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Merrimu PSP – Strategic Modelling Transport Assessment

Strategic Transport Modelling
Assessment Report

DRAFT

25 February 2026



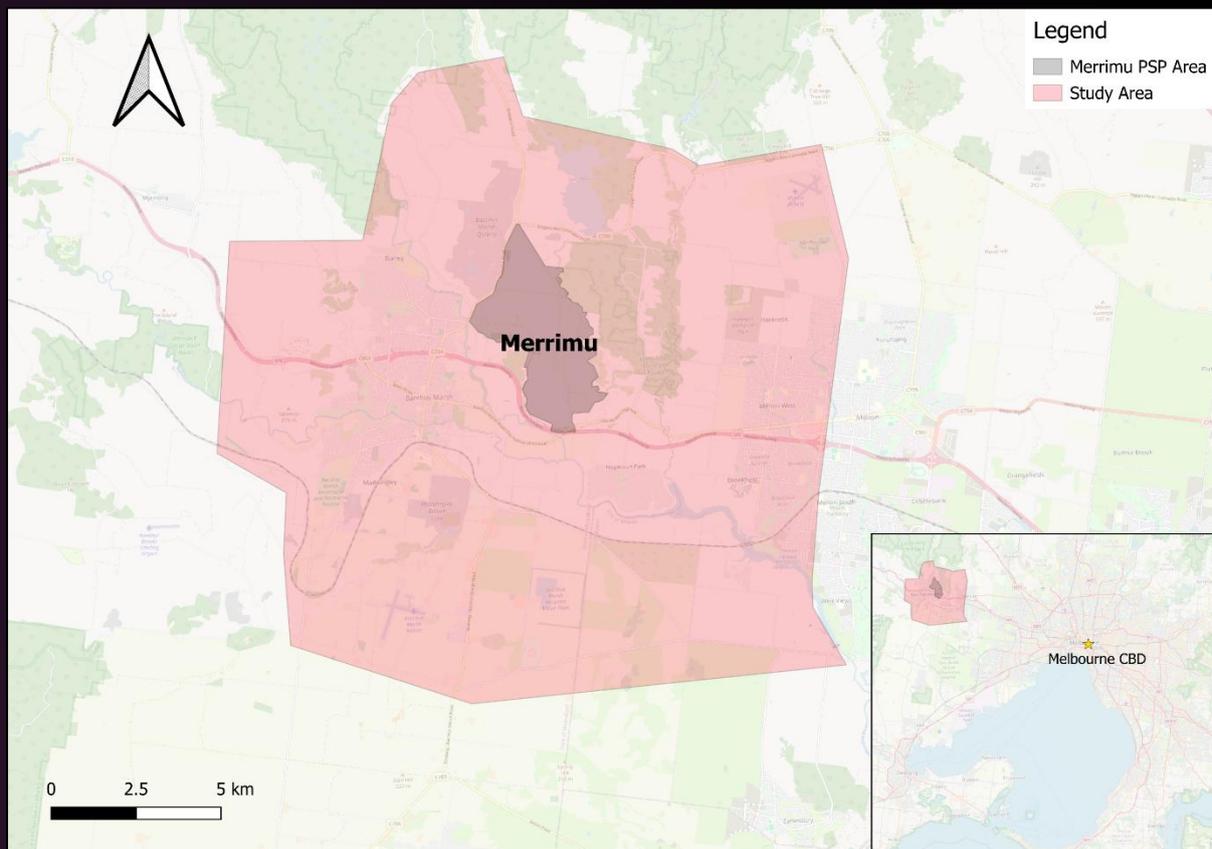
EXECUTIVE SUMMARY

Background and Scope

A Precinct Structure Plan (PSP) is currently being developed for Merrimu. Clarity has been engaged to undertake a strategic modelling assessment of the proposed land use and future transport network for the Merrimu PSP. The Merrimu Precinct will contain future residential areas, a northern and a southern 'village centre', four school sites, open spaces and a supporting road network.

The Project involves preparing a Strategic Transport Modelling Assessment (STMA) to examine traffic impacts of the proposed development of the PSP and understand future transport planning considerations. It includes a review of the validation of the VITM 2018 Reference Year model, as well as forecasting future traffic conditions without the development (Reference Case), as well as with the development (Project Case) in an ultimate 2056 horizon year. A Project Case without the Eastern Link Road (ELR) has also been produced.

The study area under consideration for the STMA is shown below. All significant impacts identified by the modelling are reported on, with a particular focus on the defined study area.



Merrimu STMA Study Area

The VITM was received from DTP with a Base Year Model validated to 2018. After validation checks and minor refinements to the road network, the model was deemed fit for purpose for assessing the transport impacts in and around the Merrimu PSP. Full details of the validation are found in the report:

Merrimu PSP – Strategic Modelling Transport Assessment - Transport Model Validation Report, Clarity, 4 December 2025

Strategic Transport Modelling Assessment

The 2056 Project Case model includes the latest proposed land use and transport networks for the Merrimu PSP. Overall, the Project Case includes an increase of around 24,450 residents, 1,500 jobs and 2,900 school enrolments across the PSP compared to the Reference Case.

This report details the results of the VITM 2056 Reference Case, and 2056 Project Case model runs. The strategic transport modelling assessment shows that traffic volumes noticeably increase in the Project Case as compared to the Reference Case on the network surrounding by the PSP. A comparison of the proposed road network and modelled Project Case volumes demonstrates that the proposed road classifications will be appropriate for the expected traffic volumes in the Merrimu PSP.

The volume-capacity plots do not identify any considerable issues in the study area as a result of the build-out of the PSP. However, it is noted that the volume-capacity ratio plots identify that the Western Freeway will be carrying additional traffic in the peak directions with the Merrimu PSP; this leads to it nearing its capacity in the Project Case. However, the speed on these sections of the Freeway do not deteriorate significantly demonstrating that traffic performance would likely not be materially affected, and that the extra traffic can be sufficiently accommodated.

No ELR Case Assessment

An additional Project Case scenario was assessed which does not contain the ELR, the scenario was compared to the 2056 Project Case to identify the potential impacts of the ELR not being developed.

The outputs from this scenario test demonstrate that the study area road network will be under significantly more strain in 2056 if the ELR is not built. Without the ELR, local roads such as Gisborne Road, Bacchus Marsh Road and Woolpack Road will be significantly more congested as the road network is not fully able to support proposed developments, including the Merrimu PSP and Parwan Employment Precinct.

The 2056 Reference Case demonstrated that some road sections within the study area, such as Gisborne Road, are close to capacity despite the Reference Case scenario assuming that the ELR is built. This suggests that without the ELR, the local network would be under considerable strain even if new developments such as Merrimu PSP were not to occur. The outcomes of the strategic modelling assessment indicate that the ELR is an important and essential component of the future 2056 transport network.

There are changes on Western Freeway, with some evidence of improvements in the VC ratio, which would be at the expense of more traffic and congestion on the local road network. In proximity to the PSP, if the ELR was not built, upgrades and further mitigation would need to be considered at locations such as Flanagans Drive and along Gisborne Road.

DISCLAIMER

This document and the services associated with it have been prepared for the Traffix Group / Stamoulis Property Group ("the Client") by Clarity Consult Pty Ltd ("Clarity"). The primary purpose of the report is to document the Strategic Transport Modelling Assessment for the Merrimu Precinct Structure Plan in accordance with the scope of services set out in the contract between Clarity and the Client.

Modelling and forecasts have been produced using the information and data as supplied by the Client and from other sources identified in this report. Except as otherwise stated in the report, Clarity has not verified or audited the information provided to us and we make no representation as to its accuracy and/or adequacy.

It is important to appreciate that Traffic and Transport Models and Forecasts are not a precise science and are only an indication of what might happen in the future and may not be achieved. They rely upon complex sets of data, assumptions and numerous factors which can influence actuals, many being beyond the control or reasonable foresight of the forecaster. Any forecast or other information contained in this report is based on the information provided by you, and obtained from the sources identified, and the assumptions you have agreed, and therefore is inherently subject to uncertainties. Inevitably, some assumptions used to develop our report will not be realised and unanticipated events and circumstances may occur.

Therefore, Clarity cannot provide any form of assurance that the forecasts documented in the Report will be achieved and no warranty should be implied as to the accuracy of the traffic forecasts.

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ACRONYMS & ABBREVIATIONS

DTP	Department of Transport and Planning
ELR	Eastern Link Road
ITA	Integrated Transport Assessment
PSP	Precinct Structure Plan
PTV	Public Transport Victoria
STMA	Strategic Transport Modelling Assessment
V/C	Volume Capacity Ratio
VITM	Victorian Integrated Transport Model
VPA	Victorian Planning Authority

1. Introduction

1.1. Background

A Precinct Structure Plan (PSP) is currently being developed for Merrimu. Clarity has been engaged to undertake a strategic modelling assessment of the proposed land use and future transport network for the Merrimu PSP.

The Merrimu Precinct will contain future residential areas, a northern and a southern 'village centre', four school sites, open spaces and a supporting road network.

The Victorian Integrated Transport Model (VITM) has been used to forecast the future traffic conditions without the development, as well as with the development in an ultimate 2056 horizon year. A strategic modelling assessment has been carried out to evaluate the traffic impacts of the development.

1.2. Project Objective

The project involves preparing a Strategic Transport Modelling Assessment (STMA) to examine traffic impacts of the proposed development of the PSP and understand future transport planning requirements. It includes a review of the validation of the VITM 2018 Base Year model, modelling of the VITM 2056 Reference Case, and development of two future (2056) project-specific scenario models. One project scenario is inclusive of the proposed Eastern Link Road (ELR), whilst the other scenario assumes that this road project is not developed.

An Integrated Transport Assessment (ITA) will also be undertaken to provide recommendations for the Merrimu PSP to support the development. This will involve a detailed background review and understanding of the existing conditions and draft PSP. The ITA is being carried out by Traffix Group. The findings from the STMA will be considered to develop recommendations for the transport networks within the study area.

1.3. Study Area

The study area is shown in red in Figure 1; it covers all of Bacchus Marsh and the western side of Melton. All major routes are included, especially to the south of the PSP area where there is more route choice.

All transport significant impacts from the strategic modelling assessment are reported on, with a focus on the defined study area.

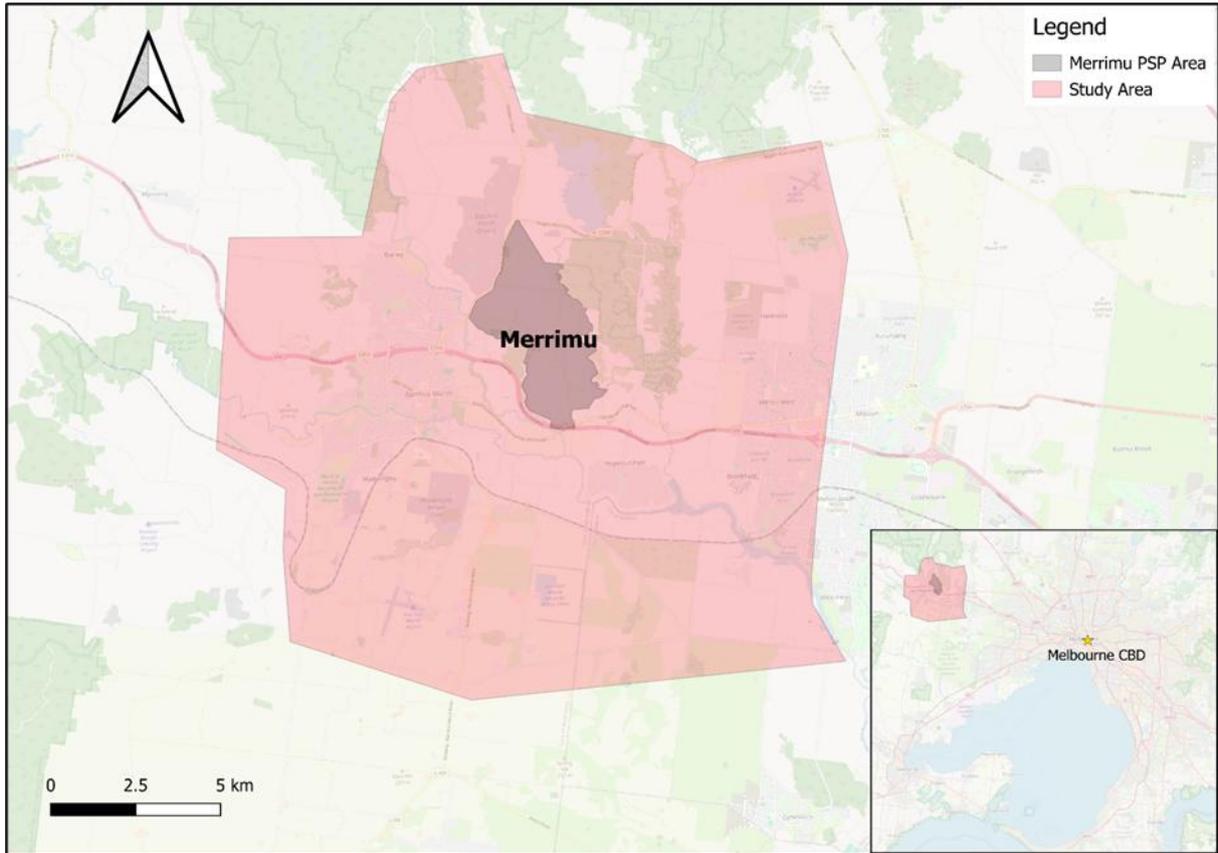


Figure 1: Merrimu STMA Study Area

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2. Model

2.1. VITM Base Model

The latest version of VITM was obtained from the Department of Transport and Planning (DTP) in April 2025 for this project. The version received and used for the project is VITM25_v1_01.

Considering the vision for the Merrimu PSP and proposed staging of the development (as shown in Figure 15), the VITM zone system inside the study area was disaggregated so that it will provide traffic forecasts at a finer level of detail. The disaggregated zones, new zone connectors and local network within the Merrimu PSP area are shown in Figure 2 and Figure 3.

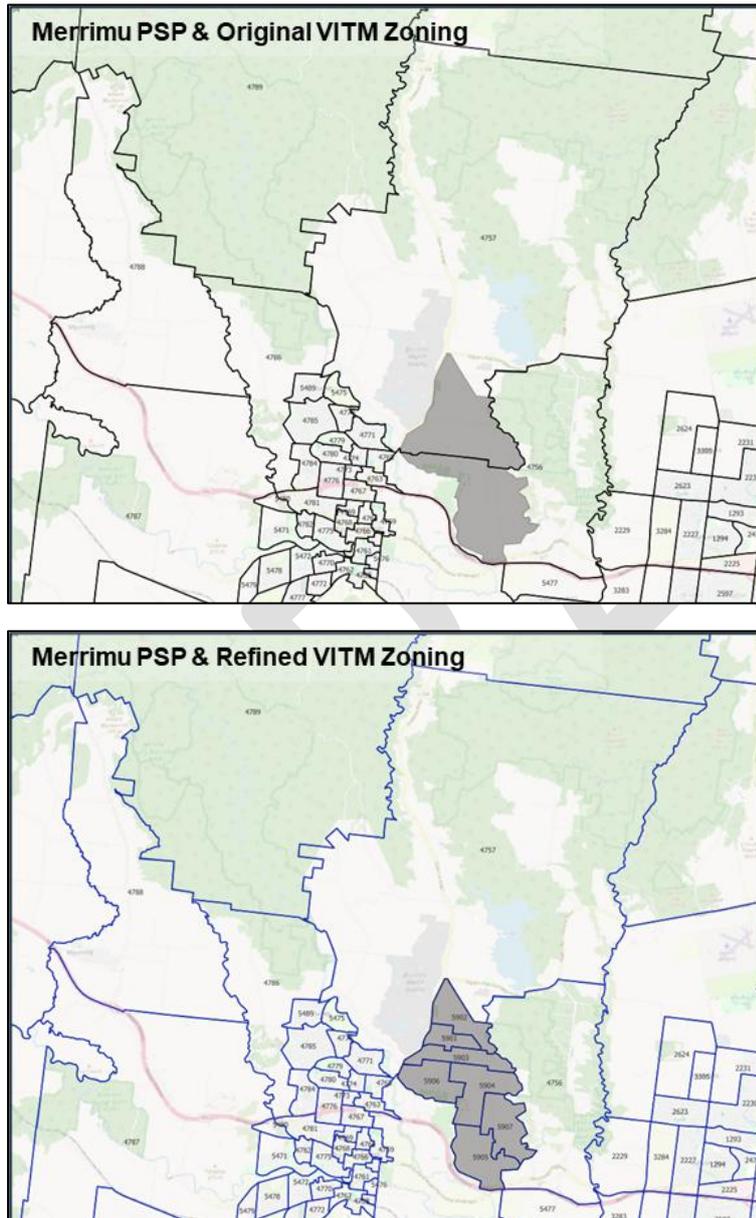


Figure 2: Study Area VITM Zones: Original Zones and Refined Zones

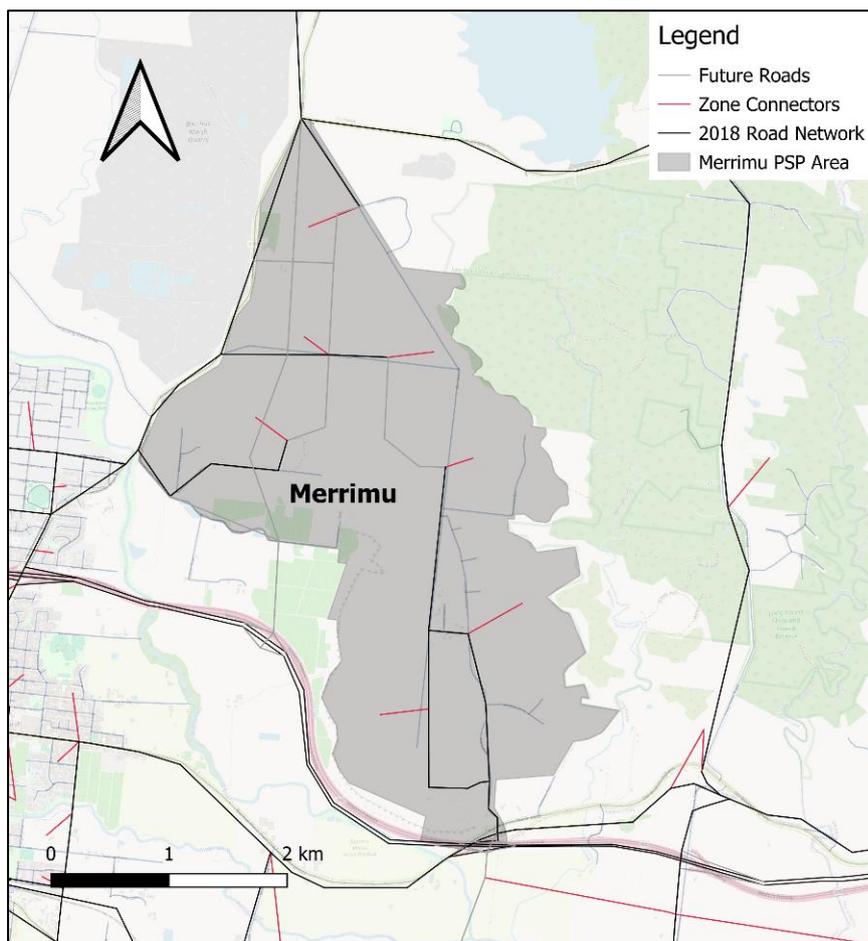


Figure 3: Amended Merrimu Road Network and Centroid Connectors

In addition, some road network amendments (link classifications, speeds, lanes) were made following a review of the Base Year VITM and validation check. No changes were required to the public transport network or services in the area.

The project model was validated to a 2018 base year and deemed fit for purpose for assessing the transport impacts in and around the Merrimu PSP. Full details of the specific network amendments, validation review and performance can be found in the following report:

Merrimu PSP – Strategic Modelling Transport Assessment - Transport Model Validation Report, Clarity, 4 December 2025

3. 2056 Reference Case Model

The 2056 horizon year is the furthest year into the future that is available with the VITM suite of models. For PSPs, it is standard practice to assess the road network performance for this timeframe, which is a 30-year horizon.

Land use and network development information within the 2056 “Central Case” VITM received from DTP was the starting point for producing a 2056 Reference Case model for this assessment. The provided VITM was checked to ensure it is logical and aligns with known future developments and network changes in the local area around Melton and Bacchus Marsh.

Checks on the land use (demographics) and network inputs were carried out in consultation with the DTP VITM Modelling Team, Moorabool Council and VPA to ensure the most suitable assumptions were included. These checks and the amendments to the provided inputs are documented in this section.

Traffic performance outputs for the 2056 reference case model are presented at the end of this section. They include plots showing volumes, speeds and volume-to-capacity ratios for key roads in the study area.

3.1. Future Transport Network

Checks have been carried out on key transport infrastructure projects in the study area and wider region. The key projected changes to the transport network from the Base Year are as follows:

- Western Freeway Upgrade
- Melton Electrification Project
- Eastern Link Road (ELR) – Bacchus Marsh Bypass

3.1.1. Western Freeway Upgrade

The Western Freeway Upgrade is a complex and large project. The status and expected completion of individual segments of the project are different from each other; Table 1 summarises what is included in the “Central Case” VITM. These assumptions were clarified with the DTP VITM Modelling team and it was confirmed that the coding represents the most likely future situation. No changes were made to the VITM assumptions for this specific project.

Table 1: Western Freeway VITM Assumptions

VITM Project ID	Project Description	Scope	Status	“Central Case” VITM Assumption
1007	Western Freeway - Coburns Rd to Bacchus Marsh Rd	Speed upgrade (90km/h to 110km/h)	Completed	Included from 2031 onwards
9011	Western Freeway - Ballarat Rd to Hopkins Rd	Widening (6 lanes)	Planned	Included from 2036 onwards
9010	Western Freeway, Interchange - Mt Cottrell Rd	New interchange (half diamond, east ELRy ramps)	Planned	

10103	Western Freeway - Hopkins Rd to Ferris Rd	Widening (8 lanes)	Planned	
9007	Western Freeway - M80 to Ballarat Rd	Widening (6 lane motorway)	Planned	
10104	Western Freeway - Ferris Rd to Harkness Rd	Widening (8 lanes)	Planned	Included from 2046 onwards
10105	Western Freeway - Harkness Rd to Old Western Freeway	Widening (6 lanes)	Planned	
9009	Western Freeway - Leakes Rd to Mt Cottrell Rd	Widening (6 lanes)	Planned (beyond 2056)	
6007	Western Freeway - Hopkins Rd to Leakes Rd	Widening (6 lanes)	Planned (beyond 2056)	
9029	Western Freeway - Mt Cottrell Rd to Coburns Rd	Widening (6 lanes)	Planned (beyond 2056)	Not included in any forecast years
7165	Western Freeway - Interchange at Bulmans Road	Interchange (full diamond)	Legacy / deferred	
7309	Western Freeway - Paynes Rd	Remove direct motorway access	Legacy / deferred	

3.1.2. Melton Electrification Project

The Melton Electrification Rail Project is assumed to be in the “Central Case” VITM from 2036 onwards, and as such will be included within the Reference Case 2056 model. The assumptions, in terms of the project coverage and project future rail services were checked with the DTP VITM Modelling team and it was confirmed that the coding represents the most likely future situation. No changes were made to the VITM assumptions for this specific project.

3.1.3. Eastern Link Road (ELR)

The ELR alignment in the existing VITM is simplified and considered out-of-date, as such Clarity have re-coded this for the Merrimu project models. The refined alignment is based on documentation available from Transport Victoria/DTP (Figure 4)¹ and can be seen in Figure 5.

The ELR is assumed to be completed from 2046 onwards in the “Central Case” VITM.

¹ <https://transport.vic.gov.au/news-and-resources/projects/bacchus-marsh-eastern-link-road-planning-study>



Figure 4: Transport Victoria: Proposed ELR Alignment

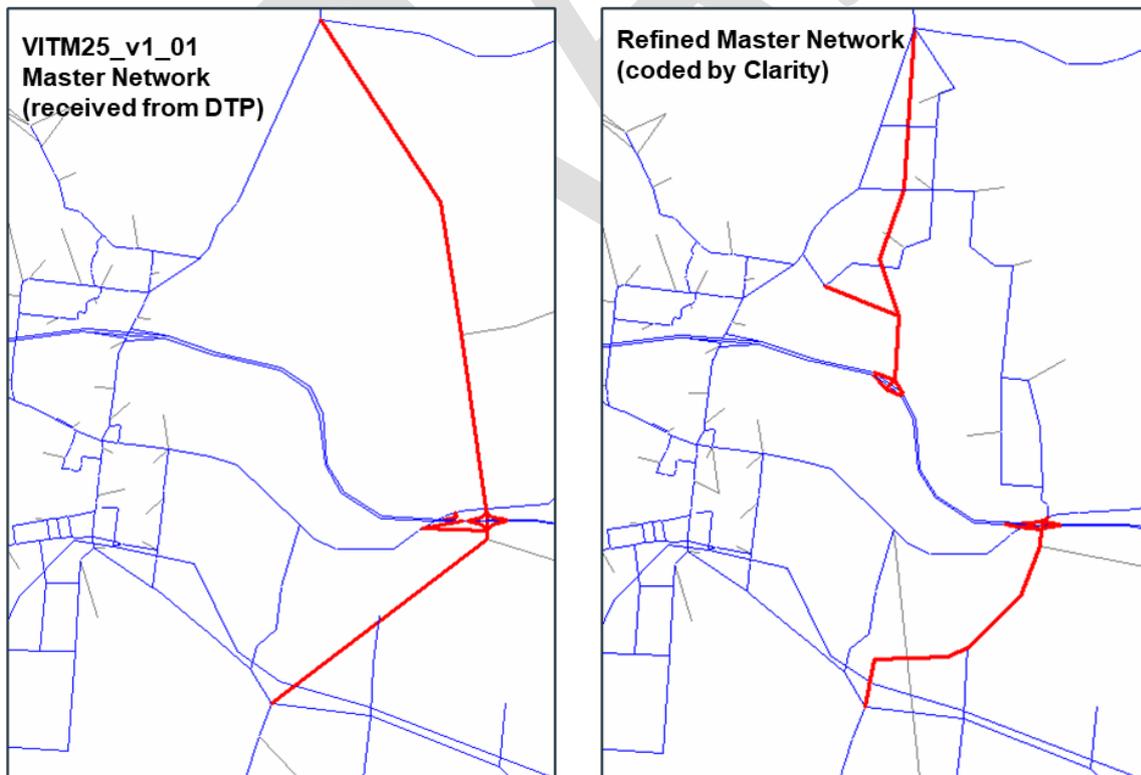


Figure 5: Original and Refined ELR Coding in the VITM

3.2. Future Land Use

The demographic inputs from the 2056 Reference Case are the default inputs received from DTP and used in VITM for forecasting. The inputs have been thoroughly reviewed to ensure they are appropriate and reflective of the expected growth in the study area over the next 30 years and some amendments were made.

3.2.1. Bacchus Marsh Housing Growth Review

Checks have been carried out on key Bacchus Marsh residential locations, where significant growth is expected. Table 2 summarises the land use changes assumed in the latest version of VITM (VITM25_v1_01), provided by DTP for this project. Key observations are that:

- There is significant growth in employment in Bacchus Marsh and there is moderate growth in population to 2056 in Bacchus Marsh.
- The households / population appears to rise between 2018 and 2031 and then continue growing a slower level to 2056.

Table 2: Bacchus Marsh Housing Growth in the VITM

Year	Households (Population)	Households (Population) Growth from 2018	Total Employment	Total Employment Growth from 2018
2018	7,359 (19,154)	-	6,526	-
2031	9,010 (22,590)	+1,651 (3,436)	12,798	+6,272
2041	9,795 (22,750)	+2,436 (3,595)	18,086	+11,560
2051	10,444 (23,592)	+3,085 (4,438)	21,878	+15,352
2056	10,865 (24,283)	+3,505 (5,129)	22,954	+16,428

Table 3 shows growth in specific zones in Maddingley, Bacchus Marsh (Figure 6), where housing developments are currently being built. It shows that a significant uplift is forecast between 2018 and 2031.

Table 3: Maddingley Zones - Housing Growth in the VITM

Year	Households (Population)	Households (Population) Growth from 2018	Total Employment	Total Employment Growth from 2018
2018	24 (70)	-	9	-
2031	345 (823)	+321 (753)	39	+30
2041	441 (964)	+417 (893)	51	+42
2051	496 (1,047)	+473 (977)	62	+52
2056	788 (1,963)	+764 (1,893)	324	+315

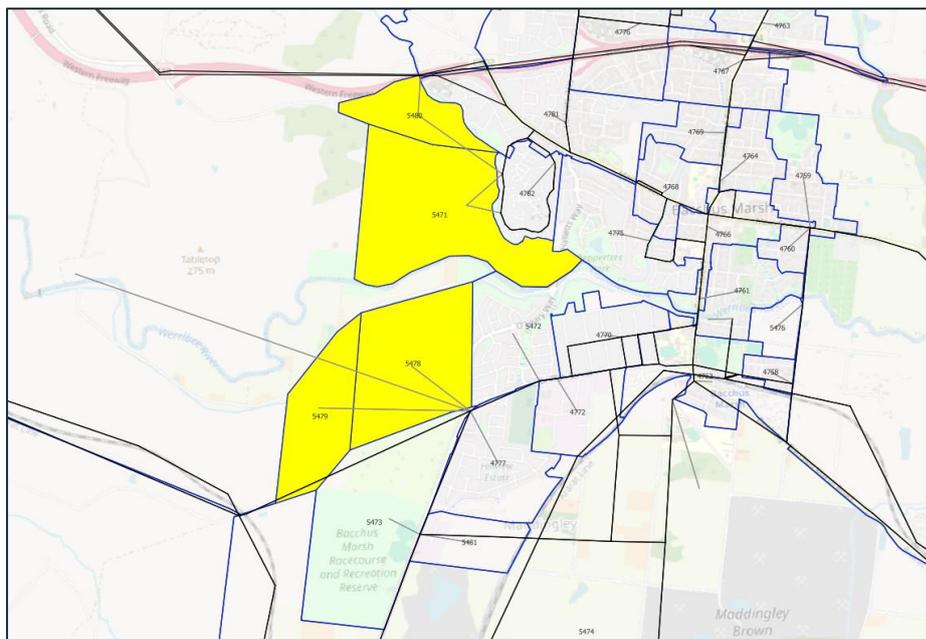


Figure 6: Maddingley Housing Development Zones

After consultation with Moorabool Council, DTP and VPA, these assumptions were agreed to be appropriate and no changes were made to this aspect of the demographic inputs.

3.2.2. Parwan Employment Precinct

Checks were carried out on key local employment locations across the study area and wider region. This review identified that the demographic inputs received did not align with Moorabool Council expectations of growth at the Parwan Employment Precinct.

To address this discrepancy, advice was sought from Moorabool Council on the magnitude and types of employment associated with this development. This information was processed into the VITM by Clarity.

Council guidance suggested that there will be around “1,500 jobs at full build out of the Parwan Employment Precinct” and these “will be a mix of agri-business, light and medium industrial jobs”. The “Parwan Employment Precinct Scoping Study Urban Enterprise, July 2022” (available from the VPA website)² was provided for more granularity on the expected job types. It was assumed that development would begin build out beyond 2031 and full build out would happen by 2051.

Table 4 shows the changes made to demographic inputs for this specific Precinct.

² <https://vpa.vic.gov.au/project/parwan-employment/>

Table 4: Parwan Employment Precinct – Refinements to the VITM Demographic Inputs

PEP (Zone 4783)	Total Employment (DTP assumptions)	Total Employment Growth from 2018 (DTP assumptions)	Total Employment (Refined assumptions)	Total Employment Growth from 2018 (Refined assumptions)
2018	313	-	313	-
2031	341	+28	341	+28
2041	353	+40	1,103	+790
2051	364	+51	1,864	+1,551
2056	369	+56	1,869	+1,556

3.2.3. New Melton Hospital and General Melton Land Use

The review also identified that the demographic inputs received did not sufficiently reflect the development of the New Melton Hospital, which is situated just to the east of the study area but is expected to be significant local employer in the future.

In the VITM provided by DTP, there is a small growth in hospital related jobs (IC17) in the New Melton Hospital zone. However, this uplift appears too low and suggests that the New Melton Hospital is not fully represented. The new hospital land use was discussed with DTP, who acknowledged that the Melton residential land use, as well as the hospital land use required updating. Subsequently, DTP provided an updated set of land use files with updated land use in the Melton area, including for the New Melton Hospital. This was adopted for use on the project and updated IC17 employment numbers for the New Melton Hospital are shown in Table 5.

Table 5: New Melton Hospital – Refinements to the VITM Demographic Inputs

New Melton Hospital (Zone 4783)	EMP_IC17 (DTP assumptions)	EMP_IC17 Growth from 2018 (DTP assumptions)	EMP_IC17 (Refined assumptions)	EMP_IC17 Growth from 2018 (Refined assumptions)
2018	1	-	1	-
2031	20	+19	6,408	+6,407
2041	226	+225	6,613	+6,612
2051	466	+465	6,853	+6,852
2056	522	+521	6,910	+6,909

3.3. Future Transport Network Performance

To assist in the assessment of transport needs in the area, the performance of the 2056 Reference Case model was assessed at a high level.

The key outputs provided are:

- **Traffic Volume:** demonstrates the traffic volumes by direction on key roads, for the AM and PM peak periods, as well as across a typical weekday.
- **Volume/Capacity (V/C) ratio:** demonstrates the traffic volume relative to the theoretical capacity for key roads, this indicates how close road sections are to reaching their capacity, giving an indication as to the level of congestion that would occur. Table 6 displays the V/C bands and what they represent for network performance.

Table 6: Volume-Capacity Ratio Bands

V/C Ratio	Description
< 0.6	The road has available capacity, and traffic flow is generally smooth.
0.6 - 0.8	The road is starting to approach its capacity, limited congestion may occur.
0.8 - 1	The road is operating at or near to its capacity, congestion is likely to occur.
1 - 1.2	The road is operating beyond its capacity, leading to significant congestion and delays.
> 1.2	The road is operating considerably beyond its capacity, leading to considerable congestion, delays and potentially gridlock.

Figure 7 shows daily traffic volume, whilst Figure 8 and Figure 9 show volumes for the AM and PM peak periods respectively. The 2056 Reference Case network shows that the roads carrying the most traffic in the study area are the Western Freeway and the southern section of Eastern Link Road. Other arterial roads also carry significant volumes of traffic such as Bacchus Marsh Road, Gisborne Road and Geelong-Bacchus Marsh Road.

Figure 10 and Figure 11 show Volume-Capacity Ratio plots for the AM and PM peak periods respectively. The plots show that by 2056 a number of roads are beginning to approach capacity (yellow) or are operating at or near to capacity (orange). Bacchus Marsh Road and Gisborne Road near Bacchus Marsh town centre are nearing capacity, as well as the section of Gisborne Road, north of the Western Freeway.

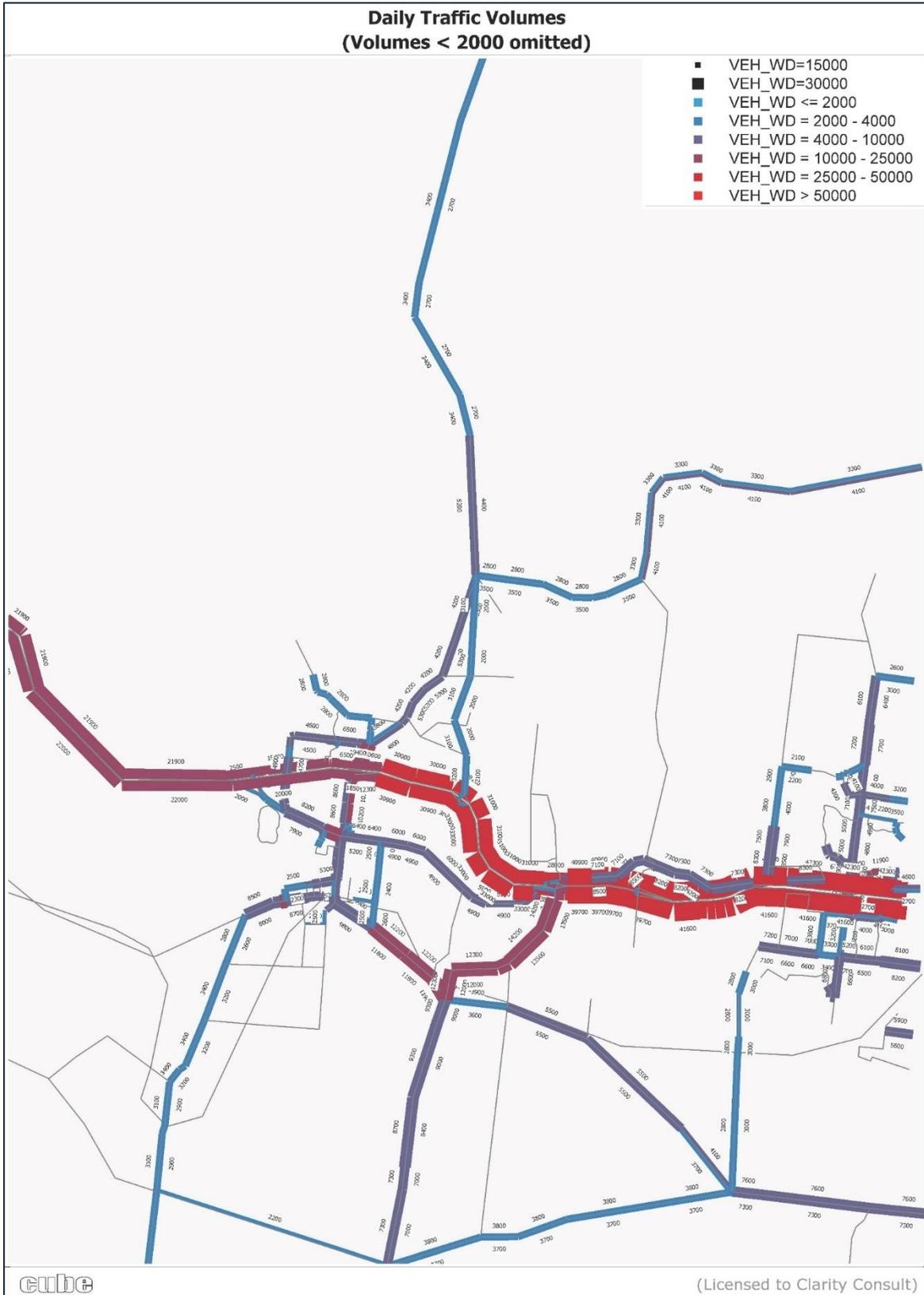


Figure 7: 2056 Reference Case - Daily Traffic Volumes – Study Area

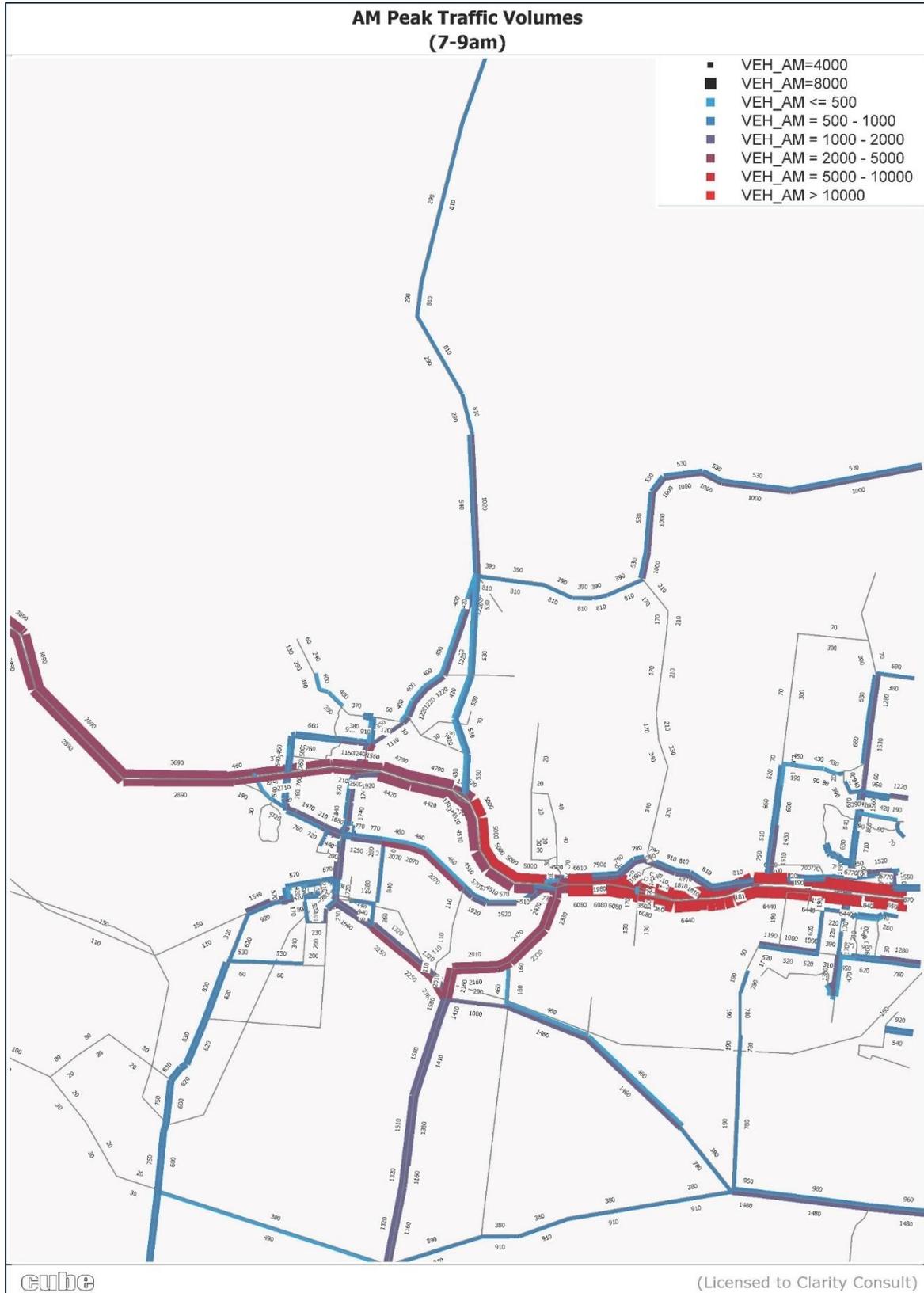


Figure 8: 2056 Reference Case – AM Peak Period Traffic Volumes – Study Area

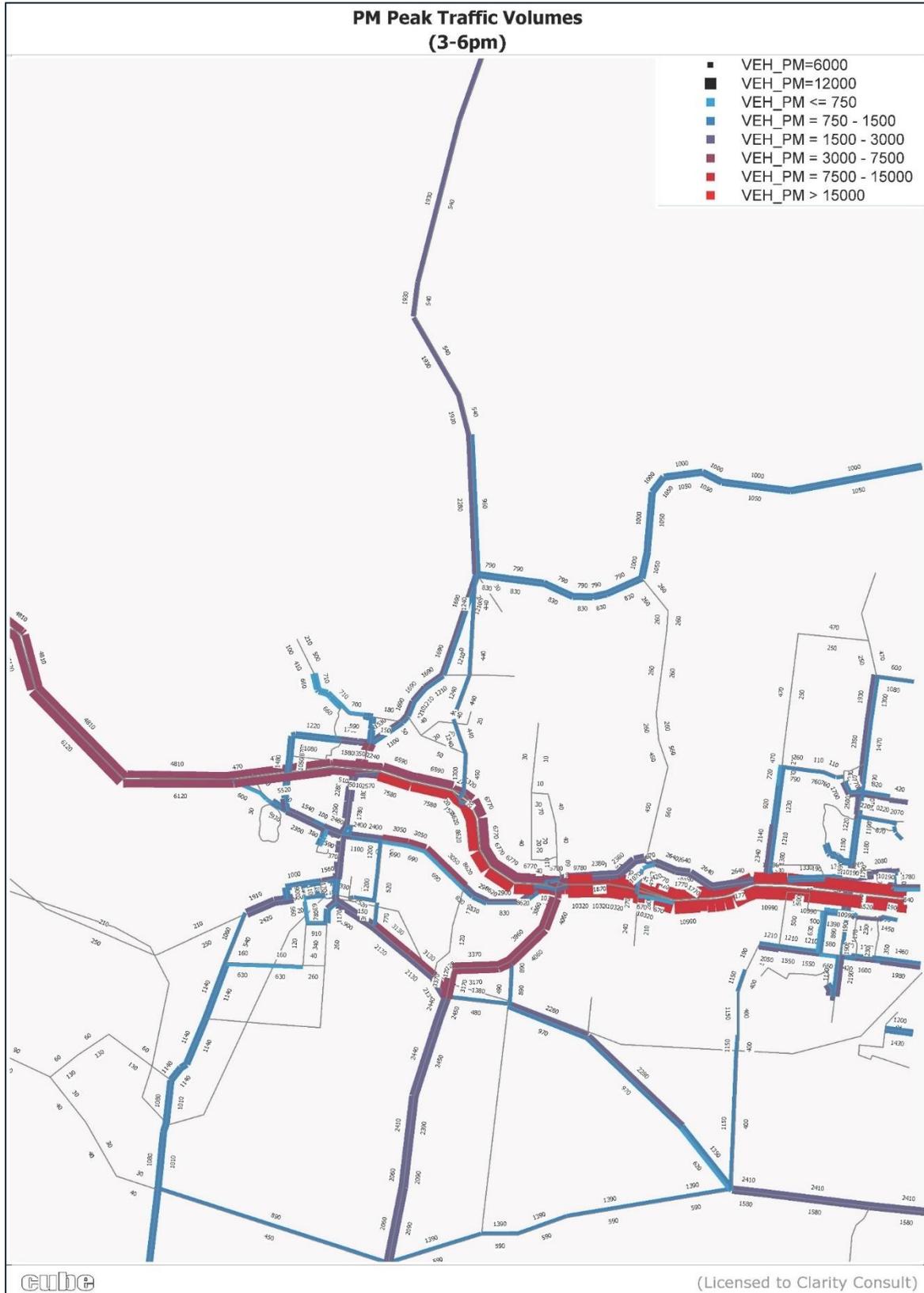


Figure 9: 2056 Reference Case – PM Peak Period Traffic Volumes – Study Area

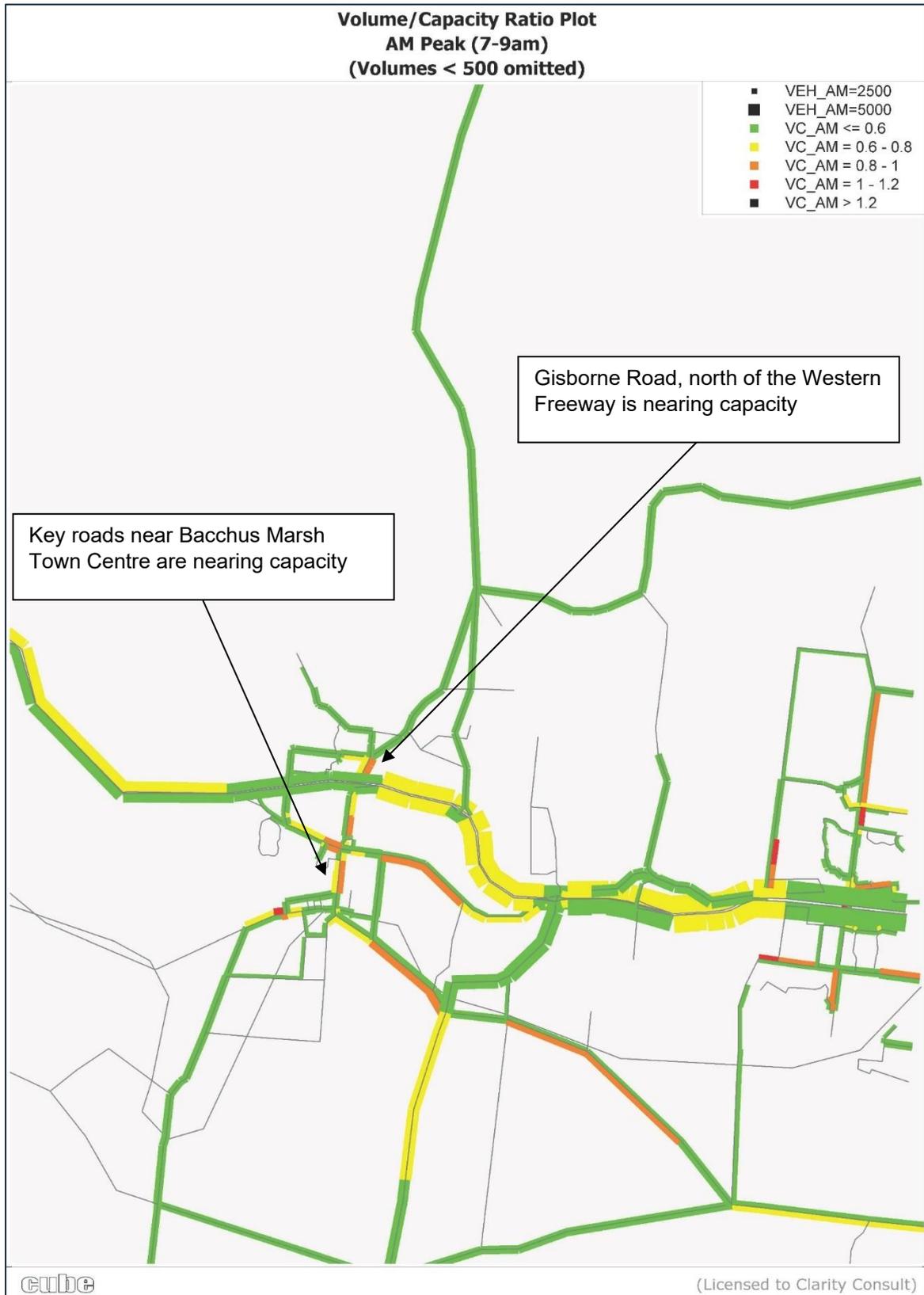


Figure 10: 2056 Reference Case – AM Peak Period Volume-Capacity Plot – Study Area

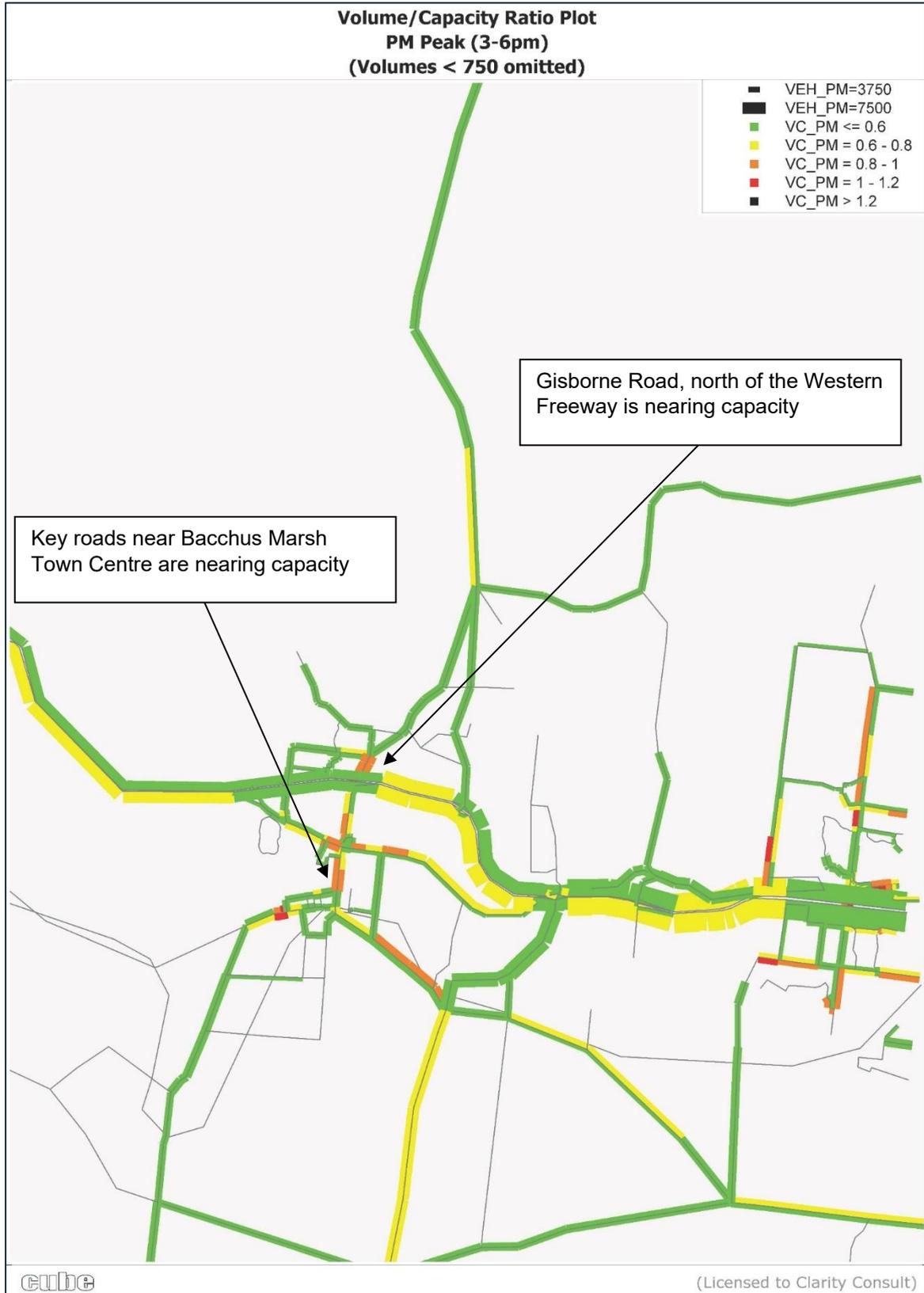


Figure 11: 2056 Reference Case – PM Peak Period Volume-Capacity Plot – Study Area

4. 2056 Project Case Model

This section describes the 2056 VITM Project Case which includes updated land use and transport networks for the Merrimu PSP. These results can be compared back to the 2056 Reference Case described in the previous section.

The latest (May 2025) Merrimu PSP Precinct Structure Plan³ has been used to inform what the development will look like at full build-out in 2056. Figure 12 shows the components of the model that have been updated for the Project Case.

In February 2026, further updates were included in the modelling assumptions to reflect the latest planning information. This includes the addition of an extra 1,405 dwellings as part of the PSP, mostly situated in the Long Forest area and some located around Wells Road & O'Connell Road. Additionally, the East-West Connector Road adjacent to the quarry was removed from the Project Case with the ELR included.

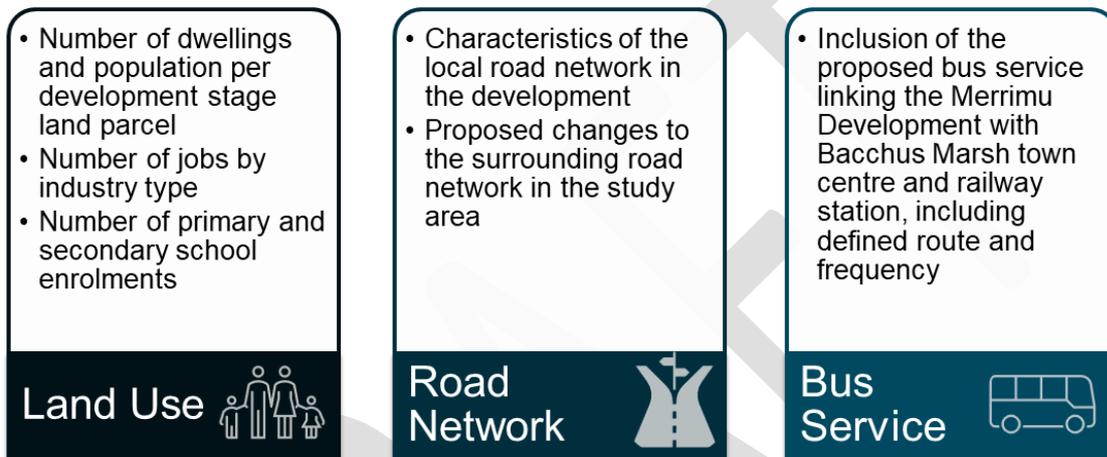


Figure 12: Components of the VITM Updated for the 2056 Project Case Model

4.1. Project Case Transport Network

The 2056 Reference Case transport network has been updated to align with the Street Network Plan within the Merrimu PSP and also based on further guidance provided by Traffix Group and Ethos Urban, which includes proposed changes to the arterial network in the vicinity of the Merrimu PSP, as shown in Figure 13. This includes some speed limit changes on arterial roads around the development, such as Gisborne Road and Bacchus Marsh Road.

In February 2026, further updates were included in the modelling assumptions to reflect the latest planning information. This includes removing the East-West Connector Road adjacent to the quarry from the Project Case with the ELR included.

Figure 14 shows the 2056 Project Case network in the study area, including centroid connectors.

³ Merrimu Precinct Structure Plan – May 2025

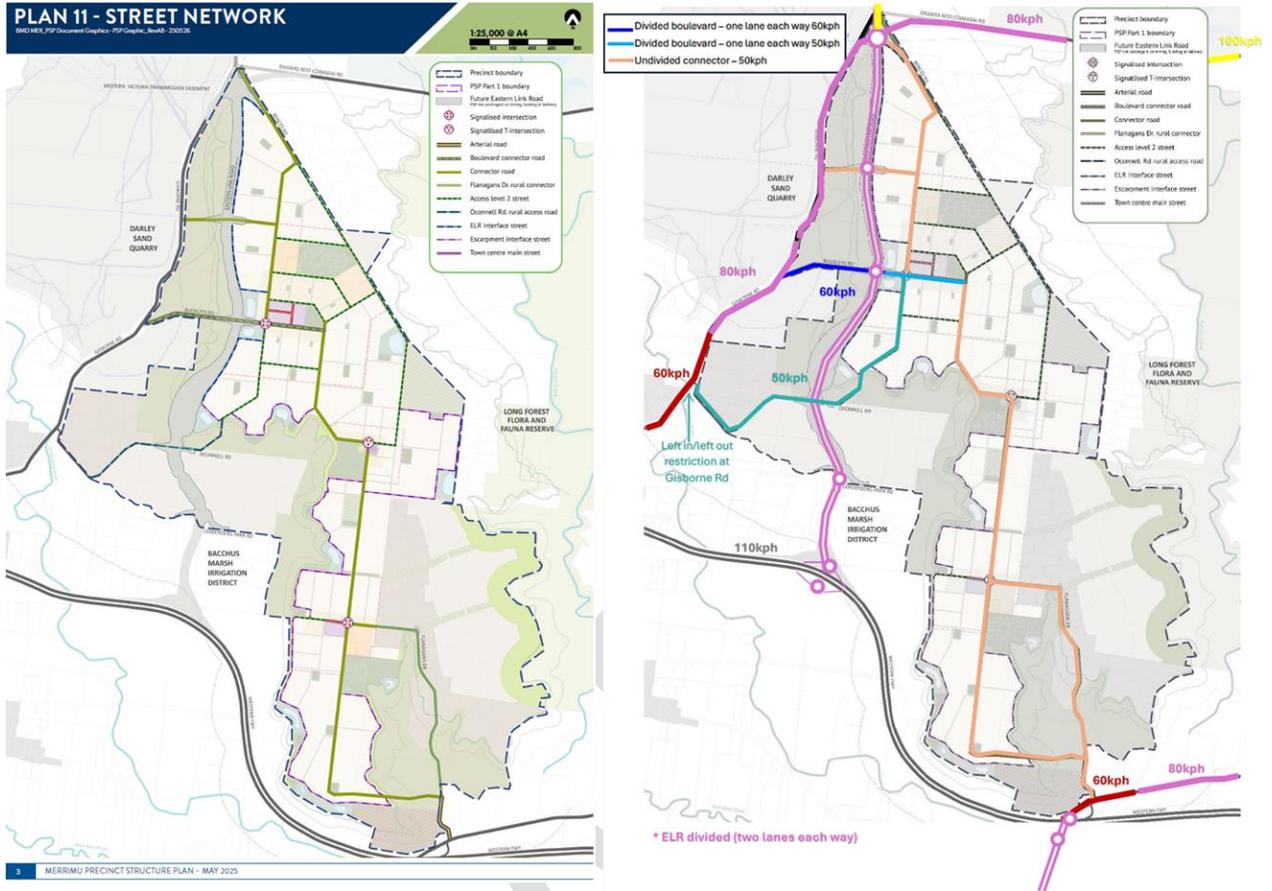


Figure 13: Proposed Merrimu PSP Street Network

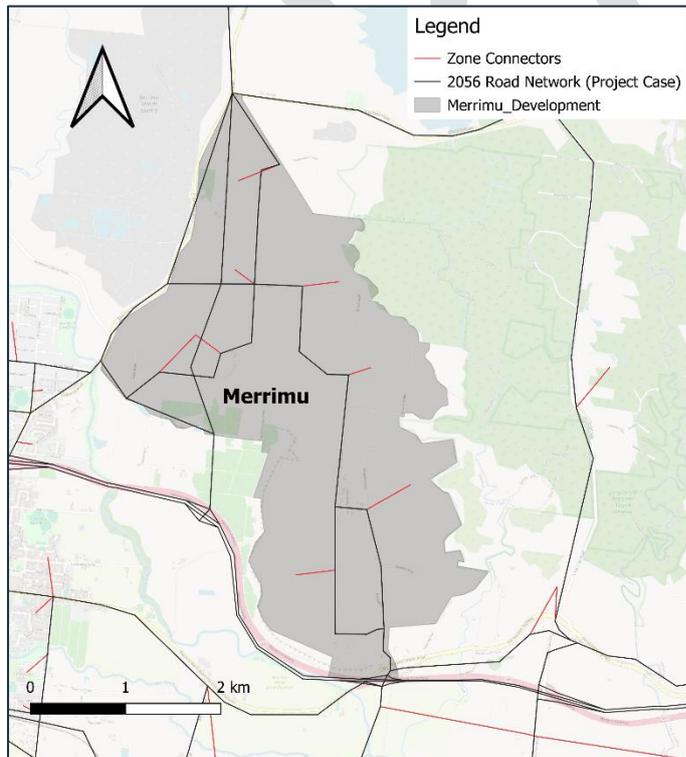


Figure 14: 2056 Project Case Merrimu PSP Road Network - Links and Centroid Connectors

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4.2. Project Case Land Use

Updated demographic inputs were produced for the 2056 Project Case to represent the changes associated with the Merrimu PSP. Table 7 summarises the population, enrolments and employment assumptions for the Reference Case and Project Case.

Table 7: Summary of Population, Enrolments and Employment for Merrimu PSP by model zone

Model Zone	2056 Reference Case 2056			2056 Project Case		
	Population	Enrolments	Employment	Population	Enrolments	Employment
5901	3	-	-	3,220	-	325
5902	62	-	4	3,710	1,350	325
5903	3	-	-	2,040	-	600
5904	62	-	4	6,348	1,100	124
5905	94	-	6	3,870	450	136
5906	94	-	6	1,367	-	6
5907	94	-	6	4,293	-	6
TOTAL	412	-	26	24,848	2,900	1,522

The zone system established for this project aligns with the Merrimu PSP Staging Plan, which is shown in Figure 15, alongside the proposed Future Urban Structure.

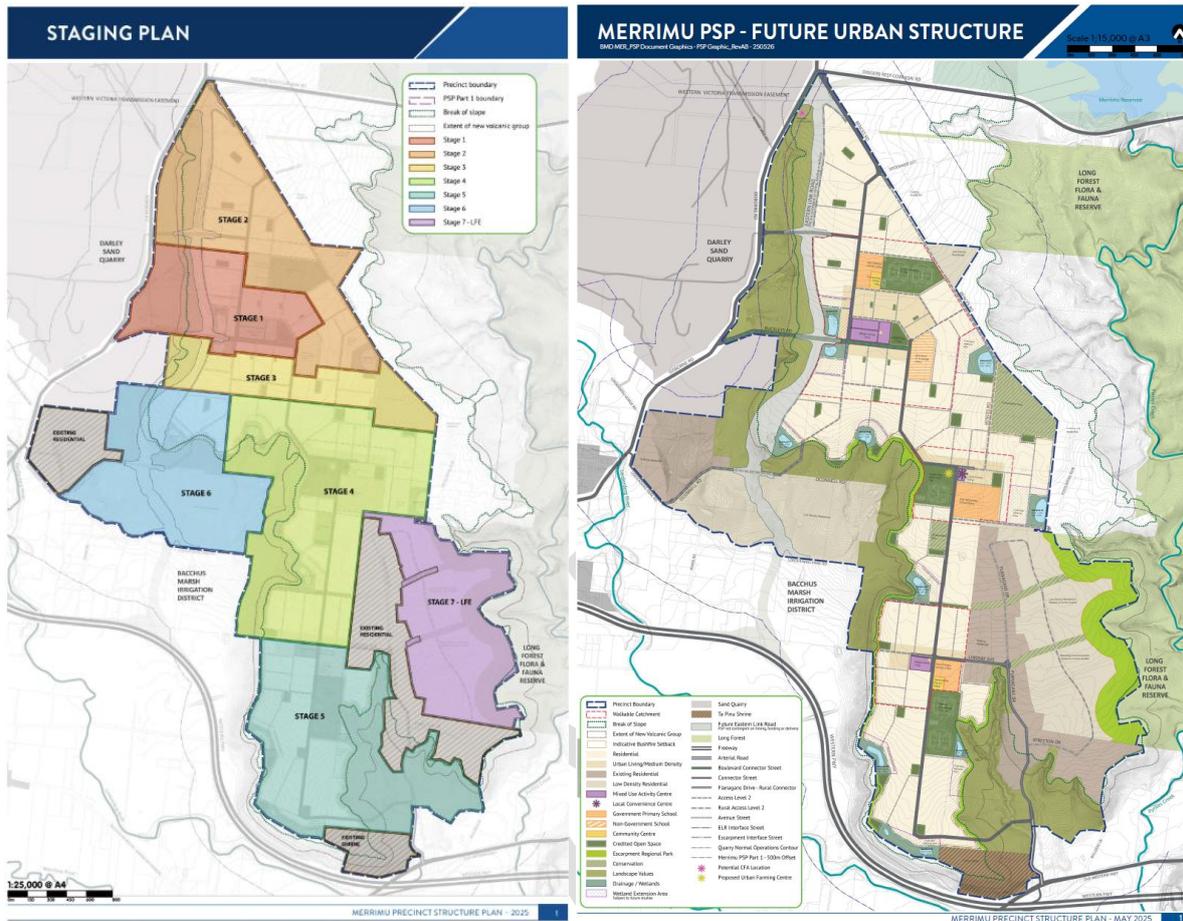


Figure 15: Merrimu PSP – Staging Plan and Future Urban Structure

4.2.1. Population Based Demographics

Dwelling assumptions for the Merrimu 2056 Project Case were taken from the Merrimu PSP Staging Yield Estimates (dated 26th May 2025)⁴. Table 8 below shows the estimated number of dwellings for each stage.

In February 2026, further updates were included in the modelling assumptions to reflect the latest planning information. This includes the addition of an extra 1,405 dwellings as part of the PSP, mostly situated in the Long Forest area and some located around Wells Road & O’Connell Road.

For the VITM a further breakdown of dwellings into population is needed. The dwelling to population ratio was taken from the existing zone, with this ratio falling within the ratio range (2.8 to 3.5) estimated for the PSP. The population structure in terms of age group proportions and number of dependents within each age group is also required. To determine the population structure, it was deemed more appropriate to pivot off a comparable zone; a zone containing new residential development in Maddingley, Bacchus Marsh was chosen.

⁴ Merrimu Precinct Structure Plan – Staging Yield Estimates – May 2025
BMD MER_PSP Document Graphics – PSP Graphic_RevAB - 250526

Table 8: Merrimu PSP - Population Cumulative Yield by Stage

Cumulative Yield	Estimated Dwellings	Estimated Residents
Stage 1	1,030	3,220
Stage 2	2,198	6,930
Stage 3	2,850	8,969
Stage 4	4,863	15,318
Stage 5	6,072	19,187
Stage 6	6,480	20,554
Stage 7 LFE	7,825	24,848

To further visualise the additional population; a 2056 Project Case population bubble plot is provided in Figure 16. This shows additional population between 2018 and 2056 within the Merrimu PSP (dark green) and more broadly across the study area (light green).

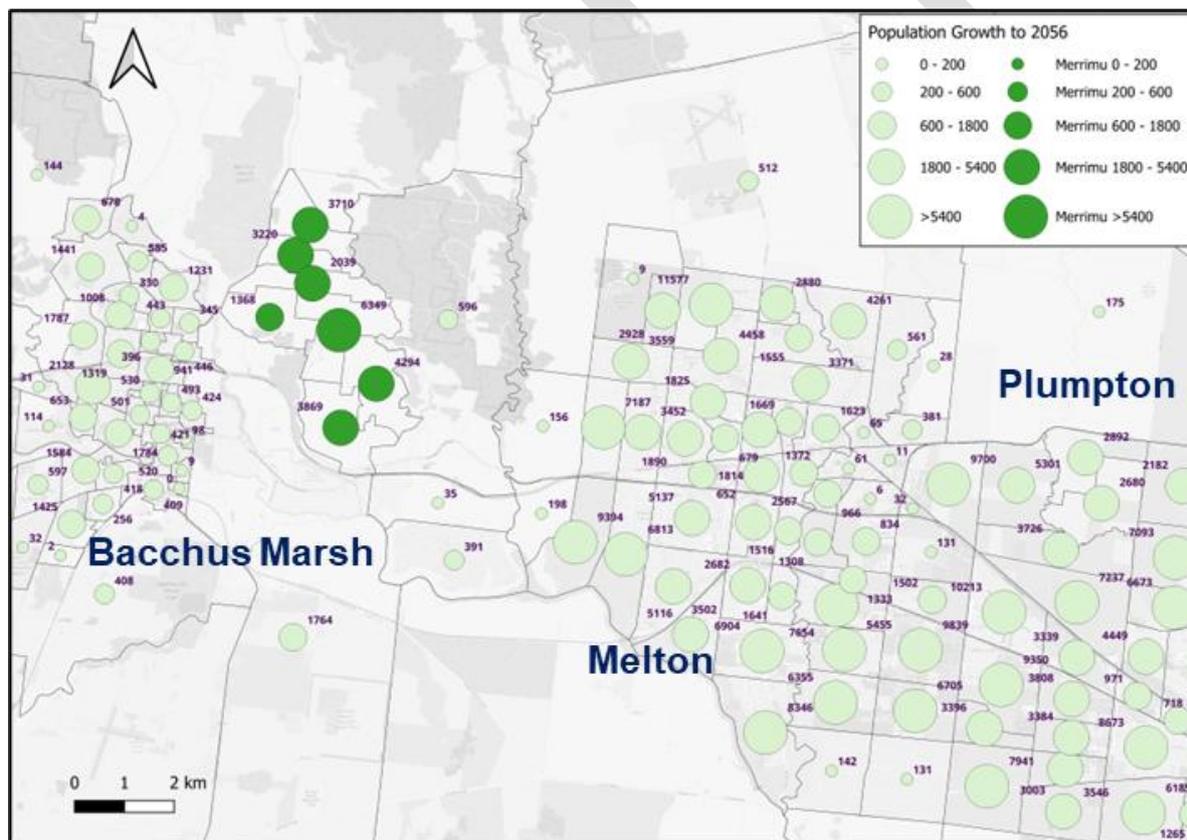


Figure 16: 2056 Project Case – Population Bubble Plot

4.2.3. Employment Demographics

Employment assumptions for the Merrimu development were provided to Clarity and are based on Merrimu PSP assumptions. Table 9 shows the estimated number of jobs for each development stage.

Table 9: Merrimu PSP – Employment (FTEs) by Stage

Stage	Activity Centre	Community Centre	Education	Club	Urban Farm
Stage 1	250	25	0	50	0
Stage 2	250	0	70	0	0
Stage 3	600	0	0	0	0
Stage 4	20	0	80	0	20
Stage 5	70	20	40	0	0
Stage 6	0	0	0	0	0
Stage 7 LFE	0	0	0	0	0
TOTAL	1,190	45	190	50	20

The jobs shown in Table 9 were split into the appropriate VITM industry classes. For Activity Centre employment, it was assumed that there would be a split of job types as shown in Figure 18.

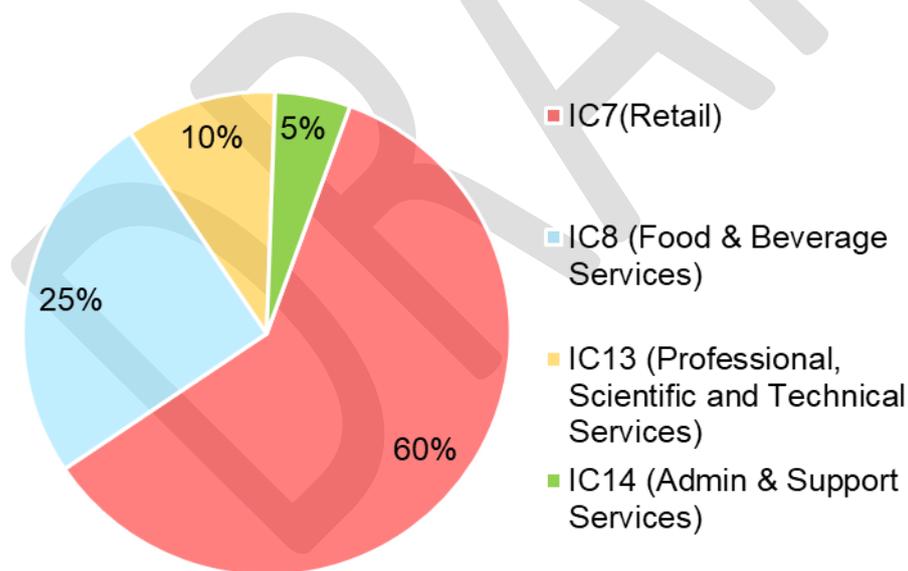


Figure 18: Job Type Breakdown Assumptions for the Activity Centres

To further visualise the new job additions; a 2056 Project Case employment bubble plot is provided in Figure 19. This shows additional jobs between 2018 and 2056 within the Merrimu PSP (dark red) and more broadly across the study area (light red).

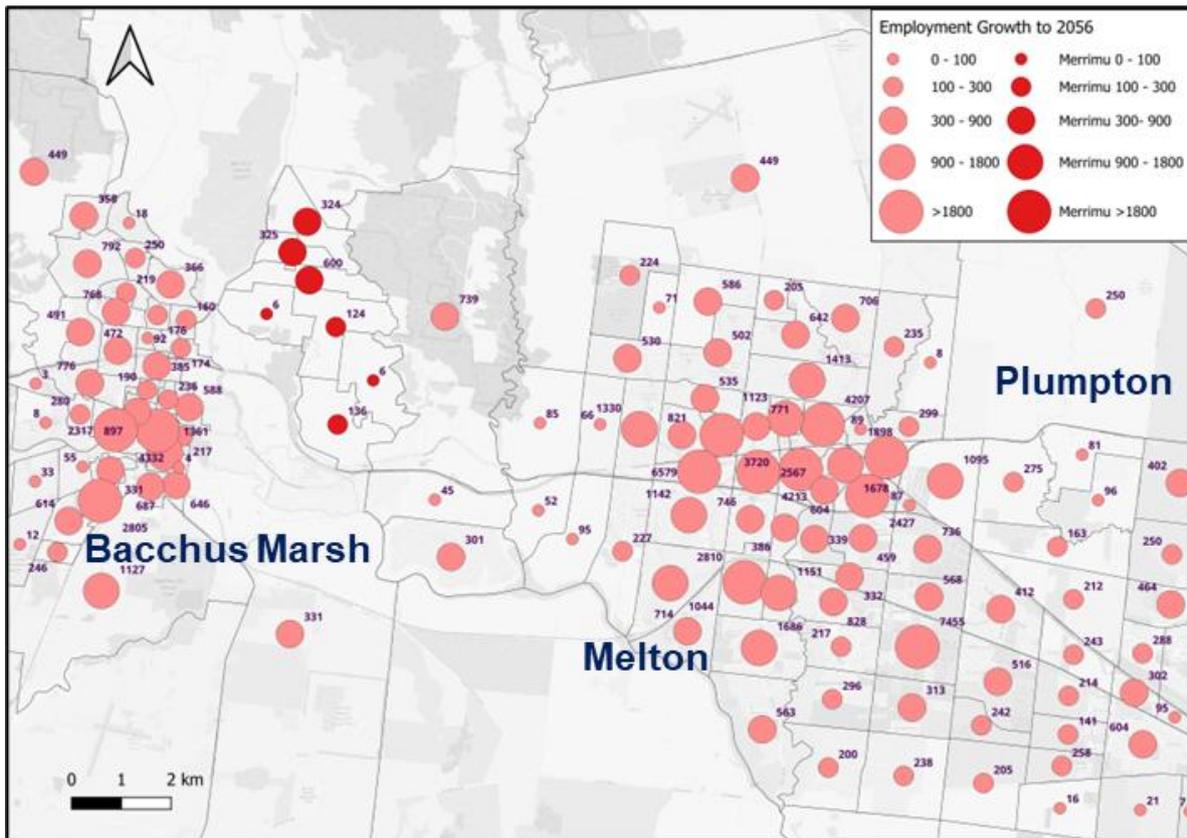


Figure 19: 2056 Project Case – Employment Bubble Plot

The PSP will also support hybrid work for Merrimu residents by providing flexible working spaces within the neighbourhood centres, as well as by designing dwellings with home-office potential. This will reduce traffic volumes, particularly in peak periods. However, these aspects are not considered with the VITM modelling as they cannot be accurately reflected within the land use inputs. Instead, this strategic modelling assessment should be considered as conservative, with there being opportunities for the Merrimu PSP to significantly reduce traffic generation using these mechanisms.

4.3. Project Case New Bus Service

From Stage 1 of the Merrimu build-out a developer sponsored bus link to Bacchus Marsh town centre and the railway station will be provided. As the Merrimu PSP progresses this will likely transit into a PTV operated bus service. It will likely be a circular bus service, running through the key connector road network within the PSP. The assumed route and VITM coding for the 2056 Project Case is shown in Figure 20.

It has been assumed that this bus service will run every 20 minutes in the AM and PM peak periods, and every 40 minutes in the interpeak and evening periods. The bus service would be timed to meet scheduled trains at Bacchus Marsh Station. The fare system used aligns all other standard PTV bus services.

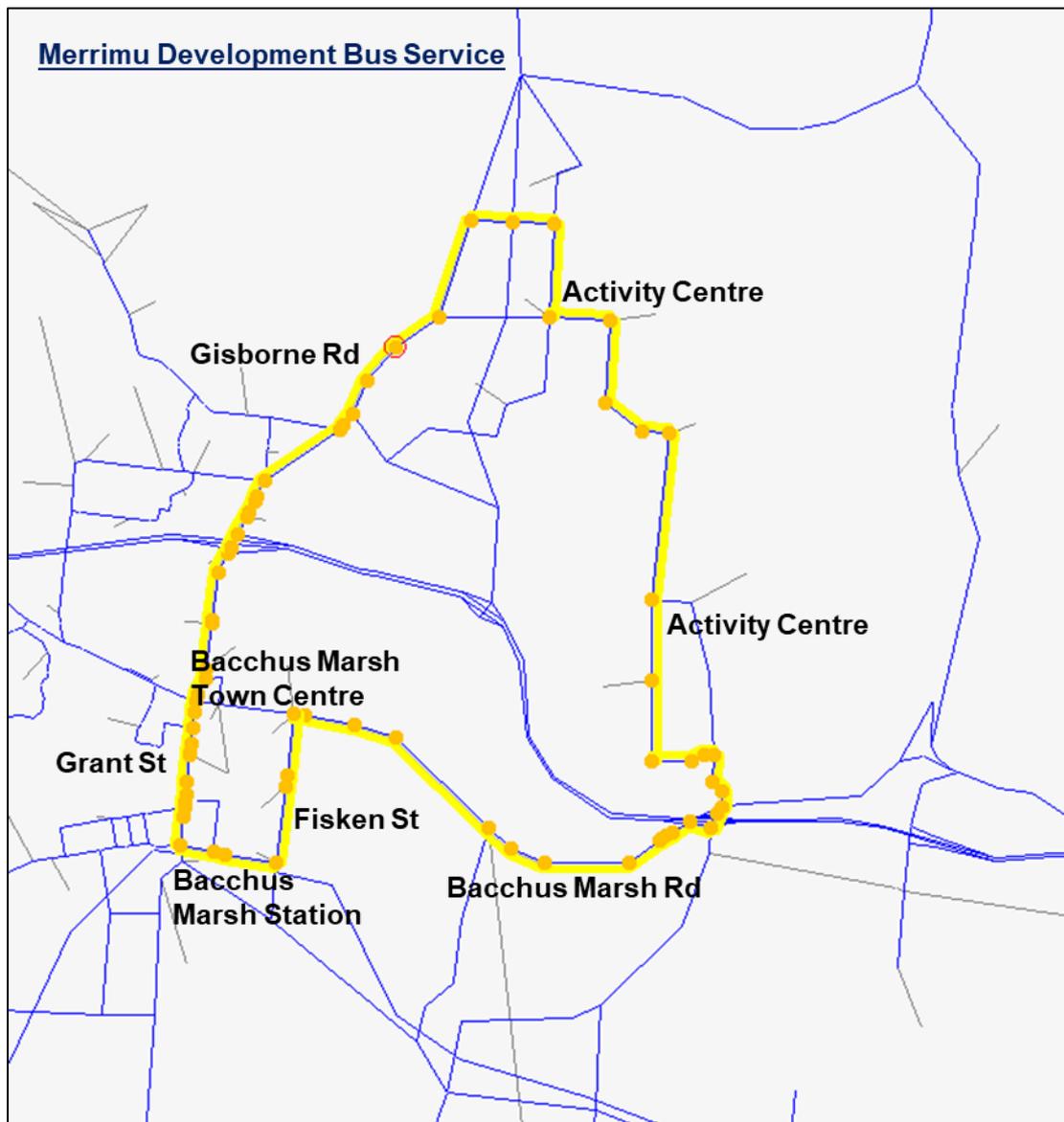


Figure 20: Merrimu PSP Proposed Bus Service

4.4. 2056 Project Case Network Performance

To assist in the assessment of transport needs in the area, the performance of the 2056 Project Case model was assessed.

The key outputs provided are:

- **Additional Trips Commentary:** displays the quantum of additional trips generated by transport mode
- **Traffic Volume Difference Plots:** demonstrates the traffic volume difference between the Reference Case and Project Case by direction on key roads, for the AM and PM peak periods, as well as across a typical weekday. These plots identify where there is a significant amount of additional traffic added to a road section as a result of the additional trip generation from the Merrimu PSP.

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- **Traffic Volume:** demonstrates the traffic volumes by direction on key roads, for the AM and PM peak periods, as well as across a typical weekday.
- **Volume/Capacity (V/C) ratio:** demonstrates the traffic volume relative to the theoretical capacity for key roads, this indicates how close road sections are to reaching their capacity, giving an indication as to the level of congestion that would occur. Table 6 displays the V/C bands and what they represent for road performance.

4.4.1. Additional Trips Commentary

A modal summary can be generated from the Standard Reporting Spreadsheet, provided with the VITM by DTP. This shows differences in trips by mode between the Reference Case and Project Case.

From this output, we have established the additional forecast trips, separated out by mode and on an average weekday, that the Merrimu PSP zones generate. Table 10 shows the modal trips summary for the Merrimu PSP zones. This shows that:

- There are around 46,800 additional private vehicle trips made
 - included within this there are around an additional 550 car trips that are travelling to park and ride sites from the PSP, such as to Bacchus Marsh or Melton Rail Station
- There are around 510 additional bus boardings, associated with the proposed Merrimu PSP bus service

Table 10: 2056 Project Case Additional Trips - Modal Summary – Merrimu PSP Zones

Type of Trip, Mode	Additional Trips - Average Weekday (Project Case – Ref Case)
Additional Private Vehicle Trips (car, truck)	+46,810
- Including additional Park and Ride access to Public Transport (by car) trips	+550
Additional Bus Boardings in the Merrimu PSP	+510

4.4.2. Traffic Volume Difference Plots

Figure 21 shows traffic volume differences between the Reference Case and Project Case across an average weekday. Key differences are noted within the figure.

Figure 22 shows volume differences for the AM and PM peak periods. Traffic differences show a similar pattern to the average weekday.

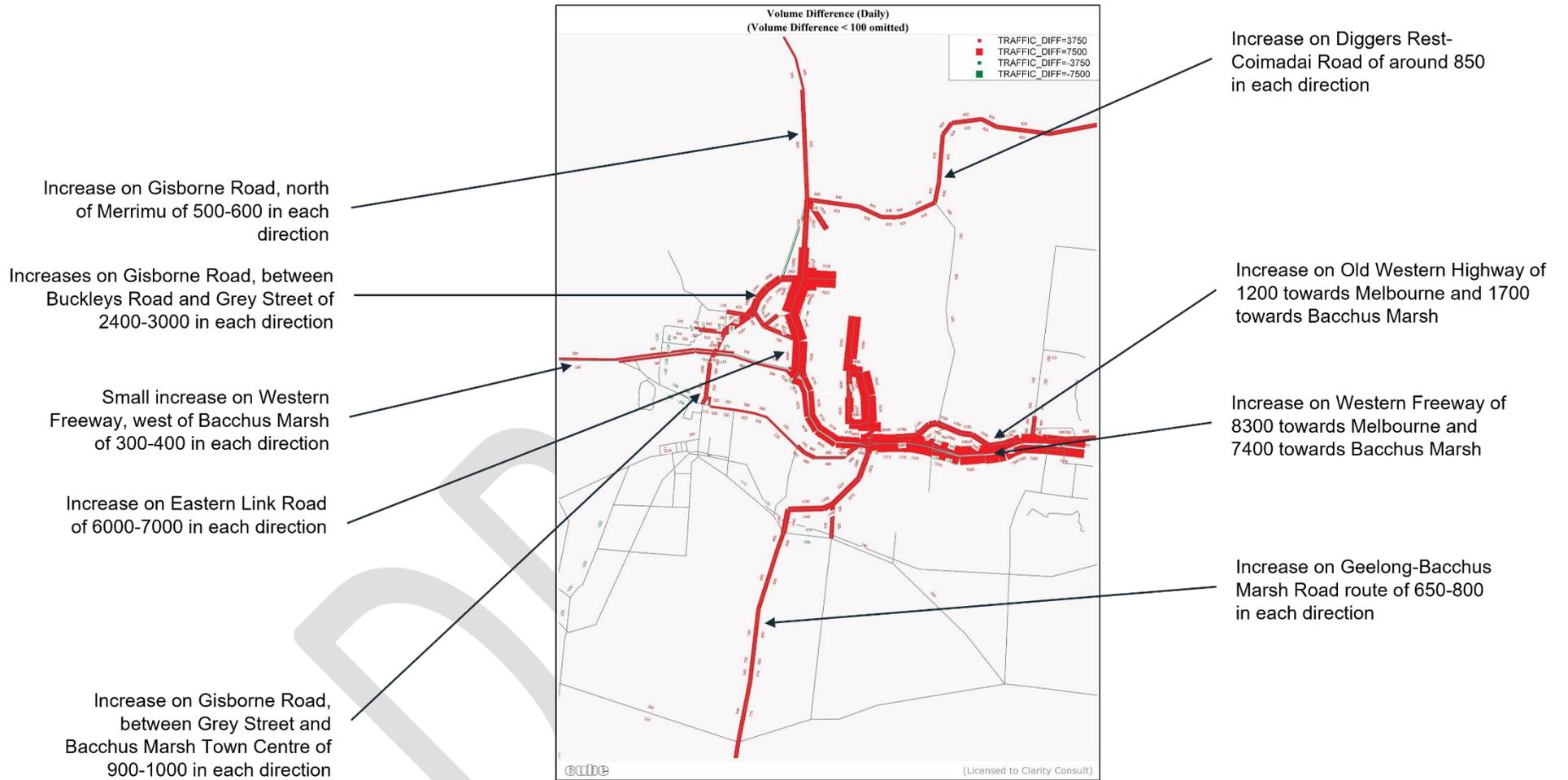


Figure 21: Daily Traffic Volume Differences – 2056 Reference Case vs Project Case

Peak directionality is noticeable in these plots, particularly on the Western Freeway. In the AM, the eastbound direction shows significantly greater volumes of added traffic, whereas in the PM this is the case for the westbound direction.

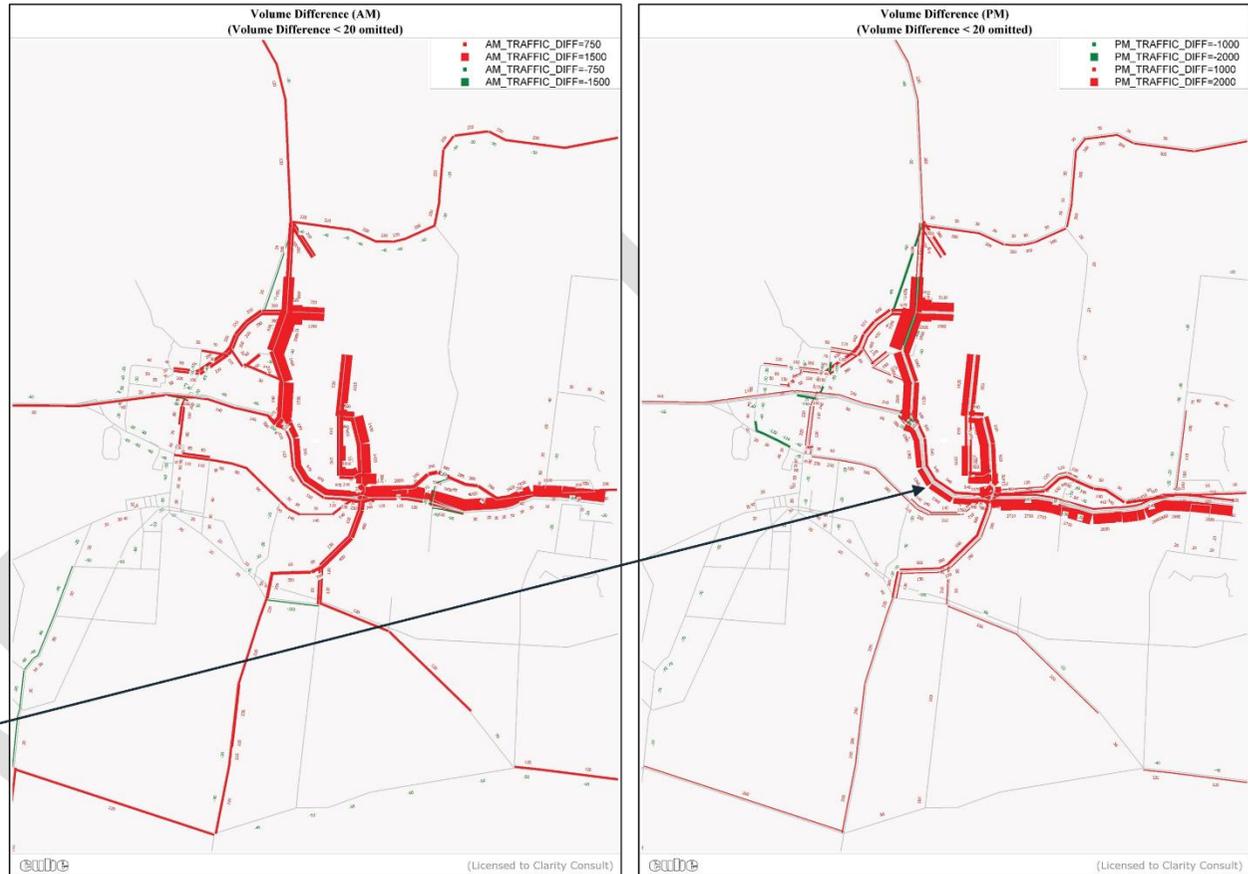


Figure 22: Peak Period Traffic Volume Differences – 2056 Reference Case vs Project Case

4.4.3. Traffic Volume Plots

Figure 23 shows traffic volumes for the Reference Case and Project Case on an average weekday.

This demonstrates that the inclusion of the Merrimu Development does not change the strategic road network hierarchy in the study area. The only significant changes are the addition of traffic to the internal Merrimu road network and increased traffic on the Eastern Link Road in Merrimu. Gisborne Road also sees a moderate increase in traffic volumes.

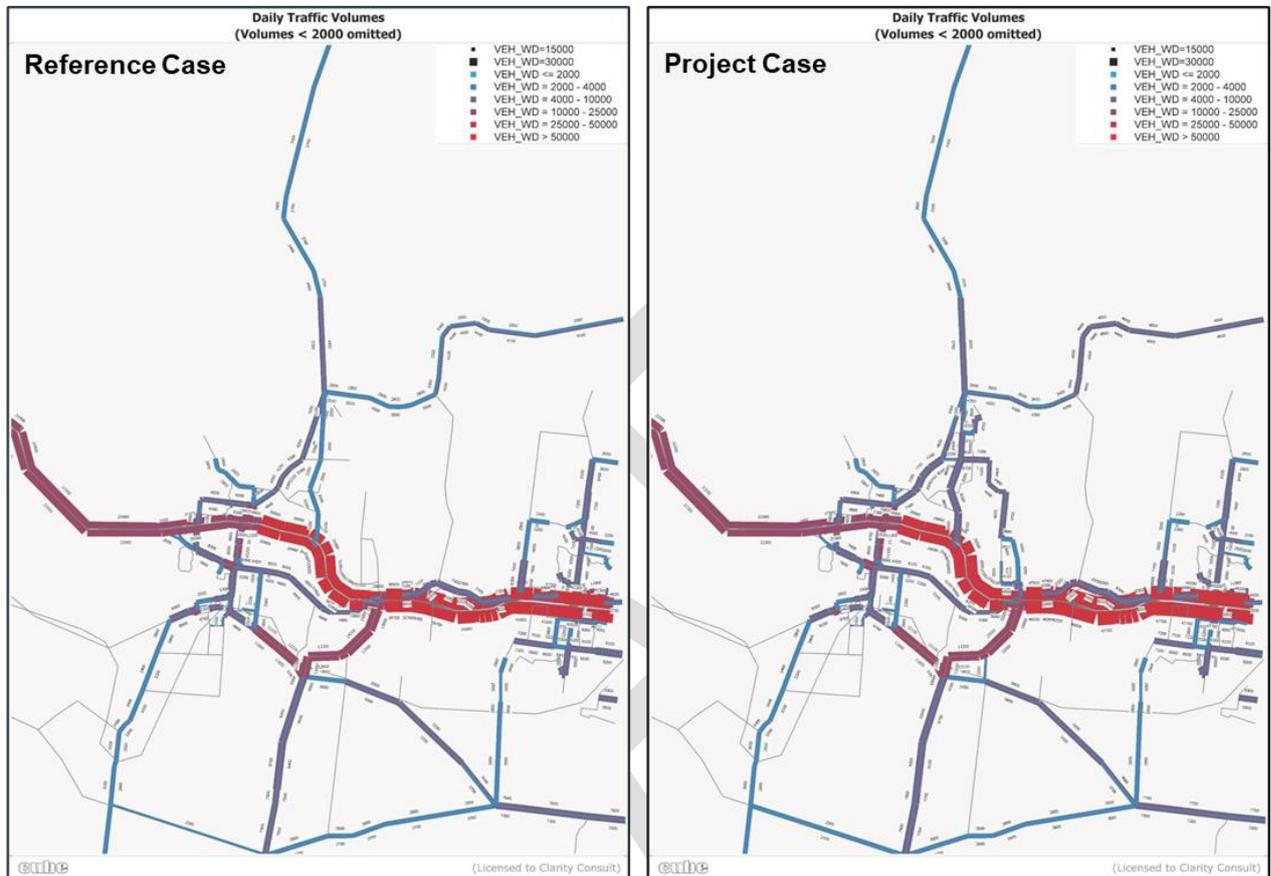
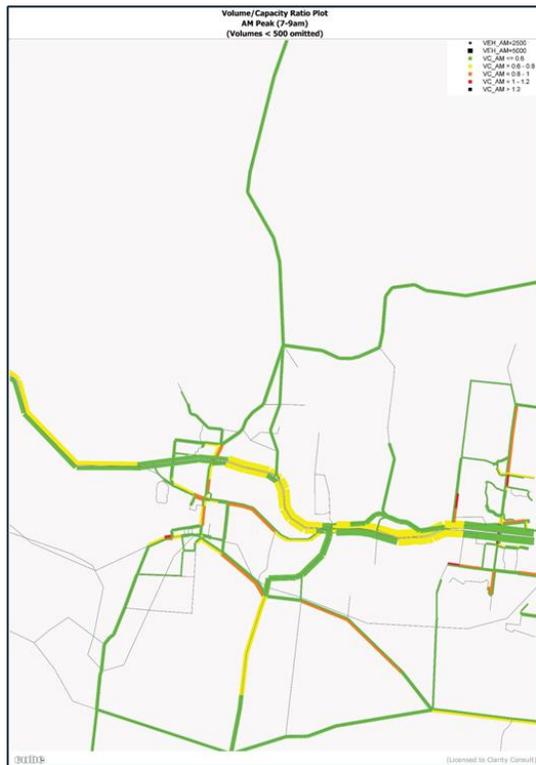


Figure 23: Daily Traffic Volumes – 2056 Reference Case and Project Case

4.4.4. Volume Capacity Ratio Plots

Figure 24 and Figure 25 show volume capacity ratio plots for the Reference Case and Project Case for the AM and PM peak periods respectively. The plots highlight the extent to which roads are approaching mid-block capacity and therefore how likely it is that congestion will occur. Both the AM and PM outputs demonstrate that the additional traffic from the Merrimu PSP does not significantly affect the performance of the network. The minor impacts identified are described in the figures.

A detailed table of Volume Capacity Ratios by each modelled scenario is provided in Appendix A.



Western Freeway:

Eastbound section deteriorates from a VC of 0.71 to 0.82. Whilst this changes the category within which it falls, this does not constitute a major impact. The speed here falls from 97kph to 90kph demonstrating that traffic performance is not significantly affected.

Western Freeway:

Similarly, a second eastbound section deteriorates in similar fashion, with VC marginally falling into the next VC category.

Flanagans Drive and other roads such as Buckleys Road in the Merrimu PSP begin to approach or operate at capacity in the Project Case

Minor mid-clock capacity issues at the freeway interchange near Flanagans Drive

Small impact to congestion in the already congested Bacchus Marsh Town Centre

Figure 24: AM Peak Period Volume Capacity Ratios – 2056 Reference Case vs Project Case



Western Freeway:
 Westbound section deteriorates from a VC of 0.77 to 0.87. Whilst this changes the category within which it falls, this does not constitute a major impact. The speed here falls from 94kph to 83kph demonstrating that traffic performance is impacted, but that reasonable freeway traffic speeds can still be maintained.

Western Freeway:
 Similarly, a second west bound section deteriorates in similar fashion, with VC marginally falling into the next VC category.

Flanagans Drive and other roads such as Buckleys Road in the Merrimu PSP begin to approach or operate at capacity in the Project Case

Minor mid-clock capacity issues at the freeway interchange near Flanagans Drive

Figure 25: PM Peak Period Volume Capacity Ratios – 2056 Reference Case vs Project Case

5. 2056 No ELR Case Model

This section describes the 2056 VITM Project Case, with the Eastern Link Road (ELR) having been removed from the transport network. This represents a scenario in which the ELR is not developed by the time of full build-out of the Merrimu PSP. These results are compared back to the 2056 Project Case described in the previous section.

5.1. No ELR Case Transport Network

The No ELR Case transport network remains the same as the 2056 Project Case, with the only changes being the removal of the ELR from the road network and the retention of the East-West Connector Road adjacent to the quarry.

Both the northern and southern sections, either side of the Western Freeway were removed from this scenario.

Figure 26 shows the PSP area transport network without the ELR, the road hierarchy is displayed.

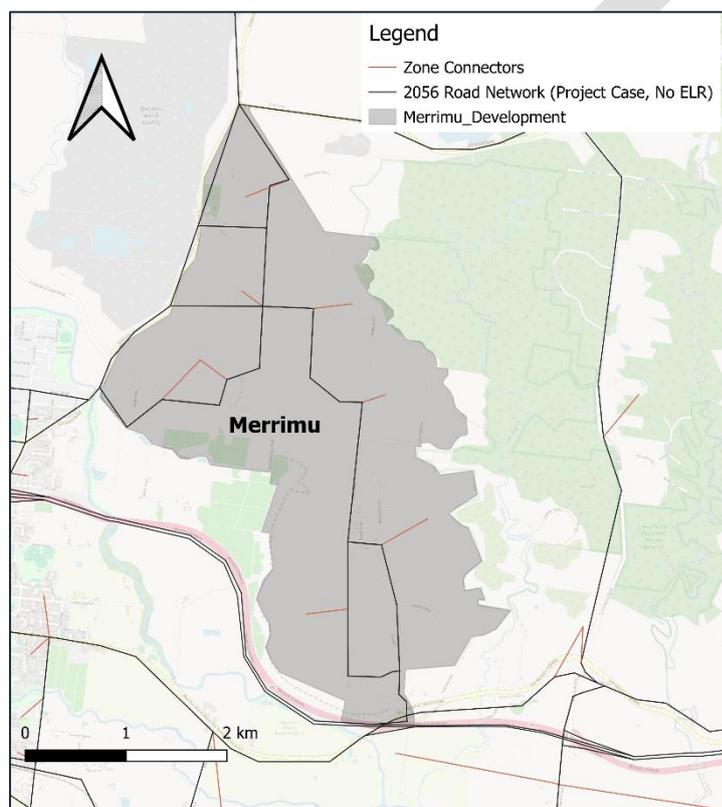


Figure 26: Study Area Transport Network – 2056 No ELR

5.2. No ELR Case Land Use

Land use assumptions for this scenario are the same as the 2056 Project Case.

5.3. No ELR Case Bus Services

Bus services and associated assumptions for this scenario are the same as the 2056 Project Case.

5.4. 2056 Project Case Network Performance

To assess this additional scenario which does not contain the ELR, the scenario was compared to the 2056 Project Case for several key metrics and commentary is provided to illuminate the forecast impacts of the ELR not being developed.

The outputs assessed and compared are:

- **Traffic Volume Difference Plots**
- **Road Network Traffic Volumes**
- **Volume/Capacity (V/C) Ratio Plots**

5.4.1. Traffic Volume Difference Plots

Figure 27 shows the traffic volume differences between the 2056 Project Case and No ELR Case across an average weekday. Key differences are noted within the figure.

The most notable changes include the removal of traffic from the northern section of the Eastern Link Road and subsequent increases on the Merrimu PSP local network, Gisborne Road and Long Forest Road. Also, there are significant increases on alternative roads such as Bacchus Marsh Road and Woolpack Road with the removal of the southern section of the Eastern Link Road.

Figure 28 shows volume differences for the AM and PM peak periods. Traffic differences show a similar pattern to the average weekday. Peak directionality is more noticeable in these plots, particularly on the Western Freeway.

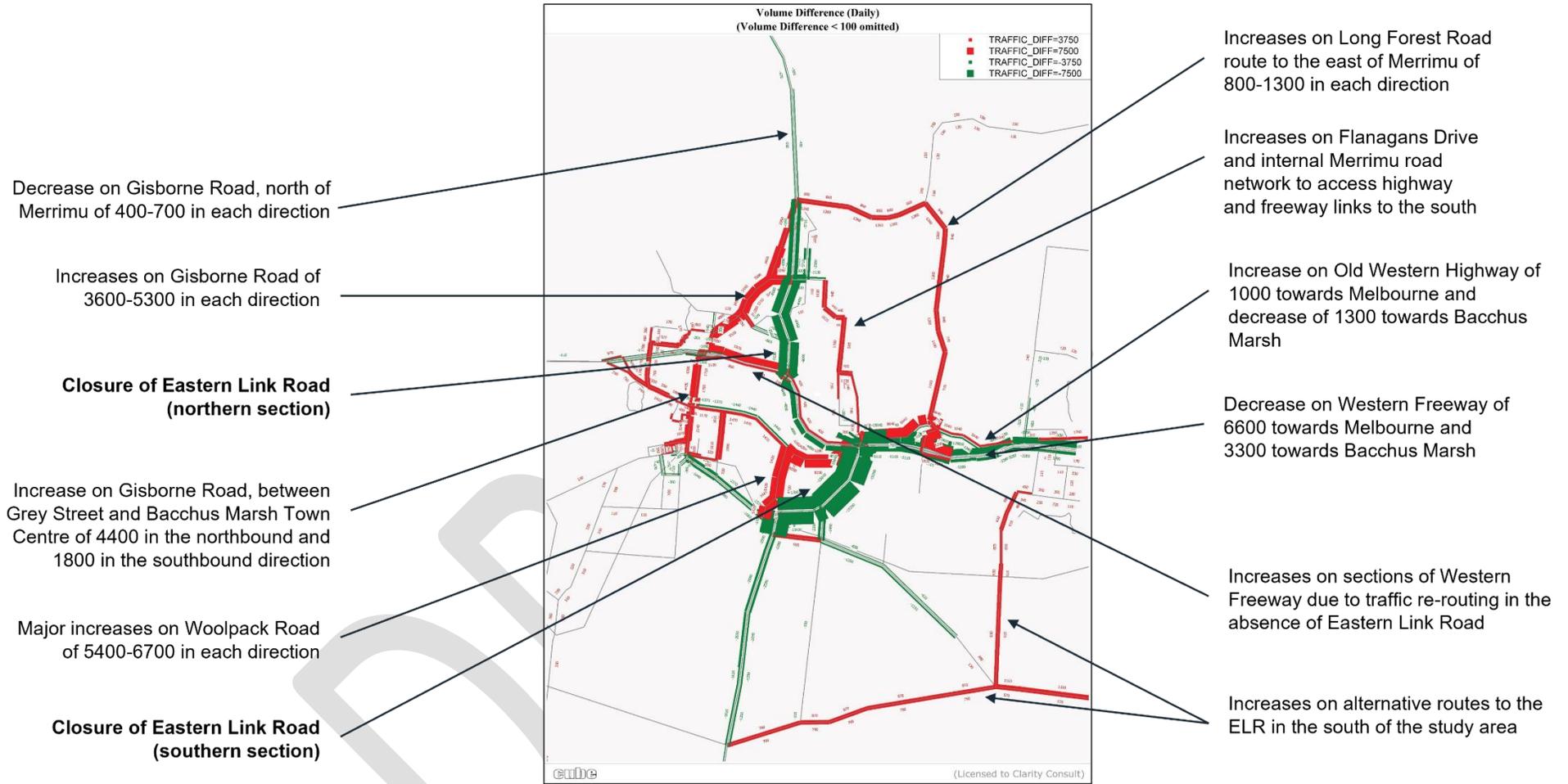


Figure 27: Daily Traffic Volume Differences – 2056 Project Case vs No ELR Case

Peak directionality is noticeable in these plots, particularly on the Western Freeway. In the AM, greater decreases occur in the eastbound direction, whereas in the PM, the westbound direction experiences significant decreases of 2300 while the eastbound direction shows increases of 200.

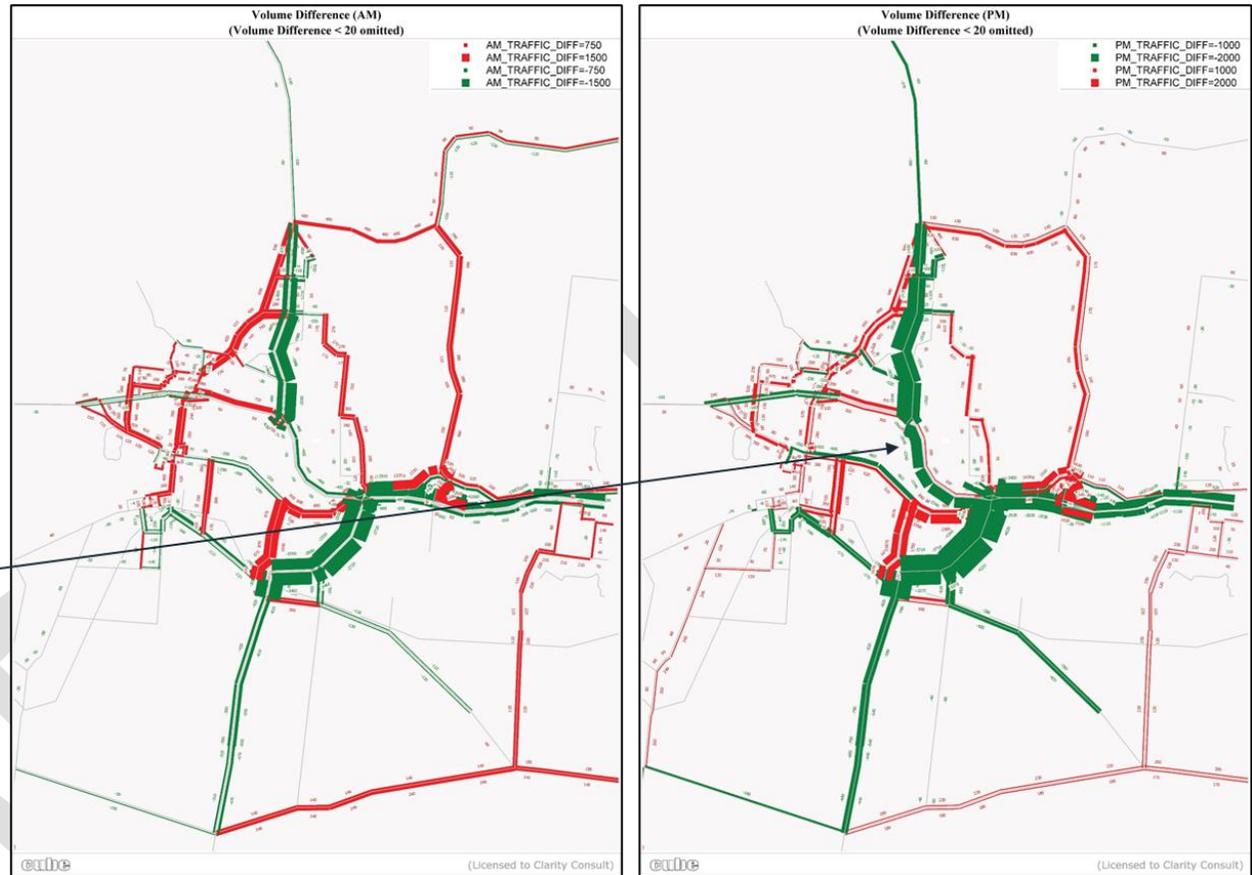


Figure 28: Peak Period Traffic Volume Differences – 2056 Project Case vs No ELR Case

5.4.1. Traffic Volume Plots

Figure 29 shows traffic volumes for the 2056 Project Case and No ELR Case on an average weekday. This demonstrates that while traffic redistributes from the closed ELR to alternative roads, the removal does not fundamentally change the road network hierarchy in the study area.

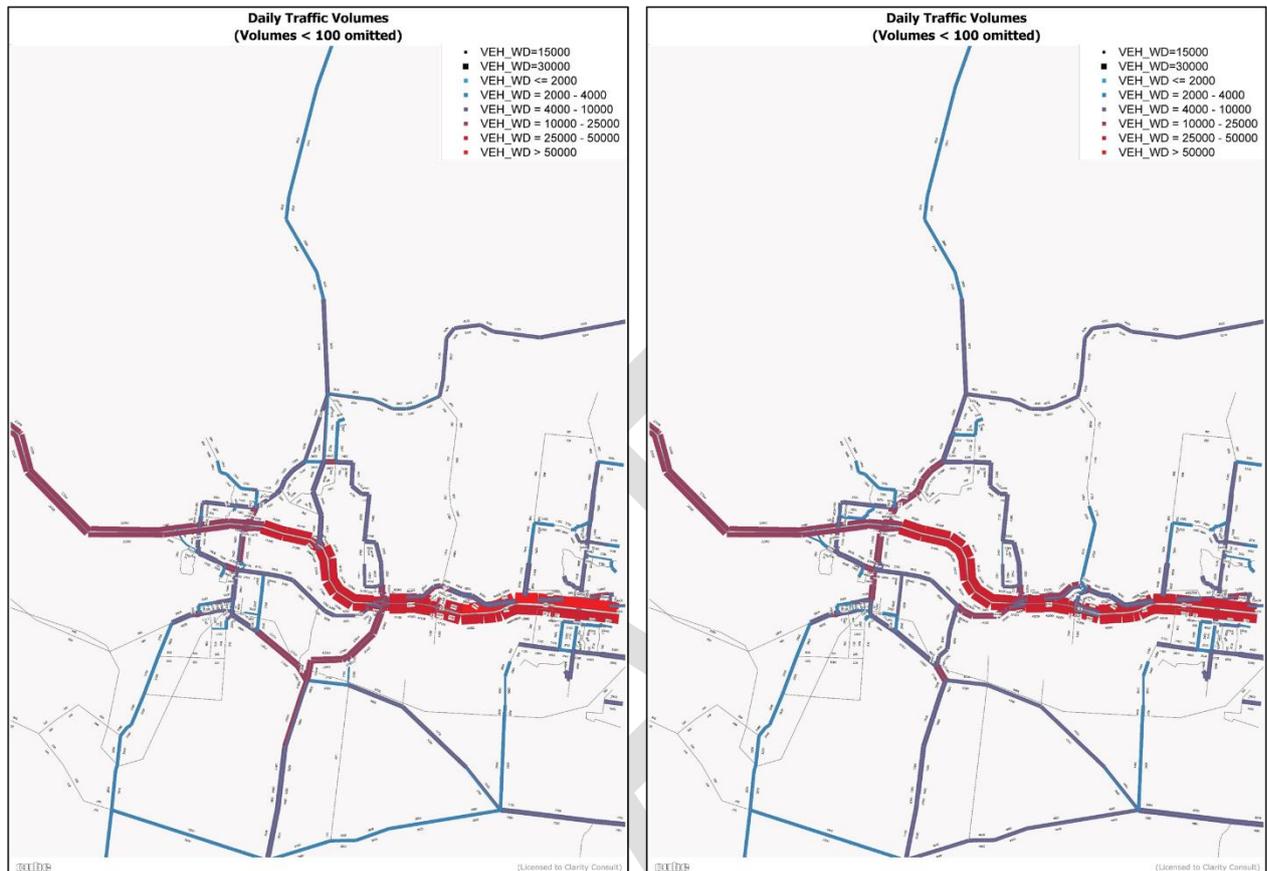


Figure 29: Daily Traffic Volumes – 2056 Project Case and No ELR Case

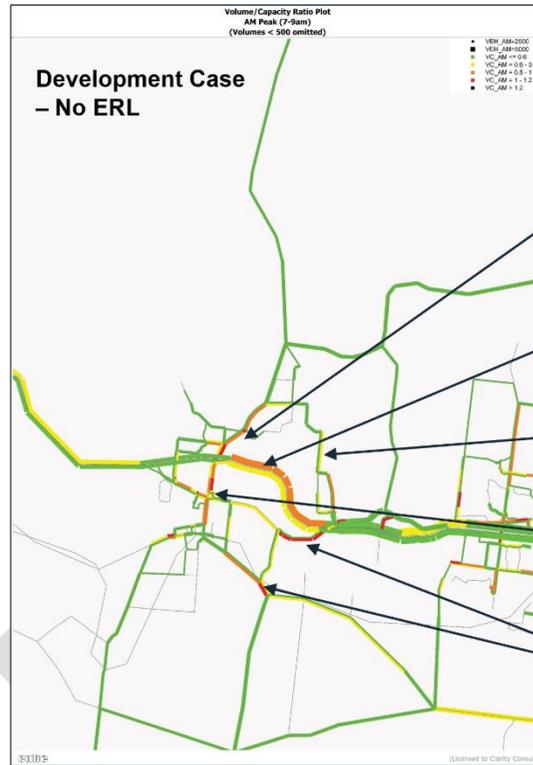
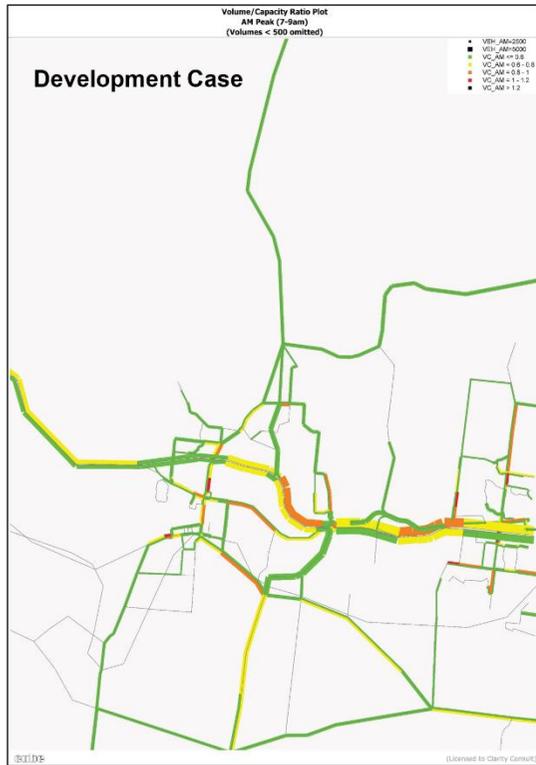
5.4.2. Volume Capacity Ratio Plots

Figure 30 and Figure 31 show volume capacity ratio plots for the 2056 Project Case and No ELR Case for the AM and PM peak periods respectively. The plots highlight the extent to which roads are approaching mid-block capacity and therefore how likely it is that congestion will occur.

A detailed table of Volume Capacity Ratios by each modelled scenario is provided in Appendix A.

Both the AM and PM outputs demonstrate that the study area road network will be under significantly more strain in 2056 if the ELR is not built. Without the ELR, local roads such as Bacchus Marsh Road and Woolpack Road will be significantly more congested as the road network is not able to support proposed developments such as the Parwan Employment Precinct.

Further north, the absence of the ELR would impact traffic from the Merrimu PSP. Gisborne Road is likely to be heavily congested without the ELR and PSP roads such as Flanagans Drive would also perform worse. Some traffic may take longer routes to access the strategic roads network, such as via Diggers Rest-Coimadai Road and Long Forest Road.



Major impacts to congestion on a long section of Gisborne Road, which connects the PSP to the Western Freeway

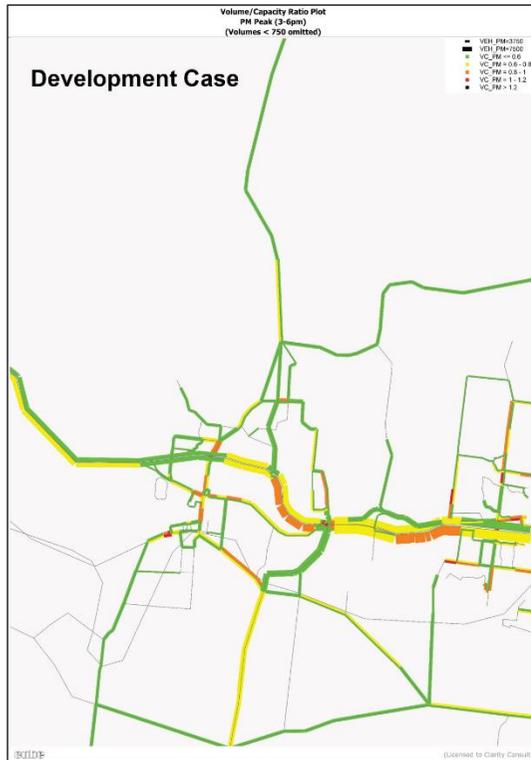
Further deterioration in congestion on the Bacchus Marsh section of the Western Freeway. With some evidence of improvements further east at the expense of congestion on the local road network.

Bences Road in the Merrimu PSP begins to approach capacity when the ERL is not in place

Further deterioration in performance of roads in the already congested Bacchus Marsh Town Centre

Major impact to congestion on the Bacchus Marsh Road and Woolpack Road route, when the ERL is not in place

Figure 30: AM Peak Period Volume Capacity Ratios – 2056 Project Case vs No ELR Case



- Major impacts to congestion on a long section of Gisborne Road, which connects the PSP to the Western Freeway
- Changes on Western Freeway, with some evidence of improvements further east at the expense of congestion on the local road network.
- Bences Road and other roads in the Merrimu PSP begin to approach or operate at capacity when the ERL is not in place
- Further deterioration in performance of roads in the already congested Bacchus Marsh Town Centre, as well as along Main Street
- Major impact to congestion on the Bacchus Marsh Road and Woolpack Road route, when the ERL is not in place

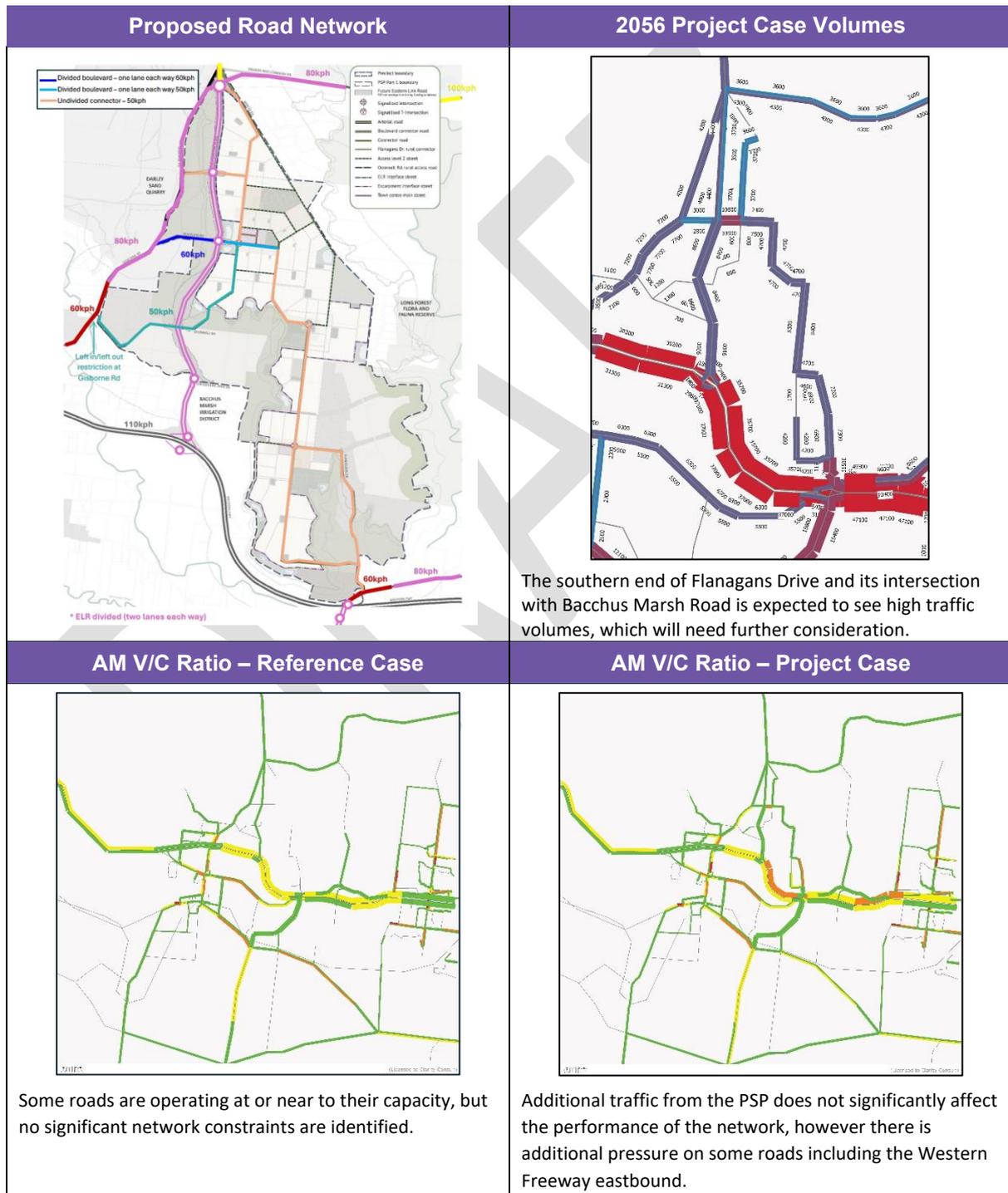
Figure 31: PM Peak Period Volume Capacity Ratios – 2056 Project Case vs No ERL Case

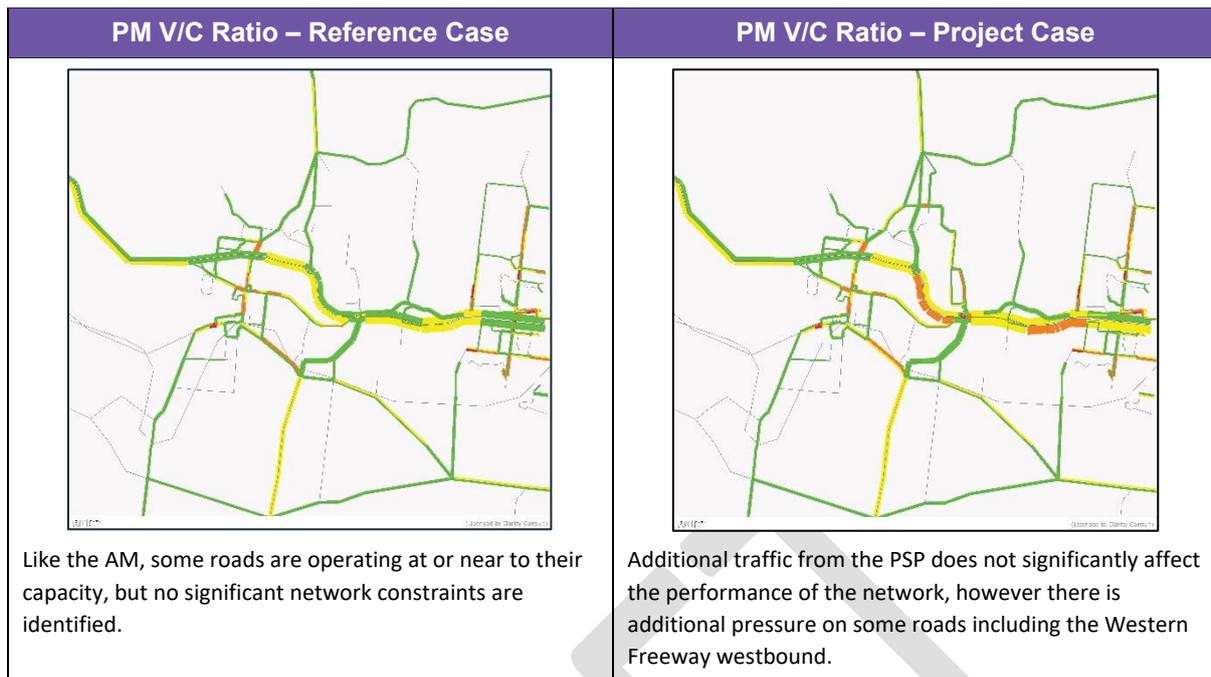
6. Summary of Findings

6.1. 2056 Project Case

The strategic transport modelling assessment shows that traffic volumes noticeably increase in the Project Case as compared to the Reference Case across the local network nearby the Merrimu PSP. The Project Case includes an overall increase of around 24,450 residents, 1,500 jobs and 2,900 school enrolments across the PSP, when compared to the Reference Case. The main comparative observations are detailed in Table 11.

Table 11: Summary of observed changes between 2056 Reference Case and Project Case





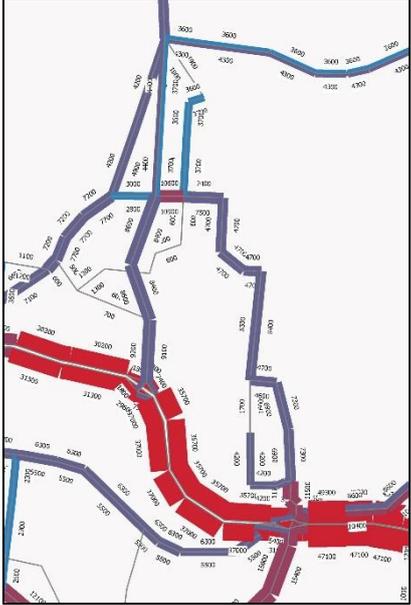
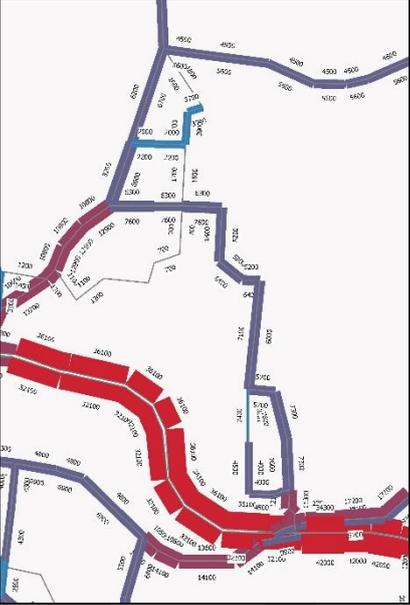
A comparison of the proposed road network and modelled Project Case volumes demonstrates that the proposed road classifications will be appropriate for the expected traffic volumes in the Merrimu PSP. This can be further confirmed in the next phase of the project, the Integrated Transport Assessment. The suitability of bus routes and frequencies, and the connections to Bacchus Marsh Rail Station will also be considered.

The volume-capacity plots do not identify any considerable issues in the study area as a result of the build-out of the PSP. However, it is noted that the volume-capacity ratio plots identify that the Western Freeway will be carrying additional traffic in the peak directions with the Merrimu PSP; this leads to it nearing its capacity in the Project Case. However, the speed on these sections of the Freeway do not deteriorate significantly demonstrating that traffic performance would likely not be materially affected, and that the extra traffic can be sufficiently accommodated.

6.2. 2056 Project Case without ELR

An additional Project Case scenario was assessed which does not contain the ELR, the scenario was compared to the 2056 Project Case to identify the potential impacts of the ELR not being developed. Table 12 shows the main comparative observations between the 2056 Project Case and the No ELR Case.

Table 12: Summary of observed changes between 2056 Project Case and No ELR Case

Daily Volumes – Project Case	Daily Volumes – No ELR Case
 <p data-bbox="209 936 778 999">The ELR carries a significant amount of traffic through the Merrimu PSP area.</p>	 <p data-bbox="815 936 1385 1021">Without the ELR more traffic must utilise Gisborne Road and Flanagans Drive. Under this scenario, upgrades to these roads would need consideration.</p>
AM V/C Ratio – Project Case	AM V/C Ratio – No ELR Case
 <p data-bbox="204 1554 774 1617">Some roads are operating at or near to their capacity, but no considerable network constraints were identified.</p>	 <p data-bbox="810 1554 1380 1680">Without the ELR there is a significant worsening of traffic conditions around the Bacchus Marsh. Gisborne Road and Bacchus Marsh Road exceed their capacities and would likely experience significant congestion.</p> <p data-bbox="810 1731 1337 1859">There is further deterioration in congestion on the Bacchus Marsh section of the Western Freeway, with some evidence of improvements further east at the expense of congestion on the local road network.</p>

PM V/C Ratio – Project Case	PM V/C Ratio – No ELR Case
 <p data-bbox="204 734 774 795">Some roads are operating at or near to their capacity, but no considerable network constraints were identified.</p>	 <p data-bbox="810 734 1380 891">Without the ELR there is a significant worsening of traffic conditions around the Bacchus Marsh. Whilst not as bad as the AM, many local roads including Gisborne Road and Bacchus Marsh Road would be nearing or exceeding their capacities and would likely experience congestion.</p> <p data-bbox="810 947 1364 1034">There are changes on Western Freeway, with some evidence of improvements at the expense of congestion on the local road network.</p>

The outputs from this scenario test demonstrate that the study area road network will be under significantly more strain in 2056 if the ELR is not built. Without the ELR, local roads such as Gisborne Road, Bacchus Marsh Road and Woolpack Road will be significantly more congested as the road network is not fully able to support proposed developments, including the Merrimu PSP and Parwan Employment Precinct.

The 2056 Reference Case demonstrated that some road sections within the study area, such as Gisborne Road, are close to capacity despite the Reference Case scenario assuming that the ELR is built. This suggests that without the ELR, the local network would be under considerable strain even if new developments such as Merrimu PSP were not to occur. The outcomes of the strategic modelling assessment indicate that the ELR is an important and essential component of the future 2056 transport network.

There are changes on Western Freeway, with some evidence of improvements in the VC ratio, which would be at the expense of more traffic and congestion on the local road network. In proximity to the PSP, if the ELR was not built, upgrades and further mitigation would need to be considered at locations such as Flanagans Drive and along Gisborne Road.

Appendix A: Tabulated Summary of Volumes and V-C Ratios

Location	Direction	Daily Volume (Vehicles per day)			Volume-Capacity Ratio – AM Peak Period			Volume-Capacity Ratio – PM Peak Period		
		2056 Reference Case	2056 Project Case	2056 No ELR Case	2056 Reference Case	2056 Project Case	2056 No ELR Case	2056 Reference Case	2056 Project Case	2056 No ELR Case
PSP Internal Road Network										
RD-01 (Bences Road)	NB	94	1,801	1,649	0.01	0.17	0.28	0.01	0.13	0.11
	SB	91	1,916	1,830	0.01	0.12	0.11	0.02	0.23	0.29
RD-02 (Buckleys Road between IN-03 and ELR)	EB	9	2,972	6,258	0.00	0.13	0.23	0.00	0.19	0.53
	WB	10	2,786	7,616	0.00	0.16	0.61	0.00	0.16	0.38
RD-02 (Buckleys Road between ELR and IN-04)	EB	9	10,581	6,258	0.00	0.43	0.23	0.00	0.94	0.53
	WB	10	10,944	7,616	0.00	0.93	0.61	0.00	0.56	0.38
Buckleys Road, east of IN-04	EB	5	7,378	6,251	0.00	0.31	0.29	0.00	0.60	0.46
	WB	5	7,508	7,573	0.00	0.53	0.50	0.00	0.44	0.47
RD-03 (Northern E-W Connector)	EB	-	-	2,002	-	-	0.13	-	-	0.16
	WB	-	-	2,243	-	-	0.14	-	-	0.15
RD-04 (Oconnell Road)	EB	136	1,192	1,076	0.01	0.04	0.04	0.02	0.15	0.14
	WB	141	1,255	1,167	0.02	0.16	0.16	0.01	0.07	0.06
RD-05 (Lindsay Avenue)	EB	93	4,744	5,155	0.01	0.40	0.46	0.01	0.32	0.35
	WB	90	4,582	5,714	0.01	0.28	0.41	0.02	0.45	0.52
RD-06 (Flanagans Drive between IN-07 and IN-08)	NB	221	6,905	7,641	0.01	0.29	0.37	0.04	0.83	0.88
	SB	229	7,252	7,269	0.04	0.83	0.85	0.02	0.36	0.37
RD-07 (Flanagans Drive between IN-08 and IN-09)	NB	368	11,470	11,311	0.06	0.54	0.57	0.03	0.21	0.21
	SB	355	11,089	12,121	0.02	0.17	0.19	0.06	0.54	0.62
RD-08 (Escarpment Connector)	EB	139	4,217	4,042	0.02	0.61	0.67	0.01	0.21	0.19
	WB	134	4,184	4,480	0.01	0.16	0.14	0.02	0.60	0.77
PSP N-S Connector Road, north of IN-04	NB	-	3,644	1,736	-	0.26	0.15	-	0.37	0.16
	SB	-	3,722	1,640	-	0.34	0.10	-	0.29	0.16
PSP N-S Connector Road between IN-05 and IN-06	NB	89	5,332	7,110	0.01	0.30	0.45	0.02	0.62	0.88
	SB	92	5,432	6,016	0.01	0.58	0.74	0.01	0.36	0.39
PSP N-S Connector Road, south of IN-06	NB	-	1,652	2,381	-	0.08	0.11	-	0.24	0.45
	SB	-	1,590	1,846	-	0.24	0.34	-	0.12	0.13
Non-PSP Road Network – Key Roads										
Eastern Link Road, between Diggers Rest-Coimadai Road and RD-03	NB	3,065	4,388	-	0.09	0.15	-	0.18	0.20	-
	SB	2,006	3,705	-	0.12	0.15	-	0.06	0.14	-
Eastern Link Road, north of the Western Freeway	NB	3,170	9,235	-	0.09	0.19	-	0.19	0.45	-
	SB	2,076	9,092	-	0.13	0.43	-	0.06	0.20	-

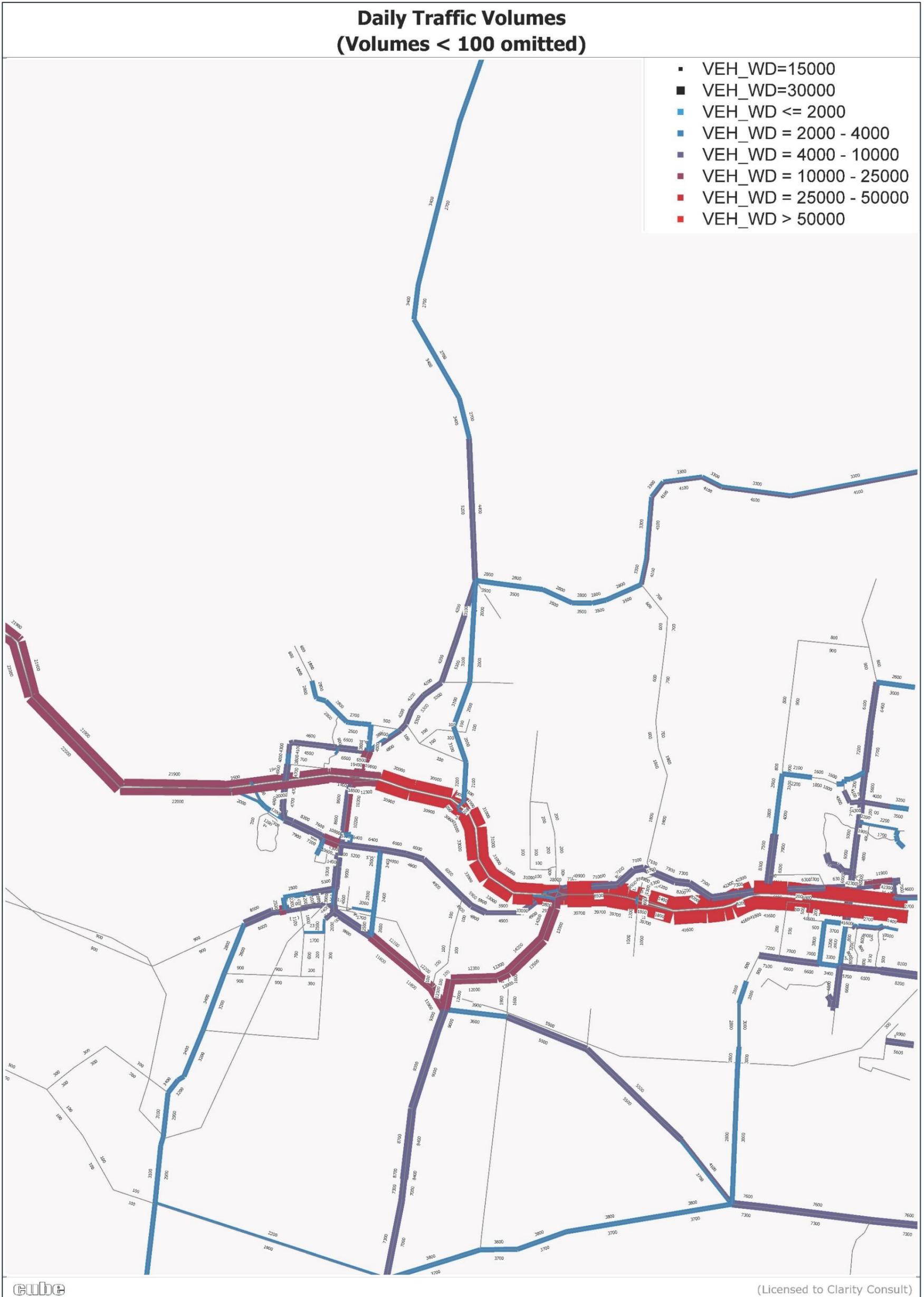
Eastern Link Road, south of the Western Freeway	NB	14,180	15,843	-	0.50	0.51	-	0.49	0.57	-
	SB	13,523	15,390	-	0.45	0.54	-	0.51	0.54	-
Gisborne Road, north of Diggers Rest-Coimadai Road	NB	5,183	5,682	5,027	0.24	0.30	0.28	0.70	0.68	0.53
	SB	4,434	5,035	4,606	0.48	0.46	0.38	0.28	0.35	0.33
Gisborne Road, south of Buckleys Road	NB	4,235	7,220	10,809	0.17	0.31	0.50	0.48	0.64	0.91
	SB	5,283	7,670	12,917	0.52	0.60	0.96	0.35	0.47	0.72
Gisborne Road, north of Holts Lane	NB	11,890	12,831	14,297	0.69	0.67	0.68	0.94	0.96	0.98
	SB	13,205	13,661	17,894	0.97	0.94	1.09	0.88	0.84	1.02
Gisborne Road between Masons Lane and Clifton Drive	NB	8,615	9,619	14,009	0.37	0.40	0.72	0.64	0.70	0.90
	SB	10,285	11,172	12,880	0.74	0.78	0.89	0.51	0.54	0.63
Diggers Rest-Coimadai Road, east of Bences Road	EB	2,769	3,608	4,470	0.20	0.30	0.54	0.25	0.26	0.28
	WB	3,503	4,323	5,580	0.40	0.38	0.37	0.27	0.36	0.60
Diggers Rest-Coimadai Road, east of Long Forest Road	EB	3,274	4,094	4,244	0.27	0.37	0.41	0.32	0.33	0.30
	WB	4,130	4,952	5,078	0.49	0.47	0.41	0.34	0.43	0.45
Long Forest Road, north of Bacchus Marsh Road	NB	1,757	1,787	2,977	0.21	0.21	0.26	0.17	0.18	0.46
	SB	1,877	1,930	2,700	0.20	0.20	0.44	0.22	0.22	0.29
Bacchus Marsh Road, east of Flanagans Drive	EB	7,060	8,586	17,224	0.30	0.45	1.07	0.59	0.62	1.02
	WB	8,463	10,441	9,741	0.74	0.76	0.57	0.47	0.63	0.84
Bacchus Marsh Road, east of Woolpack Road	EB	5,885	6,345	10,627	0.22	0.23	0.42	0.71	0.75	0.97
	WB	4,860	5,535	14,083	0.75	0.80	1.03	0.21	0.26	0.85
Bacchus Marsh Road, west of Woolpack Road	EB	5,971	6,256	4,817	0.18	0.18	0.09	0.75	0.76	0.54
	WB	4,949	5,473	6,943	0.81	0.83	0.67	0.17	0.22	0.35
Woolpack Road, south of Bacchus Marsh Road	NB	109	85	5,508	0.06	0.05	0.53	0.00	0.00	0.64
	SB	120	89	6,807	0.00	0.00	0.64	0.04	0.03	0.70
Western Freeway, east of Gisborne Road Interchange	EB	29,982	30,167	36,142	0.79	0.78	0.90	0.68	0.70	0.76
	WB	30,866	31,342	32,143	0.71	0.73	0.74	0.79	0.80	0.79
Western Freeway, west of Bacchus Marsh Road Interchange	EB	30,993	35,719	36,142	0.71	0.82	0.90	0.59	0.64	0.76
	WB	32,971	37,037	32,143	0.62	0.63	0.74	0.77	0.87	0.79
Western Freeway, east of Bacchus Marsh Road Interchange	EB	40,868	49,302	34,260	0.64	0.80	0.53	0.59	0.61	0.42
	WB	39,747	47,121	42,010	0.57	0.58	0.53	0.64	0.78	0.62
Western Freeway, east of Hopetoun Park Road Interchange	EB	42,266	50,566	43,966	0.65	0.81	0.69	0.61	0.63	0.54
	WB	41,568	48,767	45,488	0.60	0.61	0.56	0.68	0.82	0.75

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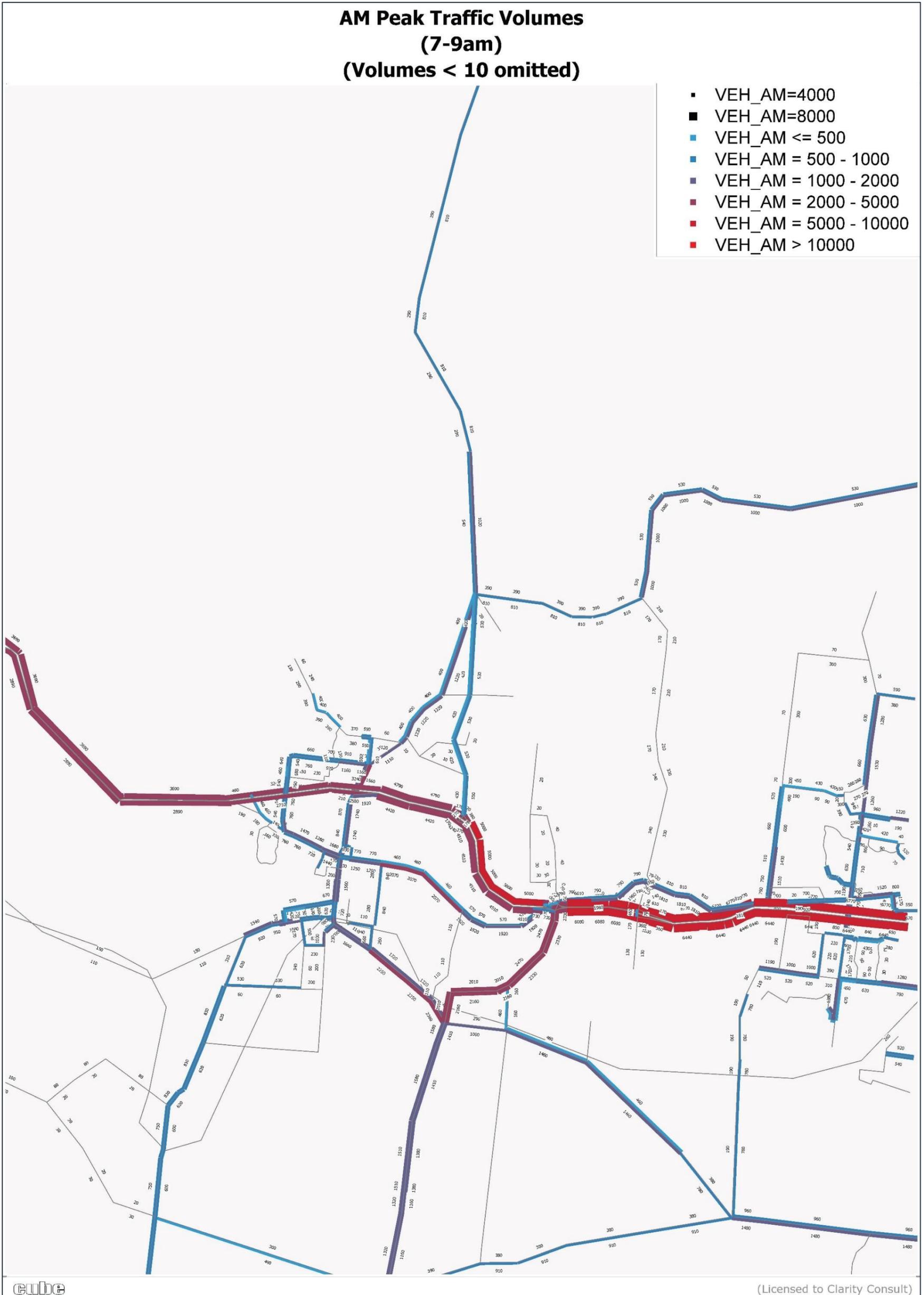
Appendix B: A3 Sized Traffic Volume Plots

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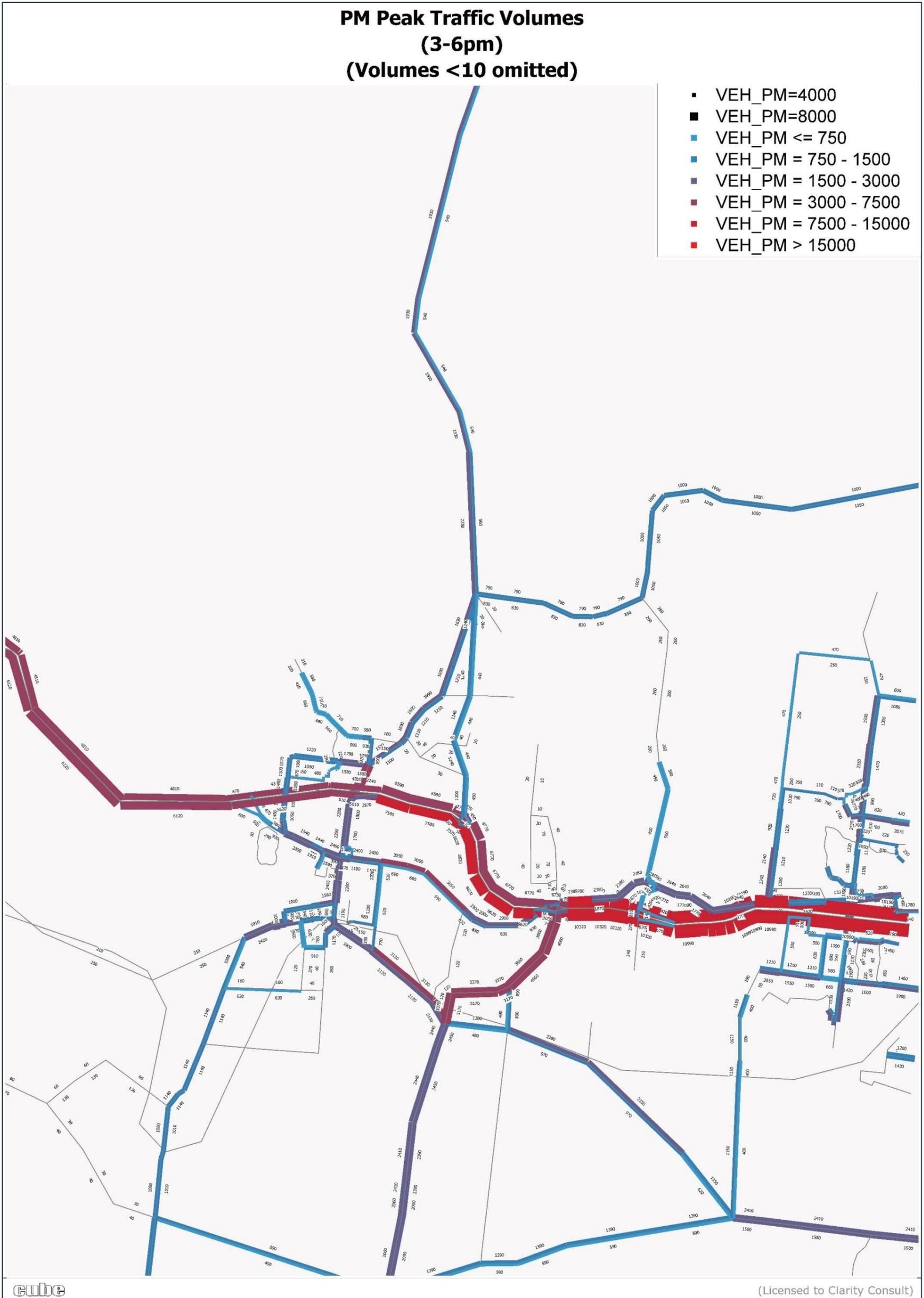
2056 Reference Case – Daily Traffic Volume



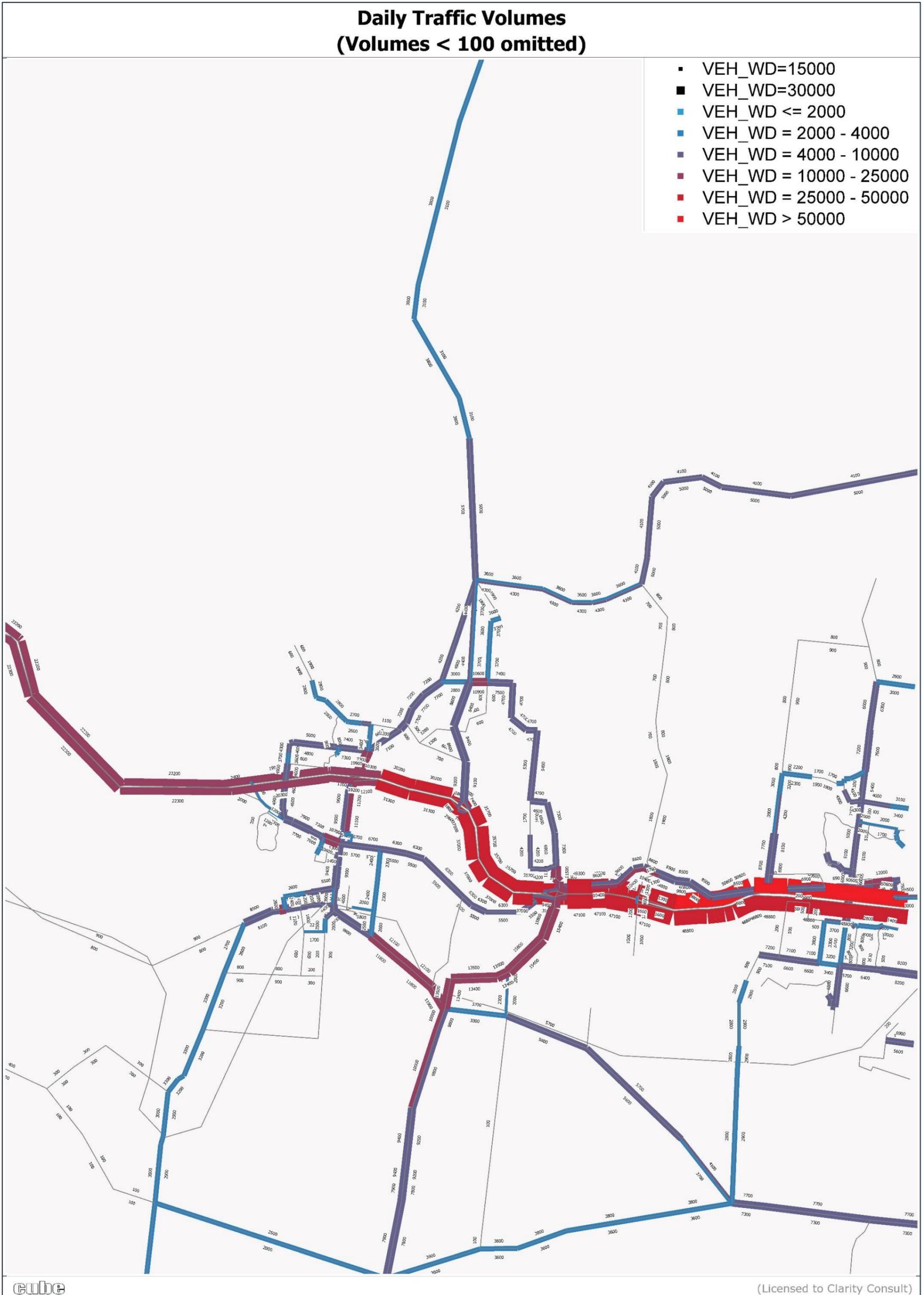
2056 Reference Case – AM Peak Period Traffic Volume



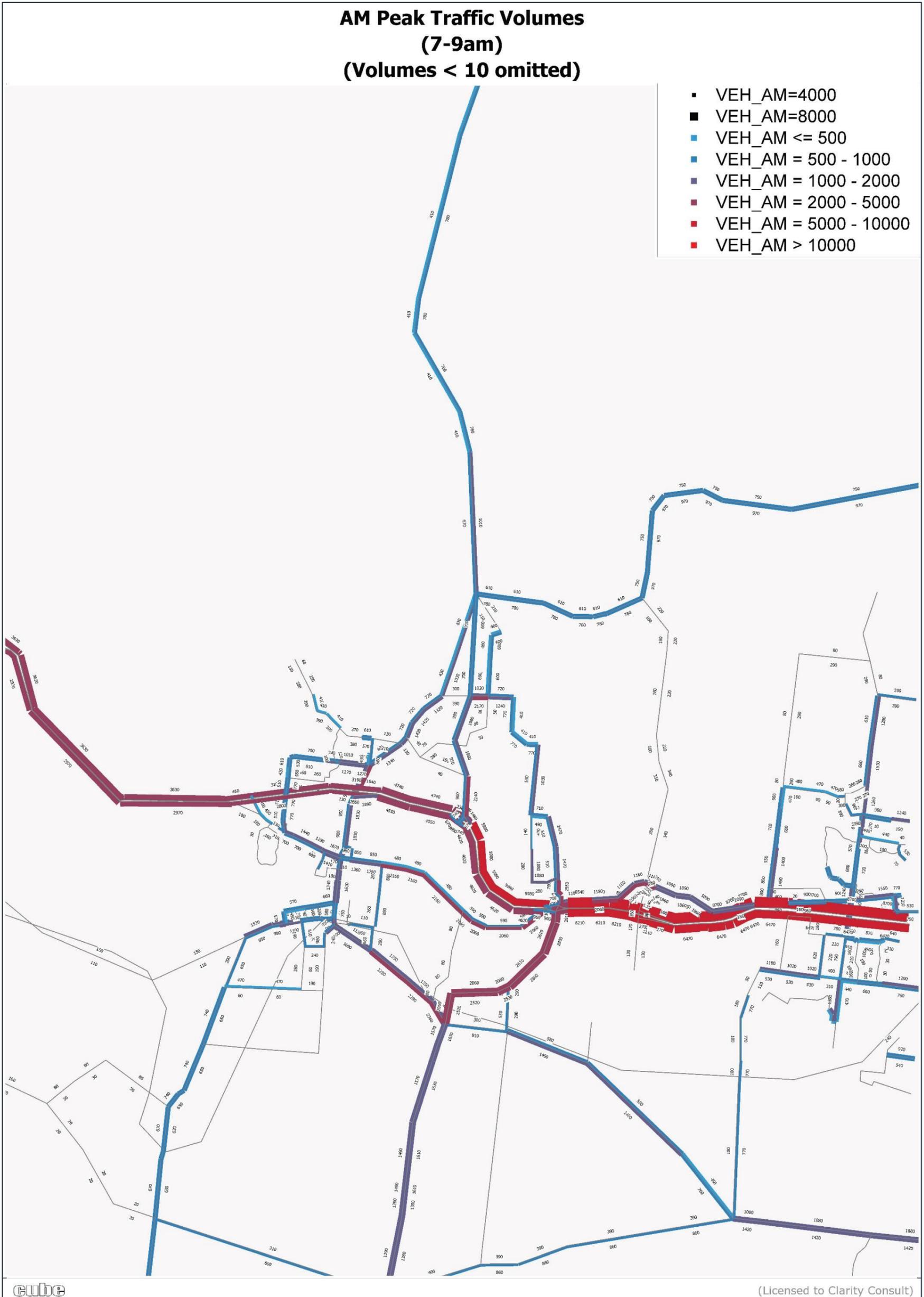
2056 Reference Case – PM Peak Period Traffic Volume



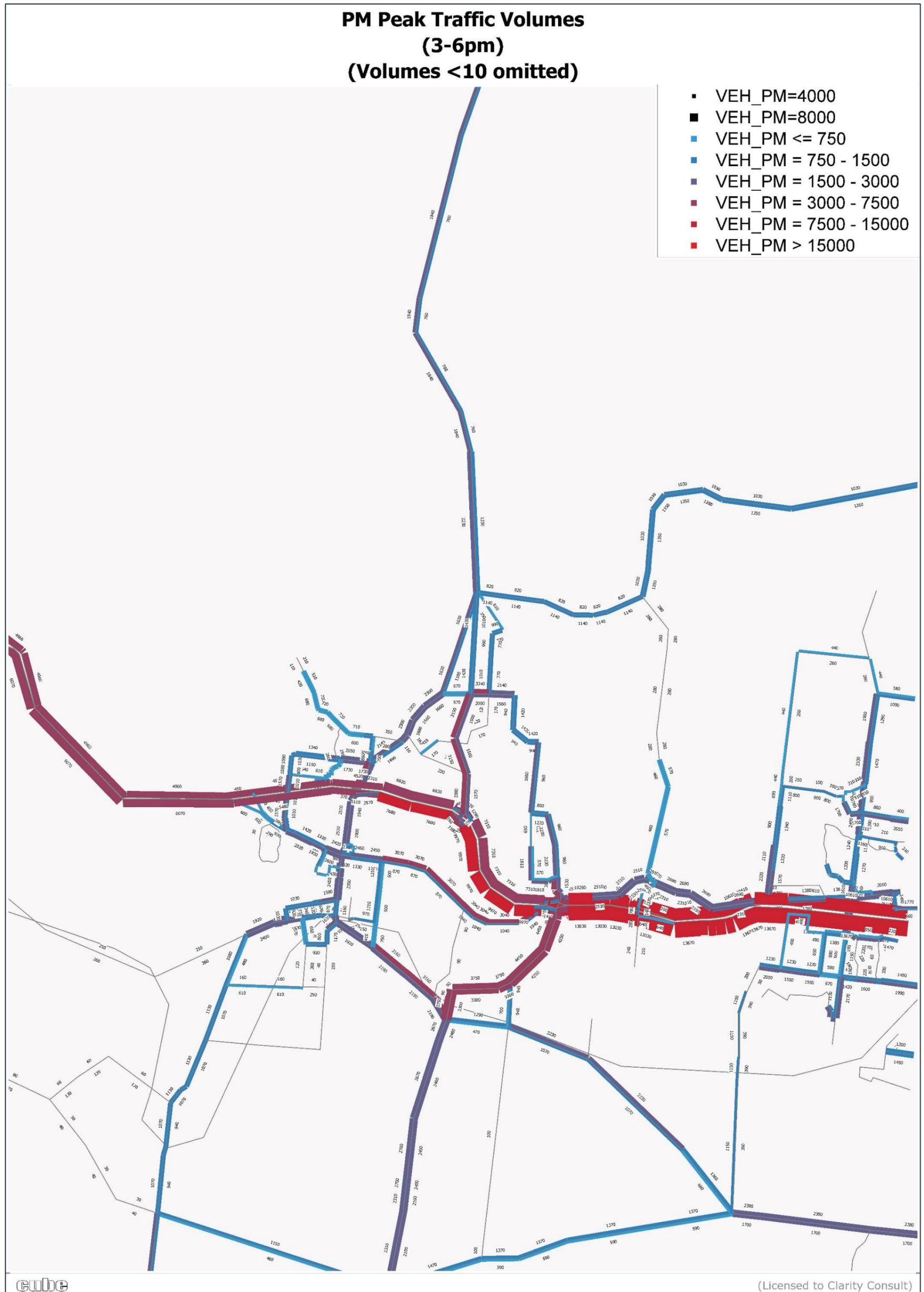
2056 Project Case – Daily Traffic Volume



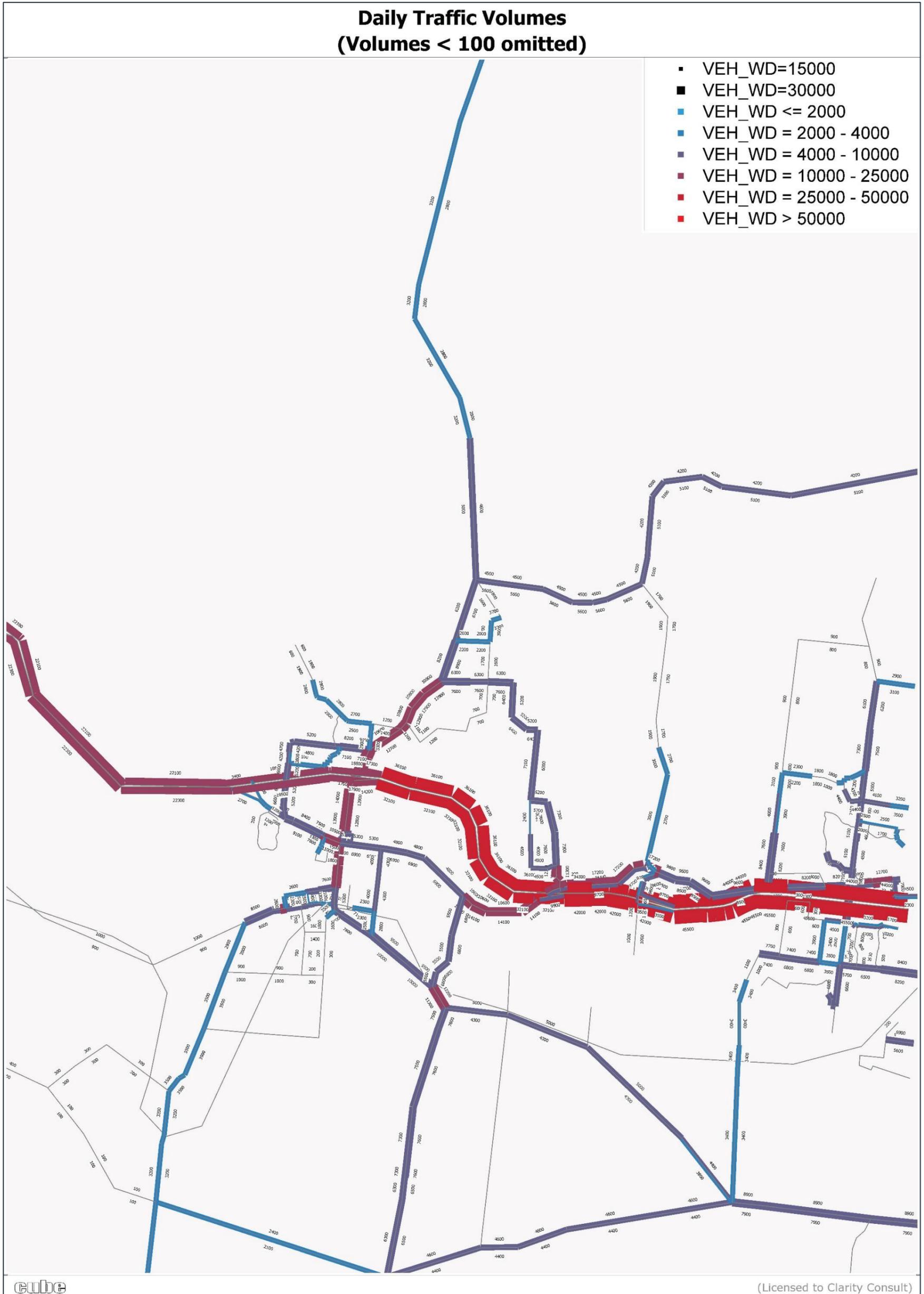
2056 Project Case – AM Peak Period Traffic Volume



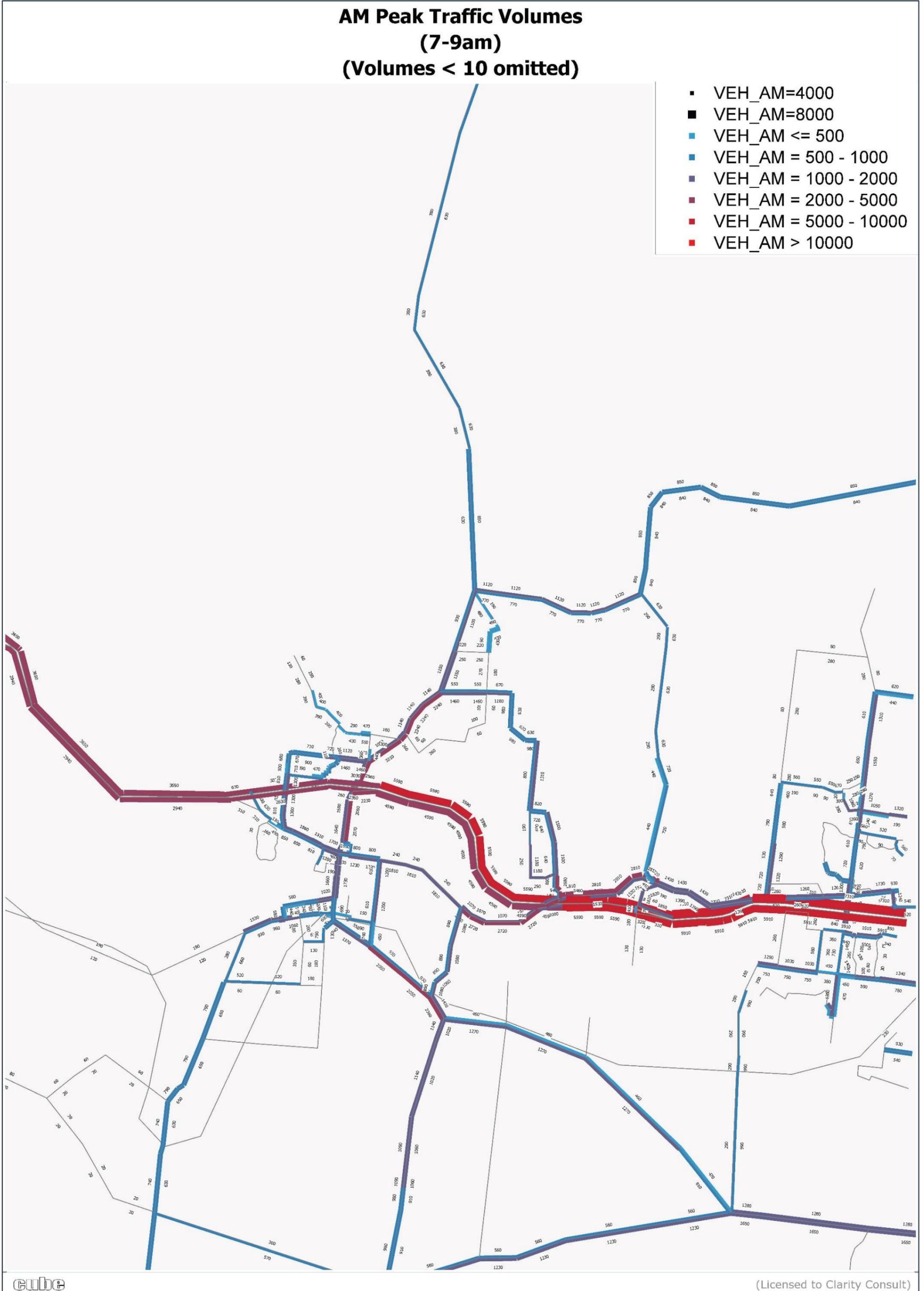
2056 Project Case – PM Peak Period Traffic Volume



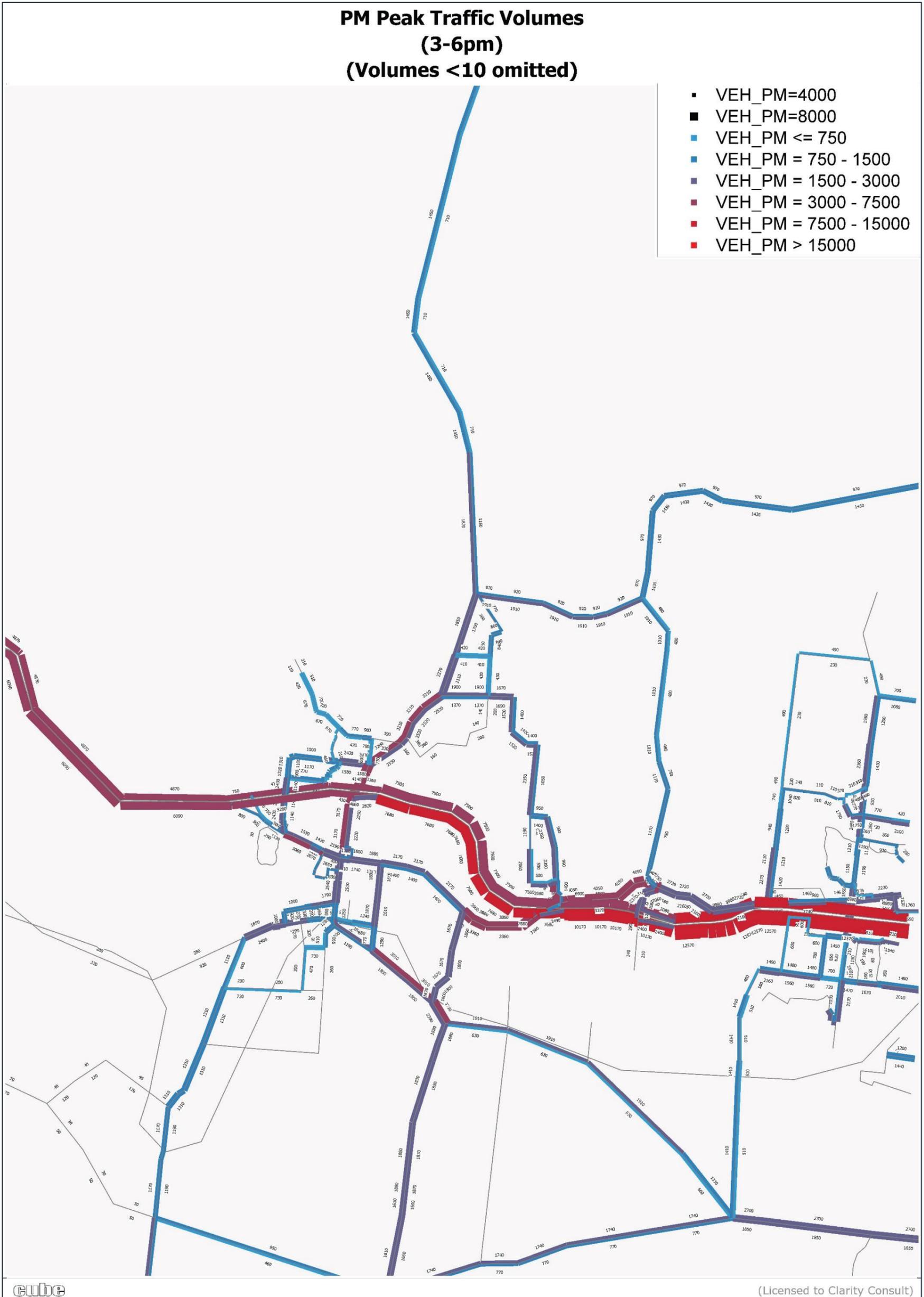
2056 No ELR Case – Daily Traffic Volume



2056 No ELR Case – AM Peak Period Traffic Volume



2056 No ELR Case – PM Peak Period Traffic Volume

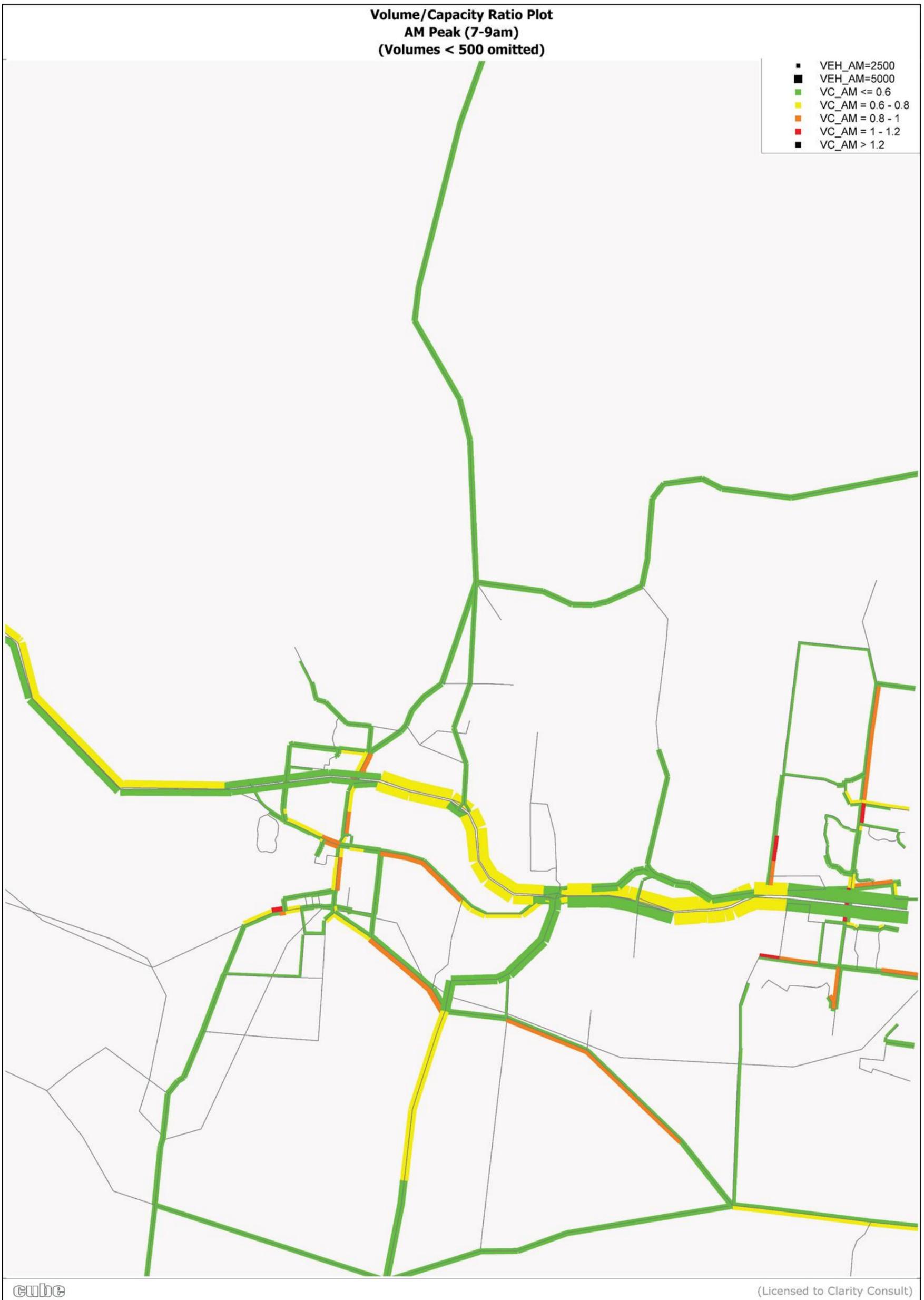


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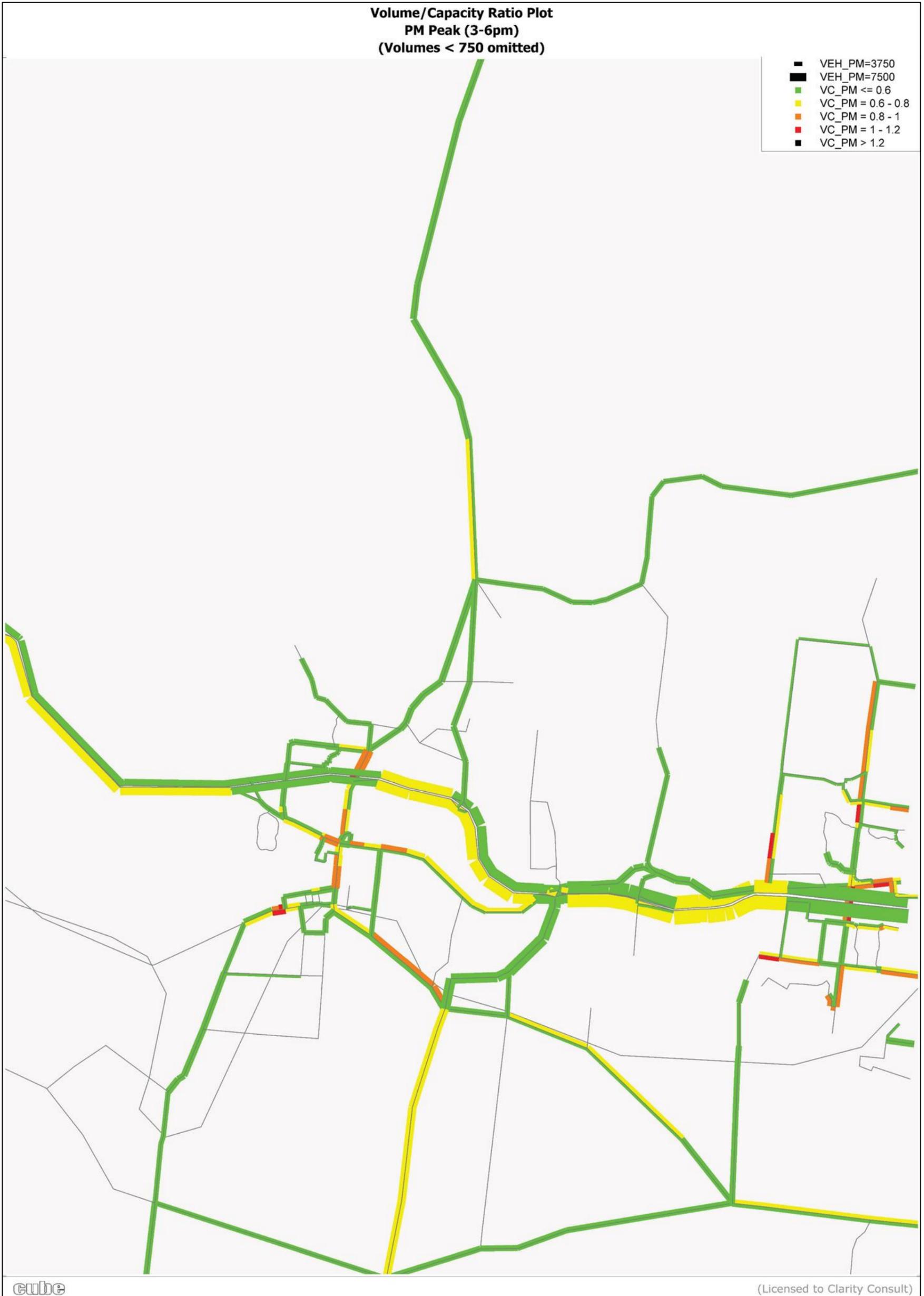
Appendix C: A3 Sized Volume-Capacity Ratio Plots

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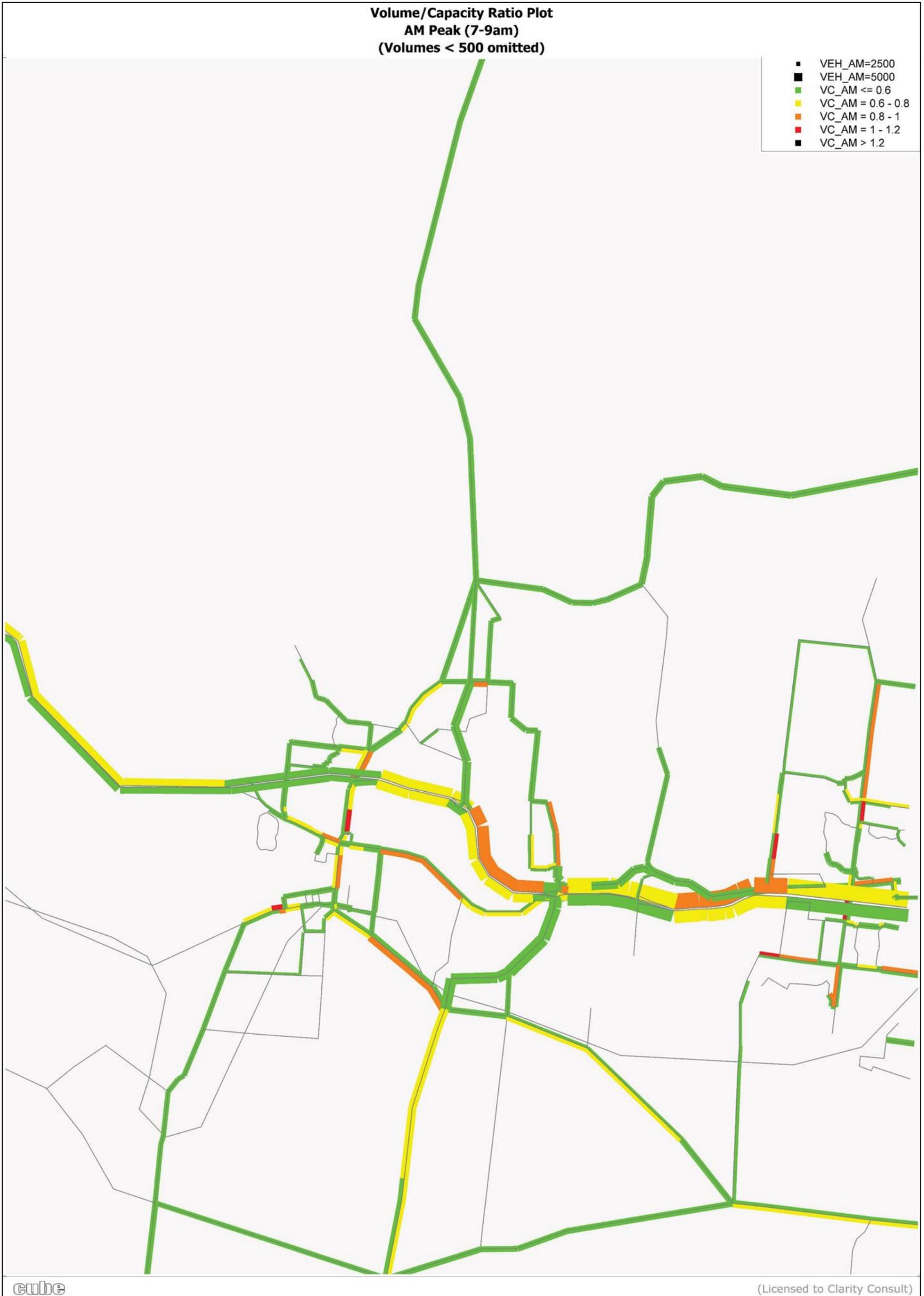
2056 Reference Case – AM Peak Period Volume-Capacity Ratios



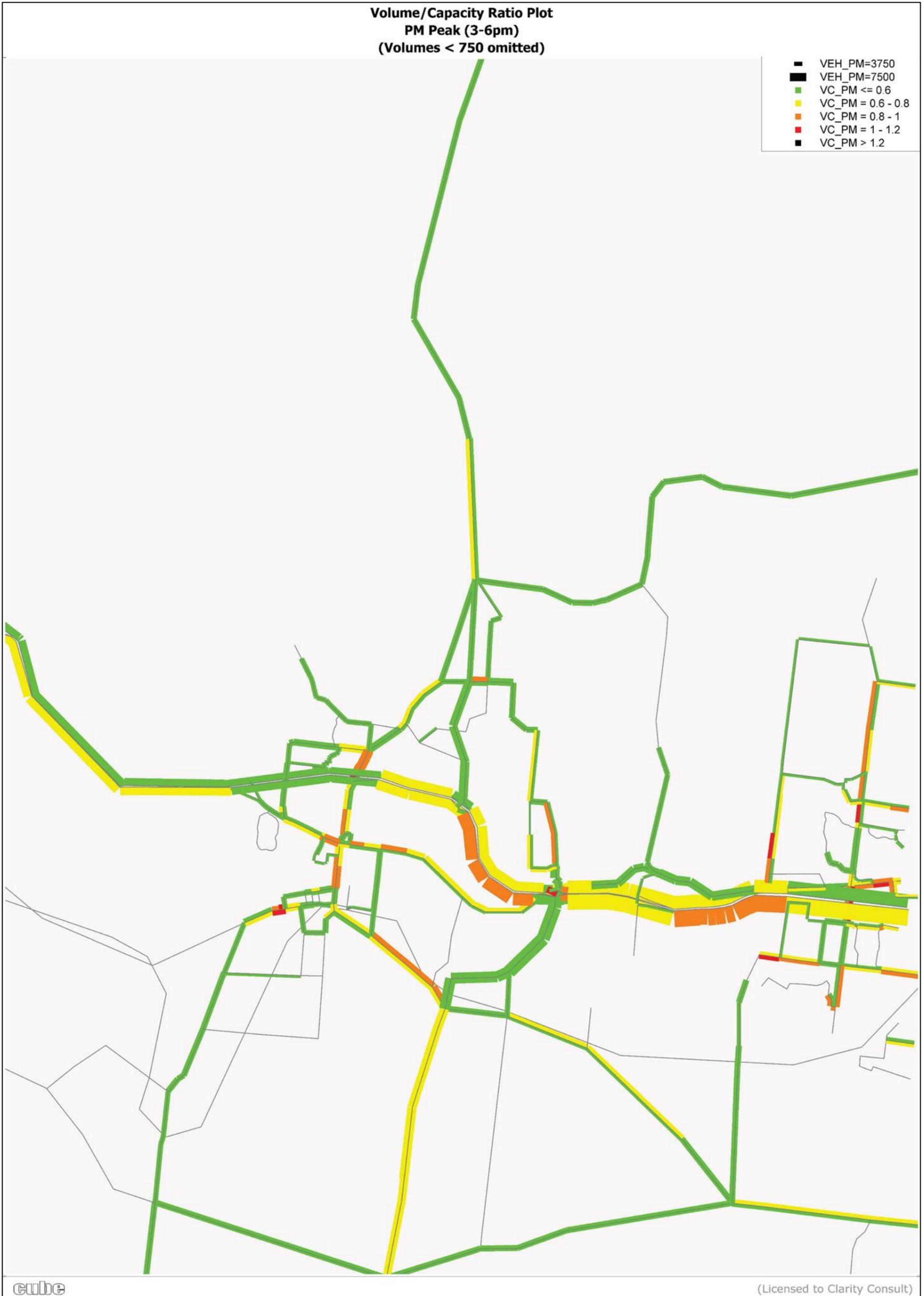
2056 Reference Case – PM Peak Period Volume-Capacity Ratios



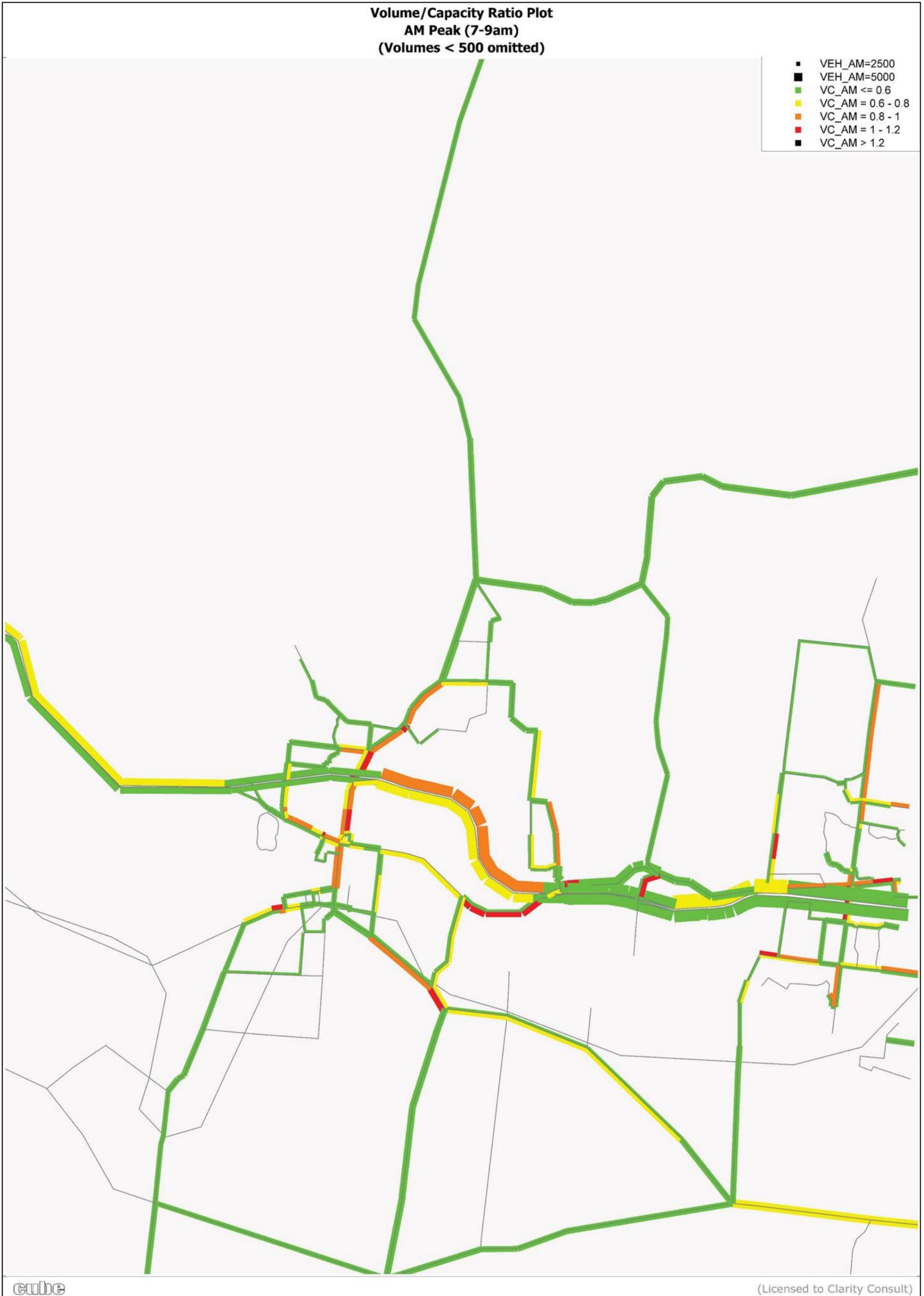
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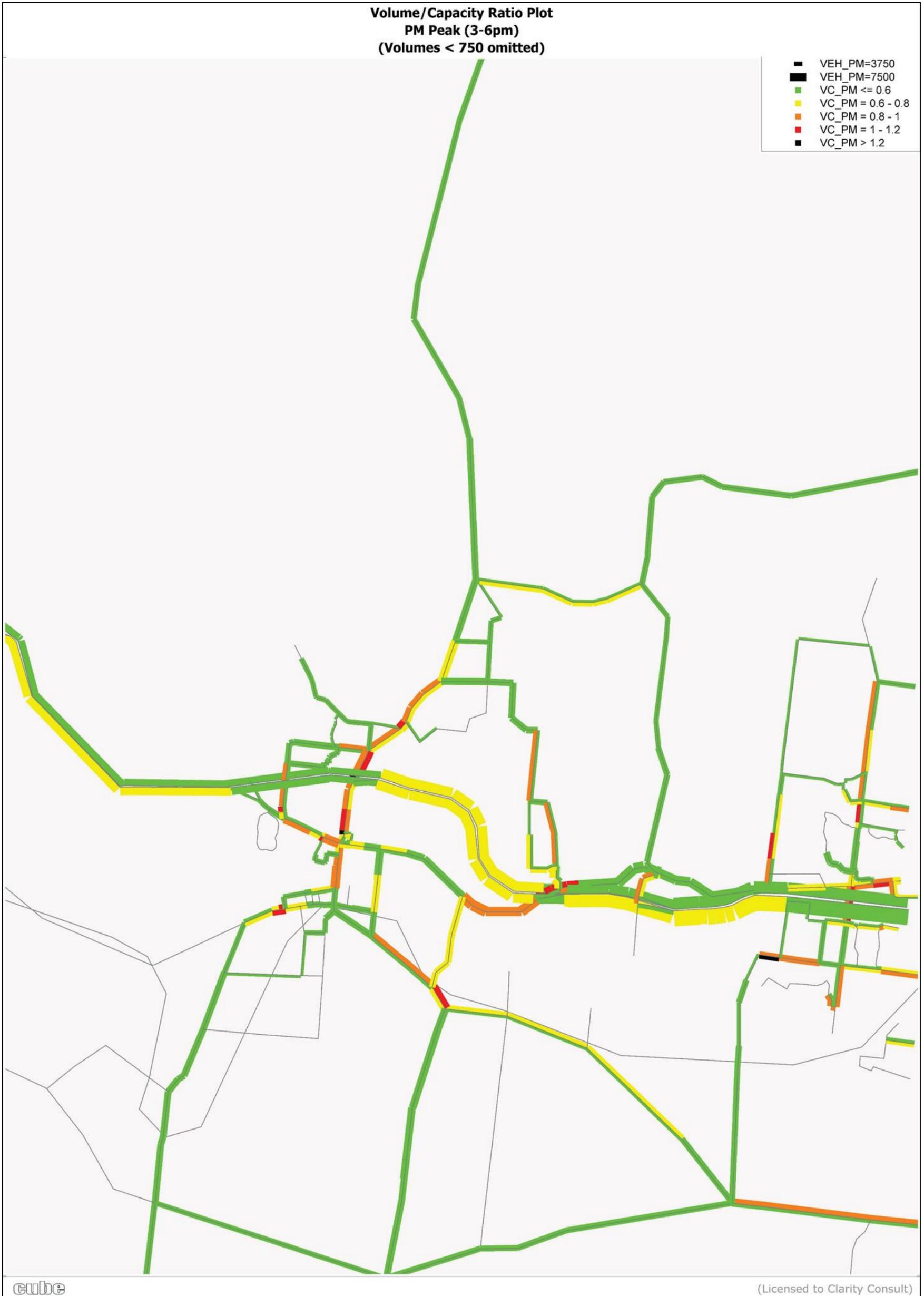
2056 Project Case – PM Peak Period Volume-Capacity Ratios



2056 No ELR Case – AM Peak Period Volume-Capacity Ratios



2056 No ELR Case – PM Peak Period Volume-Capacity Ratios



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