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Date	2 September 2016
From	John Richardson
Subject	**Mount Atkinson and Tarneit Plains PSP - Traffic and Transport Advice**

This report was prepared by John Richardson from Jacobs, his details are as follows:

Qualifications

Bachelor of Geomatic Engineering (1st class honours), The University of Melbourne, 2000-2004

Bachelor of Science (Mathematics), The University of Melbourne, 2000-2004

Masters of Business Administration, University of the South Pacific 2014-2016

Experience

John has 13 years professional experience as a transport planner, modeller and project manager, with skills in, choice modelling, survey design, survey analysis, transport strategy development, stated preference and demand forecasting. He has worked as technical leader on projects that have encompassed road, public transport, heavy vehicles, motorcycle and aviation planning, model reviews, performance monitoring, road user pricing and economic evaluation.

John has a strong background in demand forecasting having worked on a range of studies including toll roads, airports, high speed rail, general public transport and ferries.

John has extensive Cube modelling experience in the UK and Australia. In the UK he calibrated employee surface access models to Heathrow and Stansted Airports (dominated by public transport). In Australia he has worked on many projects using the Victorian Integrated Transport Model (VITM) for government and private clients, including making model enhancements such as the Northern Growth Corridor and Airport related travel.

Areas of expertise

- Strategic transport plans
- Choice modelling and model estimation
- Cube / VITM
- Demand forecasting models
- Surface access modelling
- Stated preference (SP)

Other contributors

There were no other significant contributors to this report.

Scope of the report

As per the project brief – "*The Metropolitan Planning Authority (MPA) requires a consultant to prepare a detailed Transport Modelling Assessment for Precinct Structure Plan (PSP) 1082 Mt Atkinson and PSP 1085 Tarneit Plains*". "*This Request for Quote is limited to the review of the transport modelling required for the Mt Atkinson and Tarneit Plains PSPs*."

Reliance

This report was a review of previous transport modelling conducted by Jacobs in 2014. The main people responsible were Craig McPherson (Senior Transport Modeller, 17 years' experience, PhD in Transport) and Trent Ekanayake (Graduate Transport Modeller, 3 years' experience, Bachelor of Civil Engineering from Monash University).

PSP 1082 Mt Atkinson and PSP 1085 Tarneit Plains

Metropolitan Planning Authority

Transport Modelling Assessment

3 | Final

4 July 2016

D / 16 / 2673

Document history and status

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PSP 1082 Mt Atkinson and PSP 1085 Tarneit Plains

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Contents

Important note about your report

The sole purpose of this report and the associated services performed by Jacobs is to review and advise the Metropolitan Planning Authority (MPA) on the suitability of the transport modelling used in preparing the Precinct Structure Plan for the Mt Atkinson and Tarneit Plains.

In preparing this report, Jacobs has relied upon, and presumed accurate, any information (or confirmation of the absence thereof) provided by MPA and/or from other sources. Except as otherwise stated in the report, Jacobs has not attempted to verify the accuracy or completeness of any such information. If the information is subsequently determined to be false, inaccurate or incomplete then it is possible that our observations and conclusions as expressed in this report may change.

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1. Introduction

This project reviewed the suitability of using existing VITM runs from PSP 1099 Rockbank or PSP 1080 Plumpton and Kororoit for the purposes of assessing the transport needs of an adjoining PSP – Mt Atkinson 1082 and Tarneit Plains 1085.

The details of the model reviewed are provided in Table 1, a transport modelling report prepared for Rockbank PSP 1099 is publically available on the MPA website[1]. A report for the nearby PSP 1080 Plumpton and Kororoit has also been prepared using the same version of VITM, this PSP recently went on exhibition and is available to the public. Both reports were prepared by Jacobs.

Table 1: Model reviewed

Item	Details
Model Name	Victorian Integrated Transport Model
Model Version	Western Growth Corridor Model developed by AECOM for the MPA in 2012. The model was subsequently updated by Jacobs in 2014 for the Rockbank PSP transport modelling study and then updated again for the Plumpton and Kororoit PSP transport modelling study.
Model date	Last run 30/05/2014
Run by	Jacobs

The review was undertaken as follows:

1. Confirmed the version of VITM that was used for previous PSP modelling in the western growth corridor
2. Reviewed VITM inputs against latest PSP demographic projections and transport network plans.
3. Assessed the suitability of the models for strategic assessment of Mt Atkinson and Tarneit PSPs
4. Recommended any changes required to VITM for the strategic assessment of Mt Atkinson and Tarneit PSPs

1.1 Data and assumptions

The following information was provided by MPA:

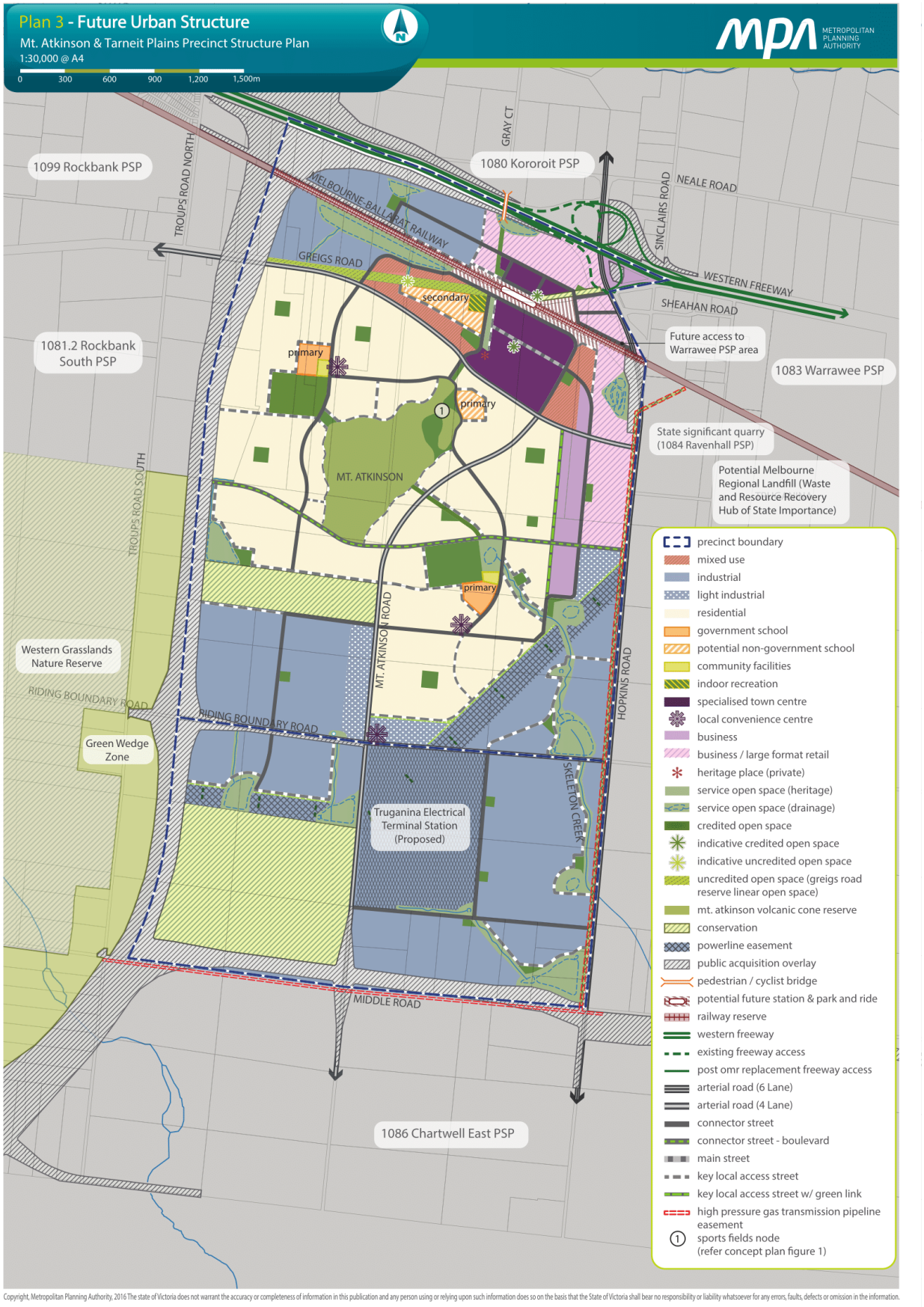
1. Spreadsheet summary of jobs (by type), dwellings and residents per transport zone for the full development
2. Future Urban Structure (FUS) Plan in PDF and GIS formats (see Figure 1).
3. 2026 transport network as per FUS alignment with:
   - Secondary arterials: 1 lane, 60km per hour
   - Hopkins Road: 1 lane and 80km per hour
4. 2046 transport network as per FUS alignment with:
   - Secondary arterials: 2 lane, 60km per hour
   - Connector and local access streets: 1 lane and 50km per hour

[1] http://www.mpa.vic.gov.au/wp-content/uploads/2013/12/SB20331-Rockbank-PSP-Modelling-Report-Rev-C.pdf

- Hopkins Road: 3 lanes and 80km per hour

5. Public transport network:
   - No change to previous modelling assumptions
6. Assumptions
   - Primary school (government and private) enrolments: assume enrolment of 450 per school
   - Non-government secondary school: assume enrolment of 1100.
   - 2026 land use to include residential development of 75% of the ultimate build-out and employment and education development at 50%.

Figure 1: Future Urban Structure (FUS)

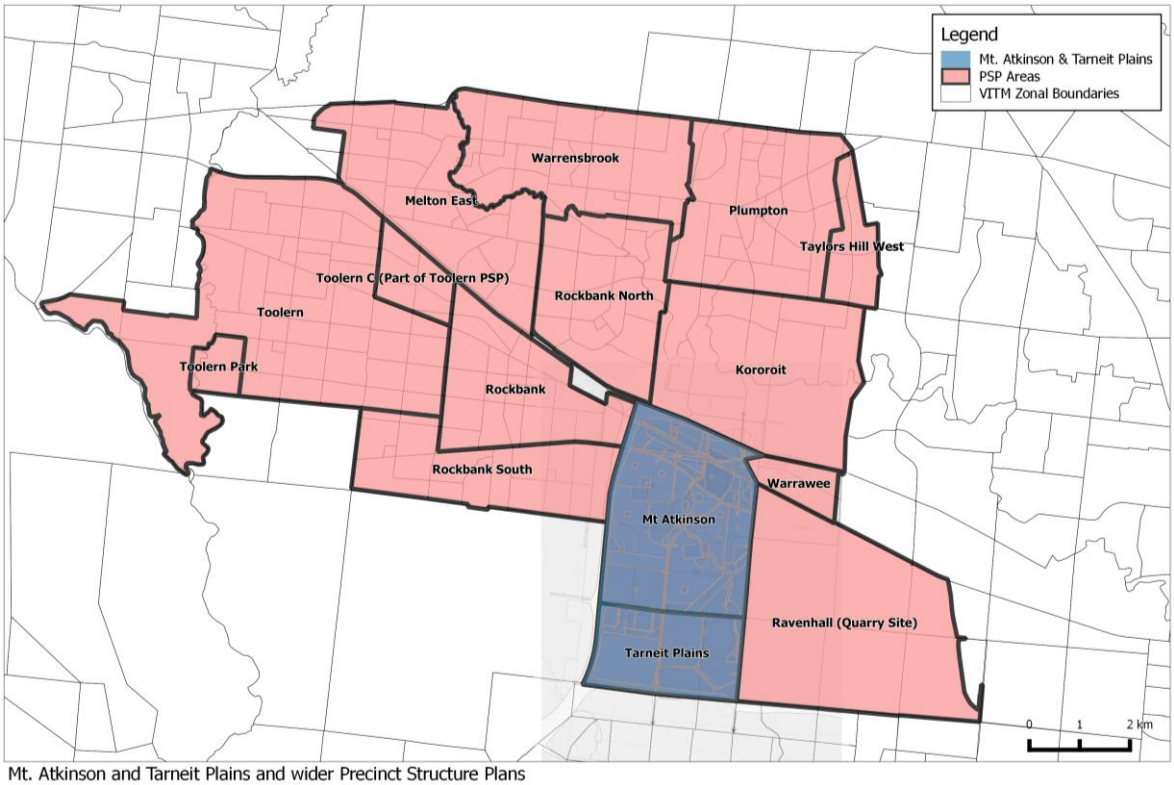


2. Model Review

2.1 Establish version of VITM for review

The location of the Mt Atkinson and Tarneit Plains PSP in relation to Rockbank and Plumpton Kororoit is shown in Figure 1. Given the boundaries created by the train line and the Western Freeway the Mt Atkinkson PSP is likely to have more traffic flows between it and Rockbank rather than Plumpton and Kororoit.

Figure 1: Location of PSP areas



Mt. Atkinson and Tarneit Plains and wider Precinct Structure Plans

After reviewing the models it was confirmed that Plumpton Kororoit was based on the Rockbank version of VITM, however housing development in Mt Atkinson were only included as a scenario in the Rockbank model rather than the core 2026 and 2046 models. As a result the Plumpton Kororoit model includes no households in the Mt Atkinson PSP area. A summary of the scenarios reviewed is provided in Table 1. The assumed build out in Mt Atkinson at 2026 in the Rockbank model was 0%.

Table 1: Demographics within Mt Atkinson PSP

Scenario	Population	Employment	Enrolments
Rockbank2026_Ref	0	0	0
Rockbank2046_Ref	0	17,184	0
Rockbank2046_S3	16,211	21,922	0
Plumpton2026_Ref	0	5,728	0
Plumpton2046_Ref	0	17,184	0

The road network within the Mt Atkinson PSP is identical for both models. Plumpton Kororoit used the Rockbank road network and added more detail within the Plumpton Kororoit PSP, connections to the Western Freeway remain the same between models.

The VITM zonal system is different in the Plumpton Kororoit Model for the area in the Plumpton Kororoit PSP. This is due to the development of a more detailed zone system in the PSP for the modelling of the PSP. The differences in zonal layout begin immediately north of the Western Freeway. The zonal system in Mt. Atkinson and in the wider Metropolitan network is the same in both models.

The public transport networks in 2026 are different in the Plumpton Kororoit model to the Rockbank model, where amendments to bus routes were made in the Plumpton Kororoit PSP. In the 2046 model there are updates to bus routes, and also to rail stopping patterns - Rockbank and Mt. Atkinson's railway station 'Hopkin's Road are included as a stops in the Plumpton Kororoit Model.

The conclusion reached is that the preferred model to use is Rockbank as it includes a better representation of 2046 population, employment and school enrolments within the Mt Atkinson and Tarneit Plains PSP's. We note however that the assumed build out at 2026 is less than MPA assumptions; this will be further discussed in the next section.

2.2 Review VITM inputs against FUS for Mt Atkinson

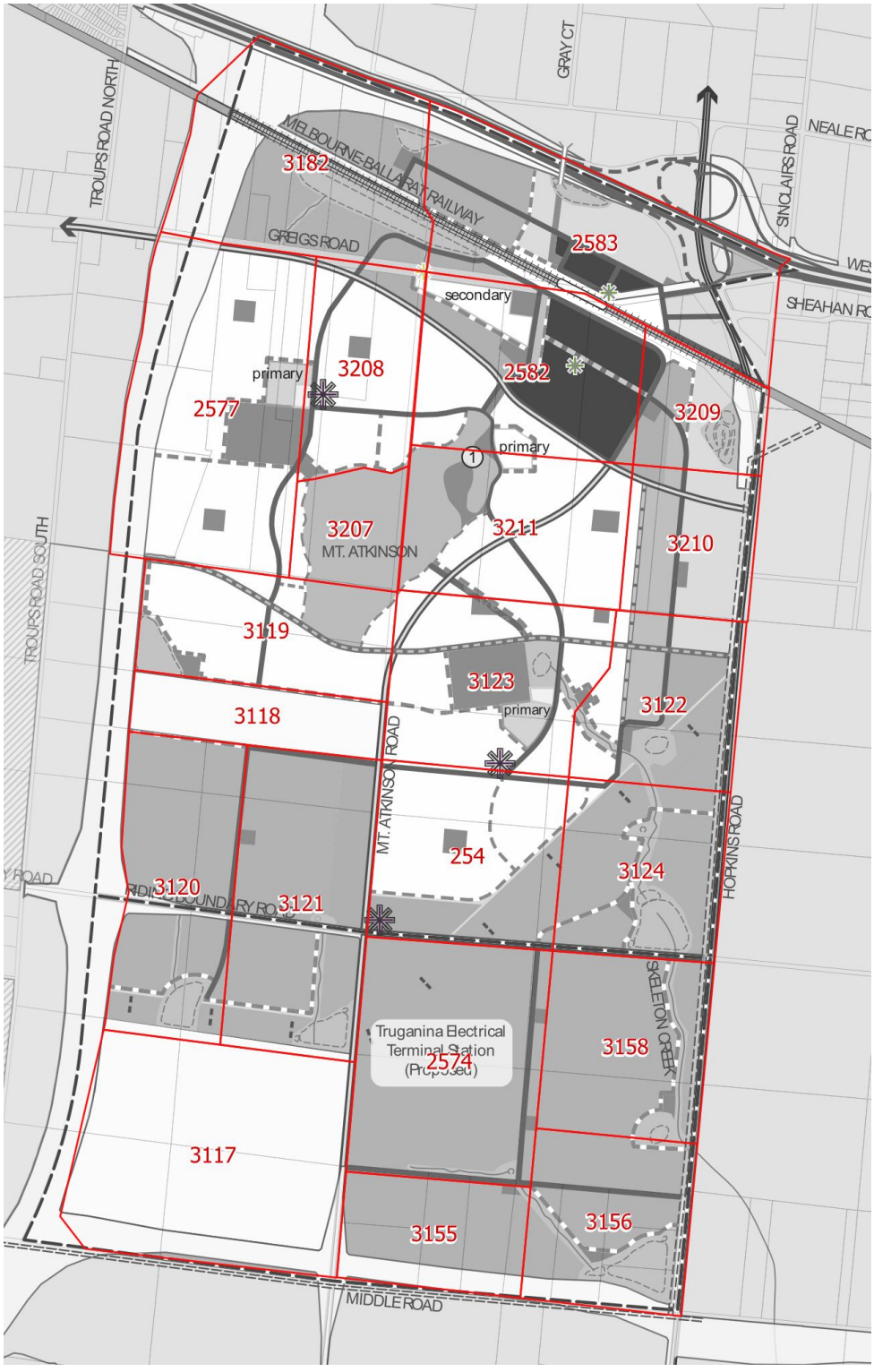
This section compares the VITM inputs against the latest PSP plans provided by MPA. The two specific scenarios used for comparison are:

- Rockbank 2026, reference scenario
- Rockbank 2046, Scenario 3

2.2.1 Zone system

As shown in Figure 2 the VITM zone system is broadly a good representation of the PSP, the only zone of some concern is Zone 3182 which is split by a train line and therefore has quite different access patterns to each side.

Figure 2: VITM Zone System

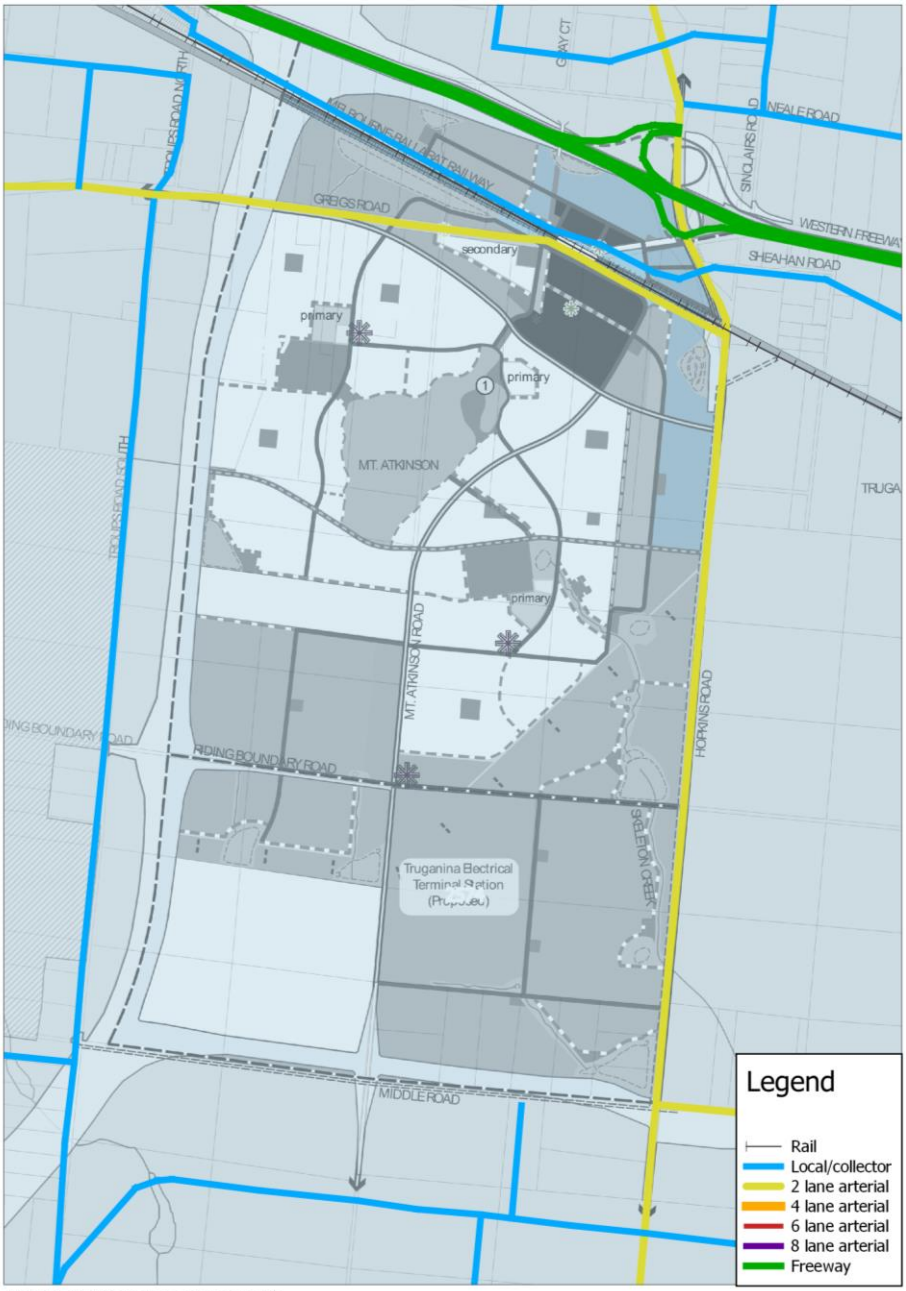


2.2.2 Road network

The 2026 road network coded in VITM is reflective of the demographic assumption of no development in Mt Atkinson. Essentially only existing roads are coded (see Figure 3), namely Hopkins Road, Greigs Road and Troups Road. The internal roads shown in the FUS are not part of the 2026 VITM road network, there is however the addition of an unknown road immediately north of the rail line, this appears to be an extension of Sheahan / Meskos Road to Westcott Parade.

The 2026 road network is not suitable to test the proposed development within Mt Atkinson as there will be population and employment in zones that are not connected to the road network. Refer to Table 2 for a comparison of individual roads.

Figure 3: 2026 VITM Road Network compared to FUS Road Network



VITM 2026 transport network
Rockbank 2026
I:/SBIF/Projects/IS157500 - Mt Atkinson PSP/GIS/Rockbank 2026 v2 Links.shp

Table 2: Comparison of 2026 Road Networks

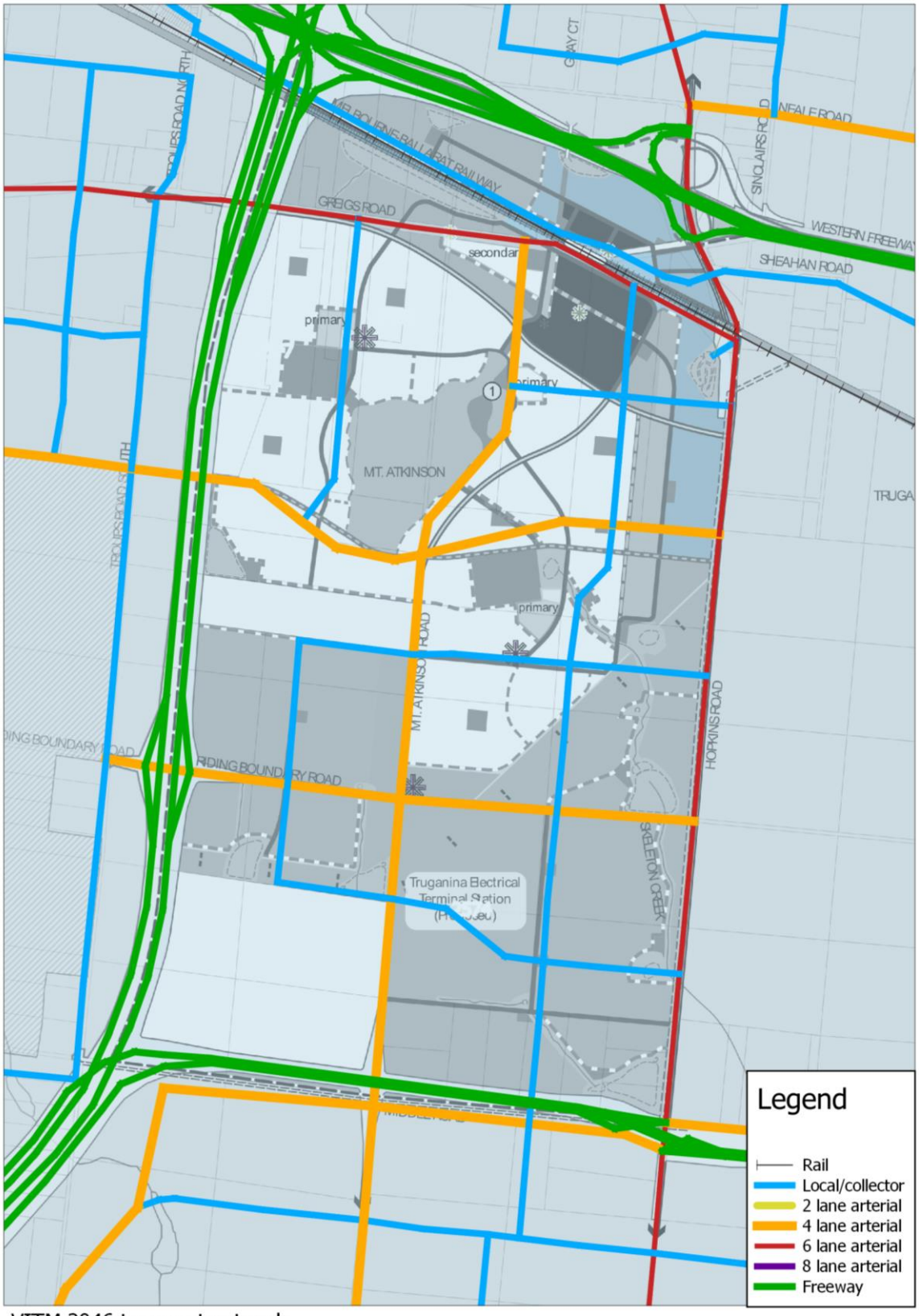
Road name	VITM	FUS
Greigs Road	Arterial, 2-lanes, 80kph	Arterial, 2-lanes, 60kph
Mt Atkinson Road	Not coded	Arterial 2-lanes, 60kph
Hopkins Road	Arterial 2-lanes, 80kph	Arterial 2-lanes, 80kph
Unnamed E-W Road	Not coded	Connector Street 2-lanes, 50kph
Riding Boundary Road	Not coded	Arterial 2-lanes, 60kph
Remaining Roads	Local / connectors, 2-lanes, 40kph/50kph	Local / connectors, 2-lanes, 50kph
OMR	Not coded	Not coded

The 2046 road network coded in VITM is similar but not identical to the main road network shown in the FUS, all major roads are included however the alignments of Greigs Road and Mt Atkinson Road have changed. A summary is provided in Table 3 and the two networks are overlayed in Figure 4.

Table 3: Comparison of 2046 Road Networks

Road name	VITM	FUS
Greigs Road	Arterial, 6-lanes, 80kph	Arterial, 4-lanes, 60kph Different alignment
Mt Atkinson Road	Arterial, 4-lanes, 60kph (70kph south of Riding Boundary Rd)	Arterial, 4-lanes, 60kph Different alignment
Hopkins Road	Arterial, 6-lanes, 80kph	Arterial, 6-lanes, 80 kph
Unnamed E-W Road	Arterial, 4-lanes, 60kph	Connector Street 2-lanes, 50kph
Riding Boundary Road	Arterial, 4-lanes, 80kph	Arterial 2-lanes, 60kph
Remaining Roads	Local / connectors 2-lanes, 50kph	Local / connectors 2-lanes, 50kph
OMR	Freeway, 4-lanes, 100kph	Freeway, 4-lanes, 100kph

Figure 4: 2046 VITM Road Network compared to FUS Road Network



VITM 2046 transport network

Rockbank 2046 Scenario 3
I:/SBIF/Projects/IS157500 - Mt Atkinson PSP/GIS/Rockbank 2046 Ultimate v3 v4 Links.shp

2.2.3 Demographics

The VITM model had zero population, employment, and school enrolments in 2026. MPA assumptions suggest a 75% build out of the PSP by 2026. To estimate the 2026 demographic and land use statistics shown below a 75% factor was applied to the 2046 figures provided by MPA. Table 4 below shows the 2026 MPA and VITM demographic statistics, and 2046 figures are shown in Table 5.

Table 4: 2026 VITM population compared to MPA assumptions

Zone	MPA			VITM		
	Population	Employment	Enrolments	Population	Employment	Enrolments
254	1606	267	0	0	0	0
2574	0	900	0	0	0	0
2577	2673	100	338	0	0	0
2582	2248	3423	1163	0	0	0
2583	309	1093	0	0	0	0
3117	0	0	0	0	0	0
3118	0	0	0	0	0	0
3119	1611	29	0	0	0	0
3120	0	710	0	0	0	0
3121	0	845	0	0	0	0
3122	430	83	0	0	0	0
3123	1933	102	338	0	0	0
3124	115	486	0	0	0	0
3155	0	397	0	0	0	0
3156	0	447	0	0	0	0
3158	0	606	0	0	0	0
3182	84	414	0	0	0	0
3207	120	2	0	0	0	0
3208	1477	26	0	0	0	0
3209	399	2118	0	0	0	0
3210	215	1729	0	0	0	0
3211	1534	327	0	0	0	0
Total	**14828**	**14106**	**1838**	**0**	**0**	**0**

Table 5: 2046 VITM demographics compared to MPA assumptions

Zone	MPA			VITM		
	Population	Employment	Enrolments	Population	Employment	Enrolments
254	2142	356	0	0	881	0
2574	0	1200	0	0	73	0
2577	3563	134	450	4233	3470	0
2582	2997	4564	1550	2520	1459	0
2583	412	1457	0	1176	2443	0
3117	0	0	0	0	0	0
3118	0	0	0	0	0	0
3119	2148	38	0	0	524	0
3120	0	946	0	0	921	0
3121	0	1127	0	0	1057	0
3122	574	110	0	0	653	0
3123	2577	136	450	2240	780	0
3124	154	648	0	0	642	0
3155	0	530	0	0	361	0
3156	0	596	0	0	516	0
3158	0	808	0	0	447	0
3182	112	552	0	0	1243	0
3207	160	3	0	0	0	0
3208	1969	35	0	2822	2400	0
3209	532	2825	0	840	940	0
3210	287	2305	0	0	1261	0
3211	2045	437	0	2380	1851	0
Total	**19770**	**18808**	**2450**	**16211**	**21922**	**0**

Figure 5 below shows a side by side comparison of the MPA and VITM population distributions. A difference plot of these data is attached in Appendix A. The overall VITM assumptions are within ± 20% (excluding enrolments). Figure 5 shows that there are minor population differences and some differences in employment intensities between the VITM assumptions and MPA estimates. These differences are unlikely to impact on the ability of the network to function.

Figure 5: 2046 population comparison

In aggregate the MPA assumptions for population are 22% higher than those used previously for modelling purposes. In both distributions the majority of households are at the north end of the PSP where the town centre is located. The additional population assumed by MPA tends to be located further south which will result in the additional trips being generated away from the town centre.

The modelled road network has acceptable volume to capacity ratios in most locations (Figure 15) and this is not expected to change with the revised population distribution. The capability of the network to service the expected development is assisted by the anticipated job numbers being lower than modelled (see Figure 6).

Figure 6 below shows a side by side comparison of employment assumptions between the MPA estimates and the VITM model. A difference plot for this comparison is attached in Appendix A. The figure below shows that there are some differences in the distribution of employment assumptions across the zones. The VITM model assumes more intense employment closer to the north of the precinct.

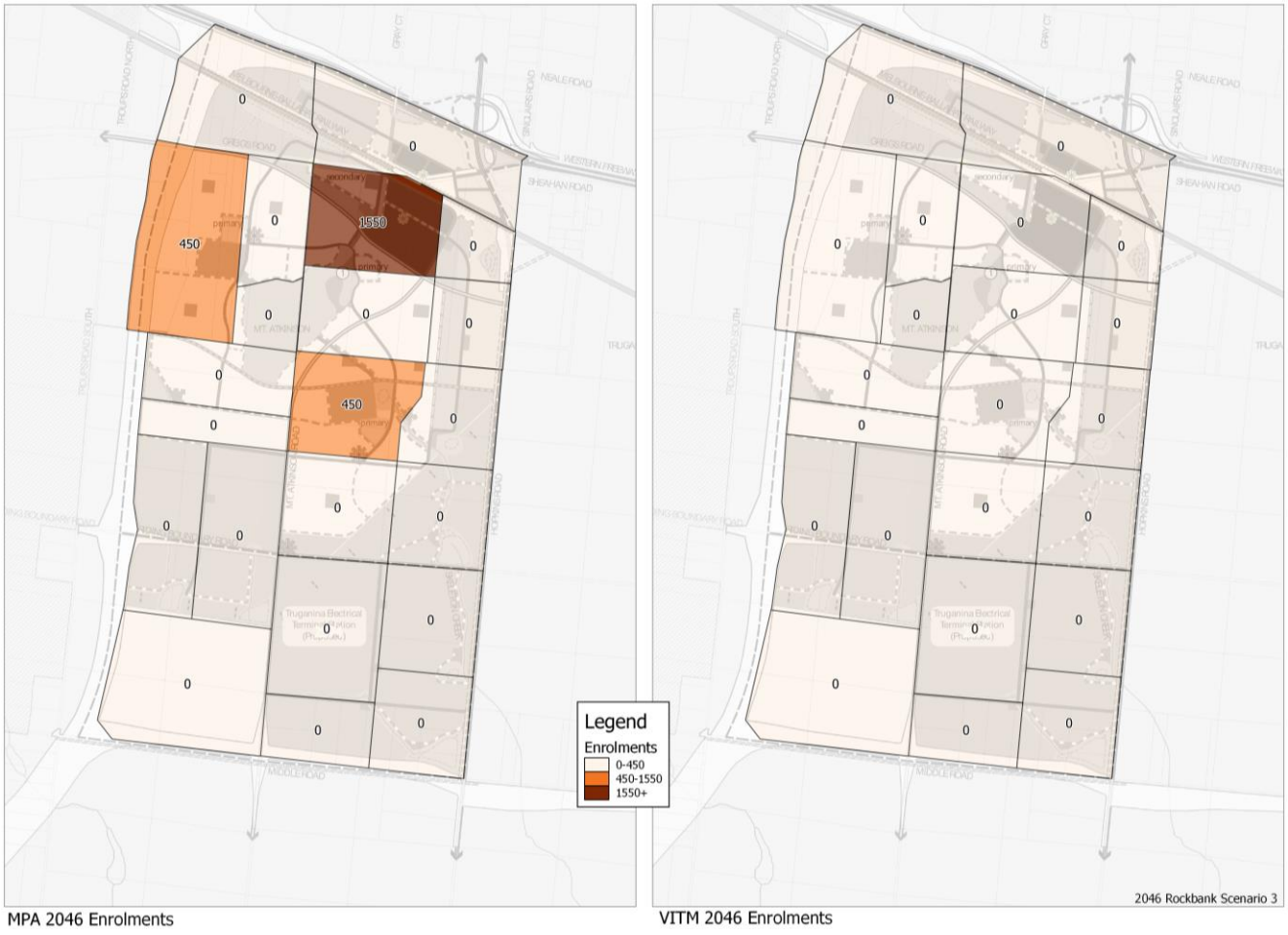
In aggregate the MPA assumptions for employment are 14% lower than those used previously for modelling purposes. MPA assumes a higher number of jobs in the south of the PSP and that jobs would be more centralised in the Mount Atkinson Town Centre (zone 2582). This could potentially trigger a need for additional capacity around the Greigs Road and Hopkins Road intersection. Although the additional jobs in the south could see more through traffic bypass this intersection.

Figure 6: 2046 employment comparison

Figure 7 shows a side by side comparison for enrolments in 2046 for the MPA estimates and the VITM model assumptions. It shows the locations of school enrolments in the MPA estimates and reveals how the VITM model did not assume any enrolments in the precinct.

The number of enrolments estimated by the MPA would result in more internal trips and fewer trips on the key intersections around the PSP area and on the surrounding arterial network.

Figure 7: 2046 enrolments comparison



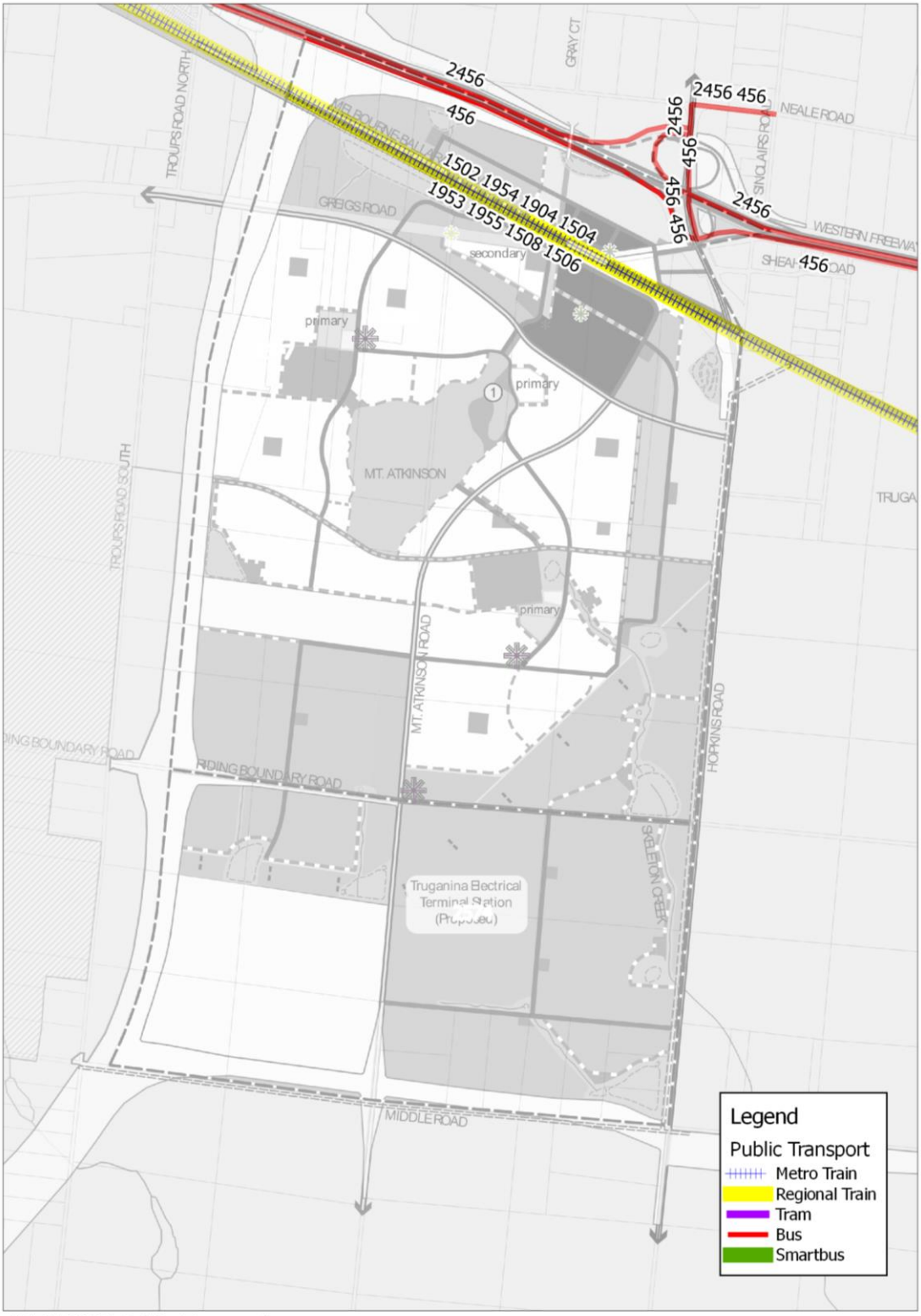
MPA 2046 Enrolments

VITM 2046 Enrolments

2.2.4 Public transport networks

The 2026 VITM public transport network in the Mt. Atkinson and Tarneit Plains PSP is shown in Figure 8.

Figure 8: 2026 VITM public transport network



VITM 2026 Public Transport
Rockbank 2026 (v2)
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The number of services per hour for these routes are listed in Table 6 below. No rail services call at Mt. Atkinson's railway station ("Hopkins Road") in 2026. Given the amount of employment and residents within walking distance of the train station it would be advantageous for the PSP to have a train stopping here, without it the nearest train station (Rockbank) is almost 5km away and people travelling to and from the CBD are unlikely to use public transport.

Table 6: 2026 VITM public transport service frequencies

Number	Route	Mode	AM	IP	PM	OP
456	SUNSHINE - MELTON	Bus	26	26	26	26
2456	MELTON - SUNSHINE	Bus	26	26	26	26
1502	MELTON - PAKENHAM EAST (METRO TUNNEL)	Metropolitan Train	8	15	8	15
1504	ROCKBANK - PAKENHAM EAST (METRO TUNNEL)	Metropolitan Train	15	0	15	0
1506	PAKENHAM EAST - MELTON (METRO TUNNEL)	Metropolitan Train	8	15	8	15
1508	PAKENHAM EAST - ROCKBANK (METRO TUNNEL)	Metropolitan Train	15	0	15	0
1904	BALLARAT - SOUTHERN CROSS (VIA RRL)	V/Line	20	30	30	30
1912	SOUTHERN CROSS - BALLARAT (VIA RRL)	V/Line	30	30	20	30
1952	ARARAT - SOUTHERN CROSS (VIA RRL)	V/Line	120	180	120	180
1953	SOUTHERN CROSS - ARARAT (VIA RRL)	V/Line	120	180	120	180
1954	MARYBOROUGH - SOUTHERN CROSS (VIA RRL)	V/Line	120	180	120	180
1955	SOUTHERN CROSS - MARYBOROUGH (VIA RRL)	V/Line	120	180	120	180

The 2046 public transport network servicing the area is shown in Figure 9. Table 7 lists the frequencies for public transport services in the PSP area by time period.

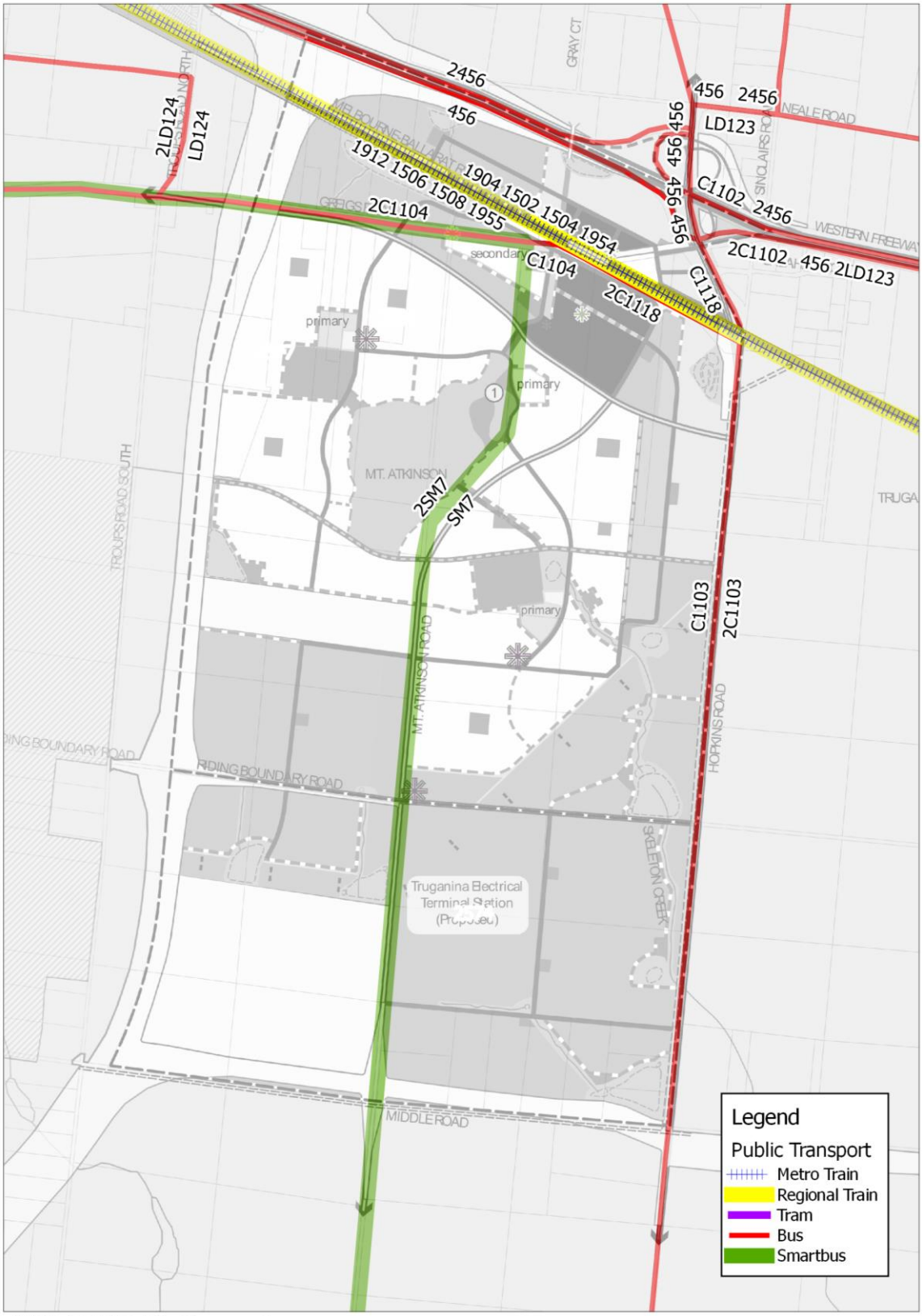
No trains stop at Mt Atkinson's railway station 'Hopkins Road' in the 2046 model, as stated above for 2026 the PSP would benefit from a stopping service which would reduce the amount of private vehicle trips in and out of the PSP.

Table 7: 2046 VITM public transport service frequencies by time period

Number	Route	Mode	AM	IP	PM	OP
456	SUNSHINE - MELTON	Bus	26	26	26	26
2456	MELTON - SUNSHINE	Bus	26	26	26	26
2C1102	CAROLINE SPRINGS RS - CAROLINE SPRINGS TOWN CENTRE	Bus	40	40	40	40
2C1103	PLUMPTON - TARNEIT RS	Bus	40	40	40	40
2C1104	TOOLERN RS - CAROLINE SPRINGS (VIA ROCKBANK RS)	Bus	40	40	40	40
2C1118	ROCKBANK WEST - ROCKBANK RS (VIA PLUMPTON)	Bus	40	40	40	40
2LD123	CAROLINE SPRINGS RS - SYDENHAM RS (VIA PLUMPTON & EASTERN ROCKBANK)	Bus	15	15	15	15

Number	Route	Mode	AM	IP	PM	OP
2LD124	TOOLERN - ROCKBANK LOOP (VIA MT COTTRELL AND PLUMPTON)	Bus	15	15	15	15
C1102	CAROLINE SPRINGS TOWN CENTRE - CAROLINE SPRINGS RS	Bus	40	40	40	40
C1103	TARNEIT RS - PLUMPTON	Bus	40	40	40	40
C1104	CAROLINE SPRINGS - TOOLERN RS (VIA ROCKBANK RS)	Bus	40	40	40	40
C1118	ROCKBANK RS - ROCKBANK WEST (VIA PLUMPTON)	Bus	40	40	40	40
LD123	SYDENHAM RS - CAROLINE SPRINGS RS (VIA PLUMPTON & EASTERN ROCKBANK)	Bus	15	15	15	15
LD124	ROCKBANK - TOOLERN LOOP (VIA MT COTTRELL AND PLUMPTON)	Bus	15	15	15	15
1502	MELTON - PAKENHAM EAST (METRO TUNNEL)	Metropolitan Train	8	10	8	10
1504	ROCKBANK - PAKENHAM EAST (METRO TUNNEL)	Metropolitan Train	15	0	15	0
1506	PAKENHAM EAST - MELTON (METRO TUNNEL)	Metropolitan Train	8	10	8	10
1508	PAKENHAM EAST - ROCKBANK (METRO TUNNEL)	Metropolitan Train	15	0	15	0
2SM7	WERRIBEE - ROCKBANK	Smartbus	10	10	10	10
SM7	ROCKBANK - WERRIBEE	Smartbus	10	10	10	10
1904	BALLARAT - SOUTHERN CROSS (VIA RRL)	V/Line	15	30	30	30
1912	SOUTHERN CROSS - BALLARAT (VIA RRL)	V/Line	30	30	15	30
1952	ARARAT - SOUTHERN CROSS (VIA RRL)	V/Line	120	180	120	180
1953	SOUTHERN CROSS - ARARAT (VIA RRL)	V/Line	120	180	120	180
1954	MARYBOROUGH - SOUTHERN CROSS (VIA RRL)	V/Line	120	180	120	180
1955	SOUTHERN CROSS - MARYBOROUGH (VIA RRL)	V/Line	120	180	120	180

Figure 9: 2046 VITM public transport network



VITM 2046 Public Transport

Rockbank 2046 (s3)
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2.3 Model outputs

2.3.1 Modelled vehicle volumes

Figure 10 shows modelled daily volumes for 2026 for the Mt. Atkinson and Tarneit Plains PSP area, Figure 11 shows more detail around the intersection of the Western Ring Road and Hopkins Road.

Figure 10: 2026 modelled daily volumes (full PSP)

Figure 11: 2026 modelled daily volumes (Western Ring Road / Hopkins Road)

Figure 12 shows modelled daily volumes for 2046 for the Mt. Atkinson and Tarneit Plains PSP area, Figure 11 shows more detail around the intersection of the Western Ring Road and Hopkins Road.

Figure 12: 2046 modelled daily volumes (full PSP)

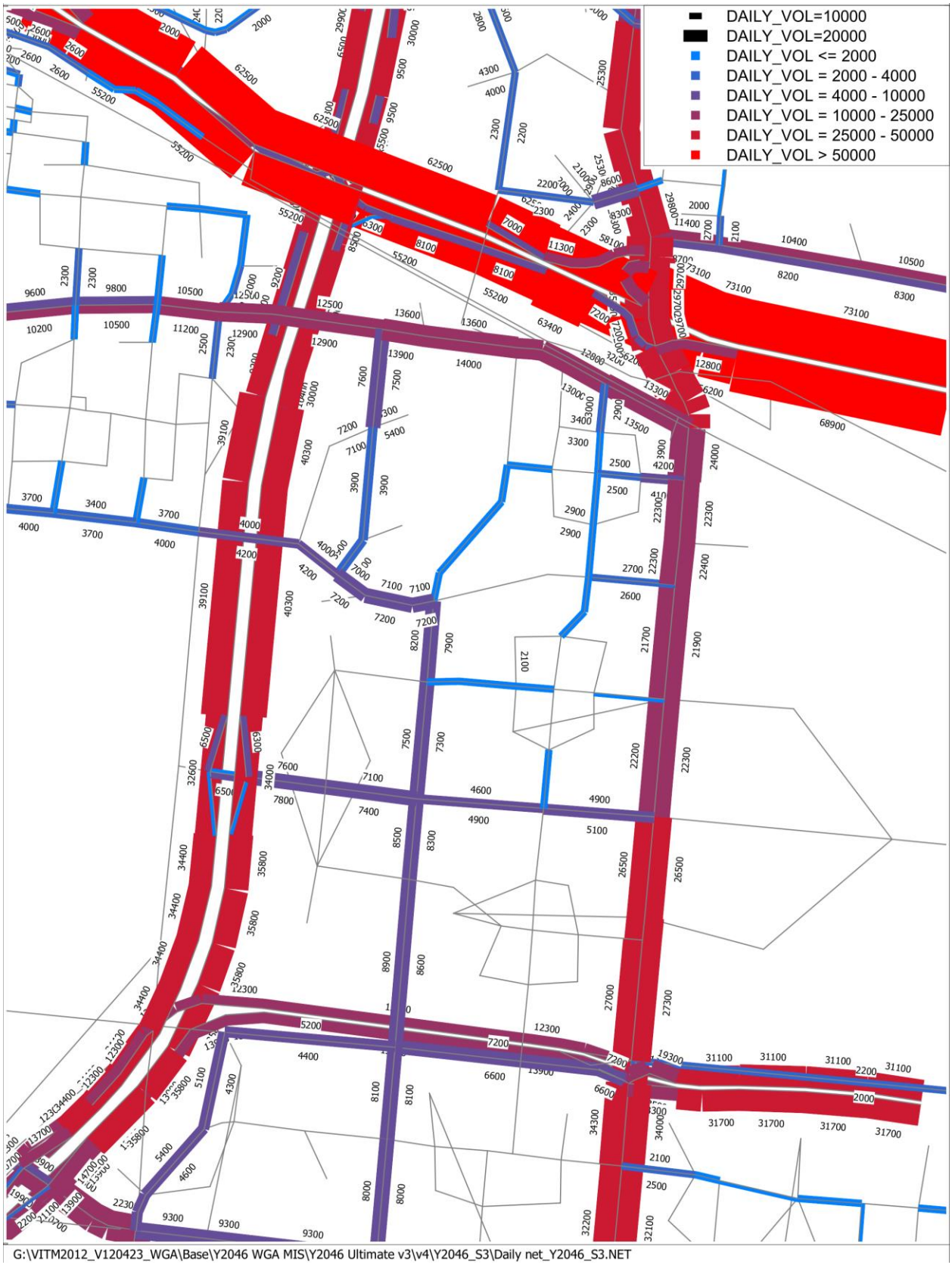


Figure 13: 2046 modelled daily volumes (Western Ring Road / Hopkins Road)

2.3.2 Volume to capacity

Figure 14 shows the modelled volume to capacity (V/C) ratios (a measure of how congested the modelled road network is on a link-by-link level). Even without any trips being attracted to or from Mt Atkinson the road network has a number pinch points, particularly on Hopkins Road either side of the Western Ring Road (WRR) and at the southern end of the PSP around Boundary Road. Greigs Road looks as though it is being used as an alternative route to access the WRR from Rockbank.

Figure 14: 2026 AM volume to capacity ratios

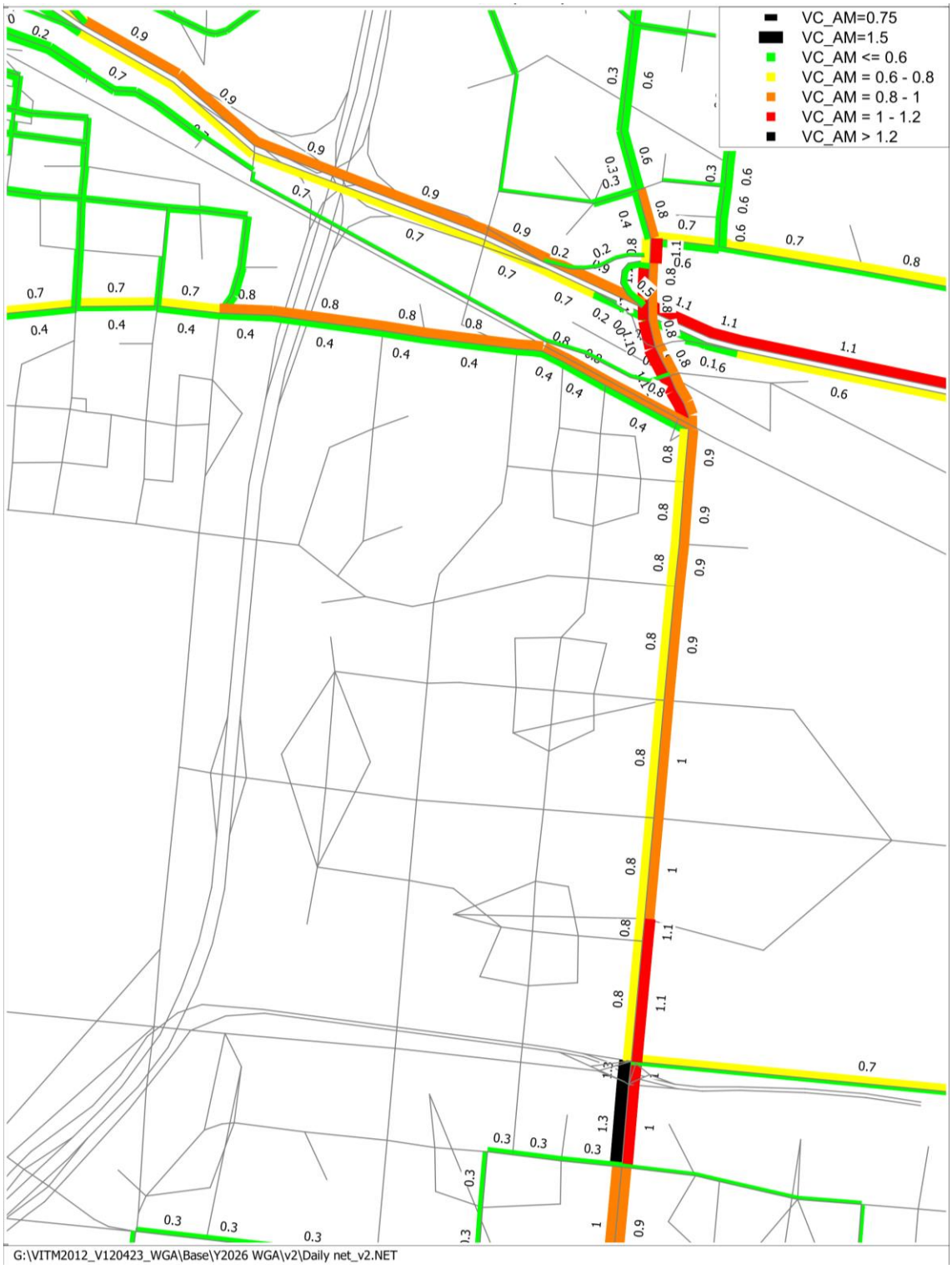
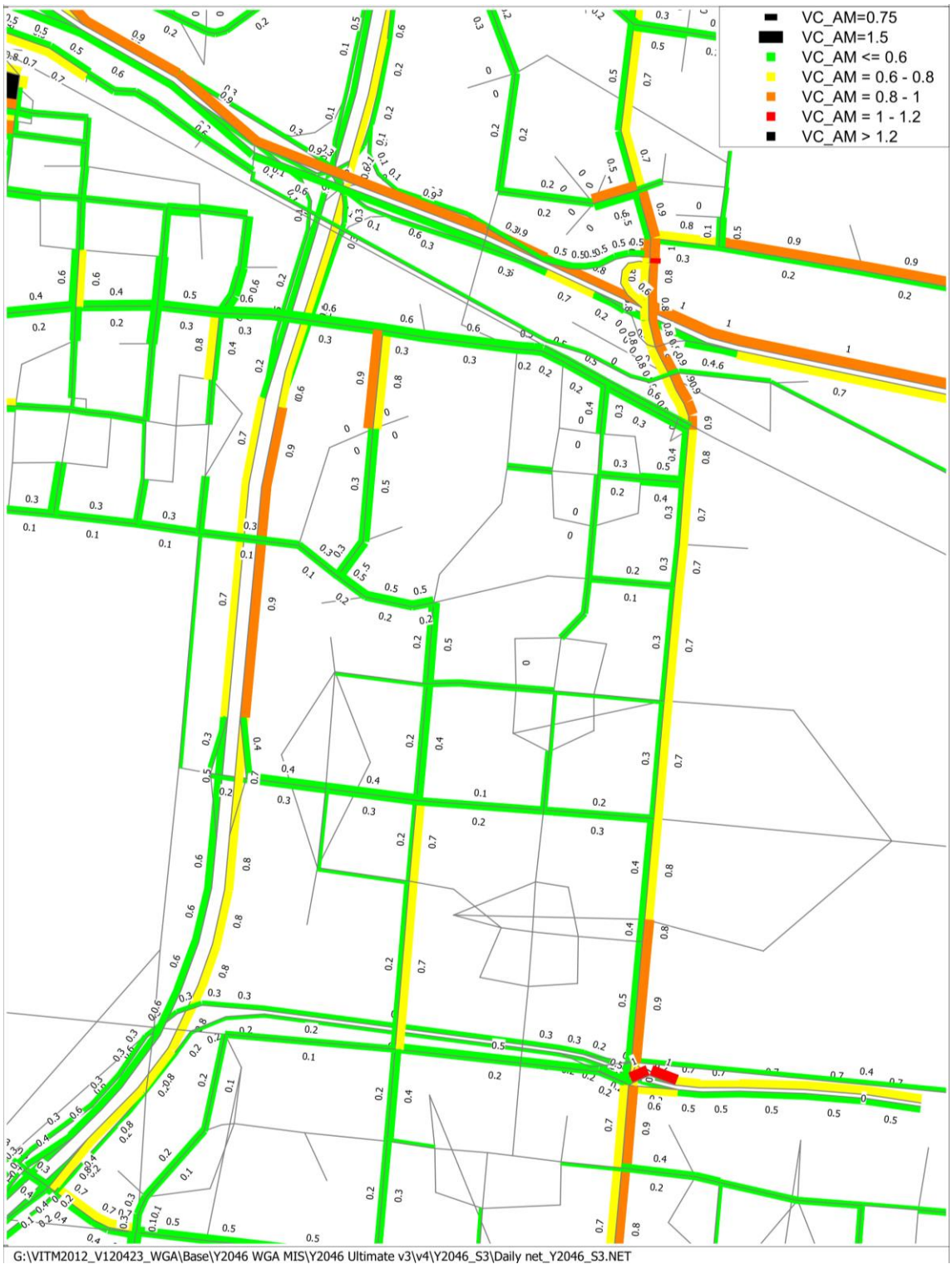


Figure 15 shows the 2046 modelled V/C ratios for the PSP area. The network generally performs well with the increased road network (compared to 2026) relieving many of the pinch points seen in 2026, although most are operating close to capacity (V/C of 0.8-0.9). The internal roads have capacity to handle increased development within the PSP.

Figure 15: 2046 AM volume to capacity ratios



2.4 Model Suitability

The most suitable existing version of VITM to consider for assessing the traffic impacts in and around the Mt Atkinson and Tarneit Plains PSP is the Rockbank model. It included a scenario for 2046 which included employment, population and school enrolment land use inputs that would generate approximately similar traffic volumes. The transport zone system, road and PT networks are a fair representation of what is currently planned by MPA.

There are however no existing model runs suitable for assessing the PSP at 2026, creating this scenario would require:

- Coding the 2026 road network
- Inputting the correct land use assumptions

If any new modelling at 2046 was deemed necessary the following updates are recommended, however we stress that none of these are essential and are not likely to change any of the conclusions about the road network required for the network:

- Correct the land use inputs to exactly match the latest MPA projections
- Consider splitting zone 3182
- Change road alignments for Greigs Road and Mt Atkinson Road
- Update the train service pattern to stop at Mt Atkinson Station
- Including updated landuse and road networks from the Plumpton Kororoit PSP modelling

2.5 Conclusion

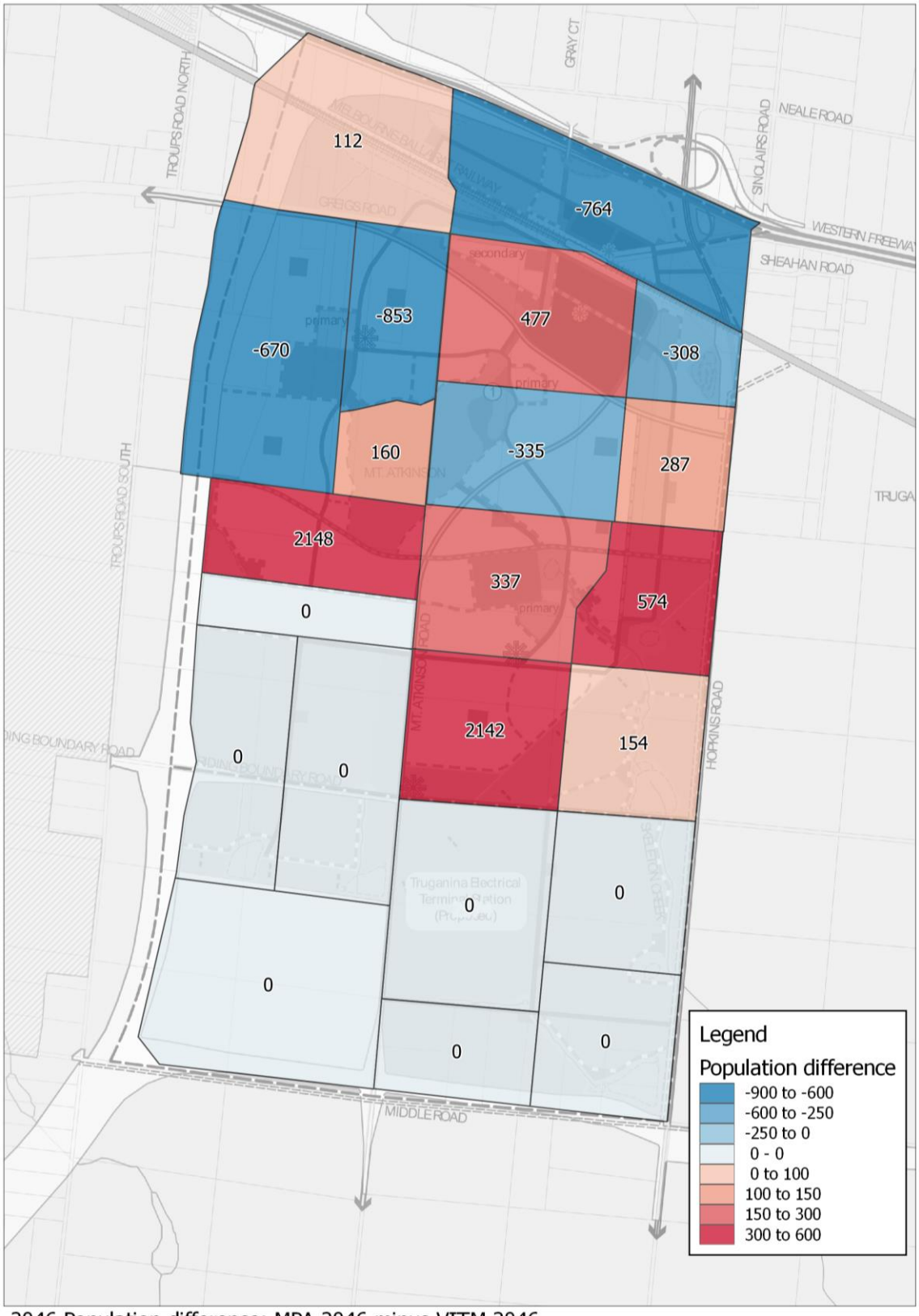
The 2046 Rockbank model is, in our opinion, a fair representation of the land use and transport networks planned for the Mount Atkinson and Tarneit Plains PSP. Whilst there are differences in the land use assumptions they are not likely to result in a significantly different distribution of traffic across the planned road network.

There is capacity in the planned internal road network to service the proposed development; the surrounding arterial road network is approaching capacity at 2046, particularly along Hopkins Road around the Western Ring Road and Boundary Road.

The lack of a 2026 VITM model suitable for use means that conclusions must be drawn from the 2046 model. Based on the assumption of a 75% build out at 2026 it is recommended that both Hopkins Road and Greigs Road be upgraded to 4-lane arterials by 2026.

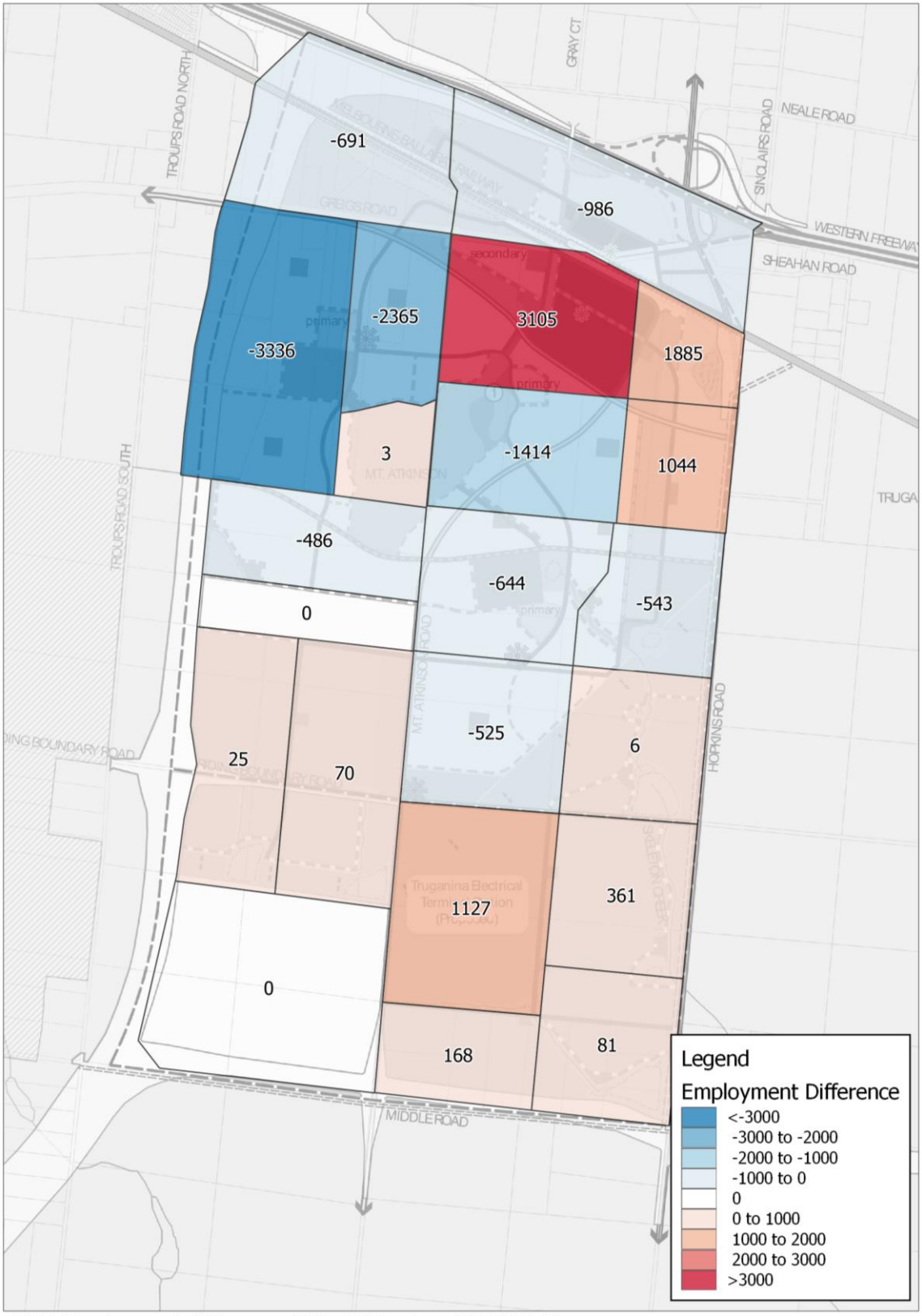
Appendix A. Demographic Difference Plots

Figure 16: 2046 population difference plot (MPA 2046 minus VITM 2046)



2046 Population difference: MPA 2046 minus VITM 2046
(VITM model: Rockbank 2046 S3)

Figure 17: 2046 employment difference plot (MPA 2046 minus VITM 2046)



2046 Employment difference: MPA 2046 minus VITM 2046
(VITM model: Rockbank 2046 S3)