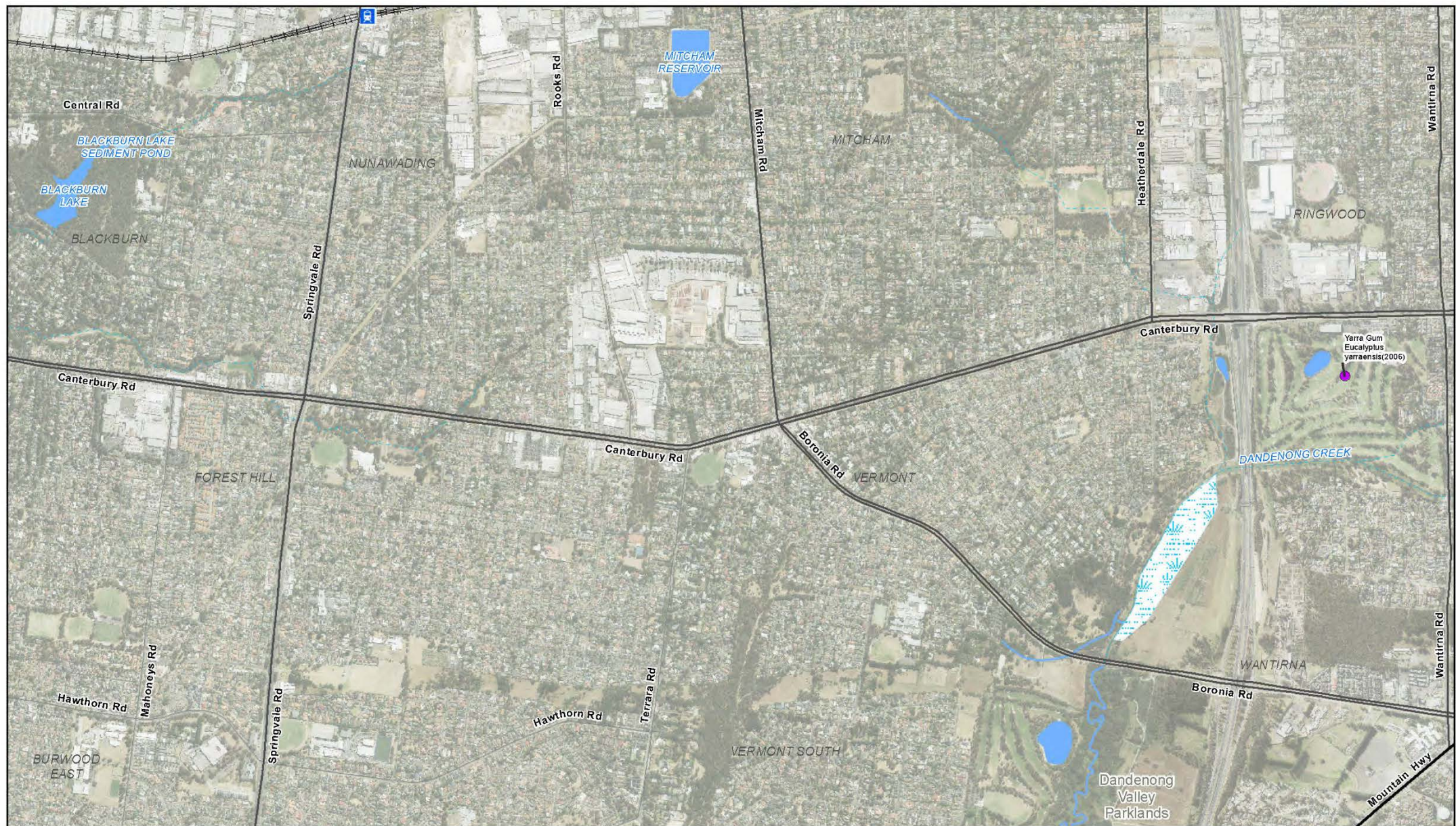
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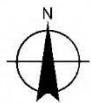
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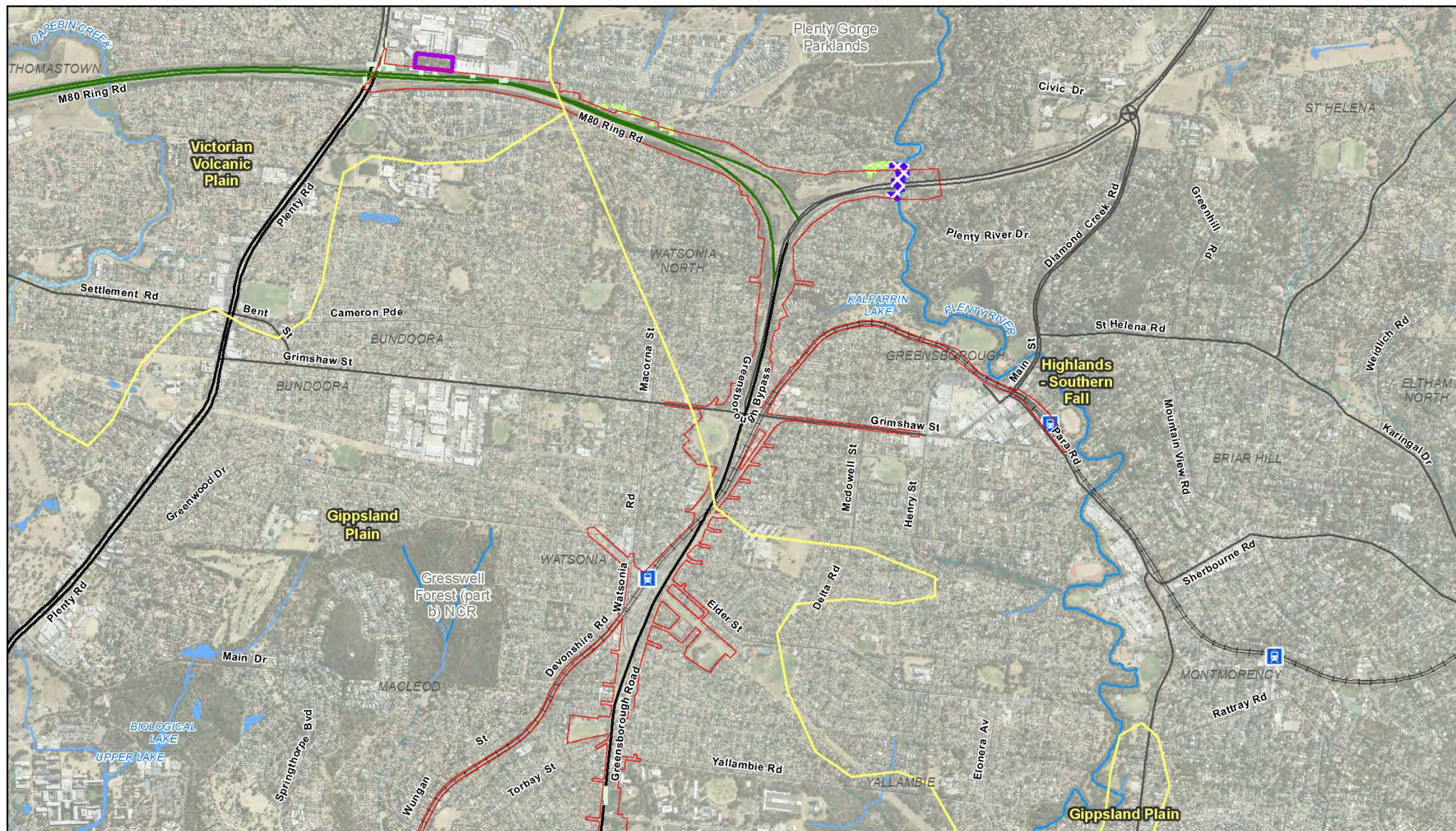


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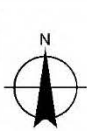
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VBA Threatened Flora Records

Figure 7-21



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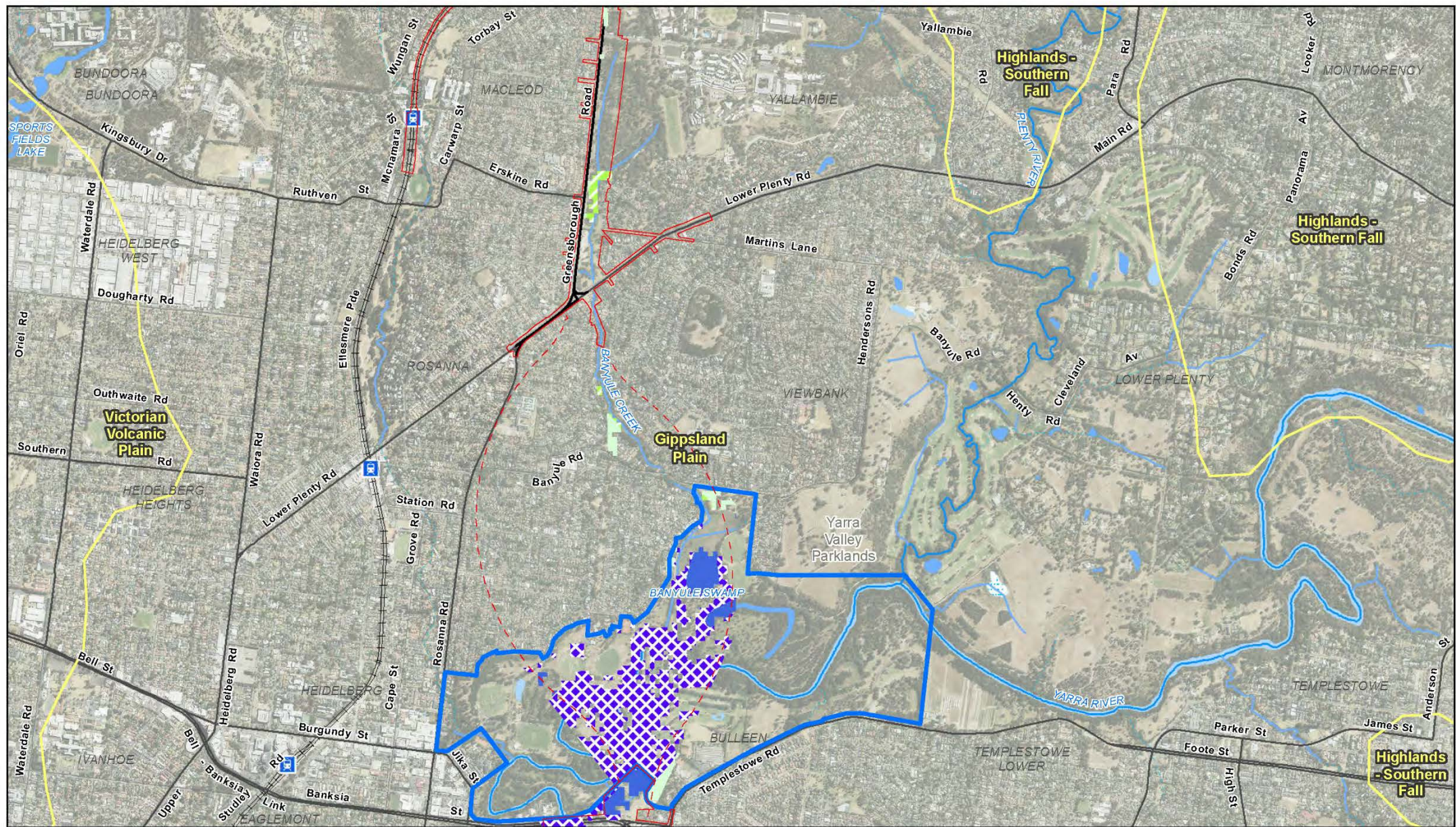


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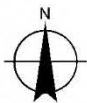
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NatureKit Ecological
Vegetation Class (EVC) Mapping Figure 8-1

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LEGEND

- Bioregions
- Project boundary - sub-surface
- Project boundary - surface
- Conditional no go zone
- Modelled vegetation (DELWP EVC 2005)
 - Creeklane Grassy Woodland, 68
 - Floodplain Riparian Woodland, 56
 - Floodplain Wetland Aggregate, 172
 - Plains Grassy Woodland, 55



North East Link Project
Environment Effects Statement (EES)

Job Number 31-35006
Revision E
Date 05 Mar 2019

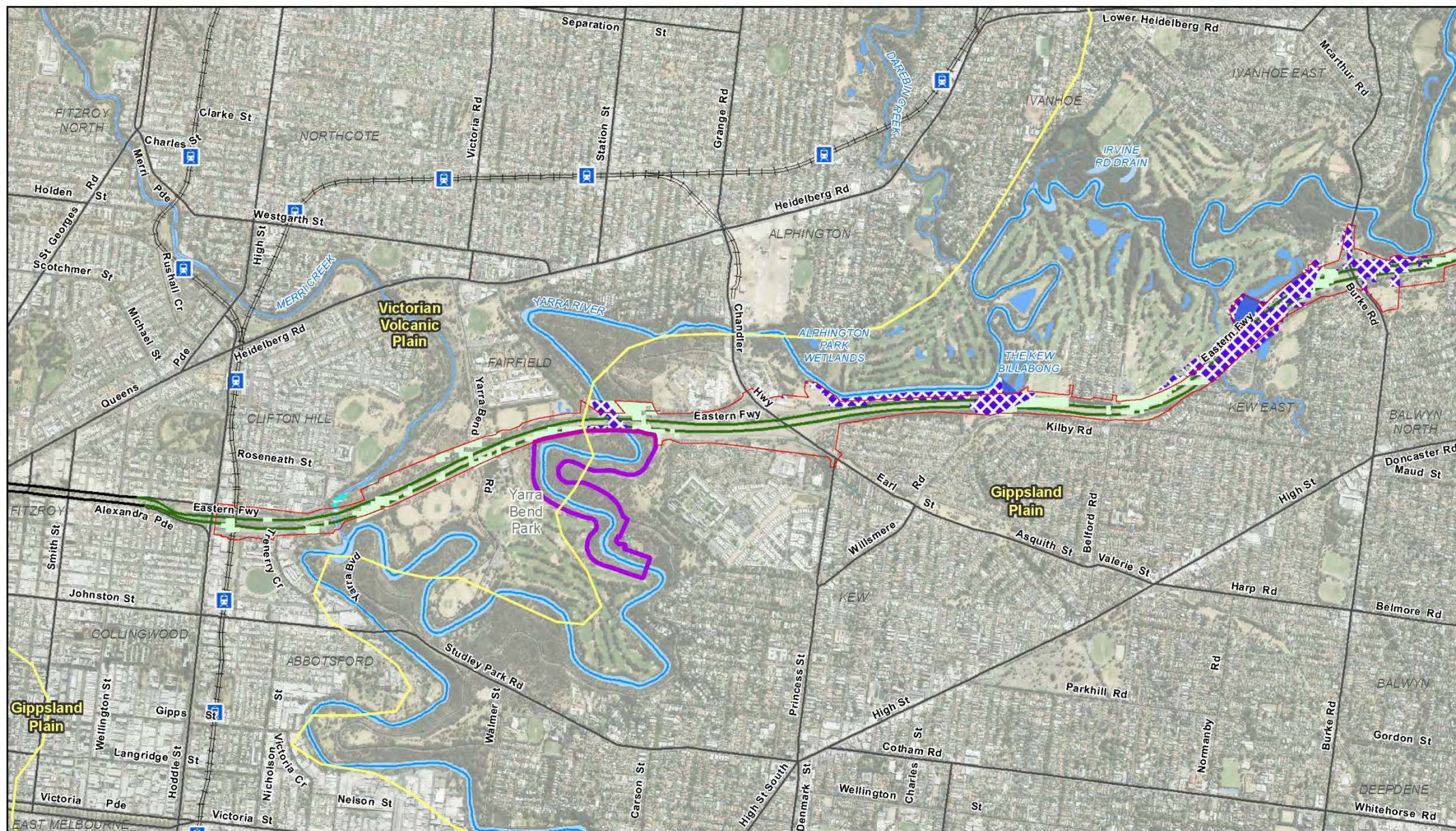
NatureKit Ecological
Vegetation Class (EVC) Mapping Figure 8-2

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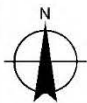
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LEGEND

- Bioregions
- Project boundary - surface
- No go zone
- Floodplain Wetland Aggregate, 172
- Grassy Woodland, 175
- Plains Grassy Woodland, 55
- Stream Bank Shrubland, 851
- Floodplain Riparian Woodland, 56



North East Link Project
Environment Effects Statement (EES)

Job Number 31-35006
Revision E
Date 05 Mar 2019

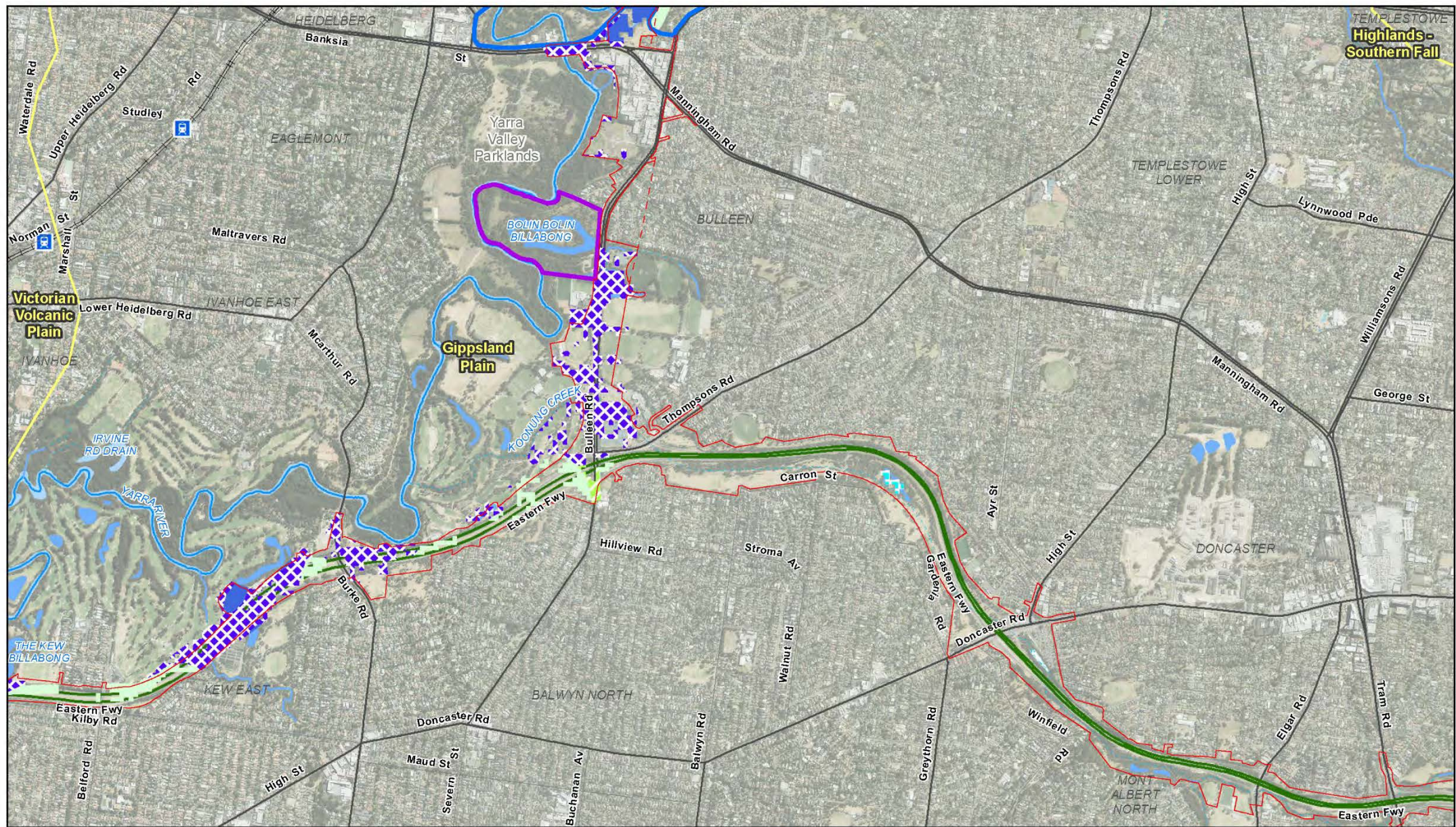
NatureKit Ecological
Vegetation Class (EVC) Mapping Figure 8-3

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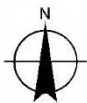
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LEGEND

- | | |
|--|---|
| <ul style="list-style-type: none"> Bioregions Project boundary - sub-surface Project boundary - surface Conditional no go zone No go zone | <p>Modelled vegetation (DELWP EVC 2005)</p> <ul style="list-style-type: none"> Creekline Grassy Woodland, 68 Floodplain Riparian Woodland, 56 Floodplain Wetland Aggregate, 172 Plains Grassy Woodland, 55 Swampy Riparian Complex, 126 |
|--|---|



North East Link Project
Environment Effects Statement (EES)

Job Number 31-35006
Revision E
Date 05 Mar 2019

**NatureKit Ecological
Vegetation Class (EVC) Mapping Figure 8-4**

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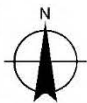
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LEGEND

- Bioregions
- Project boundary - surface
- Modelled vegetation (DELWP EVC 2005)
- Swampy Riparian Complex, 126
- Valley Heathy Forest, 127
- Valley Grassy Forest, 47



North East Link Project
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Job Number 31-35006
Revision E
Date 05 Mar 2019

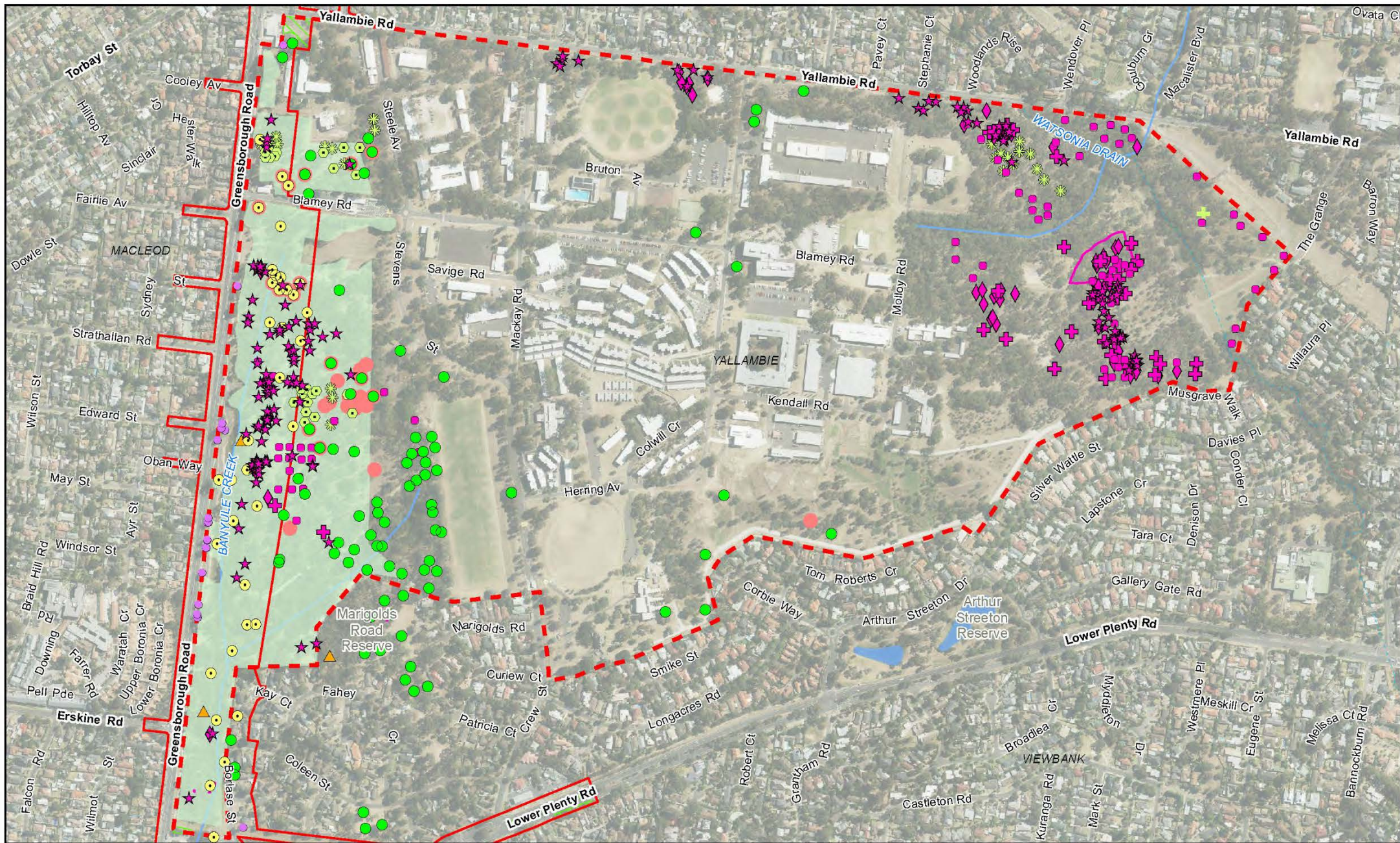
NatureKit Ecological
Vegetation Class (EVC) Mapping Figure 8-5

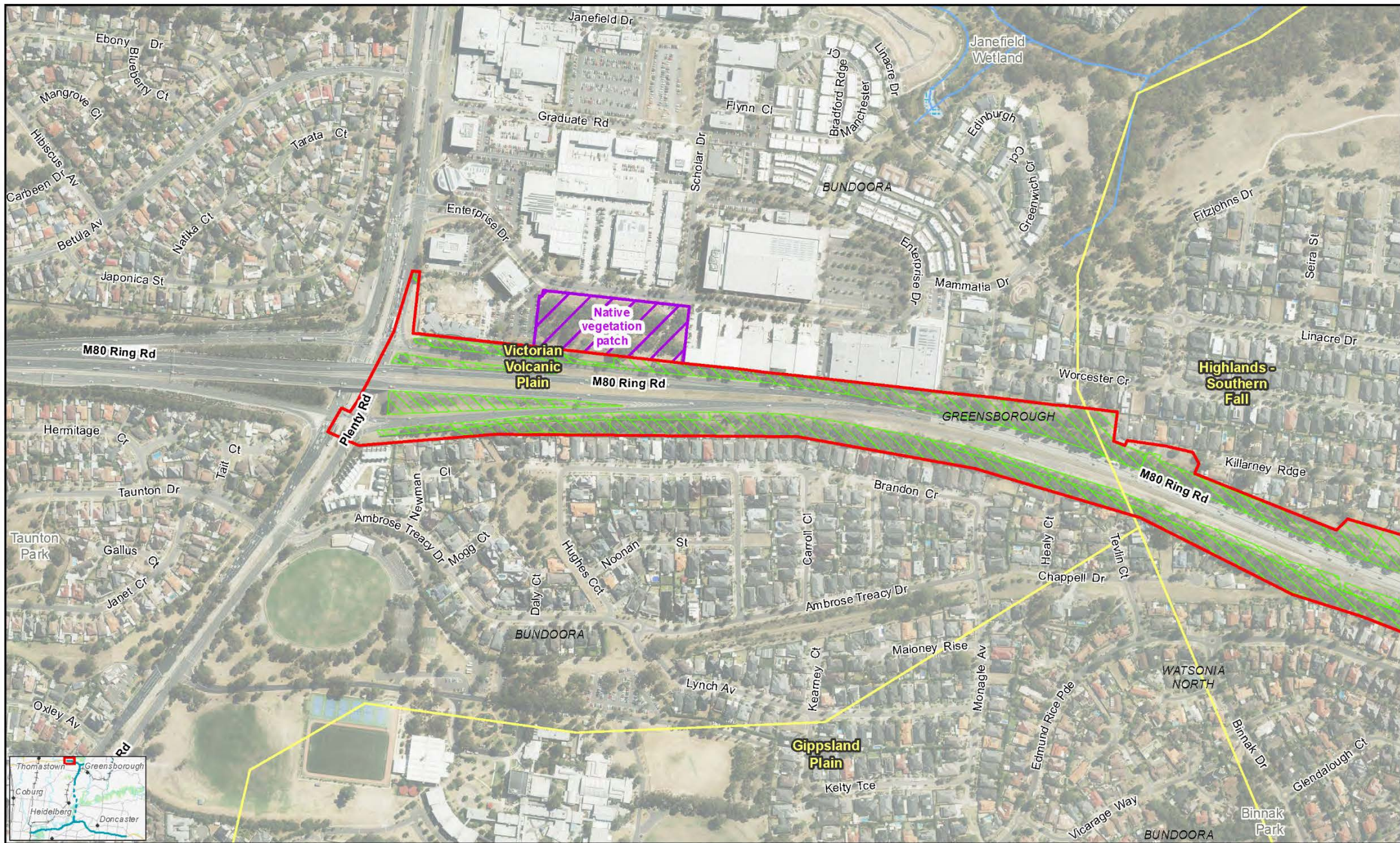
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LEGEND

- Project boundary - surface
- Amenity Planting
- No go zone
- Bioregions



North East Link Project

Job Number 31-35006
Revision Q
Date 13 Mar 2019

Ecological values
within project boundary

Figure 11-1





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LEGEND

Project boundary - surface

Bioregions

Vegetation Assessed

Grassy Dry Forest (22)

● Large Scattered Tree

Amenity Planting



North East Link Project

Job Number

31-35006

Revision

Q

Date

13 Mar 2019

Ecological values
within project boundary

Figure 11-4



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LEGEND

- Project boundary - surface
- Amenity Planting
- Bioregions
- Large Scattered Tree

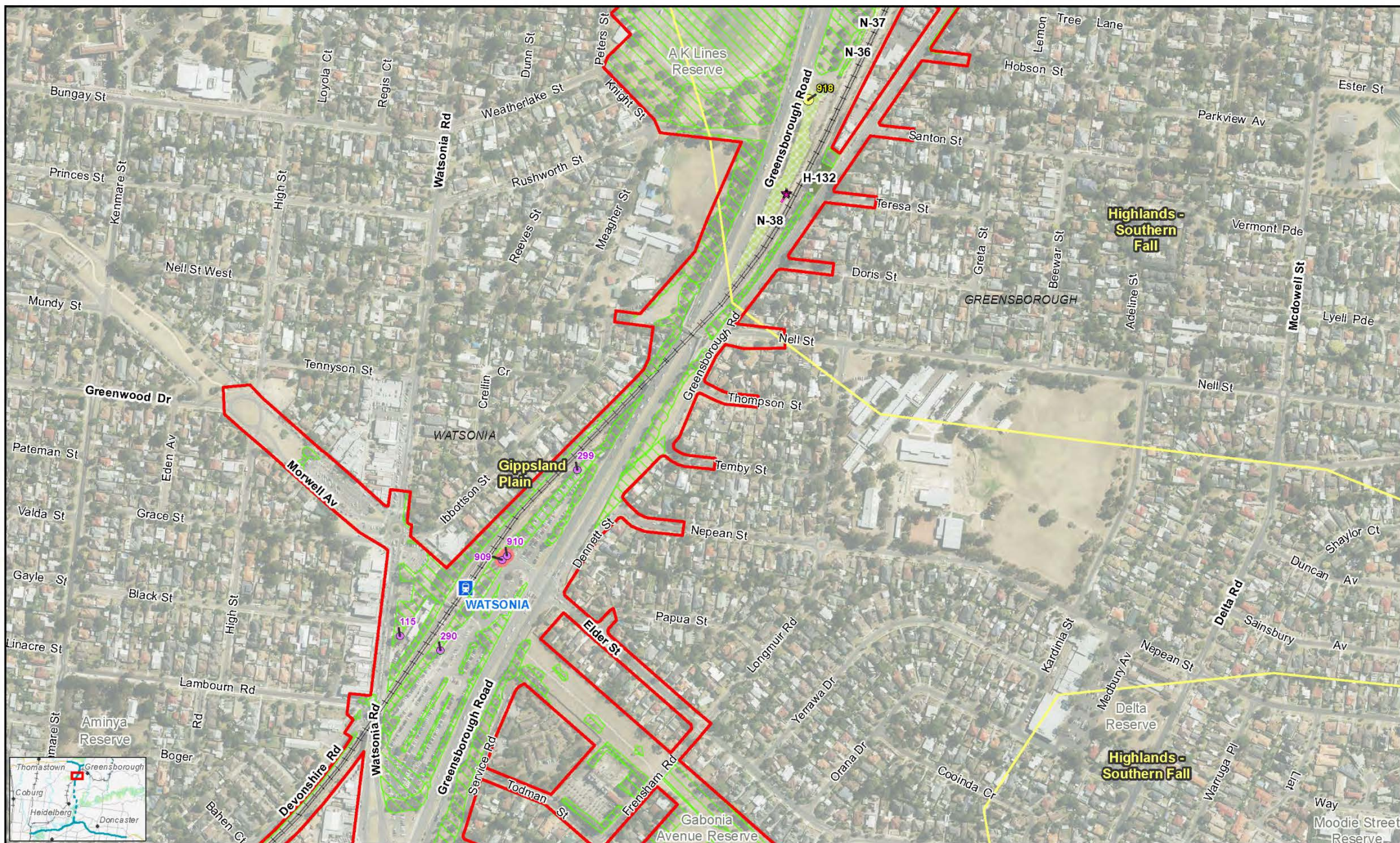


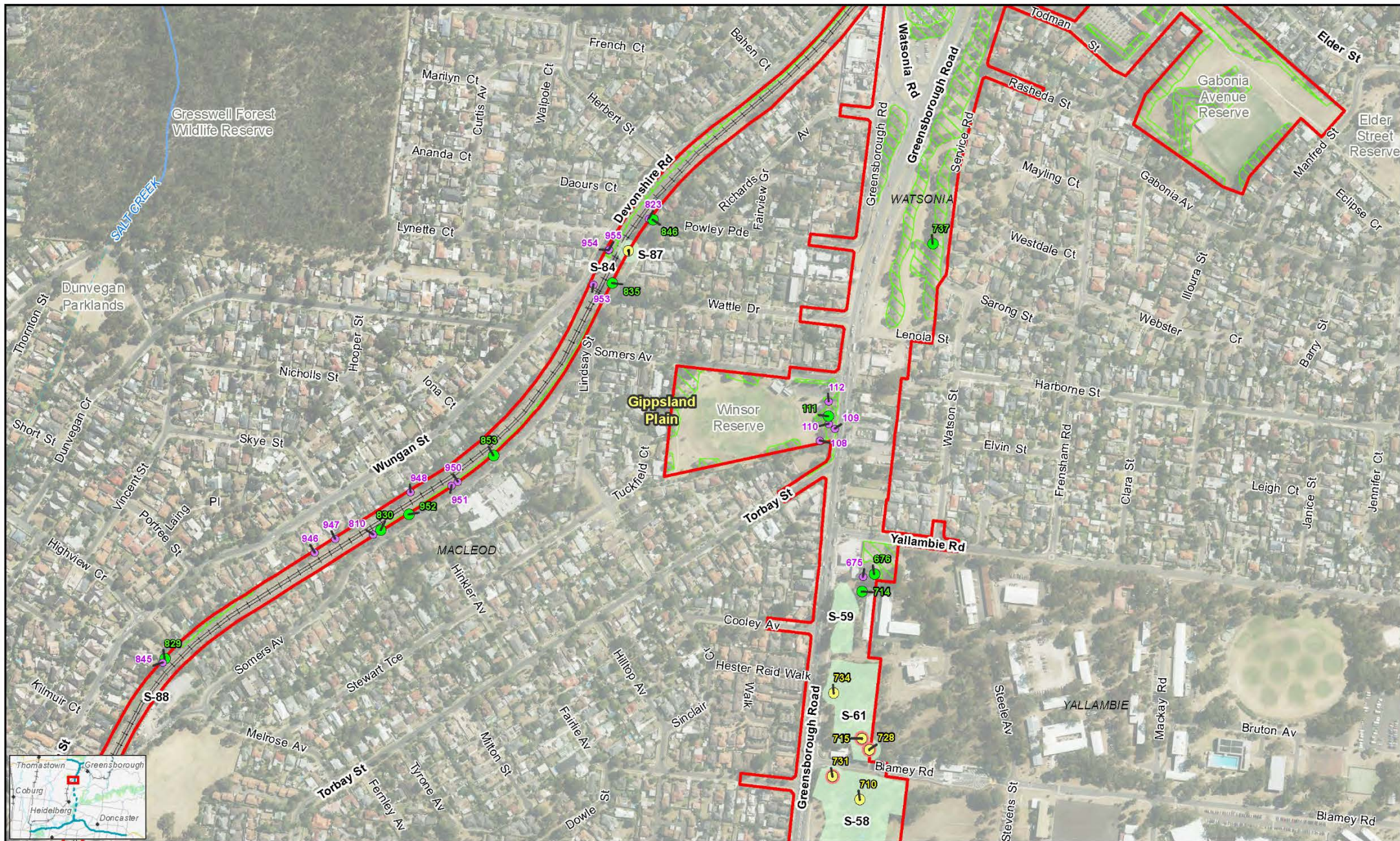
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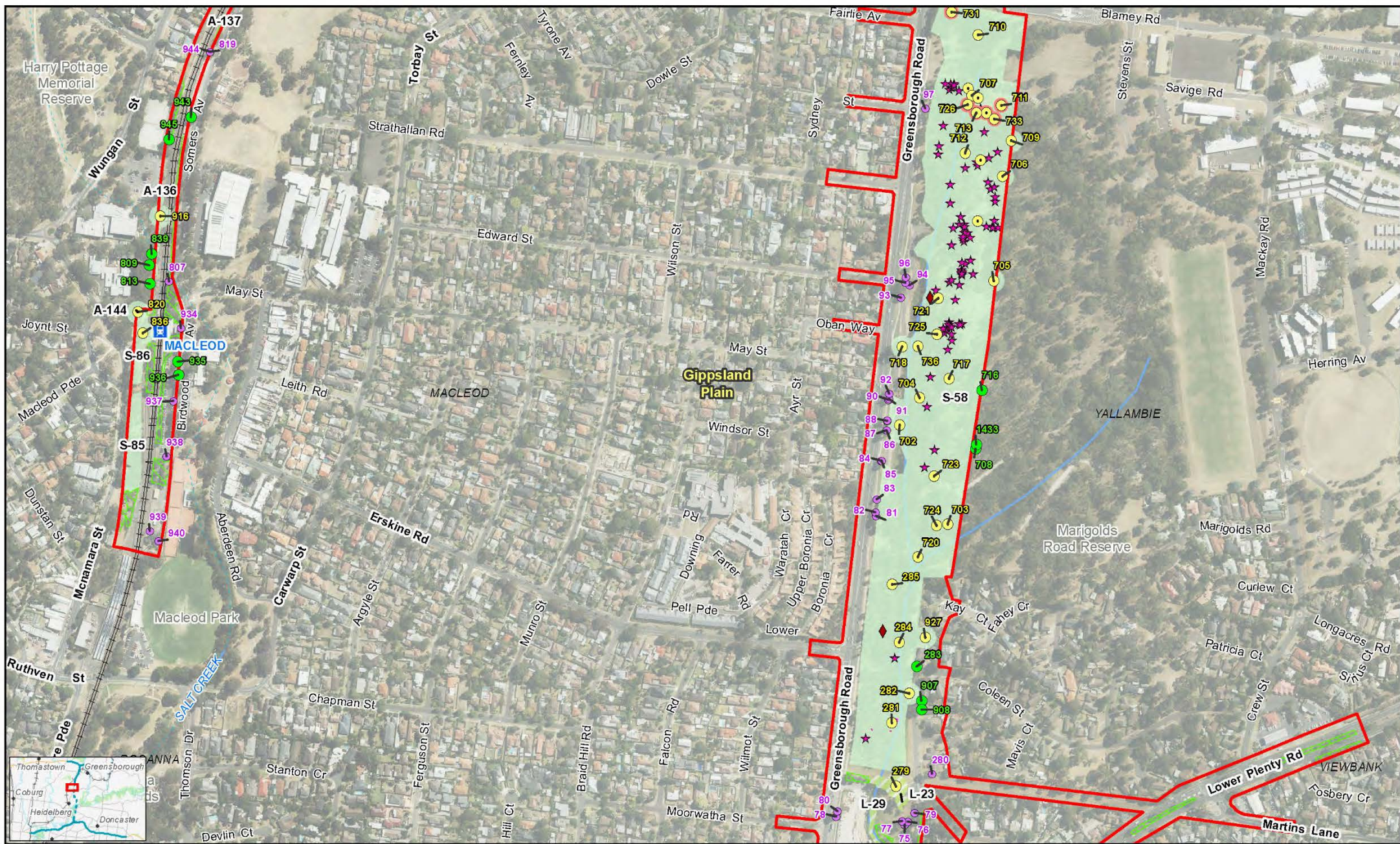
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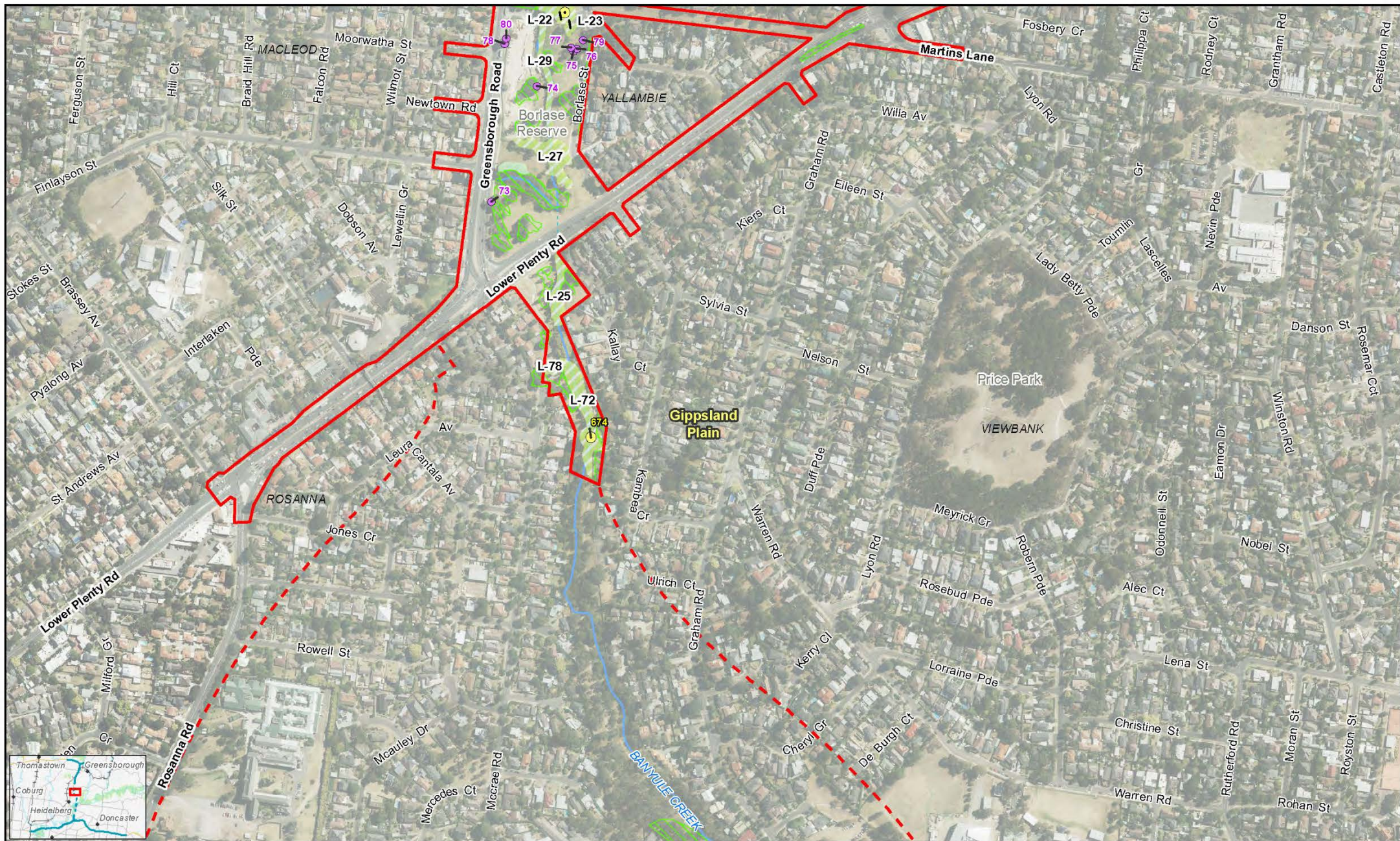
Ecological values
within project boundary

Figure 11-5









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LEGEND

- Project boundary - sub-surface
- Project boundary - surface

Vegetation Assessed

- Plains Grassy Woodland (55)

- Creekline Grassy Woodland (68)
- Bioregions

- Large trees in patches
- Small Scattered Tree
- Amenity Planting



North East Link Project

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Ecological values
within project boundary

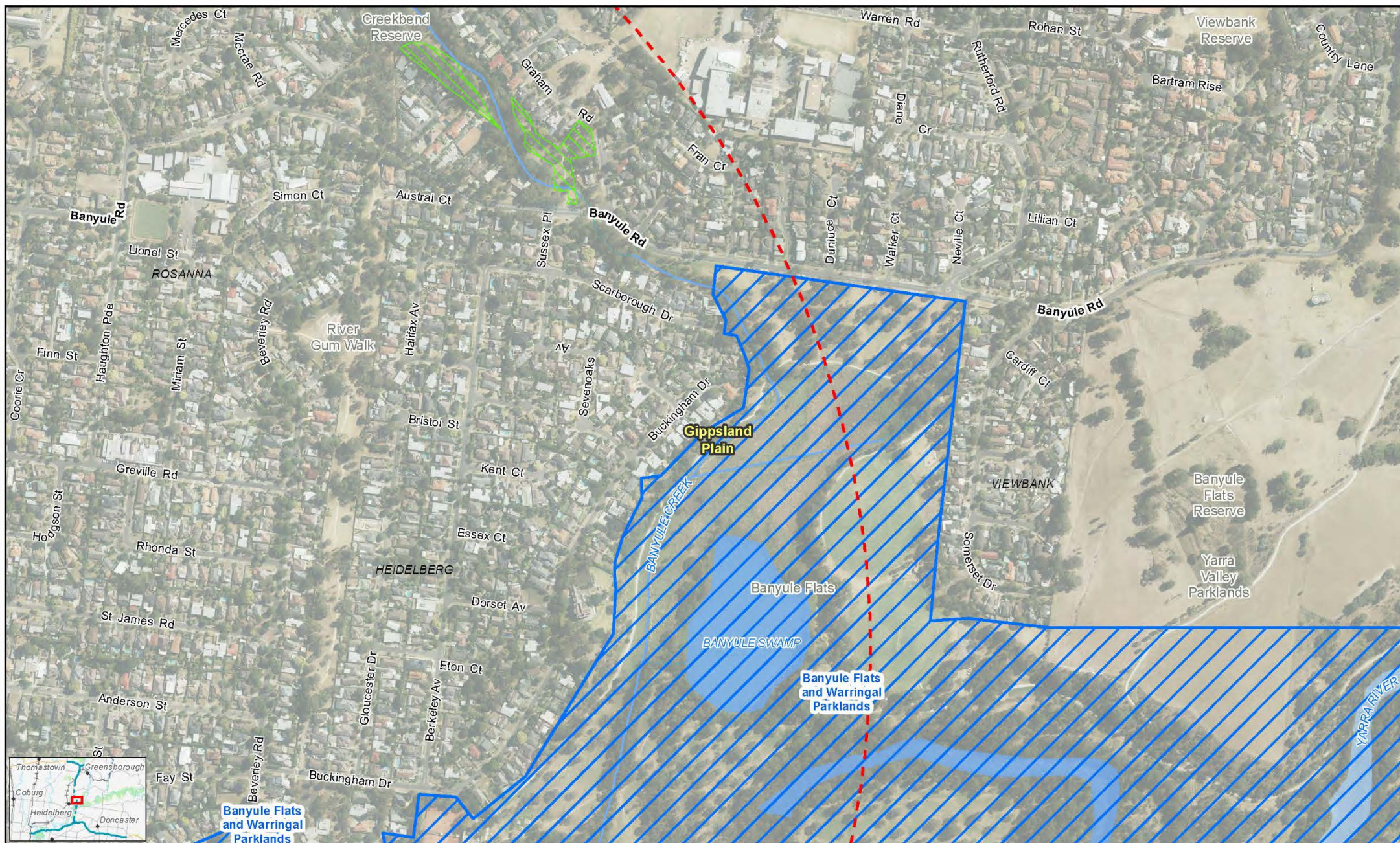
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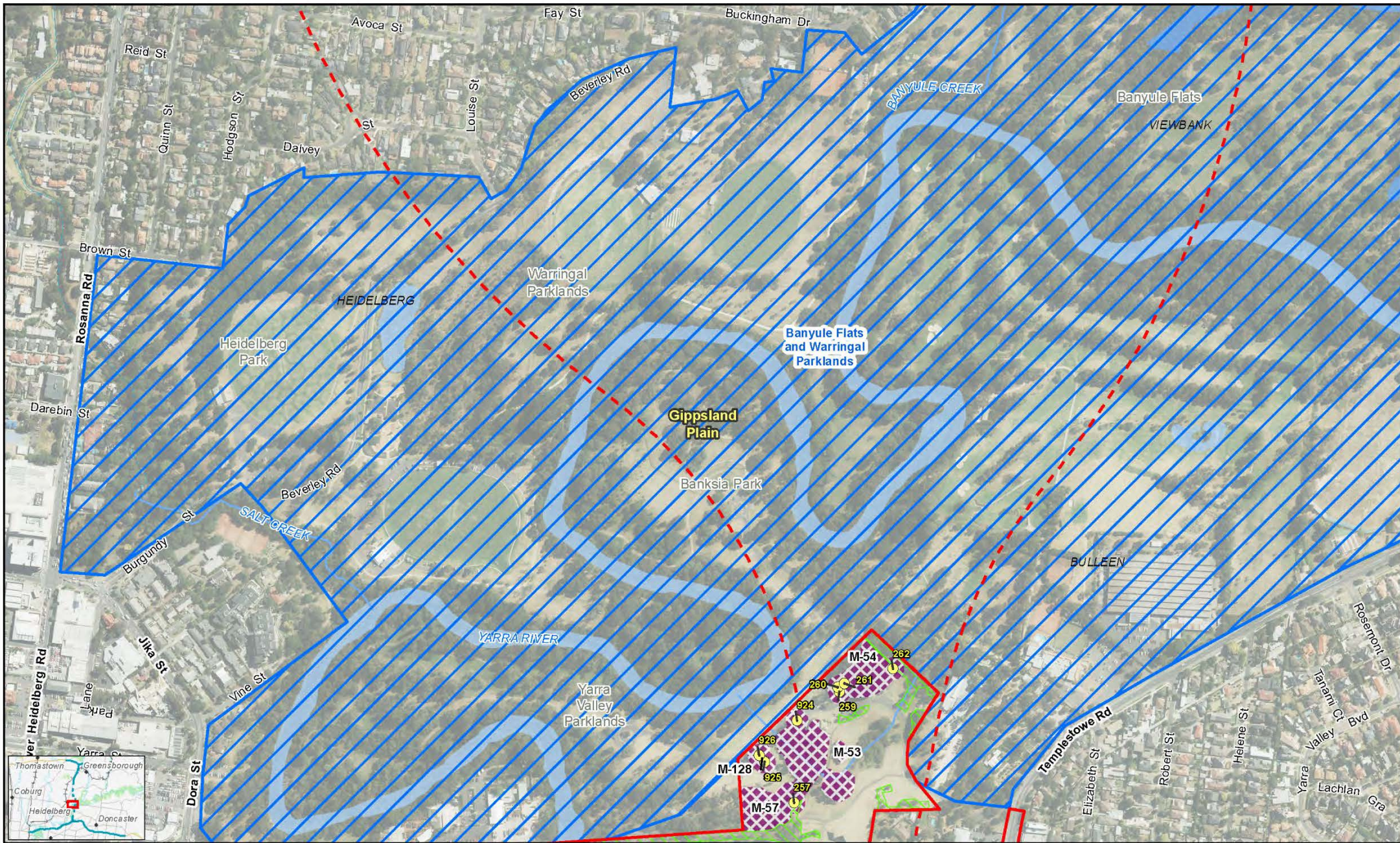
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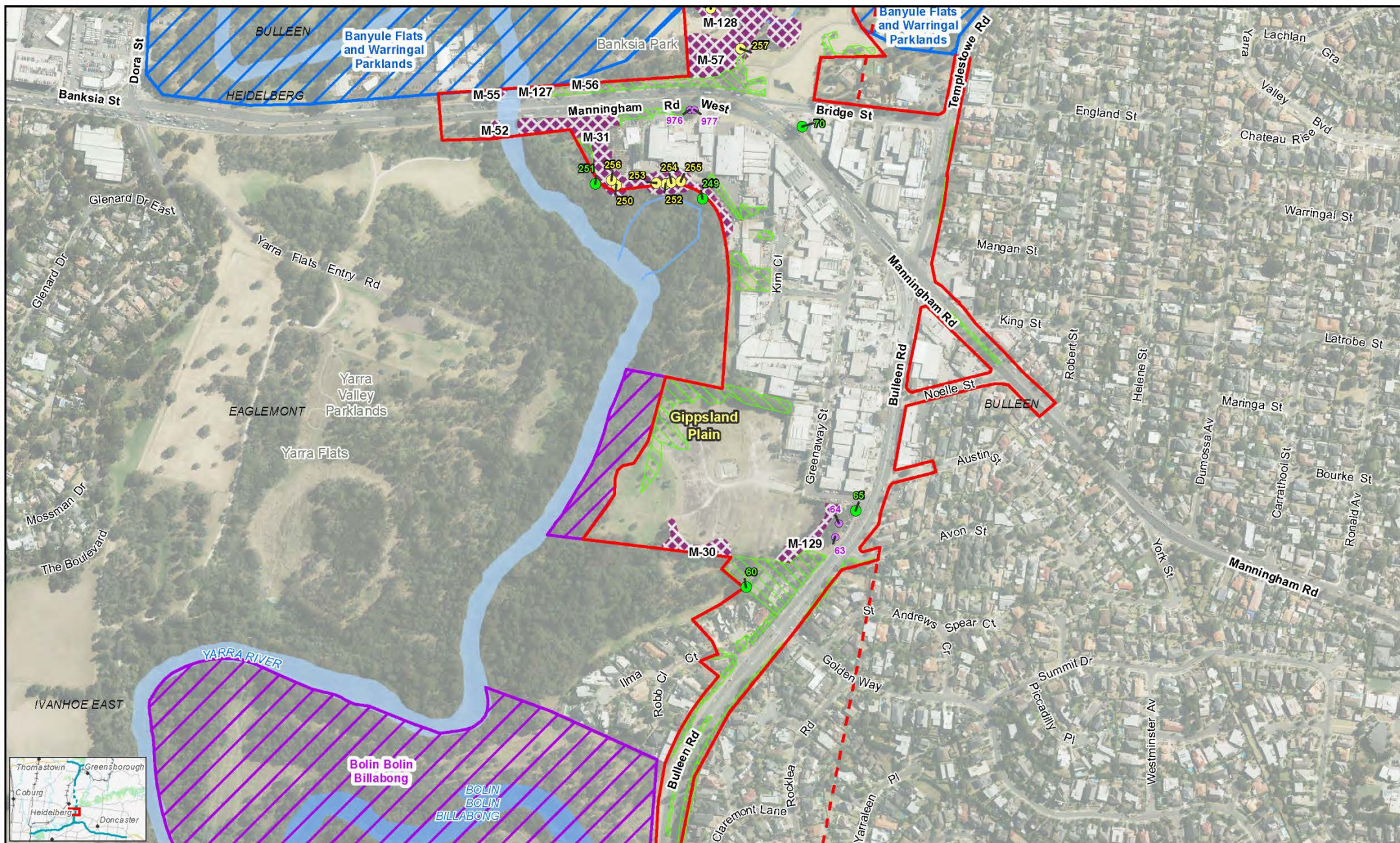




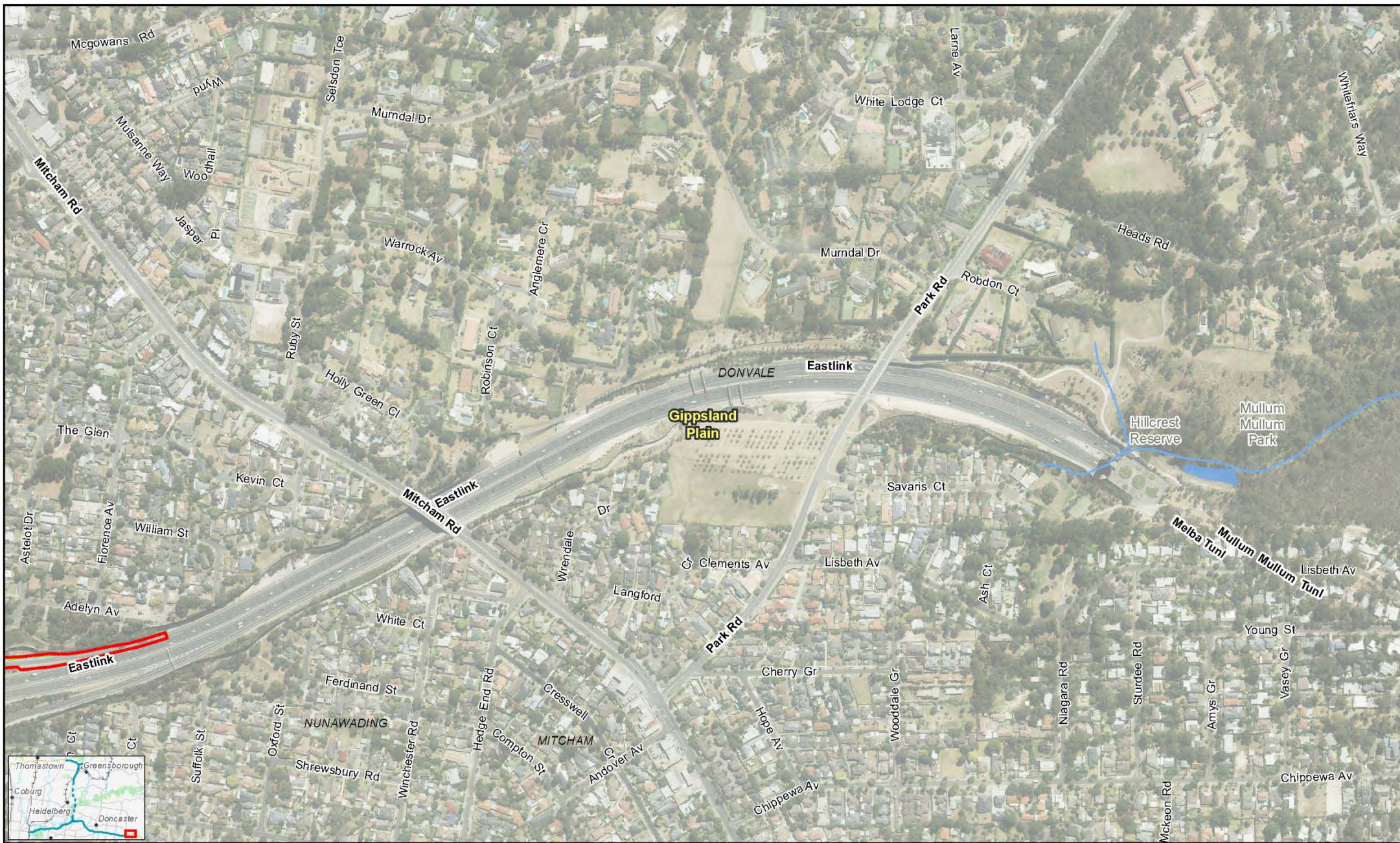
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LEGEND

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- Bioregions
- Amenity Planting

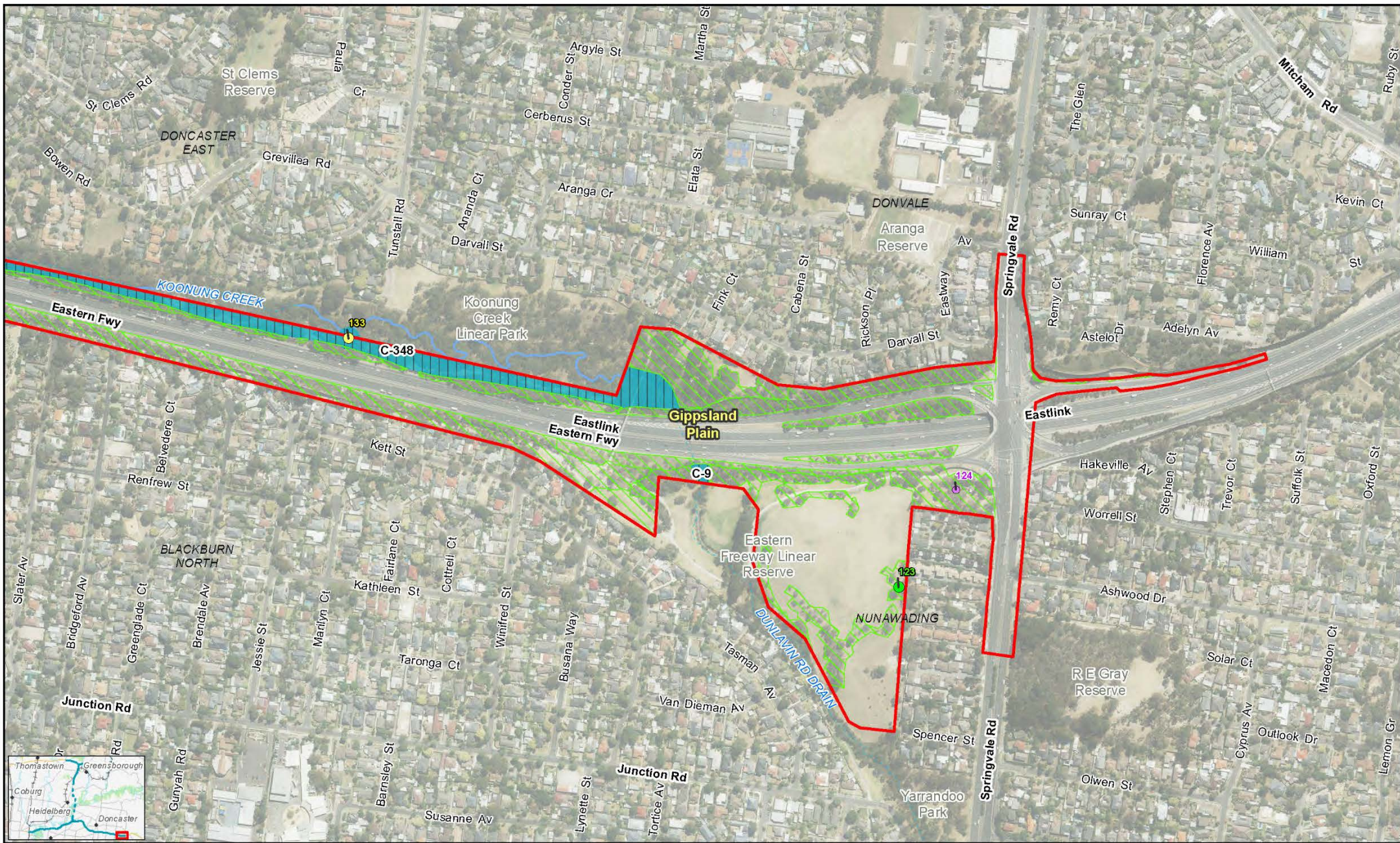


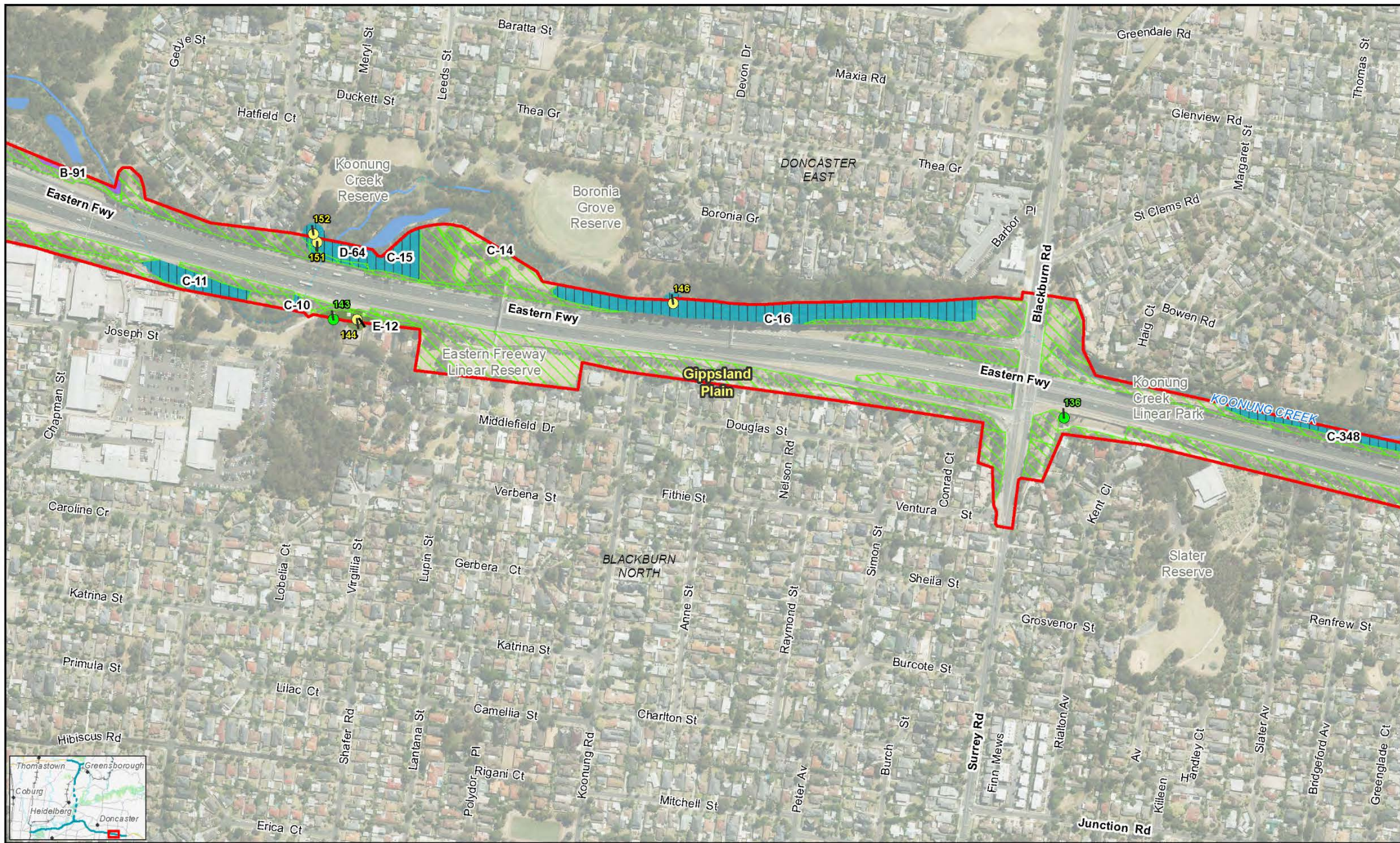
North East Link Project

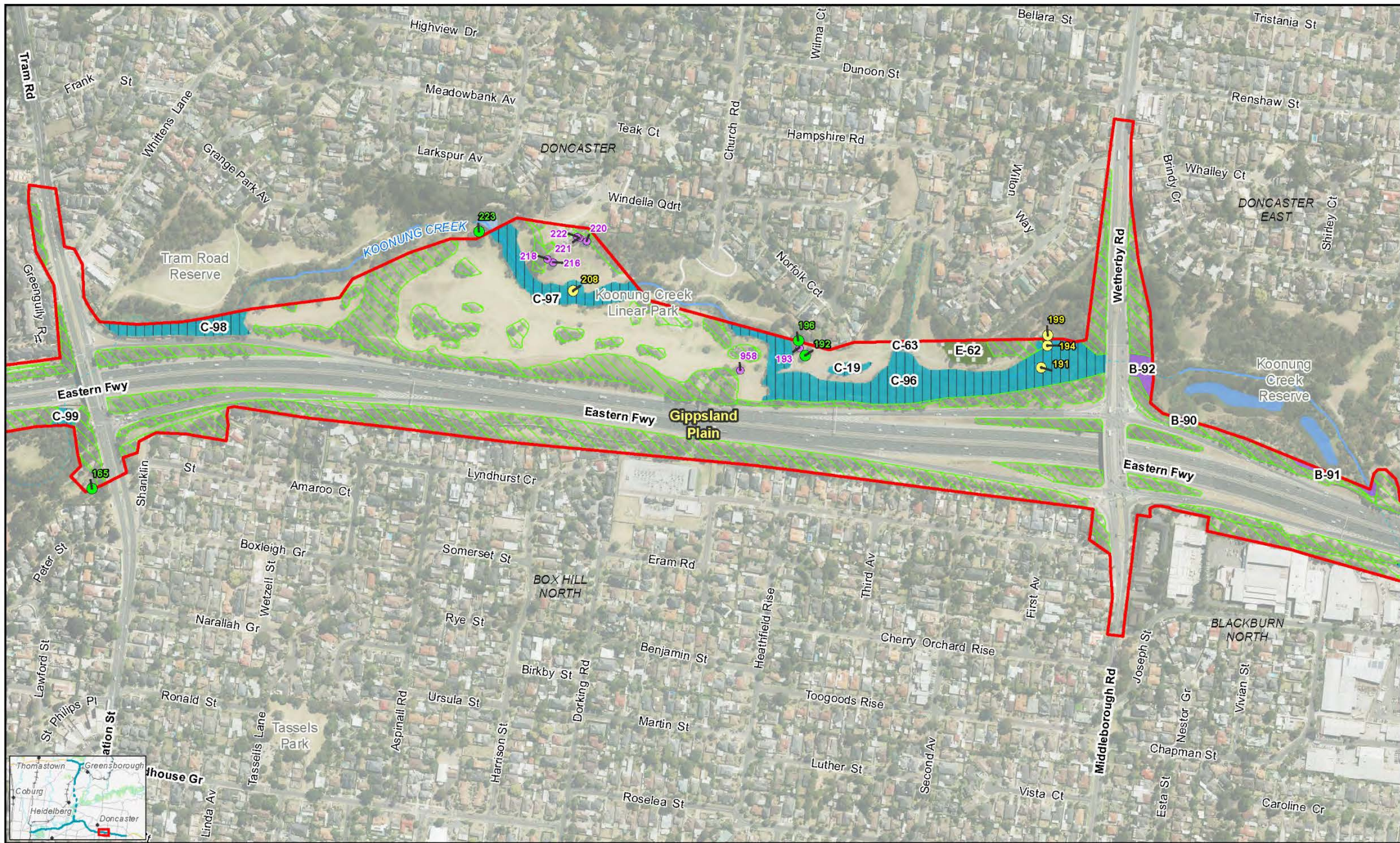
Job Number	31-35006
Revision	Q
Date	13 Mar 2019

Ecological values
within project boundary

Figure 11-14







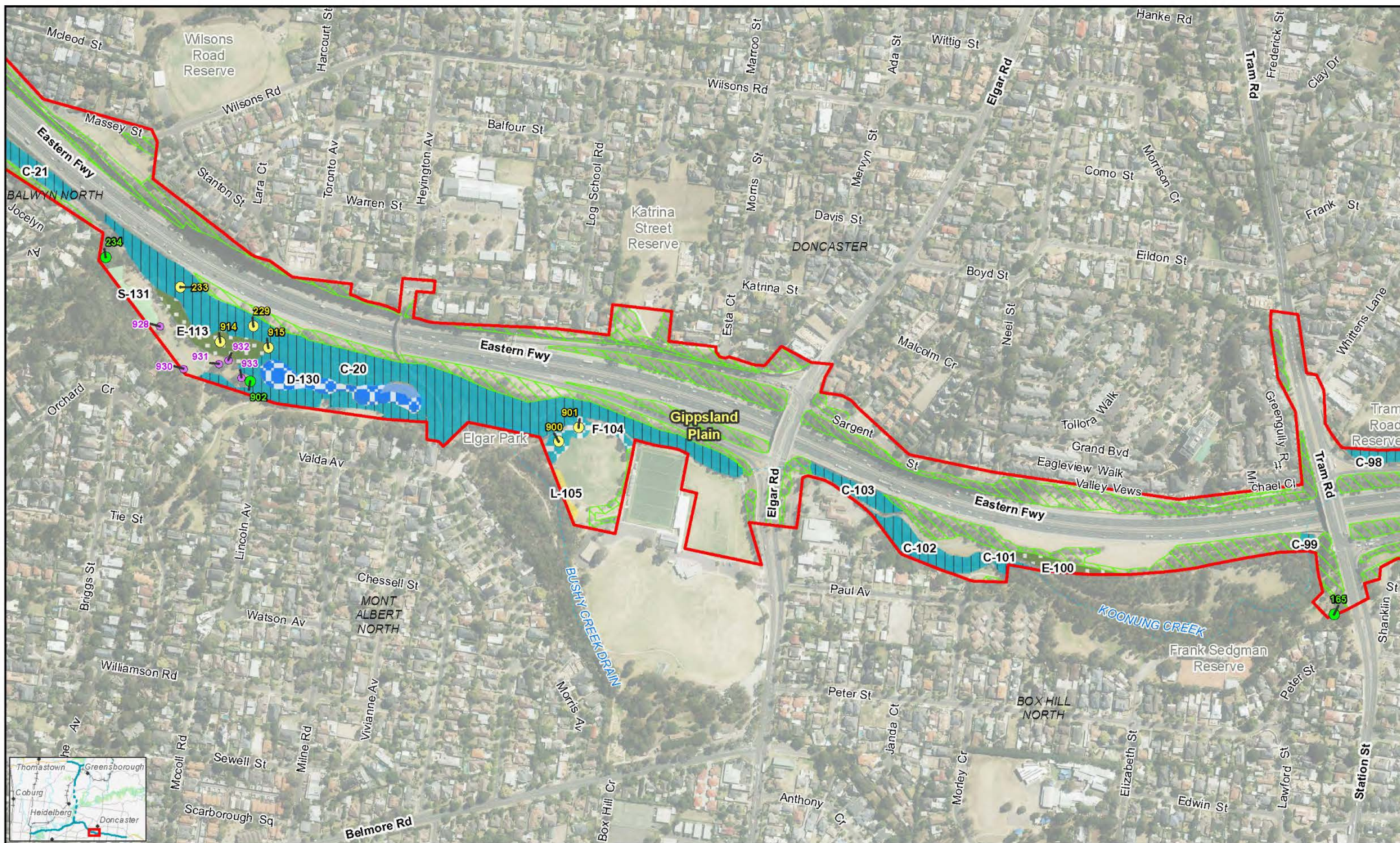
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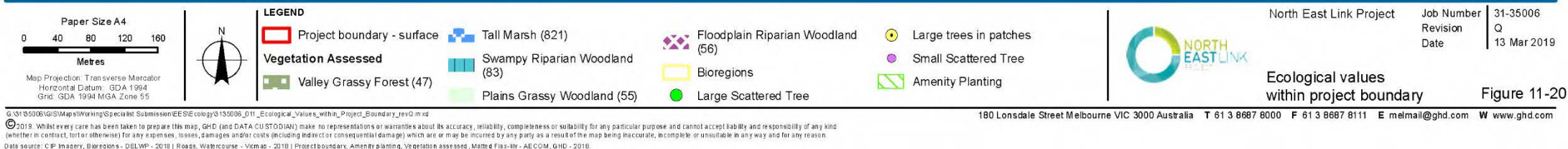
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Grid: GDA 1994 MGA Zone 55



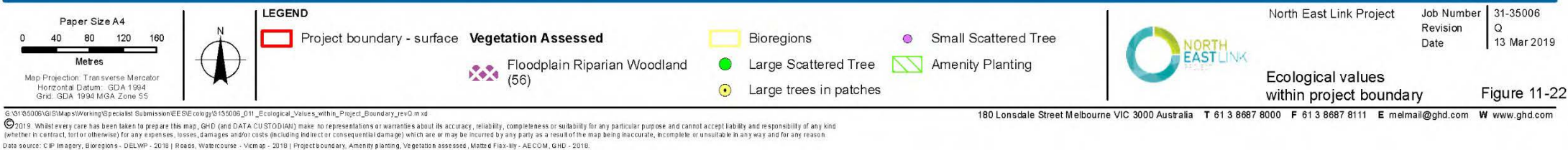
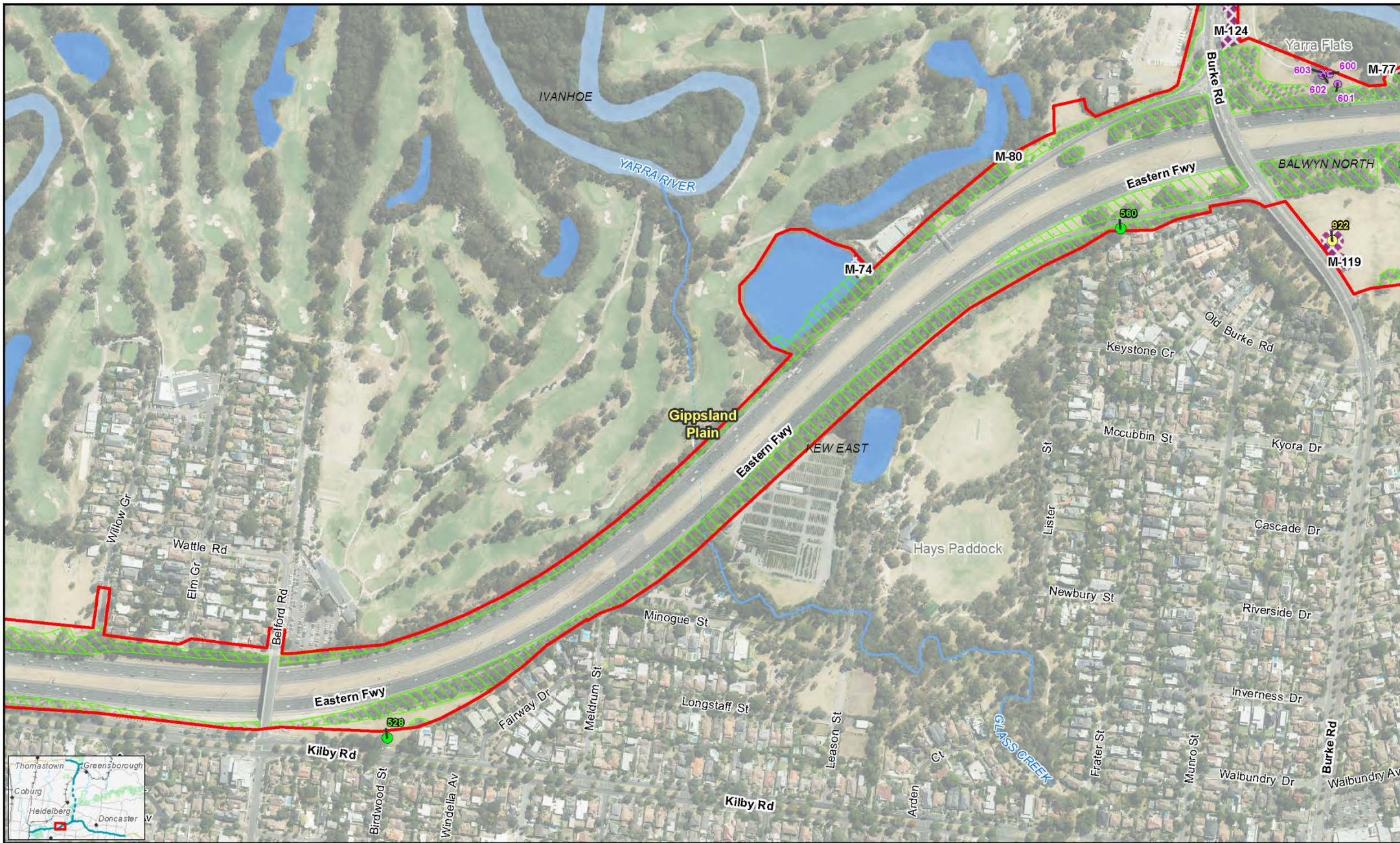
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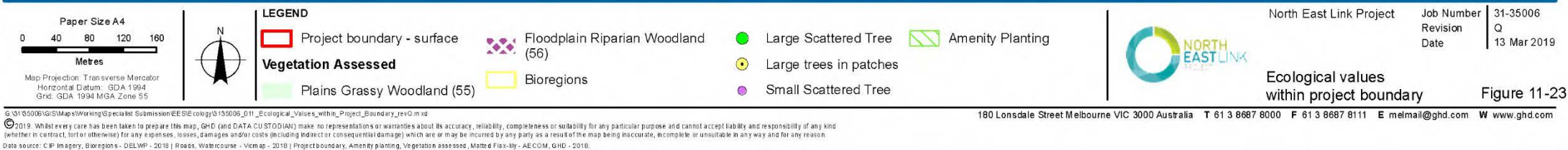
Date source: CIP Imagery, Bioregions - DELWP - 2018 | Roads, Watercourse - Vicmap - 2018 | Project boundary, Amenity planting, Vegetation assessed, Matted Pias-ly - AECOM, GHD - 2018.

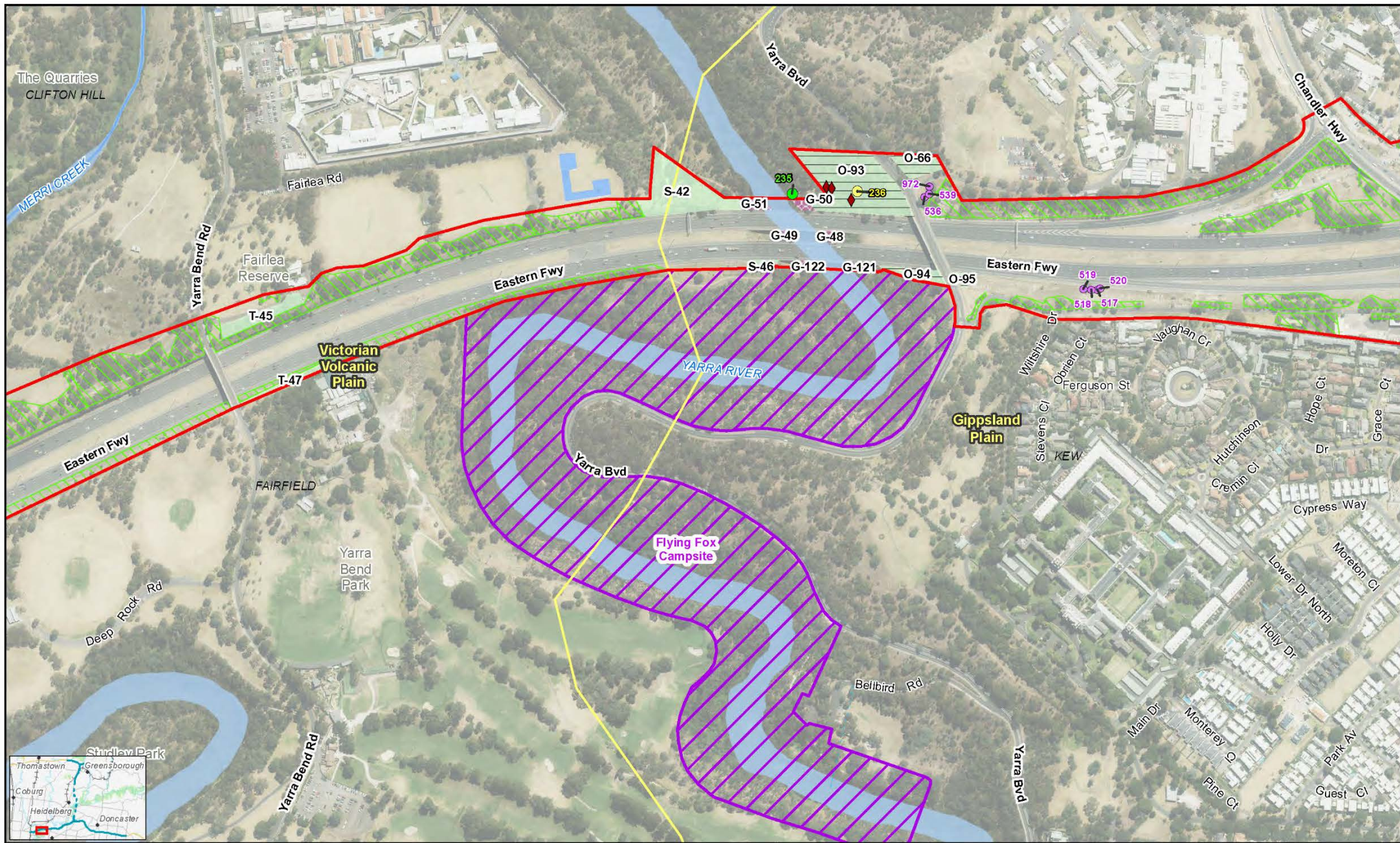




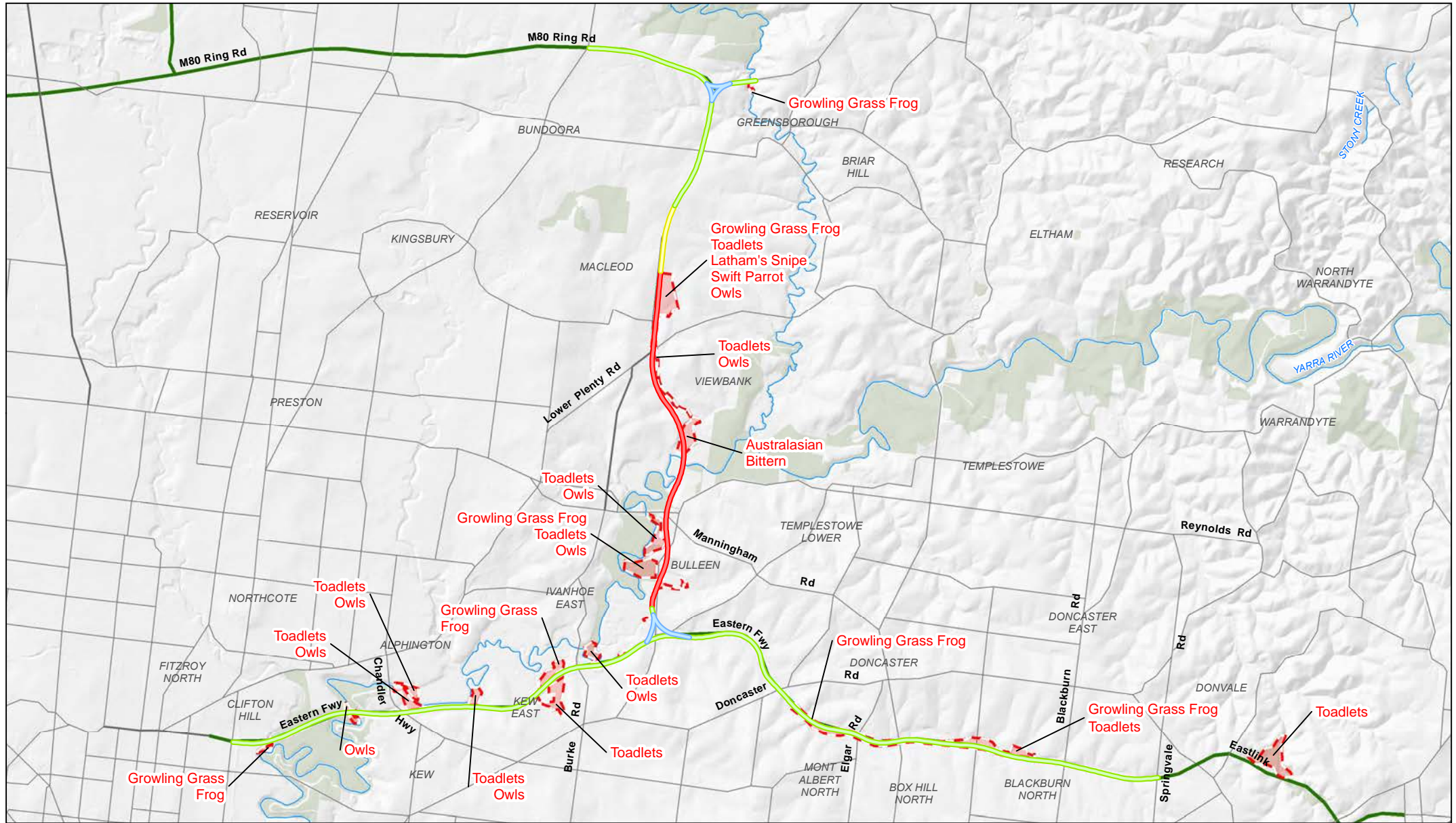


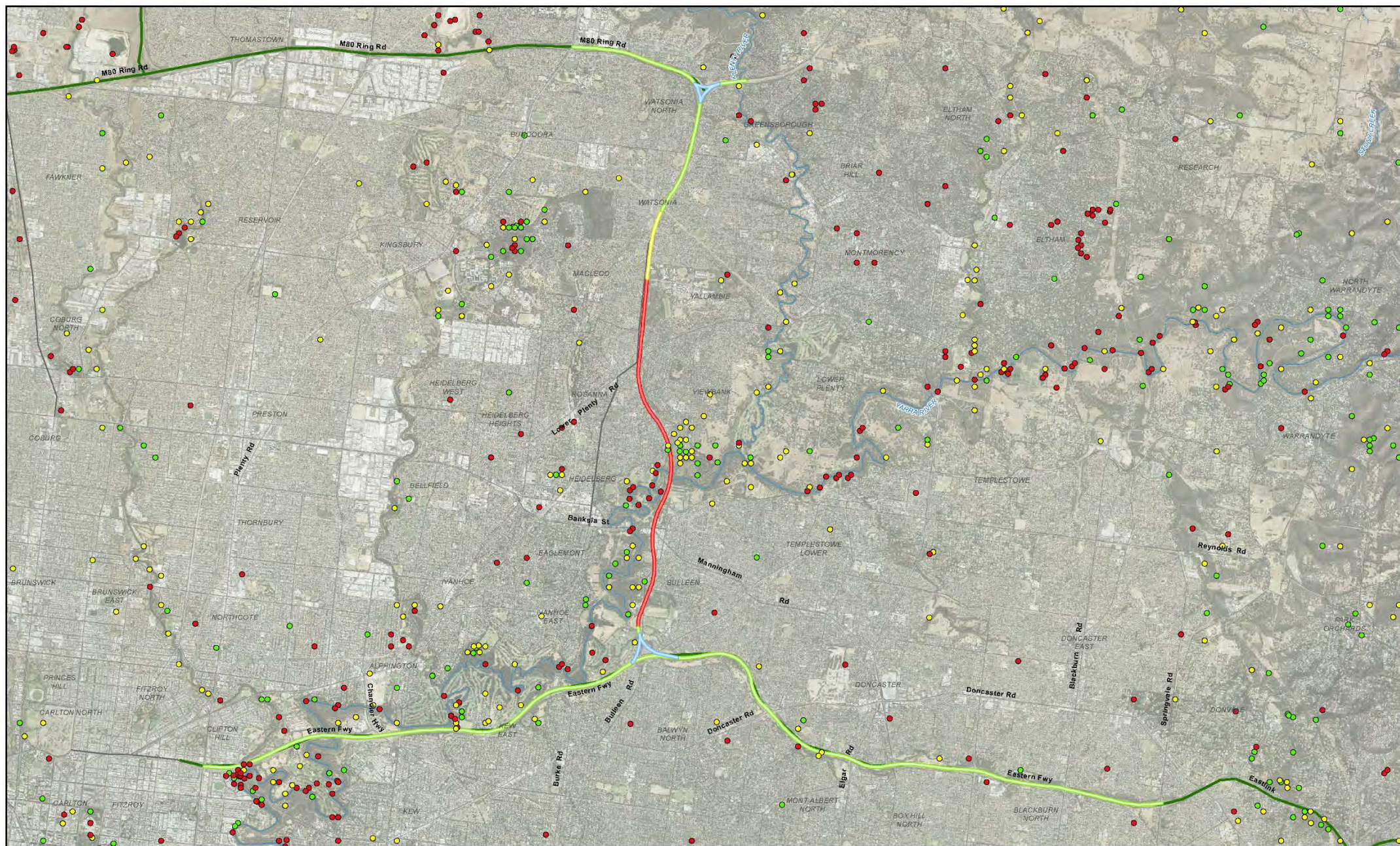












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Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55



LEGEND

VBA Threatened Fauna

- EPBC Act Listed
- FFG Act Listed
- DELWP Advisory Listed

Proposed reference project

- Elevated ramp
- Surface road
- Road in trench

Underground tunnel



North East Link Project
Environment Effects Statement (EES)

Job Number 31-35006
Revision F
Date 05 Mar 2019

Threatened Fauna Records (VBA)

Figure 13

G:\3135006\GIS\Maps\Working\Specialist Submission\EESEcology\3135006_013_ThreatenedFauna_VBA_A3L_revF.mxd

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Data source: DELWP: Vicmap Roads 2018, CIP Imagery 2018. Created by ghd

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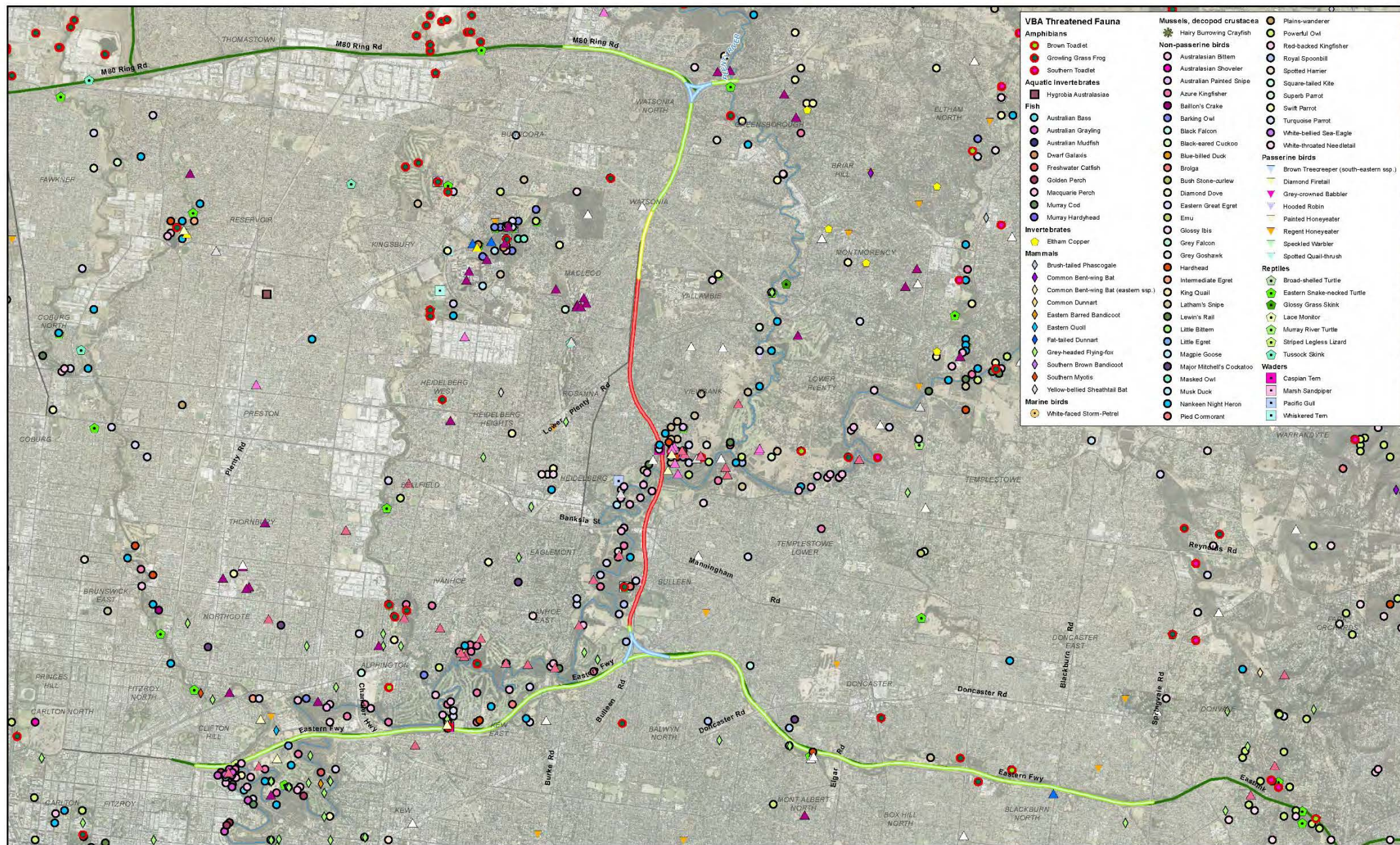
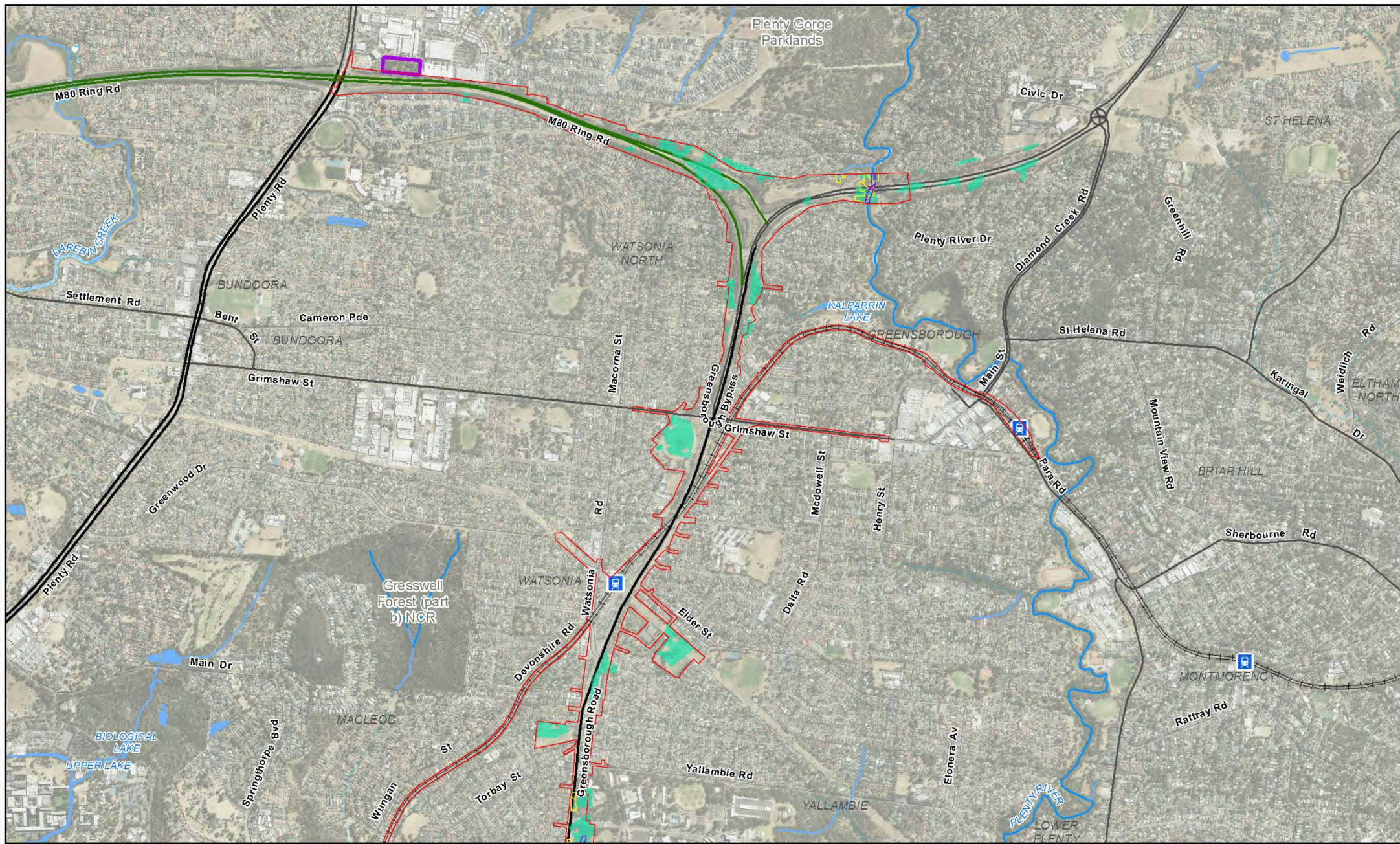
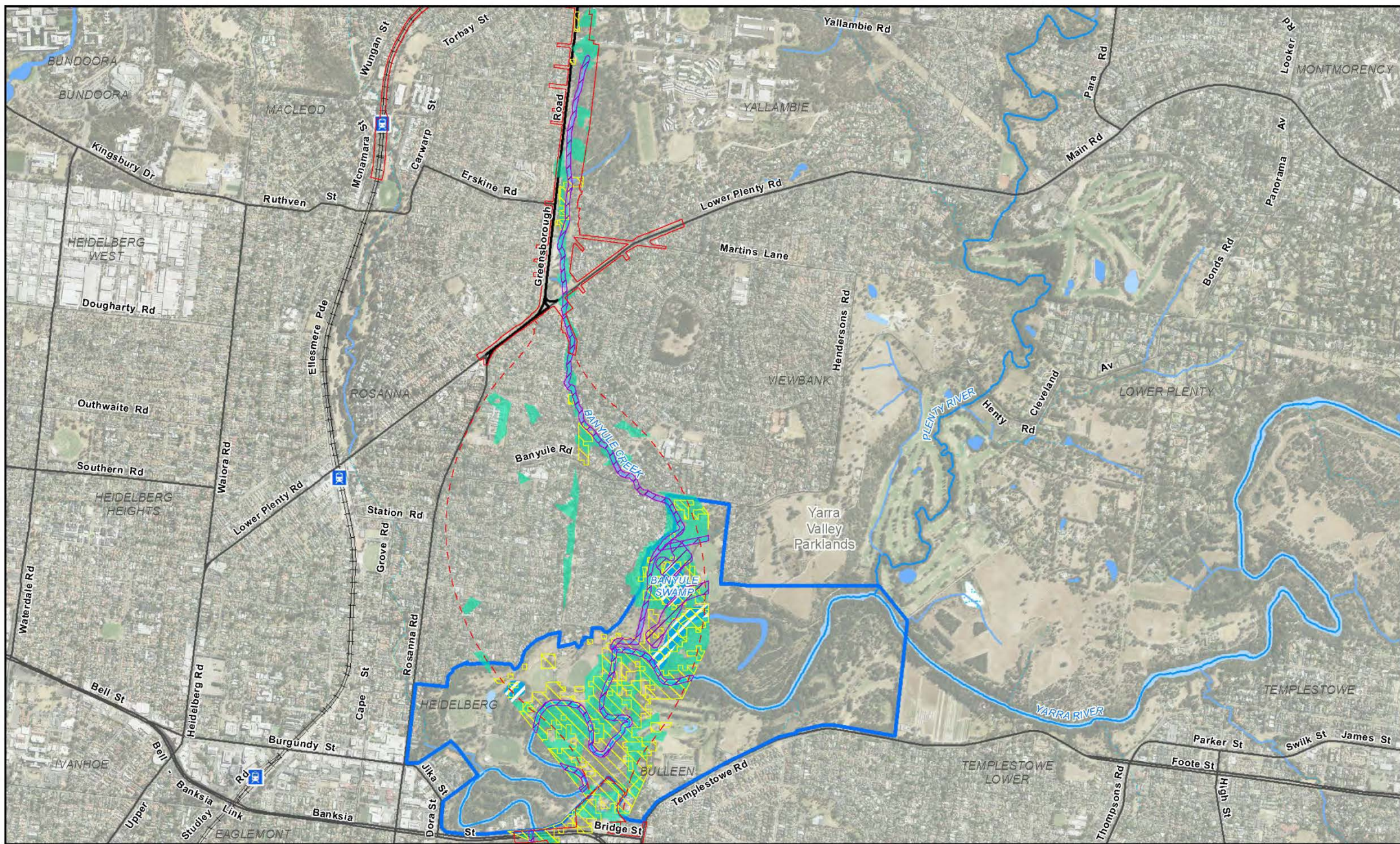
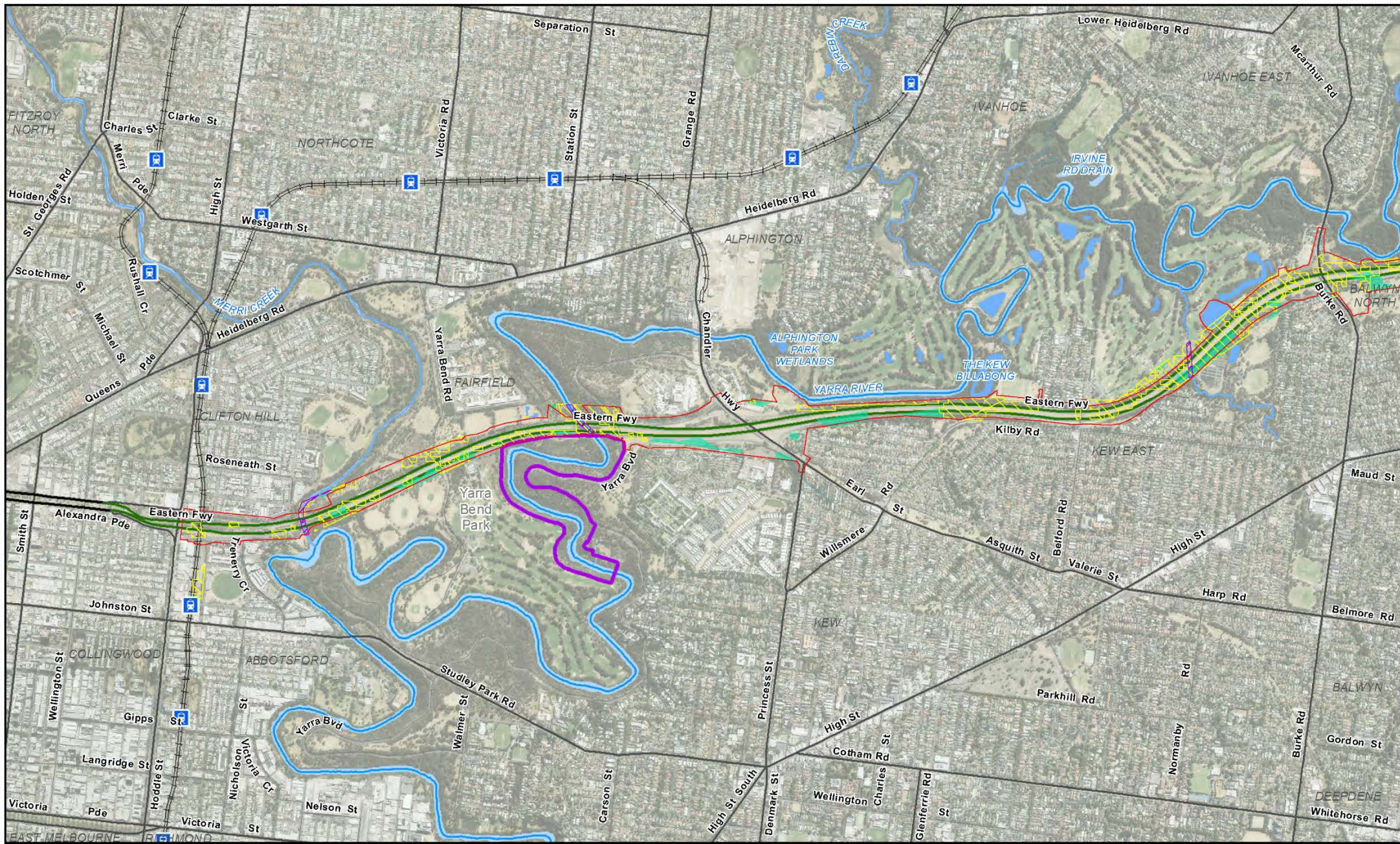
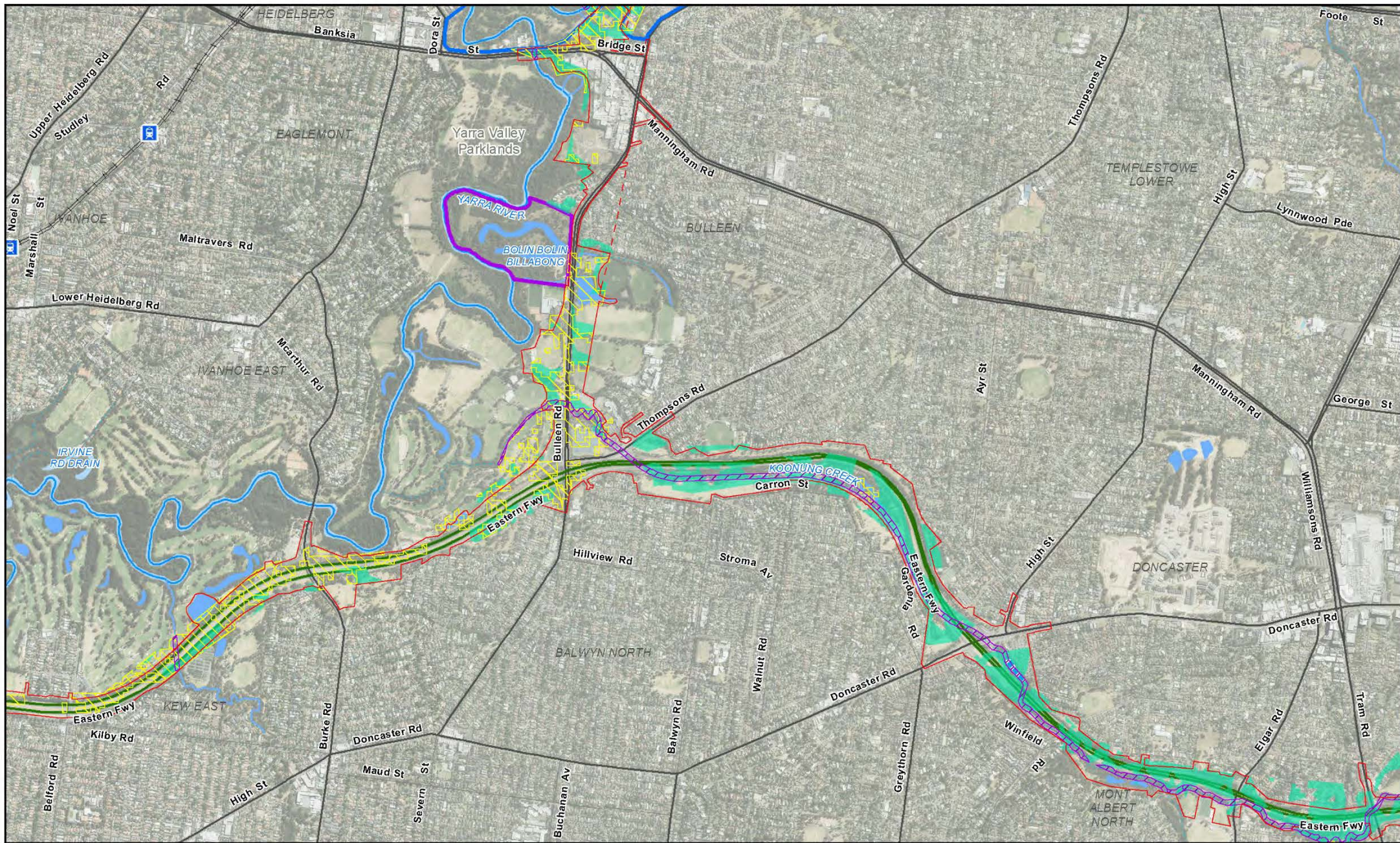


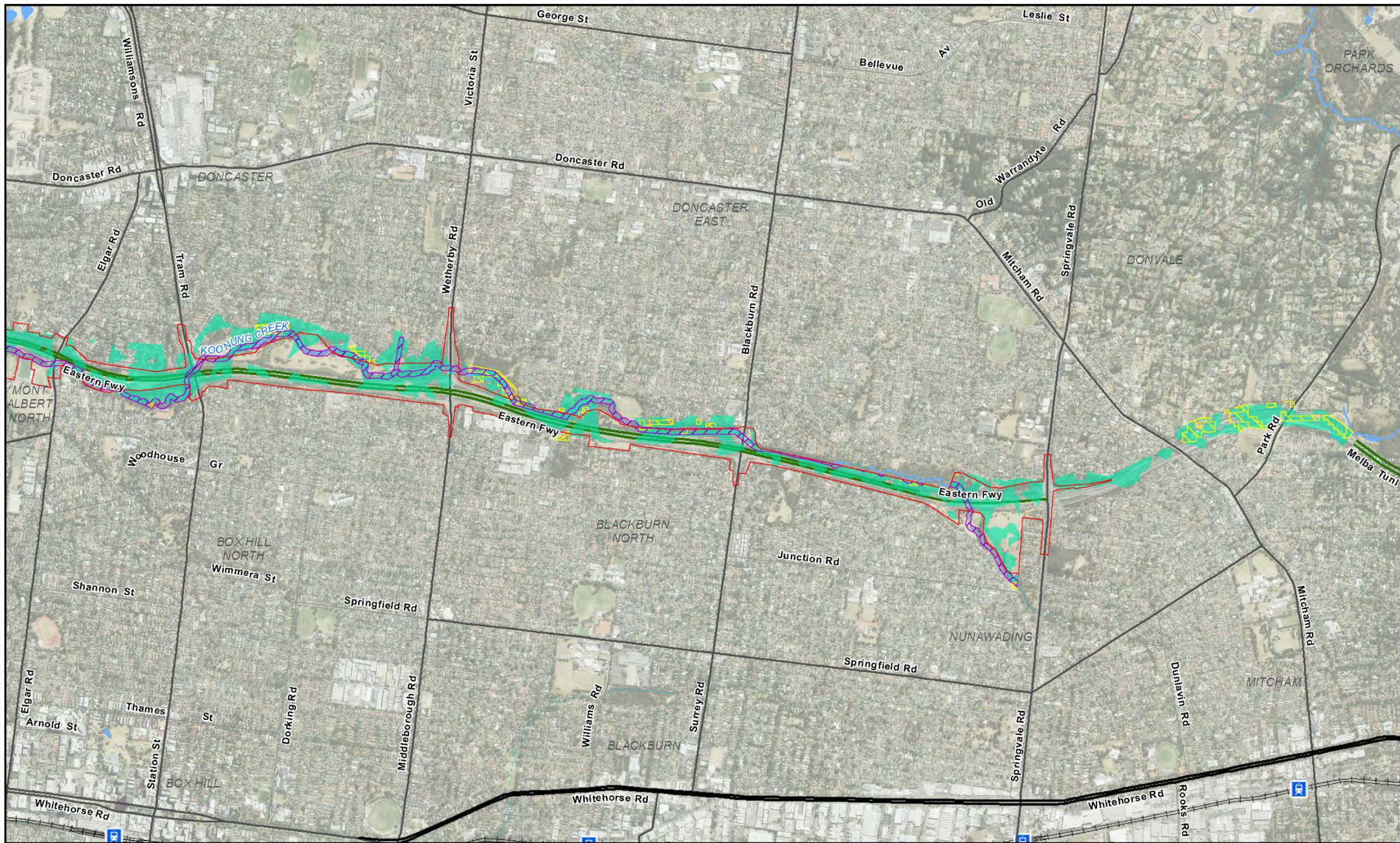
Figure 14

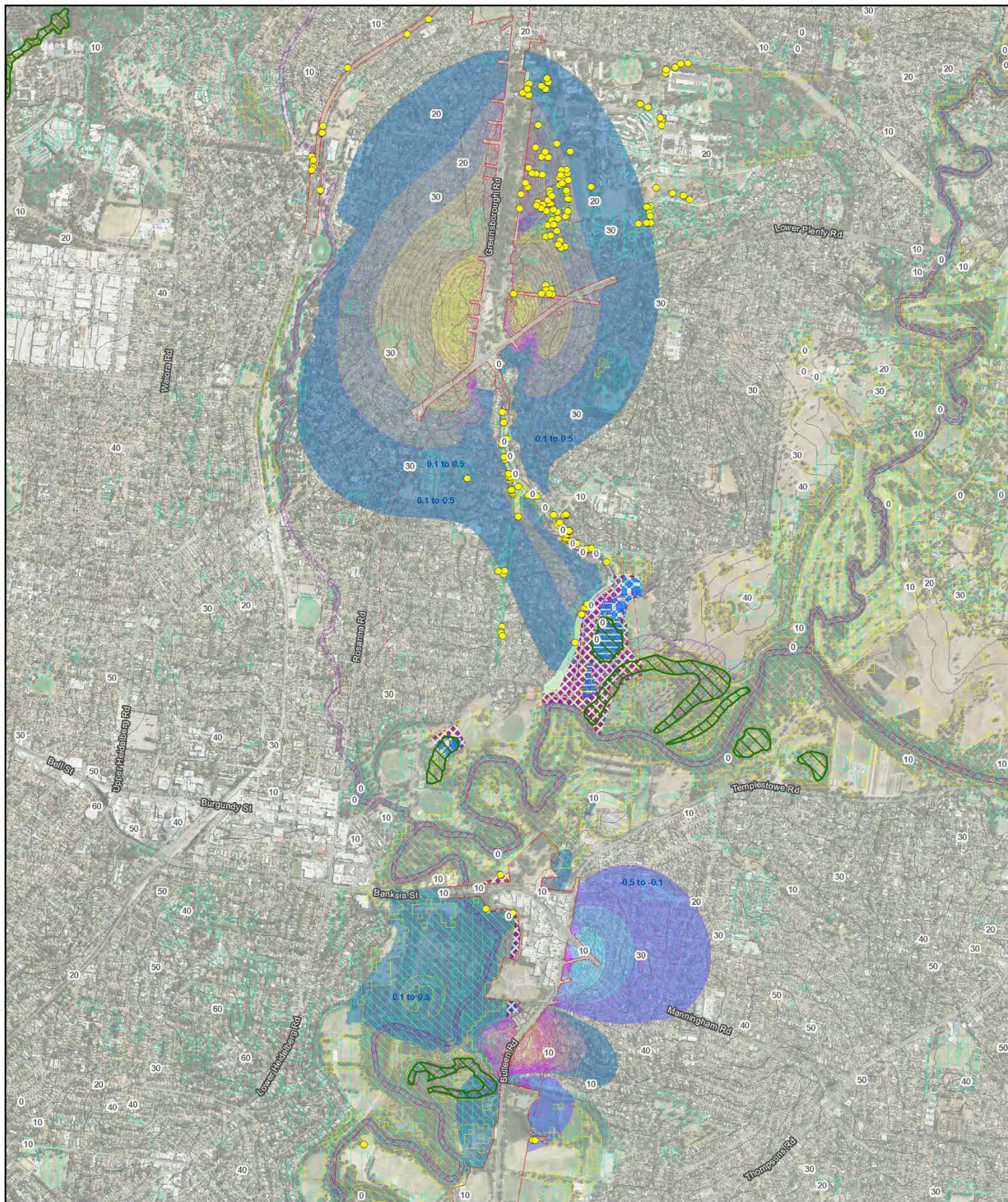










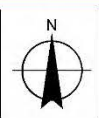


LEGEND

- Project boundary - sub-surface
- Project boundary - surface
- Large tree
- Wetlands (DELWP)
- Groundwater Dependent Ecosystems - surface expression (BOM)
- Groundwater Dependent Ecosystems - sub-surface expression (BOM)
- Groundwater Dependent Ecosystems (PPCMA)
- Native Vegetation (EVC)**
 - Aquatic Sedgeland (EVC 308)
 - Creekline Grassy Woodland (68)
 - Floodplain Riparian Woodland (56)
 - Plains Grassy Woodland (55)
 - Red Gum Swamp (EVC 292)
- Swampy Riparian Woodland (83)
- Tall Marsh (821)
- Wet Vedge Sedgeland (EVC 932)
- Depth to Groundwater Contour (m)
- Groundwater Drawdown (m)**
 - 4 to -3
 - 3 to -2

- 2 to -1
- 1 to -0.5
- 0.5 to -0.1
- 0.1 to 0.5
- 0.5 to 1
- 1 to 2
- 2 to 3
- 3 to 4
- 4 to 5
- 5 to 10
- 10 to 15
- 15 to 20

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Grid: GDA 1994 MGA Zone 55

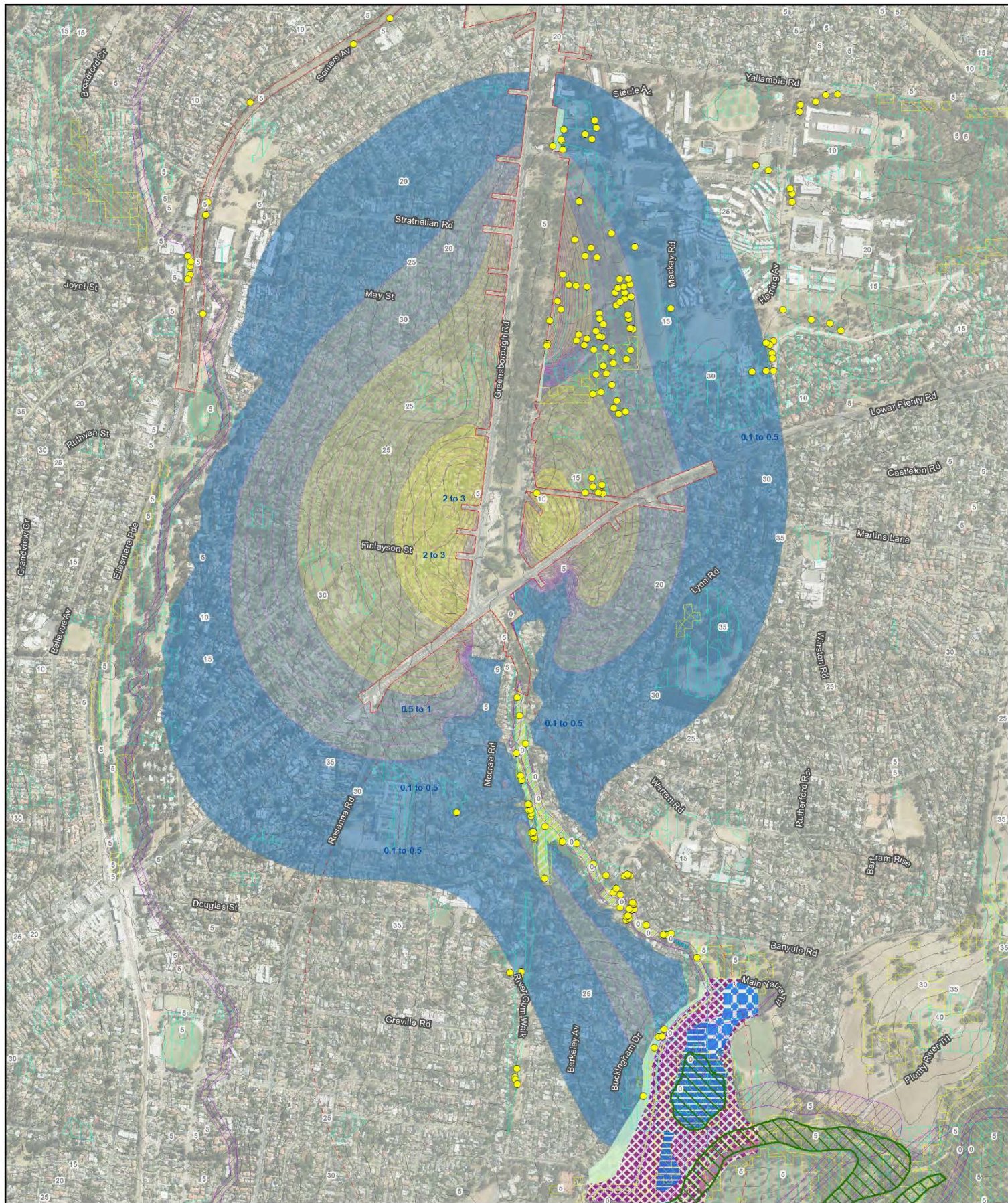


North East Link Project
Environment Effects Statement (EES)

Modelled prediction of groundwater drawdown
in late 2024 (95th percentile)
Overview

Job Number 31-35006
Revision B
Date 05 Mar 2019

Figure 16 - 1



LEGEND

- Project boundary - sub-surface
- Project boundary - surface
- Large tree
- Wetlands (DELWP)

- Groundwater Dependent Ecosystems - surface expression (BOM)
- Groundwater Dependent Ecosystems - sub-surface expression (BOM)
- Groundwater Dependent Ecosystems (PPCMA)

Native Vegetation (EVC)

- Creekline Grassy Woodland (68)
- Floodplain Riparian Woodland (56)
- Plains Grassy Woodland (55)
- Red Gum Swamp (EVC 292)

- Swampy Riparian Woodland (83)
- Tall Marsh (821)
- Wet Verge Sedgeland (EVC 932)
- Depth to Groundwater Contour (m)

Groundwater Drawdown (m)

- 0.1 to 0.5
- 0.5 to 1
- 1 to 2
- 2 to 3

Paper Size A3
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Metres
Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55



North East Link Project
Environment Effects Statement (EES)

Modelled prediction of groundwater drawdown
in late 2024 (95th percentile)
Northern Portal

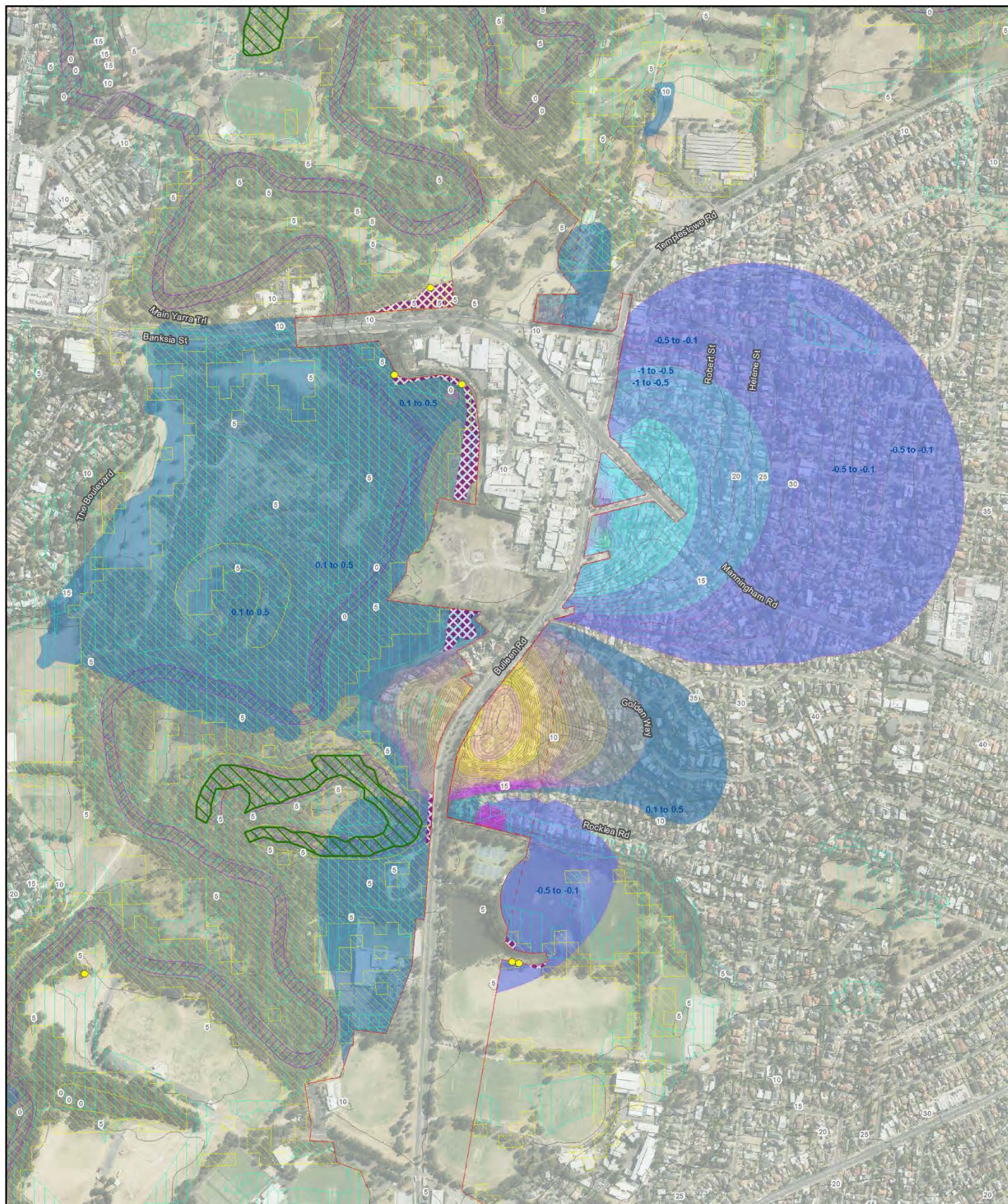
Job Number 31-35006
Revision B
Date 05 Mar 2019

Figure 16 - 2

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Data Sources: CIP Imagery, EVC 2005 - DELWP - 2019 | Road Names - Viapmap - 2018 | Groundwater Dependent Ecosystems - PPCMA, BOM - 2018 | Construction Footprint, Scattered Trees, Matted Flax-lily, Groundwater Drawdown - GHD/AECOM - 2018

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LEGEND

- Project boundary - sub-surface
- Project boundary - surface
- Large tree
- Wetlands (DELWP)

- Groundwater Dependent Ecosystems - surface expression (BOM)
- Groundwater Dependent Ecosystems - sub-surface expression (BOM)
- Groundwater Dependent Ecosystems (PPCMA)

Native Vegetation (EVC)

- Aquatic Sedgeland (EVC 308)
- Floodplain Riparian Woodland (56)
- Depth to Groundwater Contour (m)

Groundwater Drawdown (m)

- | | |
|---|--|
| -0.5 to -0.1 | 3 to 4 |
| 0.1 to 0.5 | 4 to 5 |
| 0.5 to 1 | 5 to 10 |
| 1 to 2 | 10 to 15 |
| 2 to 3 | 15 to 20 |

Paper Size A3
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Metres
Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55



North East Link Project
Environment Effects Statement (EES)

Modelled prediction of groundwater drawdown
in late 2024 (95th percentile)
Southern Portal

Job Number 31-35006
Revision B
Date 05 Mar 2019

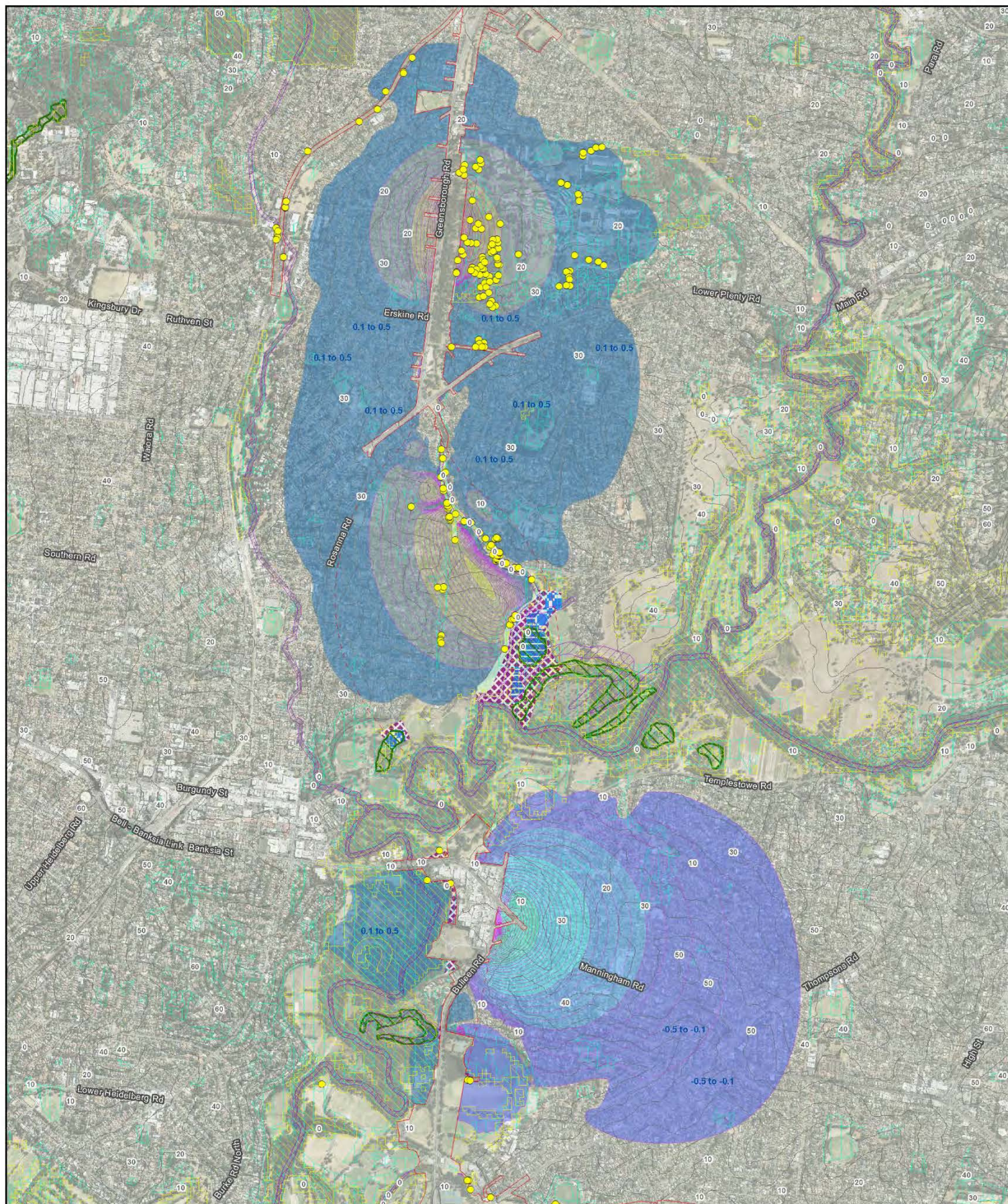
Figure 16 - 3

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Data Sources: CIP Imagery, EVC 2005 - DELWP - 2018 | Road Names - Viapmap - 2018 | Groundwater Dependent Ecosystems - PPCMA, BOM - 2018 | Construction Footprint, Scattered Trees, Matted Flax-lily, Groundwater Drawdown - GHD/AECOM - 2018

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LEGEND

- Project boundary - sub-surface
- Project boundary - surface
- Large tree
- Wetlands (DELWP)
- Groundwater Dependent Ecosystems - surface expression (BOM)
- Groundwater Dependent Ecosystems - sub-surface expression (BOM)

- Groundwater Dependent Ecosystems (PPCMA)
- Native Vegetation (EVC)
 - Aquatic Sedgeland (EVC 308)
 - Creekline Grassy Woodland (68)
 - Floodplain Riparian Woodland (56)
 - Plains Grassy Woodland (55)
 - Red Gum Swamp (EVC 292)

- Swampy Riparian Woodland (83)
- Tall Marsh (821)
- Wet Verge Sedgeland (EVC 932)
- Depth to Groundwater Contour (m)
- Groundwater Drawdown (m)
 - 5 to -4
 - 4 to -3

- 3 to -2
- 2 to -1
- 1 to -0.5
- 0.5 to -0.1
- 0.1 to 0.5
- 0.5 to 1
- 1 to 2

- 2 to 3
- 3 to 4
- 4 to 5
- 5 to 10
- 10 to 15
- 15 to 20

Paper Size A3
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Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

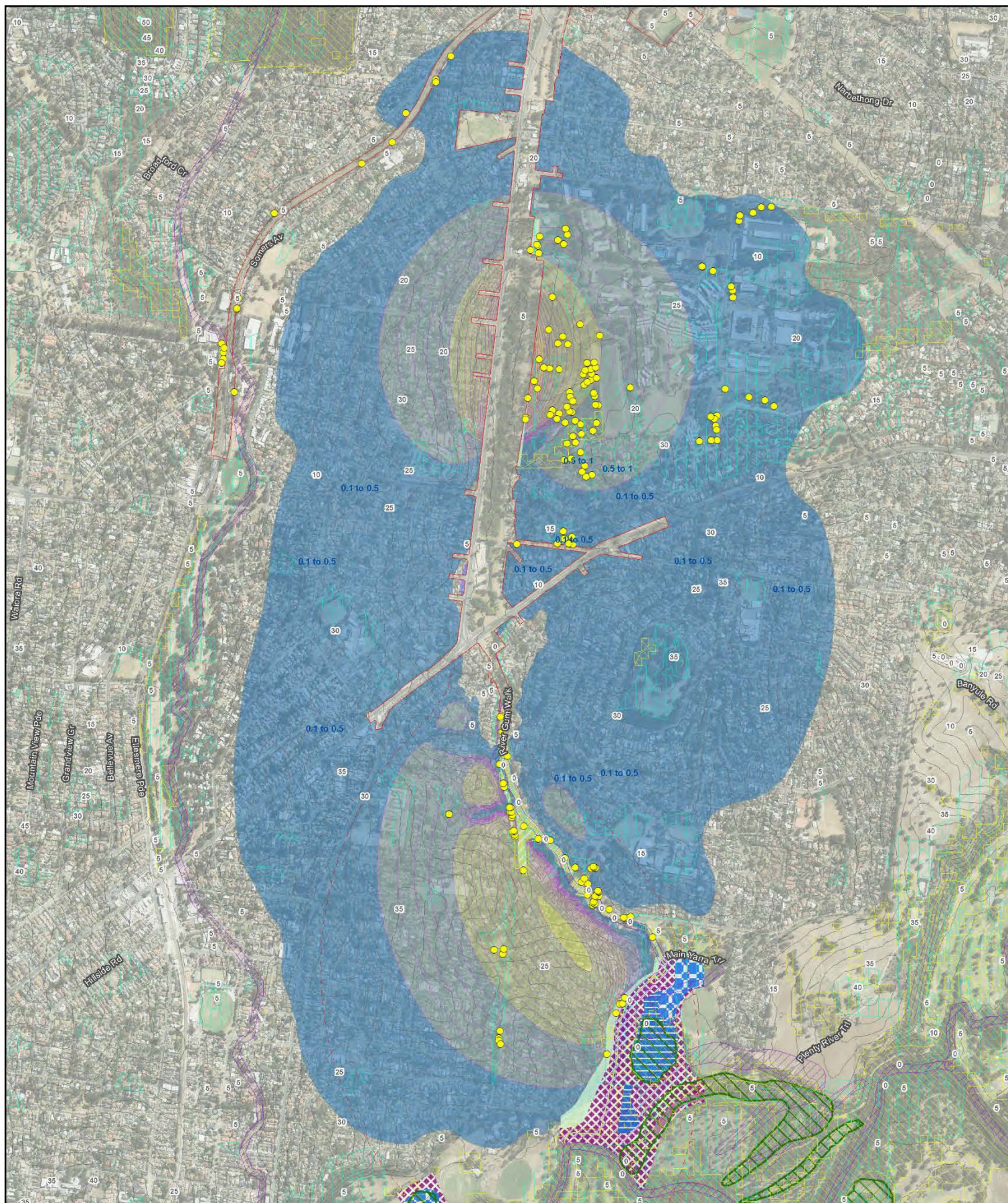


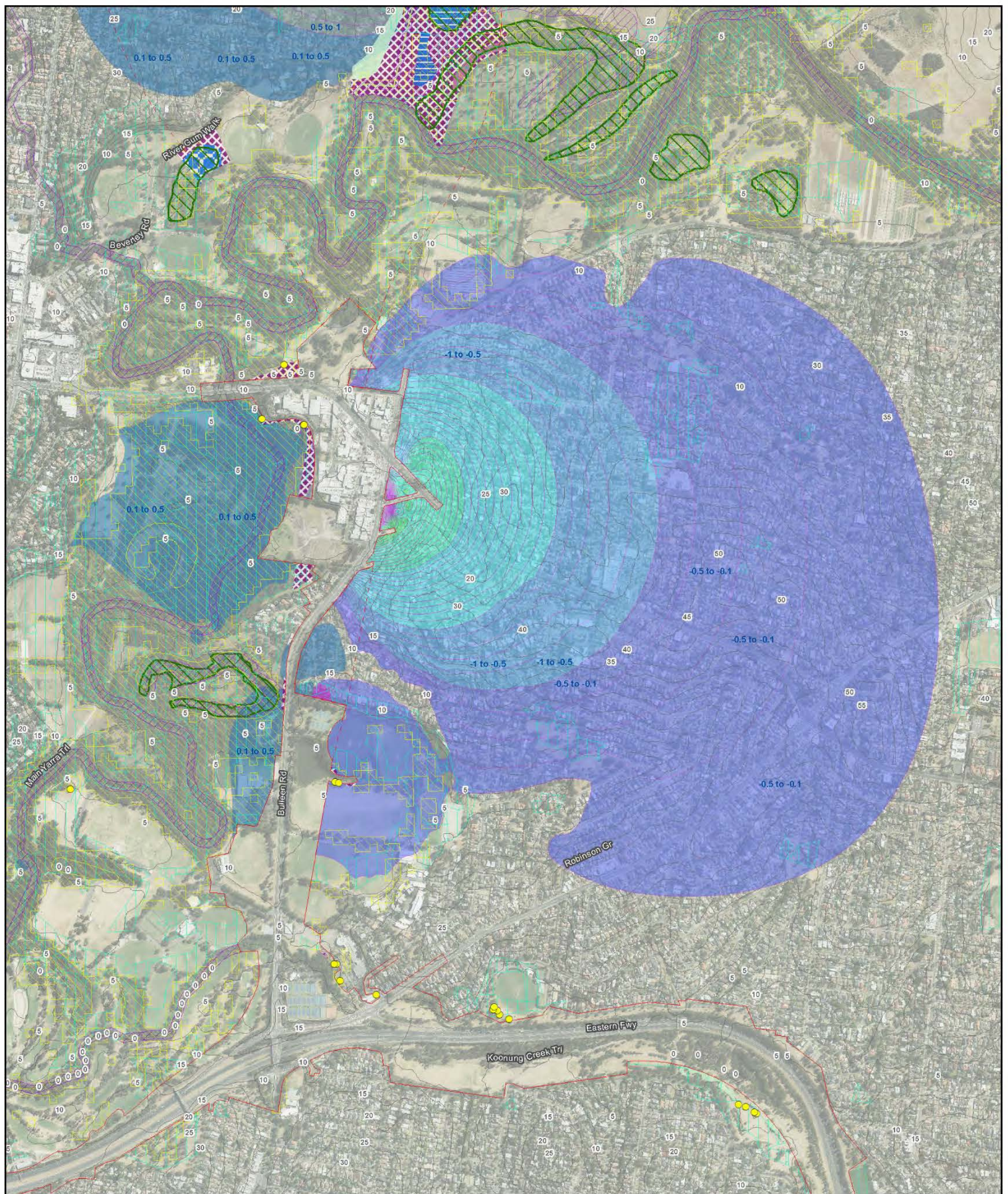
North East Link Project
Environment Effects Statement (EES)

Modelled prediction of groundwater drawdown
in 2075 (95th percentile)
Overview

Job Number 31-35006
Revision B
Date 05 Mar 2019

Figure 17 - 1





LEGEND

- Project boundary - sub-surface
- Project boundary - surface
- Large tree
- Wetlands (DELWP)
- Groundwater Dependent Ecosystems - surface expression (BOM)
- Groundwater Dependent Ecosystems - sub-surface expression (BOM)

- Groundwater Dependent Ecosystems (PPCMA)
- Native Vegetation (EVC)
- Aquatic Sedgeland (EVC 308)
- Creekline Grassy Woodland (68)
- Floodplain Riparian Woodland (56)
- Plains Grassy Woodland (59)
- Red Gum Swamp (EVC 292)

- Tall Marsh (821)
- Wet Vedge Sedgeland (EVC 832)
- Depth to Groundwater Contour (m)
- Groundwater Drawdown (m)
- 5 to -4
- 4 to -3
- 3 to -2

- 2 to -1
- 1 to -0.5
- 0.5 to -0.1
- 0.1 to 0.5
- 0.5 to 1
- 1 to 2
- 2 to 3
- 3 to 4
- 4 to 5
- 5 to 10
- 10 to 15
- 15 to 20

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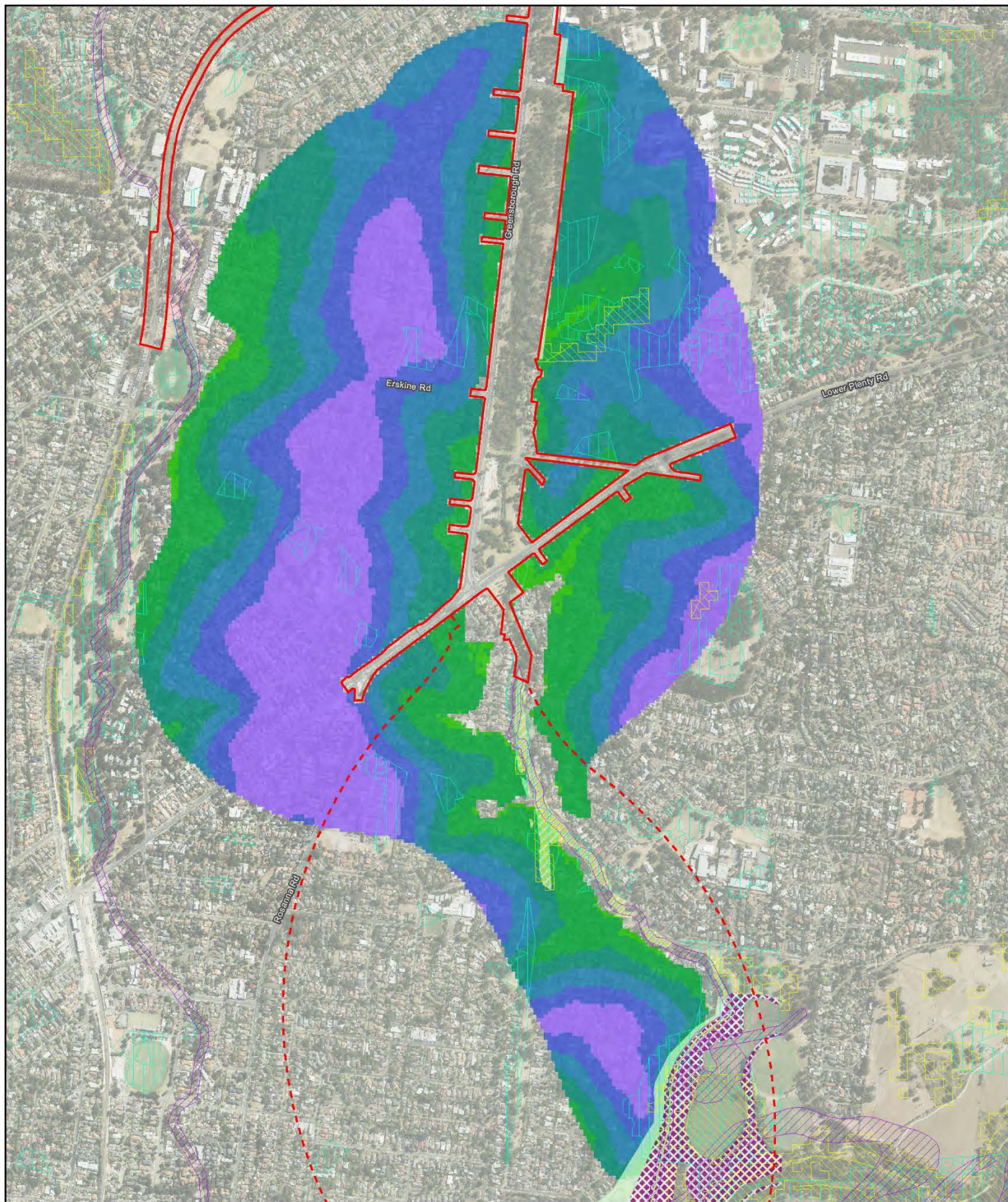


North East Link Project
Environment Effects Statement (EES)

Modelled prediction of groundwater drawdown
in 2075 (95th percentile)
Southern Portal

Job Number 31-35006
Revision B
Date 05 Mar 2019

Figure 17 - 3



LEGEND

- | | | | |
|--|---|--------------------------------|--|
| Project boundary - sub-surface | Groundwater Dependent Ecosystems - surface expression (BOM) | Native Vegetation (EVC) | Plains Grassy Woodland (55) |
| Project boundary - surface | Groundwater Dependent Ecosystems - sub-surface expression (BOM) | Creekline Grassy Woodland (68) | Predicted depth to groundwater at Late 2024 (m) |
| Groundwater Dependent Ecosystems (PPCMA) | Floodplain Riparian Woodland (56) | 0 - 5 | 5 - 10 |
| | | 10 - 15 | 15 - 20 |
| | | 20 - 25 | < 25 |

Paper Size A3
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Metres
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Grid: GDA 1994 MGA Zone 55

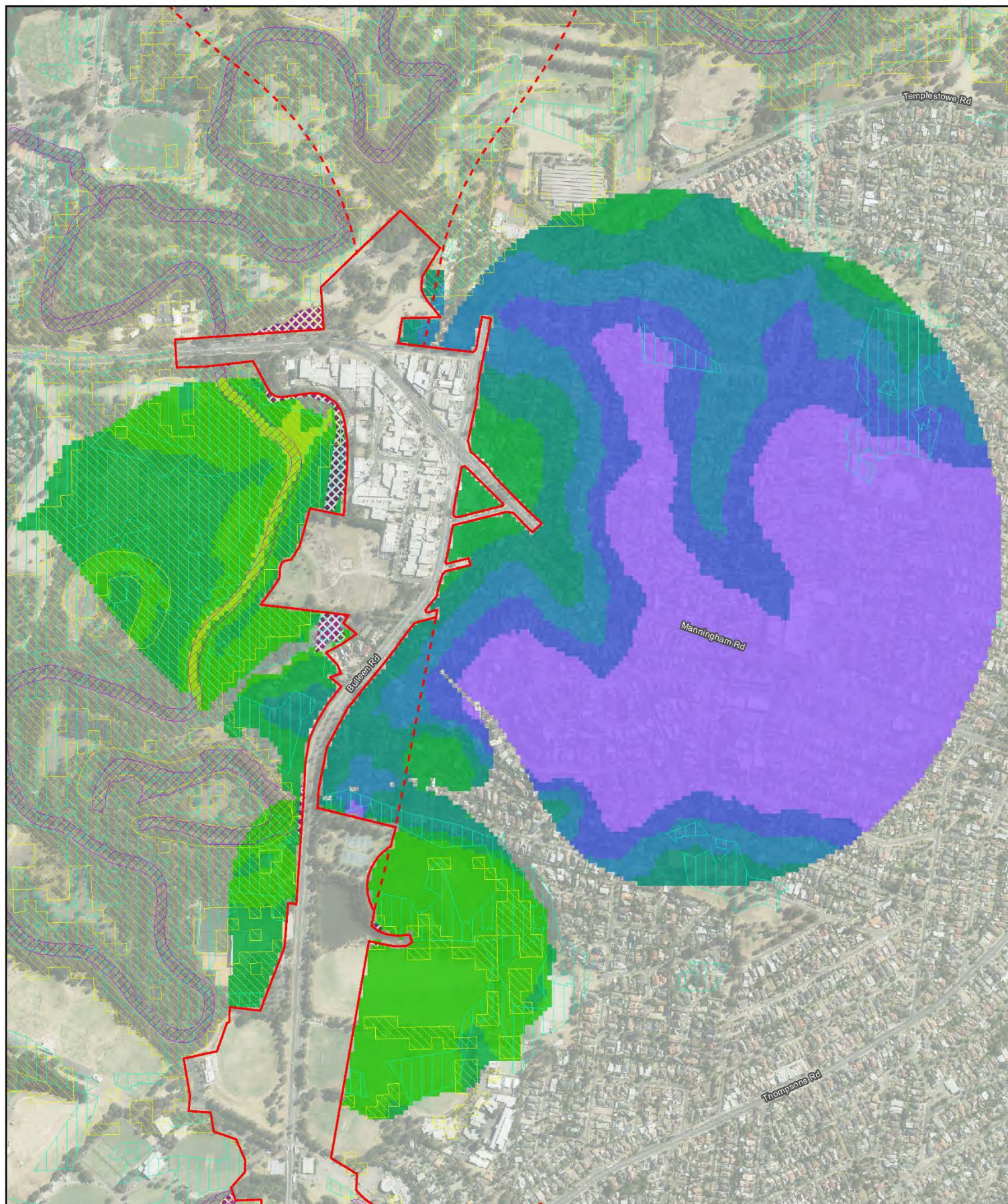


North East Link Project
Environment Effects Statement (EES)

Job Number 31-35006
Revision L
Date 05 Mar 2019

Predicted depth to groundwater Late 2024
Northern Portal

Figure 18 - 1



LEGEND

- Project boundary - sub-surface
- Project boundary - surface

Groundwater Dependent Ecosystems (PPCMA)

Groundwater Dependent Ecosystems - surface expression (BOM)

Groundwater Dependent Ecosystems - sub-surface expression (BOM)

Native Vegetation (EVC)

Floodplain Riparian Woodland (56)

Predicted depth to groundwater at Late 2024 (m)

Ground level
0 - 5
5 - 10

10 - 15
15 - 20
20 - 25
< 25

Paper Size A3
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Metres
Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
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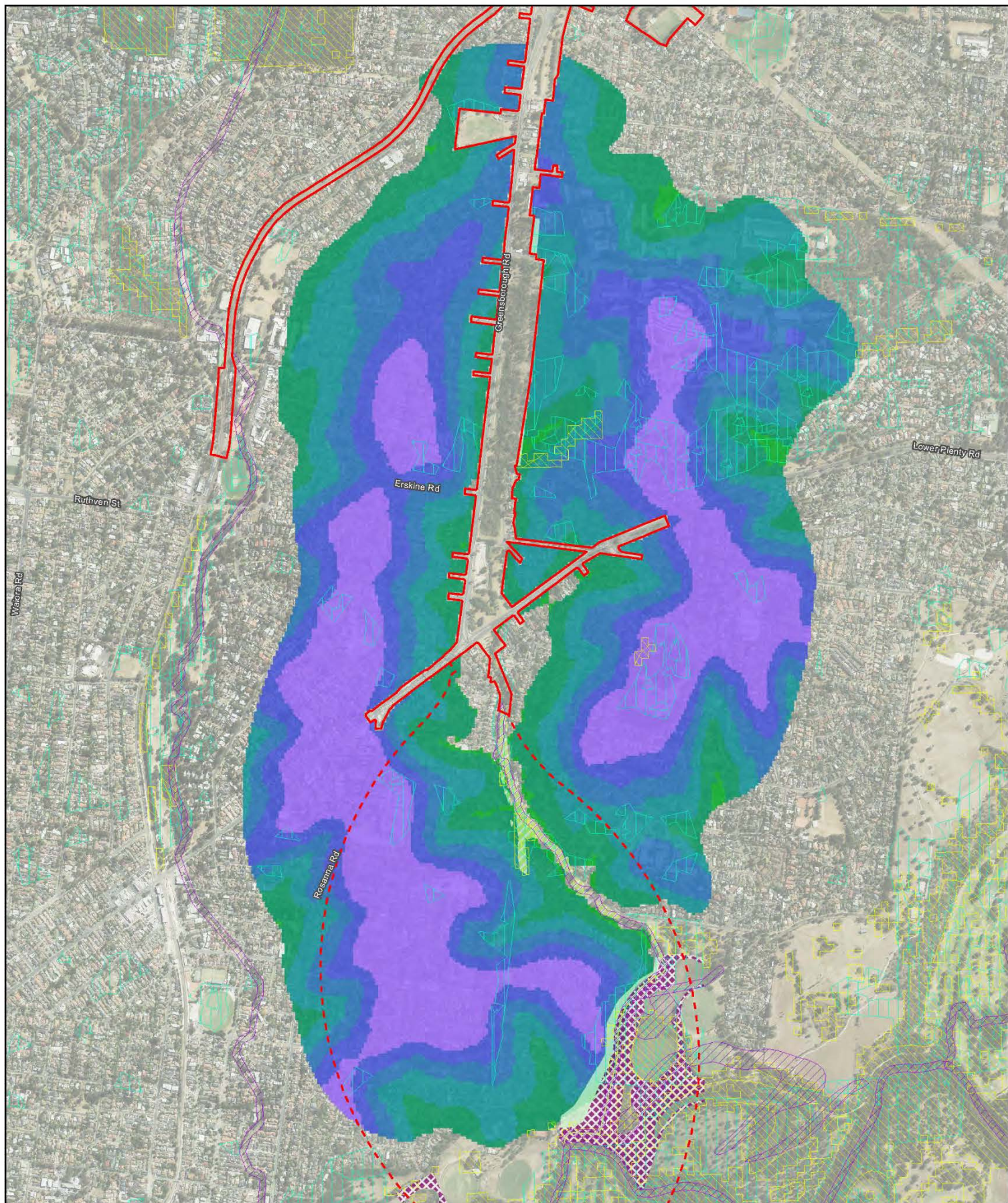


North East Link Project
Environment Effects Statement (EES)

Predicted depth to groundwater Late 2024
Southern Portal

Job Number 31-35006
Revision L
Date 05 Mar 2019

Figure 18 - 2



LEGEND

- Project boundary - sub-surface
- Project boundary - surface

- Groundwater Dependent Ecosystems - surface expression (BOM)

- Groundwater Dependent Ecosystems - sub-surface expression (BOM)

- Groundwater Dependent Ecosystems (PPCMA)

Native Vegetation (EVC)

- Creekline Grassy Woodland (68)
- Floodplain Riparian Woodland (56)

- Plains Grassy Woodland (55)

Predicted depth to groundwater at 2075 (m)

- 0 - 5

- 5 - 10
- 10 - 15
- 15 - 20
- 20 - 25
- < 25

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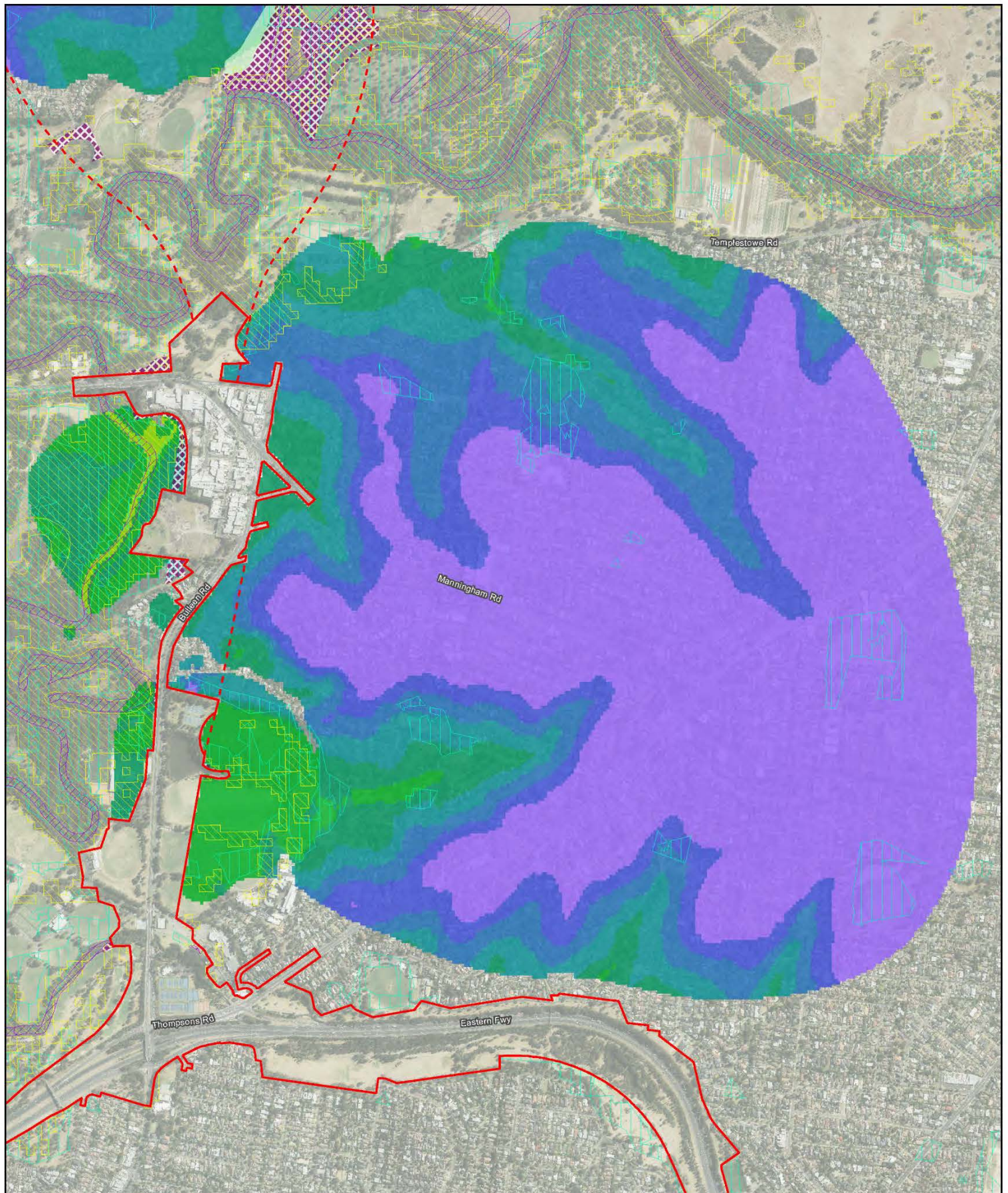


North East Link Project
Environment Effects Statement (EES)

Job Number 31-35006
Revision L
Date 05 Mar 2019

Predicted depth to groundwater 2075
Northern Portal

Figure 19 - 1



LEGEND

--- Project boundary - sub-surface
 --- Project boundary - surface

Groundwater Dependent Ecosystems - surface expression (BOM)

Groundwater Dependent Ecosystems - sub-surface expression (BOM)

Groundwater Dependent Ecosystems (PPCMA)

Native Vegetation (EVC)

Creekline Grassy Woodland (68)
 Floodplain Riparian Woodland (56)

Plains Grassy Woodland (55)

Predicted depth to groundwater at 2075 (m)

Above ground level
 0 - 5

5 - 10

10 - 15

15 - 20

20 - 25

< 25

Paper Size A3
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 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 55

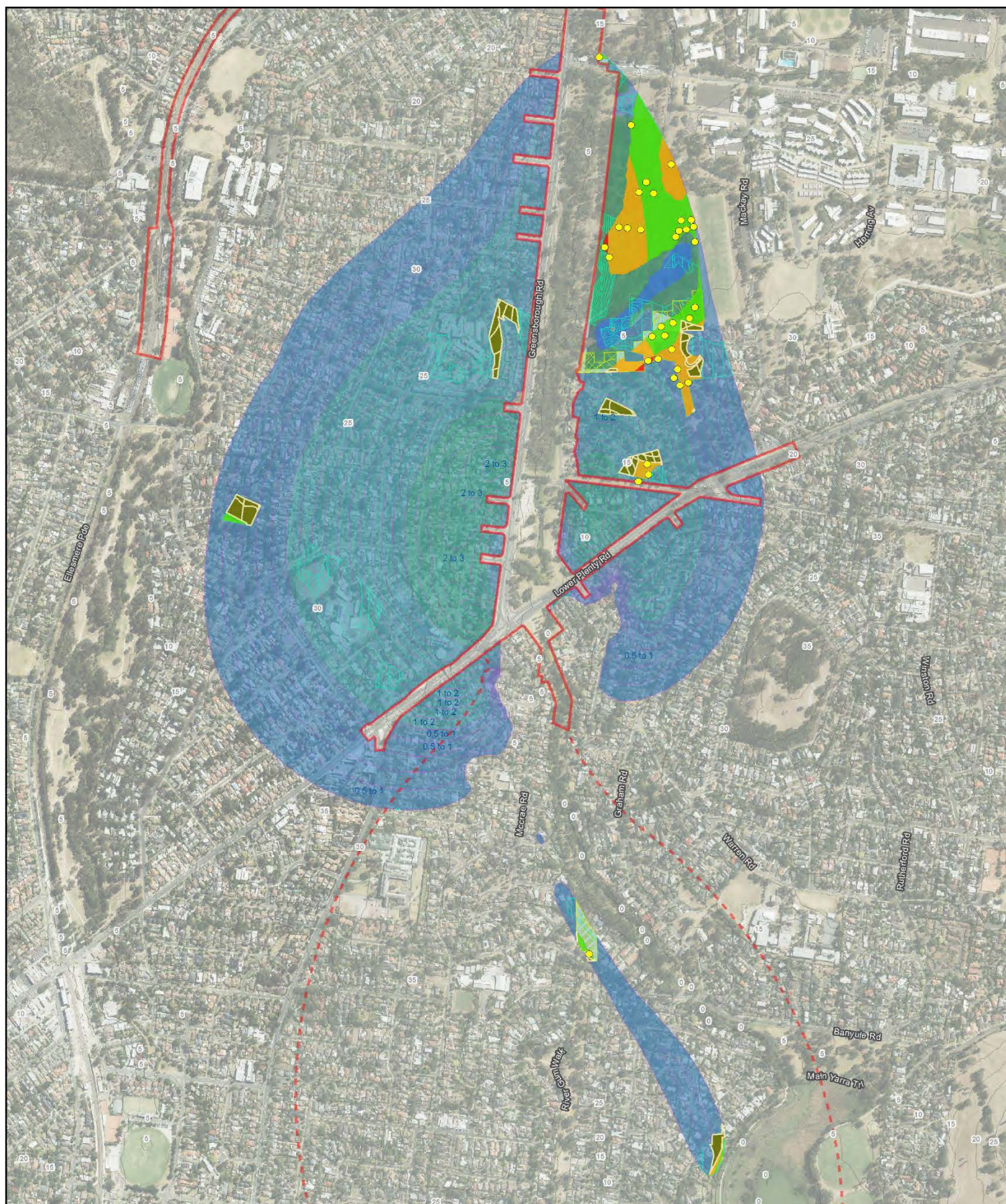


North East Link Project
 Environment Effects Statement (EES)

Job Number 31-35006
 Revision L
 Date 05 Mar 2019

Predicted depth to groundwater 2075
 Southern Portal

Figure 19 - 2



LEGEND

GDE Risk Rating Late 2024

- Very High Risk
- High Risk
- Moderate Risk
- Low Risk
- Negligible Risk - Residential, Industrial or Oval Area

- Project boundary - sub-surface
- Project boundary - surface
- Groundwater Dependent Ecosystems - surface expression (BOM)
- Groundwater Dependent Ecosystems - sub-surface expression (BOM)
- Groundwater Dependent Ecosystems (PPCMA)

- Large tree
- Native Vegetation (EVC)
 - Creekline Grassy Woodland (66)
 - Plains Grassy Woodland (55)
- EVC 2005 (DELWP)
 - Creekline Grassy Woodland (66)

- Plains Grassy Woodland (55)
- EVC 2007 (HLA)
 - Riparian Area with Seasonal Grassy Wetland
 - River Red Gum Woodland
- EVC 2005 (DELWP)
 - Creekline Grassy Woodland (66)
- Depth to Groundwater Contours (5m)

Groundwater Drawdown (m)

- 0.5 to 1
- 1 to 2
- 2 to 3

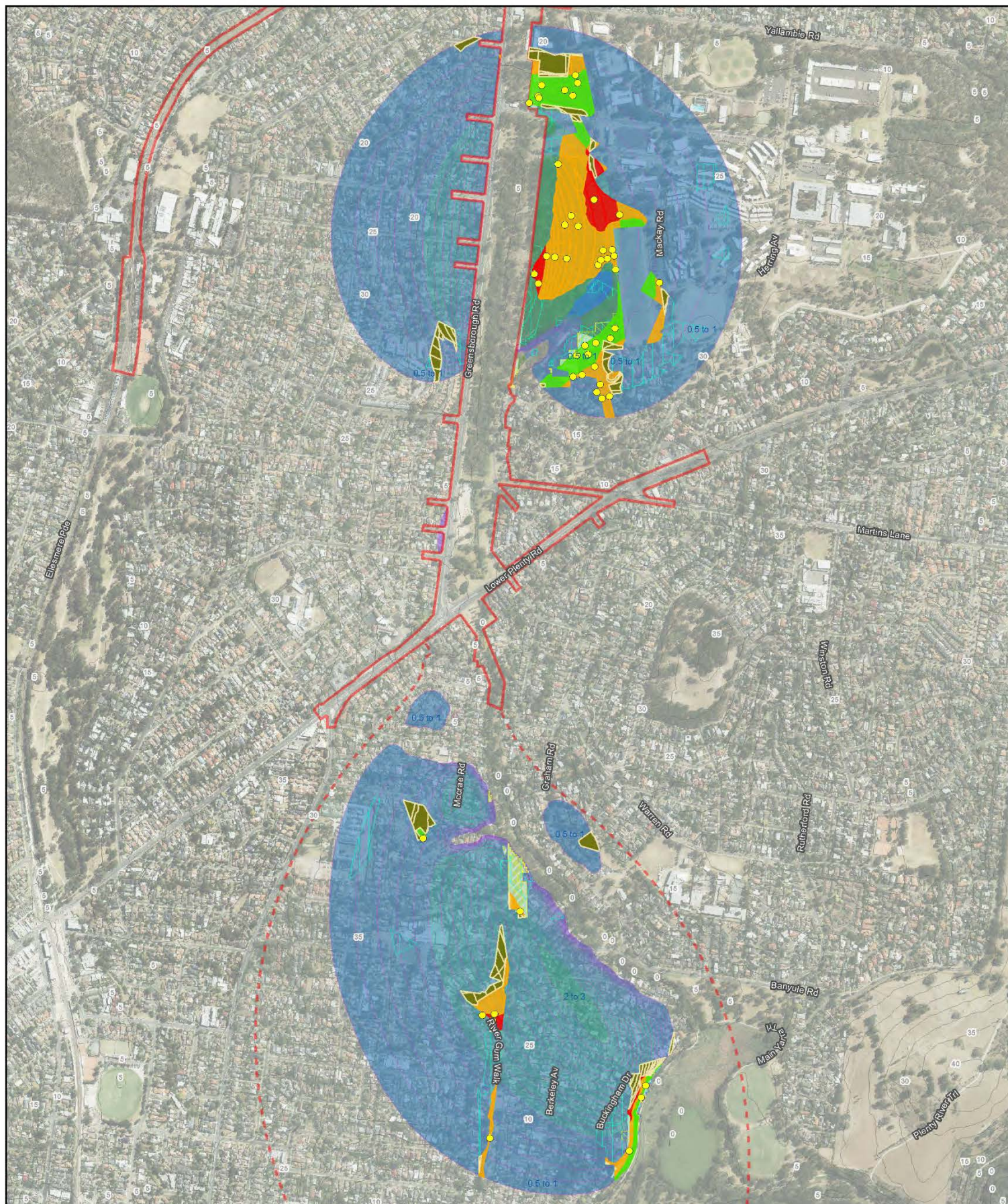
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North East Link Project
Environment Effects Statement (EES)
Risk to native vegetation and GDEs
from groundwater drawdown in vicinity
of northern portal - Late 2024
(95th percentile)

Job Number 31-35006
Revision B
Date 05 Mar 2019

Figure 20



LEGEND

GDE Risk Rating 2075

- Very High Risk
- High Risk
- Moderate Risk
- Low Risk
- Negligible Risk - Residential, Industrial or Oval Area

- Project boundary - sub-surface
- Project boundary - surface
- Groundwater Dependent Ecosystems - surface expression (BOM)
- Groundwater Dependent Ecosystems - sub-surface expression (BOM)
- Groundwater Dependent Ecosystems (PPCMA)

- Large tree
- Native Vegetation (EVC)
- Creekline Grassy Woodland (68)
- Plains Grassy Woodland (55)
- EVC 2005 (DELWP)
- Creekline Grassy Woodland (68)

- Plains Grassy Woodland (55)
- EVC 2007 (HLA)
- Riparian Area with Seasonal Grassy Wetland
- River Red Gum Woodland
- Depth to Groundwater Contours (5m)

- Groundwater Drawdown (m)
- -0.5 to -0.1
- 0.5 to 1
- 1 to 2
- 2 to 3

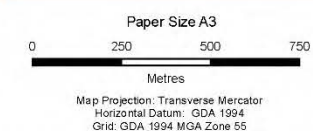
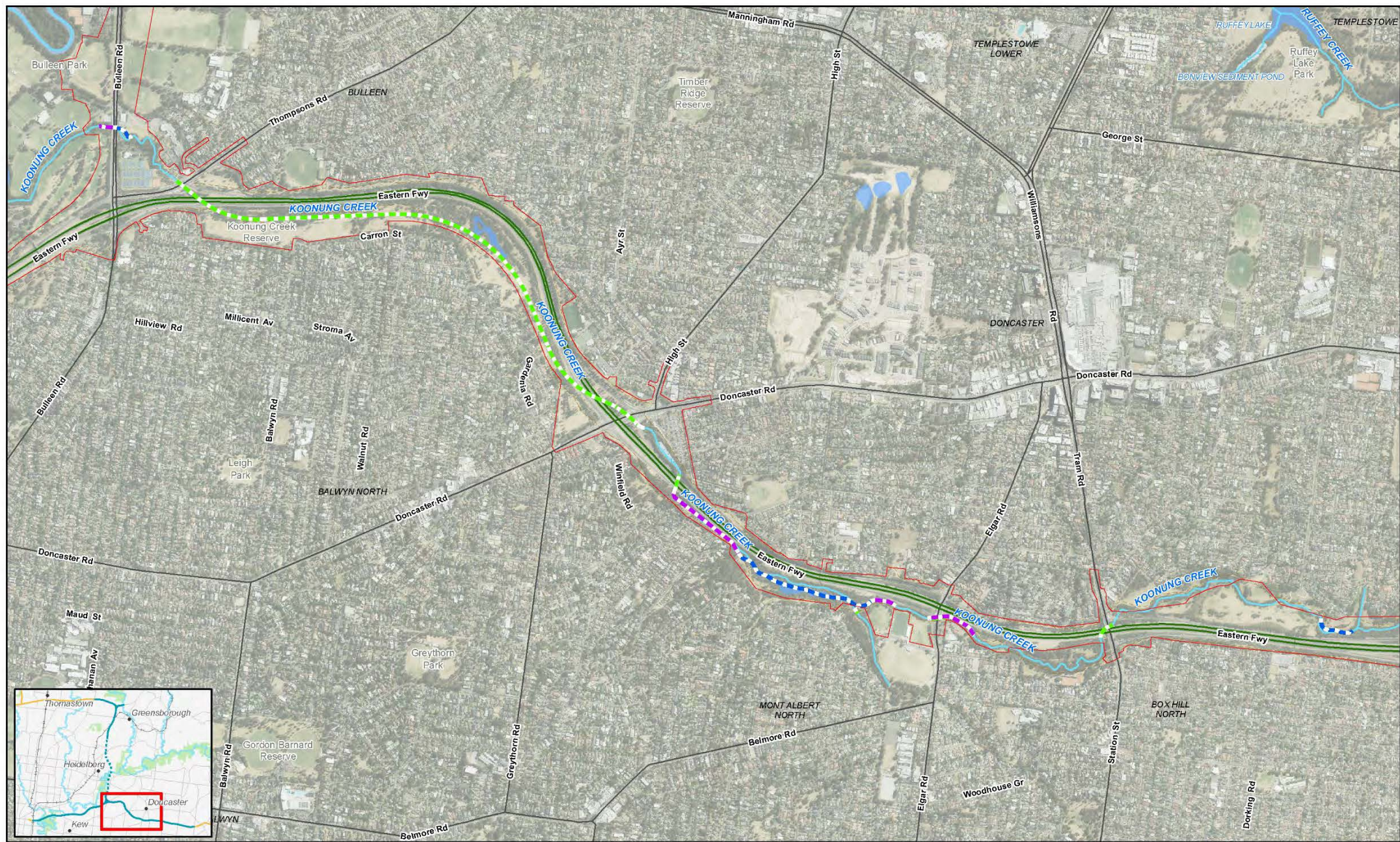
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Grid: GDA 1994 MGA Zone 55



North East Link Project
Environment Effects Statement (EES)
Risk to native vegetation and GDEs
from groundwater drawdown in vicinity
of northern portal - 2075
(95th percentile)

Job Number 31-35006
Revision B
Date 05 Mar 2019

Figure 21



Legend

- Project boundary - surface
- Existing culvert
- Proposed culvert
- Proposed creek diversion
- Watercourse

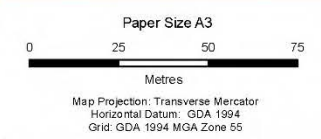


North East Link Project
Environment Effects Statement (EES)

Job Number 31-35006
Revision B
Date 05 Mar 2019

Location of waterway modifications of Koonung Creek

Figure 22 - 1



- Legend**
- Project boundary - surface
 - Existing culvert
 - Proposed culvert
 - Proposed creek diversion
 - Watercourse

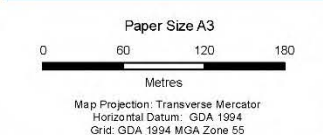


North East Link Project
Environment Effects Statement (EES)

Job Number	31-35006
Revision	B
Date	05 Mar 2019

Location of waterway modifications
of Koonung Creek

Figure 22 - 2



Legend

- Project boundary - surface
- Existing culvert
- Proposed culvert
- Proposed creek diversion
- Watercourse

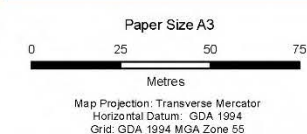


North East Link Project
Environment Effects Statement (EES)

Job Number	31-35006
Revision	B
Date	05 Mar 2019

Location of waterway modifications of Koonung Creek

Figure 22 - 3



Legend

- Project boundary - surface
- Existing culvert
- Proposed culvert
- - - Proposed creek diversion
- Watercourse

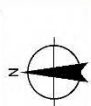
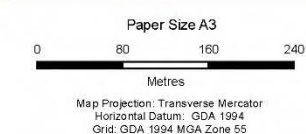


North East Link Project
Environment Effects Statement (EES)

Job Number 31-35006
Revision B
Date 05 Mar 2019

Location of waterway modifications of Koonung Creek

Figure 22 - 4



Legend

- Project boundary - sub-surface
- Project boundary - surface
- Proposed creek diversion
- Existing culvert
- Proposed culvert
- Watercourse



North East Link Project
Environment Effects Statement (EES)

Job Number 31-35006
Revision B
Date 05 Mar 2019

Location of waterway modifications
of Banyule Creek

Figure 23