Macedon Ranges Shire Council

ATTACHMENTS

Council Meeting
Under Separate Cover

Wednesday 27 March 2024

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Macedon Ranges Shire Council

Strategic Plan

Kyneton Movement Network Study (2024-2033)

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Date of Adoption			
Adoption Method	☐ Council	☐ Executive	
CEO Signature		**Date**	
Manager	Eng Lim		
Department	Engineering and Resource Recovery		
Unit	Engineering Services		
Term	2024 to 2034		
Last Endorsement Date	Nil		
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Next Endorsement Date	June 2034		

Macedon Ranges Shire Council acknowledges the Dja Dja Wurrung, Taungurung and Wurundjeri Woi Wurrung Peoples as the Traditional Owners and Custodians of this land and waterways. Council recognises their living cultures and ongoing connection to Country and pays respect to their Elders past, present and emerging. Council also acknowledges local Aboriginal and/or Torres Strait Islander residents of Macedon Ranges for their ongoing contribution to the diverse culture of our community.

DOCUMENT HISTORY	Version	Date	Author
Initial Draft	1	16/2/2024	Eng Lim
Second Draft			
Final Draft			
Approval			

Contents

Executive Summary

The draft Kyneton Movement Network Study (2024) provides guidance on the provision and upgrade of existing movement network infrastructure required to support both the existing and potential future communities of Kyneton. This study will be used to inform future movement network infrastructure planning and provide direction to guide transport infrastructure and service planning provided by Council and other levels of government.

The draft Kyneton Movement Network Study has built on the previous draft study (2019) and associated community feedback and informed by existing movement network review and traffic modelling accounting for the anticipated growth in land use and population.

The study has identified future transport infrastructure and advocacy projects to guide capital works and resourcing priorities. These projects are generally intended to achieve the following outcomes:

- Improving access to and frequency of public transport network (bus and rail) which connects more people to public transport services during peak and off-peak times;
- Developing and improving/extending pedestrian and cycle networks to key destinations and improving the Campaspe River trail network;
- Developing stronger commuter connections to and from Kyneton to major services and employment centres;
- Integrating land use and transport planning;
- Facilitating tourism opportunities through greater connection with rail and the town cycling network;
- Making the road network safer by reducing congestion, rat running, improving intersections and addressing missing links in both road, footpath and public transport services;
- Catering for user needs for accessible parking; and
- Improving connectivity in and between new and established neighbourhoods.

Introduction

Macedon Ranges Shire Council (MRSC) undertook to prepare a new Kyneton Movement Network Study (KMNS) in 2022 with the assistance of the consultant O'Brien Traffic. This study aims to address transport and infrastructure development in the town for current needs and into the future in order to respond to the forecast population and land use development.

Stage 1 of the study was completed in June 2023 comprising a review of existing movement networks, strategic directions and previous community feedback, and identification of key gaps, issues and constraints in the movement network within Kyneton.

Stage 2 focuses on developing movement network projects and recommendations to address current issues, gaps, etc., identified in Stage 1 and to cater for future demands within Kyneton. This stage included an estimation of future traffic demand likely to be generated by projected land use growth within Kyneton using a strategic transport model.

Background

In 2010, the Kyneton Movement Network Infrastructure Study was adopted by MRSC, which identified existing movement network requirements for the town.

An Urban Design Framework (UDF) was prepared for Kyneton in 2008. This UDF was not adopted by Council but formed part of the background to the Kyneton Structure Plan. The Kyneton Structure Plan was completed in 2013 and an amendment was gazetted for its incorporation into the Macedon Ranges Planning Scheme in June 2017. In addition, the Kyneton South Investigation Area Framework Plan was prepared by MRSC to provide a high-level understanding of connections and infrastructure requirements in the investigation area.

A Draft Kyneton Movement Network Study (KMNS) was prepared in 2018 in response to the adopted Structure Plan and potential population and development projections for the southern areas of Kyneton. The draft KMNS (2018) was not finalised or adopted by Council because the community did not support several recommendations from this study.

Council is concurrently preparing a revised Urban Design Framework (UDF) for Kyneton which is due for completion in FY 2023-2024. The UDF is anticipated to enhance central Kyneton's important streetscapes, public spaces and buildings, as well as improve connections with the surrounding area. The UDF supports the implementation of the aspirations and initiatives recognised in the 2013 Kyneton Structure Plan.

The KMNS will support the UDF to address the current movement network needs and help prioritise Kyneton's future needs. The new KMNS will reflect the current strategic context and have regard to previous community feedback.

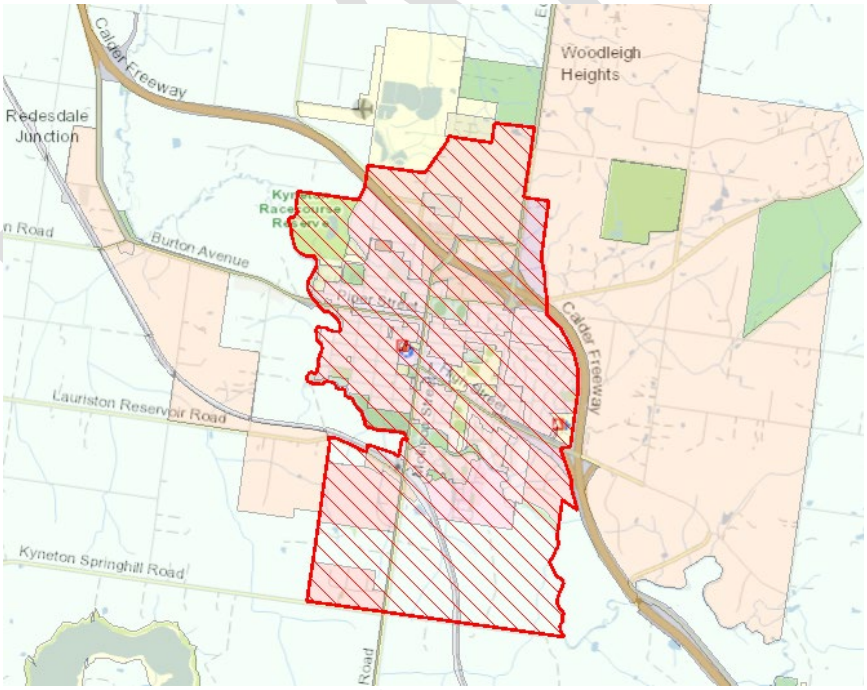
Population

The latest 2021 census data from the Australian Bureau of Statistics (ABS) states that the Kyneton District (Kyneton and its surrounds) has a population of 7,513 whereas the Township which is defined as Urban Centre and Locality (UCL) has a population of 5,114. When compared to the 2016 census data, the 2021 population reflects an increase of approximately 8% for the district and 5% for the township.

The Settlement Hierarchy vision in Clause 21.04 of the Macedon Ranges Planning Scheme forecasts Kyneton evolving from a District town (with a typical population under 6,000) to a Regional Centre (with a typical population of more than 10,000) by 2036.

Study Area

The study area includes the protected settlement boundary of Kyneton, as shown in Figure 1.



Source: VicPlan

Figure 1: Kyneton Study Area

The local facilities and precincts in Kyneton are shown in Figure 2.

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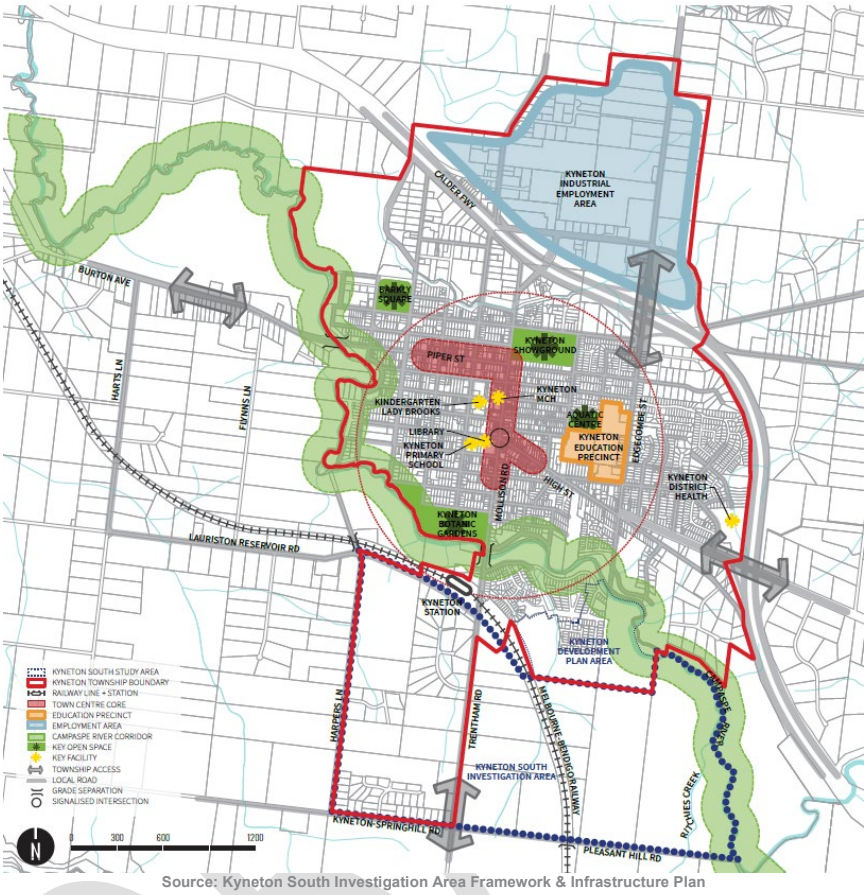

Source: Kyneton South Investigation Area Framework & Infrastructure Plan

Figure 2: Kyneton Local Context

Strategic Context

This section summarises the relevant strategic and local transport and planning documents that were considered to set the context for the KMNS.

State and Regional Strategies

Key state and regional documents that informed the development of the KMNS are listed below. Relevant details of these documents are provided in **Appendix A**.

- Plan Melbourne (2017-2050)

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- Victorian Road Safety Strategy
- Victorian Cycling Strategy 2018-2028
- Loddon Campaspe Integrated Transport Strategy (December 2015)
- Loddon Mallee South Regional Growth Plan (May 2014)

Council Policies and Strategies

Key local strategic and planning documents that informed the development of the KMNS are summarised in this section. Relevant details of these documents are provided in **Appendix B**.

- Council Plan (2021-2031)
- Shirewide Footpath Plan (2023)
- Mobility and Road Safety Strategy 2023-2032
- Disability Action Plan 2021-2025
- Kyneton Structure Plan (2013)
- Draft Kyneton Movement Network Study 2018 (Version 4, February 2019)
- Kyneton Urban Design Framework (ongoing)
- Walking and Cycling Strategy (2014-2024)

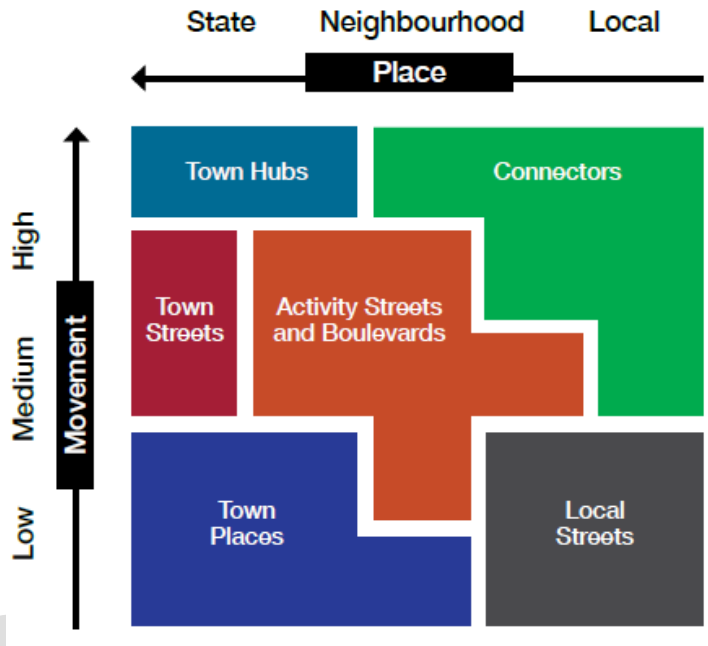
Movement Network Review

A movement network comprises all forms of transport modes including vehicles (private cars, public transport, and freight), cyclists and pedestrians. In addition, a review of car parking was also undertaken. This section outlines a summary of the movement network review within Kyneton.

Movement and Place Classifications

The Victorian Government adopted the Movement and Place (M&P) framework to translate broad strategic outcomes into priority changes improving community transport outcomes.

Six general road and street types define the various roads and streets on the rural transport network, as shown in **Figure 3**.



Source: 2023-2032 Mobility & Road Safety Strategy, MRSC

Figure 3: Movement & Place Classifications

The Department of Transport and Planning (DTP) has determined the movement and place classifications for streets throughout Victoria. The M&P classifications obtained from the Department of Transport were reviewed (refer to **Appendix C**) with findings are summarised below:

Movement & Place

- Town connections (i.e. arterial roads) are classified as M3 (moderate movement of people and/or goods), whereas Council roads are mostly classified as M5 (local movement). It is likely that a few M5 roads (e.g. Edgecombe Road) in Kyneton serve considerable "through" traffic.

- Place classifications in Kyneton are typically P4 (neighbourhood level of significance) or P5 (local level of significance). Some locations in Kyneton likely have a municipal or regional

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significance, i.e. people travel further to experience the location. Place classifications can change the movement classification that is assigned to its primary access route.

Walking

- Mollison Street, south of the Campaspe River is classified as W2 (regionally significant walking link) due to its proximity to the railway station.
- Mollison Street, north of Calder Freeway, and a section of Saleyards Road are also classified as W2, however, cannot be justified based on the adjacent land use (Place classification of P3 is inappropriate). These would be more appropriately classified as W3 (municipal walking link), the same as the remaining section of Saleyards Road and Edgecombe Road north of Calder Freeway (routes providing access to P4 places).
- The remainder of Mollison Street is classified as W3, supporting pedestrian movements to and around the strip shopping centre and other activity generators, as is Piper Street and High Street/Bourke Street.
- Other streets classified as W3 are part or all of Edgecombe Street, James Street Victoria Street, Ferguson Street, Epping Street, Welsh Street, Simpson Street, Baynton Street, Ebden Street, and provide access to the Education Centre, Bowling Club, library etc.
- The remainder of the streets within Kyneton township are classified as W4 (neighbourhood walking links) and serve mostly residential land, making up the balance of the pedestrian network.

Cycling

There are no C1 or C2 routes (Strategic Cycling Corridors) in Kyneton. The C3 (municipal routes) and C4 (neighbourhood and local links) routes are not yet shown on the M&P maps. Specialised classifications, such as recreational (CR) and training (CT) routes, have not been mapped either.

Freight

Mollison Street, High Street/Bourke Street and Piper Street/Burton Avenue are classified as F3 routes – freight access routes where provision for freight vehicles is important however freight is not a priority movement.

General Traffic

- Mollison Street, High Street/Bourke Street and Piper Street/Burton Avenue are classified as GT3 serving moderate movement of people on routes connecting municipalities or providing access to municipal-level places. Saleyards Road (between Mollison Street and Edgecombe Road) and Edgecombe Road north of the Calder Freeway are also classified as GT3 routes.

- All other streets in Kyneton are classified at GT5, serving local people movement. Some of these streets (eg. Edgecombe Street south of Calder Freeway) may be more appropriately classified as GT4, providing moderate movement of people within a municipality, or providing primary access to neighbourhood-level (P4) places.

Public Transport

Kyneton is served by regional rail, regional bus, and local bus services.

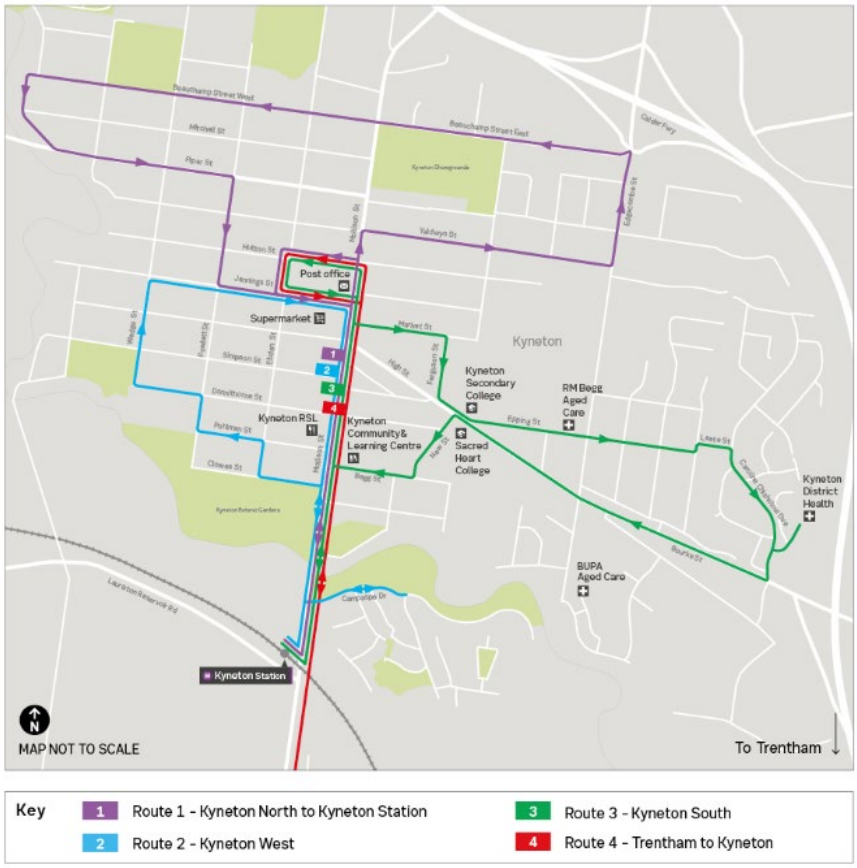
Rail Services

Kyneton Station provides access to train services on the Melbourne to Bendigo railway line. This line runs 7 days a week providing a direct connection to the metropolitan rail network via stops at Sunbury, Footscray and Southern Cross stations.

On weekdays, 22 services operate per day from Bendigo to Melbourne and 24 services operate per day from Melbourne to Bendigo. Services generally depart Kyneton at approximately 30-minute and 1-hour intervals during the peak and off-peak periods respectively. The Melbourne-Bendigo line runs 16-20 services on Saturdays and 13-17 services on Sundays.

Bus Services

Since April 2019, the Kyneton bus network has been expanded to run six days a week, with services operating Monday to Saturday. Bus Routes 1, 2 and 3, as shown in **Figure 4,** operate from approximately 6 am – 7 pm on weekdays with 9 or 10 return services, and approximately 8:30 am – 4 pm on Saturdays with 6 return services. Bus route 4 operates periodically on weekdays and Saturdays (2 services Monday to Saturday).



Source: PTV

Figure 4: Local Bus Routes

Regional bus routes serving Kyneton are as follows:

- Kyneton - Malmsbury, with a stop at the Kyneton Town Centre (once every weekday)
- Lancefield - Kyneton, with a stop at the Kyneton Town Centre (twice every day)

Detailed descriptions of rail and bus services are provided in **Appendix D**.

Walking and Cycling

The Macedon Ranges community has increasingly sought the provision of safe walking and cycling opportunities.

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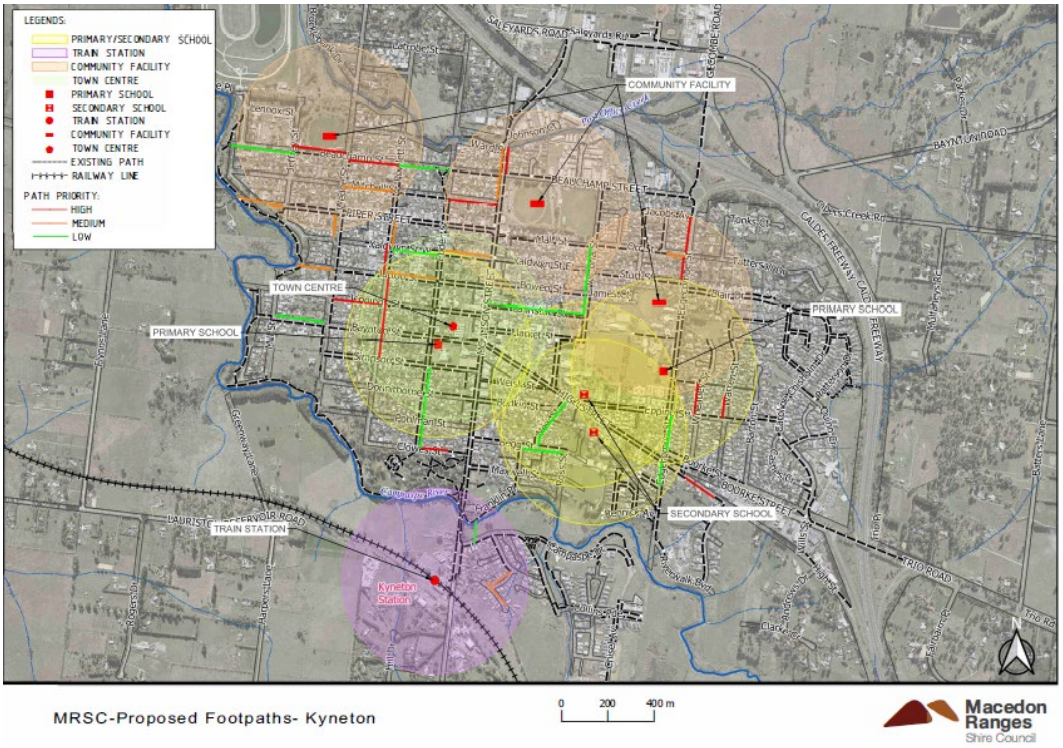
Whilst there is some cycling infrastructure in a few Kyneton roads, pedestrian paths are generally well provided throughout the Town Centre with some pedestrian paths within the general residential areas but more limited within industrial areas of Kyneton.

Pedestrian Network

The existing footpath network as well as the endorsed footpath plan from the Shirewide Footpath Plan 2023 (split into a priority list of High, Medium, and Low) is shown in **Figure 5**.



Source: Shire Wide Footpath plan, June 2023

Figure 5: 2023 Kyneton Footpath Plan

Cycle Network

Most existing roads within Kyneton have limited or no provision for cyclists. For towns such as Kyneton, a cycling network would typically incorporate the Municipal Bicycle Network (MBN), which refers to cycling routes on local roads, and the Principal Bicycle Network (PBN), which incorporates arterial road cycling. Strategic Cycling Corridors (SCC), which are typically a subset of the PBN, are high-priority cycling corridors. There are no MBN or PBN routes or SCCs in Kyneton.

Mollison Street, which is a state-managed arterial road provides on-road cycle lanes between Beauchamp Street in the north up to just north of the Campaspe River bridge in the south but

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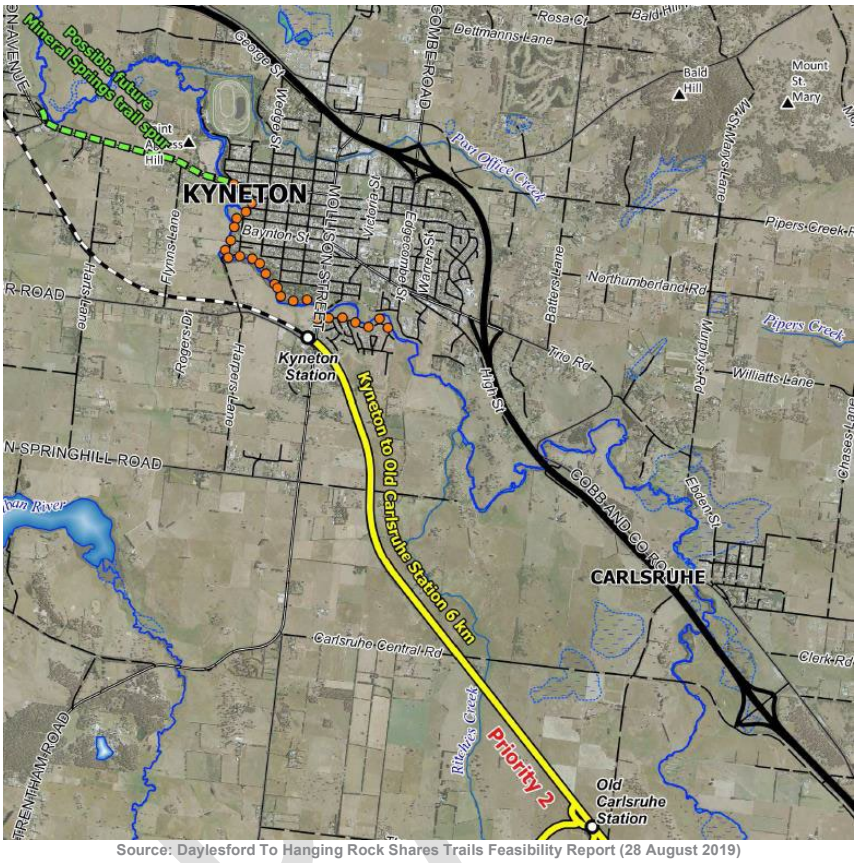
beyond this to the railway station, the cycle lanes are fundamentally non-existent and unmarked due to bluestone gutters.

Another state-managed arterial is High Street which provides on-road cycle lanes between Mollison Street and the Calder Freeway north-facing ramp on the southern side. However, there is no cycle lane on the northern side of High Street east of Edgecombe Street. A 1.5 m path within the Bourke Street reserve is deemed too narrow to cater for both pedestrians and cyclists.

Trail Network

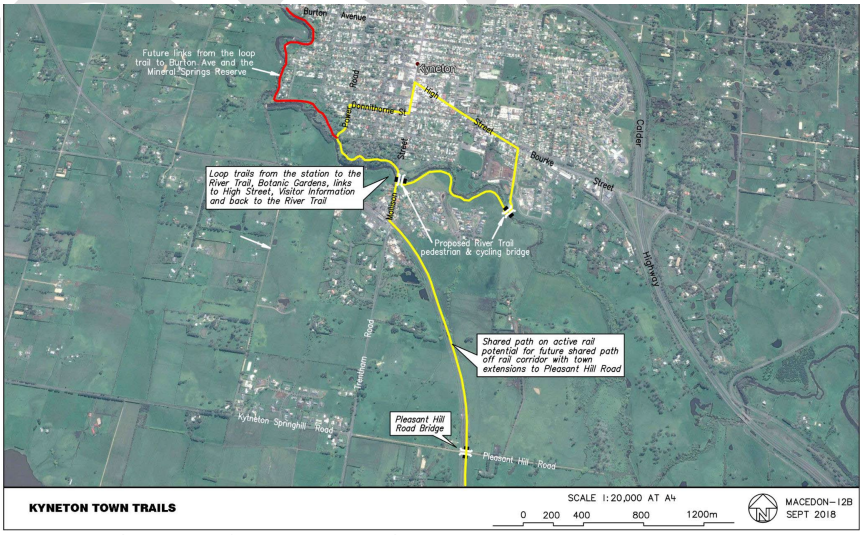
A shared trail is provided on the northern side of the Campaspe River west of Mollison Street, although gaps exist along this trail.

Council has prepared the *Macedon Ranges Shared Trails Feasibility Studies*. The studies recommended safe and convenient shared-used trails between major towns in the Shire, including Kyneton, to encourage cycling, walking and running for people across a range of abilities. The shared trail route between Kyneton Station and Old Carlsruhe Station and the potential connecting trails in Kyneton are shown in **Figure 6** and **Figure 7** respectively. This section of the trail network has been identified as development priority 2 of 6 (as part of the Kyneton to Woodend section).



Source: Daylesford To Hanging Rock Shares Trails Feasibility Report (28 August 2019)

Figure 6: Old Carlsruhe Station to Kyneton Trail Route



Source: Daylesford To Hanging Rock Shares Trails Feasibility Report (28 August 2019)

Figure 7: Potential Kyneton Trail Connections

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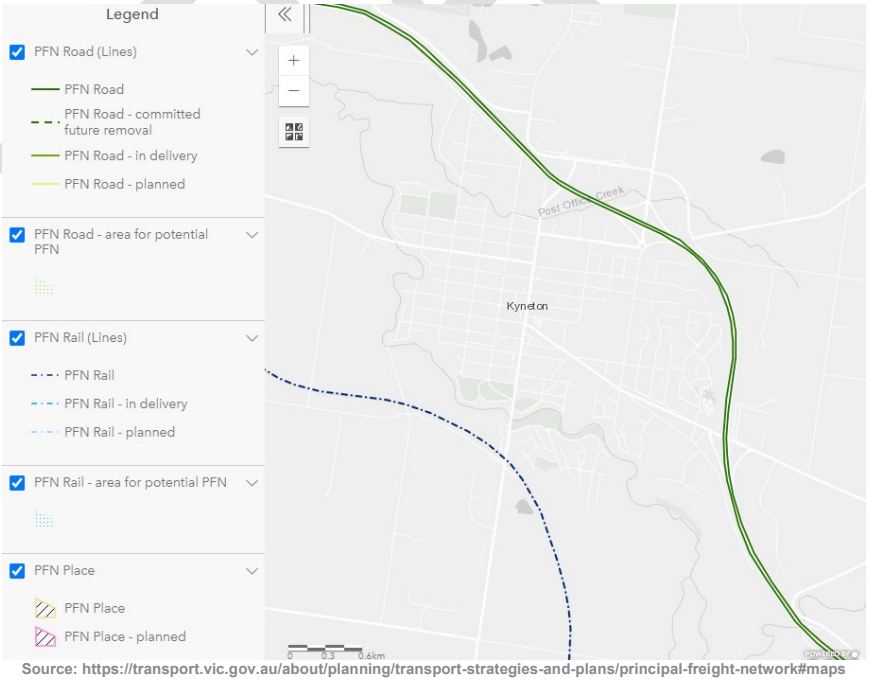
Micro-Mobility

Micro-mobility devices such as e-scooters and e-bikes are becoming a more prevalent mode choice. Many local governments within Metropolitan Melbourne are trialling micro-mobility devices; however, a detailed assessment of the usage, success, impacts, and community perception is yet to be produced.

Early opportunities to understand the community's perception and needs in relation to micro-mobility devices in Kyneton should be considered by Council. One way to do this is to incorporate specific questions into community survey(s) as part of this study. Based on the community feedback, further directions and actions can be developed for planning and implementing future movement network upgrades to cater for micro-mobility devices.

Freight

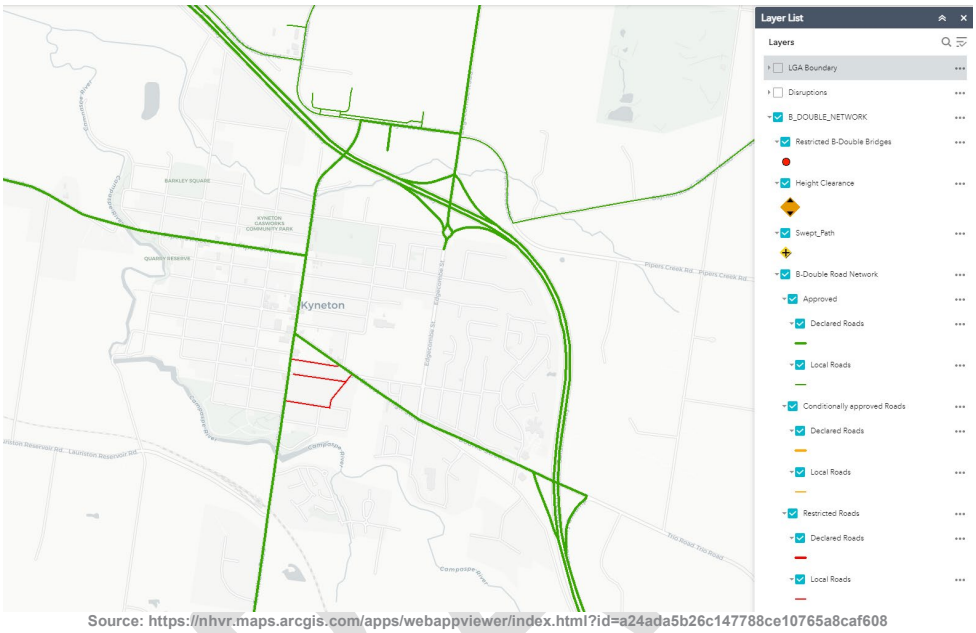
The Principal Freight Network (PFN), which was last updated in 2020 includes freight corridors and places of national, state, and regional significance that support high-capacity and efficient freight movements across Victoria. The PFN in and around Kyneton is shown in **Figure 8**. This map indicates that heavy vehicle movements generally bypass Kyneton via the Calder Freeway.



Source: https://transport.vic.gov.au/about/planning/transport-strategies-and-plans/principal-freight-network#maps

Figure 8: Principal Freight Network

Figure 9 shows a map of Victoria's B-double gazetted route network. B-double trucks are restricted to the state-managed arterial roads with some restricted access to local roads in Kyneton. These local roads are Begg Street, Bodkin Street, New Street and Saleyards Road (west of Mollison Street).



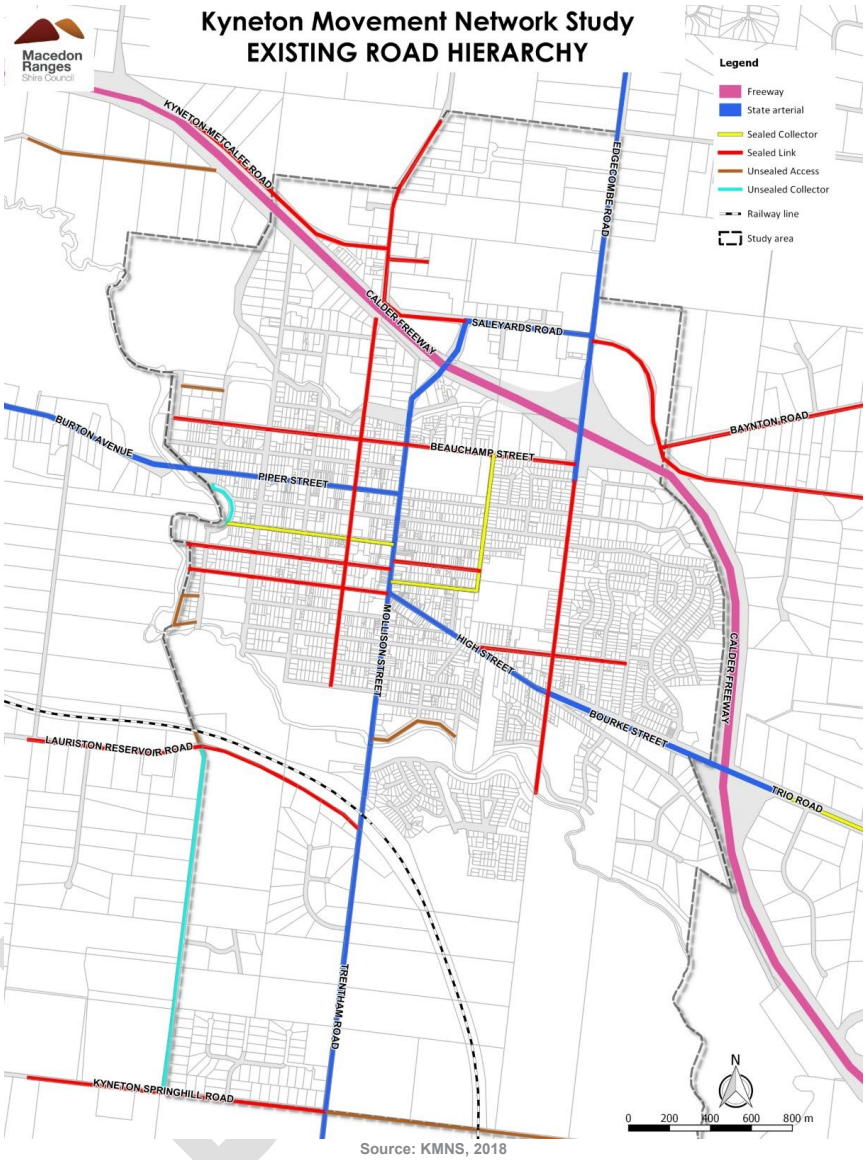
Source: https://nhvr.maps.arcgis.com/apps/webappviewer/index.html?id=a24ada5b26c147788ce10765a8caf608

Figure 9: Victoria's Gazetted B-Double Network Map

PBS routes in Kyneton are described in **Appendix E**.

Road Network and Traffic Volumes

As shown in **Figure 10**, the existing road network in Kyneton includes four state-managed arterial roads, connecting Kyneton with the region and several Council-managed collector and link roads. The existing road network hierarchy is categorised in accordance with the *Road Management Plan 2021*.



Source: KMNS, 2018

Figure 10: Existing Road Network Hierarchy

Traffic Volumes (2023)

Macedon Ranges Shire collected tube traffic counts on key roads within Kyneton in August/September 2023. This count data is summarised in **Table 1.**

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Road and Segment	2023 Count Data		
	Average Weekday Traffic (vpd)	AM Peak Hour Traffic (vph)	PM Peak Hour Traffic (vph)
High Street west of Caroline Chisholm Drive	6,950	689 (8-9 am)	653 (3-4 pm)
Mollison Street north of Mollison Place	3,640	274 (9-10 am)	341 (2-3 pm)
Edgecombe Road between Saleyard Rd and Dettmanns Ln	3,220	269 (8-9 am)	306 (3-4 pm)
Burton Avenue between Harts Ln and Flynns Ln	4,310	390 (8-9 am)	411 (3-4 pm)
Trentham Road north of Carlsruhe Road	2,420	236 (8-9am)	233 (3-4pm)
Edgecombe Street south of High Street	490	36 (9-10 am)	45 (3-4 pm)
Edgecombe Street outside of #46	3,840	447 (8-9 am)	374 (3-4 pm)
Bodkin Street west of New Street	1,160	95 (10-11 am)	96 (3-4 pm)
Begg Street outside #19A	520	41 (8-9 am)	53 (3-4 pm)
Harts Lane south of Lauriston Reservoir Road	90	8 (9-10 am)	9 (5-6 pm)

Table 1: 2023 Traffic Data on Key Roads in Kyneton

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A comparison of the previous (2015-2017) and recent count data suggests that daily traffic on Edgecombe Street and Trentham Road has increased quite significantly in the last 8 years.

Traffic movement counts were commissioned at key intersections in Kyneton on Wednesday 6 September 2023 from 3 pm to 6 pm. The peak hour counts are shown in **Appendix F**. In addition, traffic movement counts were commissioned by the consultant at the Mollison Street/Campaspe Drive intersection on Wednesday 6th April 2022 from 7 am to 9 am and 3 pm to 6 pm. The peak hour counts are included in **Appendix F**. This data suggests that Mollison Street would be carrying as many as 4,500 vehicles per day just north of Campaspe Drive.

A review of SCATS volume counts at the Mollison Street/High Street intersection was undertaken for two weeks from Monday 26 September 2022 to Sunday 9 October 2022. The first week of this period overlaps with the school holidays, while the second week denotes a typical time of the year. Traffic volumes were generally higher, albeit slightly when schools were open. Each of the two Fridays recorded the highest volumes within the corresponding week.

Hourly traffic volume profiles at this intersection for Thursday, Friday and Saturday are shown in **Figure 11**. This data indicates that on a typical midweek day (Thursday), traffic volumes generally increased from 10 am, peaked at 3 pm and then rapidly reduced thereafter. On the contrary, there were two peaks on Friday, one at noon and another at 3 pm. Volumes were quite consistent on Saturday from 10 am to 1 pm. The morning peak was relatively insignificant on both weekdays.

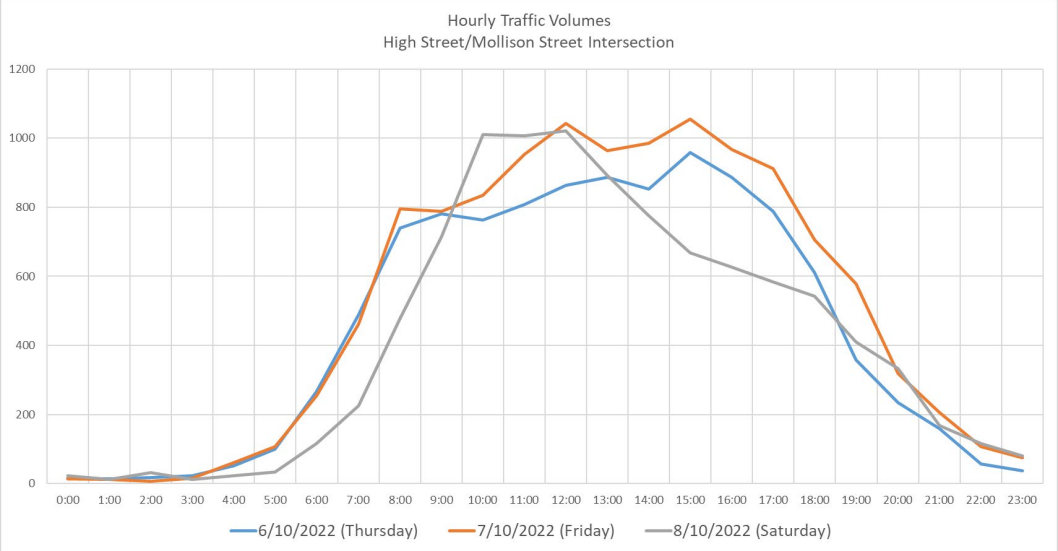


Figure 11: Sample Volume Profile at High Street/Mollison Street Intersection

Signal Operations

A review of the signal operation was carried out for the High Street/Mollison Street intersection to identify any opportunities for improvements. The phasing sequence includes a pedestrian-only phase which can be activated by pedestrians wanting to cross the northern and eastern legs of the intersection. A dedicated right-turn phase is provided for the south-to-east movement. These right turns are also permitted when gaps are available in the southbound traffic stream along Mollison Street. Further discussion with the Department of Transport and Planning (DTP) will be required to see if there is any opportunity to optimise signal sequence and timings, subject to a detailed assessment of SCATS phasing and timing reports.

Casualty Crashes

A review of the DTP's CrashStats data for the last available five years was undertaken. There was a total of 31 crashes reported in Kyneton from 2016 to 2020. Of the 31 crashes, 7 involved serious injuries and there were no fatalities.

Key trends include:

- Three pedestrian crashes occurred on Mollison Street (one at Jennings Street involving minor injuries, one at Yaldwyn Street involving minor injuries and one at Mitchell Street involving serious injuries).
- Most of the crashes occurred on the arterial roads - 12 on Mollison Street, 4 on Piper Street, and 3 on High Street/Bourke Street.
- Multiple crashes occurred along the local streets of Jennings Street, Ebden Street and Yaldwyn Street - all at cross intersections.
- Most of the crashes occurred at intersections, including:
    - 3 crashes at Mollison Street/Beauchamp Street (2 cross intersection type crashes, one rear-end crash)
    - 2 crashes at Mollison Street/Yaldwyn Street (1 cross intersection crash, 1 pedestrian crash)
    - 2 crashes at Yaldwyn Street/Ebden Street (1 cross intersection crash, 1 out of control crash)

- 2 crashes at Bourke Street/Caroline Chisholm Drive (both cross-intersection type crashes).

- There were 10 cross-traffic type crashes in Kyneton. The intersections were:
  - Piper Street/Wedge Street involving minor injury;
  - Jennings Street/Powlett Street involving minor injury;
  - Jennings Street/Ebden Street involving serious injury;
  - Yaldwyn Street/Ebden Street involving minor injury;
  - Piper Street/Ebden Street involving minor injury;
  - Mollison Street/Yaldwyn Street involving minor injury;
  - 2 x Mollison Street/Beauchamp Street, one involving serious injury and another involving minor injury;
  - Yaldwyn Street/Market Street involving minor injury; and
  - Bourke Street/Caroline Chisholm Drive intersection involving minor injury.

Car Parking

Car parking in Kyneton comprises a number of off-street car parks and a mix of restricted and unrestricted parking within various streets.

Parking Surveys

The parking survey and assessment previously undertaken by another consultant (dated 12 July 2021) for the Kyneton Town Centre UDF were reviewed. A car parking occupancy and duration survey was undertaken on Tuesday 11 February 2020 between 7 am – 7 pm and Saturday 15 February 2020 between 9 am – 4 pm within the four key precincts in Kyneton (Town Centre UDF study area, Sports and Aquatic Centre, Education Precinct and Train Station). This data is likely to represent typical conditions before the COVID-19 pandemic.

A second round of surveys was undertaken on Tuesday 21 April 2021 and Saturday 24 April 2021. The survey dates were chosen to avoid conflicts with school holidays and COVID-19 restrictions. The survey locations were expanded compared to the February 2020 survey.

A review of the above survey data and associated memorandums was conducted. Key findings have been reproduced below:

UDF Area (Town Centre)

- The peak is generally between midday and 1 pm on weekdays and between 11 am – 12 pm on Saturdays.
- The peak occupancy for off-street parking on weekdays and Saturdays is considerably higher than it is for on-street parking (possibly due to different time restrictions).
- The off-street car parks on Hutton Street, Jennings Street, Simpson Street and Yaldwyn Street East operate near capacity throughout the course of the business day (9 am – 5 pm) on weekdays. The peak occupancy for off-street parking is 83%.
- Piper Street between Mollison Street and Ebden Street has a consistently high occupancy throughout the day, ranging from 90 to 100%.
- Overall, there are sufficient car parking spaces available to accommodate the current demand and possibly an increased demand in the short term within the Town Centre. More off-street parking may be needed in the near future.

Sports and Aquatic Centre

- The peak is generally between 3-4 pm on weekdays and 10-11 am on Saturdays.
- The car parking occupancy levels on Saturdays are significantly higher than the weekdays, which is likely to be associated with the recreational classes/sessions running within the centre.
- Overall, there are sufficient car parking spaces available to accommodate the current demand and increased demand in the medium term within the Sports and Aquatic Centre.

Education Precinct

- The peak is generally between 3-4 pm on weekdays but varies on Saturdays.

- The car parking occupancy levels on Saturdays are significantly higher than the weekdays, which is likely to be associated with the recreational classes/sessions running within the centre.

- Overall, there are sufficient car parking spaces available to accommodate the current demand and increased demand in the medium term within the education precinct.

Train Station

- The peak is generally between 11 am – 12 pm and between 1-3 pm on weekdays with 81% occupancy, and between 2-3 pm on Saturdays with 19% occupancy.

- Overall, there are sufficient car parking spaces available to accommodate the current demand and possibly an increased demand in the short term. More parking may be needed at the railway station in the near future.

Accessible Parking

The provision of accessible parking is 38 spaces, comprising 24 spaces within the off-street car parks within the Town Centre, 4 on-street spaces within the Town Centre, 5 spaces at the Sports & Aquatic Centre and 5 spaces at the train station. This provision is equivalent to about 1.8% of total public parking spaces across the four precincts, Town Centre, Sports & Aquatic Centre, Education Precinct and Train Station. The Education precinct provides only one public accessible parking on Victoria Street.

The 2021 parking assessment referenced above indicated a peak occupancy rate of 33% for accessible parking. This study, however, noted that the provision of accessible parking is limited outside of the concentration of off-street parks.

Generally, 2% of the total parking provision should be accessible parking spaces. Given the peak occupancy of accessible parking is only 33%, any increase in accessible parking in the future will be subject to requests and further investigation on a case-by-case basis.

Issues and Opportunities

The issues and opportunities have been developed in this section based on the previous work undertaken by Council and associated community feedback and a review of the existing and likely future movement network conditions.

Public Transport

Key potential issues in relation to public transport services in Kyneton are summarised below.

- Inadequate bus access and connections to new residential areas south of Campaspe River, the industrial precinct, BUPA Aged Care Centre off Riverwalk Boulevard and along the full length of Edgecombe Street.
- Inadequate frequency of town bus routes during the morning and afternoon peak periods (particularly late mornings and early afternoons).
- The lack of frequent buses between the train station and the town centre during peak tourist season.
- Congestion on three of the four town routes.
- Empty buses during the off-peak. Need to optimise bus routes and services.
- Emissions and pollutants generated by buses.

Detailed issues and opportunities are provided in **Appendix G**.

Walking and Cycling

Key potential issues in relation to pedestrians and cyclists in Kyneton are summarised below.

- Incomplete walking or cycling infrastructure and road crossings on routes to and from the Kyneton Station
- The lack of safer and convenient town connections, road crossings and supporting infrastructure.

- Missing links and/or narrow sections along the river trail between Piper Street and Sanctuary Drive.
- Access connections along the river trail are too few and far between.
- The lack of pedestrian and cycling crossing across the Campaspe River.
- Supporting amenities, such as wayfinding, water taps, etc. are missing along the river trail.
- There is an opportunity to introduce marked cycle lanes on Piper Street as there is enough width adjacent to marked parking bays.
- Several high-order Council roads, e.g. link and connector roads, have no footpaths or only provide a footpath on one side.
- There is an opportunity to enable walking or cycling paths to safely access the town from the residential area to the north (e.g. Bushland Resort) and to the south (Kyneton South off Trentham Road).
- The existing on-road cycle lanes are narrow to encourage more cycling.
- The surface type and width of footpaths vary throughout the town.
- One of the key barriers to walking around and within the Town Centre is the lack of priority crossings on busy streets.
- Transit through the Mollison Street/High Street and Mollison Street/Piper Street intersections can be difficult and unsafe for cyclists.
- There is an opportunity to identify and map C3, C4, CR and CT routes for Kyneton on M&P classifications.

Detailed issues and opportunities are provided in **Appendix G**.

Freight

Through/external freight traffic via the Town Centre is an issue, which can impact the local amenity. The revision in the PFN may have reduced the quantum of external freight movements via the Town Centre.

Delivery truck movements into and out of Mollison Street should be encouraged to occur outside the peak periods (AM, midday and PM) which has the potential to improve amenity and enhance the safety of vulnerable users.

Providing adequate wayfinding signage for heavy vehicles on the approaches to the town and key destinations such as the industrial precinct could redirect the flow of heavy vehicles away from streets being used by pedestrians and cyclists.

Road Network and Traffic Operations

Key potential issues and opportunities in relation to the road network and operation in Kyneton are summarised below.

- Capacity shortfall at the High Street/Mollison Street intersection.
- Rat running and speeding on Begg Street, Bodkin Street and New Street.
- Future opportunity for a second access to new residential developments south of Campaspe River.
- Right and left turns out of Jennings Street can be challenging and unsafe.
- Delays at the right turn movement from Piper Street into Mollison Street.
- A high number of cross-intersection crashes at the Mollison Street/Beauchamp Street intersection. vehicles turning right from Mollison Street into Market Street block the through movement.
- Right turns from High Street into Epping Street often block the through movement.
- Traffic volumes, vehicle speeds and parking shortfall are the areas of concern along Edgecombe Street in the vicinity of the education precinct.

- Rat running could occur on Ebden Street, Powlett Street, Pohlman Street, Donnithorne Street and Clowes Street.

Detailed issues and opportunities are provided in **Appendix G**.

Car Parking

Potential issues in relation to parking in Kyneton are summarised below.

- The provision of accessible parking is limited outside of the concentration of off-street car parks off Mollison Street.
- The accessible parking is almost negligible (0.3% of all public parking supply) within the Education precinct.
- Non-standard and inconspicuous spaces tend to be less useable.
- More parking spaces are likely to be required at the train station in the future as the population grows.

Detailed issues and opportunities are provided in **Appendix G**.

Kyneton Traffic Model (2041)

A traffic model was utilised as a tool to assist in determining what impact the proposed land use changes within the Kyneton Township will have on the existing road network and help determine what road network changes/upgrades are required to meet the expected growth in traffic.

For the future year, Council advised utilising the following growth forecasts for the development of the future baseline model:

- Housing demand: 85 dwellings per annum, with 80% (70 dwellings) delivered in greenfield areas and 20% (15 dwellings) delivered in infill locations.
- Commercial development: Total floor area and employment within the retail and office sector to align with recommendations in the Tim Knott report (5,200 square meters).
- Industrial Employment: a rate of 2.46% per annum.

- Education: Employment and enrolment growth based on historical data from the My School website for each school in Kyneton.

The resultant housing growth forecast in the southern development area of Kyneton is shown in **Figure 12**.

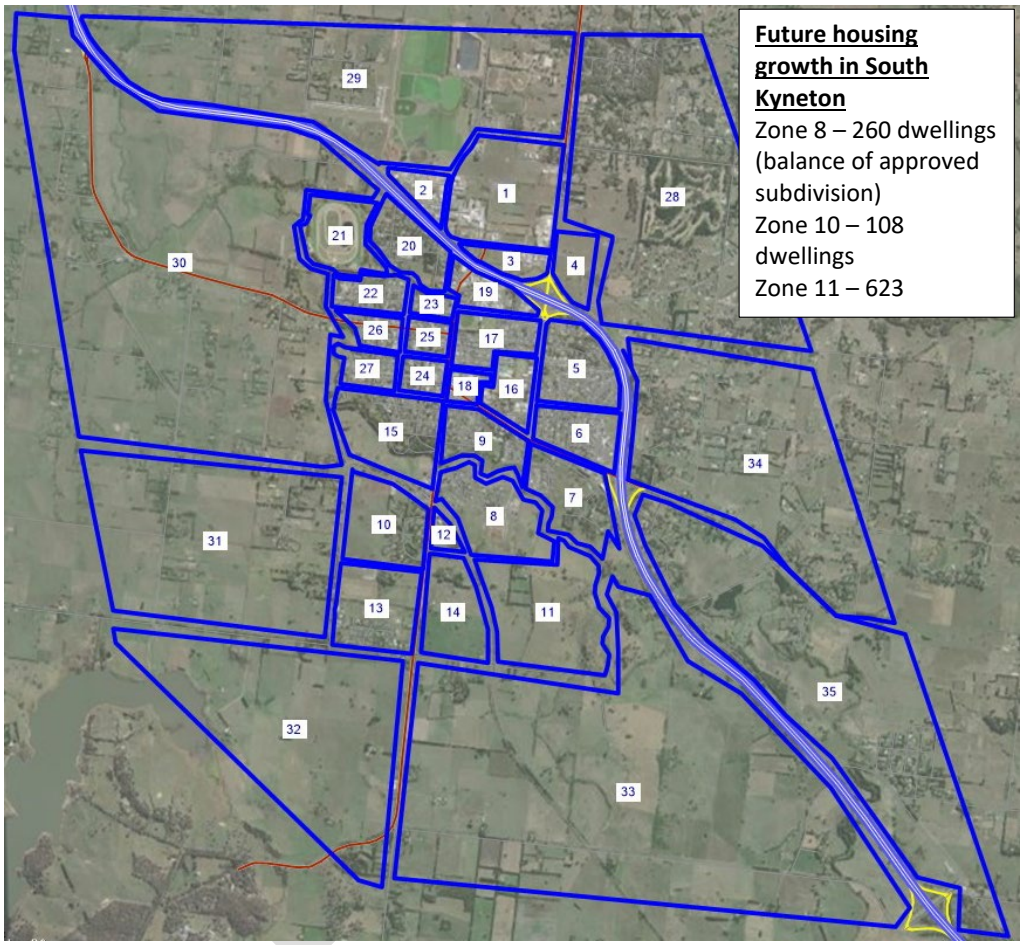


Figure 12: Zoning Structure and Assumed Housing Growth in South Kyneton

Following calibration/validation of the existing year model, the modelling assessment included three scenarios:

- 2041 baseline, using existing road network
- 2041 future network Option 1 comprising the Edgecombe Street Bridge connection across the Campaspe River and the town centre bypass route via Flynns Lane and

- 2041 future network Option 2, similar to Option 1 but the bypass route via Harts Lane.

Further description of each scenario is included in **Appendix H**.

Key findings of the modelling assessment are as follows:

- Average weekday traffic counts presented in **Table 1** on local roads are within the indicative traffic capacity set out in Clause 56.06 of the Macedon Ranges Planning Scheme for corresponding functional classification.
- Key east-west corridors, such as High Street, Piper Street and Burton Avenue have high usage although traffic on these roads is well within the anticipated capacity of 18,000 vehicles per day and 900 vehicles per hour per direction.
- Base year traffic model indicates that all roads within Kyneton operate with available capacity.
- Mollison Street is the busiest road in the traffic model, particularly a section between High Street and Yaldwyn Street, although it also has some spare capacity.
- Field observations indicate that the section of Mollison Street between Simpson Street and Lauriston Street, particularly the High Street intersection is often congested in the PM peak period.
- A notable uplift in traffic volumes is forecast in the Kyneton region to 2041 during the PM peak period (3-6 pm).
- There would be noticeable congestion in parts of the network in the future baseline scenario (without Edgecombe Street connection across the Campaspe River), most significantly on Mollison Street.
- The Edgecombe Street connection would be well utilised as it becomes the key north-south corridor, along with Mollison Street. This is logical and plausible.
- The two future network scenarios with Edgecombe Street connection would result in significant congestion relief on Mollison Street given part of the north-south traffic is redistributed to Edgecombe Street.

- The two future network scenarios with Edgecombe Street connection indicate no significant catchment for the south-to-west movements in the model leading to negligible use of both potential bypass routes.

- Traffic demands in both network scenarios are very similar.

It is noted that both town centre bypass routes did not attract any considerable traffic and therefore, were not included in the ultimate recommendations.

A further assessment of forecast traffic volumes in both future network scenarios indicates that estimated daily traffic (based on peak hour to daily traffic ratio of 10%) would be within the theoretical capacities of key roads within Kyneton.

The model predicts relatively low utilisation of Campaspe Drive and the future east-west connector compared to Edgecombe Street. Further interventions are recommended along Edgecombe Street to minimise the increase in traffic volumes and retain the Calder Highway and Mollison Street as the main north-south routes. Following the implementation of the recommended projects (e.g. traffic calming treatments and reduced speed limit on Edgecombe Street, upgrades to the High Street/Mollison Street intersection, etc.), it would be expected that more traffic than those predicted by the model would utilise these two roads. This would alleviate the pressure (if any) on Edgecombe Street and lower its peak period volumes within the theoretical capacity.

A draft modelling report, including detailed traffic volume outputs, is provided in **Appendix I**.

Recommendations

Recommendations and projects that address the identified existing transport issues and movement network gaps, and that cater for the predicted growth in traffic volumes have been developed and presented in this section.

The recommendations have been organised by the movement type (public transport, walking & cycling, freight, road network, traffic operations and car parking etc. Key types of projects identified in this section are explained in **Appendix J**.

Public Transport

Potential recommendations in relation to public transport services that address the key needs/focus areas are summarised in **Table 2**.

No.	Identified Need/Focus Area	Recommendations	Timeframe[1]	Cost[2]	Priority[3]
PT1	Bus access, connections, and routing	• Advocate to PTV to review bus routes to better serve education and industrial precincts on Edgecombe Street. • Trial on-demand flexible and accessible bus services in Kyneton outside of peak periods to key destinations (e.g. the town centre, community centres, etc.).	Short-term Medium-term	Low Moderate	High Medium
PT2	Bus efficiency and frequency	• Advocate to PTV to review the frequency and schedule of bus services to increase services during peak periods matching with the train schedule. • Investigate the feasibility of trialling an on-demand shuttle service between the railway station and the town centre during peak tourist reasons.	Short-term Medium-term	Low Moderate	High Medium
PT3	Sustainable public transport	• Advocate for bus operators and/or to PTV to replace existing fossil fuel forms of transport with hybrid or electric fleets.	Medium-term	Moderate	Medium
PT4	Bus infrastructure	• Review (on-site) existing infrastructure of all bus stops within Kyneton in conjunction with patronage and advocate to PTV to upgrade high-priority bus stops to the current standard (including DDA tiles, pad, shelter, etc.).	Short-term	Moderate	High
PT5	Railway station	• Advocate to railway authorities (VicTrack, PTV, etc.) to upgrade facilities at the railway station, including improved pedestrian access and bicycle parking to cater for future growth as well as additional car parking.	Short-term	Moderate	Medium

1 Short-term: 0-5 years, Medium-term: 5-10 years, Long-term: >10 years

2 Short-term: 0-5 years, Medium-term: 5-10 years, Long-term: >10 years

3 Function of likely benefits (connectivity, safety, etc.), feasibility, likely alignment with local strategy and policy and stakeholder/community feedback.

No.	Identified Need/Focus Area	Recommendations	Timeframe[1]	Cost[2]	Priority[3]
		• Advocate to DTP to review the existing at-grade railway crossing on Mollison Street and to identify/implement pedestrian safety improvements.	Long-term	Moderate	Low
PT6	Growth areas	• Develop a bus-capable road network and infrastructure in growth areas to accommodate bus routes through Kyneton South.	Long-term	Medium	Low

Table 2: Public Transport Recommendations

Walking and Cycling

Potential issues and opportunities in relation to pedestrians and cyclists in Kyneton are summarised in **Table 3**

No.	Identified Need/Focus Area	Recommendations	Timeframe[1]	Cost[2]	Priority[3]
AT1	Access to Kyneton Railway Station	• Ensure the delivery by the developers of traffic signals at the Mollison Street/Campaspe Drive intersection and a shared path on the northern side of Campaspe Drive between Mollison Street and Village Green Drive.	Short-term	Low	High
		• Develop cycling/walking routes identified in AT2 and AT3 to enhance access and connections to the railway station.	Long-term	High	High
		• Prioritise/expedite the delivery of a shared path in/adjacent to the railway reserve extending from the south end of the approved subdivision at 22 Village Green Drive to Mollison Street (partly funded by developers).	Short-term	Low	High
		• Seek funding from DTP to install pedestrian-operated signals at the railway crossing (across Mollison Street, on the northern side of the crossing), The indicative trigger point is when the shared path in the railway reserve is built to Mollison Street.	Medium-term	Moderate	Medium
		• Extend the existing footpath/shared path in/along the railway corridor (one or both sides) as part of the rezoning/development of greenfield sites in Kyneton South.	Long-term	High	Low
AT2	Campaspe River Trail	• Widen the river trail between the southern end of Wedge Street and the eastern terminus to match upgraded sections to the west/northwest.	Short-term Short-term	Moderate Moderate	High High

1 Short-term: 0-5 years, Medium-term: 5-10 years, Long-term: >10 years

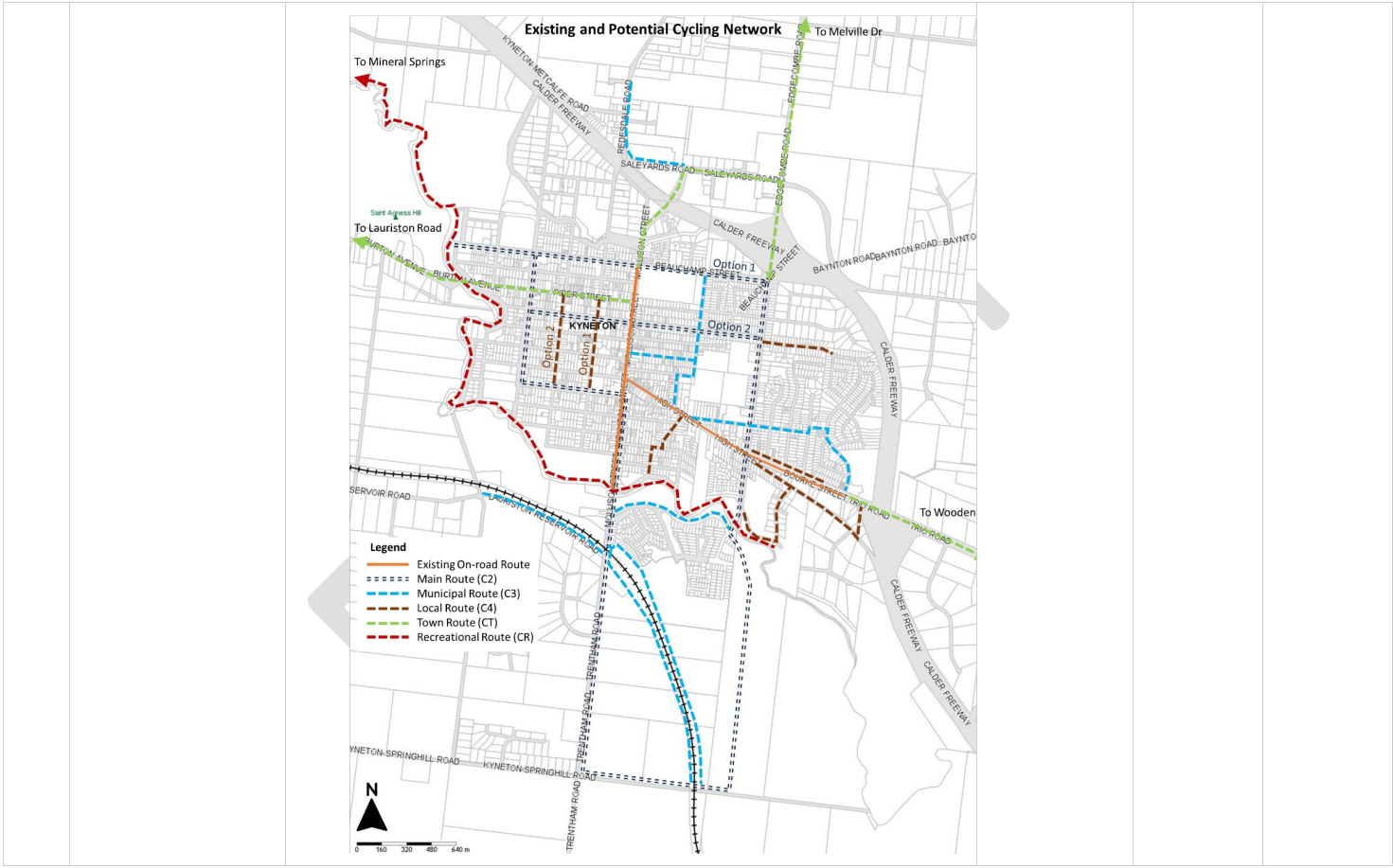
2 Short-term: 0-5 years, Medium-term: 5-10 years, Long-term: >10 years

3 Function of likely benefits (connectivity, safety, etc.), feasibility, likely alignment with local strategy and policy and stakeholder/community feedback.

No.	Identified Need/Focus Area	Recommendations	Timeframe[1]	Cost[2]	Priority[3]
		• Extend the river trail from the eastern terminus to connect with the existing shared path on the south side of Rennick Avenue. The recommended width is 2.5m. • Construct a ramp connection between the river trail and Mollison Street (on the east side of Mollison Street). • Provide additional local access to the river trail. Potential locations are Yaldwyn Street W, Baynton Street, Wedge Street and Powlett Street. • Develop a wayfinding strategy for the river trail and implement priority actions as appropriate.	Short-term Short-term Short-term	Low Low Low	High High High
AT3	Cycling network and hierarchy	• Develop cycling classification in Kyneton as follows: ○ **Main Cycling Route (C2)** – Consider installing on-road cycle lanes (in conjunction with reduced speed limit and suitable traffic calming treatments) or shared paths (2.5-3m wide as appropriate) on: Edgecombe Street (Beauchamp Street to Pleasant Hill Road) – the southern section of this route is dependent on the construction of the Edgecombe Street bridge and the continuation of Edgecombe Street out of Pleasant Hill Road; Beauchamp Street or Yaldwyn Street (Edgecombe Street to Campaspe River Trail); Wedge Street (Beauchamp Street/Yaldwyn Street to Simpson Street); Simpson Street (Wedge Street to Mollison Street);	Short to long-term	Low to High	Medium to High

No.	Identified Need/Focus Area	Recommendations	Timeframe[1]	Cost[2]	Priority[3]
		Mollison Street/Trentham Road (Pleasant Hills Road to Simpson Street) – a cycling route on Trentham Road should be delivered in conjunction with future developments; and Pleasant Hill Road (Trentham Road to Edgecombe Street) – this route is dependent on the development of land to the north. ○ **Secondary/Municipal Cycling Routes (C3)** – Consider installing on-road cycle lanes/shoulders, sharrows (in conjunction with reduced speeds and/or suitable traffic calming treatments) or shared paths (2.5-3m wide as appropriate) on: Both sides of the railway reserve east of Trentham Road (future, partly funded by developer contributions); Victoria Street; Ferguson Street; Market Street (Victoria Street to Ferguson Street); Lauriston Street; Epping Street; Leete Street; Campaspe Drive; Caroline Chisholm Drive (Bourke Street to Leete Street); Saleyards Road (Mollison Street to Jackson Drive); and Lauriston Reservoir Road. ○ **Local Cycling Routes (C4) –** Consider installing sharrows and suitable traffic calming treatments on:			

No.	Identified Need/Focus Area	Recommendations	Timeframe[1]	Cost[2]	Priority[3]
		Langley Street-Begg Street-New Street; Ebden Street or Powlett Street (Piper Street to Simpson Street); Riverwalk Boulevard; Sanctuary Drive; Blair Drive; High Street service road; and Bourke Street service road. ○ **Cycling Route between towns (CT)** – install shoulders or on-road cycle lanes (1.5-2m wide as appropriate) on: Mollison Street (Beauchamp Street to Saleyards Road); Saleyards Road (Mollison Street to Edgecombe Street); Edgecombe Street (Beauchamp Street to Bushland Resort); Burton Avenue/Piper Street (Mollison Street to Lauriston Road); and Bourke Street/Trio Road (to Woodend). ○ **Recreational Cycling Route (CR)** – As identified in AT2. In addition, extend the Campaspe River Trail to Mineral Springs to the west of the town and under the future Edgecombe Street bridge to Sanctuary Drive to the east. Some of the above projects are subject to further feasibility assessment and will require approval from DTP. The existing and recommended potential cycling network in Kyneton are illustrated in the map below.			


Existing and Potential Cycling Network
To Melville Dr
To Mineral Springs
To Lauriston Road
KYNETON
Option 1
Option 2
Option 1
Option 2
To Wooden
Legend
Existing On-road Route
Main Route (C2)
Municipal Route (C3)
Local Route (C4)
Town Route (CT)
Recreational Route (CR)
N
0 160 320 480 640 m

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No.	Identified Need/Focus Area	Recommendations	Timeframe[1]	Cost[2]	Priority[3]
AT4	Safer crossings	• Install a pram crossing or wombat crossing (if warranted) on Mollison Street at the following locations, in conjunction with kerb outstands and a reduced speed limit (refer to TR5): o Hutton Street/Bowen Street o Simpson Street/Welsh Street	Short-term	Moderate	High
		• Install a wombat crossing (if warranted) on Piper Street between Ebden Street and Powlett Street, in conjunction with kerb outstands and a reduced speed limit (refer to TR5).	Short-term	Moderate	High
		• Install a pram crossing or wombat crossing (if warranted) on High Street in the vicinity of ROW access to the Market Street car park, in conjunction with kerb outstands and a reduced speed limit (refer to TR5).	Short-term	Low	High
		• Upgrade the Mollison Street/Piper Street intersection with traffic signals or a roundabout with raised platforms to slow vehicle speeds and enable safer pedestrian crossings, in conjunction with a reduced speed limit (refer to TR5).	Medium-term	High	Medium
		• Install kerb outstands where feasible on the approaches of east-west streets (e.g. Market Street, Jennings Street, Lauriston Street, etc.) to Mollison Street to reduce crossing distance.	Short-term	Moderate	High
		• Install kerb outstands where feasible on the approaches of Ebden Street, Powlett Street and Wedge Street to Piper Street to reduce crossing distance.	Short-term	Moderate	High

No.	Identified Need/Focus Area	Recommendations	Timeframe[1]	Cost[2]	Priority[3]
		• Provide a pram crossing or wombat crossing (if warranted) on Edgecombe Street at the existing shared path connection through the Education Precinct, in conjunction with kerb outstands and a reduced speed limit (refer to TR4). The above projects are subject to further feasibility assessment and will require approval from DTP.	Short-term	Low	High
AT5	Connected footpath network	• Complete the remaining high-priority footpath projects identified in the Shire Wide Footpath Plan 2023 in Kyneton. • Advocate for developers to provide footpaths on both sides of local residential streets in the Kyneton South growth area as part of new subdivisions. • Prioritise constructing additional footpaths on the following roads based on their classifications, bus routes and the proximity to activity nodes: o Baynton Street (north side) – Wedge Street to Powlett Street o Jennings Street (north side) – Ebden Street to Powlett Street o Beauchamp Street (north side) – Mollison Street to Ebden Street and Wedge Street to Powlett Street o Victoria Street (west side) – Mair Street to Beauchamp Street o Epping Street (south side) – Edgecombe Street to Barton Street o Lauriston-Reservoir Road (south side)– Mollison Street to Harpers Lane o Donnithorne Street (south side) – Powlett Street to Wedge Street	Short-term Short-term Medium-term	Moderate Moderate Moderate	High High Medium

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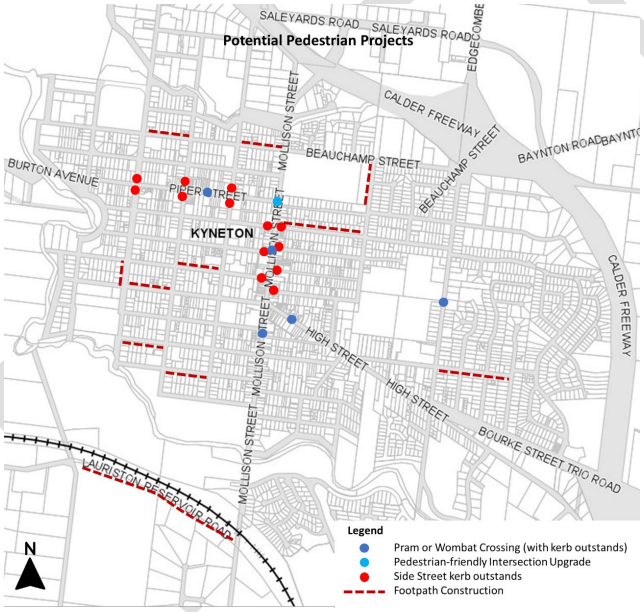
No.	Identified Need/Focus Area	Recommendations	Timeframe[1]	Cost[2]	Priority[3]
		○ Pohlman Street (south side) – Ebden Street to Powlett Street ○ Wedge Street (west side) – Baynton Street to Jennings Street ○ Yaldwyn Street E (north side) – Mollison Street to Victoria Street Pedestrian projects identified in AT5 and AT6 are shown in the map below. 			

Table 3: Pedestrians and Cyclists Recommendations

Freight

The following freight-specific projects are recommended to improve amenity and enhance the safety of road users in Kyneton:

- Ban heavy trucks (local delivery excepted) on sections of High Street and Mollison Street in the Town Centre (short-term, high priority). This recommendation will require consultation with the businesses in the Town Centre and approval from the DTP (Freight) and National Heavy Vehicle Regulator (NHVR).
- Establish detour routes for heavy trucks (short-term, high priority).
- Advocate for local businesses to arrange large deliveries outside the peak periods (short-term, high priority). This has the potential to improve amenities and enhance the safety of vulnerable road users.
- Provide adequate wayfinding signage for heavy vehicles on the approaches to the town (including the Calder Freeway) and key destinations such as the industrial precinct. This could redirect the flow of heavy vehicles away from streets being used by pedestrians and cyclists.

Road Network and Traffic Operations

Potential recommendations in relation to the road network and connections to address key needs/focus areas in Kyneton are summarised in **Table 4**.

No.	Identified Need/Focus Area	Recommendations	Timeframe[1]	Cost[2]	Priority[3]
TR1	Operation of Mollison Street	• Signal rephasing at the Mollison Street/High Street intersection. • Extend the southern right turn lane (re-line marking) by relocating the existing bus just north of Simpson Street to the frontage of the Mechanics Institute (in the form of an indented bay). • The above projects are subject to further assessment and will require approval from DTP.	Short-term Short-term	Low Low	High High
TR2	Rat runs on Begg Street, Bodkin Street and New Street	• As per TR1. • Consider implementing the following traffic management treatments as appropriate: ○ Install speed humps on Bodkin Street and Welsh Street (one-way section); ○ Install bus-friendly speed humps on Begg Street and New Street; ○ Mark parking bays (hockey sticks) on both sides of Bodkin Street and New Street (north of Bodkin Street) to create a narrowing effect; and ○ Install a splitter island on Bodkin Street approach to New Street; or ○ Restrict access to New Street, Bodkin Street and/or Begg Street to a left-in left-out arrangement at High Street and Mollison Street. This could be a temporary measure until the Edgecombe Street bridge	Short-term Short-term	Low Low	High High

1 Short-term: 0-5 years, Medium-term: 5-10 years, Long-term: >10 years

2 Short-term: 0-5 years, Medium-term: 5-10 years, Long-term: >10 years

3 Function of likely benefits (connectivity, safety, etc.), feasibility, likely alignment with local strategy and policy and stakeholder/community feedback.

No.	Identified Need/Focus Area	Recommendations	Timeframe[1]	Cost[2]	Priority[3]
		connection is built. This recommendation will require approval from DTP.			

TR3	Traffic flows /congestion and safety at key intersections	• As per TR1.
		• Signalisation and capacity upgrades of the Mollison Street/Campaspe Drive intersection (to be delivered by others as already planned).
		• Improve operations of Mollison Street at Market Street and Jennings Street. Consider the following alternatives:
		  ○ Restrict right turns into Market Street during peak hours.
		  ○ Install a loop detector on Jennings Street to trigger the activation of traffic signals at the adjacent pedestrian crossing. This could alleviate pressure on the Mollison Street/Market Street intersection.
		  ○ Full signalisation of the Mollison Street/Jennings Street intersection (replacing the adjacent traffic signals at a pedestrian crossing) and sync it with the Mollison Street/High Street traffic slights. This might require a right-turn lane on Mollison Street given the volume (unless right turns are banned in peak hours), which is only feasible if on-street parking is removed (subject to community consultation).
		• New roundabout or traffic signals with raised safety platforms at the Mollison Street/Piper Street intersection.
		• New roundabout at the Mollison Street/Beauchamp Street intersection.
			Short-term
			Short-term
			
			Short-term
			Short-term
			
			Medium-term
			
			Medium-term
			Medium-term
				Low
				High
				
				Low
				Low
				
				Moderate
				
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					High
					Medium
					
					High
					High
					
					Medium
					
					Medium
					Medium

No.	Identified Need/Focus Area	Recommendations	Timeframe[1]	Cost[2]	Priority[3]
		• New roundabout or traffic signals at the Saleyards Road/Edgecombe Road/Pipers Creek Road intersection (likely to be implemented with the development of Bunnings and other commercial sites). • Prohibit right-turn movement from High Street into Epping Street during the school drop-off and pick-up periods.	Medium-term Short-term	High Low	Low Medium
TR4	Traffic, safety, and parking conditions in the vicinity of Education Precinct	• Reduce the posted speed from 60 to 40 km/h on Edgecombe Street between Epping Street and Beauchamp Street (to complement the designation of the main cycling route). • Reconfigure the carriageway of Edgecombe Street between High Street and Beauchamp Street with 2 x 3.3m wide traffic lanes and 2 x 2.7m wide shared parking/bicycle lanes (marked). • Install kerb outstands intermittently on Edgecombe Street between High Street and Beauchamp Street to create a narrowing effect and reduce crossing distance.	Short-term Short-term Short-term	Low Low Low	High High High
TR5	Vehicle speeds and rat runs (for existing and forecast traffic)	• Implement area area-wide speed zone of 30 or 40 km/h within the town centre. • Reduce the speed limit on residential streets surrounding the town centre to 40 km/h. This includes all streets bounded by Piper Street/Mair Street to the north, Victoria Street to the east, Donnithorne Street/Bodkin Street to the south and Wedge Street to the west.	Short-term Short-term	Low Low	High High

No.	Identified Need/Focus Area	Recommendations	Timeframe[1]	Cost[2]	Priority[3]
		• Install speed humps or other traffic calming treatments as appropriate on Ebden Street, Powlett Street, Pohlman Street, Donnithorne Street, Clowes Street, Mair Street, Orr Street, Sturt Street and Yaldwyn Street E to slow traffic speeds and reduce rat runs.	Medium-term	Low	High
TR6	Movement & Place classification	• Advocate to DTP to classify Edgecombe Street between Beauchamp Street and the future Campaspe Drive connection to GT4 and M4 on Movement & Place maps to enable movement of people within the municipality and provide primary access to P4 (Education Precinct).	Medium-term	Low	High
TR7	Safely cater for forecast traffic volumes in Kyneton South	• Construct Edgecombe Street bridge across the Campaspe River accommodating vehicle, pedestrian, and bicycle movements (to be funded partly by development contributions). ○ The Campaspe Drive is designed and constructed as a connector road and currently is functioning at a satisfactory level. As part of the Riverside development, the developer is undertaking the installation of a traffic signal at the Mollison Street/Campaspe Drive intersection and a roundabout at the Windridge Way/Campaspe Drive junction ○ Delivery of the bridge shall be planned ahead of Campaspe Drive reaching the design capacity and is part of the Kyneton South development plan.	Medium-term	High	High

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No.	Identified Need/Focus Area	Recommendations	Timeframe[1]	Cost[2]	Priority[3]
		• Install a roundabout at the Campaspe Drive/Edgecombe Street extension intersection (to be funded partly by development contributions). • Signalise and upgrade the High Street/Edgecombe Street intersection with pedestrian crossings across all four legs. This project would be triggered at the same time as the Edgecombe Street bridge. • Upgrade Edgecombe Street between the new bridge and High Street. Consider a bus-capable cross-section of 2 x 3.5m wide traffic lanes with indented parking on both sides, a 2.5m shared path on the western side and a 1.5m footpath on the eastern side. This project would be triggered at the same time as the Edgecombe Street bridge.	Medium-term Medium-term Medium-term	Moderate High High	High High High
TR8	Safely cater for forecast traffic volumes	• New roundabout at the Trentham Road/Pleasant Hill Road when greenfield sites are developed south of the Campaspe River with direct access off Pleasant Hill Road (to be funded partly or fully by development contributions). • New roundabout at the Trentham Road/future east-west access road intersection when greenfield sites east and west of Trentham Road are developed (to be funded partly by development contributions).	Long-term Long-term	High High	High Low
TR9	Safely cater for forecast traffic volumes	• Upgrade Pleasant Hill Road to a suitable standard when greenfield sites are developed south of the Campaspe River with direct access off Pleasant Hill Road (to be funded by development contributions). Consider	Long-term	High	High

No.	Identified Need/Focus Area	Recommendations	Timeframe[1]	Cost[2]	Priority[3]
		creating a 24m reserve to enable the provision of a bus-capable collector/connector street. • Advocate DTP to upgrade Trentham Road between Pleasant Hill Road and Mollison Street to a suitable standard to support future developments on both sides.	Long-term	High	Low

Table 4: Road Network and Operational Recommendations

Car Parking

The following recommendations in relation to car parking aim to improve accessibility and availability of parking for all users in Kyneton:

- Undertake an accessible parking audit (short-term with high priority) in the town centre and surrounding areas and identify improvements to ensure compliance with relevant guidelines and standards.
- Target an accessible parking supply of at least 2% of the total supply within the Town Centre and Education Precinct (short-term with high priority). This can be done by (upon request on a case-by-case basis):
- Converting a few standard on-street parking spaces into accessible spaces in the town centre at/near shops and community facilities.
- Installing/marking accessible parking spaces on High Street, Epping Street and Edgecombe Street within the Education Precinct
- In the medium term, formalise the unsealed council-owned car park on the corner of the Ebden Street/Yaldwyn Street intersection.
- Assess parking demands and compliance with timed restrictions every 4-5 years in the town centre and activity areas to identify the need for additional parking or changes to timed restrictions.

Prioritisation of Projects

To assist with the prioritisation of projects for delivery, a Multi Criteria Assessment was undertaken. Multi Criteria Assessment (MCA) is a decision tool that assists in comparing both quantitative and qualitative aspects of projects, by assigning weights and scores to various criteria and their performance metrics.

Recommendations presented above were split into projects that can be delivered individually or in a group. A total of 116 projects were identified encompassing all modes of transport and car

parking. Most of the identified projects include capital works for the delivery although a few projects involve advocacy to state governments and private developers.

Six criteria and associated performance metrics included in the MCA for prioritisation of these projects are outlined below.

- **Feasibility / Constructability**: Prioritise projects that
    - are within Council land and can be delivered without external approval/consultation.
    - have no/less environmental and cultural heritage impacts and do not require the removal of trees.
    - do not require major construction or infrastructure upgrades.
- **Connectivity:** Prioritise projects that
    - improve/enhance the serviceability of key destinations.
    - complete critical gaps in the existing movement network.
- **Safety:** Prioritise projects that
    - provide the greatest increase in safety for all road users.
    - align with Safe System principles.
- **Alignment with Movement and Place classifications:** prioritise projects that address Movement and Place performance gaps.
- **Alignment with local strategy and policy:** Prioritise projects that
    - support the Council's objectives for the movement network.
    - provide additional community benefits, for example, tourism, local businesses, etc.
    - have already been developed to reduce total project time and cost or will be delivered in part by developer contributions.
- **Stakeholder and community sentiments:** Prioritise projects (post the community and stakeholder consultation) that

- the local community supports.
- have the likelihood to be supported, in principle by external stakeholder stakeholders.
- This criterion has been added as a placeholder for this report and will be fully incorporated into the MCA once feedback from the community and stakeholders (DTP, etc.) on the identified projects is received.

Each assessment criteria and performance metrics were assigned a weighting based on its importance and scored between 1 and 5 based on a pre-established scoring guide. The scoring guide comprised factors that capture both the anticipated benefits (connectivity, safety, proximity to key destinations, etc.) as well as implications (costs, environmental, cultural impacts, etc. As such, the MCA ranking provides an objective ranking for each of the projects identified.

The top 30 projects prioritised by the MCA are provided in **Table 5**. The raw outputs of the MCA comprising all identified projects and their ranking are included in **Appendix K**.

MCA Ranking						
MCA Ranking	**Project ID**	**Road Name**	**Project**	**Start**	**End**	**MCA Score**
1	49	Edgecombe Street at existing shared path connection through Education Precinct	Priority crossing with kerb outstands			69%
2	84	Kyneton Town Centre	Area speed limit reduction (30 km/h or 40 km/h)			65%
3	82	Edgecombe Street	Carriageway reconfiguration (shared bicycle and parking lane) and kerb outstands (narrowing effect and reducing crossing distance)	High Street	Beauchamp Street	62%
4	85	Streets surrounding town centre (bounded by Piper/Mair, Victoria, Donnithorne/Bodkin & Wedge)	Speed limit reduction (to 40 km/h)			60%
5	45	High Street at Market Street Car Park ROW access	Priority crossing with kerb outstands			60%
6	44	Piper Street	Wombat crossing with kerb outstands	Ebden Street	Powlett Street	60%
7	97	Edgecombe Street (post the construction of a bridge at Campaspe River)	Road upgrade and reconfiguration	High Street	Future Campaspe River bridge	60%
8	105	Kyneton Town Centre	Convert on-street parking spaces to accessible parking spaces (case-by-case basis)			59%
9	104	Kyneton Town Centre	Undertake accessible parking audit			59%
10	81	Edgecombe Street (post the construction of a bridge at Campaspe River)	Speed limit reduction (to 40 km/h)	Epping Street	Beauchamp Street	59%
11	73	New Street	Traffic calming (speed cushions and hockey sticks)	High Street	Begg Street	59%
12	72	Begg Street	Speed cushions	Mollison Street	Ross Street	59%

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MCA Ranking						
MCA Ranking	**Project ID**	**Road Name**	**Project**	**Start**	**End**	**MCA Score**
13	70	Bodkin Street	Traffic calming (speed humps, hockey sticks, splitter island at New St)	Mollison Street	New Street	59%
14	77	Mollison Street into Market Street	Restrict right turn movements during peak times (short term)			59%
15	43	Mollison Street	Priority crossing with kerb outstands	Simpson Street	Welsh Street	59%
16	42	Mollison Street	Priority crossing with kerb outstands	Hutton Street	Bowen Street	59%
17	83	High Street/Edgecombe Street (post the construction of a bridge at Campaspe River)	Intersection upgrades (traffic signals)			59%
18	69	Mollison Street/High Street	Intersection upgrades (right turn extension and signal mods)			57%
19	21	Edgecombe Street (post the construction of a bridge at Campaspe River)	On-road cycle lanes/shared path	Beauchamp Street	Pleasant Hills Road	57%
20	23	Wedge Street	On-road cycle lanes/shared path	Beauchamp Street or Yaldwyn Street	Simpson Street	56%
21	22	Beauchamp Street or Yaldwyn Street	On-road cycle lanes/shared path	Edgecombe Street	Campaspe River Trail	56%
22	106	High Street, Epping Street, Edgecombe Street	Install on-street accessible parking in/around the Education Precinct			55%
23	62	Yaldwyn Street E (north side)	Construct footpath	Mollison Street	Victoria Street	55%
24	61	Wedge Street (west side)	Construct footpath	Baynton Street	Jennings Street	55%
25	60	Pohlman Street (south side)	Construct footpath	Ebden Street	Powlett Street	55%
26	59	Donnithorne Street (south side)	Construct footpath	Powlett Street	Wedge Street	55%

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MCA Ranking						
MCA Ranking	**Project ID**	**Road Name**	**Project**	**Start**	**End**	**MCA Score**
27	58	Lauriston-Reservoir Road (south side)	Construct footpath	Mollison Street	Harpers Lane	55%
28	57	Epping Street (south side)	Construct footpath	Edgecombe Street	Barton Street	55%
29	56	Victoria Street (west side)	Construct footpath	Mair Street	Beauchamp Street	55%
30	55	Beauchamp Street (north side)	Construct footpath	Wedge Street	Powlett Street	55%

Table 5: Top 30 Priority Projects

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Advocacy to DTP

The development and delivery of the priority projects summarised in **Table 6** will require advocacy and approval of DTP.

MCA Ranking	Project ID	Project
2	84	Area-wide speed reduction in Kyneton Town Centre
4	85	Area-wide speed reduction in residential streets surrounding Kyneton Town Centre
5	45	Priority pedestrian crossing with kerb outstands on High Street at Market Street Car Park Right of Way (ROW)
6	44	Wombat crossing with kerb outstands on Piper Street
10	81	Speed limit reduction (to 40kmh) on Edgecombe Street (post the bridge construction)
14	77	Restrict turn movements from Mollison Street into Market Street during peak hours
15	43	Priority crossing with kerb outstands on Mollison Street at/near Simpson Street and Welsh Street
16	42	Priority crossing with kerb outstands on Mollison Street at/near Hutton Street and Bowen Street respectively
17	83	Intersection upgrades (traffic signals) at High Street/Edgecombe Street intersection (post the bridge construction)
18	69	Intersection upgrades (right turn extension and signal mods) at High Street/Mollison Street

Table 6: Priority Projects Requiring DTP Approval/Advocacy

Appendix A – State and Regional Strategies

Document	Key Messages	Relevant Issues Identified
Plan Melbourne (2017-2050)	Policy 7.1.2 Support planning for growing towns in peri-urban areas Kyneton has been identified in peri-urban areas where there is the capacity for more housing and employment-generating developments providing an affordable and attractive alternative to metropolitan living. Strategies are needed for the timely delivery of state and local infrastructure to support growth and protect the significant amenities (including agricultural and environmental assets) without urban sprawling.	NA
Victorian Road Safety Strategy 2021-2030	Vision: Zero road deaths by 2050. • Halve road deaths and reduce serious injuries by 2030. • One of the strategic focus areas is vulnerable and unprotected road users, including cyclists. • Levers to change include safer travel speeds for vehicles, infrastructure improvements and education programs.	NA
Victorian Cycling Strategy 2018-2028	Aim: increase the number, frequency and diversity of Victorians cycling for transport by: • Investing in safer, lower-stress, better-connected networks, prioritising strategic corridors • Making cycling a more inclusive experience. The strategy prioritises strategic cycling corridors but recognises that neighbourhood cycling connections are essential to provide safe access to local destinations.	NA
Loddon Campaspe Integrated Transport Strategy (December 2015)	Kyneton is recognised as a sub-regional employment centre with a strong population and economic growth expected. Relevant priorities include: • Develop a functional road use hierarchy for freight, community access and tourist routes, then prioritise investment in these road networks. • Railway Station Access Improvement Program, encouraging active and public transport. • Rail Trails and recreational tourism bike networks. • Small town connectivity plans.	Lower-income families are being forced out of Kyneton into towns with fewer transport options and further from services.

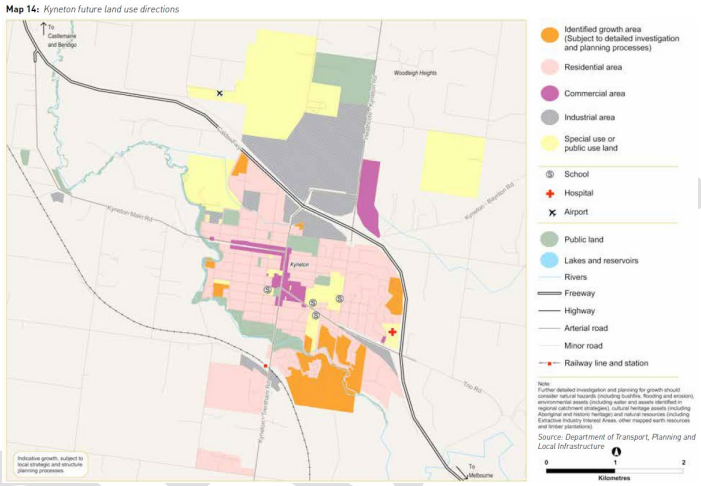
Document	Key Messages	Relevant Issues Identified
Loddon Mallee South Regional Growth Plan (May 2014)	Recognised that large centres, such as Kyneton act as hubs to smaller surrounding settlements and rural areas. Future directions include targeting new growth to settlements in Kyneton. This plan identified that there is a large supply of existing residentially zoned land. The following map shows future land use directions for Kyneton. This plan directs that to support strong growth in Kyneton, the choice of transport modes should be increased, including those for commuters from Kyneton to Bendigo. **Map 14:** *Kyneton future land use directions*  	NA

Table A1: Summary of State and Regional Strategic Documents

Appendix B – Council Policies and Strategies

Council Plan 2021-2031

The Council Plan provides the strategic direction for the future of the Macedon Ranges Shire. It outlines key priorities for the next four years, covering the term of the current elected Council, and supports the achievement of the Community Vision through planned objectives and strategies.

One of the strategic objectives of the Council Plan is Connecting Communities. The key relevant priorities include:

- Improve connectivity and movement, and provide transport choices to the community, including walking trails and bike paths. **The KMNS will develop a cycling network to improve connectivity to key destinations and encourage the uptake of active transport.**
- Integrate land-use planning and revitalise and protect the identity and character of the Shire. **The KMNS will identify public and active transport opportunities in the southern area of Kyneton to guide future land use planning.**

The relevant actions in the Council Plan – Year Two 2023/2024 include:

- Continue to improve continuous accessible paths of travel to key destinations, such as recreation and community facilities, through the funding of the Footpath Construction Program.
- Commence a review of the Kyneton Movement Network Study (2018) to develop and guide the planning of future infrastructure requirements (multi-year).
- Continue to advocate to the Victorian Government for improvements to bus and rail public transport services, with a focus on identifying township issues throughout the year.
- Review and update the 2018 Shire Wide Footpath Plan.
- Advocate for increased State Government funding for supervised school crossings.
- Progress the Kyneton Town Centre Urban Design Framework to Council for decision and consider implementation into the Macedon Ranges Planning Scheme.

Shirewide Footpath Plan 2023

The Shire Wide Footpath Plan 2018-2027 prioritises the promotion of health and well-being and the improvement of the built environment by upgrading the walking and cycling infrastructure within the municipality. Since the Plan's adoption in 2018, the Council has spent $3,882,794 on multiple footpath deliveries as part of Capital Delivery projects and many footpaths initially listed in this Plan have been delivered.

Council's *Shire Wide Footpath Plan* highlights new footpath/shared path linkages forecast for 10 years (2018-2027). Individual projects are prioritised by being evaluated against a select set of criteria. The criteria include improving access to education, business, recreation, and transport nodes. Catchment population and links to other strategies/plans are also considered. The priorities are then evaluated against community input from Council's internal request system, community consultation and internal and external studies.

Council adopted the shire-wide footpath plan in December 2018, following community feedback obtained during December 2017 for input into the prioritisation of projects scheduled for each township and again in December 2018.

This plan was reviewed in the financial year FY2022/2023, considering the land use activities in the Shire have also changed since the document was adopted. This review sets out a multi-criteria assessment matrix to prioritise footpath delivery, engage with the community to identify and plan for their future needs, as well as to embed future strategic township growth in identifying the different hierarchies of the footpath network within the municipality.

The revised 2023 Plan incorporates community consultation on factors such as

- connectivity to either a business precinct, recreation precinct, community facility or education facility;
- connectivity to a public transport node (i.e. bus stop, train station etc);
- the population within the catchment area for which the path is servicing;
- comparison with the current walking and cycling strategy; and
- servicing areas with potential mobility issues, preschools/aged care etc.

The identified future pathways are rated high (coloured red), medium (coloured orange) or low priority (coloured green) and represented in maps for each township.

Mobility and Road Safety Strategy 2023-2032

The Shire's Mobility and Safety Vision is 'A safe and convenient road transport system for healthy people and a healthy environment'. The following strategic objectives align with the Council Plan 2023-2032 as follows:

- Mobility – improving mobility so that people can easily access the places that are important to them.
- Road Safety – reducing road trauma and creating a safe road environment.
- Road Safety and Mobility – improving safety and mobility, creating an attractive environment and economic viability.
- Leadership – playing a leadership role in road safety and mobility.

The online survey undertaken as part of this strategy provided the following feedback/trends:

- Whilst car use is very high many people walk, cycle, and use non-motorised vehicles (such as skateboards and scooters). Public transport tends to be used infrequently.
- Many people are not satisfied with the safety of roads, footpaths and cycling facilities.
- The main issues related to the quality of infrastructure include poor quality roads and paths, lack of cycling facilities, and poor connectivity for walking and cycling. The school journey and safe movement around schools were also a significant concern.

Kyneton Structure Plan (2013)

The Kyneton Structure Plan provides a planning framework for identifying the issues and planning opportunities to accommodate the future growth and development of Kyneton to 2036. The plan was organised around five themes, one of them being Transport and Access. This theme follows the principles of balancing the needs of pedestrians, cyclists, motorists and public transport users and achieving a well-connected and mobile community through all modes of transport.

The following critical issues and considerations were identified in the Kyneton Structure Plan through consultations with local businesses, community members and other interested parties:

- The three main access routes and thoroughfares (High/Bourke Street, Mollison Street and Piper Street) that play a key role in shaping commercial, industrial, and residential

development within the Town Centre and periphery of Kyneton are managed by the Department of Transport.

- There is a demand to upgrade infrastructure to encourage and assist access from areas such as the hospital and education precincts back into the Town Centre to ensure ease and safe access for walking and cycling.
- Linkages along and across the Campaspe River and Post Office Creek to connect various precincts within Kyneton are missing.
- The station car park is currently at capacity on weekdays and has poor pedestrian and cycling access to the surrounding residential areas and a relatively poor connection to the Town Centre.
- Bus access and services are limited to cater for increasing population and demand, particularly to and from the Town Centre and the station. The residential areas to the east are not well served by bus routes.
- High long-term parking demand puts pressure on existing parking facilities, particularly along Mollison Street, High Street and Piper Street.
- Through freight traffic via the Town Centre is an issue.

The Transport and Access Plan for Kyneton is shown in **Figure B1**

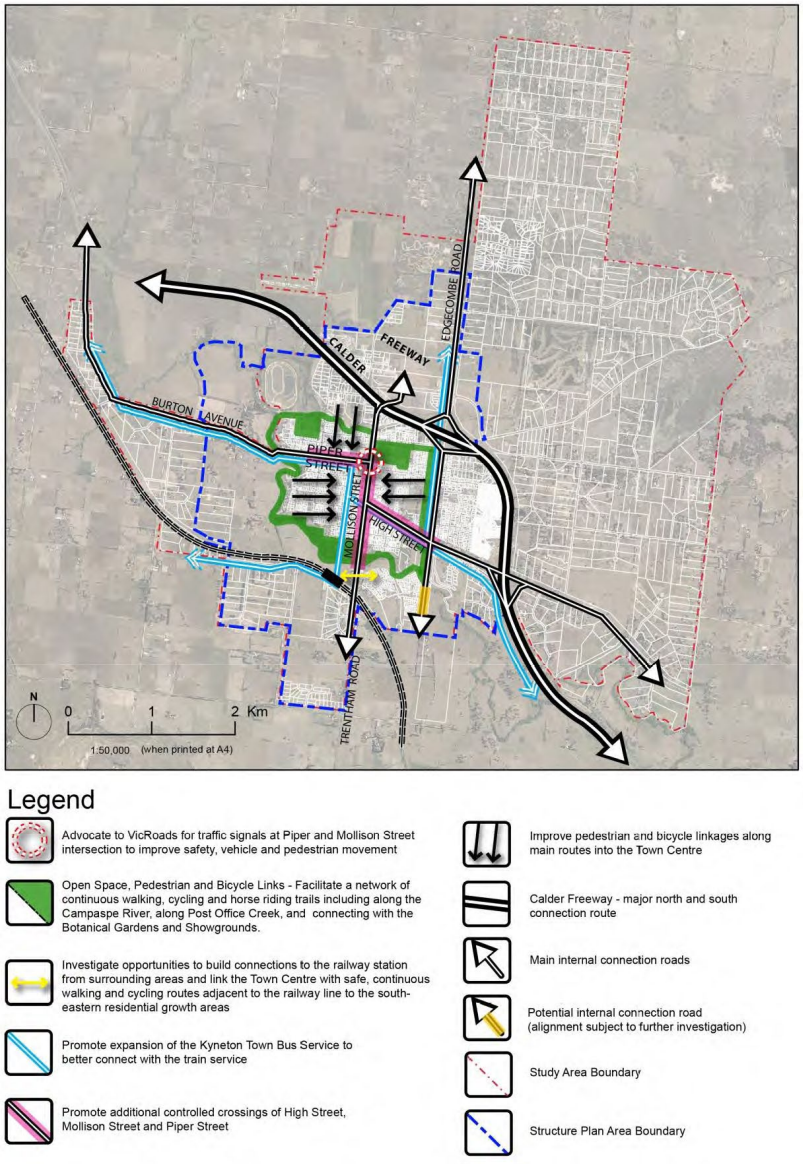


Figure B1: Transport and Access Plan from Kyneton Structure Plan

Draft Kyneton Movement Network Study 2018 (Version 4, February 2019)

The primary purpose of the draft KMNS (2018) was to guide the forward planning requirements of a growing community to ensure the development of a transport network that is integrated, safe, responsive, inclusive and sustainable.

The feedback through the consultation process was that the draft KMNS (2018) focused too much on the growth area and that more focus is required on movement challenges in the existing township. While the 2018 plan was not adopted by Council, many issues and opportunities identified during the study remain relevant.

Input from the community, stakeholders and agencies acquired through an extensive consultation process identified key issues and opportunities and informed the development of strategic directions for the draft KMNS in 2017.

Of the 18 issues identified by Council relating to transport infrastructure, the frequency of the train service, footpath connections and local road maintenance were the top three issues rated by residents.

The issues and opportunities identified through the development of the draft KMNS (2018) are outlined below.

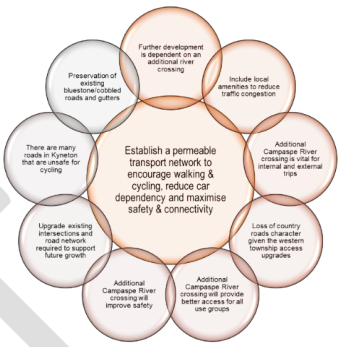
Footpaths/Paths

- Better quality surfaces – maintenance, DDA compliance
- Importance of having footpaths on all our streets to reduce reliance on cars
- Better pedestrian access to the train station
- Better access to the Campaspe River Trail
- An overwhelming majority stated that they use or may require walking trails in the next 5 years.

Roads/Traffic/Transport

- Improved safety and amenities of the existing rail crossing for pedestrians, cyclists and motor vehicles
- Transport networks should connect new estates within the township

- Improved level of service for local road maintenance
- Cycling and pedestrian networks need to be in place to avoid reliance on cars
- Develop local area traffic management schemes in problem areas
- To improve access, the Edgecombe Street bridge should be constructed if new development is permitted south of the Campaspe River
- Bus connections should be extended to new areas and improved in existing areas
- Parking shortfall/requirements for the Edgecombe Street education precinct
- More parking spaces at the train station.



The feedback during consultation on the draft KMNS (2018) relevant to the Town Centre included the need for:

- Improved wayfinding and promotional signage
- Direct and connected footpaths with good surfaces, crossing opportunities and safer pedestrian facilities
- Safe bicycle access in Kyneton's main streets and to Kyneton railway station
- Improved car parking in the Town Centre, including accessible parking spaces
- Pedestrian crossing points that cater for people of different ages and abilities to cross the road safely
- Clarity around the trade-off between pedestrian and footpath spaces, bike access, kerbside parking and vehicle access.

Draft Kyneton South Investigation Area Framework Plan (August 2017)

The purpose of the Framework Plan is to provide direction to guide future medium to longer-term growth that may occur in the Kyneton South Investigation Area.

The Framework Plan is being updated by Council, which will ultimately make the 2017 plan redundant. Notwithstanding this, many issues and opportunities identified during its development, through a targeted stakeholder workshop in October 2016, remain relevant. This workshop included representatives from State and local government, and a range of authorities and agencies, and focused on identifying the current and future constraints of the Kyneton Township that need to be addressed.

The key relevant issues and opportunities that were raised during this process were:

Street Network

- For future growth to be considered, the Edgecombe Street crossing of the Campaspe River will be required to provide an alternate access point to the township.
- The planning for the investigation area should explore the opportunity of providing an East-West Road connection over the railway.
- Explore the potential for a western local bypass connection (e.g. Harpers Lane or Flynns Lane) to lessen the dependence on Mollison Street.
- Desired Melbourne-bound transport route from the Investigation area could utilise Trentham Road and head south to Carlsruhe Central Rd and access the Calder Freeway.
- Upgrades may be required to the existing road, bike and pedestrian infrastructure dependent on growth impact.
- Explore the potential for a rail bridge crossing along Pleasant Hill Road, preserving the existing heritage bridge for pedestrian/cycling purposes.

Public Transport

- There are timetabling issues associated with the current Public Transport offering, with bus services not aligning with the few train services provided during peak times.
- The increased population may trigger the requirement to expand the bus network to cater for future growth within the Township and Investigation Area.

Footpath and Trail Network

- The existing pedestrian and cycle infrastructure within the township requires improvements to ensure the future planned network can connect to an existing network.
- The provision of a cycle network hierarchy should be created for Kyneton that focuses on providing safe access to key destinations, such as Kyneton Station, the Town Centre, employment areas and the Education Hub.
- There is potential to utilise the tributaries of the Campaspe River as key north-south trail connections through the Investigation Area, linking the existing Kyneton community.

The potential street, cycle, and pedestrian plans from the 2017 framework are shown in **Figure B2.**

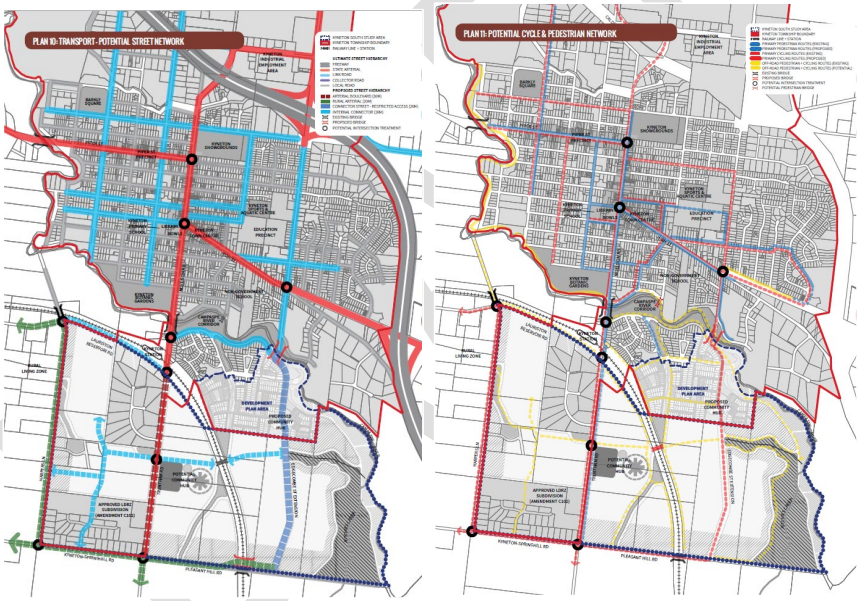


Figure B2: Potential Street, Cycle & Pedestrian Network Plans

Kyneton Urban Design Framework (ongoing)

Council is refreshing Kyneton's Town Centre Urban Design Framework (UDF). The UDF will provide urban design direction for Kyneton's streetscapes, public open spaces, and buildings, focusing on the three main commercial streets: Mollison Street, High Street and Piper Street.

Walking and Cycling Strategy (2014-2024)

Council's *Walking and Cycling Strategy*, which was adopted in 2014 aims to increase walking and cycling opportunities in the shire and promote healthy active lifestyles from 2014–2024. The key objective of the strategy is to provide Council with strategic direction on ways to increase participation and improve the supportive infrastructure and resourcing for walking and cycling in the shire over the next ten years.

The Walking and Cycling Strategy was developed from the high value placed on walking and cycling opportunities by the community and looks to provide clear priorities and guidelines for future action. Community feedback revealed that most respondents (89%) consider the provision of walking and cycling paths, tracks, and trails as extremely important or important.

Specific capital projects that are of importance to the KMNS are:

- Progressively implement the shared trail along the Campaspe River in Kyneton as identified by the Open Space Strategy (priority action).
- Link Piper Street to Campaspe River Trail (aspirational action).
- Continue to work with the Macedon Ranges Cycling Club to reinforce Hurry Reserve as the home base for the club, including supporting club initiatives to maintain the velodrome as a connection to past uses of the site. Upgrading the velodrome to meet contemporary cycling facility standards is not supported (aspirational action).
- Fill gaps in Campaspe River Trail between Hutton Street and Jennings Street, and Donnithorne Street and Clowes Street (aspirational action).
- Loop around the school area along Mollison Street, Yaldwyn Street East, Edgecombe Road and High Street (aspirational action).
- Provide a path along the south side of Campaspe River east of Mollison Street (aspirational action).

A list of key projects that will require Council advocacy to the Department of Transport to support implementation is as follows:

- The on-road connection between towns linking Kyneton to Gisborne (via Woodend and Macedon) along Old Calder Highway (high priority)

- Review existing on-road cycle provision along Mollison Street between the Botanic Gardens and Showgrounds, ensure compliance to contemporary standards (high priority)
- The on-road connection between Lancefield to Kyneton along Three Chains Road, Chases Lane, and Pipers Creek Road (medium priority)
- Possible on-road connection along Kyneton Main Road to Mineral Springs and Malmsbury (medium priority)
- On-road connection along Piper Street from Mollison Street to Campaspe River (low priority)

The Walking and Cycling Strategy network map for Kyneton is shown in **Figure B3**.

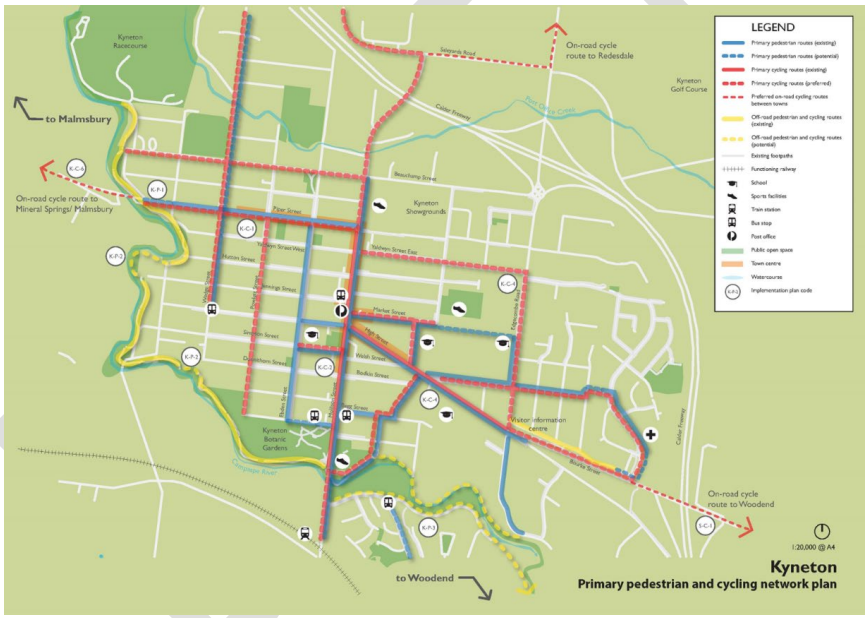


Figure B3: Kyneton Pedestrian and Cycling Network Plan

Disability Action Plan 2021-2025

This plan is intended to reduce barriers and increase inclusion and participation for people with disability. It identifies ways the Council will make access to places easy and inclusion better for people who live, work, and visit Macedon Ranges.

There are five areas covered in this plan: joining in, safety and health, helping people to know about disability, access to buildings and places, and work.

The most relevant areas for consideration of this KMNS and associated actions are summarised below:

- Safe and healthy. Council will
    - ensure places that can be active for people of all ages and abilities.
- Access to buildings and places. Council will
    - help people to understand and follow laws about keeping pathways clear of good access.
    - make more accessible car parks.
    - make more footpaths in places where people need them.
    - advocate for government funding to make more buildings and places accessible.
    - advocate for more and better public transport.

Appendix C – Movement & Place Classification Maps

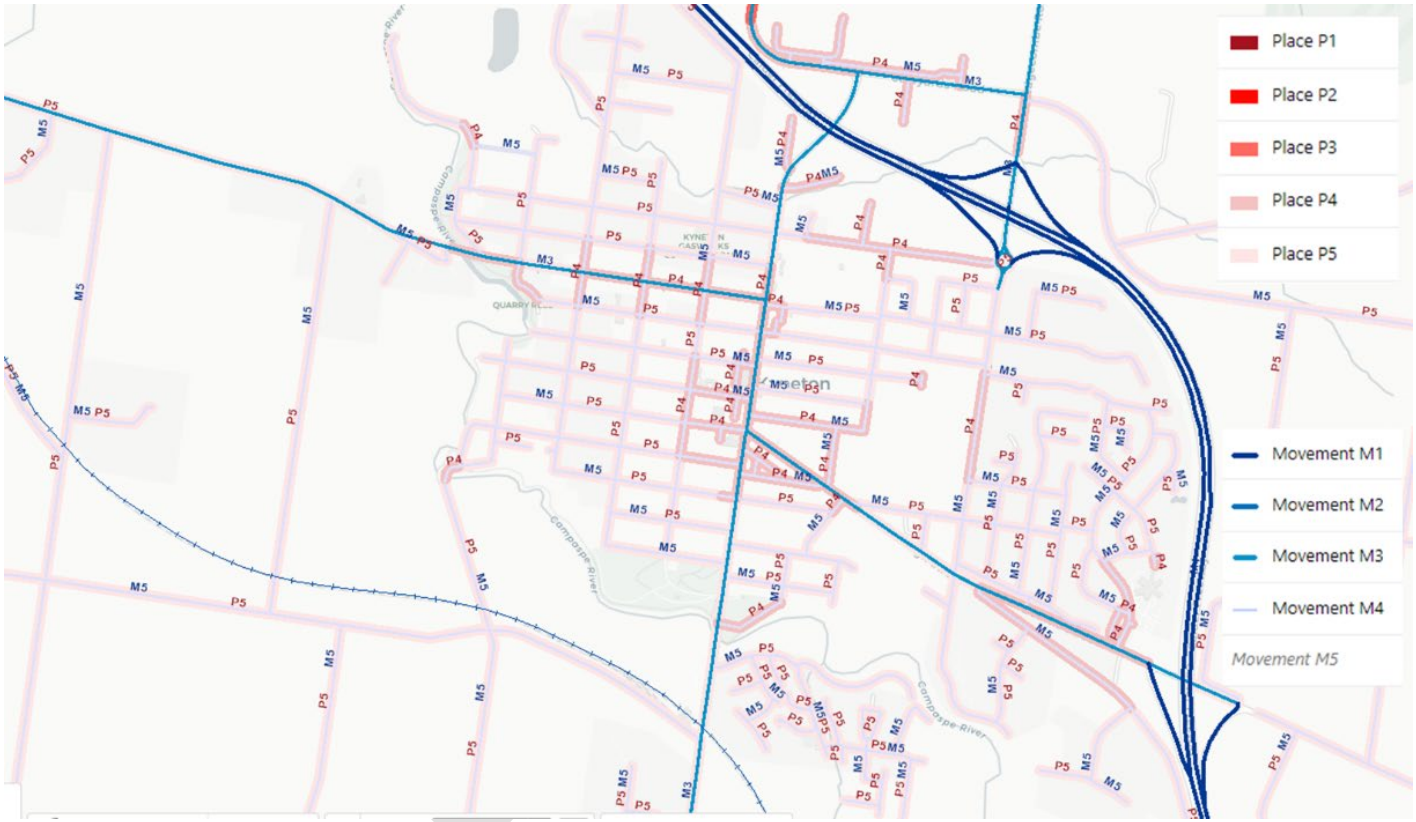


Figure C1: M&P classifications (General)

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Figure C2: M&P Walking Classification

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Figure C3: M&P Freight Classification

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Figure C4: M&P General Traffic Classification

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Appendix D – Existing Public Transport Details

Rail Services

Station profile and sample patronage data supplied by DTP for the Kyneton Station indicate total passenger boardings in June 2022 were approximately 6,800 passengers which is approximately 49% fewer than the total boardings for the same month before COVID-19 (i.e. in June 2019). Total boardings in May 2022 were approximately 8,200 passengers, reflecting approximately a 47% reduction from May 2019. Approximately 80% of boardings headed towards Bendigo and the remainder towards Melbourne. The busiest hour of the day at the Kyneton station in June 2022 was from 4-5 pm.

Since the introduction of the regional V/Line daily fare cap to be the same as the Metropolitan fare on 31 March 2023, V/Line patronage data has shown an increase in passengers taking advantage of cheaper fares. More than 1.5 million people used public transport across regional Victoria in the first month of the new fares, including 210,000 passengers on the Bendigo Line. Patronage data shows an uplift in passengers on weekends and special services. For Kyneton station itself, monthly patronage has increased by approximately 6% from 9,730 in April 2023 to 10,303 in December 2023.

The *Regional Network Development Plan* (Connecting Regional Victoria, May 2016) lists the following future directions to improve rail services to Kyneton:

- Deliver capacity improvements on the Bendigo line
- Upgrade tracks on the Bendigo line to allow for higher speeds of up to 160 km/h
- Increase track capacity between Kyneton and Bendigo
- Improve safety at regional level crossings
- Investigate opportunities for local transport in Loddon Mallee to provide additional travel options for residents
- Review and upgrade stations and facilities in Loddon Mallee in line with changing community needs
- Plan for and implement bus service improvements across Loddon Mallee as demand for services change

Bus Routes

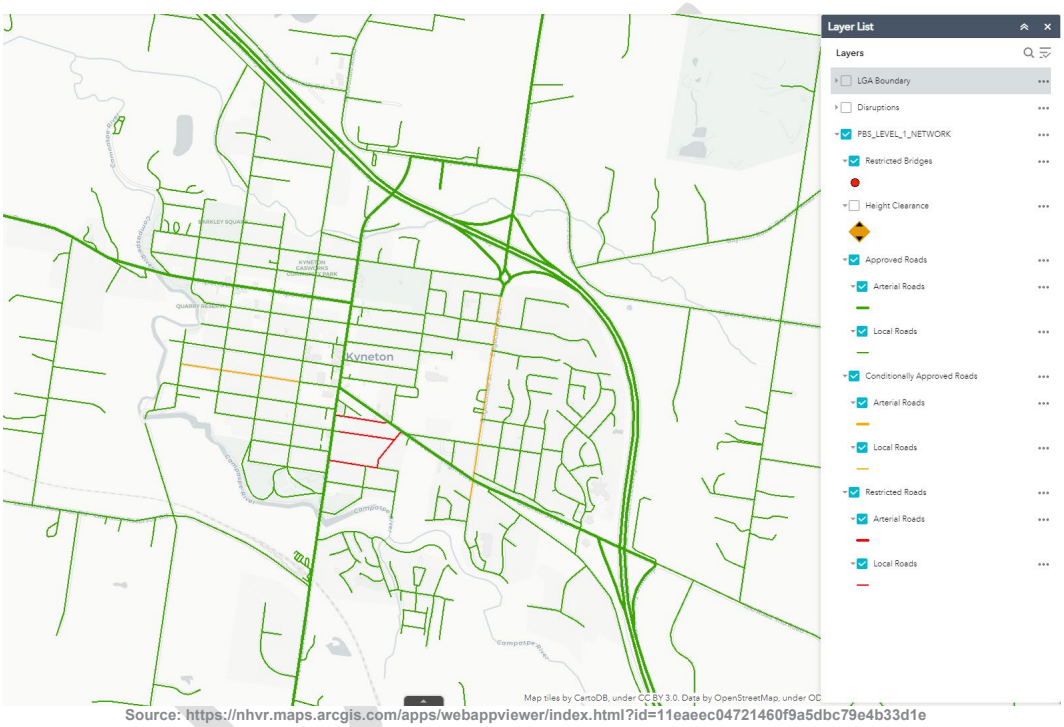
Bus Route 1 operates almost hourly from approximately 9 am to 3 pm on weekdays (7 services). it also has one service in the early morning around 6:30 am and two services in the evening (around 6 pm and 7 pm). On Saturdays, Bus Route 1 operates hourly from approximately 10:45 am to 1:45 pm (4 services), with the first service around 8:45 am and the last service around 3:20 pm.

Bus Route 2 operates almost hourly from approximately 8:45 am to 1:45 am and then again from 1:45 pm to 4:45 pm on weekdays (a total of 7 services). It has the first service in the early morning around 6:45 am and the last one in the evening around 6:30 pm. On Saturdays, Bus Route 2 operates almost hourly from approximately 10:20 am to 2:20 pm, with the last service around 4:20 pm.

Bus Route 3 operates almost hourly from approximately 9:30 am to 12:30 pm and then again from 2 pm to 4 pm on weekdays (a total of 6 services). It has the first service around 7 am and two services in the evening around 5:45 pm and 6:45 pm. On Saturdays, Bus Route 3 operates almost hourly from approximately 9 am to 3 pm, with the last service around 4 pm. It is noted that in the afternoon, upon arrival at the Town Centre, Route 3 service turns into Route 1 outbound service operating via Kyneton North.

Appendix E – Existing Freight Network Details

Figure E1 provides a network for PBS Level 1 vehicles in and around Kyneton. The PBS Level 1 vehicle (defined as 3 or 4-axle rigid trucks towing a 3 or 4-axle dog trailer) has access to most local roads except under certain conditions imposed by the road authority. Begg Street, Bodkin Street, New Street and Welsh Street have restricted access to PBS Level 1 vehicles. Edgecombe Street between Goode Street and Jacobs Avenue is a conditionally approved PBS Level 1 route, with no access permitted between 8-9:30 am and 2:30-4 pm Monday to Friday (School days only). Bayton Street is also a conditionally approved PBS Level 1 route, with restricted access between 8-9.30 am and 2.30-4 pm Monday to Friday (School days only).



Source: https://nhvr.maps.arcgis.com/apps/webappviewer/index.html?id=11eaeec04721460f9a5dbc79e4b33d1e

Figure E1: PBS Level 1 Network Map

Typical freight movements within Kyneton are likely to consist of delivery trucks (including semi-trailer trucks) accessing the Town Centre and retail outlets, and heavy trucks to and from the industrial precinct. The traffic data suggests that the Calder Freeway/Edgecombe Street interchange is being heavily used by trucks to access the industrial precinct.

Appendix F – Intersection Turning Movement Counts

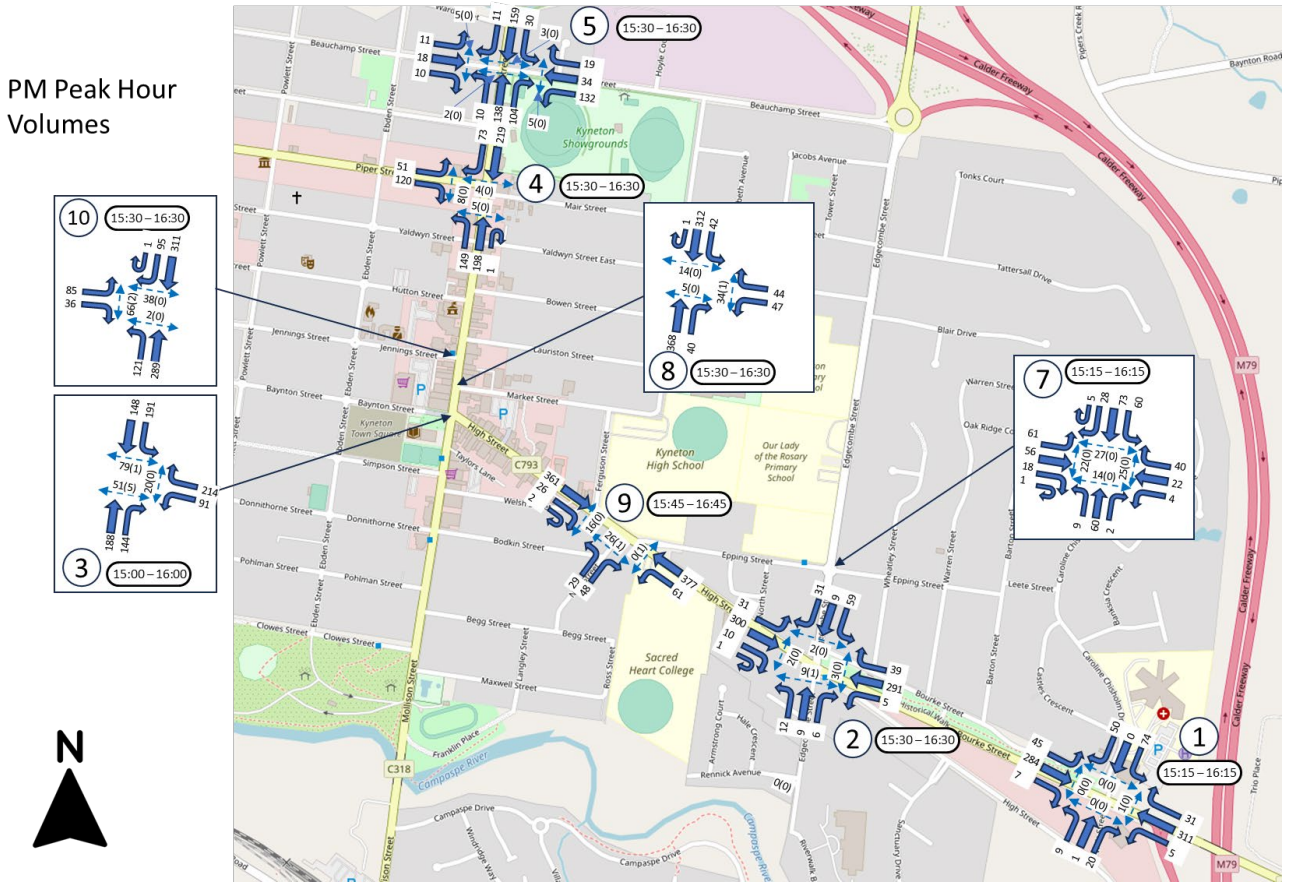


Figure F1: Peak Hour Traffic Counts (Sep 2023)

PM Peak Hour Volumes

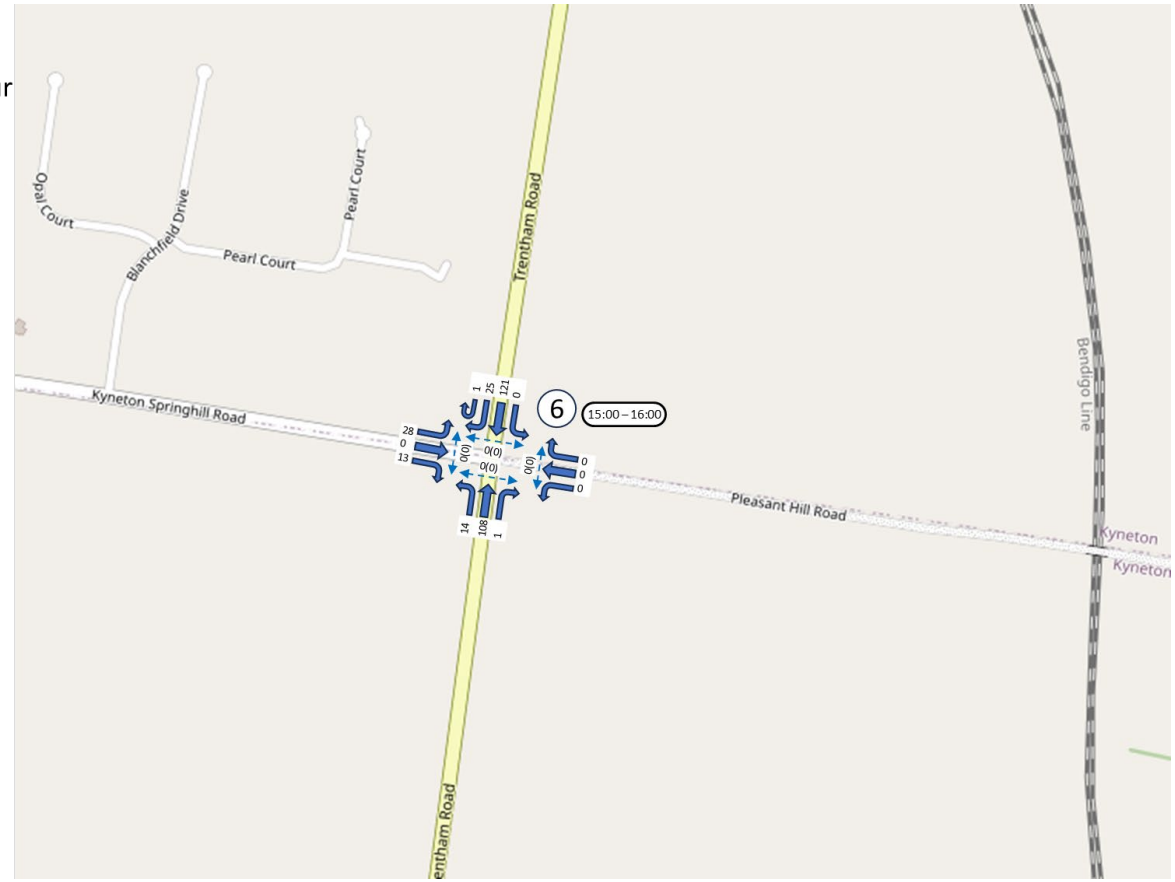


Figure F2: Peak Hour Traffic Counts (Sep 2023)

PM Peak Hour Volumes

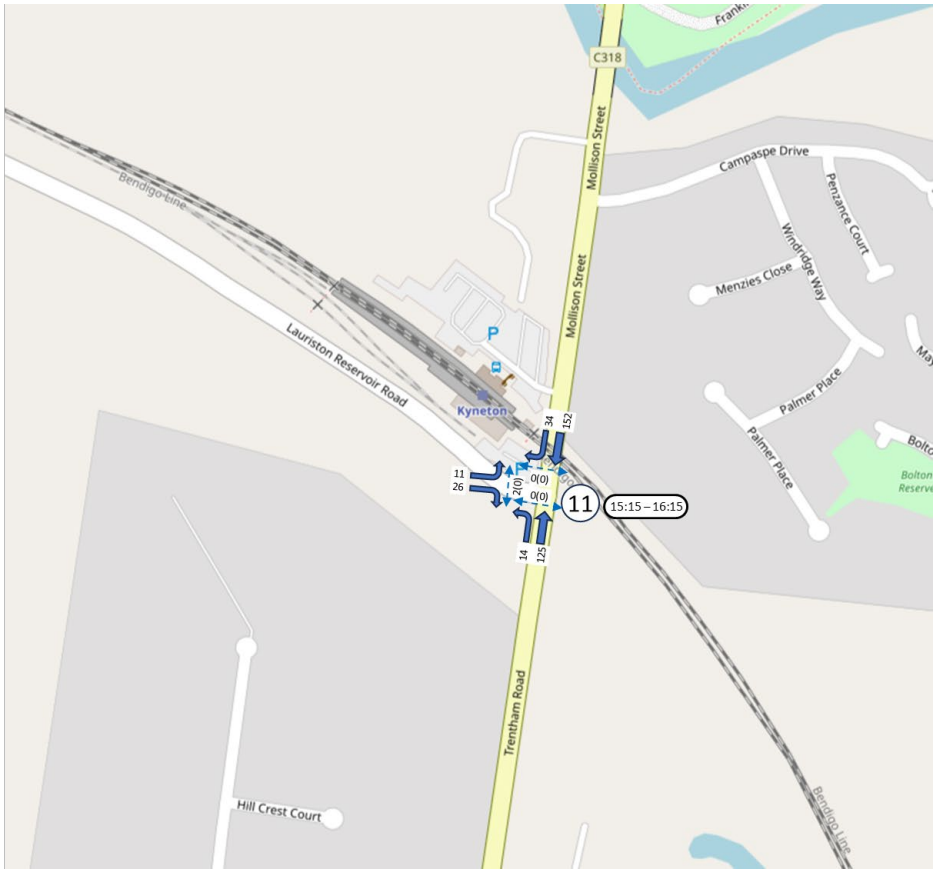


Figure F3: Peak Hour Traffic Counts (Sep 2023)

87

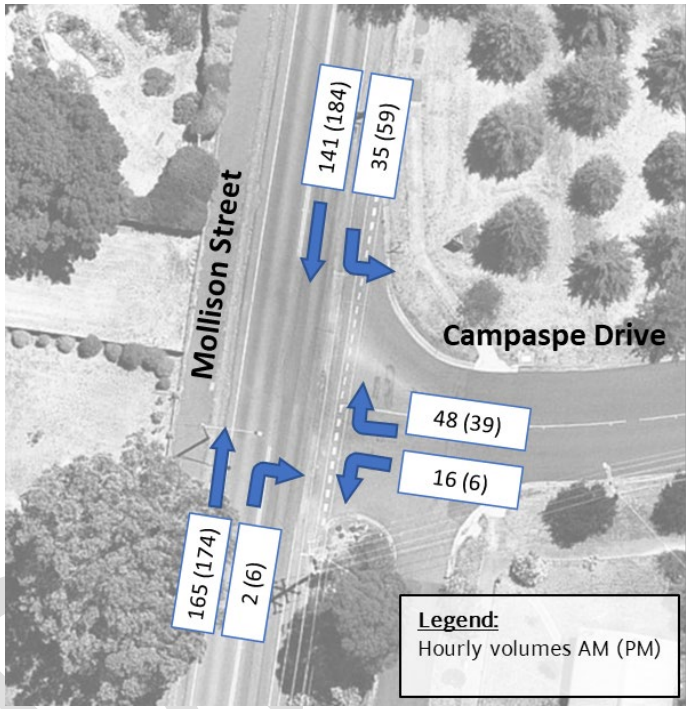


Figure F4: Peak Hour Traffic Counts (April 2022)

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Appendix G – Detailed Issues and Opportunities

Type	Issues/Opportunities
Access, Connections and Routes	• Current bus services can be extended to serve the entire town. • Inadequate bus access and services in new residential areas south of the Campaspe River. • No bus routes connecting the industrial precinct with the Kyneton station. This route has the potential to serve employees working in the industrial precinct without relying on private cars. • Town bus routes are not extended along the full length of Edgecombe Street, missing vital bus connections to the education precinct. • Room for improvements for bus connection in existing areas. For example, direct route to BUPA Aged Care Centre off Riverwalk Boulevard and Sports & Aquatic Centre off Victoria Street.
Efficiency and Frequency	• Coordination between the town bus services and the train service was improved in 2018/19. There may still be opportunities to enhance integration between bus and train services, particularly during peak periods (further feedback from the community and stakeholders needs to be sought). • Town bus routes operate almost hourly during business hours but with only 9 to 10 services per day. There is room to increase the frequency of town bus routes during peak periods (late morning to early afternoon) to reduce the use of private cars. • Without frequent bus services during the AM and PM peak periods and improved routes, it is difficult to get people to and from the station and to encourage the mode shift. Opportunities to increase the frequency during the AM and PM peak periods in sync with the regional train line need to be explored. • Bus frequency to and from the Town Centre could be more frequent during peak tourist season. • Improved taxi services can play the role of servicing the community, including people with disabilities throughout the day.
Active travel links	• Limited active transport links discourage active transport and may be prompting increased car usage to and from Kyneton station for commuting. • More bike parking is desired by the community at the railway station.
Congestion	• Three of the four town routes require buses to turn right from Jennings Street onto Mollison Street. This intersection gets quite busy during peak periods so it would be challenging for buses to turn right without delays and adhere to the schedule.

Type	Issues/Opportunities
	• Buses also make a right turn from Ferguson Street onto High Street. Some delays could occur for this movement.
Ridership	The community feedback suggested that buses often run empty. As buses are generally 12.5 m in length, they occupy more road space. There is a need to optimise bus services. One way to do this is to increase the bus frequency during the peak periods and trial demand-responsive flex services outside during the off-peak. Another way is to review and adjust bus routes to increase usage throughout the day.
Environment	The bus fleet is likely to run on fossil fuel which produces significant emissions. Opportunities to upgrade the bus fleet to hybrid or electric should be considered to reduce emissions and greenhouse gases.
Rail Patronage	Declining rail patronage post COVID-19 (which could partially be attributed to hybrid/work-from-home arrangements) is discouraging, albeit expected. Promoting train commuting at a regional level could increase patronage and reduce car trips.
Rail/Bus Interchange	There appears to be room to improve the look and feel of public transport facilities at the Kyneton station.

Table G1: Public Transport Issues & Opportunities

Type	Issues/Opportunities
Access to Kyneton Railway Station	• The community felt that key barriers to walking or cycling to and from the Kyneton Station are less-than-optimal infrastructure (such as narrow on-road cycle lanes on Mollison Street leading to the station), and the lack of safer and convenient town connections, crossings and supporting infrastructure (e.g. street lighting, bike parking, seating and water fountains). • The narrowing of cycle lanes on Mollison Street from the Campaspe River bridge to the station access due to bluestone gutters is an issue for cyclists. The removal of bluestones can be challenging. Appropriate treatments to transition cyclists from the cycle lanes onto the western pathway along Mollison Street and vice versa could be considered. • There is a need to provide a safer crossing for pedestrians and cyclists of all abilities across Mollison Street at/near the Kyneton station. It is anticipated that the proposed signalisation of the Mollison Street/Campaspe Drive intersection, which is located approximately 250 m north of the station access, will provide opportunities for pedestrians to safely cross Mollison Street. • Further growth in the southern area may necessitate another pedestrian crossing at the railway crossing on Mollison Street. • The provision of connections to and from the station has the potential to promote walking and cycling. For example, a new footbridge connection east of Mollison Street can provide much better connectivity between the station and the areas to the northeast of the station. Another opportunity is to extend the shared trail along the Campaspe River to Sanctuary Drive and provide ramp access to the Mollison Street footpaths to attract more walking and cycling to and from the station.
Campaspe River Trail	• The shared trail along the Campaspe River is often a popular choice for walking and cyclists. Completing missing links (if any) or upgrades to narrow sections along this trail between Mollison Street and Piper Street will enhance recreational cycling and walking opportunities. • The section of the shared trail along the Campaspe River from the south end of Wedge Street to Piper Street (which was upgraded in 2018) is approximately 2.5 m wide whereas the section from the south end of Wedge Street to Langley Street, including the Mollison Street underpass is much narrow. This eastern section needs to be upgraded with a 2.5 m wide pavement to improve the western section. • Opportunities to extend the river trail from its eastern terminus to Sanctuary Drive, with connections to Ross Street and Riverwalk Boulevard should be considered to draw a wider community onto this trail and to increase its usage. A ramp from this trail to Mollison Street would provide improved access to the railway station.

Type	Issues/Opportunities
	• Access connections along the river trail are too few and far between. There are opportunities to provide access to and from Yaldwyn Street W, Bayton Street, Wedge Street and Powlett Street. • The northern end of this river trail appears to terminate at Mitchell Street (just north of Piper Street) without extending to the Racecourse Reserve. • Supporting amenities are missing along the river trail. The community felt that wayfinding signage, water stations and seating should be provided along the river trail.
Walking and Cycling Network	• A well-planned and connecting cycling network that will be embraced by many residents needs to be developed. • There is a need to create a cycling network hierarchy for Kyneton that focuses on providing safe and convenient access to key destinations, such as Kyneton Station, the Town Centre, employment areas and the education precinct. • The layout of the street network and the river trail provides opportunities for safe and purpose-built cycling loop routes for recreational and exercise usage and is suitable for people of all ages and abilities. • Council could investigate a network of continuous walking and cycling trails along the Campaspe River and Post Office Creek. The inner loop could be developed along the river trail and through quiet local streets connecting key destinations, such as the Town Centre, the education precinct, the old primary school site, etc. • There are no marked cycle lanes on Piper Street even though there is enough width adjacent to marked parking bays. • There is an opportunity to extend the shared path along Campaspe Drive (on the northern side) from its current terminus at Village Green Drive to Mollison Street. This connection will allow residents to access bicycle lanes along Mollison Street to and from the railway station and Town Centre. • Several high-order Council roads, e.g. link and connector roads, have no footpaths or only provide a footpath on one side. High-order local roads often serve public transport and provide access to key destinations. A more connected footpath network is sought with paths provided on both sides of collector and link roads within Kyneton. • There are no walking or cycling paths along Mollison Street/Trentham Road south of the station access to serve the residents living on Hill Drive and Kyneton-Springhill Road. Trentham Road does not provide any shoulders. Trentham Road has a sufficient reserve to provide a shared trail on the western side of the carriageway or a 1.5 m wide shoulder on either side, in the short term to cater for residents wanting to

Type	Issues/Opportunities
	access the station and the town centre on foot or by bicycle. Further developments are expected to occur south of the Campaspe River in the short to medium term. Trentham Road will need to be reconfigured with a lowered speed limit (e.g. 60 km/h) to accommodate this growth. • The area north of the Industrial precinct has many low-density dwellings accessible via Edgecombe Road. There are no walking or cycling paths to safely access the town from this area. The provision of wider shoulders and/or a lowered speed limit on Edgecombe Road from the industrial precinct to Bushland Resort would promote cycling into and out of the town. • Residents in new estates just south of the Campaspe River have only one entry/exit point for all movements, including walking and cycling. Due to this, residents need to walk or cycle up to Mollison Street and then across a busy bridge before tracking back around to the schools. The provision of a footbridge over the Campaspe River at a strategic and feasible location (noting steep topography) would provide a direct connection between new estates and many destinations within Kyneton for people of all ages and abilities. • The extension of the shared trail along the Campaspe River to Mineral Springs along Burton Avenue could encourage many tourists who stay at the caravan park to access the town on foot or bicycles. • The existing on-road cycle lanes are too narrow to be effective and safe to encourage cycling. The provision of standard and safer cycle lanes on High Street and Mollison Street would be challenging with some level of impact on vehicle flows and/or parking. For example, widening cycle lanes may require the removal of parking on one or both sides of the road, which may not be supported by businesses. Nonetheless, opportunities to reconfigure these streets or to establish alternative cycling routes should be examined. • Many streets have no sealed footpaths on either side of the road, which can be a disincentive to walking. While it is not practical to provide footpaths on all streets in the town, a footpath on one side of key streets, such as Caroline Chisholm Drive, Epping Road, Edgecombe Street, and Beauchamp Street and all streets within the town will serve relatively large catchments to and from destinations. • Council should continue seeking funding from the state and federal governments to establish off-road shared trail connections from Kyneton to Bendigo and Woodend (consistent with the Shared Trails Feasibility Studies). • Opportunities to link the town centre with safe, continuous walking and cycling routes from the surrounding area need to be investigated. The potential options are Market

Type	Issues/Opportunities
	Street, Lauriston Street or Yaldwyn Street E to the east, connecting the education precinct and residential areas with the Town Centre, and Baynton Street or Yaldwyn Street W to the west of Mollison Street.
Maintenance	• The quality of footpath surfaces is a major issue identified by the community. Slippery and/or uneven surface on many footpaths is a hazard, especially for older and young people and those with disabilities. Footpaths need repair and resurfacing with quality material. Better weed control is also required. • Better/improved maintenance is needed on roads where cycle lanes exist. • The surface type and width of footpaths vary throughout the town. Council should ensure a minimum standard for new installations within and outside of the Town Centre.
Pedestrian Crossings	• One of the key barriers to walking around and within the Town Centre is the lack of priority crossings on busy streets. • Currently, there is little provision for pedestrians crossing the streets in the Town Centre, apart from the pedestrian crossing in front of the Post Office and the traffic lights at the High Street/Mollison Street intersection. • Safer crossing options are needed along Piper Street and Mollison Street and their intersections. Introducing traffic lights at the Piper Street/Mollison Street intersection would manage vehicle speeds and provide safer crossings for pedestrians. • Threshold treatments with kerb outstands can be provided at key midblock points along High Street, Mollison Street and Piper Street to slow vehicles and support people walking in the area. The previous feedback indicates that the community is largely supportive of removing some on-street parking to install more green space/planting and pedestrian crossings.
Safety	• Upgrading or adding streetlights in and around the Town Centre will improve the safety of pedestrians. • Existing on-road cycle lanes on Mollison Street and High Street are narrow, within the dooring zone of the adjacent parking lanes and are not immediately apparent to drivers. Green pavement can highlight bicycle lanes on Mollison Street and High Street with almost no impact on parking. Alternatively, parking can be removed on one of the two sides along Morrison Street and High Street to provide separated/buffered cycle lanes. • Transit through the Mollison Street/High Street and Mollison Street/Piper Street intersections can be difficult and unsafe for cyclists.

Type	Issues/Opportunities
	• The eastern cycle lane on Mollison Street does not extend to the High Street intersection. An alternative cycling route should be established to avoid this intersection. • Pram crossings at key intersections in the Town Centre are inconsistent and often not effective. Tactile surfaces are largely missing at crossings. • Reducing speed limits to 40 km/h on all roads within the Town Centre and Education Precinct would ensure safer gaps for pedestrians and cyclists crossing various streets. In the event of a collision, crash forces would be closer to Safe System thresholds. • Opportunities to install thresholds and kerb outstands need to be considered on the side street approaches at Mollison Street and Piper Street to reduce the crossing distances and control entry speeds. Strategic locations can be prioritised based on the number of crossings and turning movements and the feasibility of installing such treatments.
Supporting Infrastructure	• There is not enough bike parking in the Town Centre. • There may be opportunities to convert a few on-street parking bays into kerb outstands to install bike hoops. Strategic locations within the Town Centre need to be identified that are less likely to be disruptive to pedestrian flows and businesses in general.

Table G2: Pedestrians and Cyclists Issues & Opportunities

Type	Issues/Opportunities
Begg Street, Bodkin Street and New Street	• Rat running and speeding on Begg Street, Bodkin Street and New Street is mainly due to the limited capacity at the Mollison Street/High Street intersection. • Rat running in this precinct is practically unavoidable unless the Mollison Street/High Street intersection is significantly improved and/or a second bridge across the Campaspe River at the southern end of Edgecombe Street is constructed. • Typical traffic calming measures, such as speed humps may not be effective or supported (noting the bus route along Bodkin Street-New Street would restrict the type of treatments) in discouraging drivers considering the congestion that occurs at the Mollison Street/High Street intersection. • Any aggressive traffic management treatments, such as one-way streets or partial closures could push more traffic to the Mollison Street/High Street intersection where the capacity is already constrained.
Campaspe River Crossing	• One of the main causes of the traffic congestion along Mollison Street and rat running on local streets is the absence of the second river crossing. • The Edgecombe Street bridge over the Campaspe River is highly desired by the community to support existing and future developments in the town, particularly south of the river, to relieve traffic at the High Street/Mollison Street intersection, and to remove barriers to walking and cycling. • The need to provide a separate bridge over the Campaspe River may also be required for walking and cycling if gradients at the Edgecombe Street bridge and the road leading to High Street are adverse. When planning/designing the Edgecombe Street bridge and associated upgrades, particular consideration needs to be given to school children who might walk or cycle from the southern residential areas to access the education precinct. • The new river crossing will require upgrades to Edgecombe Street between High Street and Riverwalk Boulevard, including the provision of appropriate parking, walking, and cycling infrastructure within the 20 m road reserve. The constraints include steep gradients and utilities, including overhead cables and power poles on the western side of the carriageway. • This new second river crossing will also necessitate upgrades to the Edgecombe Street/High Street intersection. Options include a roundabout or traffic lights.
Traffic flows /congestion and Safety	• A high number of crashes was reported at cross intersections. Local streets could be treated with roundabouts or speed cushions/humps at stop lines. • **Mollison Street/High Street** – traffic capacity is a major issue at this signalised intersection, especially on the southern and eastern approaches during peak periods.

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Type	Issues/Opportunities
at intersections	Some congestion could also occur due to signal sequencing and timings. Traffic tends to avoid this intersection and rat run on local streets (including Bodkin Street, Begg Street and New Street). Signal sequencing and settings need to be improved to increase the vehicle throughput. Capacity improvements, including the extension to the southern right turn lane, separated left and right turn lanes on High Street, etc. can also be carefully explored, noting some parking would need to be removed near this intersection. • **Mollison Street/Campaspe Drive** – the only entry/exit point for the new residential subdivision. It is planned to be upgraded with traffic signals. • **Mollison Street/Market Street** – vehicles turning right from the south block the through movement. Consideration to ban right turns during peak periods may be considered. • **Mollison Street/Jennings Street** – vehicles turning right from the north block the through movement. Right and left turns out of Jennings Street, including buses often conflict with pedestrians and the through traffic on Mollison Street. Improvements, such as signalising this intersection or making it one-way away from Mollison Street up to the car park entrance should be investigated, which requires detailed traffic surveys. Signalisation will necessitate the removal of pedestrian signals in front of the Post Office. The partial closure of Jennings Street at Mollison Street will alter bus routes and trigger improvements at other intersections along Mollison Street. • **Mollison Street/Piper Street** – predominant traffic movements are from the west to the south and vice versa. Delays are expected to occur for right turns from the north and right and left turns out of Piper Street. Due to this, rat running could occur on Ebden Street. Improvement options include reconfiguration to a modified T-intersection or traffic signals. • **Mollison Street/Beauchamp Street** – unsignalised cross intersection with crash history. Beauchamp Street is a link road providing critical access to the industrial area and Showgrounds to the east and the residential area to the west. Improvement options include a roundabout (which may require the relocation of utilities), traffic signals (which may not be warranted) or restricting the turn movements into and out of Beauchamp Street. • **Mollison Street/Saleyards Road** – no major issues are anticipated given the provision of a right turn lane on Saleyards Road. • **Saleyards Road/Edgecombe Road/Pipers Creek Road** – the staggered cross intersection is in the industrial precinct where volumes are expected to increase with the planned developments. This intersection is to be upgraded with traffic signals.

Type	Issues/Opportunities
	• **Bourke Street/Caroline Chisholm Drive** – with two reported crashes the northern approach is the only access to many homes and the health precinct. The proximity to the freeway ramps can be an issue, limiting options available to upgrade this intersection. • **High Street/Edgecombe Street** – increased traffic due to the potential bridge crossing further south could trigger safety and operational issues at this cross intersection requiring improvements. • **High Street/Epping Street** – right turns from High Street often block the through traffic from the east. This issue may only be limited to school drop-off and pick-up times. Banning right turns can be considered, which may shift problems to the North Street intersection. • **Trentham Road/Pleasant Hill Road** – upgrades to this intersection will be required in the future when further developments occur south of the Campaspe River with direct access to Pleasant Hill Road. The most practical solution will be a roundabout control, highlighting it as a main entry to the township. In addition, Pleasant Hill Road and its bridge over the railway tracks will also need to be upgraded.
Edgecombe Street Education Precinct	• Traffic volumes, vehicle speeds and parking shortfall are the areas of concern along Edgecombe Street in the vicinity of the education precinct (although no casualty crashes were reported in the last five years of available data). • Edgecombe Street, which is classified as a link road can attract considerable traffic due to its connections with the Calder Freeway, the industrial precinct over the freeway and towns further to the north (although the 2015/16 traffic counts were within the notional capacity). • The second river crossing (if/when built) could increase traffic on Edgecombe Street past the education precinct to access the northern destinations or the freeway, which has the potential for unintended consequences. • “Through” traffic on Edgecombe Street is unavoidable but can be reduced with aggressive traffic calming measures, improvements along Mollison Street and/or a new northbound entry ramp from Bourke Street to the Calder Freeway; all initiatives may be challenging to achieve having regard to the previous community feedback and physical constraints. • Connecting Blair Drive and Caroline Chisholm Drive has the potential to reduce traffic on Edgecombe Street past the education precinct but would also increase traffic on Caroline Chisholm Drive, which provides a narrow carriageway and intermittent footpaths on the eastern side. This connection will also increase right turns into and

Type	Issues/Opportunities
	left turn out of Caroline Chisholm Drive at Bourke Street, which needs to carefully be assessed.
Traffic routes from the south	• Due to the heavy traffic along Mollison Street and Piper Street, the local street network west of Mollison Street and south of Piper Street is being used to travel from the south of the town to the north of the town during the AM peak period, and the reverse movement during the PM peak period. • Rat running could occur on Ebden Street, Powlett Street, Pohlman Street, Donnithorne Street and Clowes Street. Further development of the area south of the Campaspe River would make this rat running worse without significant improvements to Mollison Street and Piper Street. • Any aggressive traffic management treatments could be challenging given the use of local streets by the community and bus services, and the Kyneton CFA on Ebden Street. • A western town centre bypass may ultimately be needed to cater for “through” traffic, as well as movements between the southern area in Kyneton and northwest destinations (such as Bendigo). • Opportunities to improve the operation of Mollison Street and Piper Street and to enhance pedestrian and cyclist facilities to reduce the reliance on cars need to be investigated in the short term. • In the long term, the provision of a western bypass route would reduce “through” traffic on the local streets and support residential developments in the southern area. Although there are a few options, all of them would be costly and contentious. • A detailed assessment should be undertaken to determine if/when the need to provide a township bypass would be triggered.

Table G3: Road Network and Operational Issues & Opportunities

Type	Issues/Opportunities
Accessible Parking	• The provision of accessible parking is limited outside of the concentration of off-street car parks off Mollison Street, although the accessible parking provision is about 1.8% of all public parking supply in the town centre which is slightly lower than a typical target of 2%. • Opportunities to provide on-street accessible parking on side streets adjacent to the state-managed arterial roads could be explored to increase the accessible parking provision to 2% within the town centre. This may entail re-line marking a couple of standard spaces near shops. • The accessible parking is almost negligible (0.3% of all public parking supply) within the Education precinct. Opportunities to convert a few standard parking on High Street, Epping Street and Edgecombe Street into accessible parking could be investigated. • A review/audit of accessible parking is required to ensure compliance with relevant Australian Standards and appropriate access, wayfinding/signage and configurations. Non-standard and inconspicuous spaces tend to be less useable.
Parking Supply	• The parking surveys confirm that the parking supply in all precincts always exceeded the parking demand. Notwithstanding this, there is a perception among the community that the current supply in the Town Centre, the Education precinct and the train station are inadequate and that more parking is needed to support the existing demand and future growth. • The most critical car parks in the Town Centre appear to be Hutton Street, Jennings Street, Simpson Street, and Yaldwyn Street. The parking demand at these locations is likely to exceed the capacity in the near future as the population grows. • The most critical on-street parking locations appear to be Piper Street and Mollison Street. • Opportunities to provide overflow parking can be considered in the short term. In the medium to long term, the unsealed council-owned car park on the corner of the Ebden Street/Yaldwyn Street intersection should be formalised. • More parking spaces are likely to be required at the train station in the future as the population grows. The provision of 50 new car spaces at the train station caters for short to medium-term needs.
Parking Restrictions	• Longer parking restrictions could be considered at some on-street parking locations in the Town Centre to relieve the pressure on the off-street car parks. • There is an opportunity to improve parking enforcement.

Type	Issues/Opportunities
Supporting infrastructure	• More wayfinding signage that is visible from the main roads should be provided to direct drivers to appropriate car parking. • There is also room to improve line marking at on and off-street car spaces.
New Estates	• Roads in new residential estates appear to be narrow and may not be suitable for on-street parking for residents and visitors. • Council could set minimum road widths for new estates to allow for on-street parking without impeding vehicle movements.

Table G4: Car Parking Issues & Opportunities

Appendix H – Traffic Model Scenarios

The modelling assessment included the following road network scenarios:

- Future (2041) Baseline, comprising existing road network (except for the southern growth area where connections to Pleasant Hills Road and Trentham Road were modelled) and future land use assumptions (guided by Council). The assumed road network is shown in **Figure H1**.
- Future (2041) Network Option 1, comprising the Edgecombe Street Bridge connection across the Campaspe River and the town centre bypass route via Flynns Lane. The assumed road network for this scenario is shown in **Figure H2**.
- Future (2041) Network Option 2, comprising the Edgecombe Street Bridge connection across the Campaspe River and the town centre bypass route via Harts Lane. The assumed road network for this scenario is shown in **Figure H3**.

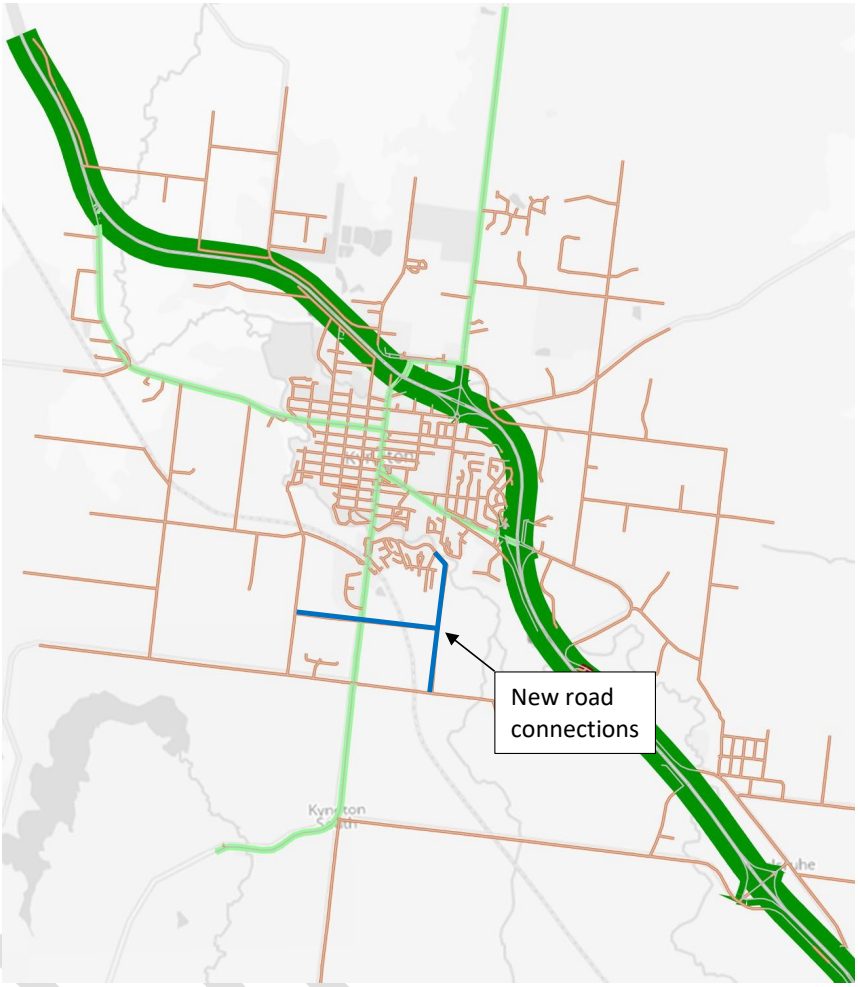

Figure H1: Assumed Future Baseline Road Network

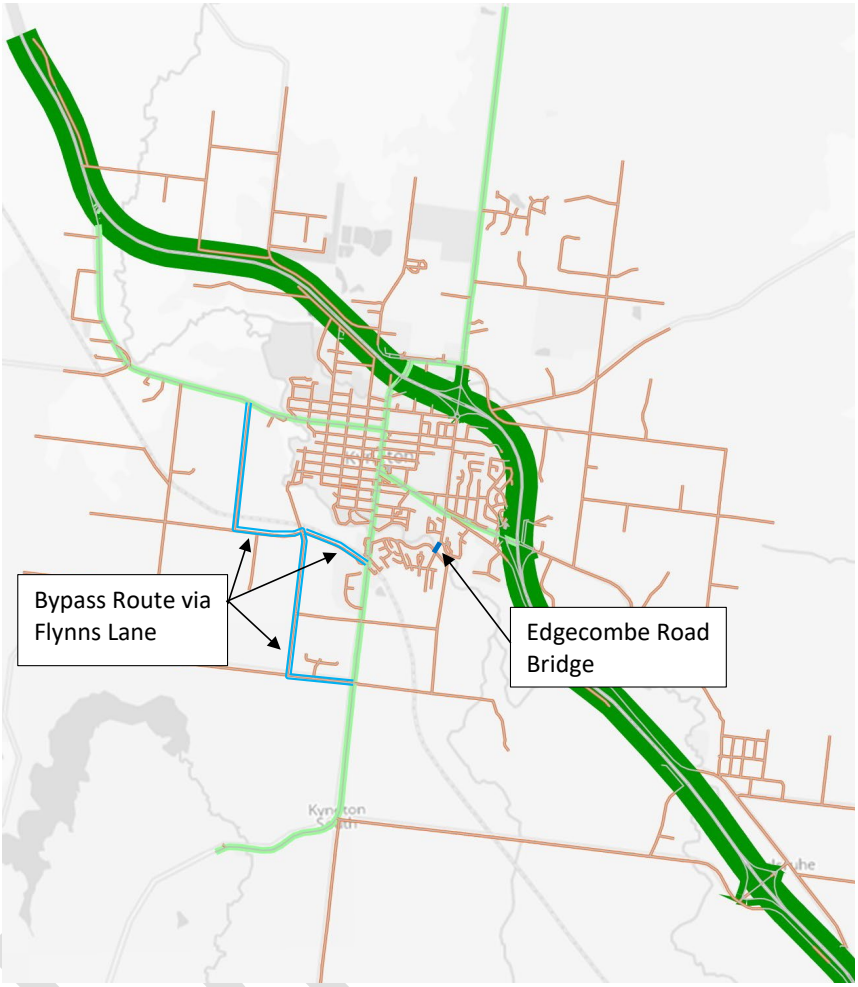

Figure H2: Assumed Future Road Network Option 1

Figure H3: Assumed Future Road Network Option 2

Appendix I – Detailed Traffic Model Report

CLARITY

Kyneton Movement Network Study

Traffic Model Development and Options Testing

16th January 2024

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Outline

Base Model Setup, Validation and Outputs

A. Background and Existing Model Review

B. Base Model Development

C. Base Model Validation

D. Base Model Outputs

Future Model Outputs and Scenario Testing

E. Future Base Model

F. Scenario 1: Bridge + Shorter Bypass

G. Scenario 2: Bridge + Longer Bypass

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1 – Background

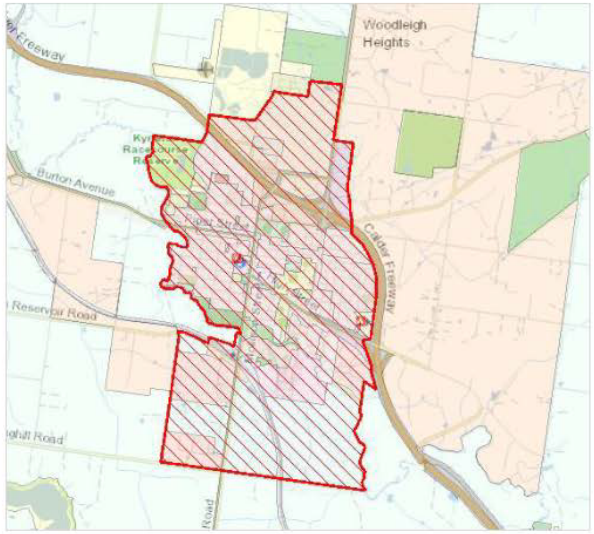
Macedon Ranges Shire Council is seeking to prepare a new ***Kyneton Movement Network Study (KMNS).*** This study will be aimed at addressing transport and infrastructure development in the town now and into the future to respond to the forecast population and land use development.

This study is being carried out in two stages, with:

- **The first stage** focussing on the state of the current transport movement network and infrastructure (completed early 2023)
- **The second stage** assessing proposed transport infrastructure associated with the forecast population growth in the town and will subsequently inform the delivery timelines for future capital works programs **(this stage)**

As part of any robust transport infrastructure assessment, modelling of the benefits of proposed new infrastructure is required.

In 2018, a model for the Kyneton area was developed by T&TS in the PTV Visum modelling software.



Kyneton Study Area

CLARITY

(B) Model Development

- *Scope of Model Development*
- *Network Setup*
- *Demand Setup*
- *Data Collation and Analysis*

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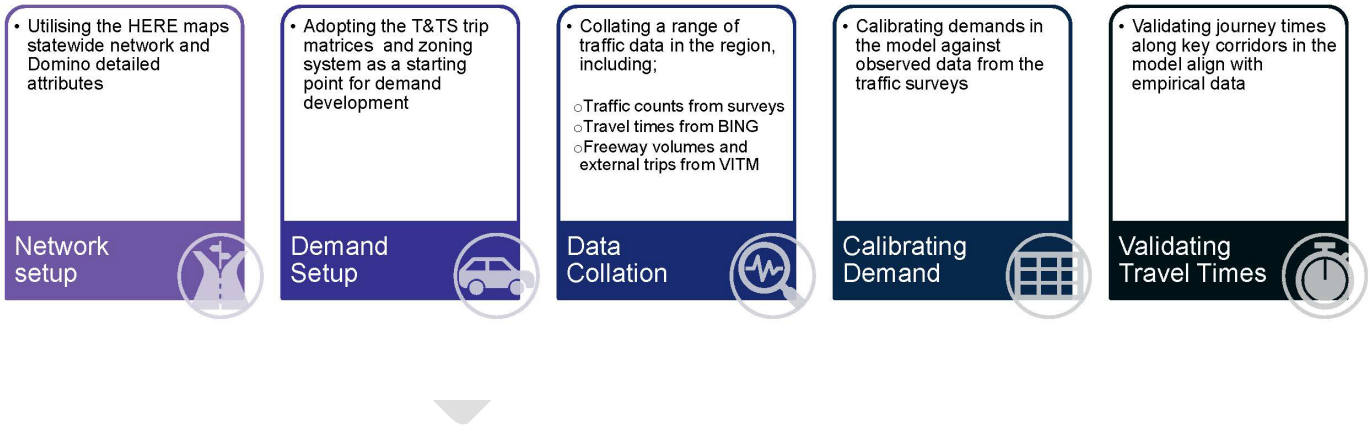
2 – Scope of Model Development

A methodology was developed to create a new model for the Kyneton region, to support the Kyneton Movement Network Study (KMNS). This is intended to be developed as a static model (i.e. without intersections or simulation) in the PTV Visum modelling software package and for the whole PM peak period (i.e. 3 to 6pm).

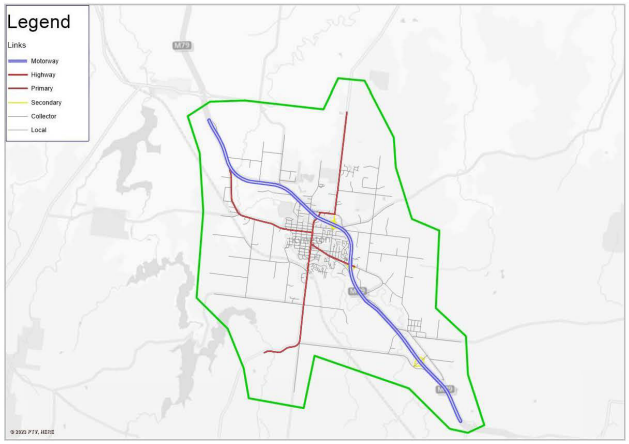
The model development methodology is outlined below, noting this ***pivots off both the Department of Transport and Planning (DTP) Strategic Model (VITM) and Mesoscopic Model (Domino)***, while leveraging baseline demand patterns from the previous TTS work for internal demand distribution (in the absence of any other internal trip pattern matrix to use as a starting point):



3 – Network Setup

The initial network structure was sourced from DTP, who had acquired this for the whole state of Victoria in 2022 from ***HERE maps*** (as shown below bottom left).

This network was then reviewed and updated as required in the context of the Kyneton area, with road ***network parameters sourced from the outer regions of the Metropolitan Domino model*** and embedded and linked into this model (parameters shown on bottom right).



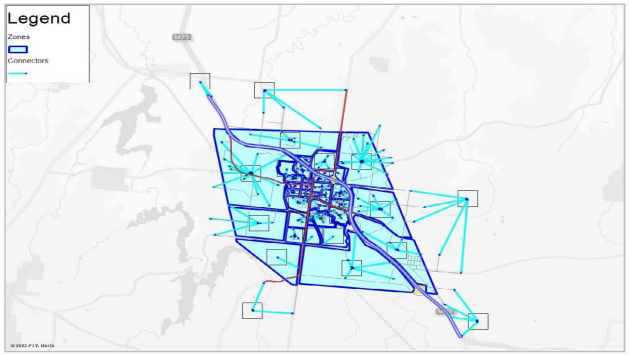
Link Types and modelling characteristics

Type	Road Type	Volume Delay Function (VDF)	Freeflow Speed Factor	Impedance	Lane Capacity
61	Freeway	Akcelik2 (3.00 0.60 0.98 0.60)	80%	1.00	2,000
62	Ramp	Akcelik2 (3.00 0.20 0.98 0.60)	80%	1.00	1,800
43	Primary Undivided	BPR3 (1.05 1.75 1.15 0.50)	70%	1.05	900
33	Secondary	BPR3 (0.90 1.75 1.00 0.50)	70%	1.10	850
24	Local/Collector	BPR3 (0.90 1.75 1.00 0.50)	70%	1.15	800
20	Minor	BPR3 (0.90 1.75 1.00 0.50)	65%	2.00	400

1. **Volume Delay Function (VDF)** – function that determines how delays form as congestion builds, noting different types of roads behave in different ways
2. **Freeflow Speed Factor (FFS)** – the actual operating speeds along different sections of road, taking into account geometric and intersection constraints
3. **Impedance** – the level of side friction experienced on different types of roads from for example parked vehicles pulling in and out of spots and interacting with traffic
4. **Lane Capacity** – the theoretical lane capacity along different sections of corridor

4 – Demand Setup

The initial demand set for the model was sourced from the T&TS model (trip matrix excerpt below) and embedded in this model, noting this was only utilised as a starting point for subsequent model development. Following this, ***zone connectors to disperse traffic in to and out of the network were regenerated***, to provide more suitable access/egress locations (as shown to the bottom left).



Seed Trip Patterns from Previous Kyneton Model

40 x 40		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
	Name	IIZ/IN2Z			C2Z			I1Z/LUR	GR21	SUZ1	I1Z/LDR		IN1Z	LDRZ			PU		C1Z		GR21	SUZ2					
	Sum	61.56	53.25	46.01	0.00	158.41	282.99	40.63	54.70	6.40	17.01	1.94	8.01	33.56	2.97	82.48	109.70	158.68	122.25	141.34	67.33	0.00	104.36	59.31	80.04	49.87	76.60
1	Z/NC 28.46	0.00	0.48	0.24	0.00	0.00	0.00	0.01	1.23	0.00	0.70	0.08	0.12	1.30	0.11	2.19	0.00	0.00	6.73	0.77	0.60	0.00	0.67	0.47	1.19	0.88	1.48
2	54.10	0.77	0.00	2.54	0.00	0.00	0.00	2.03	0.93	0.00	0.53	0.06	0.11	0.98	0.09	2.15	5.42	0.55	5.46	0.66	0.45	0.00	0.90	0.36	0.93	0.66	1.13
3	14.99	0.39	0.09	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.15	0.02	0.04	0.26	0.02	0.58	1.55	0.15	1.78	0.24	0.13	0.00	0.14	0.10	0.28	0.18	0.32
4	C2Z 9.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	35.80	0.71	2.17	0.26	0.00	0.00	2.04	0.51	0.04	0.00	0.04	0.00	0.03	0.06	0.01	0.12	0.00	2.12	1.46	9.04	0.31	0.00	0.12	0.08	2.37	0.45	0.27
6	58.24	1.93	1.19	0.66	0.00	17.33	0.00	3.05	0.64	0.03	0.37	0.04	0.09	0.66	0.06	1.27	0.00	19.69	0.79	11.04	0.69	0.00	1.91	0.13	1.55	1.05	1.13
7	Z/LU 133.10	2.31	1.46	0.67	0.00	15.80	17.74	0.00	1.51	0.01	0.85	0.09	0.18	1.55	0.14	2.62	0.01	15.25	1.68	1.11	1.95	0.00	5.93	0.34	3.47	2.45	2.92
8	GR21 31.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	SUZ1 13.85	0.00	0.07	0.00	0.00	0.00	1.06	0.79	0.07	0.33	0.00	0.19	0.02	0.04	0.34	0.03	0.68	0.00	0.00	0.05	0.27	0.10	0.00	0.93	0.01	0.09	0.00	0.09
10	Z/LD 18.14	1.71	0.49	0.62	0.00	0.20	0.29	0.09	0.00	0.00	0.00	0.01	0.07	0.24	0.02	0.22	0.10	0.17	0.27	1.93	0.16	0.00	0.75	0.03	0.44	0.24	0.55
11	6.34	0.42	0.18	0.23	0.00	0.04	0.05	0.02	0.00	0.00	0.00	0.00	0.02	0.04	0.00	0.04	0.04	0.03	0.07	0.60	0.03	0.00	0.14	0.00	0.11	0.04	0.11
12	IN1Z 27.07	1.75	0.50	0.63	0.00	0.33	0.46	0.13	0.00	0.00	0.23	0.02	0.00	0.30	0.03	0.35	0.26	0.26	0.34	2.30	0.24	0.00	1.77	0.04	0.62	0.37	0.71
13	LDRZ 18.09	1.81	0.53	0.67	0.00	0.10	0.16	0.07	0.00	0.00	0.09	0.01	0.07	0.00	0.01	0.12	0.11	0.09	0.22	1.75	0.09	0.00	0.60	0.01	0.32	0.13	0.28
14	18.28	1.81	0.53	0.67	0.00	0.10	0.16	0.07	0.00	0.00	0.09	0.01	0.07	0.12	0.00	0.12	0.11	0.09	0.22	1.76	0.09	0.00	0.61	0.02	0.32	0.13	0.28
15	54.66	0.90	0.27	0.34	0.00	2.24	3.16	0.81	1.20	0.00	0.74	0.07	0.27	1.23	0.11	0.00	1.61	0.22	2.14	1.30	0.76	0.00	1.95	1.27	2.03	1.20	2.17
16	PU 270.21	4.88	1.22	1.54	0.00	0.00	0.00	3.19	0.27	0.01	0.15	0.02	0.03	0.28	0.02	0.55	0.00	45.97	2.66	1.83	1.64	0.00	2.44	0.37	4.57	3.03	2.43
17	292.96	0.14	0.26	0.32	0.00	3.77	206.50	7.38	2.50	0.03	0.78	0.08	0.22	2.12	0.20	0.94	0.45	0.00	12.07	1.01	0.22	0.00	0.00	0.40	3.71	1.07	1.09
18	C1Z 245.53	7.52	1.84	2.33	0.00	28.44	7.50	1.74	0.85	0.00	0.46	0.05	0.07	0.87	0.08	1.45	5.61	5.62	0.00	24.63	5.76	0.00	14.74	4.02	12.66	9.60	13.30
19	306.20	5.86	1.46	1.80	0.00	0.46	3.35	9.12	4.21	0.02	2.35	0.26	0.35	4.44	0.39	13.72	11.41	30.81	21.57	0.00	5.11	0.00	19.01	13.49	3.81	2.89	4.86
20	GR21 64.66	4.03	1.18	1.45	0.00	0.05	8.32	2.36	0.91	0.00	0.58	0.06	0.20	0.99	0.09	3.05	6.00	0.08	7.51	1.63	0.00	0.00	1.81	1.24	1.92	1.17	2.10
21	SUZ2 42.23	0.39	0.12	0.14	0.00	0.00	1.67	0.65	0.16	0.00	0.12	0.01	0.09	0.16	0.01	1.20	1.39	0.02	2.51	10.46	1.65	0.00	3.49	2.15	1.17	0.41	0.96
22	22.92	0.06	0.02	0.02	0.00	0.01	2.48	0.74	0.27	0.00	0.17	0.02	0.07	0.28	0.02	1.94	1.30	0.03	2.38	1.69	0.48	0.00	0.00	0.79	1.30	0.75	1.37
23	21.19	0.07	0.02	0.03	0.00	0.00	2.68	1.58	0.49	0.00	0.29	0.02	0.16	0.28	0.02	0.90	1.25	0.01	3.93	1.57	0.26	0.00	0.55	0.00	0.87	0.35	0.73
24	120.43	0.67	0.18	0.22	0.00	19.21	4.20	0.99	0.47	0.00	0.26	0.03	0.04	0.49	0.04	14.00	3.56	0.73	3.38	1.83	3.30	0.00	8.28	5.06	0.00	5.37	9.10
25	24.92	0.61	0.18	0.22	0.00	3.29	0.69	0.22	0.07	0.00	0.05	0.00	0.02	0.07	0.01	2.25	0.69	0.01	0.99	0.71	0.55	0.00	1.35	0.90	1.64	0.00	1.64
26	136.29	0.73	0.21	0.25	0.00	0.90	9.68	2.08	0.80	0.00	0.42	0.04	0.09	0.75	0.07	0.66	6.92	0.15	9.09	1.39	2.06	0.00	5.11	3.58	4.76	3.31	0.00

5 – Data Collation and Analysis (Traffic Surveys)

A data collection exercise was conducted in late 2023 to provide up to date traffic count information within the Kyneton region. ***Data was collected between the period of August and September*** and consisted of local network turning movement counts at 11 locations and automatic midblock tube counts at 10 locations.

The survey locations are marked up and tabulated below for both midblock and turning movement counts.

No	Site
1	Caroline Chisholm Dr / Bourke Street
2	High Street / Edgecombe Street
3	High Street / Mollision Street
4	Piper Street / Mollision Street
5	Beauchamp Street / Mollision Street
6	Kyneton Springhill / Trentham Road
7	Epping Street / Edgecombe Street
8	Market Street / Mollision Street
9	High Street / New Street
10	Jenning Street / Mollision Street
11	Trentham Road / Lauriston Reservoir

No	Site
1	Bourke Street, 150m from Caroline Chisholm Drive
2	Mollision Street, 160m from Johnson Court
3	Edgecombe Road, Between Dettmans & Saleyards Road
4	Burton Avenue, Between Harts Lane & Flynns Lane
5	Trentham Road, 500m from Carlsruhe Central Road
6	Edgecombe Street, 100m from High Street
7	Edgecombe Road, 200m from Red hill Road
8	Bodkin Street, Between Mollision & New Street
9	Begg Street, Between Mollision & New Street
10	Harts Lane, 200m from Lauriston Reservoir Road

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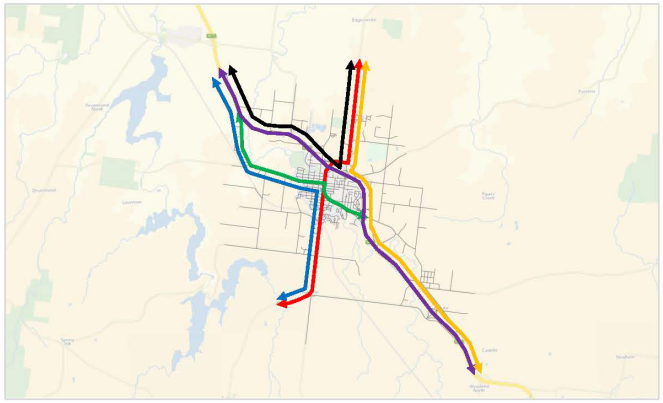
5 – Data Collation and Analysis (BING Travel Times)

Travel time data was also sourced from the Bing Maps API for all the key Corridors in the study area. This resulted in six corridors with travel times extracted as shown in the plot below and tabulated to the right.



No.	Route	Between
1	Trentham Road	Redhill Road & Premier Mine
2	Burton Avenue	Wards Lane & Fairbarn Place
3	Calder Freeway	Woodend North & Malmsbury East
4	Trentham Road	Premier Mine & Malmsbury East
5	Edgecombe Road	Redhill Road & Woodend North
6	Edgecombe Road	Redhill Road & Malmsbury East

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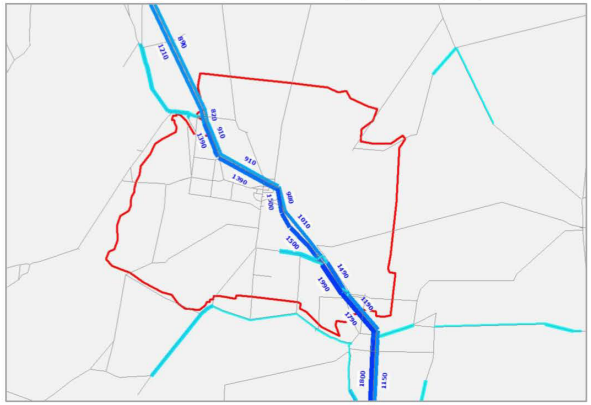
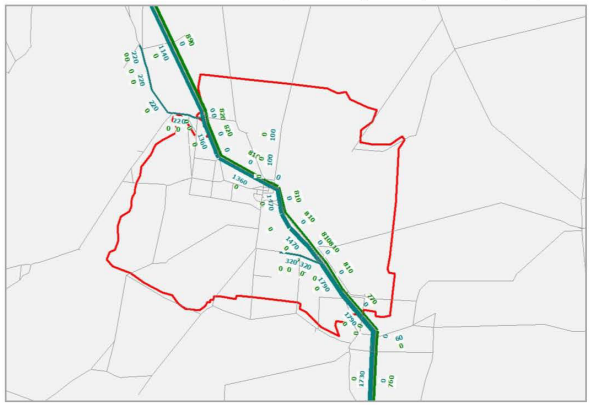
5 – Data Collation and Analysis (VITM Extractions)

Finally, as part of the data collation process, information was sourced from the DTP statewide VITM model. This was focussed on the Calder Freeway, in the context of lack of data for the freeway and that strategic models in regional settings are only suitable at a macro level.

Traffic Volumes on the Calder Freeway (2 hour equiv.)



Select Links on Calder Freeway entering area (2 hour equiv.)



Kyneton Study Area

It is again worth noting that VITM is not specifically calibrated in this region and hence these outcomes are only used to guide the modelling with something appropriate for the Calder Freeway.

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CLARITY

(C) Model Validation

- *Guidelines*
- *Demand Calibration*
- *Travel Time Validation*

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6 – Validation Guidelines

Model validation was conducted for both demand and operations, with comparisons to traffic counts on sections of the network for demand and comparisons to corridor travel times for operations.

The guideline targets adopted were sourced from DTP and are outlined below:

Metrics	Criteria	Source
Traffic Counts	• 50% of cases have a GEH < 5 • 80% of cases have a GEH < 10 • $R^2 > 0.9$ • Slope between 0.9 and 1.1	DTP Strategic Modelling Guidelines
Travel Time Corridors	• 80% of corridors within 30%	DTP Mesoscopic Modelling Advice

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7 – Demand Calibration

Demand calibration was undertaken using the principles of matrix estimation. The outcomes of this estimation process against DTP criteria are outlined below. This demonstrates an ***excellent fit of the model against the observed data***. Secondary checks of the volume of through trips in the model against VITM were also undertaken showing similarities in directional through trip portions, noting the new KMNS model had lower proportions of through trips overall[1].

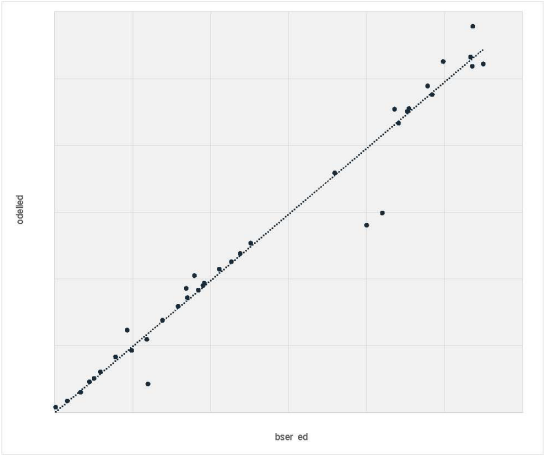
Demand Calibration Outcomes

Metrics (LV)	Criteria	Modelled	Meets
GEH < 5	> 50%	92%	✓
GEH < 10	> 80%	100%	✓
R^2	> 0.90	1.0	✓
Slope	0.9 – 1.1	1.0	✓

Through Trip Comparisons

No.	VITM	KMNS Model
Northbound	65%	50%
Southbound	85%	55%

[1] again it is worth noting that VITM is not calibrated in this area and is therefore only indicative of trip patterns in this region



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8 – Travel Time Validation

Within the defined study area, seven corridors in both directions were identified for travel time validation (as shown below). A comparison of the modelled travel time against the observed time sourced from the BING Maps API is shown below, indicating 100% of routes are within 30% of observed values, with 83% of routes within 15%.

	Northbound Trentham Road	Soutbound Trentham Road	Eastbound Burton Avenue	Westbound Burton Avenue	Northbound Calder Freeway	Southbound Calder Freeway	Northbound Trentham Road via Burton	Southbound Trentham Road via Burton	Northbound Calder Hwy via Edgecombe	Soutbound Calder Hwy via Edgecombe	Eastbound Calder Hwy via Edgecombe	Westbound Calder Hwy via Edgecombe
Observed	13.9	14.1	9.5	10.4	12.8	13.6	14.2	14.4	11.1	16.6	12.8	10.2
Modelled	14.0	14.3	10.4	10.3	12.1	12.0	14.2	12.4	12.8	12.3	10.3	11.0

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DRAFT

Summary – Model Development & Validation

A transport model has been developed for the Kyneton region, leveraging existing tools and modelled networks within the state of Victoria. The model network was extracted from the Victorian HERE maps network, before parameters and external trip patterns were sourced from Department of Transport and Planning's Domino and VITM models respectively. The model was then finally calibrated to surveyed traffic counts and performance validated to travel times as sourced from BING, both to DTP guidelines to ensure suitable representation of the network demands and performance.

Demand Validation

- ✓ Demand validation demonstrated excellent outcomes, with all criteria significantly exceeded

Travel Time Validation

- ✓ Travel time validation also showed excellent outcomes, with 100% of routes demonstrating modelled outcomes within 30% of observed travel times and nearly 85% within 15%

*Based on this model development process and achievement of DTP guideline requirements, the **model is deemed fit to move forward** to the subsequent scenario testing phase*

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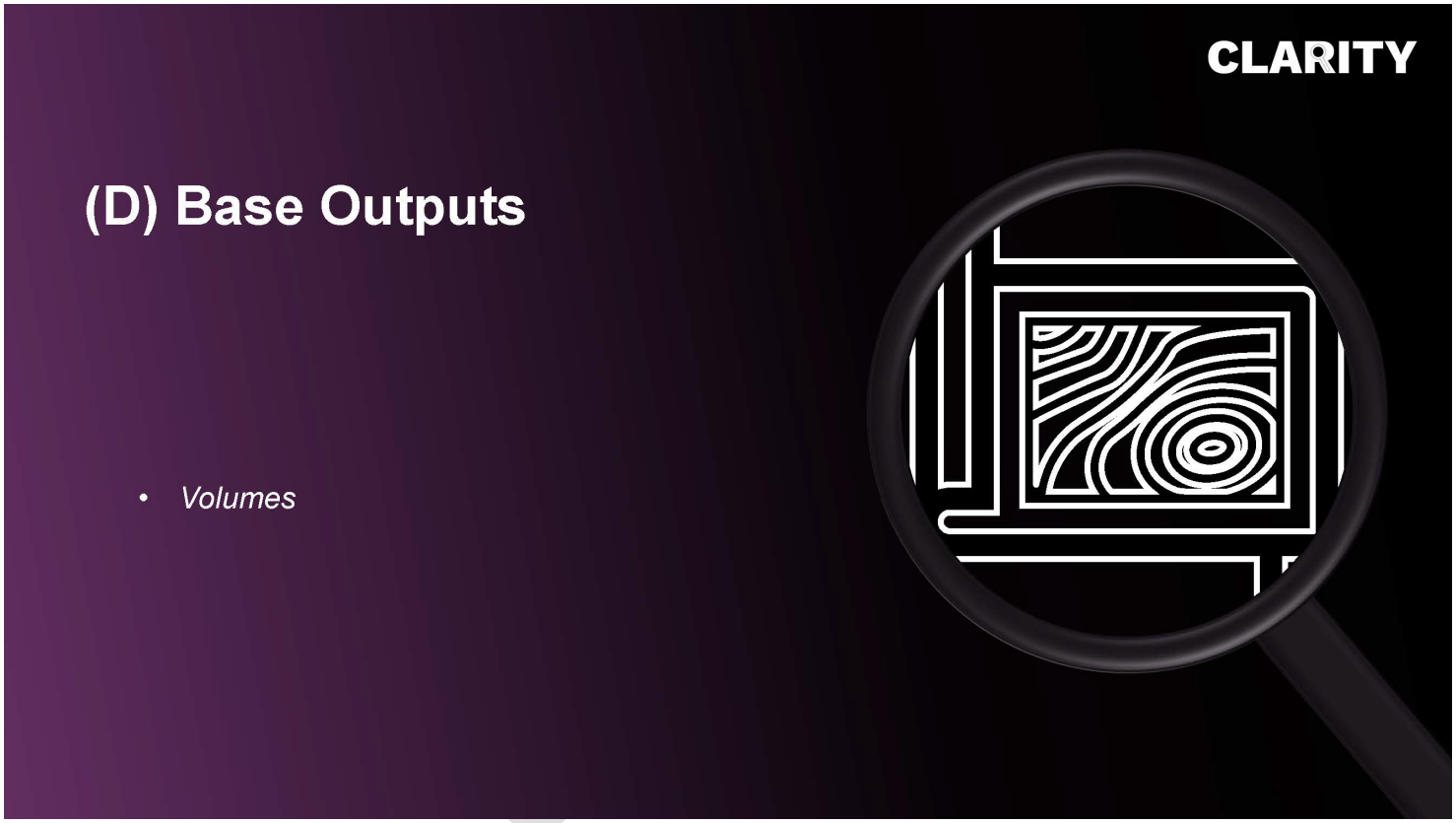

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9 – Modelling Results

With the model suitably validated to DTP standards a suite of outputs from the model can be generated. These include the following plots, noting further information on network statistics can also be generated should this be beneficial:

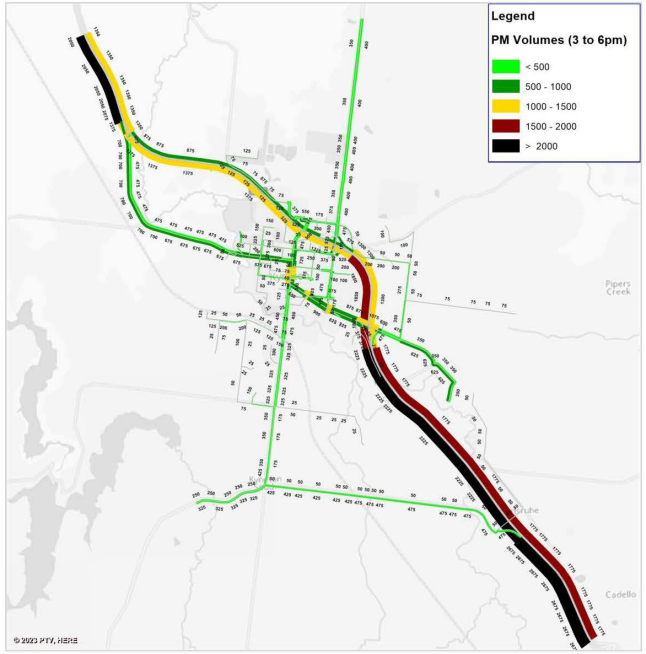
- **Traffic Volumes Plots** – plots showing the volume of traffic on all sections of road across the full three-hour peak period

9 – Traffic Volume Plot (2023 PM Peak)

Traffic volumes in the PM peak period in the Kyneton region are shown to the right. This shows the Calder Freeway caters for a lot of traffic, most of which are through trips in both directions.

There are also high volumes on the east-west corridors of High Street and Burton Avenue, of between 700 and 900 vehicles across the three-hour PM peak period.

Zoomed in volumes in the town centre are found on the following page.



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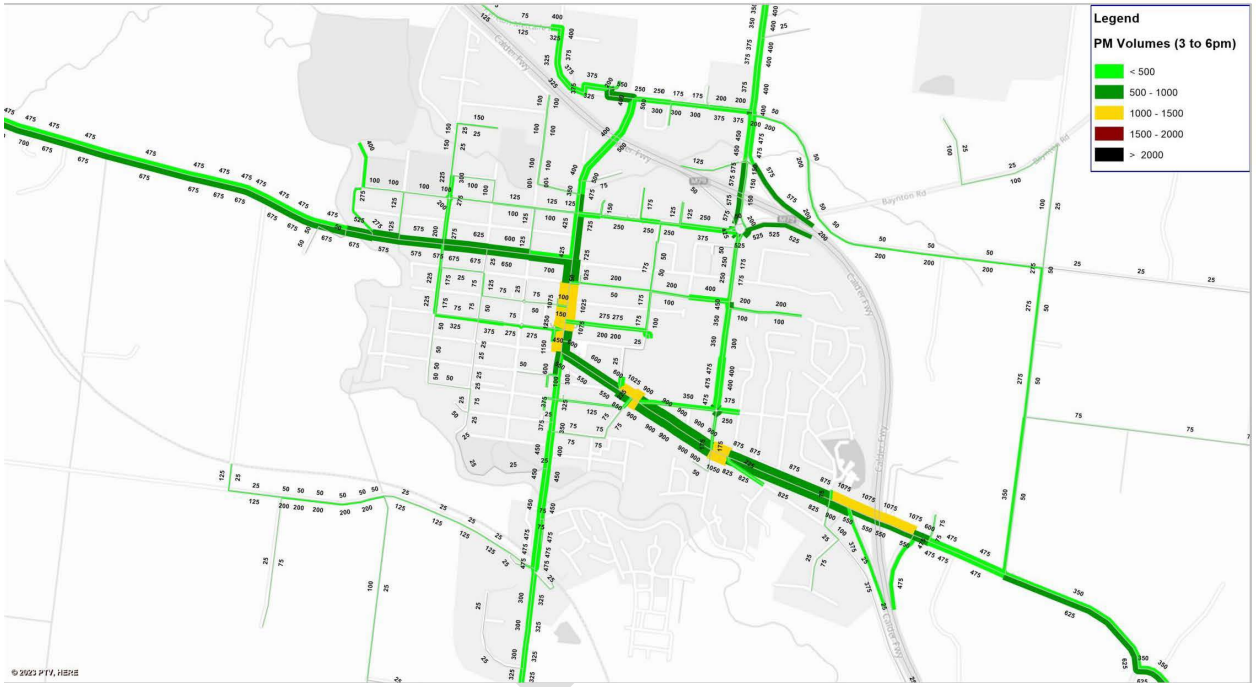
9 – Traffic Volume Plot Zoom (2023 PM Peak)



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CLARITY

(E) Future Model Development

- *Scope*
- *Growth*
- *Volumes*

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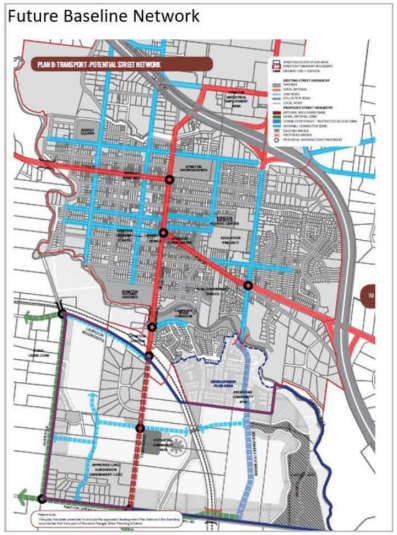
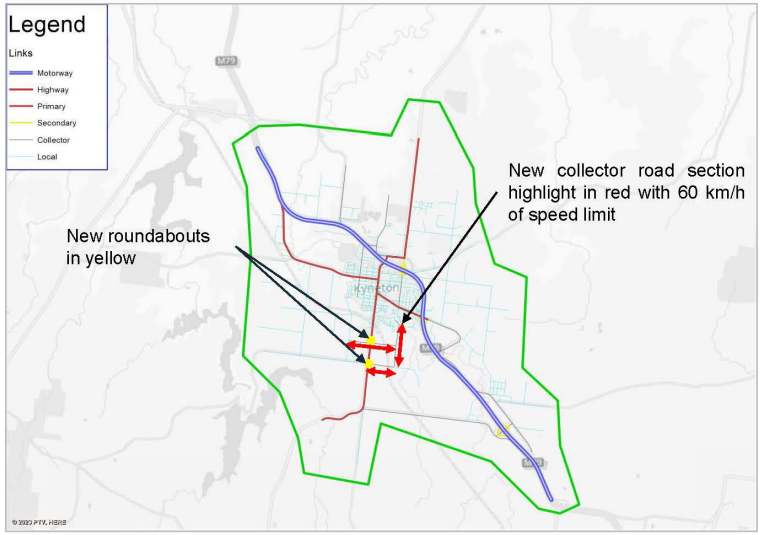
10 – Future Base Model Network

Following development and outputting of the base year model, a future year model was developed for the Kyneton region to represent a circa 20 year horizon of 2041. Two aspects of the model were updated to reflect this, being the network and the demand. The network upgrades are shown below in schematic (left) and model markup formats (right).





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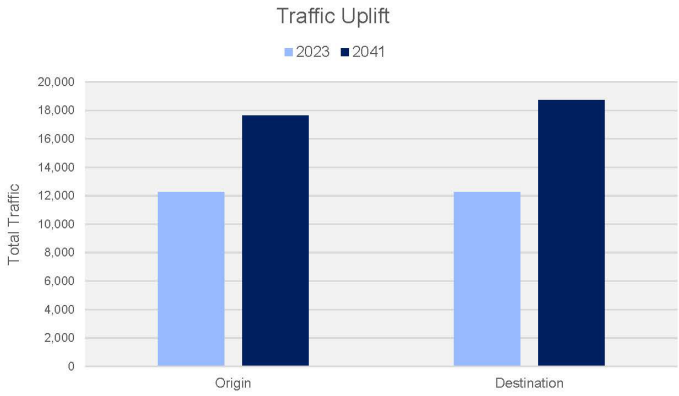
11 – Future Base Model Demand

Future demand was then developed through a growth factoring process using the matrix estimation principle of furnessing. This process looked at infill into greenfield areas within Kyneton that are expected to build out across this horizon, as well as background growth both in and through the region, to provide total uplift in demand from and to each area in Kyneton. The demand growth by zone is shown below, alongside a graph of the total uplift from present day to future year 2041.

Zone	LU	Type	Area (m^2)	Origin Traffic	Destination Traffic	20 years Origin Traffic	20 years Destination Traffic
1	IN1Z/N2Z	Internals	967	194	273	463	651
2	IN1Z	Internals	159	332	195	792	465
3	IN1Z	Internals	169	65	134	155	320
4	C2Z	Internals	223	10	0	414	416
5	GRZ1	Internals	497	205	316	246	379
6	GRZ1/PUZ3/C1Z	Internals	350	521	471	725	656
7	IN1Z/LDRZ/GRZ1	Internals	516	267	313	307	360
8	GRZ1	Internals	614	86	78	530	795
9	GRZ1/SUZ1/C1Z	Internals	357	141	51	193	70
10	IN1Z/LDRZ	Internals	554	97	75	465	359
11	FZ	Internals	1,089	15	11	676	1,014
12	IN1Z/FZ	Internals	71	83	20	142	34
13	LDRZ	Internals	589	38	192	90	455
14	FZ	Internals	495	45	17	307	461
15	GRZ1/PUZ7/C1Z	Internals	668	353	290	371	304
16	PU	Internals	252	410	379	737	681
17	C1Z/GRZ1	Internals	327	311	511	347	570
18	C1Z/GRZ1	Internals	93	559	337	575	347
19	IN1Z/GRZ1	Internals	226	501	271	605	327
20	GRZ1	Internals	374	130	256	172	338
21	SUZ2	Internals	424	398	0	398	0
22	GRZ1	Internals	221	274	304	309	343
23		Internals	89	50	219	62	273
24	GRZ1	Internals	136	468	267	380	217
25		Internals	132	57	258	95	431
26		Internals	145	615	688	729	816
27		Internals	182	327	464	352	499
28		Internals	4,521	17	111	17	111
29		Internals	4,217	63	142	63	142
30		Internals	8,800	74	131	74	131
31		Internals	3,326	23	74	23	74
32		Internals	3,236	52	187	52	187
33		Internals	8,812	39	83	39	83
34		Internals	3,543	76	143	76	143
35		Internals	4,357	643	376	643	376
36		Externals	-	1,360	2,062	1,733	2,628
37		Externals	-	2,685	1,790	3,422	2,281
38		Externals	-	253	330	322	421
39		Externals	-	408	350	520	446
40		Externals	-	15	90	19	115
				12,260	12,259	17,642	18,721



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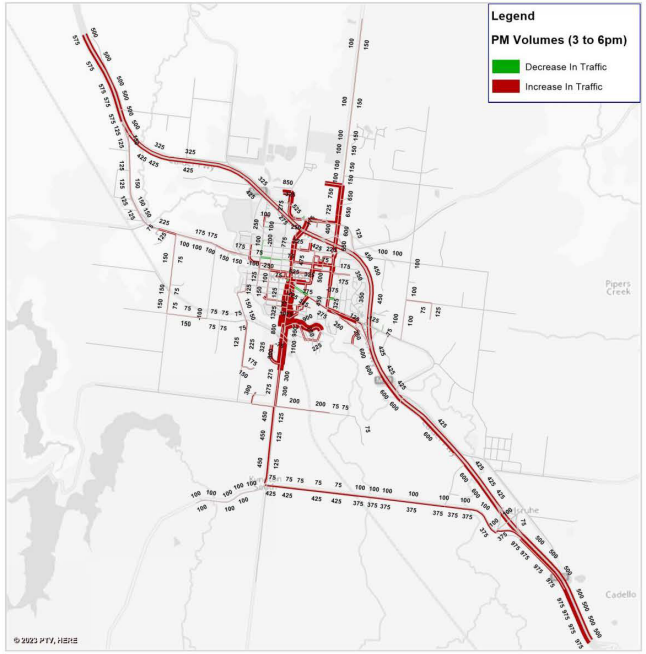
12 – Traffic Uplift Plot (2041 vs 2023 PM Peak)

Traffic volume uplifts in the PM peak period in the Kyneton region are shown to the right. This shows increases in traffic throughout the network, with particularly large increases along Mollisons Road through the central part of the city and Edgecombe Road to the north/west.



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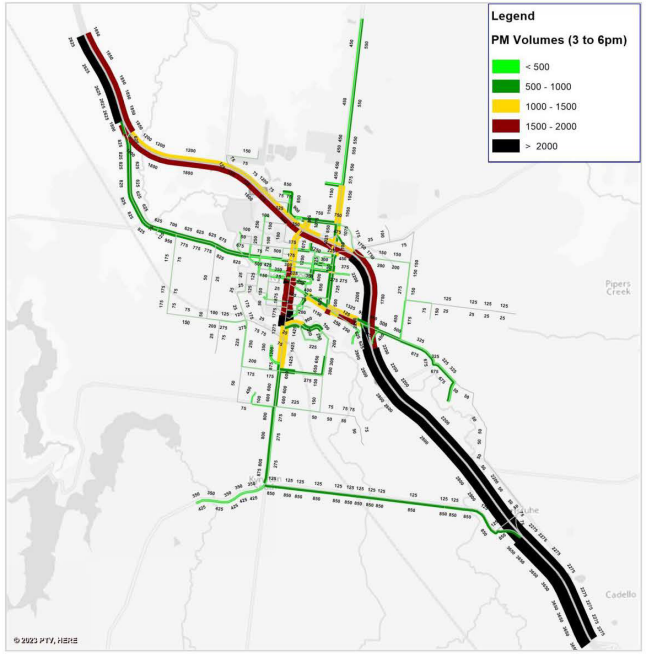
12 – Traffic Volume Plot (2041 PM Peak)

These uplifts in volume result in much higher volumes along many roads within the Kyneton region in the future PM peak, with:

- Mollison Street now catering for up to 2,000 vehicles in each direction
- High Street catering for over a 1,300 vehicles in each direction
- Edgecombe Road nearly tripling in traffic volume from 400 vehicles per direction to 1,200 vehicles per direction

Zoomed in volumes in the town centre are found on the following page.



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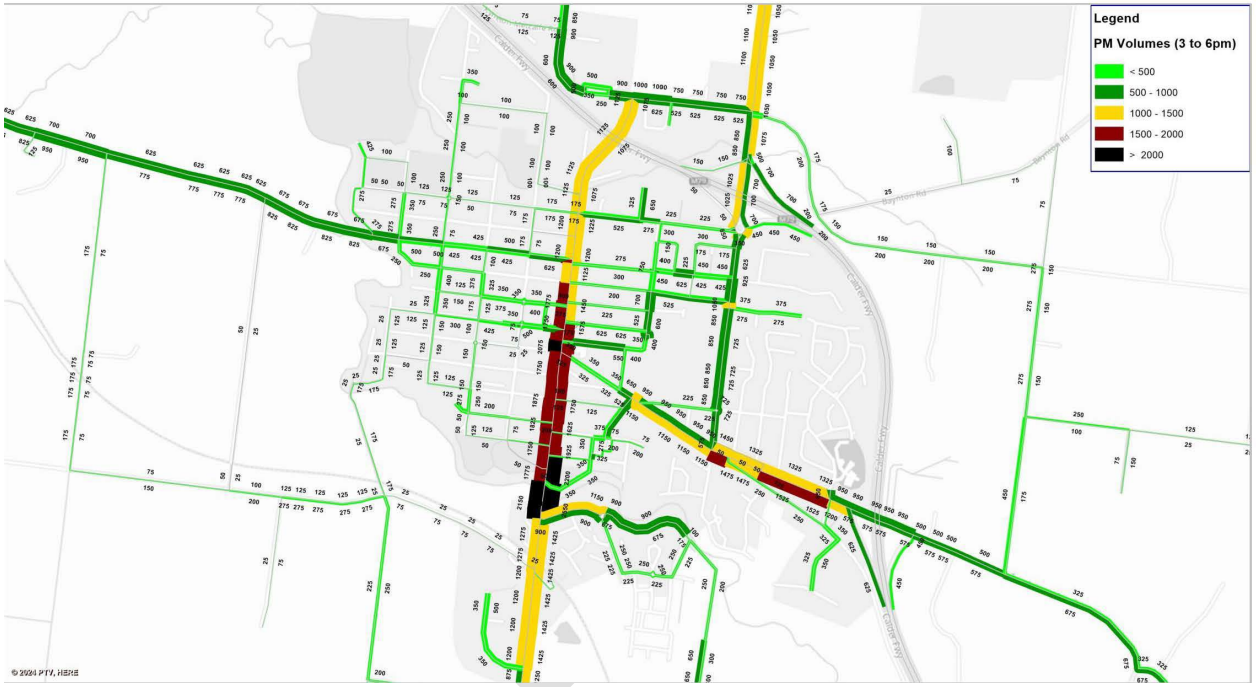
12 – Traffic Volume Plot Zoom (2041 PM Peak)



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CLARITY

(E) Scenario Testing
Bypass Option 1

- *Scope*
- *Diversions*
- *Volumes*

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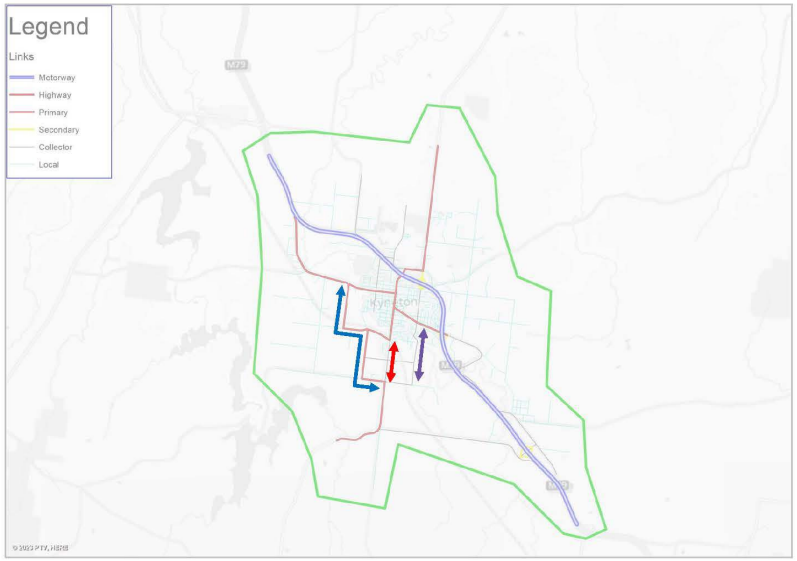
DRAFT 28

13 – Modelling Scope (Option 1)

The first option tested for Kyneton is outlined below. This includes:



- ***New Bridge on Edgecombe*** connecting Edgecombe road to Campaspe Drive
- ***Down grading of Mollison*** between Lauriston Reservoir road & Kyneton Springhill with arterial downgraded to a collector speed reduced to 60 km/h
- ***New Arterial Bypass route*** connecting from Kyneton Springhill Road all the way to Burton Avenue, with an 80 km/h posted speed limit

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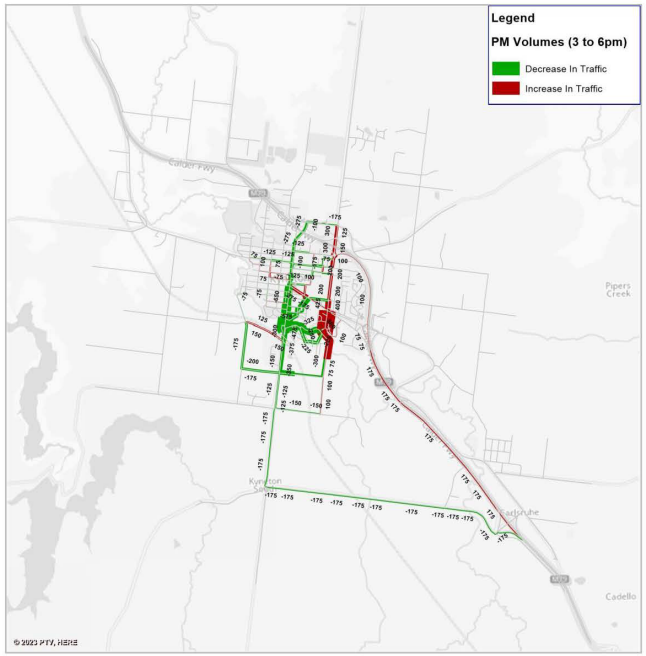
DRAFT 29

14 – Traffic Diversion Plot (2041 Option 1 PM Peak)

With the addition of the new Edgecombe Bridge, significant amounts of traffic are observed diverting off Mollison Street to utilise the new crossing, with up to 1,200 vehicles using the new crossing both directions. This provides some relief to Mollison Street, as well as Carlsruhe Central Road to the south, with vehicles now able to instead use the Bourke Street interchange.

Note limited traffic is noted to use the Bypass Routes proposed as part of this option/



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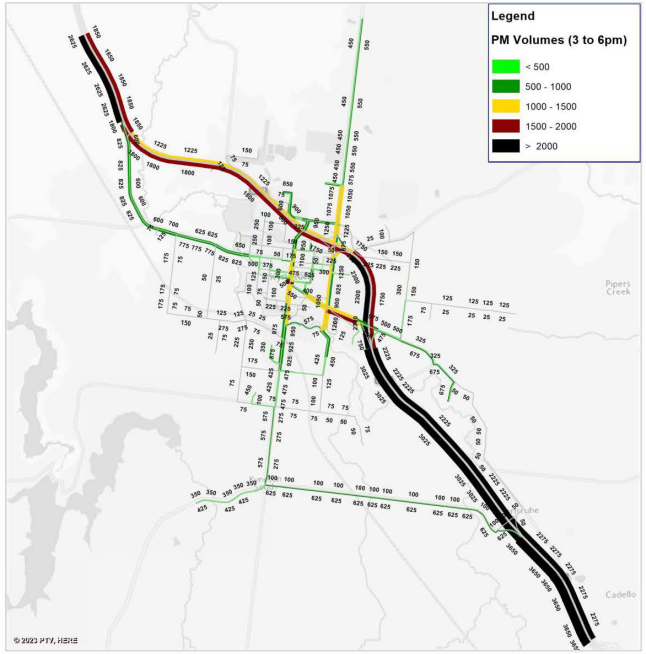
14 – Traffic Volume Plot (2041 Option 1 PM Peak)

The diversion in traffic to the Edgecombe bridge changes the function of arterials in the Kyneton area, with Mollison Street and Edgecombe Street now effectively splitting traffic for the key north/south movement.



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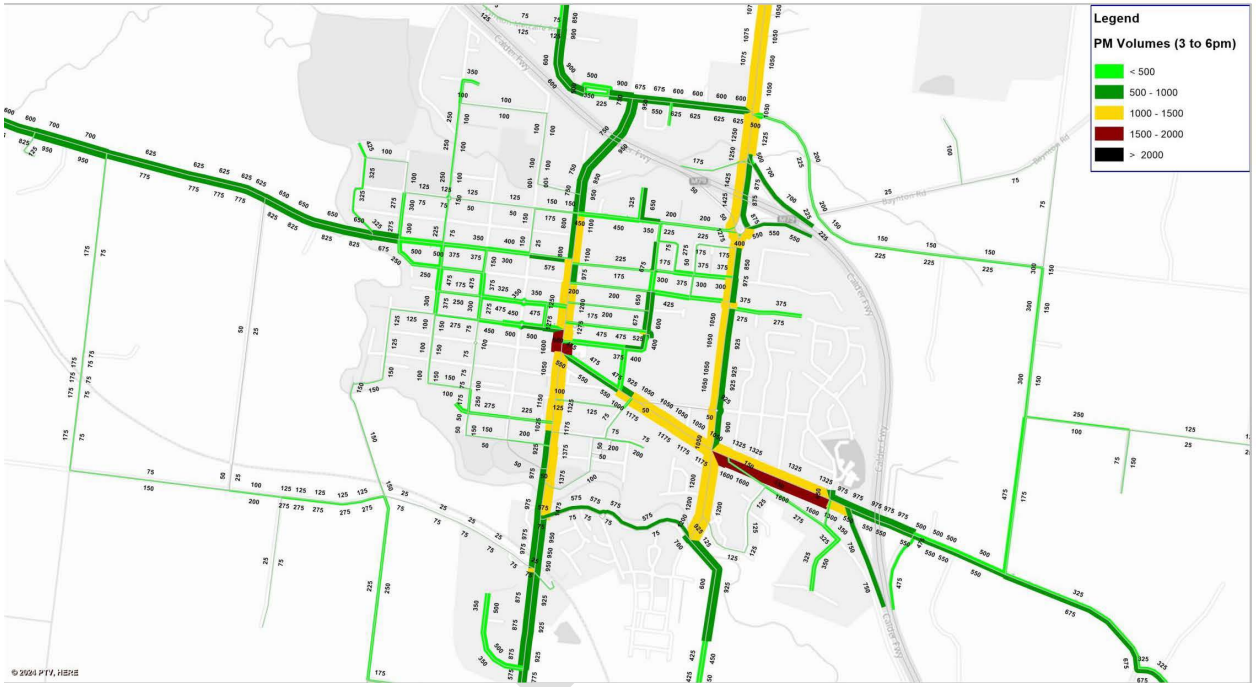
14 – Traffic Volume Plot Zoom (2041 Option 1 PM Peak)



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CLARITY

(F) Scenario Testing
Bypass Option 2

- *Scope*
- *Diversions*
- *Volumes*

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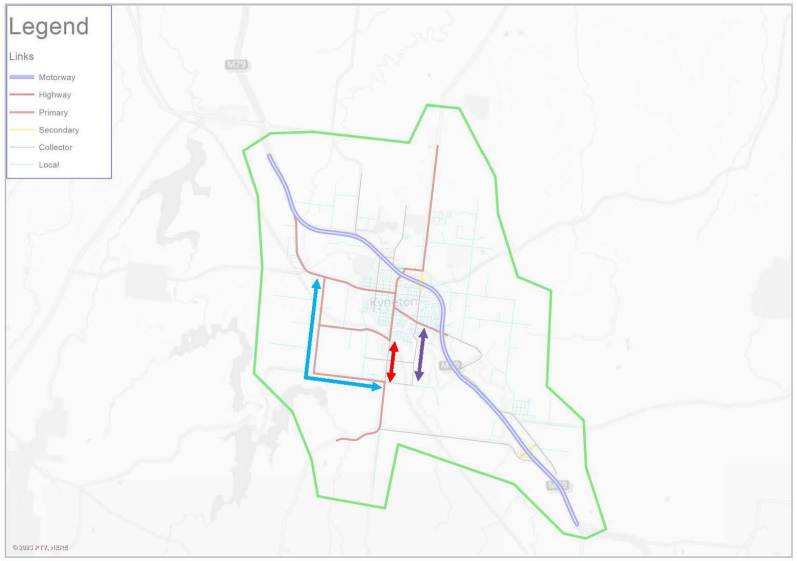
DRAFT 33

15 – Modelling Scope (Option 2)

The second option tested for Kyneton has similar inclusions to Option 1, with the only difference being the configuration of the Bypass, as outlined below:



- New Arterial Bypass route connecting from Kyneton Springhill Road to Burton Avenue **using Harts Lane instead of Flynns Lane**

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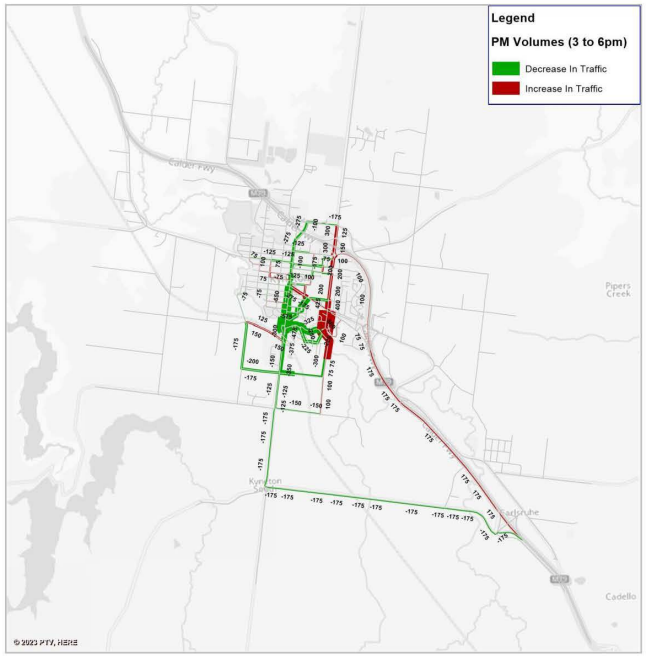
16 – Traffic Diversion Plot (2041 Option 2 PM Peak)

Traffic diversion outcomes in Option 2 are in line with Option 1, with no notable differences given the underutilisation of the proposed bypass route and Edgecombe Road attracting a lot more traffic due to the new bridge overpass.



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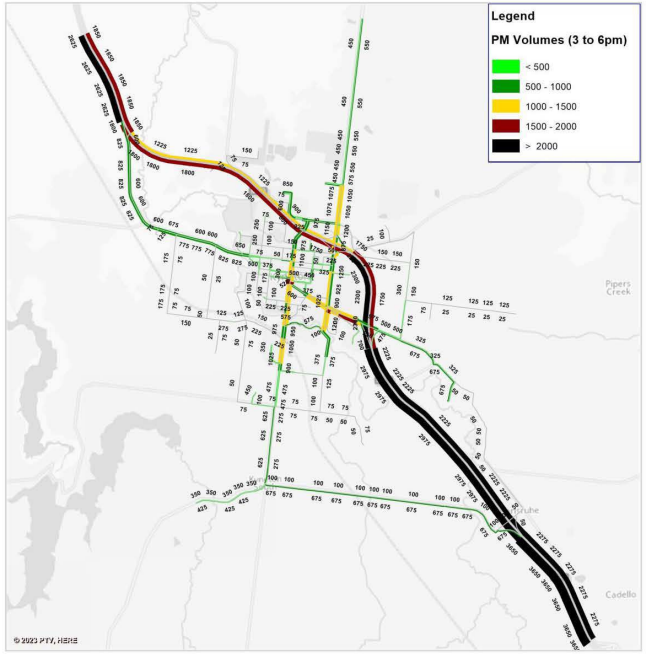
16 – Traffic Volume Plot (2041 Option 2 PM Peak)

This results in similar traffic volumes to Option 1, with again Edgecombe Road becoming the key north/south arterial in the study area.



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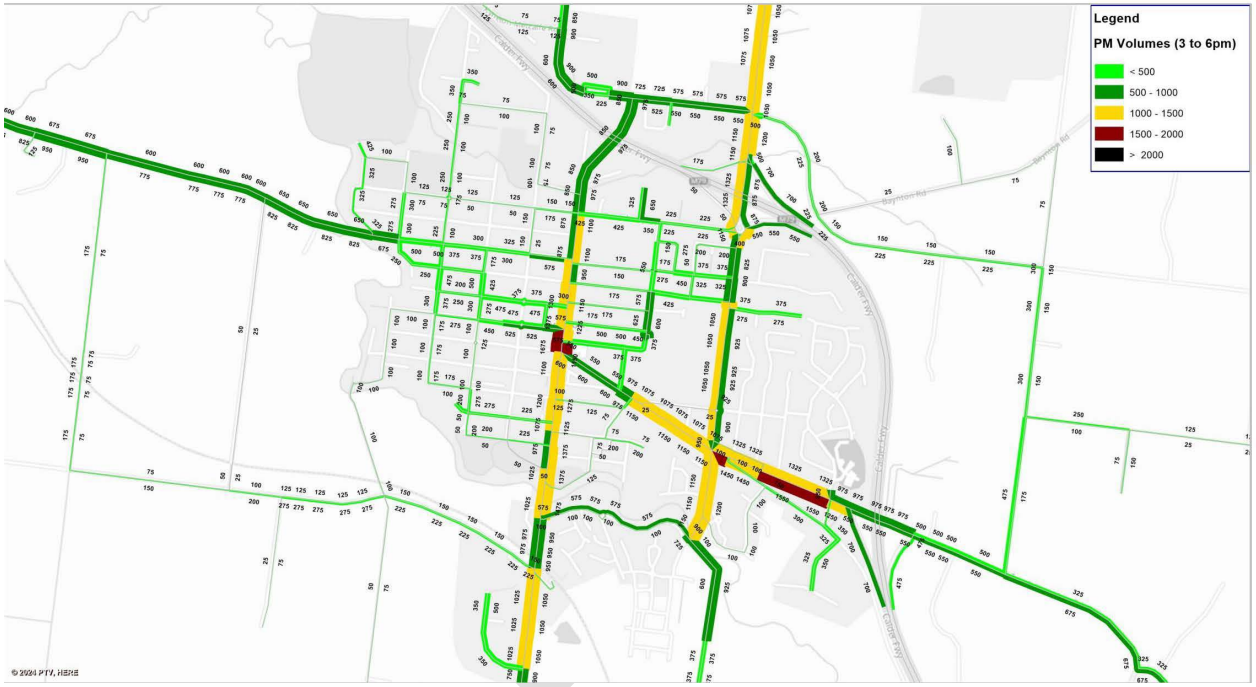
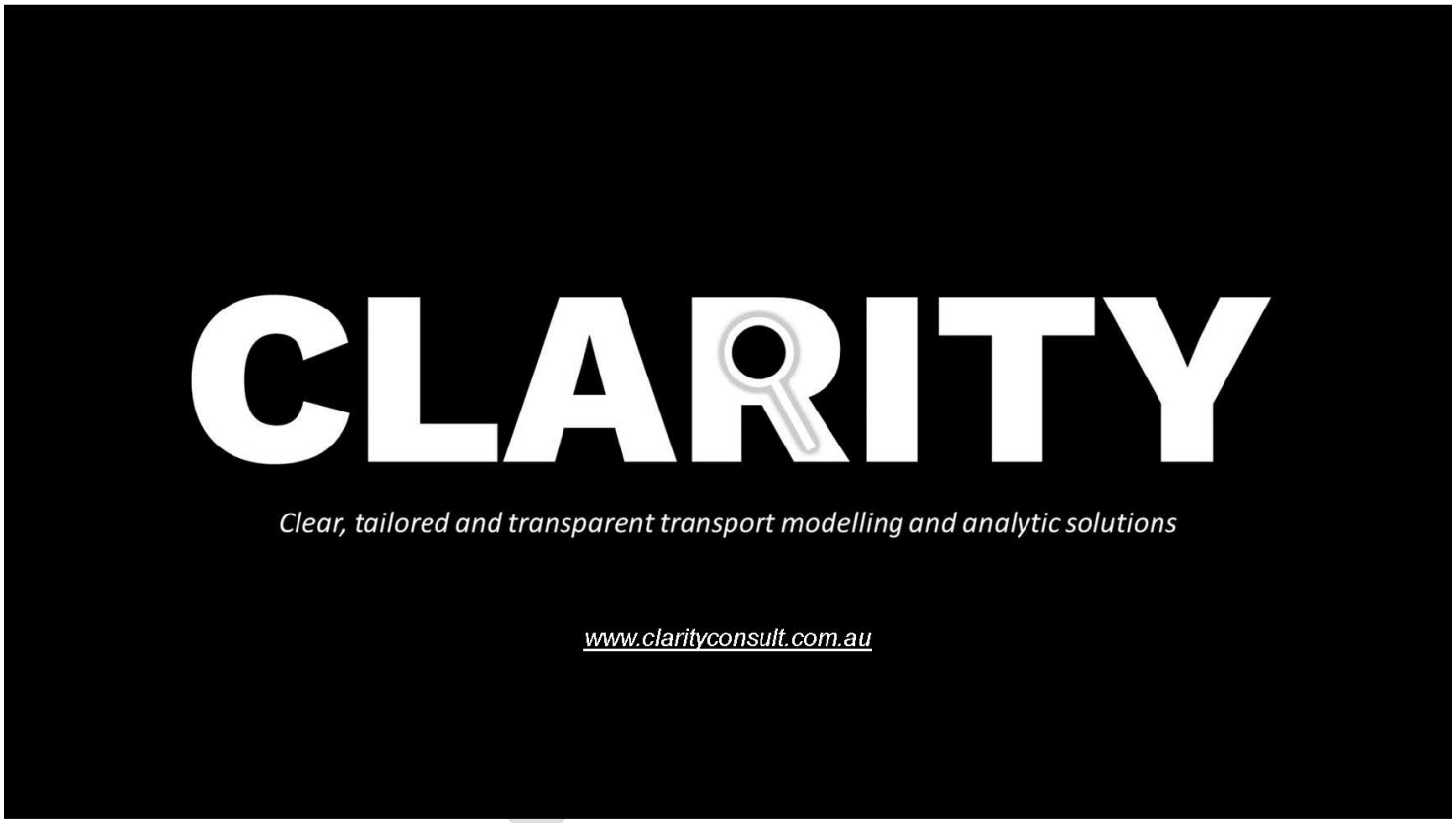
16 – Traffic Volume Plot Zoom (2041 Option 2 PM Peak)



144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Appendix J – Type of Recommended Projects

Movement Type	Project Type	Description	Example Photo
Active Transport	Footpath	• Sealed path for pedestrians to walk along. • Typical width is 1.5m.	
Active Transport	Shared path	• Sealed path that is shared between pedestrians and cyclists for transport. • Typical width is 2.5-3m for the context of this study.	

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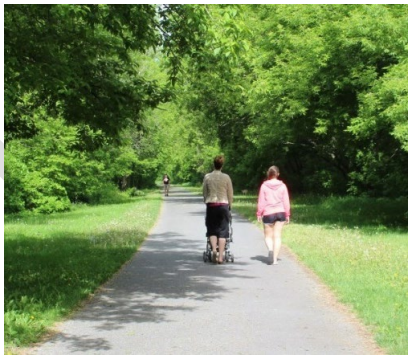
Movement Type	Project Type	Description	Example Photo
Active Transport	Recreational/River trail	• Sealed path that is used by pedestrians and cyclists for leisure. • Typical width is 2.5-3m for the context of this study.	
Active Transport	Pedestrian-operated signals	• Designated street crossing with traffic lights that activate a red light for motorists when a pedestrian pushes a button. • Typical width is 2.5-3m for the context of this study. • Suitable for high-volume roads with a high volume of pedestrian crossings (for example, at/near railway stations).	

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Movement Type	Project Type	Description	Example Photo
Active Transport	On-road cycle lanes	• Marked bicycle lanes on the sealed carriageway of a road dedicated to cyclists. • Typical width is 1.2-1.8m for the context of this study. • Typically installed along the kerb or between kerbside parking and traffic lane.	
Active Transport	Sharrows	• Pavement markings that indicate a road is a shared environment for bicycles and cars and alert all road users to the presence of bicycles on the road.	
Active Transport	Pram crossing	• A localised area of the footpath is lowered to the same level as the adjacent roadway to let pedestrians cross the road.	

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Movement Type	Project Type	Description	Example Photo
Active Transport	Wombat crossing	• Raised pedestrian crossing that provides priority to pedestrians crossing the road and encourages motorists to slow down when approaching the crossing. • Typical width varies from 3-3.5m.	
Active Transport	Kerb outstands	• A localised widening of the footpath at intersections or mid-block, which extends the footpath into and across parking lanes or the road shoulder to the edge of the traffic lane. • Kerb outstands reduce the crossing distance for pedestrians and cyclists and create a narrowing effect along the road.	

Movement Type	Project Type	Description	Example Photo
Active Transport	Raised platforms	• Elevated sections of road that aim to reduce vehicle speeds on the approach to areas of higher risk, such as intersections. •	
Traffic/road network	Speed humps	• One of the traffic calming devices that uses vertical deflection to slow motor-vehicle traffic to improve safety conditions.	
Traffic/road network	Splitter islands	• A raised or painted traffic island that separates traffic in opposing directions of travel.	

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Movement Type	Project Type	Description	Example Photo
Traffic/road network	Access/movement restriction or control	• Some turning movements are restricted to control traffic movements and improve road safety.	

Table J1: Description of Key Recommendation/Project Types

Appendix K – MCA Prioritisation Outputs

Key Assessment Criteria	Criteria Weighting	Key Performance Indicators (KPIs)	KPI Individual Weighting	KPI Weighting Guide	Raw Scoring Guide					
					0	1	2	3	4	5
Feasibility	25%	Arterial roads / rail corridors / non-Council land	10%	Council will have less influence on change on non-Council land.	n/a	Requires approval from external authorities	n/a	n/a	n/a	Within Council land
		Environmental and cultural impacts	5%	Will the project have an impact on flora & fauna, and cultural heritage, or require the removal of trees?	n/a	Major	n/a	Moderate	n/a	Minor
		Significant infrastructure	10%	Is major infrastructure required? Removal of existing or new infrastructure.	n/a	Major	n/a	Moderate	n/a	Minor
Connectivity	15%	Proximity to essential services	13%	Is the project near key destinations such as schools, childcare centres, etc? Is the project within the town centre?	n/a	No	n/a	Provides connectivity	n/a	Close proximity
		Complete critical gaps	2%	Does the project complete critical gaps in the existing movement network e.g. missing off-road cycling links	n/a	No	n/a	Reduces gap	n/a	Completes critical gap
Safety	20%	Road safety	20%	Does the project improve safety for all road users	Greatly reduces safety	Reduces road safety	Neutral	Slightly improves safety	Improves safety (Safe System aligned treatments)	Significantly improves safety (Safe System aligned treatments)
Movement and Place	10%	Alignment with Movement and Place Aspirations	10%	Does the project align with M&P aspirations? Will the project address an M&P performance gap?	Strongly goes against M&P objectives.	n/a	n/a	Neutral	Aligns with M&P objectives. Addresses a gap.	Strongly aligns with M&P objectives. Addresses a large gap.
Alignment with local strategy and policy	10%	Aligns with relevant Council strategy	5%	How well does the project align with Council's strategy?	Strongly goes against strategic objectives	Goes against strategic objectives	Does not support strategic objectives	Neutral	Generally aligns with strategic objectives	Aligns strongly with strategic objectives
		Social and economic benefits	2%	Does delivering transport improvements provide added community benefits? is this a tourism, local businesses, school routes, shopping routes or cycling routes? Does it provide activation and renewal opportunities?	N/A	Low	N/A	Medium	N/A	High
		Project developed separately	3%	Has the project already been developed separately? This will reduce total project time and cost.	n/a	No	n/a	n/a	n/a	Yes

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Stakeholder & community sentiment	0%	Community sentiments	0%	Is the community supportive of the project	Strongly against	Low support		Supportive		Strongly supportive
		Stakeholder support	0%	Is the project likely to obtain stakeholder support? Will there be a challenge with obtaining stakeholder approval? (e.g. POS on an arterial road, signalised intersection, etc)	n/a	Difficult to obtain approvals	n/a	some stakeholder consultation required	n/a	Little to no approvals required

Table K1: MCA Prioritisation Criteria, Weightage and Performance Metrics

Project Number	Path / Road Name	Project Type	Feasibility	Connectivity	Safety	Movement and Place	Alignment with local strategy and policy	Stakeholder & community sentiment	MCA Score	Ranking MCA	Start	End
1	Campaspe River Trail	Rec Shared Path	11%	6%	12%	10%	7%	0%	46%	93	Wedge Street	Eastern Terminus
2	Campaspe River Trail	Rec Shared Path	11%	8%	8%	10%	6%	0%	43%	114	Eastern Terminus	Ross Street
3	Campaspe River Trail	Rec Shared Path	9%	8%	8%	10%	6%	0%	41%	116	Ross Street	Rennick Avenue
4	Campaspe River Trail	Rec Shared Path	25%	7%	8%	8%	5%	0%	53%	56	Access connections to Yaldwyn Street W, Bayton Street, Wedge Street and Powlett Street	
5	Campaspe Drive	Shared Path (advocacy - developers)	19%	8%	8%	6%	9%	0%	50%	73	Mollison Street	Village Green Drive
6	Edgecombe Street	Shared path bridge	7%	8%	12%	10%	9%	0%	46%	92	Riverwalk Boulevard/Rennick Avenue	Campaspe Drive
7	Trentham Road	Shared path and footpath	7%	8%	16%	10%	7%	0%	48%	86	Railway station	Kyneton-Springhill Road
8	Mollison Street	Improved Cycle Lanes/shared path	11%	2%	16%	8%	4%	0%	41%	115	Campaspe Drive	Railway Station
9	Piper Street	On-road cycle lanes	17%	8%	16%	6%	7%	0%	54%	54	Mollison Street	Harts Lane
10	Burton Avenue	On-road cycle lanes/shoulders	11%	8%	16%	8%	5%	0%	48%	85	Harts Lane	Lauriston Road
11	Mollison Street	On-road cycle lanes/shoulders	11%	8%	16%	8%	5%	0%	48%	84	Beauchamp Street	Saleyards Road
12	Saleyards Road	On-road cycle lanes/shoulders/shared path	13%	8%	16%	8%	5%	0%	50%	76	Mollison Street	Edgecombe Street
13	Edgecombe Street	On-road cycle lanes/shoulders/shared path	11%	8%	16%	8%	5%	0%	48%	83	Beauchamp Street	Bushland Resort
14	Bourke Street	On-road cycle lanes/shoulders	11%	7%	16%	8%	5%	0%	47%	88	Edgecombe Street	High Street
15	Trio Road	On-road cycle lanes/shoulders	11%	7%	16%	6%	6%	0%	46%	94	High Street	Murphys Road
16	Campaspe River Trail	Wayfinding strategy	21%	6%	8%	6%	7%	0%	48%	82		
17	Mollison Street/Campaspe Drive	Signalised intersection (advocacy - developers)	13%	3%	16%	6%	8%	0%	46%	90		
18	Railway reserve	Shared Path	11%	7%	12%	8%	8%	0%	46%	91	22 Village Green Drive	Mollison Street
19	Mollison Street at a railway crossing	Pedestrian operated signals	9%	11%	16%	6%	5%	0%	47%	89		
20	Railway reserve	Shared Path	7%	8%	12%	8%	8%	0%	43%	111	22 Village Green Drive	Toward Pleasant Hills Road
21	Edgecombe Street (post the construction of a bridge at Campaspe River)	On-road cycle lanes/shared path	15%	12%	16%	8%	6%	0%	57%	19	Beauchamp Street	Pleasant Hills Road

Project Number	Path / Road Name	Project Type	Feasibility	Connectivity	Safety	Movement and Place	Alignment with local strategy and policy	Stakeholder & community sentiment	MCA Score	Ranking MCA	Start	End
22	Beauchamp Street or Yaldwyn Street	On-road cycle lanes/shared path	19%	8%	16%	8%	5%	0%	56%	21	Edgecombe Street	Campaspe River Trail
23	Wedge Street	On-road cycle lanes/shared path	19%	8%	16%	8%	5%	0%	56%	20	Beauchamp Street or Yaldwyn Street	Simpson Street
24	Simpson Street	On-road cycle lanes/shared path	19%	7%	12%	8%	5%	0%	51%	70	Wedge Street	Mollison Street
25	Pleasant Hill Road	On-road cycle lanes/shared path	19%	2%	12%	6%	4%	0%	43%	108	Trentham Road	Edgecombe Street
26	Victoria Street	On-road cycle lanes/shared path	19%	11%	12%	8%	5%	0%	55%	41	Market Street	Beauchamp Street
27	Ferguson Street	On-road cycle lanes/shared path	19%	11%	12%	8%	5%	0%	55%	40	Victoria Street	High Street
28	Market Street	On-road cycle lanes/shared path	19%	11%	12%	8%	5%	0%	55%	39	Victoria Street	Ferguson Street
29	Lauriston Street	On-road cycle lanes/shared path	19%	11%	12%	8%	4%	0%	54%	53	Victoria Street	Mollison Street
30	Epping Street	On-road cycle lanes/shared path	19%	7%	12%	8%	5%	0%	51%	69	High Street	Barton Street
31	Leete Street	On-road cycle lanes/shared path	19%	7%	12%	8%	5%	0%	51%	68	Barton Street	Caroline Chisholm Drive
32	Caroline Chisholm Drive	On-road cycle lanes/shared path	19%	7%	12%	8%	5%	0%	51%	67	Bourke Street	Jessie Evelyn Crescent
33	Saleyards Road	On-road cycle lanes/shared path	19%	7%	12%	8%	5%	0%	51%	66	Mollison Street	Jackson Drive
34	Lauriston Reservoir Road	On-road cycle lanes/shared path	19%	7%	12%	6%	5%	0%	49%	79	Mollison Street	Harts Lane
35	Langley Street	Sharrows and traffic calming	25%	3%	12%	6%	5%	0%	51%	65	Franklin Place	Begg Street
36	Begg Street	Sharrows and traffic calming	25%	7%	12%	6%	5%	0%	55%	38	Langley Street	New Street
37	New Street	Sharrows and traffic calming	25%	7%	12%	6%	5%	0%	55%	37	Begg Street	High Street
38	Ebden Street or Powlett Street	Sharrows and traffic calming	23%	7%	12%	6%	5%	0%	53%	57	Piper Street	Simpson Street
39	Riverwalk Boulevard	Sharrows and traffic calming	25%	3%	12%	6%	5%	0%	51%	64	High Street	Sanctuary Drive
40	High Street Service Road	Sharrows and traffic calming	25%	3%	12%	6%	5%	0%	51%	63	Wheatley Street	Clarke Crescent
41	Bourke Street Service Road	Sharrows and traffic calming	25%	3%	12%	6%	5%	0%	51%	62	Edgecombe Street	Eastern end
42	Mollison Street	Priority crossing with kerb outstands	17%	10%	20%	6%	6%	0%	59%	16	Hutton Street	Bowen Street
43	Mollison Street	Priority crossing with kerb outstands	17%	10%	20%	6%	6%	0%	59%	15	Simpson Street	Welsh Street
44	Piper Street	Wombat crossing with kerb outstands	17%	10%	20%	6%	7%	0%	60%	6	Ebden Street	Powlett Street
45	High Street at Market Street Car Park ROW access	Priority crossing with kerb outstands	17%	10%	20%	6%	7%	0%	60%	5		
46	Mollison Street/Piper Street	Intersection upgrade - signalisation/roundabout	7%	6%	20%	8%	6%	0%	47%	87		

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Project Number	Path / Road Name	Project Type	Feasibility	Connectivity	Safety	Movement and Place	Alignment with local strategy and policy	Stakeholder & community sentiment	MCA Score	Ranking MCA	Start	End
47	Jennings Street, Lauriston Street & Market Street at Mollison Street	Kerb outstands (reducing crossing distance)	17%	10%	16%	6%	6%	0%	55%	36		
48	Ebden Street, Powlett Street & Wedge Street at Piper Street	Kerb outstands (reducing crossing distance)	17%	10%	16%	6%	6%	0%	55%	35		
49	Edgecombe Street at existing shared path connection through Education Precinct	Priority crossing with kerb outstands	25%	10%	20%	8%	6%	0%	69%	1		
50	Kyneton township and surrounds	Implement proposed footpaths in 2023 Shire Wide Footpath Plan	19%	7%	12%	6%	9%	0%	53%	55		
51	Kyneton South	Include footpaths in future development (advocacy - developers)	19%	3%	16%	8%	8%	0%	54%	42		
52	Bayton Street (north side)	Construct footpath	25%	7%	12%	6%	5%	0%	55%	33	Wedge Street	Powlett Street
53	Jennings Street (north side)	Construct footpath	25%	7%	12%	6%	5%	0%	55%	32	Ebden Street	Powlett Street
54	Beauchamp Street (north side)	Construct footpath	25%	7%	12%	6%	5%	0%	55%	31	Mollison Street	Ebden Street
55	Beauchamp Street (north side)	Construct footpath	25%	7%	12%	6%	5%	0%	55%	30	Wedge Street	Powlett Street
56	Victoria Street (west side)	Construct footpath	25%	7%	12%	6%	5%	0%	55%	29	Mair Street	Beauchamp Street
57	Epping Street (south side)	Construct footpath	25%	7%	12%	6%	5%	0%	55%	28	Edgecombe Street	Barton Street
58	Lauriston-Reservoir Road (south side)	Construct footpath	25%	7%	12%	6%	5%	0%	55%	27	Mollison Street	Harpers Lane
59	Donnithorne Street (south side)	Construct footpath	25%	7%	12%	6%	5%	0%	55%	26	Powlett Street	Wedge Street
60	Pohlman Street (south side)	Construct footpath	25%	7%	12%	6%	5%	0%	55%	25	Ebden Street	Powlett Street
61	Wedge Street (west side)	Construct footpath	25%	7%	12%	6%	5%	0%	55%	24	Baynton Street	Jennings Street
62	Yaldwyn Street E (north side)	Construct footpath	25%	7%	12%	6%	5%	0%	55%	23	Mollison Street	Victoria Street
63	High Street	Heavy vehicle ban (advocacy - DTP/NHVR)	17%	10%	12%	6%	5%	0%	50%	75	Mollison Street	Ferguson Street
64	Mollison Street	Heavy vehicle ban (advocacy - DTP/NHVR)	17%	10%	12%	6%	5%	0%	50%	74	High Street	Beauchamp Street
65	Ebden Street	Establish heavy vehicle detour route	25%	6%	4%	6%	4%	0%	45%	97	Simpson Street	Beauchamp Street
66	Ferguson Street & Victoria Street	Establish heavy vehicle detour route	25%	6%	4%	6%	4%	0%	45%	96	High Street	Beauchamp Street
67	Kyneton Township and its surrounds	Concentrate heavy vehicle movements outside of peak times (advocacy - local businesses)	25%	2%	12%	6%	5%	0%	50%	71		
68	Kyneton Township and its surrounds	Wayfinding to reduce heavy vehicle traffic through the township	17%	2%	12%	8%	5%	0%	44%	107		
69	Mollison Street/High Street	Intersection upgrades (right turn extension and signal mods)	17%	10%	16%	6%	8%	0%	57%	18		

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Project Number	Path / Road Name	Project Type	Feasibility	Connectivity	Safety	Movement and Place	Alignment with local strategy and policy	Stakeholder & community sentiment	MCA Score	Ranking MCA	Start	End
70	Bodkin Street	Traffic calming (speed humps, hockey sticks, splitter island at New St)	25%	6%	16%	6%	6%	0%	59%	13	Mollison Street	New Street
71	Welsh Street (one-way section)	Speed humps	25%	6%	12%	6%	5%	0%	54%	43	Mollison Street	High Street
72	Begg Street	Speed cushions	25%	6%	16%	6%	6%	0%	59%	12	Mollison Street	Ross Street
73	New Street	Traffic calming (speed cushions and hockey sticks)	25%	6%	16%	6%	6%	0%	59%	11	High Street	Begg Street
74	New Street at High Street	Restrict access to left-in/left-out only	13%	6%	20%	6%	6%	0%	51%	61		
75	Bodkin Street at Mollison Street	Restrict access to left-in/left-out only	13%	6%	20%	6%	6%	0%	51%	60		
76	Begg Street at Mollison Street	Restrict access to left-in/left-out only	13%	6%	20%	6%	6%	0%	51%	59		
77	Mollison Street into Market Street	Restrict right turn movements during peak times (short term)	17%	10%	20%	6%	6%	0%	59%	14		
78	Market Street/Beauchamp Street	Intersection upgrade - roundabout	7%	2%	20%	6%	4%	0%	39%	119		
79	Saleyards Road/Edgecombe Road/Pipers Creek Road	Intersection upgrade - signalisation/roundabout (advocacy - developers)	7%	6%	16%	6%	4%	0%	39%	120		
80	High Street into Epping Street	Restrict right turn movements during school times	17%	6%	16%	6%	5%	0%	50%	72		
81	Edgecombe Street (post the construction of a bridge at Campaspe River)	Speed limit reduction (to 40 km/h)	17%	6%	20%	10%	6%	0%	59%	10	Epping Street	Beauchamp Street
82	Edgecombe Street	Carriageway reconfiguration (shared bicycle and parking lane) and kerb outstands (narrowing effect and reducing crossing distance)	21%	7%	20%	8%	6%	0%	62%	3	High Street	Beauchamp Street
83	High Street/Edgecombe Street (post the construction of a bridge at Campaspe River)	Intersection upgrades (traffic signals)	13%	10%	20%	8%	8%	0%	59%	17		
84	Kyneton Town Centre	Area speed limit reduction (30 km/h or 40 km/h)	17%	10%	20%	10%	8%	0%	65%	2		
85	Streets surrounding town centre (bounded by Piper/Mair, Victoria, Donnithorne/Bodkin & Wedge)	Speed limit reduction (to 40 km/h)	17%	6%	20%	10%	7%	0%	60%	4		
86	Ebden Street	Speed humps (or similar, where appropriate)	21%	6%	16%	6%	5%	0%	54%	52	Clowes Street	George Street
87	Powlett Street	Speed humps (or similar, where appropriate)	21%	6%	16%	6%	5%	0%	54%	51	Clowes Street	Lavender Street
88	Pohlman Street	Speed humps (or similar, where appropriate)	21%	6%	16%	6%	5%	0%	54%	50	Mollison Street	Powlett Street
89	Donnithorne Street	Speed humps (or similar, where appropriate)	21%	6%	16%	6%	5%	0%	54%	49	Mollison Street	Wedge Street
90	Clowes Street	Speed humps (or similar, where appropriate)	21%	6%	16%	6%	5%	0%	54%	48	Mollison Street	Wedge Street
91	Mair Street	Speed humps (or similar, where appropriate)	21%	6%	16%	6%	5%	0%	54%	47	Mollison Street	Victoria Street

Project Number	Path / Road Name	Project Type	Feasibility	Connectivity	Safety	Movement and Place	Alignment with local strategy and policy	Stakeholder & community sentiment	MCA Score	Ranking MCA	Start	End
92	Orr Street	Speed humps (or similar, where appropriate)	21%	6%	16%	6%	5%	0%	54%	46	Edgecombe Street	Victoria Street
93	Sturt Street	Speed humps (or similar, where appropriate)	21%	6%	16%	6%	5%	0%	54%	45	Edgecombe Street	Victoria Street
94	Yaldwyn Street E	Speed humps (or similar, where appropriate)	21%	6%	16%	6%	5%	0%	54%	44	Mollison Street	Victoria Street
95	Edgecombe Street	Update M&P Classification (GT4, M4, P4)	17%	6%	8%	10%	7%	0%	48%	81	Beauchamp Street	Campaspe Drive (future connection)
96	Edgecombe Street across Campaspe River	New road bridge connection	7%	8%	16%	6%	8%	0%	44%	106		
97	Edgecombe Street (post the construction of a bridge at Campaspe River)	Road upgrade and reconfiguration	19%	8%	16%	10%	7%	0%	60%	7	High Street	Future Campaspe River bridge
98	Trentham Road/Pleasant Hill Road	Intersection upgrade - roundabout (advocacy - developers)	7%	2%	16%	6%	5%	0%	36%	123		
99	Trentham Road/future east-west access roads	Intersection upgrade - roundabout (advocacy - developers)	7%	2%	16%	6%	5%	0%	36%	122		
100	Pleasant Hill Road	Carriageway upgrade (advocacy - developers)	15%	2%	12%	6%	5%	0%	40%	117	Trentham Road	Future development
101	Trentham Road	Carriageway upgrade (advocacy - DTP)	7%	6%	12%	8%	7%	0%	40%	118	Pleasant Hill Road	Mollison Street
102	Mollison Street/Jennings Street	Intersection upgrade - signalisation	7%	10%	16%	6%	6%	0%	45%	98		
103	Mollison Street/Jennings Street	Install loop detector to trigger existing POS	17%	10%	16%	6%	6%	0%	55%	34		
104	Kyneton Town Centre	Undertake accessible parking audit	25%	10%	12%	6%	6%	0%	59%	9		
105	Kyneton Town Centre	Convert on-street parking spaces to accessible parking spaces (case-by-case basis)	25%	10%	12%	6%	6%	0%	59%	8		
106	High Street, Epping Street, Edgecombe Street	Install on-street accessible parking in/around the Education Precinct	25%	6%	12%	6%	6%	0%	55%	22		
107	Cnr Ebden Street/Yaldwyn Street	Formalise unsealed car park	21%	6%	12%	6%	7%	0%	52%	58		
108	Edgecombe Street, Industrial Precinct	Bus route review (advocacy - PTV)	17%	7%	8%	8%	9%	0%	49%	78		
109	Btwn residential areas and key destinations	On-demand bus service trial (advocacy - PTV)	13%	12%	8%	10%	7%	0%	49%	77		
110	Bus routes to the train station	Bus frequency/schedule review (advocacy - PTV)	17%	7%	8%	8%	8%	0%	48%	80		
111	Btwn town centre and train station	On-demand bus service trial during peak tourist season (advocacy - PTV)	13%	7%	8%	8%	7%	0%	43%	113		
112	Kyneton Township bus routes	Hybrid/electric bus uptake (advocacy - PTV)	13%	2%	8%	6%	8%	0%	37%	121		
113	Kyneton Township bus stops	Upgrade bus stop facilities (advocacy - PTV)	13%	6%	12%	6%	6%	0%	43%	110		
114	Kyneton Township bus stops	Upgrade train station facilities (advocacy - VicTrack/PTV)	13%	10%	8%	6%	6%	0%	43%	112		
115	Mollison Street at railway crossing	Level crossing safety review (advocacy - DTP)	13%	6%	16%	6%	4%	0%	45%	95		
116	Kyneton South growth areas	Develop bus network capability	11%	8%	8%	8%	8%	0%	43%	109		

Table K2: MCA Outputs (All Projects)

Appendix L – Glossary of Terms

Term	Definition
GEH	• The GEH statistic is a self-scaling empirical statistic with similarities to a chi-squared test. The desired target for model calibration is to achieve a GEH value of less than 5.0 at more than 90% of sites in the core area and at least 80% of those in the peripheral element of the network.
R^2	• R-squared is a statistical measure of how close the data are to the fitted regression line. It is the percentage of the response variable variation that is explained by a linear model.
SCATS	• Sydney Coordinated Adaptive Traffic System • An intelligent transportation system developed in Sydney, Australia by former constituents of the Roads and Maritime Services in the 1970s. SCATS primarily manages the dynamic (online, real-time) timing of signal phases at traffic signals, meaning that it tries to find the best phasing (i.e. cycle times, phase splits and offsets) for the current traffic situation (for individual intersections as well as for the whole network). This is based on the automatic plan selection from a library in response to the data derived from loop detectors or other road traffic sensors.