

Attention: Ross Closter
Bacchus Marsh Property Group Pty. Ltd.
PO Box 4298
GEELONG Vic 3220

20 March 2020

Dear Ross,

Re: **Review EIIA Hopetoun Park North**

As instructed, we have undertaken a brief desktop study to provide preliminary advice on the potential for land to the north of the Hopetoun Park growth area indicated within an Extractive Industry Interest Area to be developed for extractive industry purposes.

It is our overall opinion that the likelihood of establishing a feasible quarry site is very low considering the factors affecting the site as outlined below.

We have sourced information from the Geovic database and also both Melbourne Supply Area - Extractive Industry Interest Area reports (1996 & 2003). Attached are maps displaying some of the more pertinent factors considered.

The area is located within the Metropolitan Supply Area primarily due to the Darley sand deposits to the northwest being a large resource of construction sand as an important source for Melbourne. This is evidenced by the number and size of Work Authorities (WA's) in the Darley area (refer map Current WA's EIIA's). Both DEDJTR (now DJPR) and CCAA submissions to C81 Planning Scheme Amendment highlighted that importance. The subject Hopetoun Park area would not appear to sustain such strategic importance.

The EIIA's were predicated on the existence of the favourable geological units and "planning windows" as at 1996 and as briefly reviewed in 2003; in this case to host potential sand and gravel deposits primarily within the upper sand unit over a reasonably sized contiguous area. Since that time, the smaller landholdings and particularly the freeway construction, has altered the appropriateness of the EIIA's size, which upon review under the original methodology would likely reduce the current potential to a point of irrelevance.

The geology of the subject land (refer map Geological Units) is complicated by three differing types of units being an overlying sand and gravel (Darley gravel), a Basalt flow and underlying clays, sands and gravels (Werribee Formation). Traditionally for the region, the upper sand unit has been sourced for construction sand as in the main Darley area, however in this location is a relatively thin deposit. The presence of the basalt layer complicates sand extraction below, and the basalt itself is likely of variable quality due its relative thickness and position between the two sedimentary units. The vertical and lateral extent of the deposits are restricted and material quality questionable, thereby limiting location of an extractive industry.

We note that historically, the subject Hopetoun north land had previous extractive industry applications (refer map Expired EI Tenements). These incorporated WA 460 (prev. EIL 1117) Oupan Resources for Basalt and EIL 1508 Ronald Silverstein for sand. A small amount of sand extraction in the south west corner of WA460 (as EIL 1117) was directed toward specialty high grade silica sand from the lower sub-basaltic sand unit. It appears that this was found to be limited and somewhat contaminated by the basaltic layer evident at the site (which was essentially overburden). It is understood following failure of the operation and in-appropriate rehabilitation, the site had to be eventually reclaimed utilising Government bonded funding. Given this previous experience, new applications would be expected to face similar hurdles and potential objectors.

In operative terms, extraction, processing, screening, conveying and stockpiling would likely require buffer distances to sensitive land uses of between 250m to 500m under EPA residual air emissions guidelines for separation distances. The larger distance would be for either sand (potential respirable crystalline silica) or basalt (blasting) production. Given the proximity to at least the three residences identified, and in the case of blasting basalt adjacent to a major freeway, separation distances would severely reduce extraction to a negligible area.

Other considerations for extractive industry locating in the subject area are the planning and environmental controls that would form part of a Planning Permit application. While the zoning does not currently preclude quarrying, it is noted that the land and surrounds are affected by Significant Landscape, Environmental Significance and Design and Development overlays. Issues incorporated into the design and approval of an extractive operation with these controls would be visual amenity aspects, which may affect the western escarpment area in particular and virtually impossible to completely screen from view. Also, Council planning approval would be cognisant of truck transport movements to and from the site along local roads creating dust or noise issues.

Additionally, Aboriginal Cultural Heritage Sensitivity (Wurundgen Woi Wurrung CHAC) abuts, and is located on, the subject land (refer map Aboriginal Cultural Heritage Sensitivity). It appears four specific sites on the land may be registered. Native vegetation as EVC693 Plains Woodland / Grassland Mosaic is also mapped over the area (refer map EVC Native Vegetation). While minimal tree cover is apparent across the site, the mapping would trigger surveys being required. The cost of Cultural Heritage Management Plan (CHMP) preparation and potential offset requirements for native vegetation can be considerable.

While these latter issues could be overcome, the attractiveness or prospectivity of such sites becomes diminished when the cost benefit of the deposit size is also potentially reduced.

The extractive industry approvals process has moved to a risk based approach that requires rigorous management controls that will provide appropriate rehabilitation outcomes on site closure. Each of the factors including viable resource/s, likely noise/dust separation distance of 250m+, visual amenity controls, traffic management, CHMP and native vegetation offsets would have to be risk assessed and controls established for the construction, operation and rehabilitation / closure phases. Market demand and supply would require a substantial resource of specific saleable products to be established to justify the cost of a successful application. On balance, we conclude that the likelihood of establishing a feasible quarry site is very low considering the factors affecting the site.

Yours sincerely,
C.K. PROWSE & ASSOCIATES Pty. Ltd.

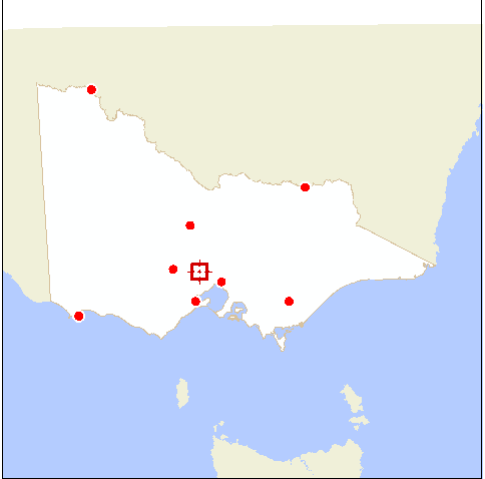
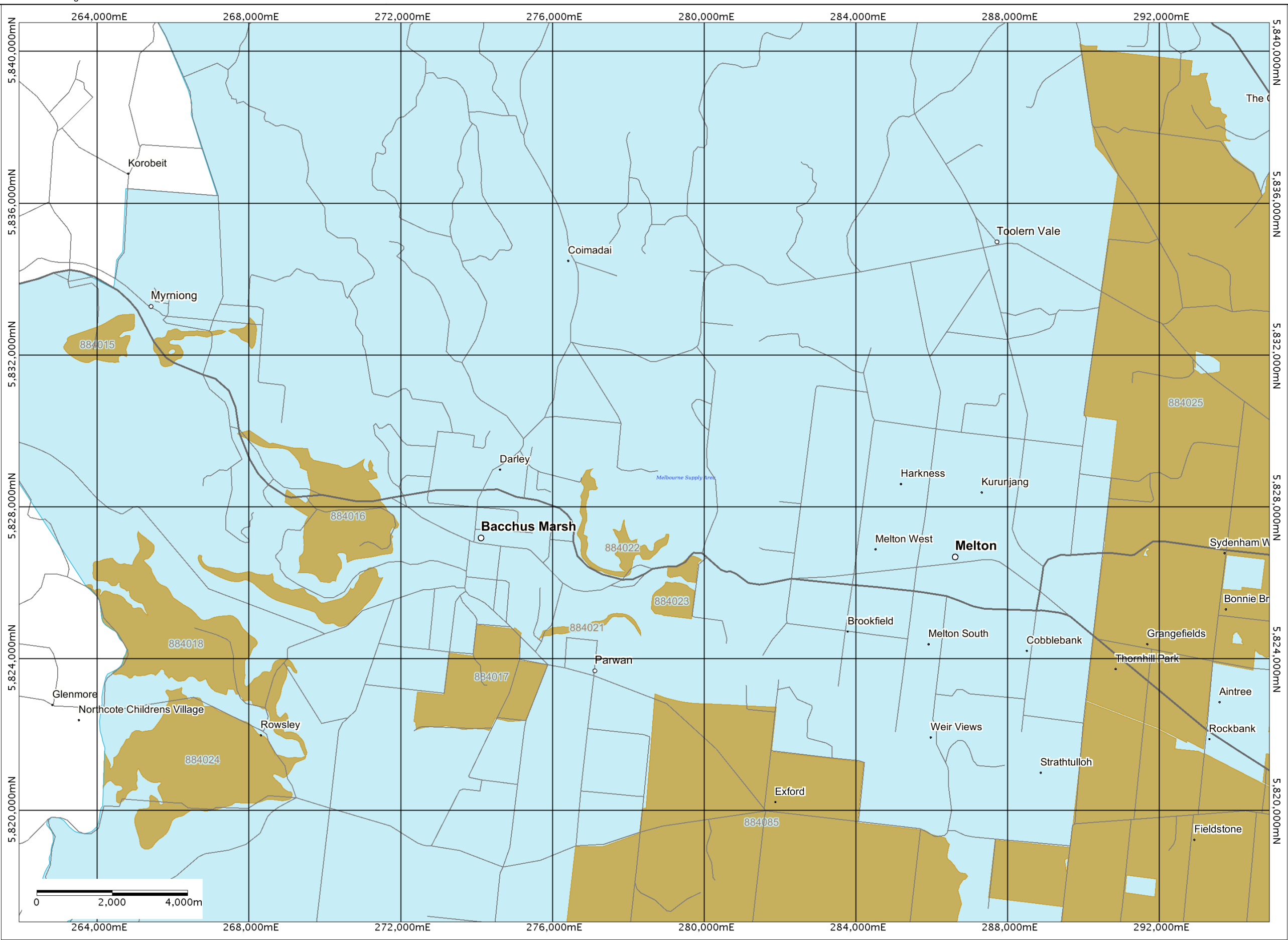


Christopher Prowse.
Principal Consultant



S:\Admin\ckpa\Reports\DBCbr176.docx

This report has been prepared under instruction for and on behalf of the Client which it is addressed. C.K. Prowse & Associates Pty. Ltd., its heirs, successors, agents or nominees assume no responsibility, liability or indemnity to any person, other legal entity or third party (whether caused by negligence or not) for any loss or damage arising from the use of the information, interpretation, opinion or advice contained herein. Copyright © C.K. Prowse & Associates Pty. Ltd. 2020



Legend

Roads (250K)

Major Roads

Other Roads

Victoria Boundary (25K)

Boundary

Coastline

PROJECT_AREA_EXTRACTIVES_MSA

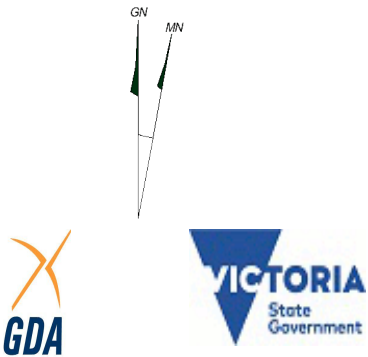
Extractive Industry Interest Areas

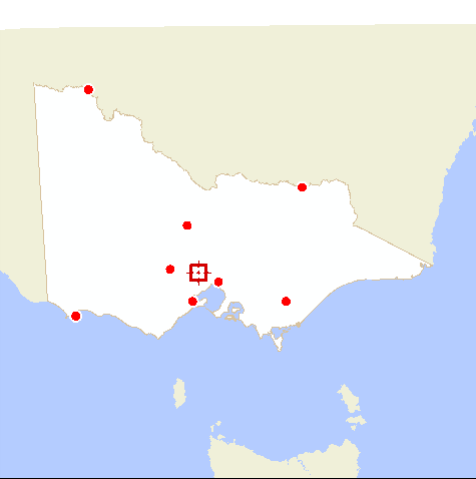
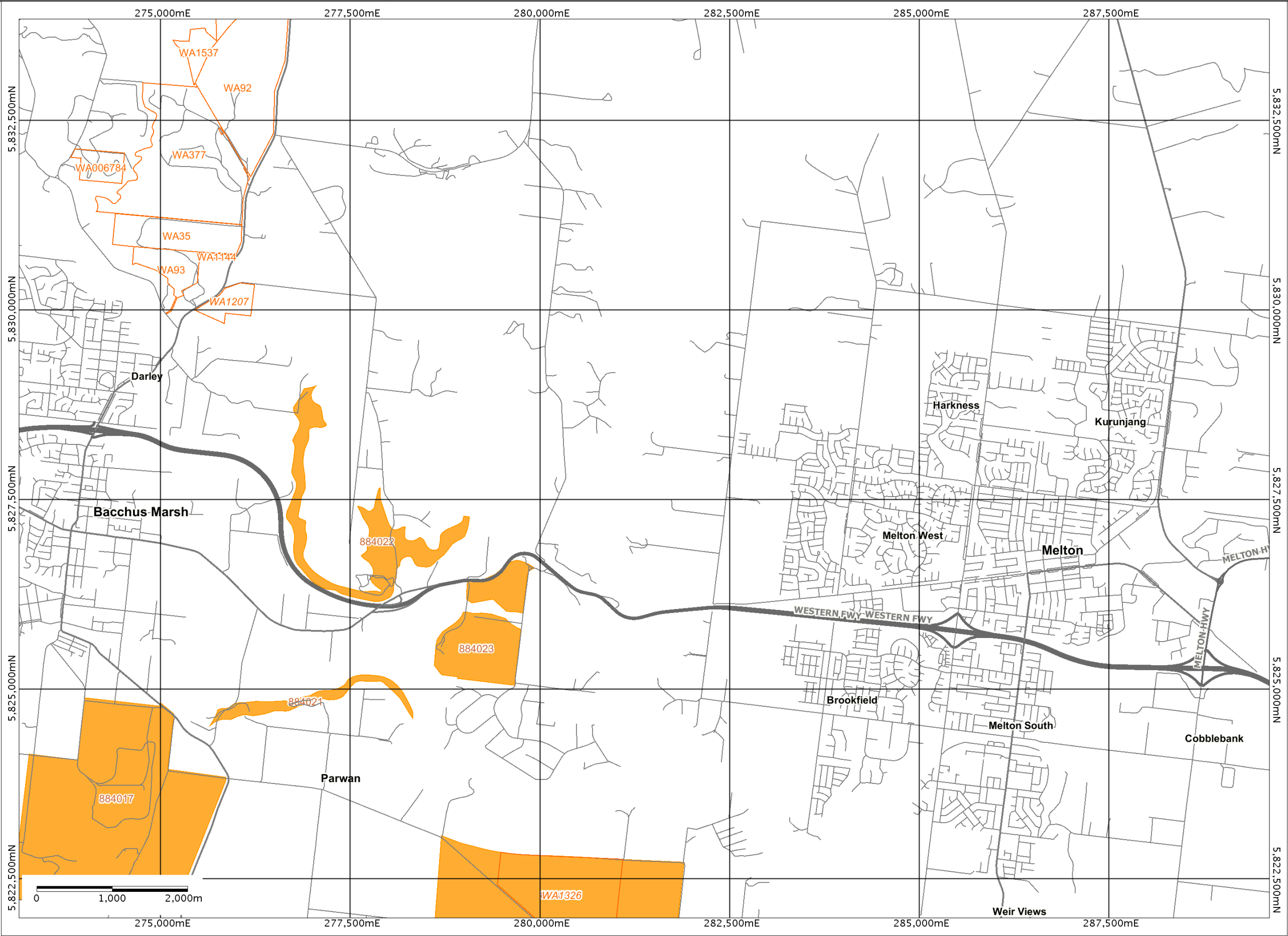
Disclaimer: This map is a snapshot generated from Victoria Government data. This material may be of assistance to you but the State of Victoria does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

Generated from GeoVic 3

Map Scale:1:100,000

Projection:MGA 55





Legend

Towns (50K)

Current Extractive Industry Work Authorities

Roads (vmsimple)

- Freeway
- Highway
- Main Road
- Other

Victoria Boundary (25K)

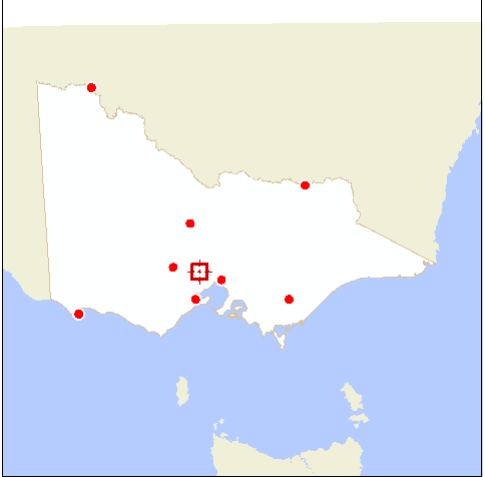
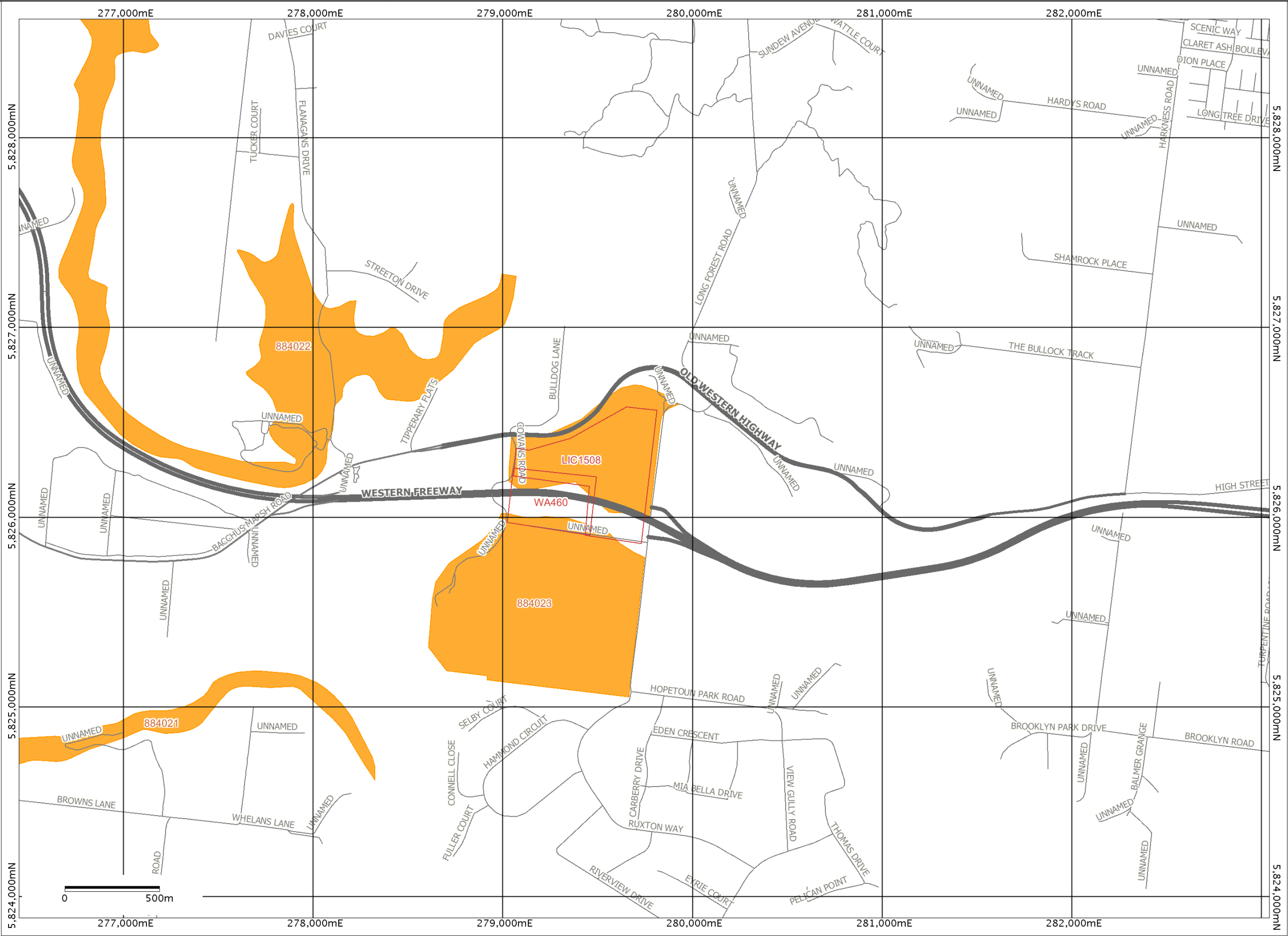
- Boundary
- Coastline

Extractive Industry Interest Areas

GN
MN

GDA

VICTORIA
State Government



Legend

Towns (25K)

Expired Extractive Industry Tenements

Roads (vmtrans)

Freeway

Highway

Main Road

Other

Victoria Boundary (25K)

Boundary

Coastline

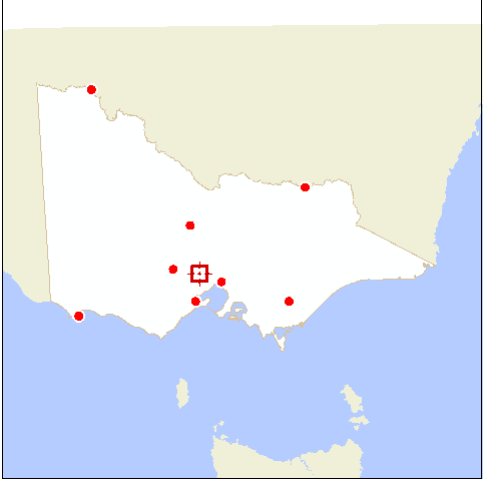
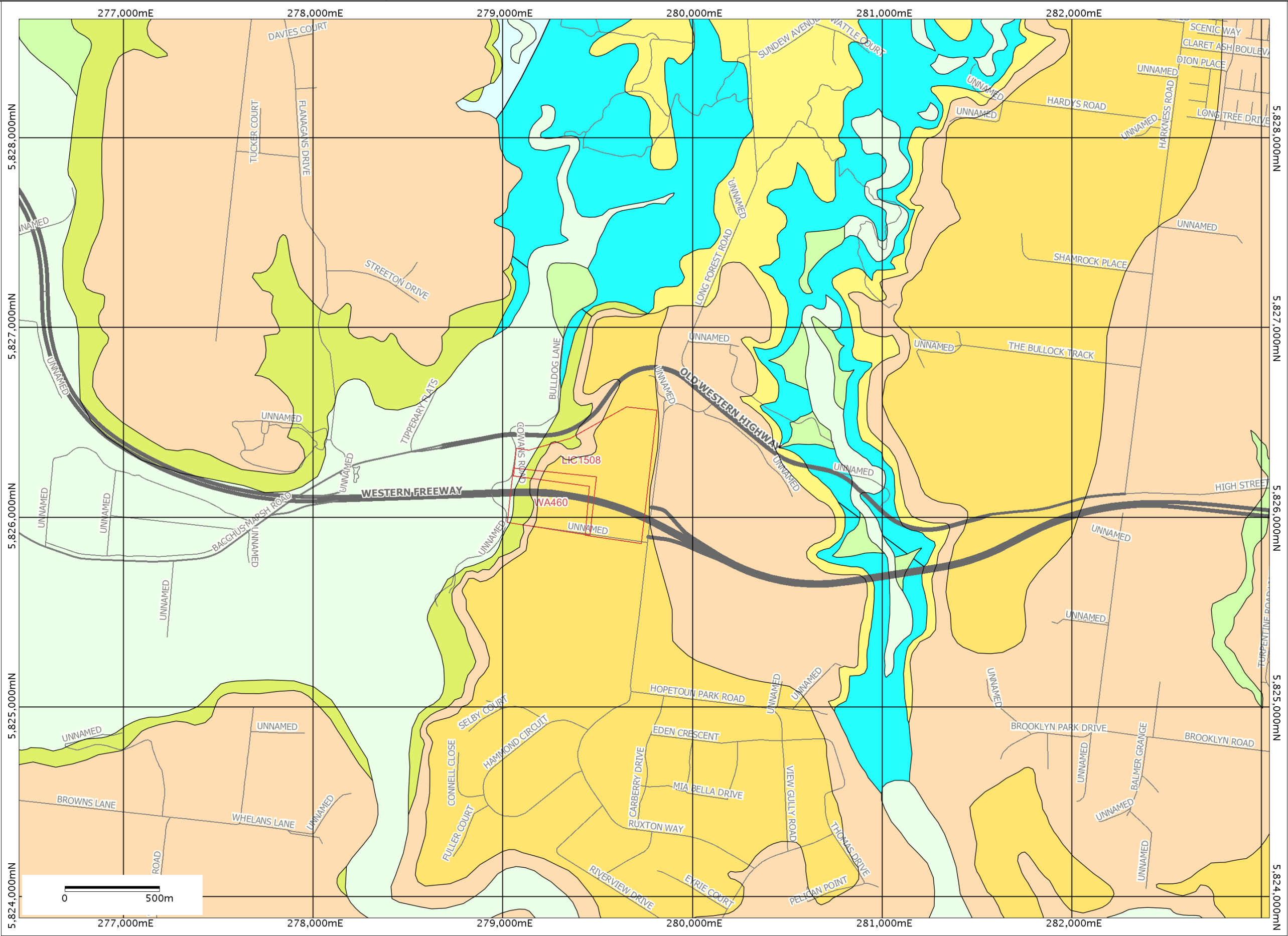
Extractive Industry Interest Areas

GN

MN

GDA

VICTORIA State Government



Legend

Towns (25K)

GSV Shear Displacement Structure (50K)

GSV Geological Unit Contact (50K)

Expired Extractive Industry Tenements

Roads (vmtrans)

Freeway

Highway

Main Road

Other

Victoria Boundary (25K)

Boundary

Coastline

GSV Geological Unit (50K)

GN

MN

GDA

VICTORIA
State Government

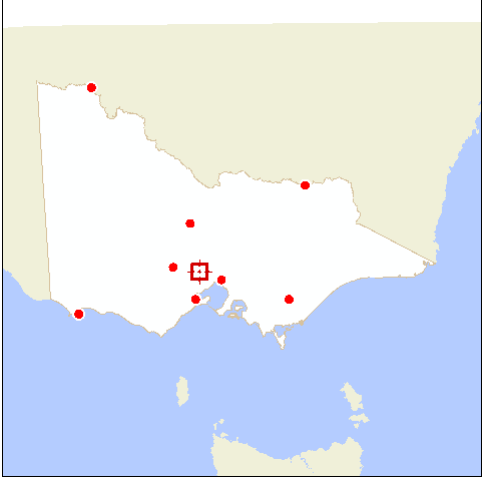
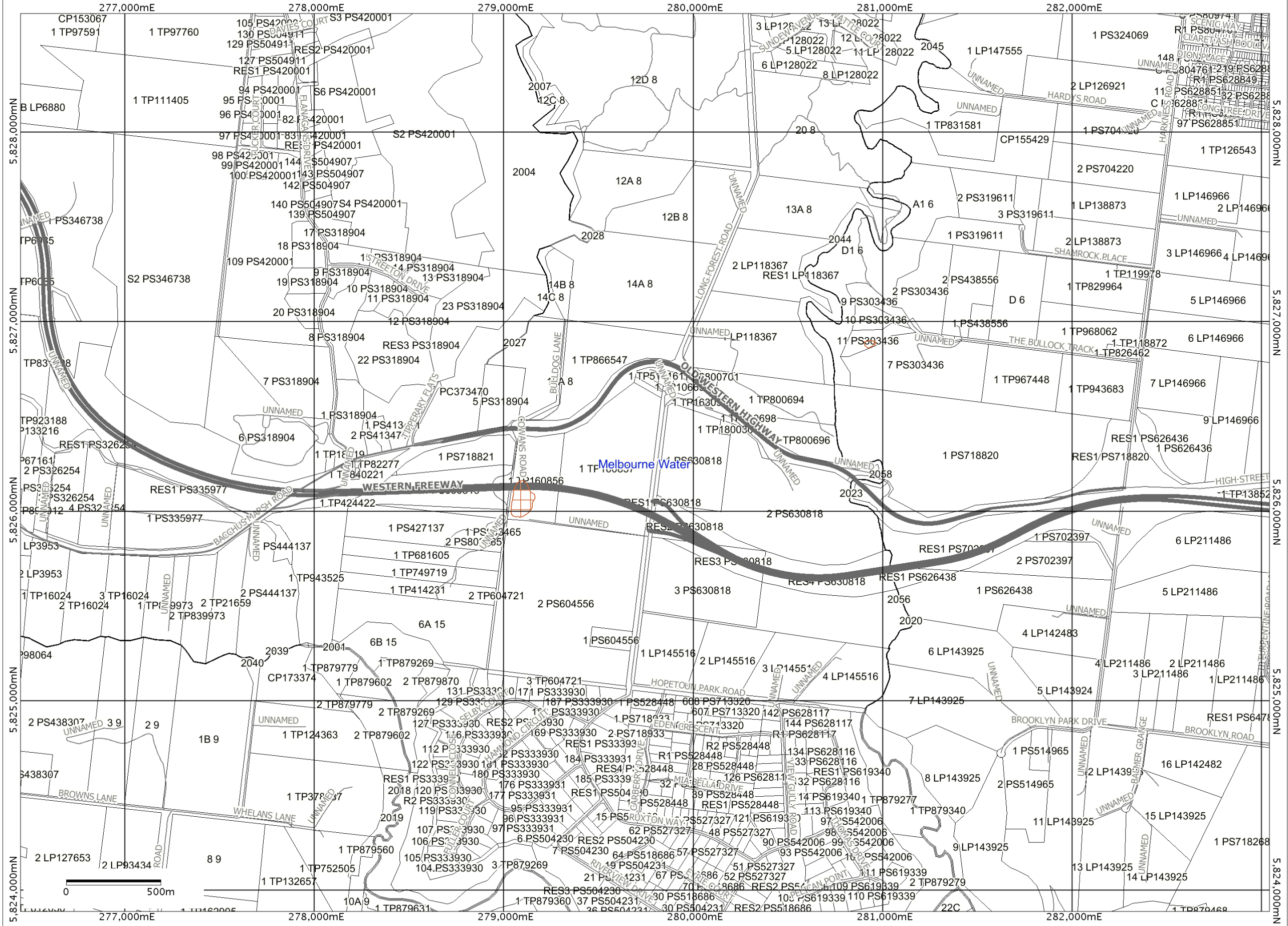
Disclaimer: This map is a snapshot generated from Victoria Government data. This material may be of assistance to you but the State of Victoria does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

Generated from GeoVic 3

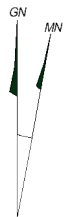
Map Created Tue Jan 21 2020 11:23:45 GMT+1100 (AEDT)

Map Scale:1:20,000

Projection:MGA 55



- Legend
- Towns (25K)
 - Quarry or Mine Areas
 - Melbourne Water Corporation
 - Roads (vmtrans)
 - Freeway
 - Highway
 - Main Road
 - Other
 - Victoria Boundary (25K)
 - Boundary
 - Coastline
 - Property - Parcel Description



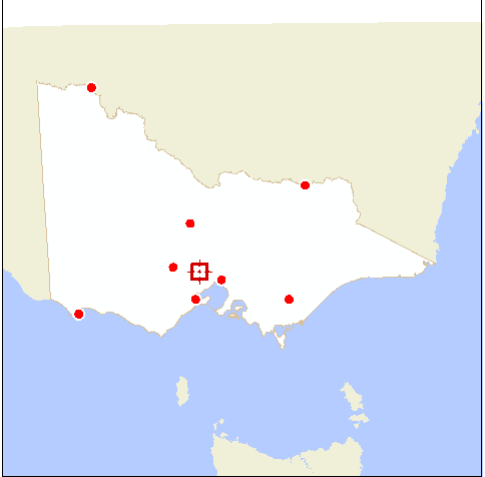
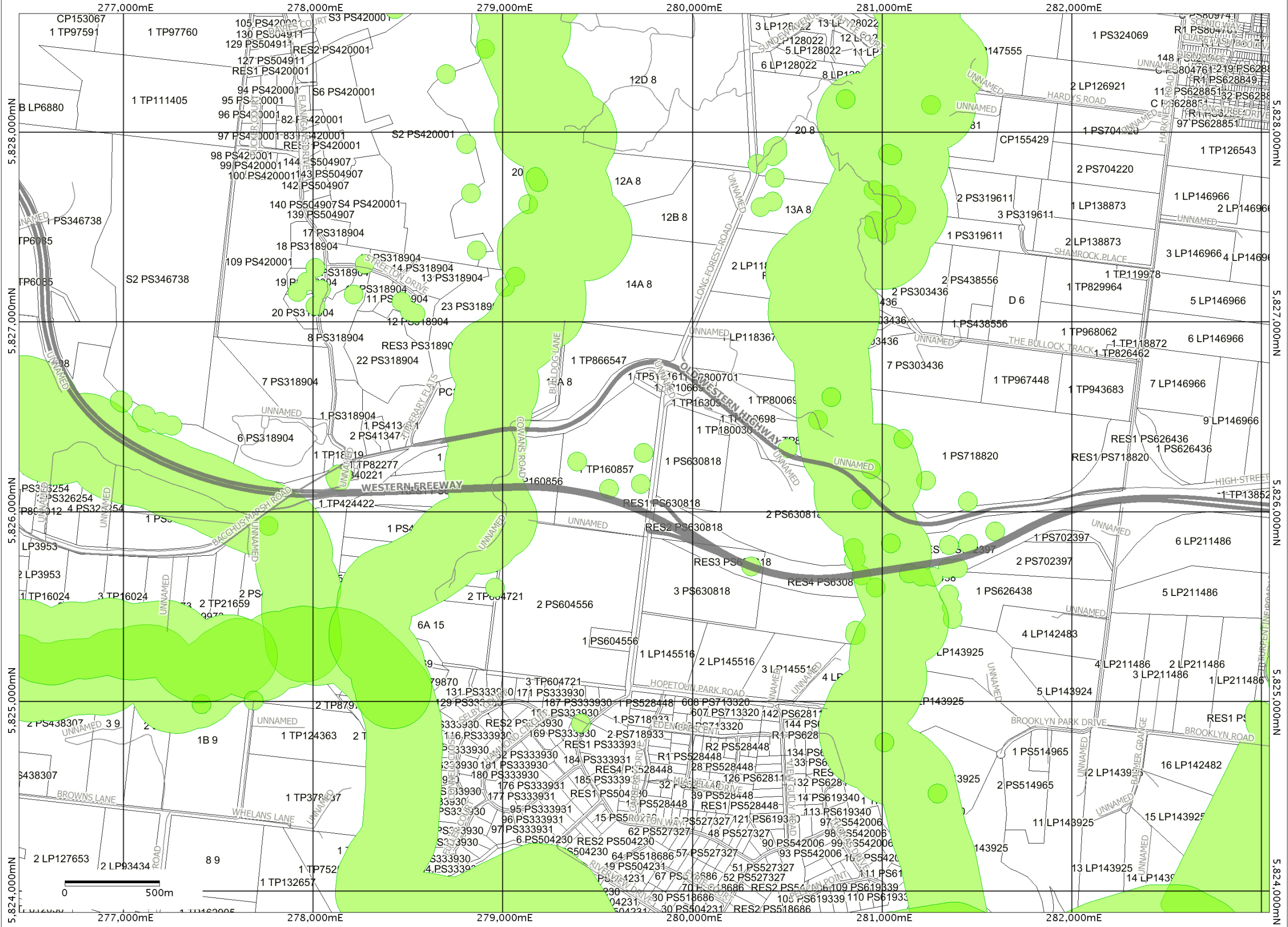
Disclaimer: This map is a snapshot generated from Victoria Government data. This material may be of assistance to you but the State of Victoria does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

Generated from GeoVic 3

Map Created Tue Jan 21 2020 15:35:43 GMT+1100 (AEDT)

Map Scale: 1:20,000
Projection: MGA 55





Legend

Towns (25K)

Roads (vmtrans)

- Freeway
- Highway
- Main Road
- Other

Victoria Boundary (25K)

- Boundary
- Coastline

Cultural Heritage Sensitivity

Property - Parcel Description

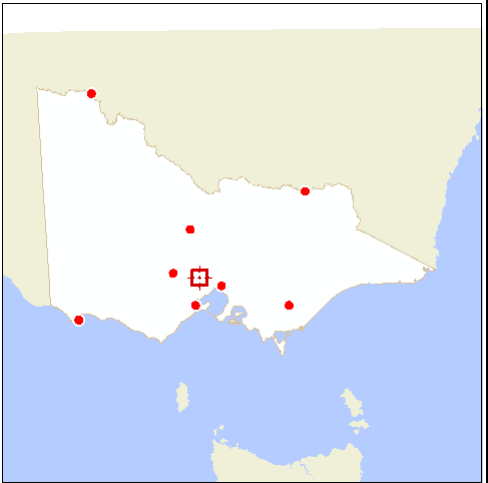
Disclaimer: This map is a snapshot generated from Victoria Government data. This material may be of assistance to you but the State of Victoria does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

Generated from GeoVic 3

Map Created Tue Jan 21 2020 11:42:01 GMT+1100 (AEDT)

Map Scale: 1:20,000
Projection: MGA 55





Legend

Towns (25K)

Roads (vmtrans)

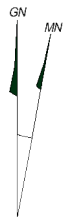
 Freeway
 Highway
 Main Road
 Other

Victoria Boundary (25K)

Boundary
Coastline

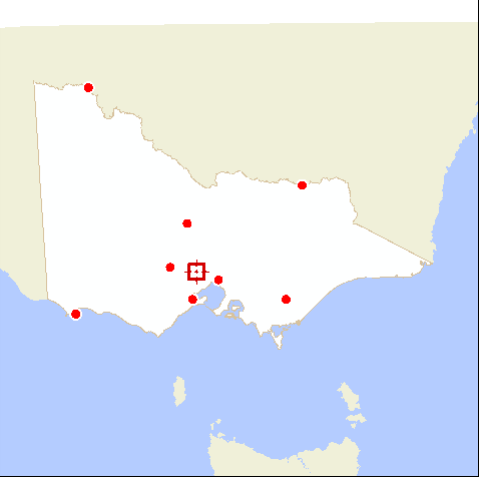
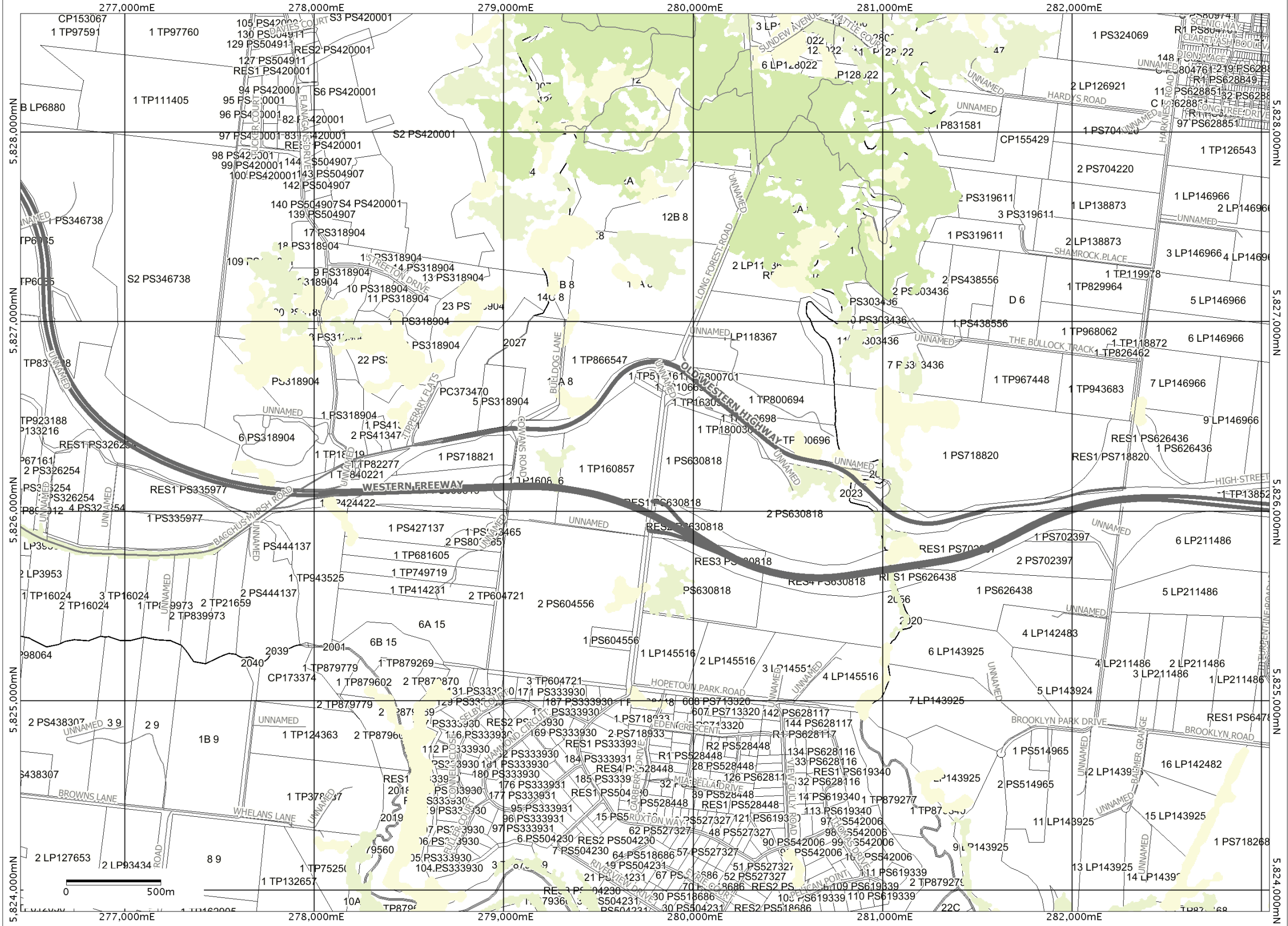
Ec
Ve
(2)

1.1 Gr
2.1 Dr
2.2 dr
3.1 Da
4.1 dr
5.1 or
5.1 Wk
5.1 Hil
5.2 Se
5.2 an
5.2 Hil
5.3 Gr
6.1 Hil
6.1 ric
6.1 Ex
6.2 alt
7.1 Sh
7.1 alt
7.1 - V
7.2 Fo
8.1 Sw
8.2 Wk
9.1 Wk



Map Scale: 1:20,000
Projection: MGA 55

Map Created Tue Jan 21 2020 12:08:44 GMT+1100 (AEDT)



- Legend
- Towns (25K)**
- Roads (vmtrans)**
- Freeway
 - Highway
 - Main Road
 - Other
- Victoria Boundary (25K)**
- Boundary
 - Coastline
- Tree Density**
- Dense
 - Medium
 - Scattered
- Property - Parcel Description**

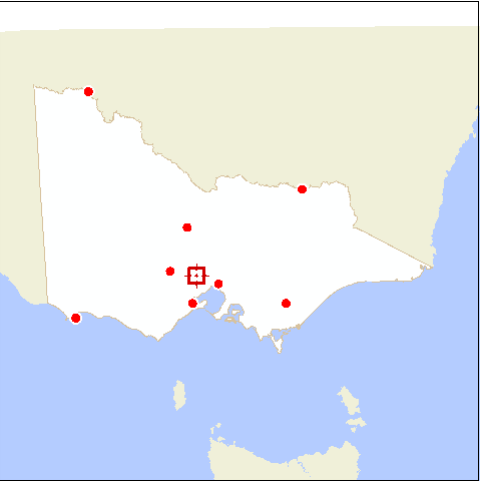
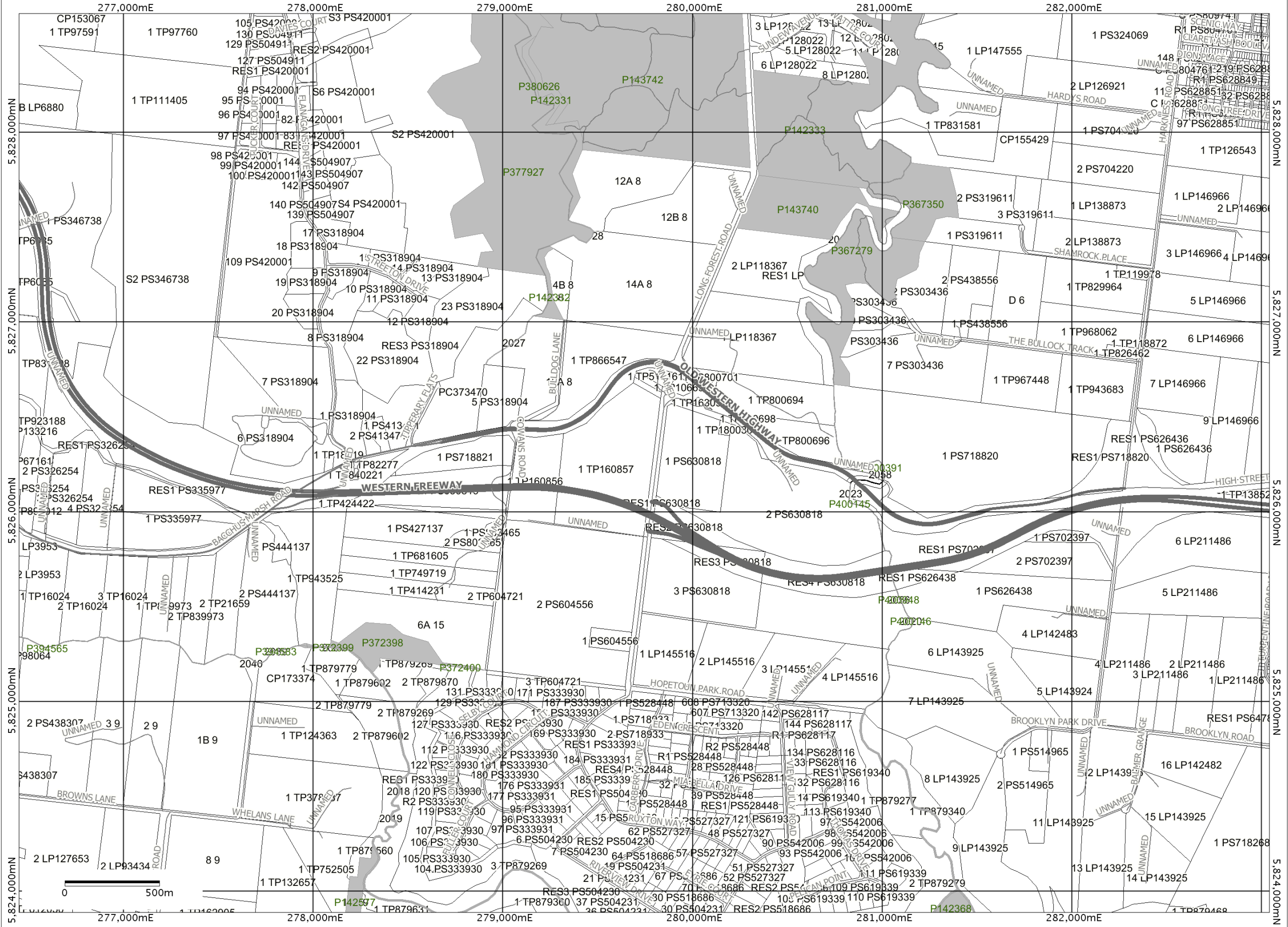
Disclaimer: This map is a snapshot generated from Victoria Government data. This material may be of assistance to you but the State of Victoria does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

Generated from GeoVic 3

Map Created Tue Jan 21 2020 15:11:04 GMT+1100 (AEDT)

Map Scale: 1:20,000
Projection: MGA 55





- Legend
- Towns (25K)**
- Roads (vmtrans)**
- Freeway
 - Highway
 - Main Road
 - Other
- Victoria Boundary (25K)**
- Boundary
 - Coastline
- Crown Land 25K**
- Property - Parcel Description**

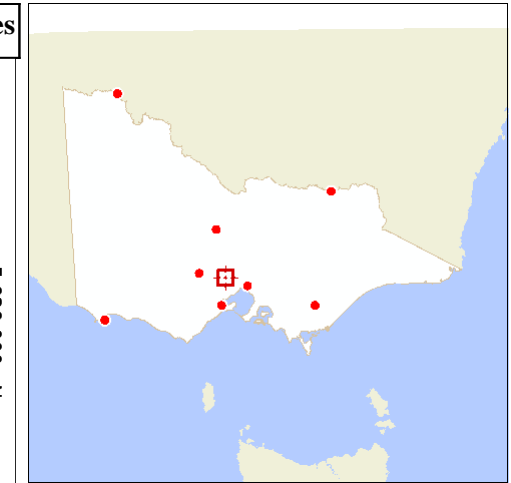
Disclaimer: This map is a snapshot generated from Victoria Government data. This material may be of assistance to you but the State of Victoria does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

Generated from GeoVic 3

Map Created Tue Jan 21 2020 11:29:12 GMT+1100 (AEDT)

Map Scale: 1:20,000
Projection: MGA 55





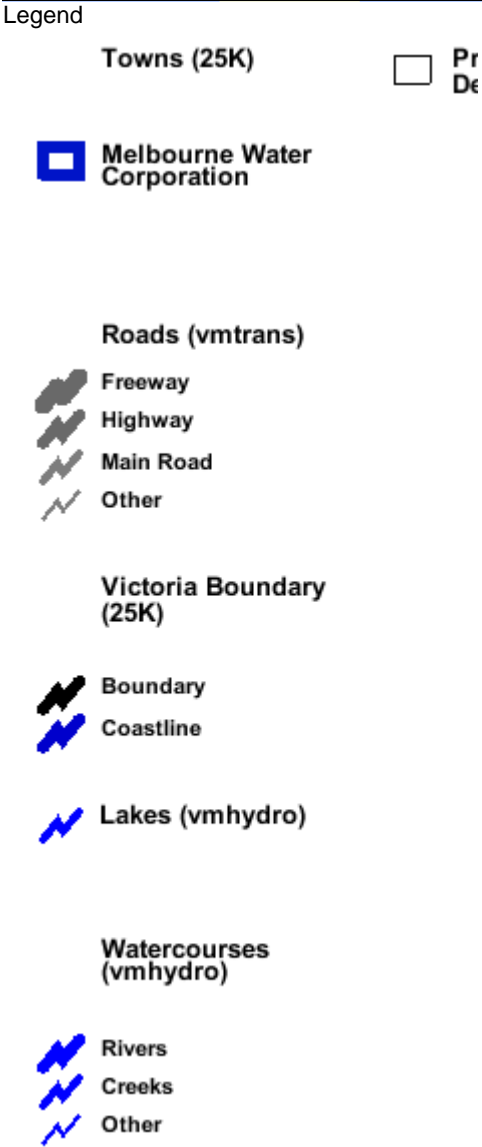
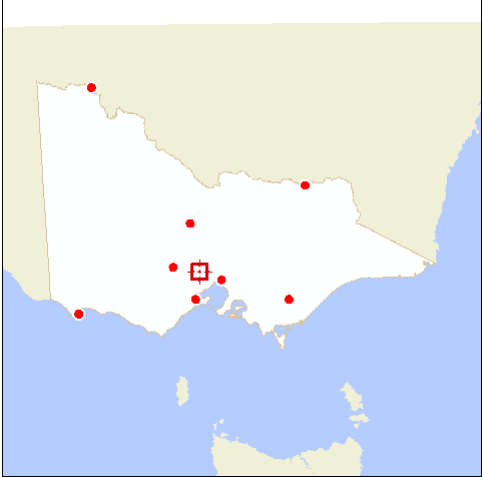
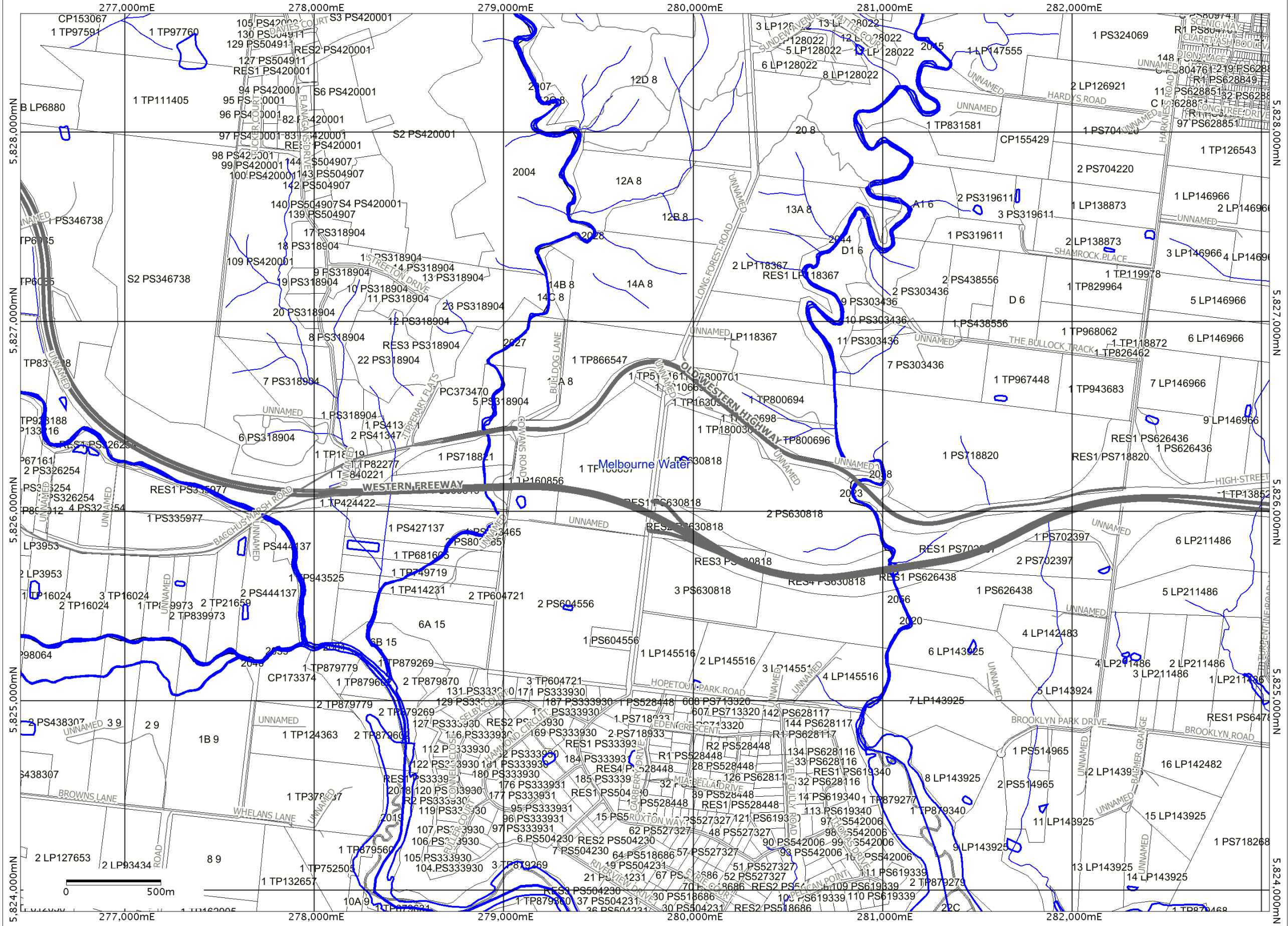
Boreholes - All

-



| | |
|-------------|----------|
| Map Scale: | 1:20,000 |
| Projection: | MGA 55 |

Map Created Tue Jan 21 2020 10:51:45 GMT+1100 (AEDT)



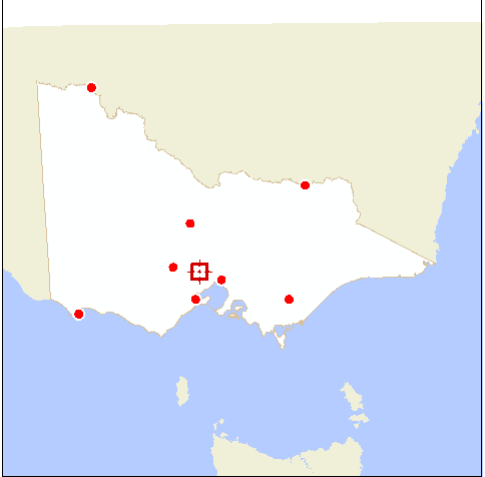
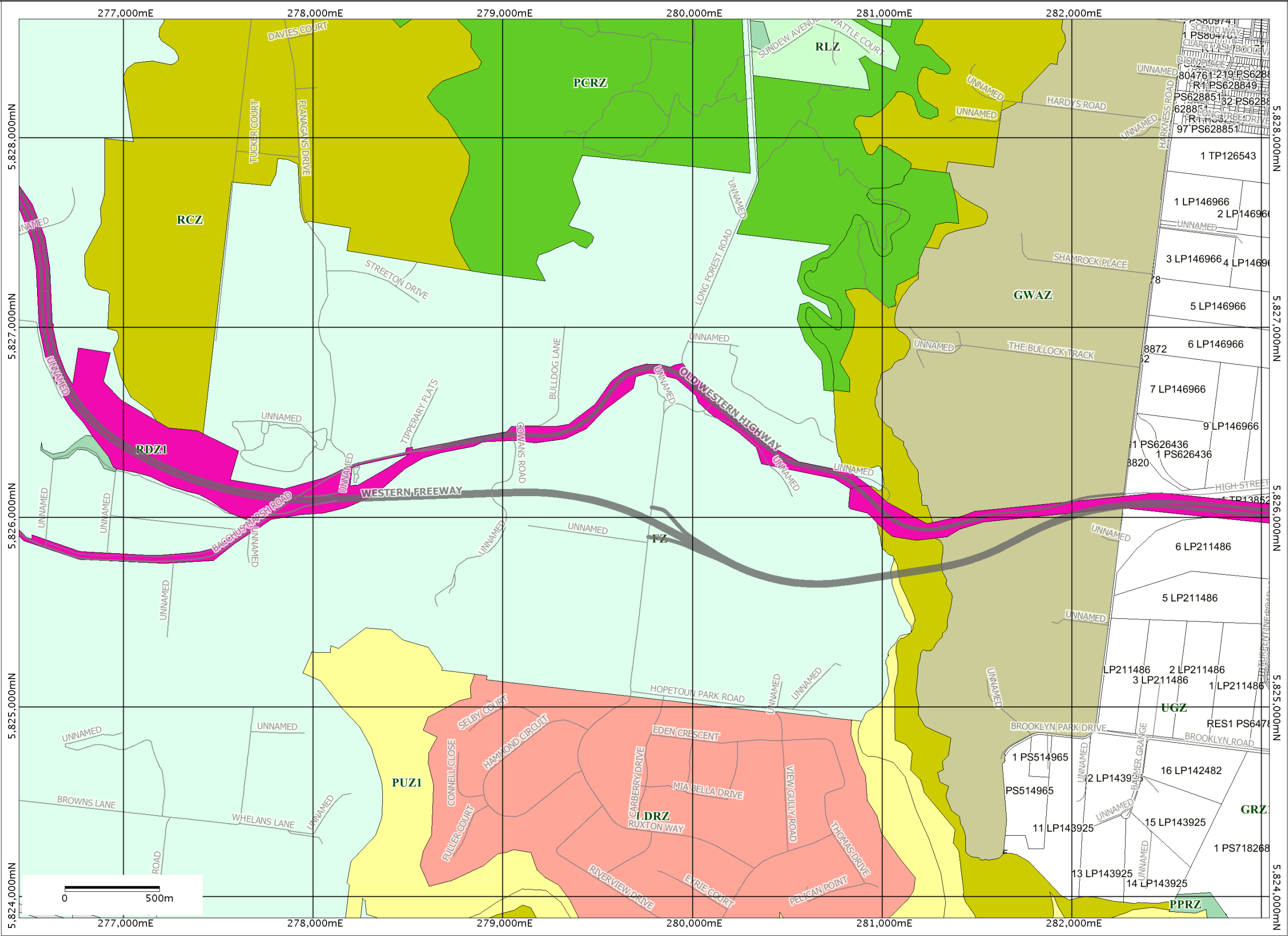
Disclaimer: This map is a snapshot generated from Victoria Government data. This material may be of assistance to you but the State of Victoria does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

Generated from GeoVic 3

Map Created Tue Jan 21 2020 15:33:06 GMT+1100 (AEDT)

Map Scale: 1:20,000
Projection: MGA 55





Legend

Towns (25K)

PI

Re

Re

Lo

Zo

Mi

To

Bu

Bu

Bu

Bu

Bu

Bu

Inc

Inc

Inc

Ru

En

Zo

Fa

Ru

Ru

Gr

Gr

Ru

Zo

Ur

Sp

Cc

De

Ca

Dc

Se

El

Roads (vmtrans)

Freeway

Highway

Main Road

Other

Victoria Boundary (25K)

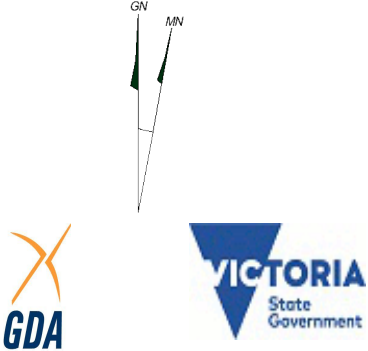
Boundary

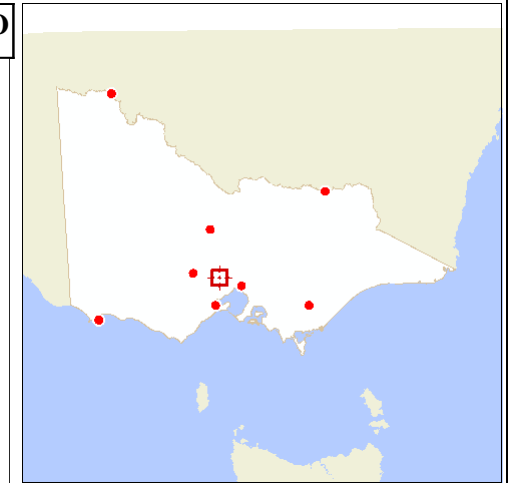
Coastline

Disclaimer: This map is a snapshot generated from Victoria Government data. This material may be of assistance to you but the State of Victoria does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

Map Scale:1:20,000

Projection:MGMA 55

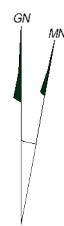


☐ **Pr**

-  Freeway
-  Highway
-  Main Road
-  Other

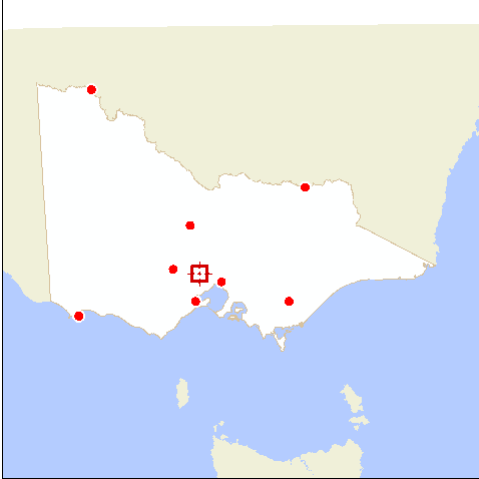
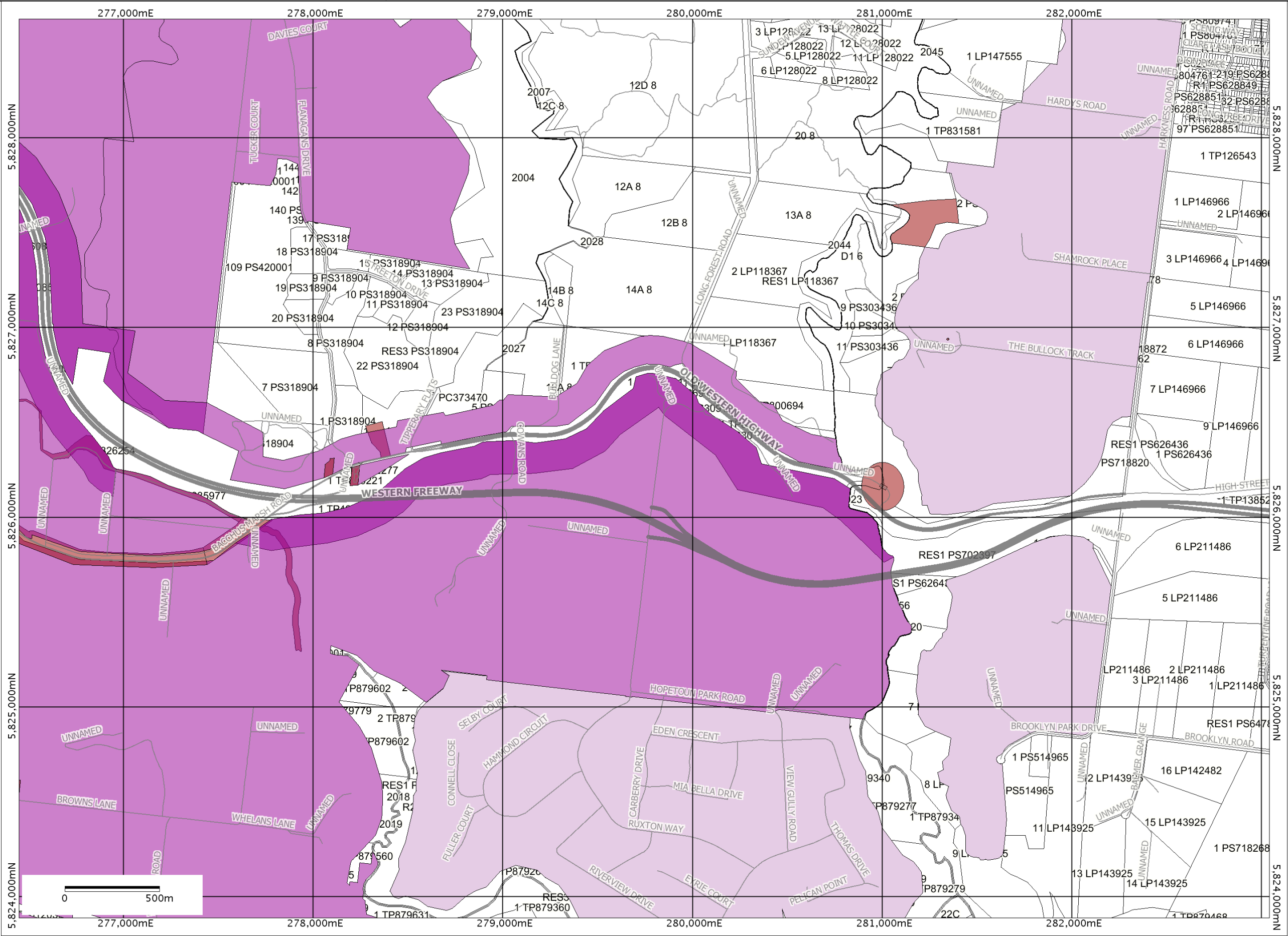
 Boundary
 Coastline

-  Environmental Significance Overlay
-  Vegetation Protection Overlay
-  Significant Landscape Overlay



| | |
|-------------|----------|
| Map Scale: | 1:20,000 |
| Projection: | MGA 55 |

Map Created Tue Jan 21 2020 15:16:59 GMT+1100 (AEDT)



Legend

Towns (25K)

Pr

De

Roads (vmtrans)

Freeway

Highway

Main Road

Other

Victoria Boundary (25K)

Boundary

Coastline

Planning Overlay - Heritage and Built

Heritage Overlay

Design and Development Overlay

Incorporated Plan Overlay

Development Plan Overlay

Neighborhood Character Overlay

Disclaimer: This map is a snapshot generated from Victoria Government data. This material may be of assistance to you but the State of Victoria does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

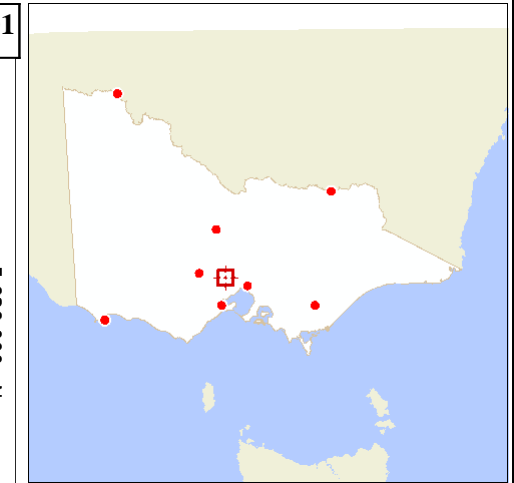
Generated from GeoVic 3

Map Created Tue Jan 21 2020 15:21:18 GMT+1100 (AEDT)

Map Scale:1:20,000

Projection:MGA 55





Pr
De

