

MELTON SOUTH STRUCTURE PLAN

TRANSPORT ACCESS & MOVEMENT

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DRAFT



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01 Introduction, Purpose & Process

Melton South is critical to the success of the Melton Township

01

Introduction, Purpose & Process

Growth in City of Melton

The City of Melton is one of the fastest growing municipalities in metropolitan Melbourne. It has a population of approximately 135,500¹, which is expected to nearly triple to 500,00 over the next 40 years².

Melton is currently a satellite township that is separated from metropolitan Melbourne by some nine kilometres. This area between the Melton Township and metropolitan Melbourne is where the vast majority of the population growth is expected to occur, i.e. the Western Growth Corridor.

Melton Township is expected to experience less growth than wider Melton

The level of growth expected within the existing Melton Township boundary is much less than this, and could result in the focus and level of investment being much less, especially with the proposed activity centres like Toolern and Rockbank.

As such, suitable planning and support will need to be provided throughout to enable Melton leverage off the anticipated levels of growth in the area, and continue to provide a significant function to the City of Melton community and beyond.

Melton South is critical to the success of the Melton Township

Melton South will be a critical part to achieving the above, as it is centred on the Melton Railway Station with the potential to become an activity centre in its own right and form the southern interface to the Melton Town Centre. Moreover, Melton South can be expected in the future to be a critical link between the Melton Town Centre, and Toolern Metropolitan Activity Centre and Employment Precinct.

Currently, Melton South is highly car dependent and has a number of significant movement barriers, such as the rail line, busy connector roads and creek system. As such, the balancing of through movements while trying to increase its place making will be at the core of developing a successful Melton South Structure Plan.

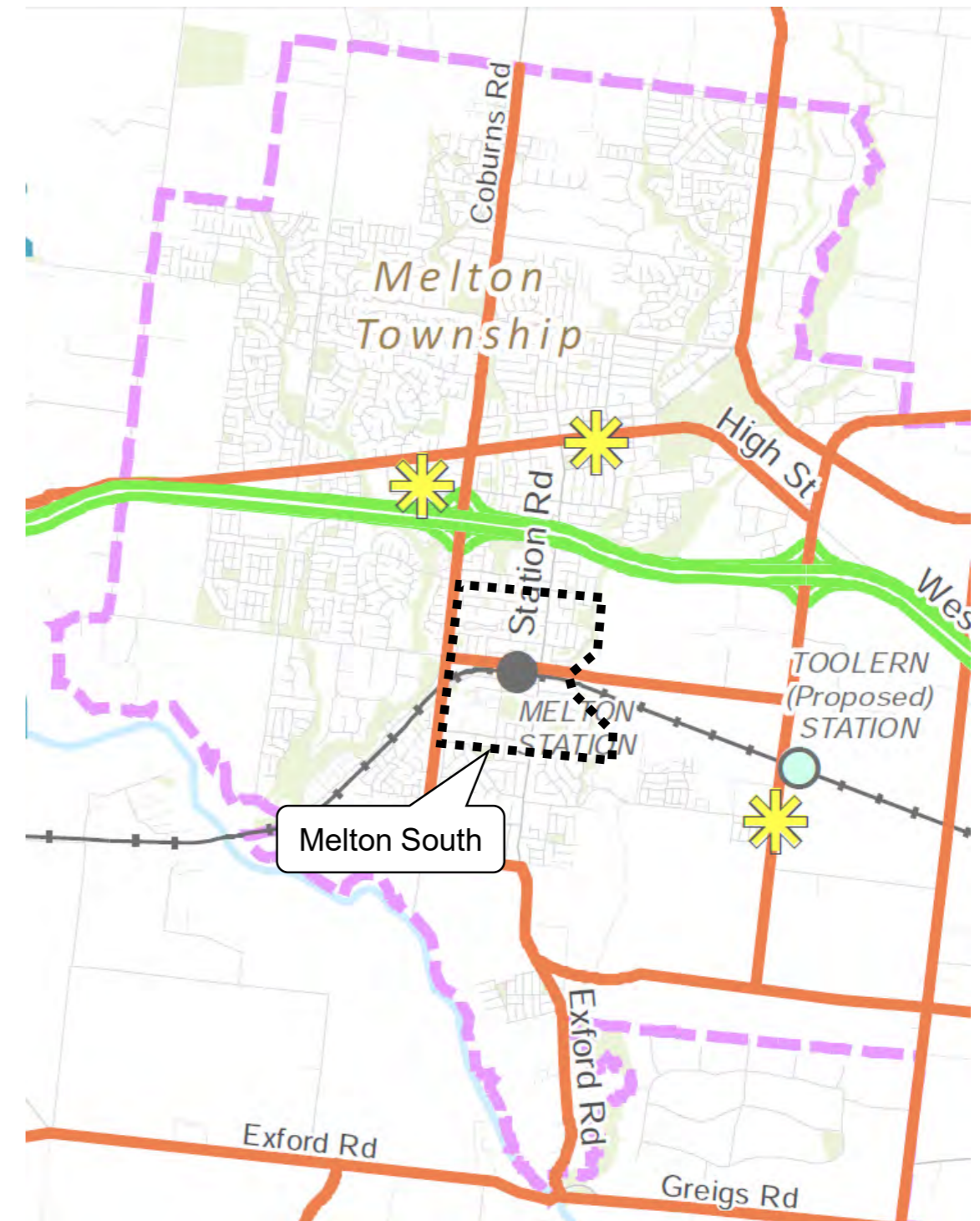


Figure 1: Melton South study area. Source: Moving Melton (2015)

¹ ABS 2016

² Moving Melton Integrated Transport Strategy Report, November 2015

The Structure Plan provides an opportunity to leverage off the locational advantage Melton South provides

01

Introduction, Purpose & Process

Purpose of the Melton South Structure Plan

The establishment and implementation of the Melton South Structure Plan provides an opportunity to properly consider, plan and guide development in the area. Without this, there is a real potential that Melton South will stagnate and not further develop, within an area that will see transformative change as part of the Western Growth Corridor.

Challenges & opportunities in Melton South

Access to work and education is a major challenge in the City of Melton, as well as the majority of other major strategic land use and transport planning activities within outer suburban areas, particularly from the perspective of social inclusion and transport equity. The current response to this has been the continued provision of road network infrastructure, which doesn't provide transport choices, and promotes forced car ownership. But with Melton South having the following, it doesn't have to be the case:

- Schools
- A rail station and services that are expected to be significantly improved
- The adjacent Toolern PSP, which is expected to accommodate a Metropolitan Activity Centre and employment precinct

Moreover, it provides an opportunity to make Melton South a place in its own right and support a vibrant and prosperous community.

Leveraging opportunities in Melton South

In order to leverage off these expected locational advantages that Melton South provides, there will need to be a shift in the way the transport network is originated, both from a movement and modal priority perspective within Melton South. This is on the basis that in order to create a sense of place it can't be dominated by vehicle traffic. Also, providing a point of difference, in that you can easily access major employment and educational destinations through alternative transport modes would be expected to help make Melton South a highly desirable place to live.

It is also noted that the above is not expected to come at the expense of providing reasonable road based access. Rather, it is considered to be possible through the development of an orderly transport network with a clear intent and supporting measures.

Key questions we answered

▶ What type of transport network do we want / need to support increasing access demands but help create a sense of place?

▶ How do we provide easy viable alternative transport modes to access local key destinations?

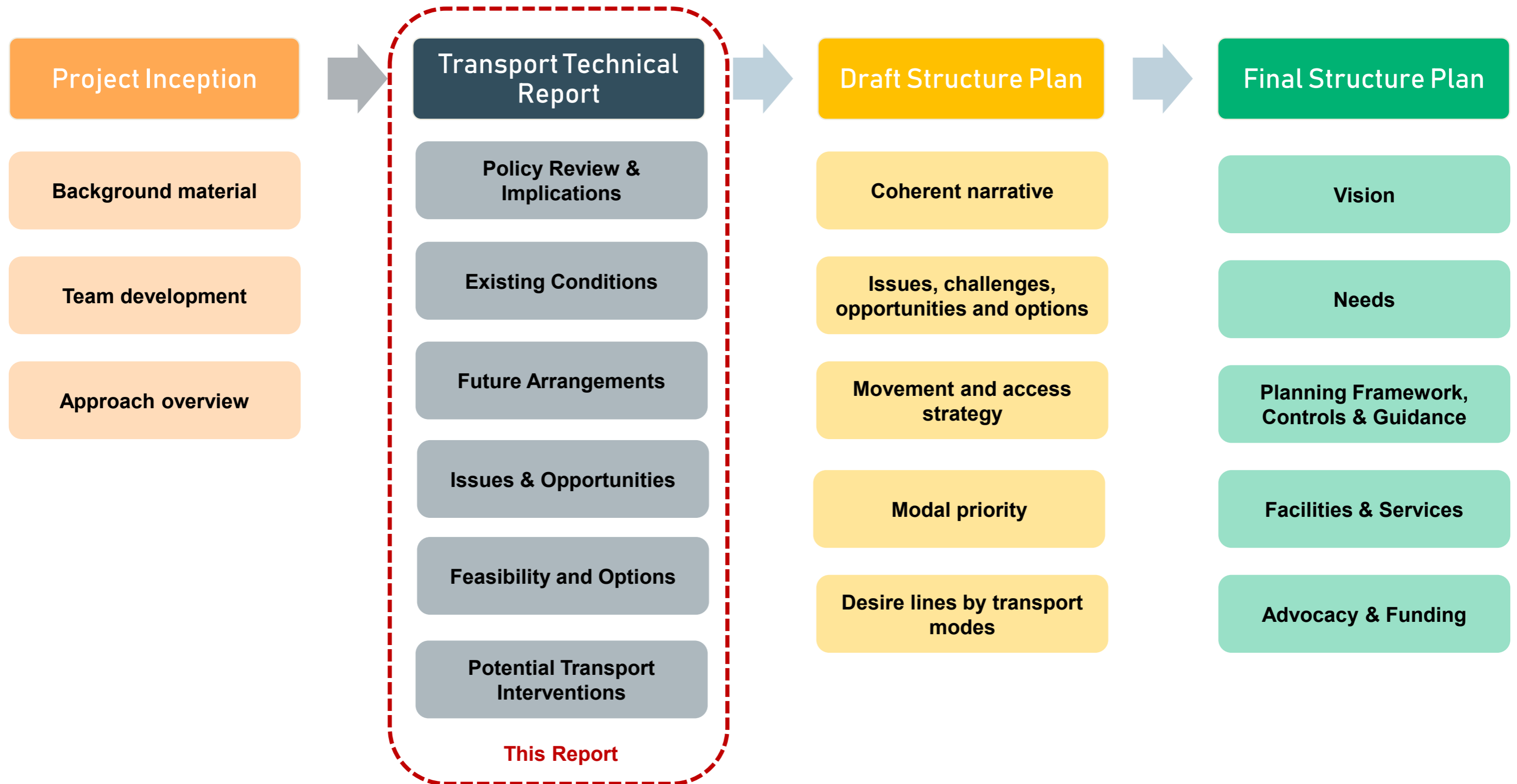
▶ What measures are needed to support through movements but create a high amenity core?

▶ How do we influence decision makers and align planning outcomes to achieve the overall desired vision?

This GTA Transport Access and Movement Background Report will be an input into the Melton South Structure Plan

01

Introduction, Purpose & Process



02 Study area

The Melton South Study Area comprises a diverse mix of land uses with a station at its heart

Melton South is located in Melbourne's outer north-western suburbs within the City of Melton.

The study area constitutes the future boundaries of Melton South, which is bisected by the Ballarat Rail Line.

Melton Railway Station is located at the core of the suburb, with the Melton Station Shopping Centre adjacent to the north. A strip of commercial land uses are also located around Exford Road and Staughton Street.

Melton South predominately consists of residential land uses. There are also educational facilities with three schools and multiple reserves also located within the study area. An additional two schools are located on the periphery of the study area.

Public park and recreation zones are located at the centre of the existing suburb and its eastern boundary on Toolern Creek.

The surrounding area is predominately residential in nature or designated for urban growth.

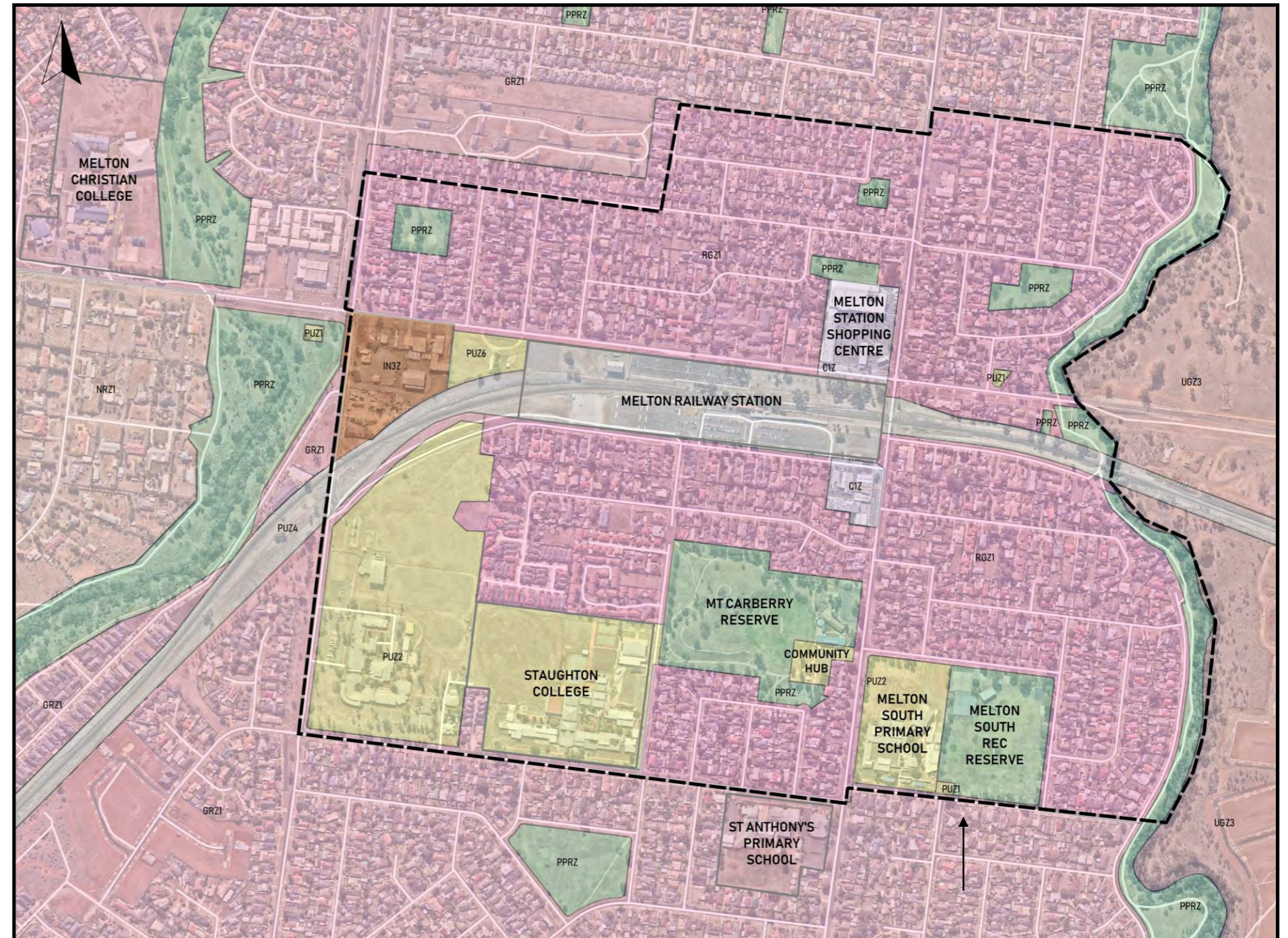


Figure 2: Melton South study area

Existing population and density

There is a higher population and employment density in Melton South compared to Melton, but lower than Greater Melbourne

There is a residential population of 10,000 in Melton South, or 413 people per square kilometre. This is a higher density than the wider Melton LGA which has a density of some 257 people per square kilometre.

Similarly, the job densities in Melton South are greater than the whole of Melton, but lower than Greater Melbourne.

Population	ABS 2016	Area (sqkm)	Population Density (people /sqkm)
Melton South	10,010	27.87	359
City of Melton	141,750	527.54	269
Melbourne (suburb)	47,285	6.50	7,270
Greater Melbourne	4,485,211	9,992.51	449

Source: 2016 ABS Census

Employment	ABS 2016	Area (sqkm)	Employment Density (people /sqkm)
Melton South	1,537	27.87	53.23
City of Melton	20,739	527.54	39.31
Melbourne CBD	199,221	2.37	84,095
Greater Melbourne	1,762,781	9,992.51	176

Source: 2016 ABS Census

Population and land use projections

City of Melton population will almost double by 2031, with greatest growth in Melton South likely to be in employment and education opportunities

The Melton South precinct is expected to see residential population increases of approximately 31% over the next 15 years. Projections for students and worker numbers are in the order of 25% and 70% respectively.

The growth figures are expected to be dwarfed by what is expected to occur within the Western Growth Corridor, with some additional 222,000 more residents expected within Melton (i.e. double current numbers) over the next 15 years.

How this growth is managed will be a core focus in the area, but shouldn't be at the expense of the success for Melton South and the rest of the existing urban areas in Melton.

Melton South [1]	2016	2021	2031	2016-2031 Change
Population [2]	10,010	10,830	13,130	31%
Employment	1,437	1,765	2,419	68%
Education (primary and secondary)	2,693	3,219	3,441	28%

Source: S-VITM 2018, from Reference Case

[1] the Melton South area for the purposes of the S-VITM data differs that that of the entire Melton South suburb, and as such the number are not consistent with those presented elsewhere in the report. The purposes of this table is to understand the change over time rather than utilise the raw numbers.

[2] Source: Forecast id

Melton	2016	2021	2031	2016-2031 Change
Population	141,750	177,140	277,780	96%

Source: Forecast id

03 Transport Policy Review & Implications

State Legislation, Policy and Plans



Plan Melbourne, 2017 - 2050 Victorian State Government, 2016

The Victorian Government released Plan Melbourne in 2016 (update of the previous plan released in 2014). The Plan looks to build on Melbourne's reputation as a global city of opportunity and choice, as it caters for an almost doubling of the population over the next 35 years (i.e. out to 2051).

The Plan generally focuses on the metropolitan area, but in terms of Melton and its role at the state and northwest regional level, it sets out the following:

- **Policy 1.1.4:** Support the significant employment and servicing role of health and education precincts across Melbourne. These relate to health and education precincts, of which Melton Health is listed as one that has been identified for future service and growth.
- **Policy 1.2.1:** Support the development of a network of activity centres linked by transport. Melton has been highlighted currently medium levels of job density with Plan Melbourne indicating Toolern as a future centre of growth.
- **Policy 3.3.1:** Create pedestrian-friendly neighbourhoods - Priority should be given to pedestrian movements in neighbourhoods. Continuous, high-quality walking routes need to be developed and streets need safe, pleasant and attractive walking routes.
- **Policy 3.3.2:** Create a network of cycling links for local trips - The growth of cycling in suburban Melbourne is being encouraged and facilitated.
- **Direction 7.2:** Improve connections between cities and regions – Better public transport and freight connections, both within the regions to major hub destinations, as well as back to Melbourne



Transport Integration Act, 2010 Victorian State Government, 2016

The Transport Integration Act, came into effect on July 2010, is the primary transport statute for Victoria. The Act forms an overarching legislative framework for transport related state planning policy decisions and has been integrated within the Victorian Planning Provisions (VPP). It recognises the aspirations of Victorians for an integrated and sustainable transport system that contributes to an inclusive, prosperous and environmentally responsible state. The Act has been effective to date in changing the focus of organisations that traditionally only considered a single transport mode. The Act will require all decisions affecting the transport system be made within the same integrated decision-making framework. These include:

- Social and Economic Inclusion
- Economic Prosperity
- Environmental Sustainability
- Integration of Transport and Land Use
- Efficiency, Coordination and Reliability
- Safety, Health and Wellbeing



Network Development Plan Public Transport Victoria (PTV), 2012

In 2012 the PTV released the Network Development Plan for Metropolitan Rail which examines the requirements for Melbourne's train system in the short, medium and long term. The plan consists of the following four stage plan over a 20 year period:

- Overcome existing network constraints and provide a strong foundation for further expansion of capacity in the future
- Introduce a metro-style train system for Melbourne
- Extend the network into growth areas and existing areas without good access to rail services
- Prepare for further growth and protect future option

As part of the 20 year plan, several key projects were identified which would specifically improve services on the Melton Line. This included the delivery of an additional train station at Toolern and duplication and electrification of the rail line to Melton.



Victoria's 30-Year Infrastructure Strategy Infrastructure Victoria, 2016

This is Victoria's first ever 30-year infrastructure strategy. It is a state wide, evidence-based plan covering all types of infrastructure. It sets out a pipeline of initiatives to be delivered over the next three decades to help create the best possible future for the state.

Strategy has been created for the community, developed through consultation and delivered to Parliament. It is a product of the input of people from all over Victoria on how to create a future where everyone has good access to jobs, education and services, where communities and businesses thrive and where the environment is valued.

The strategy specifically identifies the rail electrification of the Melton line as a key transport infrastructure project to support the high population growth experienced in the western corridor.

NOTE: This is advisory to Government but not Government Policy.



Network Development Strategy (NDS) Victorian State Government, 2017

State Government has recently released the NDS, which provides an overview of the key components and strategic approach to development of the transport network and system. It identifies the following five key phases to deliver the strategic approach, noting that users / people should be held at the centre of each of the phases.

- Set strategic direction: determining the outcomes we want from the transport system in the future and establishing a framework for how to design, build and operate the system.
- Design network and system: assessing the performance of the network to help determine priorities for investigation and intervention.
- Choose investments: government required to choose investments that will have the greatest effect on the system, deliver the best outcomes and provide the best value to the community.
- Develop and build: work commences on detailed planning, feasibility studies and construction.
- Operate: key interface with users -> critical services are delivered adequately

The NDS also states that a "review of the transport system" is underway to apply the concepts of the network development strategic approach and develop options.



SmartRoads / Movement & Place VicRoads 2018

VicRoads have superseded their SmartRoads policy with a new Movement and Place approach. The Movement and Place approach, based on the original Link and Place book produced in 2007 (Jones), recognises that transport links performs two functions: movement of people and goods, and serving as a place (a destination in its own right). The movement function is about minimising travel time and throughput whilst the place function is about a destination in its own right and seeking to dwell and spend time in the location.

There is often an inherent conflict between the two. The Movement and Place approach seeks to recognise the competition between movement and place uses and decide on the balance that needs to be achieved for each of these functions at the desired locations.

Note: Technically Movement and Place is not current Government Policy as though informal memos are in circulation, no published material on how to apply it exists



Victorian Infrastructure Plan **Victorian State Government, 2017**

The Victorian Infrastructure Plan aims to provide world-class infrastructure strengthens Victoria as a globally connected economy, an equitable society and an environmental leader. The document is the State Government's response to the Infrastructure Victoria Strategy and their approach recognises the importance of strengthening our infrastructure resilience in partnership with government, the public and the private sectors.

The plan contains commitments to a number of schemes, including the following:

- Level Crossing Removal Program
- Western Suburbs Road Package
- Strengthening of walking and cycling networks.



Victorian Cycling Strategy 2018-2028 **Transport for Victoria 2017**

The Victorian Cycling Strategy 2018-2028 is designed to make cycling more inclusive, and actively focuses on increasing the number of people riding for transport. This includes commuter trips to work and education and also local trips to schools, railway stations and shops. The strategy provides clear focus to make bicycles the preferred mode of choice for trips to work and local trips. This will be enabled through the prioritised investment in a safe and connected cycle network, with strategic cycling corridors proposed to fulfil this role. For local trips the strategy mentions greater collaboration and coordination with Councils to create better connections, including improved integration between cycling and public transport and prioritising cycle networks to train stations. Improved end-of-trip facilities is also proposed at train station.



West Growth Corridor Plan **Victorian State Government, 2016**

Melton South is located in Melbourne's West Growth Corridor, which encompasses much of the outer north-western suburbs of metropolitan Melbourne. The West Growth Corridor Plan is a high-level guide for the delivery of housing, employment, services and transport infrastructure for the next 30-40 years in Melbourne's outer western growth areas. The Corridor will eventually accommodate a population of at least 377,000 and 164,000 jobs.

Within The Plan, Melton South is located directly to the south of the Melton Major Town Centre, and directly west of the future Toolern Metropolitan Activity Centre.

The success of the town centres and growth in the area are indicated to be based on there being high levels of accessibility via the proposed train stations, north-south public transport routes, as well as high capacity traffic and freight access with the Western Freeway interchange to Ferris Road.



Council and Wellbeing Plan 2017-2021

Melton City Council

This strategic document encompasses Council's Public Health and Wellbeing plans into a consolidated document. It is the key document that sets out the strategic and planning direction for the council and community.

The document consists of five themes:

- A proud, inclusive and safe community
- A thriving and resilient natural environment
- A well planned and built City
- A strong local economy and lifelong learning City
- A high performing organisation demonstrating leadership and advocacy



Moving Melton, Integrated Transport Strategy

Melton City Council, November 2015

The Moving Melton – Integrated Transport Strategy (the Strategy) was adopted by MCC in 2015 to provide guidance on how the transport network within the municipality will need to change into the future to accommodate the anticipated population growth and development. The Strategy identifies a high car dependency, and low level of public and active transport options currently available within Melton.

The Strategy aims to improve interchanges between transport modes, accessibility/timetabling issues and resilience of the macroscopic network. The Strategy will be assessed and reviewed by Council to ensure that the municipality is on track.



Road 2 Zero Strategy 2009 - 2018

Melton City Council, May 2009

The document establishes targets that aim to reduce the rate and incidence of road trauma within the municipality. While the municipality's crash history is below the Victorian average, a rapidly growing population with increased mobility needs presents a significant challenge. The document consists of the following target:

“Greater than 30% reduction in serious and fatal crashes in 2018 when compared to 2002-2007 data”



Economic Development & Tourism Strategy 2014-2030

Melton City Council

The document identifies key drivers, barriers and future roles of council towards guiding Melton into the future. Given the substantial growth expected for the area and forecasted patterns of sectorial employment, a clear roadmap into the future is needed. The themes identified to guide future growth include:

- Business growth and attraction
- City promotion and tourism
- Innovation and Technology
- Learning and Capacity Building
- Planning for Future Growth.



Safer City Plan 2015-2017

Melton City Council

The document establishes the strategic direction and commitment of Council to improve the real and perceived safety of its residents., as safety is integrally linked to developing a healthy and equitable community. The document acknowledges that with an increasing population, opportunities and risks are presented in terms of safety.

The Safe City Plan has been developed with respect to three key priority areas:

- Vibrant places and spaces
- An informed, connected and resilient community
- A responsive council and local services system



City of Melton Advocacy Priorities

Melton City Council

As the name suggests, the City of Melton Advocacy Priorities document establishes the City's priorities for advocating to State and Federal government to support Melton to manage existing and anticipated growth.

The advocacy agenda includes several transport specific items:

- The upgrade of the Western Freeway within the City of Melton to an urban freeway standard is a key safety priority.
- Revitalisation of Melton South including the Melton Railway Station precinct
- A more frequent and better connected bus network
- Future railway stations at Hopkins Road, Paynes Road and Calder Park / Hillside
- Investment in the arterial road network, with specific intersections targeted (none of which are within the Melton South study area)
- A 21st century rail service

What does this mean for the Melton South Structure Plan?

03

Policy Review & Implications

From the numerous State Government policy, we draw the following general conclusions, and outline what this will mean for our Transport Paper

1. **Growth in the area needs to be catered for**
2. Transport integration with land use is at the core of State transport policy settings
3. State Government aims to deliver Places that are highly accessible
4. State Government aims to reduce congestion by catering for future demand
5. The significant investment in state-wide rail infrastructure means that the station, and access from it, will be critical to access jobs and services (both in Melton and beyond)
6. Walking and Cycling are important and it is about strategic investment in corridors and safety improvements
7. There are still some unknowns in relation to State Government's plan for the public transport network in Melton South

The local policy establishes a suite of projects designed to support Melton's growth

1. **The Structure Plan should align with the Moving Melton transport initiatives**
2. The Structure Plan should align with the transport advocacy agenda
3. Transport should be safe from both a road safety and a personal safety perspective
4. Transport initiatives should balance movement against place making objectives



Source: Moving Melton Integrated Transport Strategy (2015)

04 Issues & Opportunities by Transport Mode

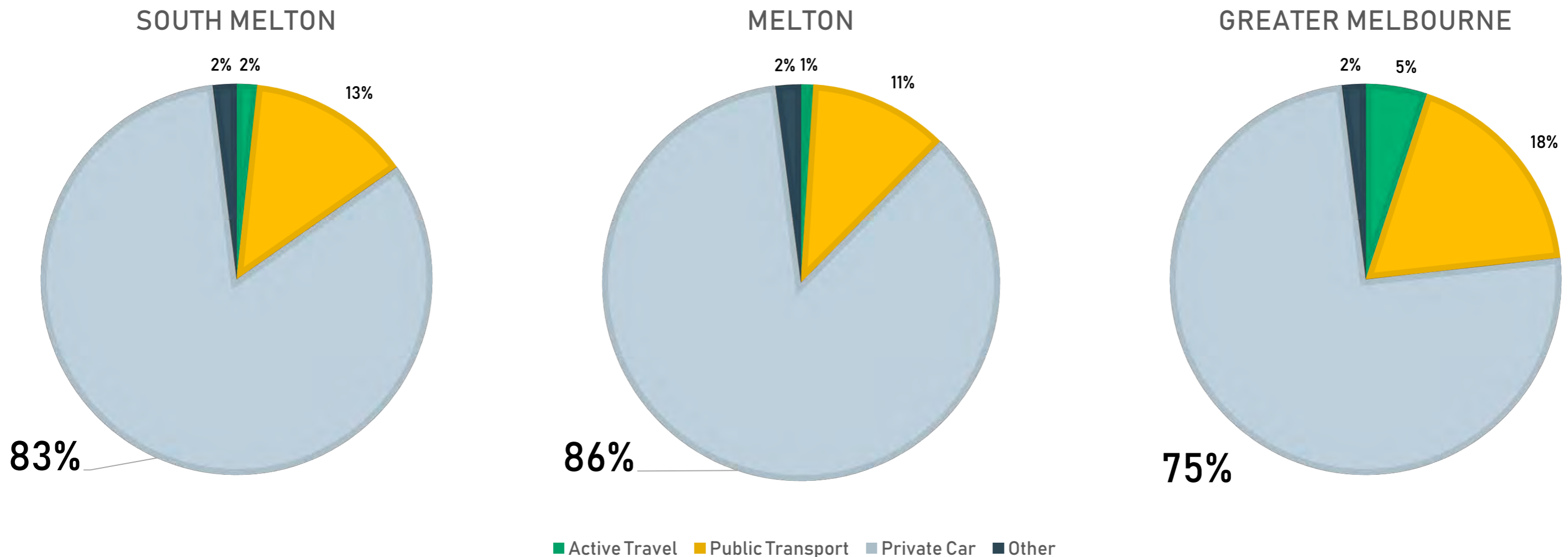
Existing mode share

The use of car in Melton South to access work is very high and above the average across Melbourne

Those travelling from the suburb of Melton South and the City of Melton currently use private cars considerably more for journeys to work than the Greater Melbourne region, with 83% of journeys undertaken by cars compared to 75%.

Melton South sees a higher mode share for active and public transport and a lower mode share for private vehicle use than the overall municipality, which could be due to its proximity to Melton Station.

As such, private car is expected to remain the main mode used by those that reside and access employment in Melton South, but there is a high potential to achieve mode shift if suitable facilities, development mixes and densities are implemented.



Potential future mode share

As the job densities increase in Melton South it is expected that the car mode share will decrease

Figure 3 identifies the current general relationship that exists between employment density and car mode shares in Melbourne. It indicates that as densities increase, car mode shares tend to decrease, at least beyond a critical level of density of approximately 1,000 jobs per square kilometre.

Melton South has a lower car mode share than would be expected for its current job density, likely due to its proximity to the train station and the local residents have a reasonable low car ownership rate of 1.7 cars per household (in Melton it is 2 cars per household and it is 1.63 across Greater Melbourne).

The existing job density is also sitting near the 1,000 jobs per square kilometre tipping point, so the increased job numbers expected over the next 15 years should help further reduction the mode share in accessing the area for work.

The following section will outline the issues and opportunities within the Melton South Structure Plan area by mode, these modes are:

- Roads
- Rail (train)
- Bus
- Walking
- Cycling
- Road safety.

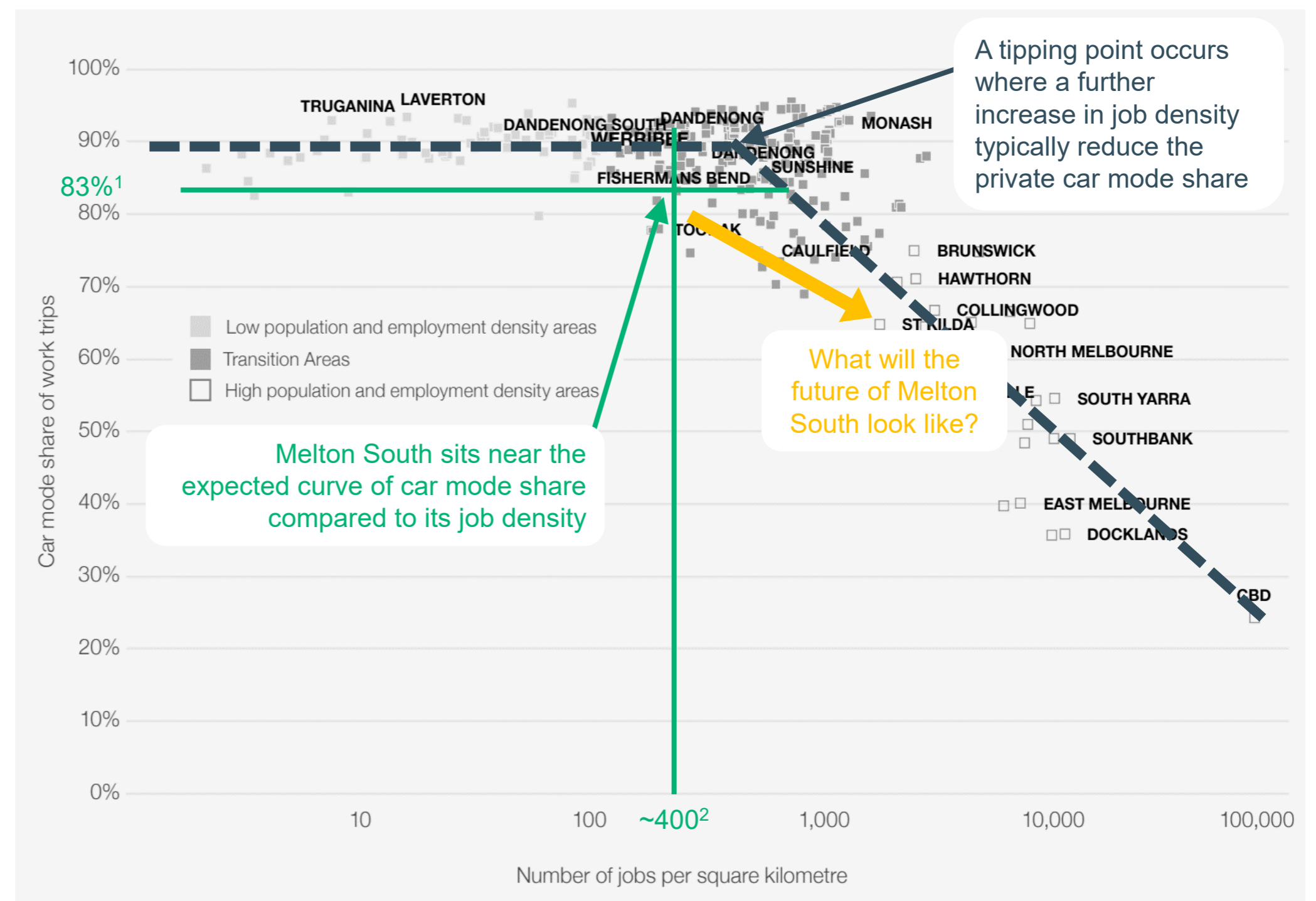


Figure 3: Distribution of Melbourne’s job density and declining car mode share by suburb

Source: ABS Census (2016), Journey to Work, as cited in Infrastructure Victoria, 5-Year Focus, April 2018
 [1] ABS 2016
 [2] S-VITM (2018)

4.1 Roads

Existing Arterial Network

Melton South has a well-connected local road network, providing access in all directions; there are no arterial roads within the Study Area.

The Western Freeway provides Melton South with access to the broader road network. The freeway is accessible via Station Road and Coburns Road, which are north-south thoroughfares through Melton Township. However, neither road is currently classified as a VicRoads declared arterial.

The arterial road network in the surrounding area is quite limited and no arterial roads currently exist within Melton South.

Access to the adjacent Toolern PSP area is provided via the east-west thoroughfare Abey Road.

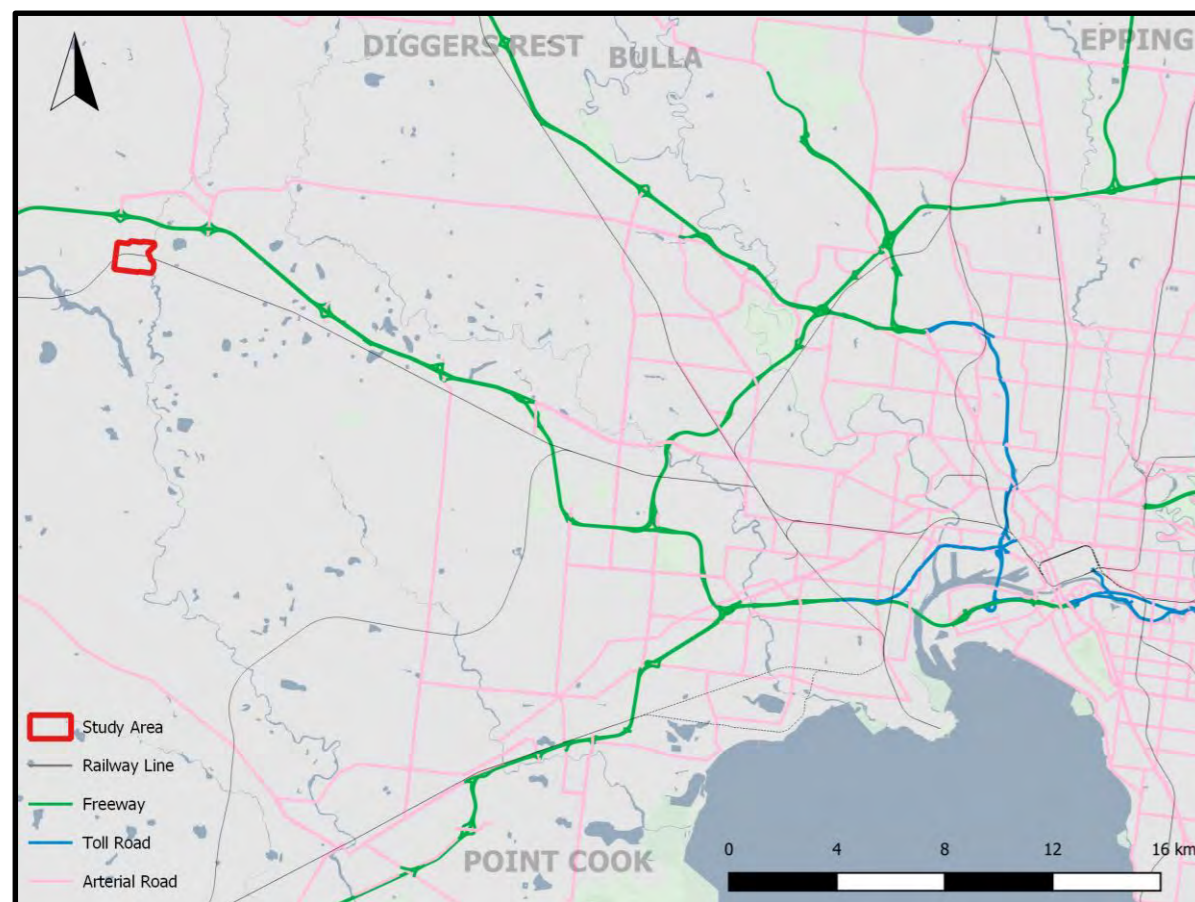


Figure 4: Arterial road network surrounding Melton South study area

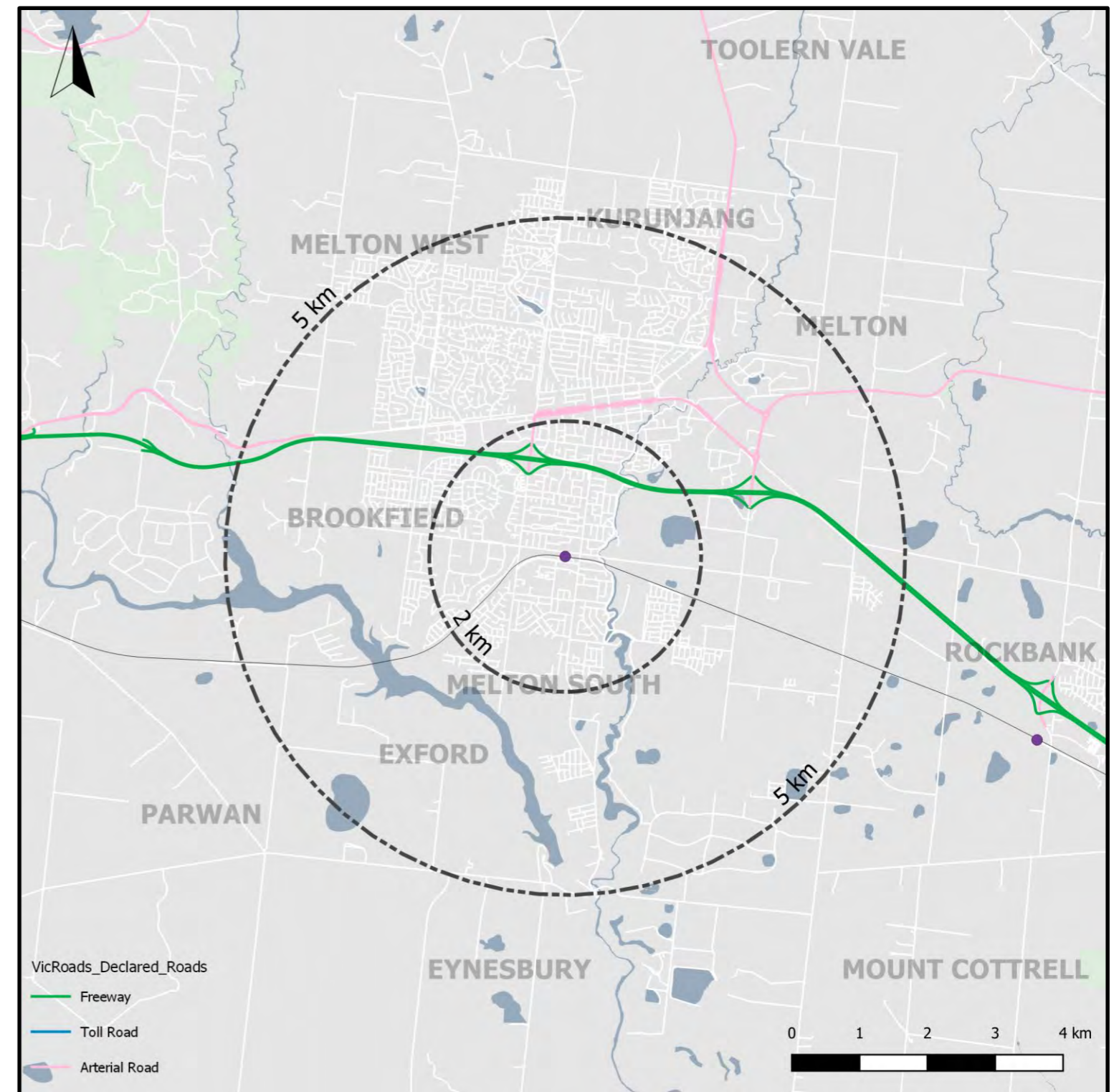


Figure 5: Arterial road network surrounding Melton South study area

Existing Arterial Network – volumes and capacity

Melton South sits south of the Western Freeway and unsurprisingly the majority of traffic travels along the north-south arterials to access it.

The only road link approaching capacity in the existing Melton South road network is on the southbound lane on Station Road / Exford Road near the level crossing.

The volumes on both Station Road / Exford Road and Coburns Road / Rees Road are approaching the volumes typically expected on the arterial network (i.e. over 4,000 vehicles per day).

The significant volumes on Station Road / Exford Road cause severance issues, resulting in pedestrians having difficulty informally crossing and limiting the place making opportunities along the street.



Figure 6: 2015 AM Volume Capacity Source: VITM (2017)

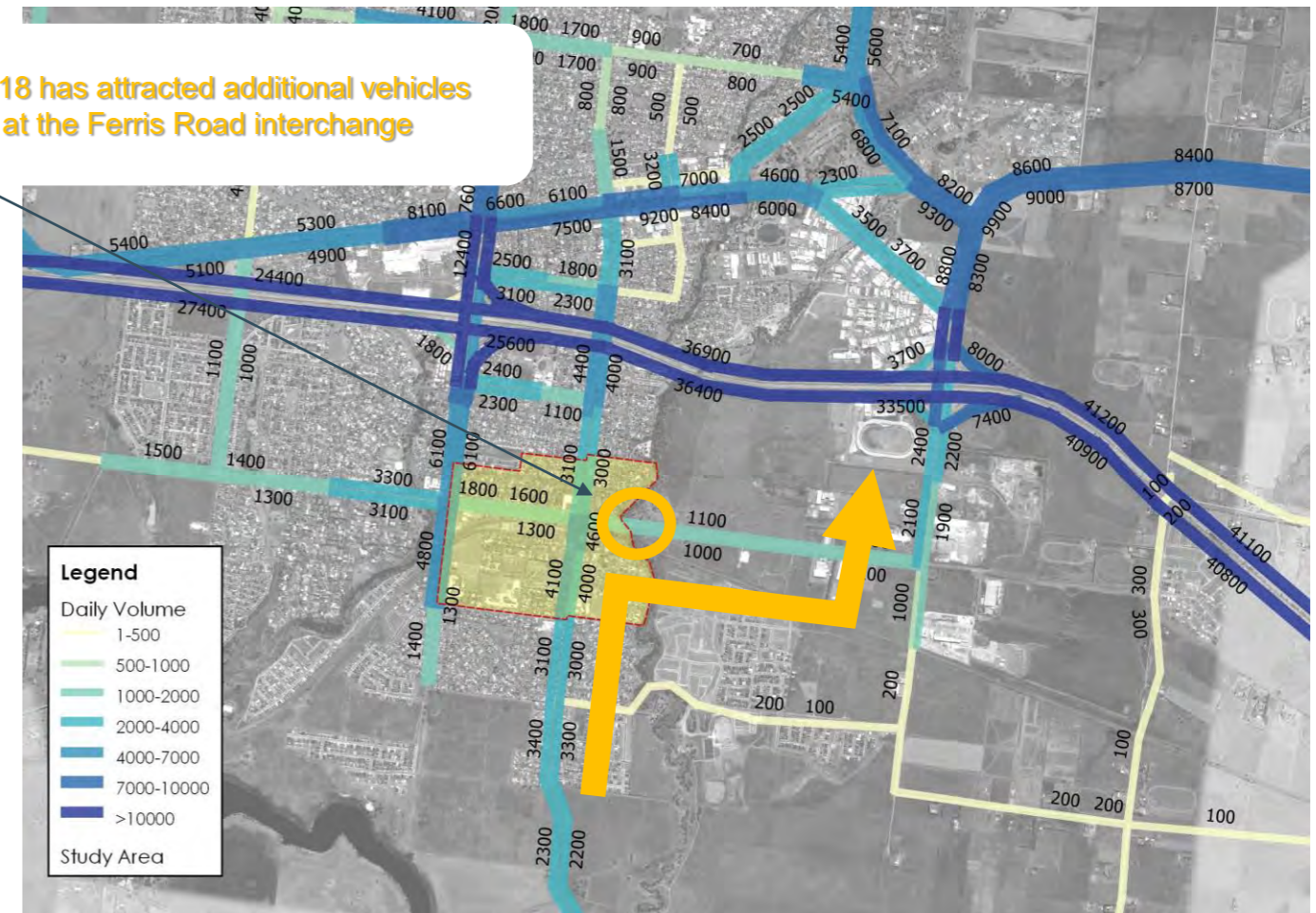


Figure 7: 2015 Daily Volumes Source: VITM (2017)

Future Arterial Network – within Melton South

The Moving Melton Integrated Transport Strategy proposes to continue to work with the VPA in the development of Precinct Structure Plans to develop an arterial road network to support the long term growth as identified in the Growth Corridor Plans.

The proposed arterial roads within the Melton South Structure Plan area are:

- Coburns Road
- Rees Road
- Brooklyn Road
- Abey Road (on fringe of study area)

As shown on the previous page, these roads area already carrying significant traffic volumes and performing a similar function to an arterial road.

The upgrade of these roads to the arterial network will need to be mindful of Movement and Place principles. This is particularly important along Brooklyn Road north of the Station, in order to not reduce pedestrian connectivity between the Melton Station Square Shopping Centre and the Railway Station. It is also important along Rees Road when passing Al Iman College.

MCC's committed Capital Works program includes installation of two signalised intersections and a duplication of the Abey Road Bridge. This will further support the proposed arterial road network.

Supporting recommendations:

- Provide key north-south and east-west through corridors.
- Continue to advocate for level crossing removals to improve flows, along the main north-south corridors through Melton South.
- Ensure key roads in the precinct adjacent to active land uses are low speed environments that provide safer environments for pedestrians and cyclists.
- Provide signalised intersection at Brooklyn Rd / Exford Rd / Station Rd to help manage vehicle and pedestrian conflicts.
- Install 40km/h speed zones along roads with active land uses (i.e. Schools and Station).

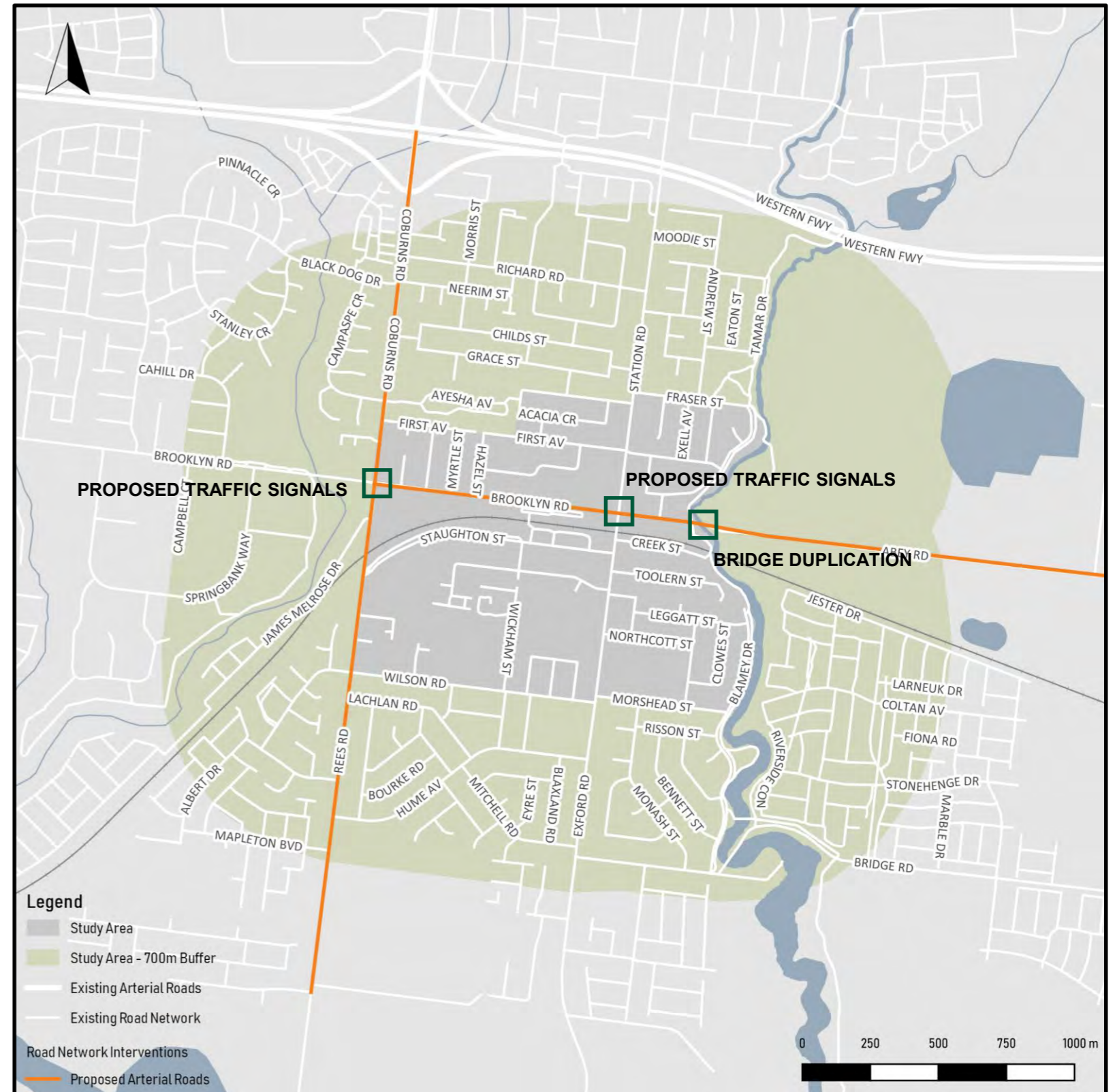


Figure 8: Proposed arterial road network adapted from Moving Melton

Future Arterial Network – connecting Melton South

With the Toolern PSP being located to the east of Melton South there is expected to be a significant level of development and full road network provided to support and connect it, as shown in Figure 9.

Most notably with the proposed road network supporting Toolern and connecting it to Melton South is the third river crossing to the south via an east-west secondary arterial road. It is proposed to connect with Exford Road and through various intersection and road upgrades also connect with Rees Road, which will enable vehicles to travel north-south to and through the Melton South study area.

There are a number of existing cross-sectional constraints with the sections of Exford Road and Rees Road within existing residential areas, which may limit the ability to accommodate additional significant traffic volumes, which are discussed later in the report

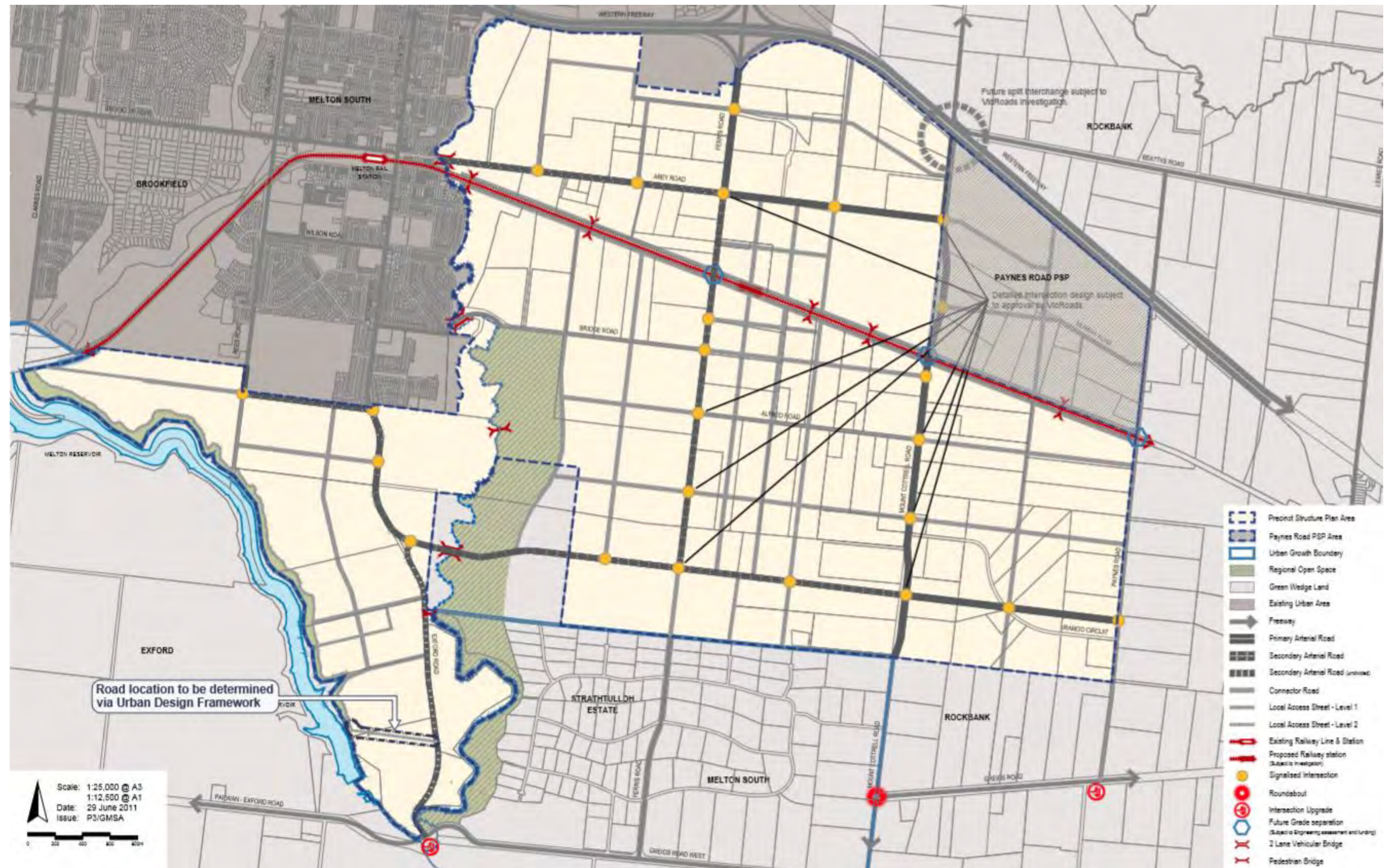


Figure 9: Proposed arterial road network associated with Toolern PSP prepare by VPA

Future Arterial Network – broader Melton network

The Moving Melton Integrated Transport Strategy also proposes to deliver, or advocate for, a suite of road projects surrounding the Melton South Structure Plan area as shown in the list and the image below:

- (A) Improve existing arterial road intersections
- (B) Upgrade Western Highway to urban freeway standard
- (C) Upgrade Christies Road
- (D) Improve access to Western Freeway at West Melton
- (E) Improve access to Calder Freeway at Diggers Rest
- (F) Duplicate Melton Highway
- (G) Kororoit Creek Bridge (Westwood Drive)
- (H) Kororoit Creek Bridge (Rockbank Middle Road)

S-VITM reference case (Govt. Transport Model) also includes a suite of road projects assumed to be delivered between 2016 – 2046. The majority of work is assumed to take place to the south east of Melton South within the Western Growth Corridor.

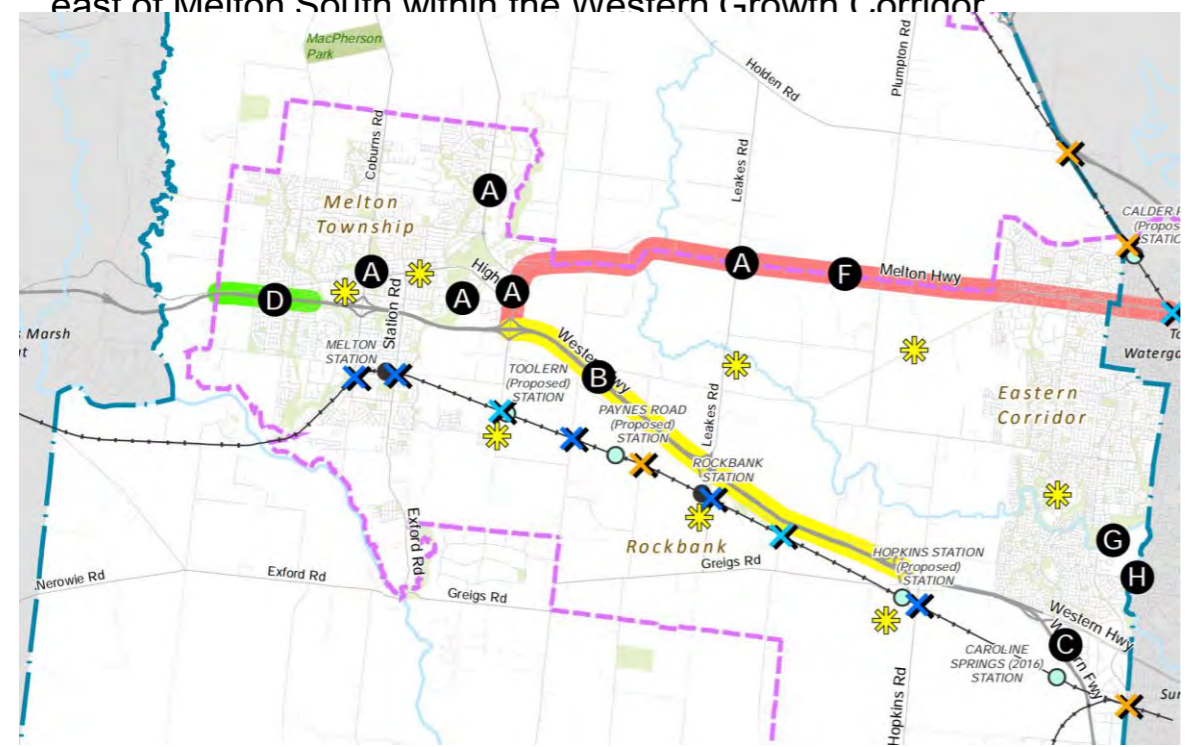


Figure 12: Proposed road interventions Source: Moving Melton (2015)

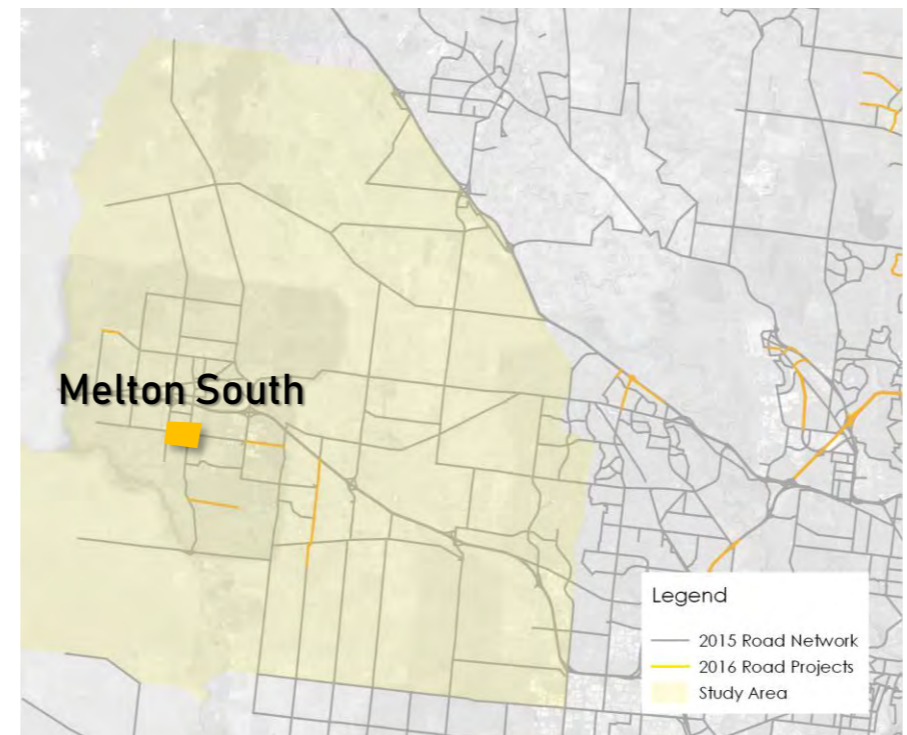


Figure 10: 2016 Road network

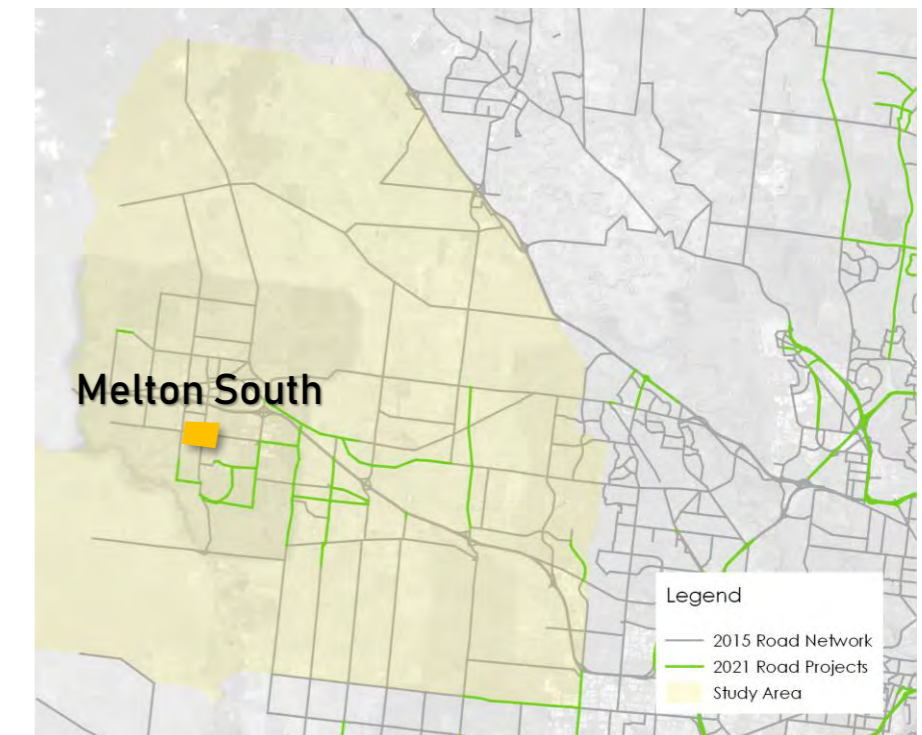


Figure 11: 2021 Road network

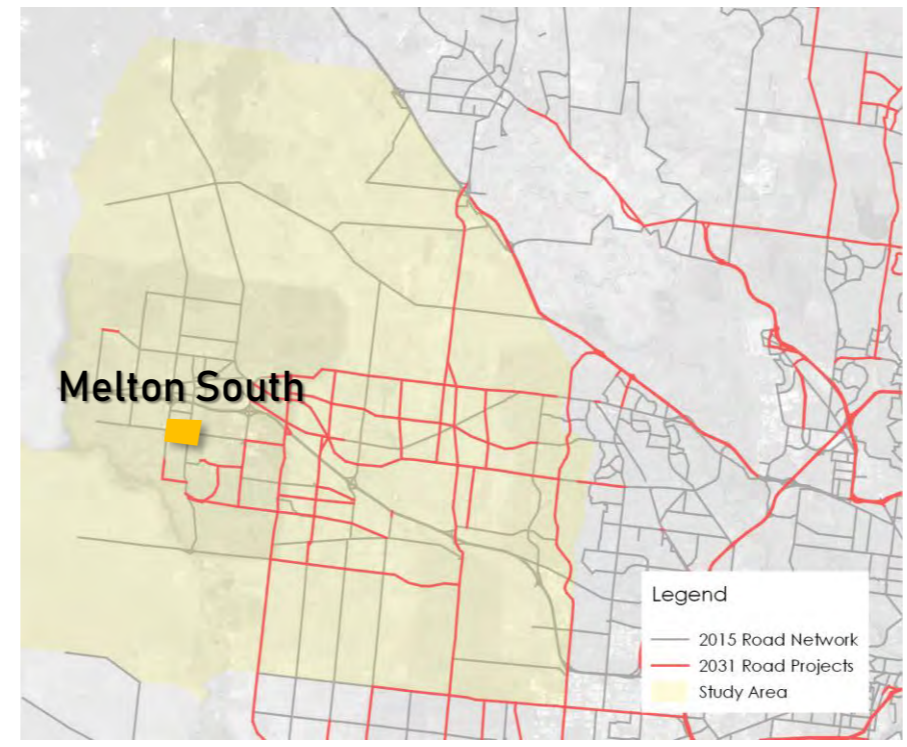


Figure 13: 2031 Road network

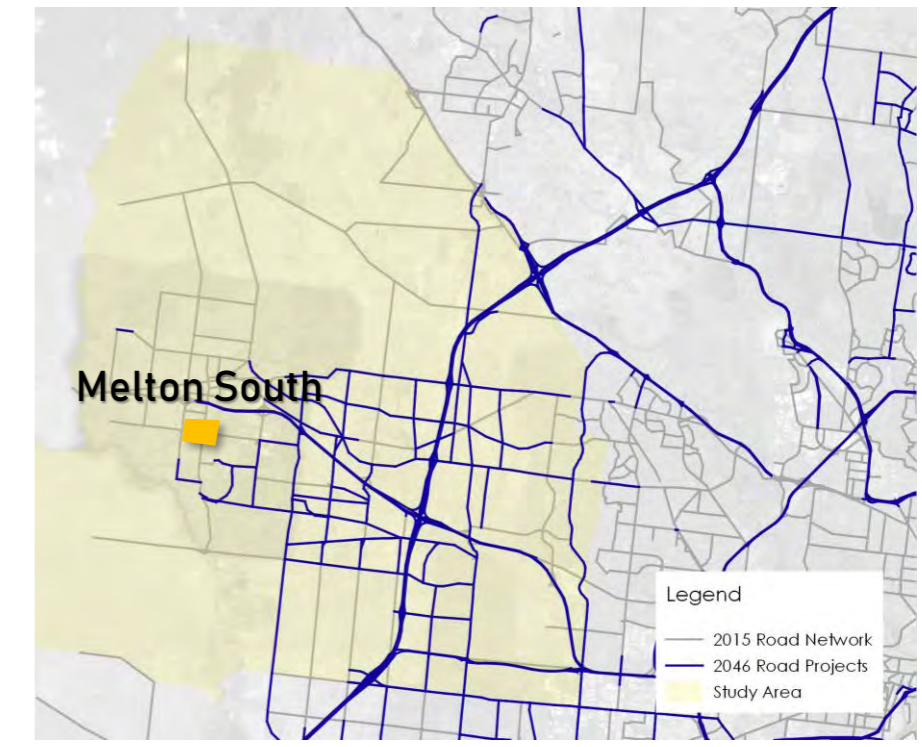


Figure 14: 2046 Road network

Note: all maps sourced from S-VITM (2018), from reference case

Future Arterial Network Operations

Impacts to volumes and capacity

As the road network expands with the implementation of various PSPs and projects listed earlier in this report, and the population within the study area and surrounds traffic volumes will increase and streets within and surrounding the study area will begin to approach road capacity. The closer the road network operates to capacity the more congestion people suffer.

The congestion issues experienced in Exford Street are projected to worsen by 2031, with a small section projected to exceed road capacity. The level crossing at Exford Street reduces the capacity through this section, reinforcing the need to remove it to support growth in vehicle movements, including freight and buses.

The greatest increases in traffic volumes within the study area are expected to occur along Rees Road. If Melton South wishes to support the increase in trips by car, this projected traffic growth reinforces the aspiration to upgrade the street to the arterial network, and also remove the level crossing on Rees Road / Coburns Road.

While the rest of the network in the study area is expected to operate within acceptable levels, it is also noted that east-west traffic volumes are expected to increase in the area, namely in accessing Toolern to the east via Abbey Road and Bridge Road. Their upgrade and use is considered to help with local residents accessing future employment opportunities, but ideally not at the expense of the development of the study area.



Figure 15: 2015 AM Volume Capacity



Figure 16: 2031 AM Volume Capacity

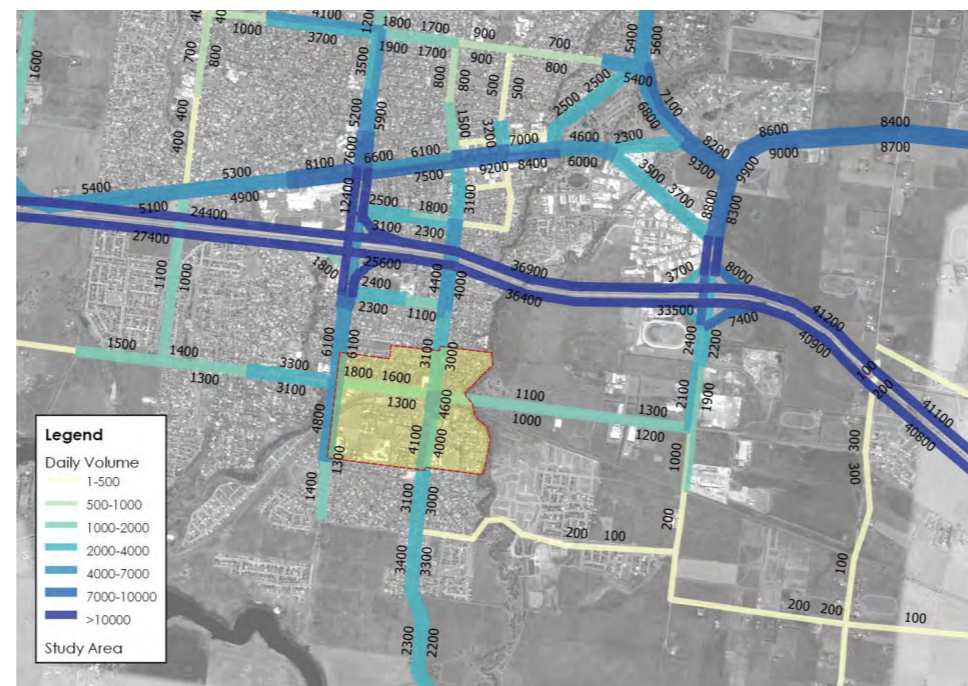


Figure 17: 2015 Daily Volume



Figure 18: 2031 Daily Volume

Note: all sourced from VITM (2017)

There are two level crossings within Melton South, one located along Station Road just east of the railway station, and one is located along Coburns Road.

It is feasible to remove both these level crossings but there are many different design options that need to be explored in detail, including transport planning and engineering detail.

Removal of these would improve safety and accessibility. Grade separation is typically provided by one of following options:

- Road under rail
- Road over rail
- Rail over the roads
- Rail under the roads
- Combination (partial over and under)

There are pros and cons associated with every level crossing design. In the Melton South context, it will be important to ensure that connectivity for pedestrians and cyclists is maintained and enhanced. This is particularly important for Station Road / Exford Road to enable connectivity between the Exford Road shopping strip, the Station and the Melton Station Square Shopping Centre.

At this early stage, it is most important that the Council is clear that any future removal of the level crossing should improve connectivity for pedestrians or cyclists, as well as personal security and safety.

A preliminary desktop assessment of potential grade separation options has been undertaken and is included in Attachment 1. Given the complexity of these two level crossings within the established area, a specific and more detailed investigation is recommended. However, these assessments help to understand the likely constraints with any options that would need to be considered in detail with Government.

All advice is to be relied on for strategic planning purposes only. The purpose of this investigation was to review the feasibility and options for the removal of the Station Road and Coburns Road level crossings based on the analysis undertaken to support the Structure Planning process.

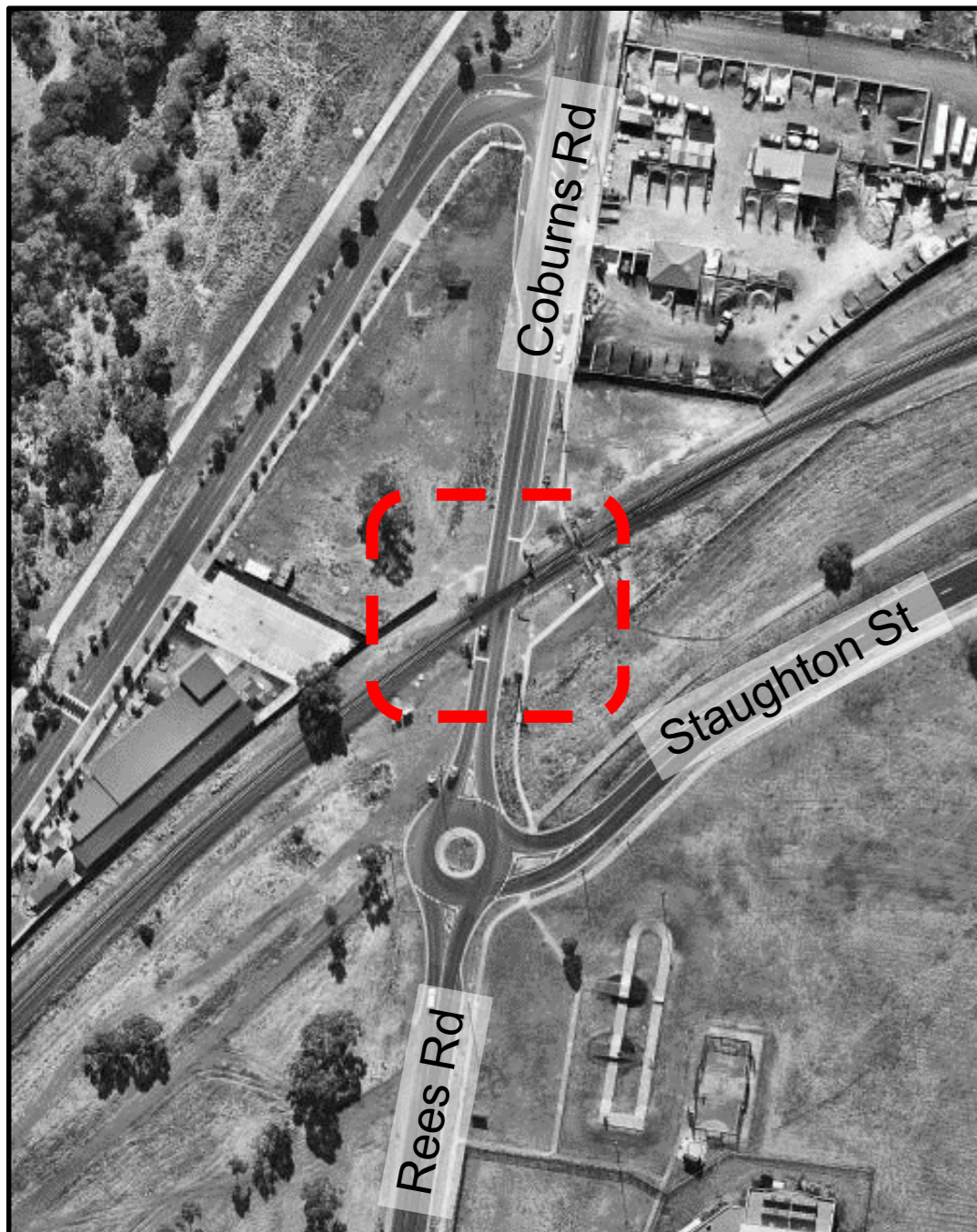


Figure 19: Coburns Road level crossing Source: Nearmap



Figure 20: Exford Road level crossing Source: Nearmap

Level crossing removal - Exford Road

City of Melton should work with LXRA and TFV to ensure that all modes are considered in the development of the level crossing removal design, and the removal is completed in a manner that integrates with existing and future land uses.

There is the opportunity to improve the connectivity between the shopping facilities north and south of the railway line, creating a more integrated town centre. This would be well supported by the Council aspirations for Station and Exford Roads.

Construction considerations at Exford Road:

- Relatively flat road in the vicinity of the rail line.
- Without any natural topography/slope in the area, a road under or over option would likely result in the limiting of turning movements at nearby junctions.
- Rail under or over the road would likely impact the adjacent at grade station.

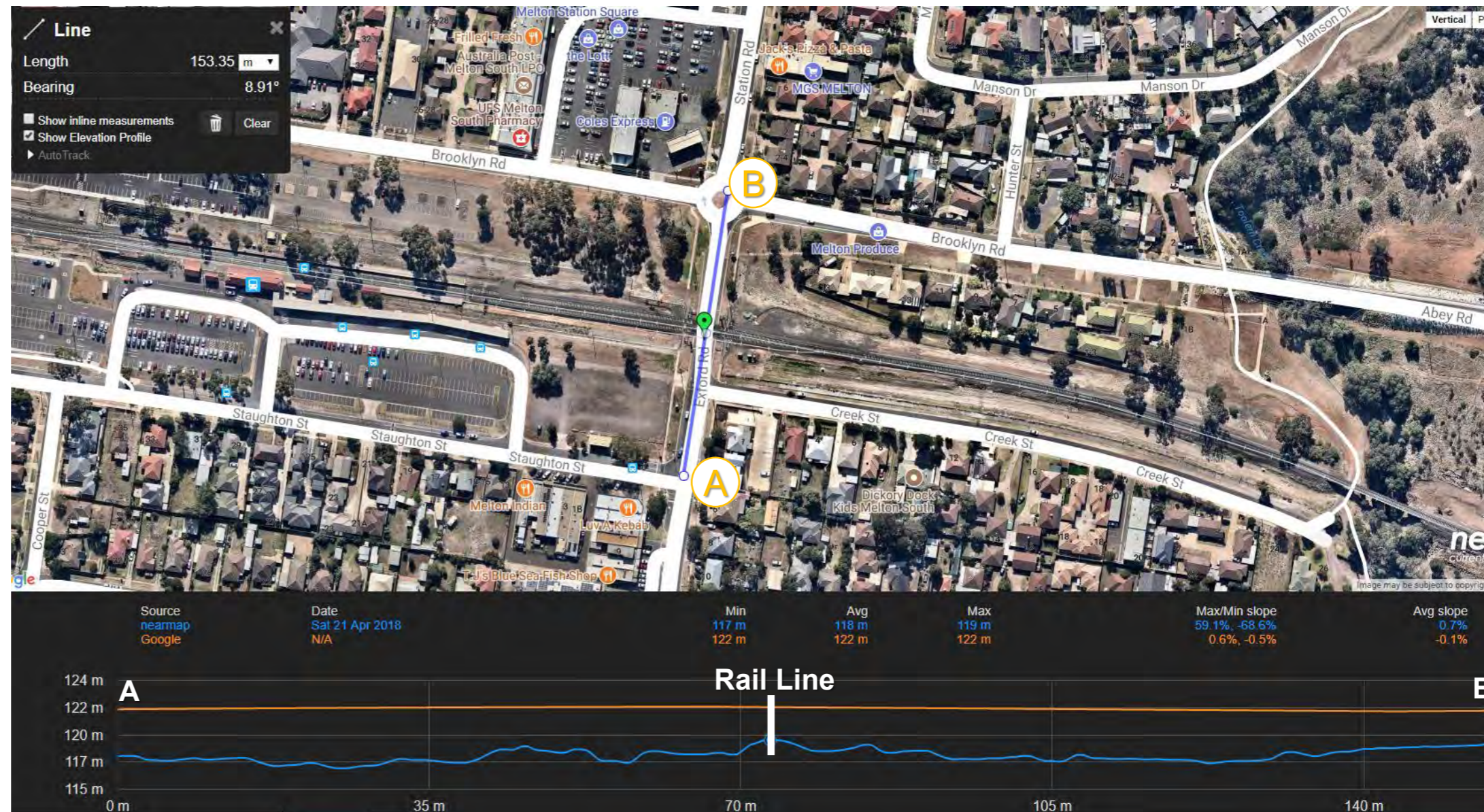


Figure 21: Exford Road level crossing Source: Nearmap

Level crossing removal - Coburns Road

04

Issues & Opportunities
by Transport Mode

City of Melton should work with LXRA to ensure that all modes are considered in the development of the level crossing removal design, and the removal is completed in a manner that integrates with existing and future land uses. Particular care should be given to ensuring access is maintained for freight associated with the industrial properties to the north of the level crossing.

Construction considerations

- The design should align with the aspirations to upgrade Coburns Road / Rees Road to the arterial network. This means the grade separation should have greater height clearances for B-Doubles, and specific grade requirements for freight.
- Slight down slope in the north direction with a slight crest just north of the railway line.
- Could potentially allow for a road under scenario given the slope and localised high point with the rail.

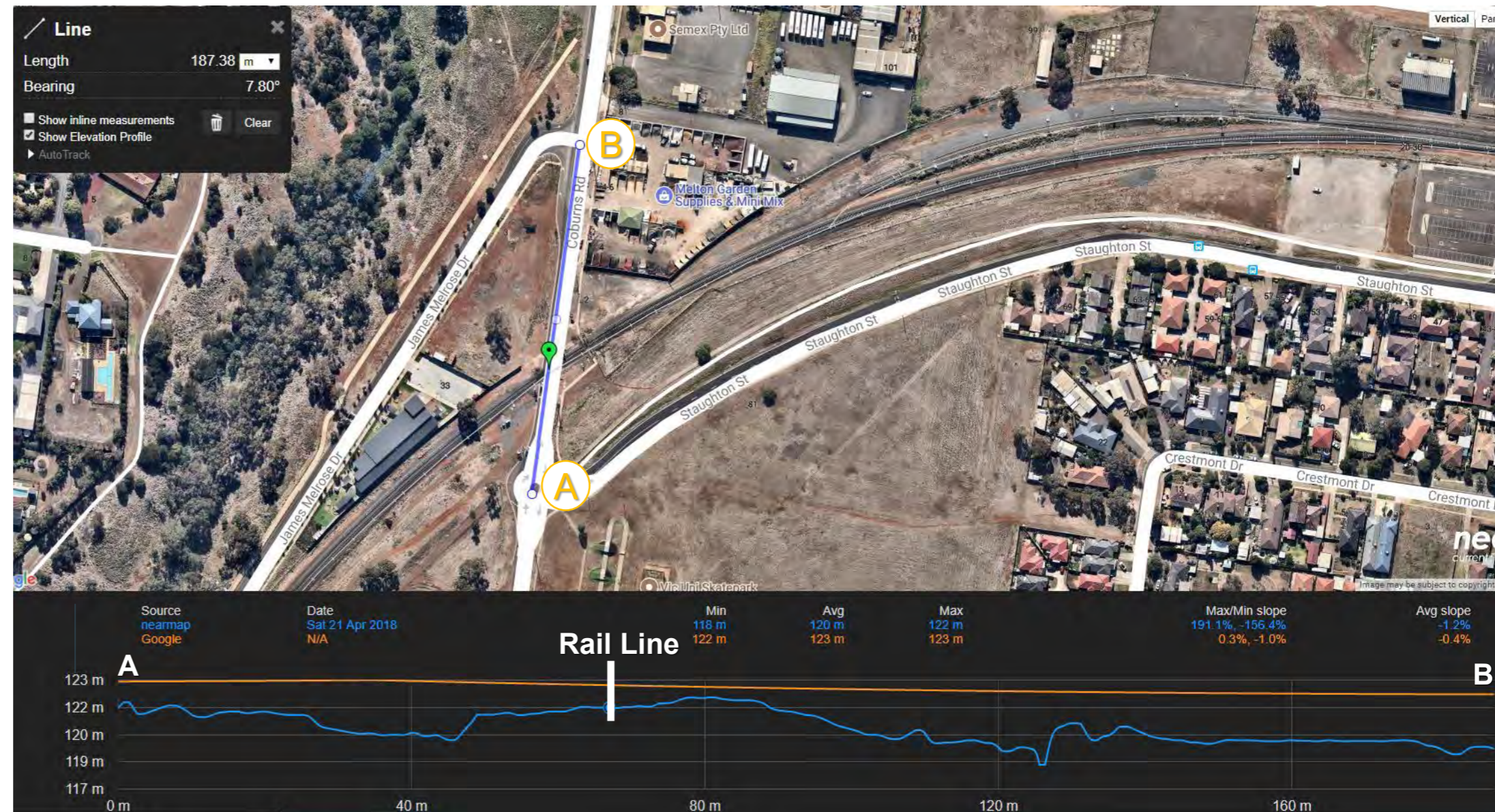


Figure 22: Coburns Road level crossing Source: Nearmap

A significant amount of land within Melton South is allocated to at grade car parking, especially at the station

Parking within Melton South is primarily concentrated in nine different at-grade car parks. The car parks cater for rail commuters, shoppers, university students and recreation users.

Melton Station provides for approximately 820 car parking spaces. The spaces are almost evenly distributed between the northern and southern sides of the station. The placement, configuration and quantum of this car parking will be reviewed as part of the upgrade of Melton Station. This work should consider the placemaking aspirations of the town centre and be completed with support from the Movement and Place framework.

Other locations with significant provisions of car parking are the Melton Station Shopping Centre with approximately 170 spaces and the Al Iman College with approximately 225 spaces.

This does not include on-street parking and residential parking, which is prolific in the area.

Angled on-street parking is provided adjacent the secondary school and a strip of shops on Exford Road near Melton Station. Kerbside parking is enabled throughout the suburb, and is typically unrestricted.

It is also noted that limited park and ride facilities will be provided at the new and upgraded stations of Toolern and Rockbank, respectively. These limited amounts of parking are only expected to service local demands and not materially impact Melton Station's significant park and ride function for residents in the broader area. As such, the potential need for additional car parking at the Melton Station is likely as the population in the area grows and increased train service numbers are provided,

Supporting recommendations:

- Any structured car parking facilities should ideally be able to be converted to other uses to support various potential development arrangements
- Locate station park and ride facilities more to the periphery with more direct access the north-south corridors through Melton South.
- Minimise crossovers within the precinct to improve footpath connectivity.

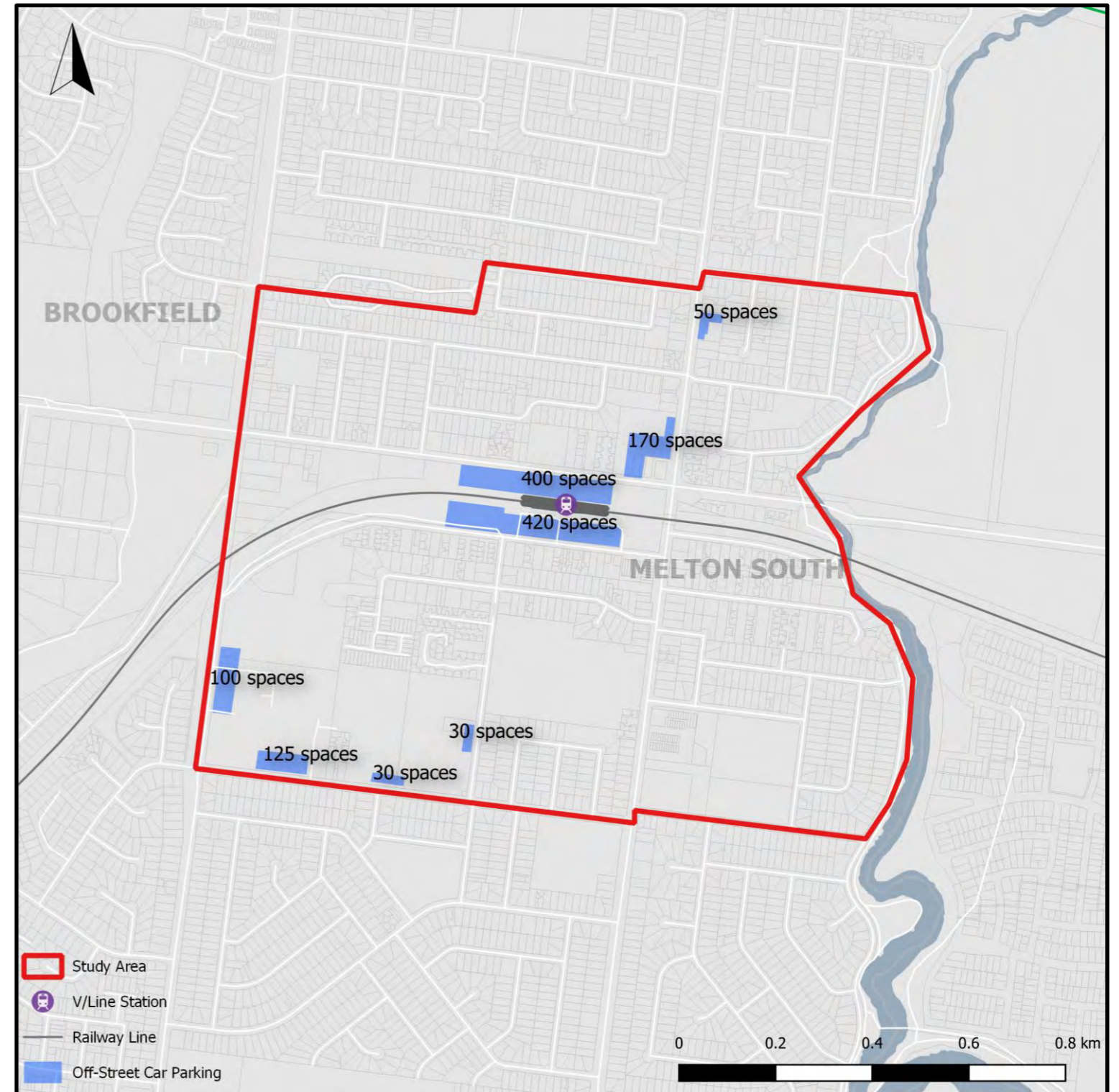


Figure 23: Off-street parking facilities within the study area

4.2

Rail

Existing Rail Network

The station provides residents of Melton South with direct connection to the CBD.

At the core of Melton South is Melton Station, which serves as the primary public transport interchange for the broader existing Melton Township. Melton Station provides residents with direct access to key destinations and interchanges in central Melbourne, as well as connection to Ballarat.

Melton Station is located on V/Line's Melbourne-Ballarat Line. Services operate between 5:00am and 12:45am every 15-30 minutes for CBD bound trips in peak hours and 30-60 minutes in off-peak hours.

The peak hour service frequency for outbound trips is constrained by the single track between Deer Park West and Melton resulting in a sporadic frequency of between 25 – 75 minutes, with only 4 outbound services arriving at Melton Station between 7am – 10am on a weekday. This service frequency is poor compared to other metropolitan services that typically have a 20 minute outbound peak hour service (e.g. Upfield and Pakenham lines).

As part of the Ballarat Line Upgrade, the single rail track from Deer Park West to Melton will be duplicated, allowing for increased frequency and operational reliability of services.



Figure 24: Existing rail and metro bus network

Destination Station	Travel time from Melton South
Footscray	30 minutes
Southern Cross	40 minutes
Ballarat	52 minutes

Future Rail Network – complementary projects

Rail upgrades are underway and will provide more services more often to and from Melton Station



As part of the Regional Rail Revival, the **Ballarat Line Upgrade** is being implemented to improve services to growth areas in Melbourne's outer west and Ballarat. The project will include the duplication of track between Deer Park West and Melton, which will improve peak capacity from Melton. The duplication will trigger an upgrade to any existing assets within the Melton South Structure Plan area (i.e. Melton Station) however, it will enable an increase in service frequency.

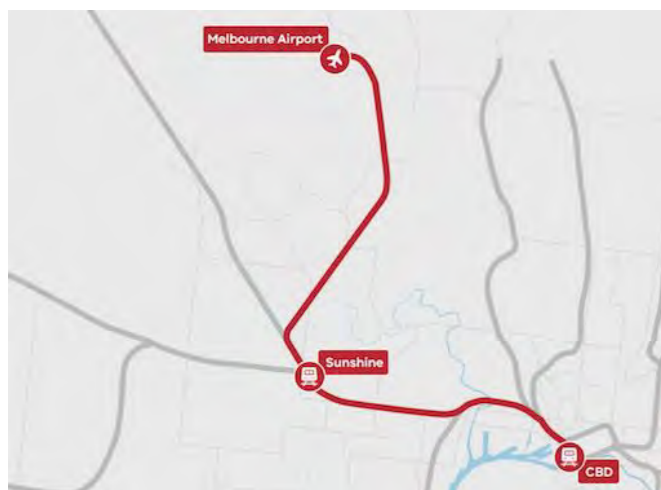
The project will also consist of the construction of a new station at Toolern and upgrading the existing station at Rockbank to support the development of these PSP areas.

The Ballarat Line Upgrade will enable the future opportunity for **electrification** of rail tracks to Melton and the creation of a new metropolitan line independent of V/Line services. The electrification of the line will allow for high capacity trains to service the growing population in the outer western suburbs and provide direct access to CBD stations and the south-eastern suburbs. There is still uncertainty surrounding the extent and specific timing of potential electrification.

What is understood is that electrification of the line and ability to support additional train services is dependent on additional capacity being provided within the City Loop. The **Metro Tunnel** Rail Project will provide this by enabling the Sunbury and Pakenham/Cranbourne Lines to no longer need to circulate through the City Loop. Consequently, the project will provide capacity in the inner city for new services on all metropolitan lines. With a duplicated track, this will enable services to operate more frequently from Melton into the CBD.

Also, as commuter from Melton transitions to a metro-style system, **stabling** will be required at the end of the line. As such, the creation of a new metropolitan service to Melton will likely require stabling yards to be provided at Melton Station, unless the electrification extends further west.

The current proposal for a rail line to the **Melbourne Airport** is via the Sunshine Route, which will provide interchange options at Sunshine. This will significantly open up accessibility between Melbourne Airport and Melton South.



Future Public Transport Network – impacts to travel times

Public transport accessibility is expected to increase given the proposed investment in rail, but this is focused on connecting with the CBD, not the proximate area.

This results in public transport accessibility improving over the next 30 years for longer trips, however those trips more proximate to Melton South (i.e. Toolern Vale and Rockbank) will increase.

Given the increase in job opportunities projected to occur in Toolern Vale and Rockbank, these shorter trips will become increasingly important. This reinforces the need to invest in the bus network to cater for shorter trips.

The bus network is the focus of the following section.

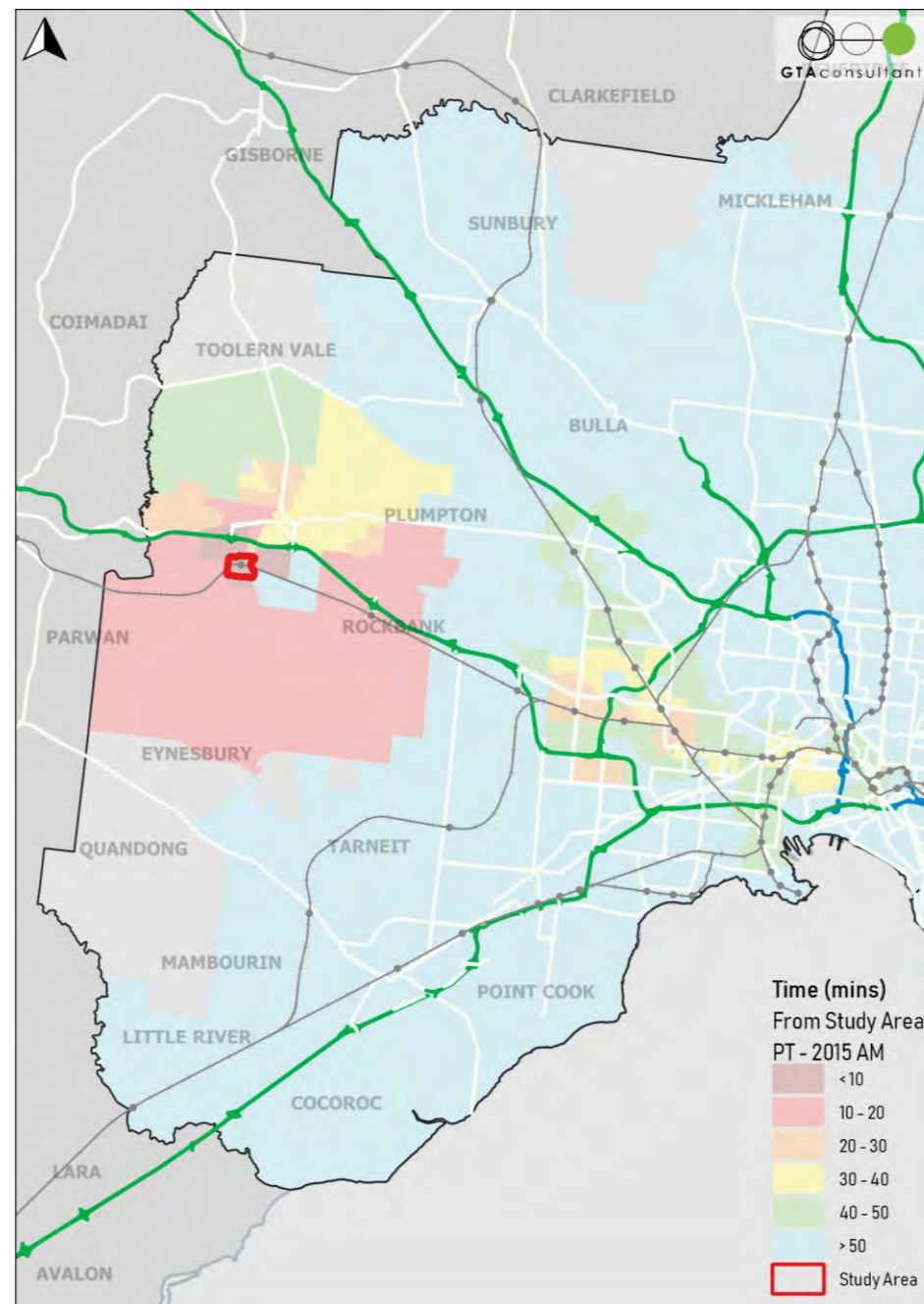


Figure 26: 2015 AM travel time

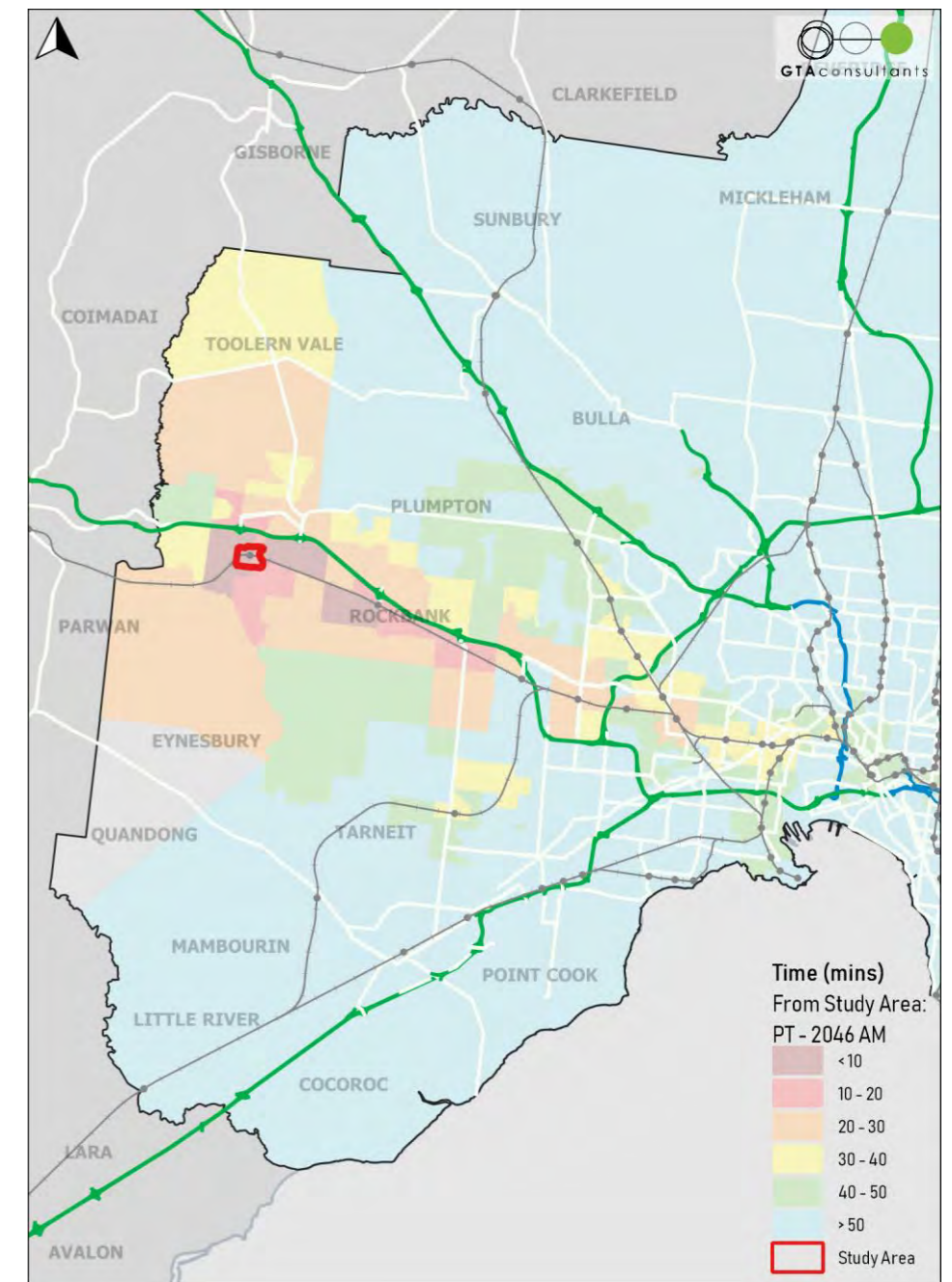


Figure 27: 2046 AM travel time

4.3 Buses

Melton Station also provides a bus interchange that connects to areas within Melton Township and Woodgrove Shopping Centre, although the services are infrequent.

Five regular bus services (Routes 453, 455, 457, 458 and 459) connect Melton Station with areas throughout the Melton Township. A Night Rider bus service also connects Melton Station to the all-night (Friday and Saturday) metropolitan train services on the Sunbury Line at Watergardens Station.

All bus services have stops on either Coburns Road or Station Road in the north of Melton South. Routes 457 and 459 also service the southside of the existing suburb.

Routes 453 and 455 operate hourly from Melton Station, while Routes 457, 458 and 459 operate every 30 minutes.

The challenges facing the existing bus network include:

- There is limited coverage in terms of both the location of bus stops, and the duration of bus services
- The existing bus timetable does not align with the existing train timetable, which coupled with a low bus service frequency can result in significant wait times for people



Figure 28: Existing bus network Source: PTV

Key Locations	Duration
Woodgrove Shopping Centre	9 minutes (Route 457)
High Street, Melton	17 minutes (Route 457)

Existing Bus Network – coverage

As outlined on the previous page, the bus network in Melton South Structure Plan area has limited coverage in terms of houses and land uses that have a bus stop nearby, and in terms of service frequency.

The bus service frequency ranges from 30 – 90 minutes within the peak hours.

Figure 30 shows the existing bus stop coverage by mapping a 400m catchment from existing bus stops.

What this means is that there is a significant proportion of the Melton South Structure Plan area that is not serviced by proximate buses, and the streets that are proximate have limited service frequency.

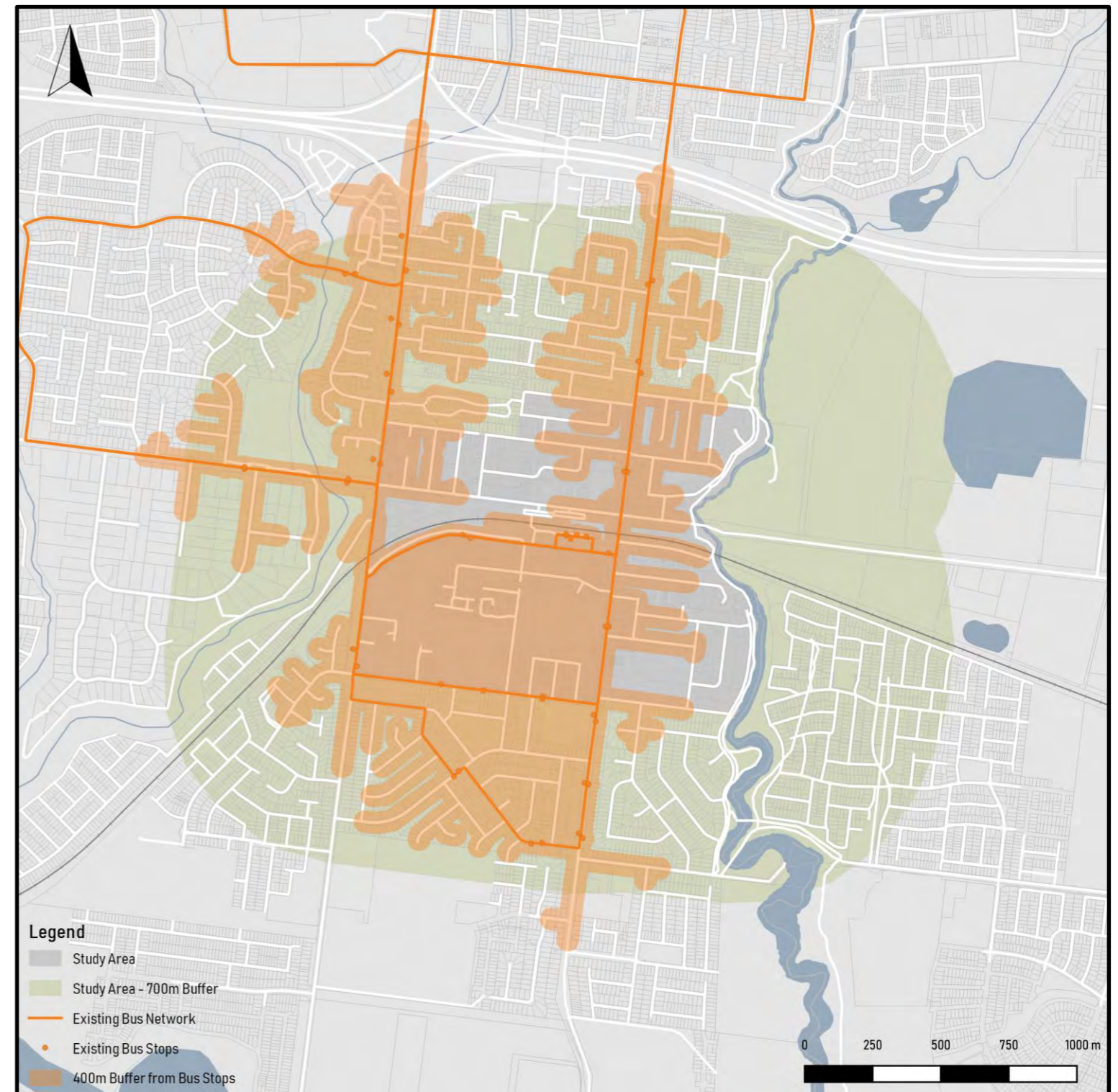


Figure 29: Bus stop coverage – approximate 400m buffer from existing bus stops

Bus Interchange

04

Issues & Opportunities
by Transport Mode

The existing bus interchange appears to operate well. Every terminating bus is allocated a bus bay, which combined with a low service frequency means there are no existing bus stop capacity issues at the interchange.

Access for buses into and out of the interchange is prioritised, with the only delays caused by pedestrian crossings within the Station car park.

Delays at the approach to the interchange may be caused by traffic queuing to access the car park, at the traffic lights at the intersection of Staughton Street and Exford Road, or at the level crossing on Exford Road.

There are opportunities to improve the wayfinding and real time information for customers to provide an improved customer experience.

Further work is required to understand the impacts of the proposed increases in bus service frequency, and routes, on the existing bus interchange.



Figure 31: Existing bus interchange access points and facilities

4.4 Pedestrians

Existing Pedestrian Network

The pedestrian network in Melton South is disconnected, even in the vicinity of Melton Station.

Access to Melton Station is not conducive to pedestrian movements. Only a small catchment of Melton South can access the station within 10 minutes on foot, especially in the northwest due to limited network connectivity. Also, the rivers either side for significant pedestrian movement barriers in accessing the station.

From the south, Melton Station is accessed from the east-west Staughton Street. One zebra crossing is located on Staughton Street immediately opposite the station buildings, although this is a significant distance from the shopfronts.

From the north, pedestrians do not have the option of crossing the road at a signalised intersection or zebra crossings. Additionally, no footpaths lead directly to the station on the northern side.

The southern side of Brooklyn Road consists of a dirt surface with frequent potholes. The surface would be very challenging to traverse by pedestrians with prams, or people in wheelchairs.

Pedestrians accessing one side of the station from the other are required to walk east toward the level crossing and circulate back west, or use a pedestrian underpass which may present personal safety concerns.

Two signalised crossings are provided on Exford Road, which is the main thoroughfare bisecting the existing suburb. The southernmost crossing services the adjacent primary school, while the northernmost crossing provides connectivity to Melton Station. A school crossing is provided opposite Staughton College on Wilson Road.

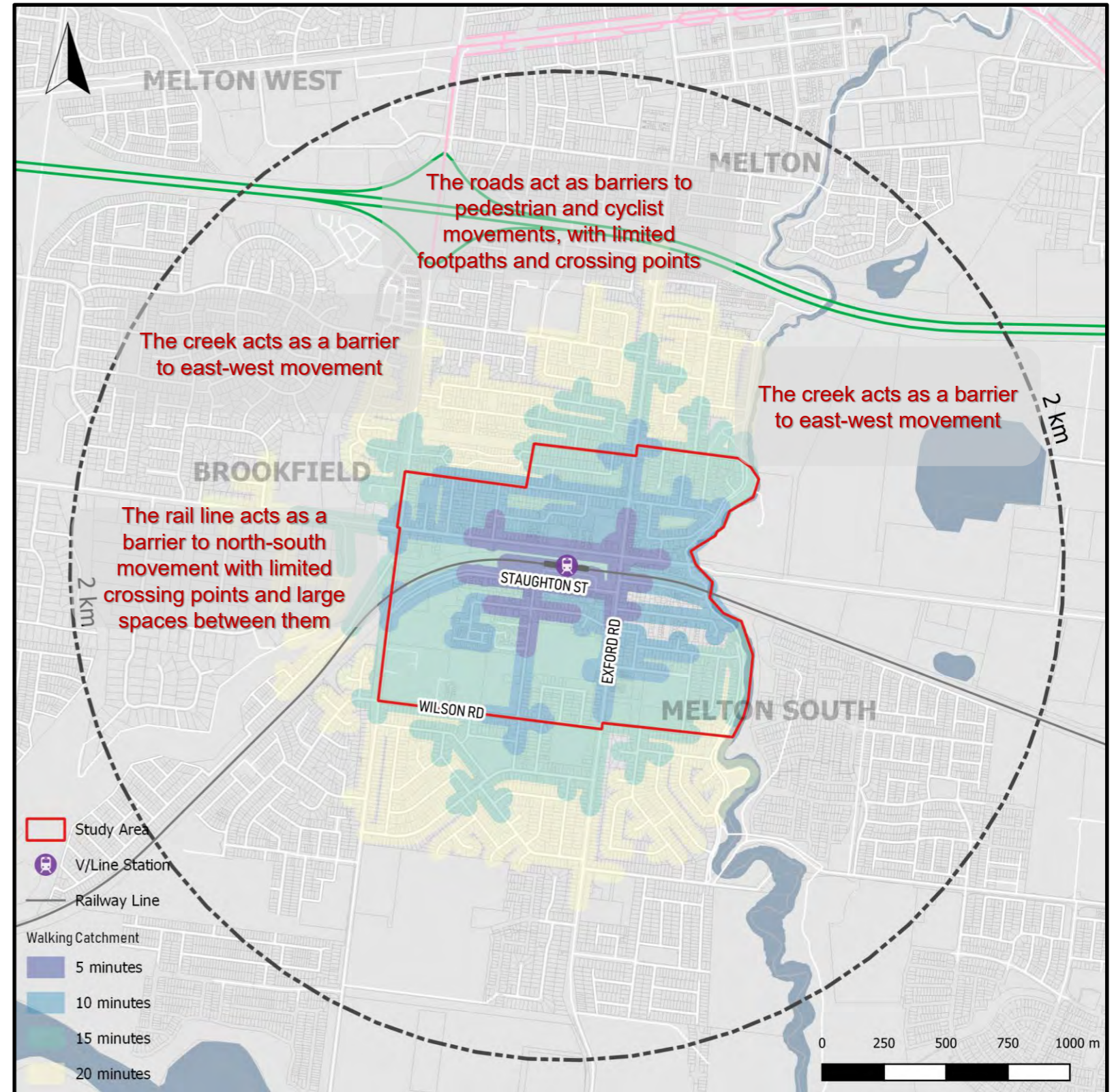


Figure 32: Walking catchment map showing walking distance by time from Melton Station

Existing Pedestrian Network

Figure 34 highlights the locations of missing footpaths within and surrounding the study area. The photographs below show the limited pedestrian facilities in terms of missing footpaths and facilities that do not meet DDA requirements.



Figure 33: Missing footpaths within and surrounding the study area. Note: this map is displaying data provided by MCC and has not been validated by a site inspection.

Future Pedestrian Network Design

The aim is to make walking a real option in Melton South. To assist with this, Melton South should be a pedestrian orientated centre with increased land use diversity which will support agglomeration of employment and higher land values.

Below are the urban form factors that have been identified through research to influence travel behaviours, how they are currently provided and could be to help reduce car use in accessing Melton South.

Melton South has a station within it, so residents have a short distance to transit. This is a major benefit that should be able to be further leveraged off, namely ensuring the entire study area has good access to it, and provide 'short cuts' to help further decrease the travel distance to it.

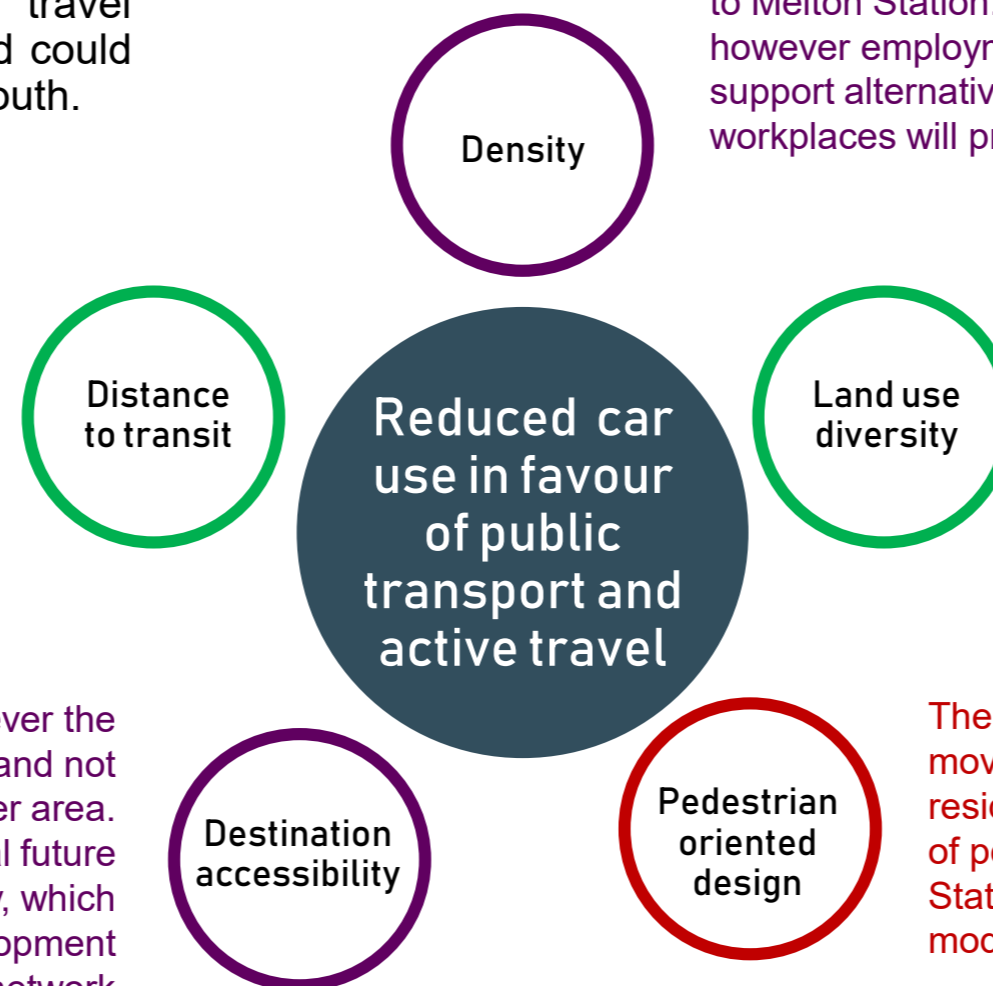
Melton South is currently accessible by mass transit, however the frequency and capacity of the V/Line services are limited, and not expected to cater for the growing population in the broader area.

The duplication of the Melton Line and potential future electrification will also see increased frequency and capacity, which should encourage mode shift. However, similar development planning activities should be undertaken with the local bus network and connections to key trip destinations, especially with the Toolern Employment Precinct which will be developed to the northeast.

The existing suburb of Melton South mostly consists of typical outer suburban residential density land uses, even within close proximity to Melton Station. Population is not expected to increase greatly, however employment and educational numbers will. Trying to support alternative transport modes in accessing the schools and workplaces will provide the most impact in Melton South.

Melton South mainly consists of residential land use. However, there are educational and retail land uses. As additional non-residential land use is provided, it can be expected to help reduce car use in the area.

The area does not overly support or encourage pedestrian movements. Rather, it is still a car dominated area, even in local residential streets. Improving the connectivity, priority and safety of pedestrian infrastructure, particularly in accessing the Melton Station, schools and places of employment will likely encourage mode shift.



Future Pedestrian Network

Moving Melton Integrated Transport Strategy outlines several pedestrian network initiatives designed to make walking a real option for anyone who wants to walk.

The key initiatives relevant to Melton South are outlined below:

- Develop a Pedestrian Network Plan identifying a hierarchy of walking routes (Figure 35 shows the network map for Melton South)
- Require footpaths for new subdivisions

The proposed Principal Pedestrian Network follows the creeks, and utilises Wilson Road, Exford Road and Brooklyn Road.

Consideration should be given to strengthening the pedestrian connection between the Melton Railway Station, and the Melton Station Square Shopping Centre.

MCC's committed Capital Works program includes the construction of a pedestrian refuge on Rees Road to support safer pedestrian crossing to James Melrose Drive.

Supporting recommendations:

- Identify where the core / heart of Melton South is and make it a pedestrianised environment .
- Footpaths within 2km of the station to be connected with no missing links and crossings of movement corridors.
- Local roads within 2km of the station become low speed environments to encourage on-road cycling and pedestrian crossing activities.
- Connect existing creek trails to Melton Station.



Figure 34: Future Pedestrian Network adapted from Moving Melton

4.5 Bicycles

Existing Bicycle Network

The bicycle network within and near Melton South is very limited and therefore not used

A comprehensive cycling network does not currently exist in the study area and the surrounding suburbs, as shown in Figure 36.

However, the majority of Melton would be accessible within 20mins by bike, as a typical cyclist can travel 5km in that time within an urban environment.

Cycling lanes exist on Exford Road (south of the railway) and Station Road (north of the railway), providing a north-south spine through Melton South for cycling movements to connect to the station and Melton. However, the lanes abruptly terminate approximately 200m from the railway in both directions as the roads become more constrained. It is noted that the lanes are not exclusively dedicated to cycling movements, as the space is shared with vehicles parked kerbside. The lane is therefore quite narrow for cyclists in the proximity of parked vehicles.

Cycling lanes also exist on Coburns Road north of the railway on the boundary of Melton South. However, the cycling lanes do not currently continue south across the railway on Rees Road, which Al Iman College fronts.

It is proposed to implement on-road cycling lanes on Staughton Street and Rees Road near the railway to improve connectivity between Melton Station and the school.

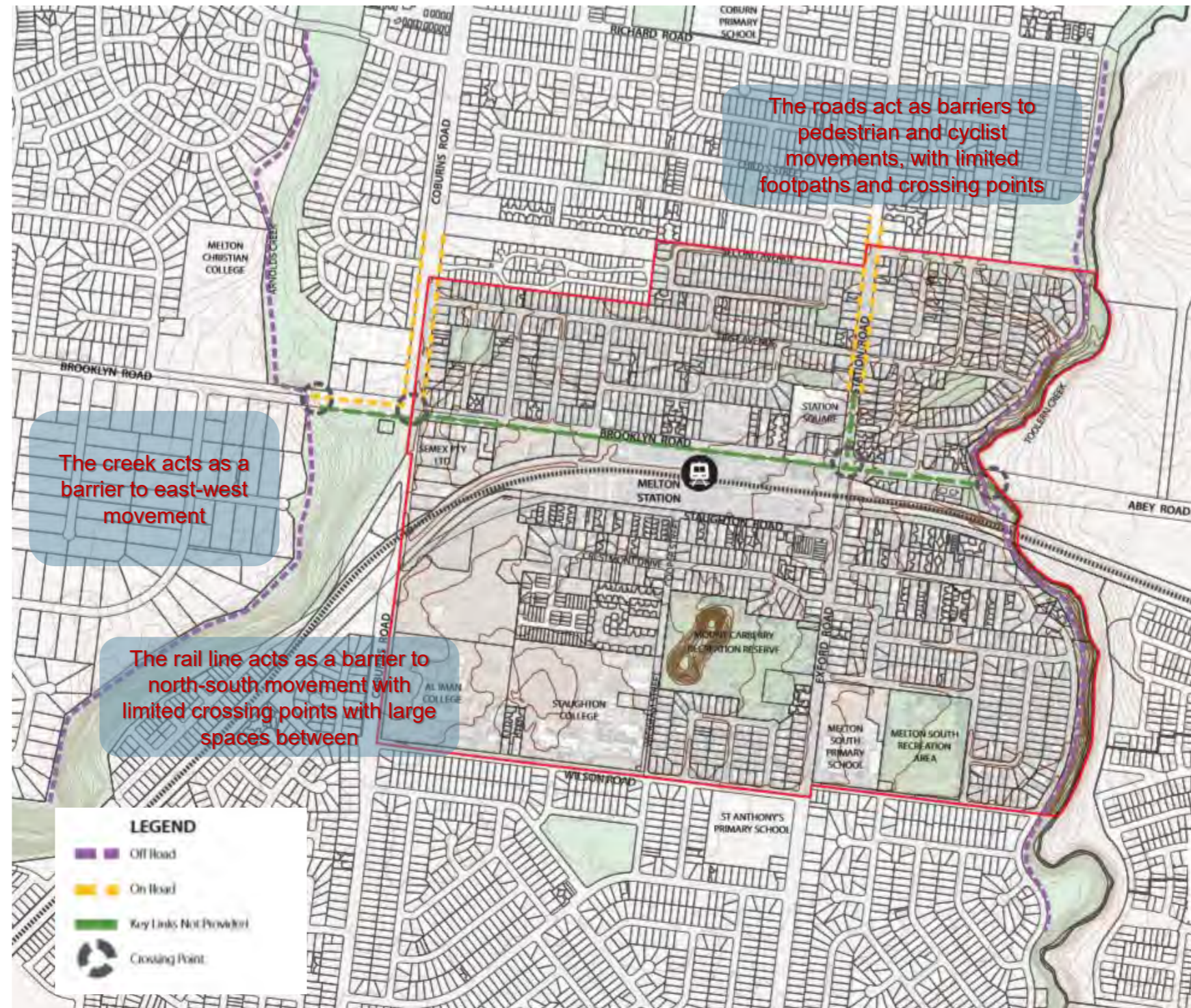


Figure 35: Cycling catchment map showing cycling distance by time from Melton Station

The photographs below show several examples of where the existing cycling facilities are discontinuous or very narrow paths.



Figure 36: Path ends before the roundabout and cyclist is not supported through the intersection



Figure 37: Path is consumed by parking lane



Figure 38: Path is very narrow and places riders within the 'dooring' zone on a 60km/h street

Future Bicycle Network

03

Existing Access & Movement Patterns

Moving Melton Integrated Transport Strategy outlines several cycling network initiatives designed to make cycling a real option for anyone who wants to cycle.

The key initiatives relevant to Melton South are outlined below:

- Develop a Bicycle Network Plan (Figure 40 shows the network map for Melton South)
- Require cycling network for new subdivisions
- Advocate for an off-road cycle route between Melton Township and Metropolitan Melbourne.
- Investigate opportunities to promote walking and cycling.

The future bicycle network builds on the two existing north-south routes on Station Road and Coburns Road. However, as shown on the previous page these existing facilities do not provide a safe cycling environment.

Further work is required to ensure the existing bicycle network provides safe and comfortable riding conditions.

Supporting recommendations:

- Local roads within 2km of the station become low speed environments to encourage on-road cycling and pedestrian crossing activities.
- Connect existing creek trails to Melton Station.
- Provide bicycle parking and end-of-trip facilities at Melton Station and other key trip destinations within Melton South (i.e. retail precinct, Schools, etc.) to help facilitate cycling.
- Work with VicRoads to secure funding for the delivery of a Strategic Cycling Corridor

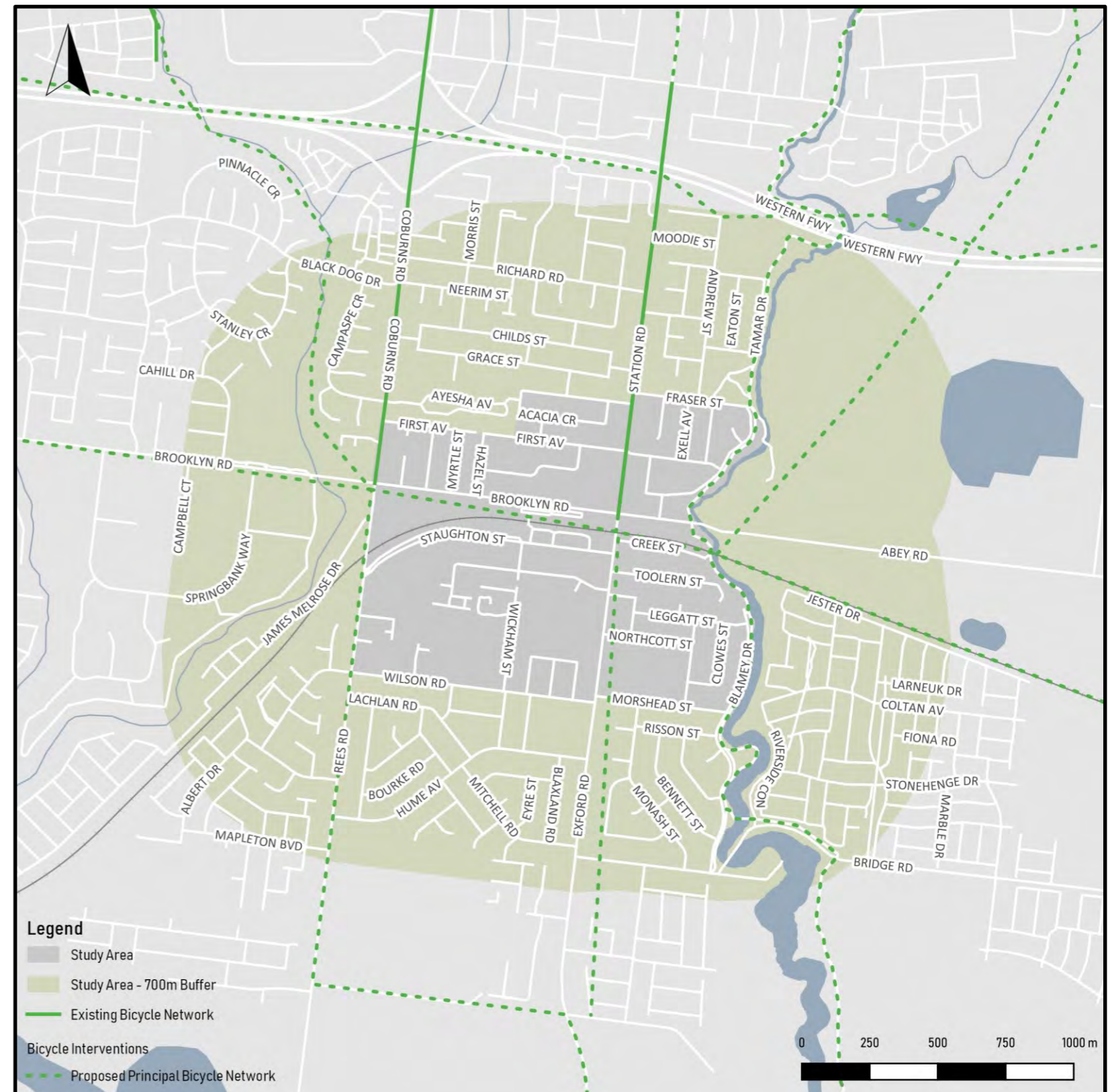


Figure 39: Proposed cycling network adapted from Moving Melton

4.6 Road Safety

In the previous five-year period, a total of 34 crashes occurred within the boundaries of the Study Area, three of these (~10%) involved cyclists and pedestrians, and 11 were classified as serious crashes.

Serious crashes are defined as crashes whereby at least one individual involved was hospitalised. It is important to note that not all crashes are accounted for, as crashes without injury are not recorded.

There were two incidents within the study area involving cyclists and one involving a pedestrian, each of these occurring at different locations.

Most of the incidents occurred on Station Road, Exford Road or Brooklyn Road.

Notably, there were 9 incidents that occurred in the immediate vicinity of Melton Station, though these occurred during a variety of conditions, so no trends can be identified.

Any upgrades to the existing transport network must consider road safety best practice, including the use of Safe Systems principles.

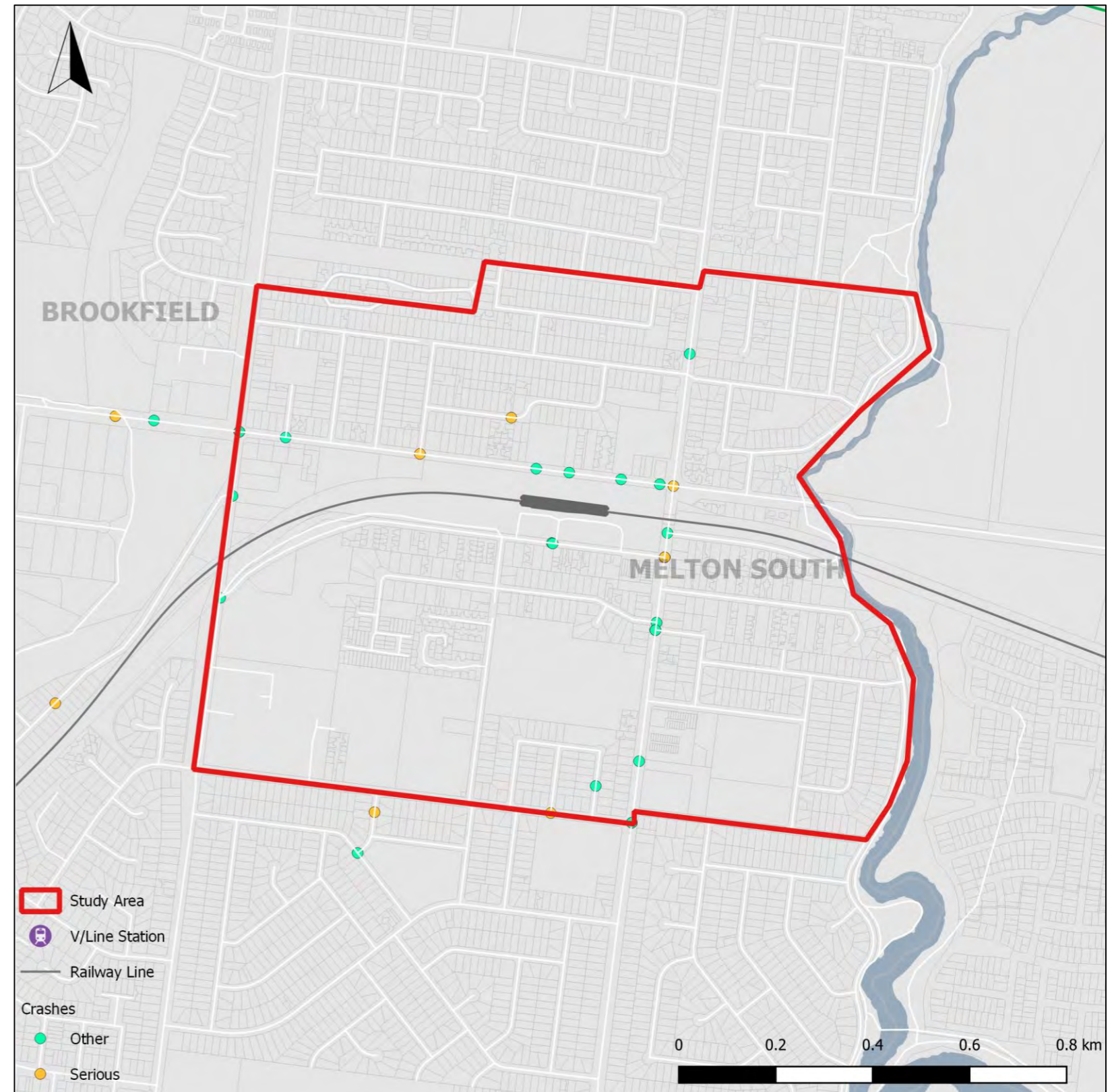


Figure 40: Crash location by severity for crashes between 2013 – 2018

4.7 Technology

Technology is already disrupting how we travel, and is only expected to be more significant into the future

Key Technology Developments

Connected and Automated Vehicles (CAV's) & Electric Vehicles (EV's)

- CAV's include integrated connectivity and automation between vehicles, resulting in improved efficiency and safety, and lower emissions
- EV's offer improved efficiency and lower emissions but require new infrastructure

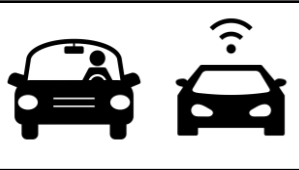


Mobility as a Service (MaaS)

- A shift in mobility preference away from private car ownership and towards a pay per use type scheme
- Commercial vehicles in search of a customer potentially roaming around and/or parked in the area (zombie vehicles)

Impacts on Melton South Structure Plan

- The delivery of road infrastructure will likely support any future roll out of AVs
- If new Council car parking facilities are developed, they should include suitable facilities for EVs (uptake likely 2020 onwards)
- Delivery publicly available parking through more shared facilities that can transition to alternative users (to respond to shared AV future)
- Look at reviewing Planning Scheme to include a provision to recommend higher floor-ceiling heights to allow structures to be converted to other uses in the future.
- Capitalise on having the train station by improving access for pedestrians and cyclists to and from the residential areas, schools and other key trip destinations – this reduces future risks of the key node being an area that is highly congested by AVs (in a Private Ownership AV world)

Adoption is not a certainty, but the following scenarios exist

	<p>Driver VS Driverless</p>	<ul style="list-style-type: none"> • By 2030, it is expected that approximately 15% of cars will be fully autonomous under a high disruption scenario [1] • This could result in vehicle use to become more attractive and increase road way capacities
	<p>Petrol/Diesel VS Electric</p>	<ul style="list-style-type: none"> • In 2017, electric vehicles made up 0.2% of all cars sold in Australia [2] • Charging points in car parks should start being provided
	<p>Private Ownership VS Shared/On-Demand</p>	<ul style="list-style-type: none"> • The ownership model of autonomous vehicles is unknown • Potential integration with other modes of transport

[1] Automotive revolution – perspective towards 2030, How the convergence of disruptive technology-driven trends could transform the auto industry, McKinsey & Company, Advanced Industries, January 2016

[2] The state of electric vehicles in Australia, June 2018, Second Report: Driving Momentum in Electric Mobility, Climate Works Australia and Electric Vehicle Council

4.8 Summary

These demographic, infrastructure and technology changes have the potential to change how people access Melton South, in both good and bad ways

04

Issues & Opportunities
by Transport Mode

DEMOGRAPHICS

The majority of the population growth in the area will be within the adjacent Western Growth Corridor.

This population in the area is expected to far out pace the number of jobs in the area, so accessing them via the highway and rail network will be critical

The number of jobs and students is increasing in Melton South, which should be a catalyst to making it a place in its own right

The increase in job density in the Toolern Metropolitan Activity Centre will create job opportunities in closer proximity to Melton South resulting in a shift in movement patterns

INFRASTRUCTURE

Rail infrastructure investment will likely see Melton Station become a key station in the metropolitan network

The at-grade level crossings are expected to be removed to support the proposed rail services

Better bus services are expected to support the growing station catchment

Investment in walking and cycling networks will support short trips to be undertaken by active transport

An expanded road network and additional station parking facilities will see more driving into Melton South

TECHNOLOGY

Uptake and adoption scenarios are expected to accelerate from approx. 2030, but this is speculative

Connected and Automated Vehicles may increase accessibility but also cause congestion

Integration and ease of multi-modal transport trips may occur, particularly share-car to rail

Electric Vehicle charging points are likely needed earlier

Summary of transport issues and opportunities

04

Issues & Opportunities
by Transport Mode

01

Introduction, Purpose & Process

- Melton South is critical to the success of the Melton Township, but will need to support more vehicles while becoming a place in its own right
- The Structure Plan provides an opportunity to leverage off the locational advantage Melton South provides
- The Transport Access and Movement Background Report will be a key input into the development of the Melton South Structure Plan

03

Existing Issues

- There are a number of existing major movement barriers, such as the rail line, main roads and creeks
- The transport network is reflective of the high reliance on private vehicles, such as the large park and ride facilities at Melton Station
- Pedestrian and bicycle facilities are limited and of a low user focus in connecting key trips
- Rail and bus services operate at low frequencies with limited integration
- There is no pedestrian link between the station and the Melton Station Square Shopping Centre on the northern side.
- The proximate retail and employment land uses are not well connected or talk to Melton South as a place for people to spend time – where is the centre / heart?
- Majority of the recorded crashes in the area occur proximate to and in accessing Melton Station.

02

Policy Review & Implications

- At a State level, transport integration with land use to provide convenient and safe access for users is at the core of their policy settings.
- State Government has also been re-evaluating their strategic approach to transport network development and how they can better support place making for users, such as the application of Movement and Place
- Melton will blend into Melbourne as a result of the Western Growth Corridor, but will need to ensure it remains accessible and liveable throughout
- Local policy highlights that Melton City Council want the precinct to develop as a safe, vibrant and connected place

04

Future Opportunities

- Significant population growth is expected in the adjacent Western Growth Corridor, which could be leveraged off or take the focus of the existing urban areas in the Melton.
- In Melton South there is expected to be significant student and worker growth.
- With the increased worker densities in the Melton South, there is an opportunity to reduce car use in accessing it, which can be further increased through the creation of a pedestrianised core, increased land use diversity and access via alternative transport modes.
- Major transport infrastructure investment is expected in the area, especially with Melton Station and the accessing train services, but this will also likely see increased traffic volumes accessing the station.
- Removal of the level crossings will help to improve accessibility and safety, but only with the inclusion of bicycle and pedestrian facilities.
- There is an opportunity to leverage off emerging technology, but only if planning for them starts now.

05 Vision & Objectives

State and Council Policies and strategies set various transport visions and objectives that the Melton South will need to fit into

The transport visions and objectives within the relevant policies and strategies guiding the development of Melton South are broadly set out below.



- **Vision:** A future transport system which is integrated, built around its users and highly effective
- **Prosperous:** A transport system that stimulates an innovative, diverse, flexible and competitive economy and provides value for money to taxpayers
- **Connected:** A transport system that promotes social and economic participation, increases access to knowledge and skills and balances access to economic opportunity across the state
- **Liveable:** A transport system that creates places where people want to live, enhancing health, safety and security, and lessening the impact on the environment

- **Vision:** A sustainable integrated transport network to meet the needs of the city now and in the future
- *Improved, resilient and sustainable mode choices.*
- *Easy to use, safe, reliable and request transport network and facilities.*
- *Connected transport network – Connecting the communities of the City of Melton to each other and beyond.*
- *A transport system to develop City of Melton as a centre for employment .*

Common themes across State and Council Policy:

- **Liveability:** characterised by robust and complete neighborhoods, accessibility and sustainable mobility, a diverse and resilient local economy, vibrant public spaces, and affordability.
- **Connect with the surrounds:** Melton South as a destination as well as capitalising on the significant growth occurring in close proximity to Melton South
- **Reduce the reliance on private car use:** supporting a transition to public and active modes of transport, including the management of car parking demands
- **Create a sense of place and identify for people:** focus on balancing transport objectives with place making objectives to encourage people to spend time in key centres – resulting in commercial uplift
- **Accessibility and connectivity:** ensuring equitable service provision to support access to opportunities for all residents and visitors to Melton South

These common themes have been translated into a vision for transport in Melton South, with supporting objectives, and enablers as shown over the page.

The transport vision and objectives for the Centre focuses on improving connectivity, access and placemaking

05

Vision & Objectives

Transport Vision:

Make Melton South an attractive and healthy place to live, access and spend time for all current and future residents and visitors.

Transport Related Objectives to Inform the Structure Plan:

Improve connectivity

Leverage off the investment in transport infrastructure to better connect key trip types

Balance external and internal trips

Achieve an integrated transport network that supports all modes

Improve station access

Provide a local fine-grain connected pedestrian and bicycle network

Have a high frequency bus network connecting with proximate residential areas, educational site and employment precincts.

Create a sense of place

Identify Melton South's core / heart

Encourage an increased land use diversity and density in the core / heart

Create a suitable environment in the core / heart to encourage people to spend time

Future Enablers:

- Application of the Movement & Place Framework with TFV
- Investment in, and influence on, transport infrastructure
 - Engage community
 - Partnerships with industry

06 Potential Transport Interventions

Network Upgrades - opportunities and agencies

The Precinct Structure Plan needs to consider the significant volume of work that is occurring within and surrounding the study area by multiple agencies.

The detail and timing of network upgrades is not in any single agencies control, however, the impact of any change to the program may impact Melton's development.



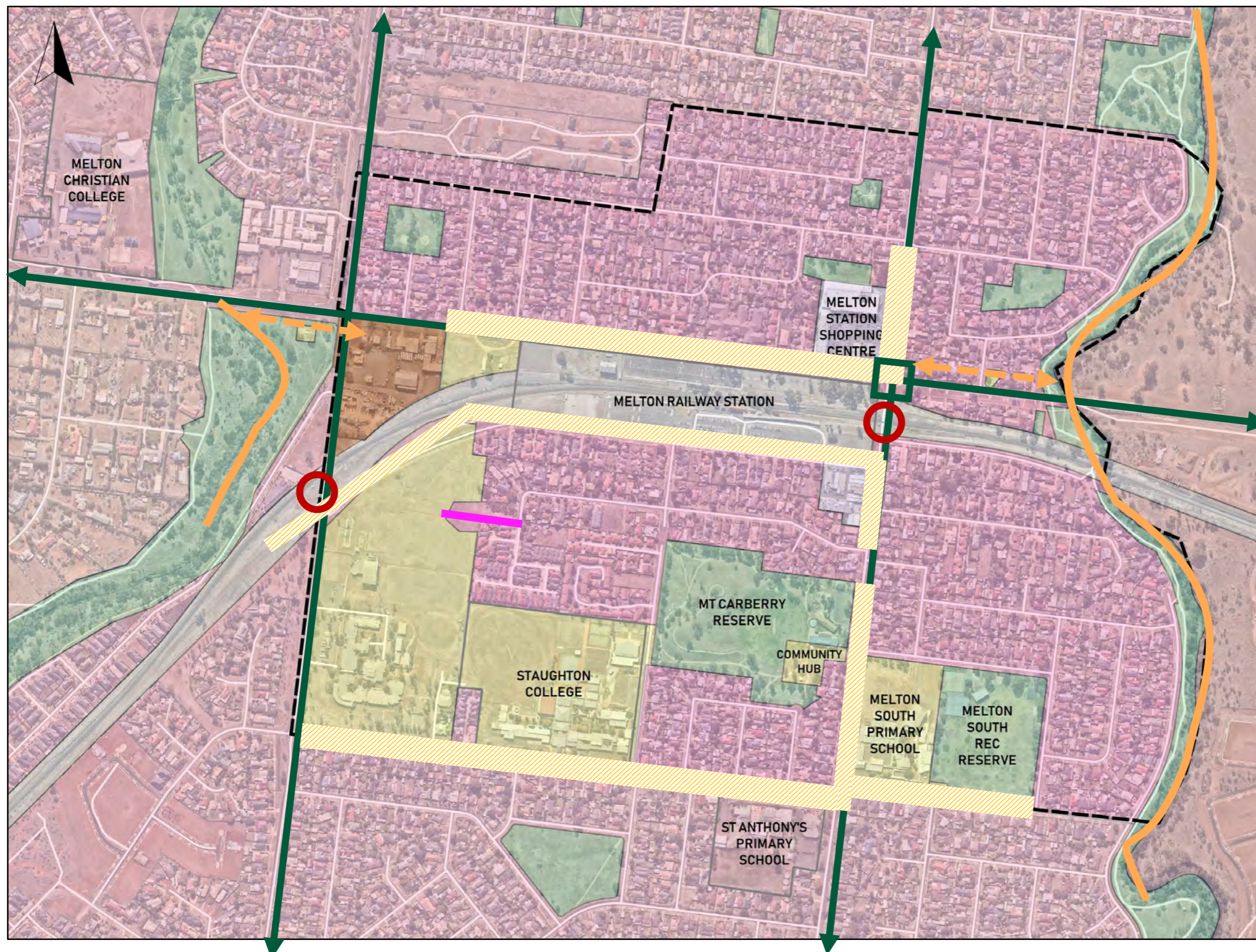
Potential Transport Interventions


The following list of potential transport interventions are provided as part of the Transport Movement and Access Background Report for consideration in the Melton South Structure Plan:


- **Public Transport Network**
 - Facilitate additional and higher frequency buses on the key movement corridors and in accessing the station, as well as provide regular bus stops throughout the precinct to encourage people to use public transport in accessing the study area and use the park and ride facilities.
 - Continue to advocate for rail infrastructure investment to and at Melton Station.
- **Preference modes that are space efficient:**
 - Capitalise on having the train station by improving access for pedestrians and cyclists to and from the residential areas, schools and other key trip destinations.
 - Improve and prioritise bus accessibility and linkages with the station through movement and lane priority measures, especially at signalised intersections
 - Reallocate road space and slow down traffic on roads adjacent to active land uses to support place functions (improving the local neighbourhoods)
- **Walking & Cycling Network**
 - Identify where the core / heart of Melton South is and make it a pedestrianised environment with weather projection, seating and high quality urban landscaping.
 - Footpaths within 2km of the station to be connected with no missing links and crossings of movement corridors.
 - Local roads within 2km of the station become low speed environments to encourage on-road cycling and pedestrian crossing activities.
 - Connect existing creek trails to Melton Station.
 - Provide bicycle parking and end-of-trip facilities at Melton Station and other key trip destinations within Melton South (i.e. retail precinct, Victorian University, Schools, etc.) to help facilitate cycling.
- **Establish and work towards a mode split target**
 - Progressively aim to reduce the car mode share for those accessing the precinct by:
 - improve access to key destinations by the alternatives
 - increase land use diversity and employment density
 - Make the key destinations attractive places to spent time
 - The mode split target should be used to guide investment and planning decisions.
- **Road Network**
 - Provide key north-south and east-west through corridors.
 - Continue to advocate for level crossing removals to improve flows along the main north-south corridors through Melton South.
 - Ensure key roads in the precinct adjacent to active land uses are low speed environments that provide safer environments for pedestrians and cyclists, and help support place making.
 - Provide signalised intersection at Brooklyn Rd / Exford Rd / Station Rd to help manage vehicle and pedestrian conflicts.
 - Install 40km/h speed zones along roads with active land uses (i.e. Schools and Station).
- **Car Parking**
 - Deliver publicly available parking through more shared facilities (rather than link to only one development) that can transition to alternative users.
 - Locate station park and ride facilities more to the periphery with more direct access the north-south corridors through Melton South.
 - Minimise crossovers within the precinct to improve footpath connectivity.
 - Design parking so people are encouraged to walk into Melton South Centre

A number of the above potential transport interventions are illustrated on the plan on the next page. These are strategic directions/recommendations that must be reviewed during the delivery phase of the structure plan.

Potential Transport Interventions



 Key corridor with low speeds and reallocation of road space to facilitate place function adjacent key land uses. Suitable pedestrian crossings to be considered.


 Provide a new link to facilitate bicycle and pedestrian access between Al Iman College site and the Station

 Level crossing removal

 Key movement corridor

 Proposed traffic signals

 Existing pedestrian corridor

 Improve access to pedestrian network

Minimise crossovers

The entirety of Melton South is within walking distance (i.e. less than 2km) from Melton Railway Station.

- All local roads within the precinct to be low speed to facilitate on-road cycling
- Footpaths to be connected with no missing links

MELTON SOUTH STRUCTURE PLAN

TRANSPORT ACCESS & MOVEMENT

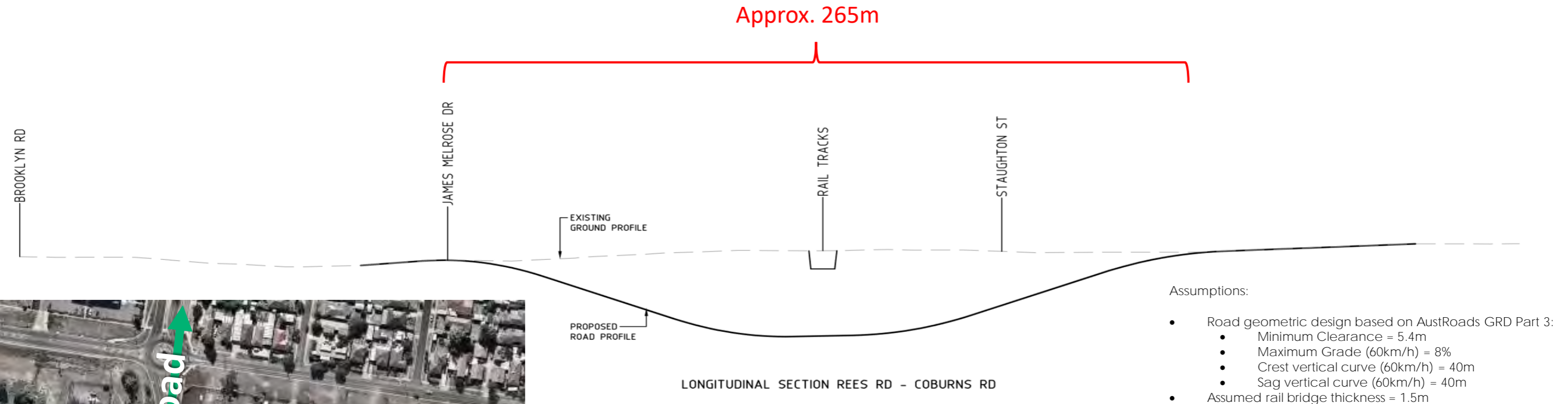
Attachment 1: Road & Rail Grade Separation



Options Investigated – Road Under & Rail Over



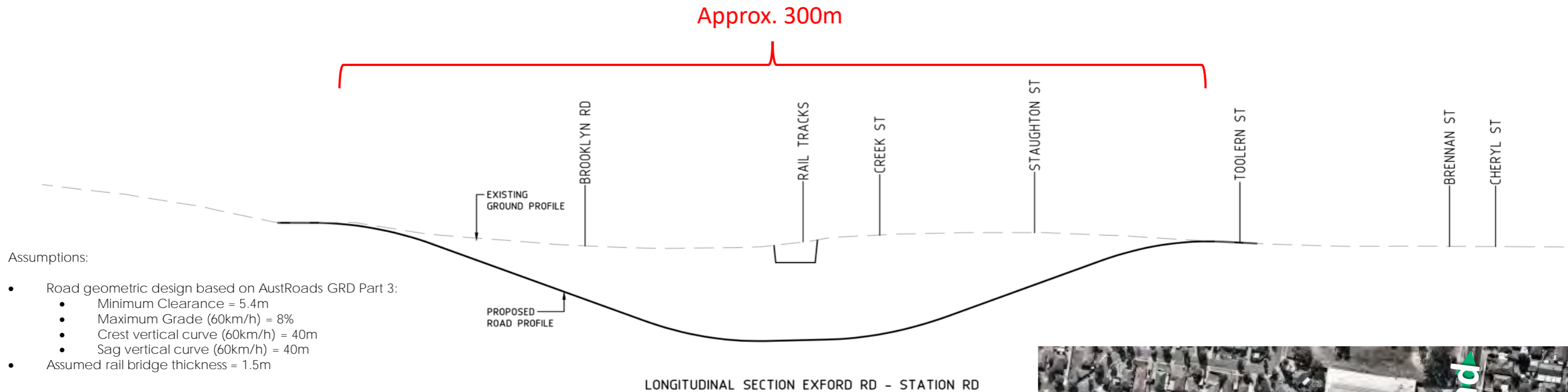
Road Under - Coburns Road & Ballarat Rail Line



Issues & Opportunities:

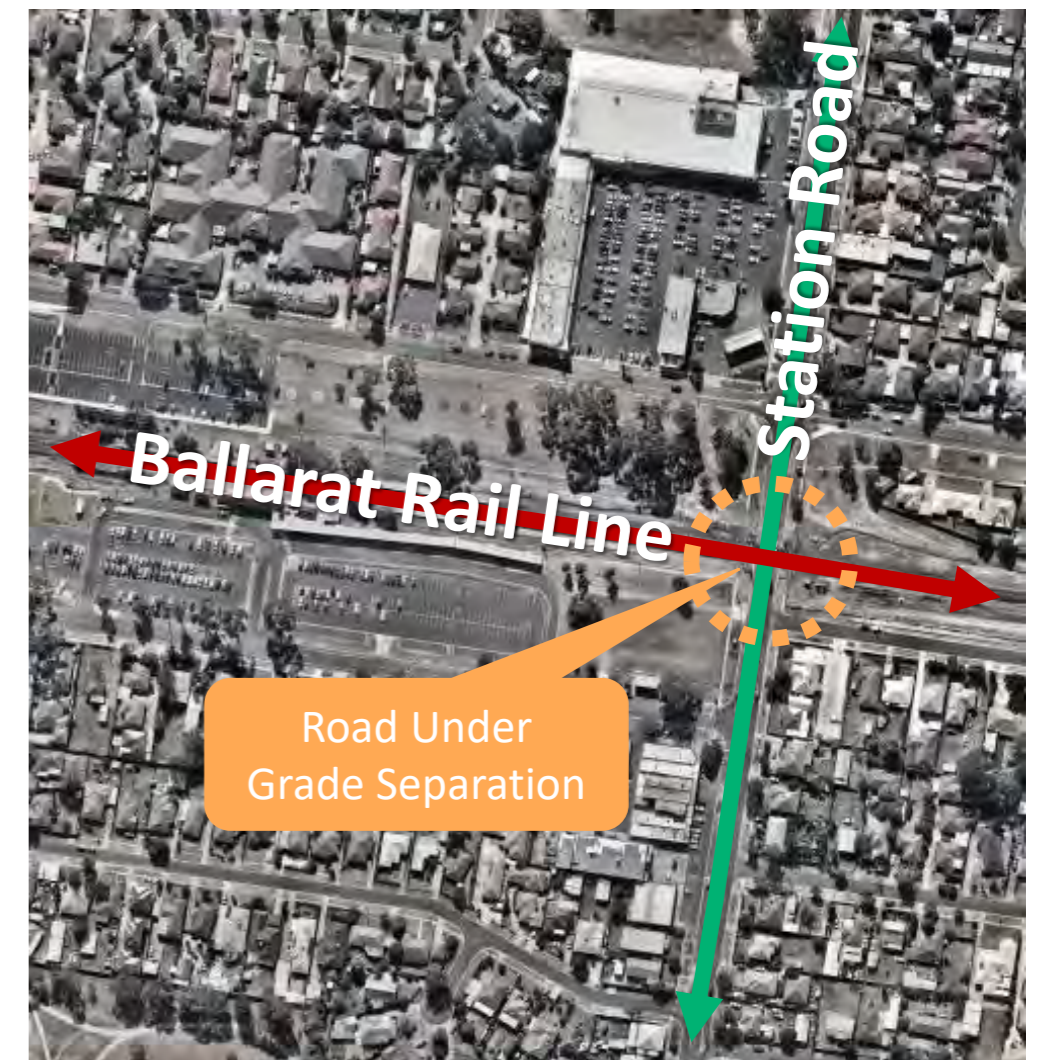
- Road under rail along Coburns Road seems practical
- Would need to modify Coburns Road / James Melrose Drive intersection
- Would need to remove / relocate Coburns Road / Staughton Street intersection
- Pedestrian and bicycle facilities should be included
- Rail line still forms a significant movement barrier
- Road over rail would require a longer structure as height clearance over rail is higher than road clearance under

Road Under - Station Road / Exford Road & Ballarat Rail Line



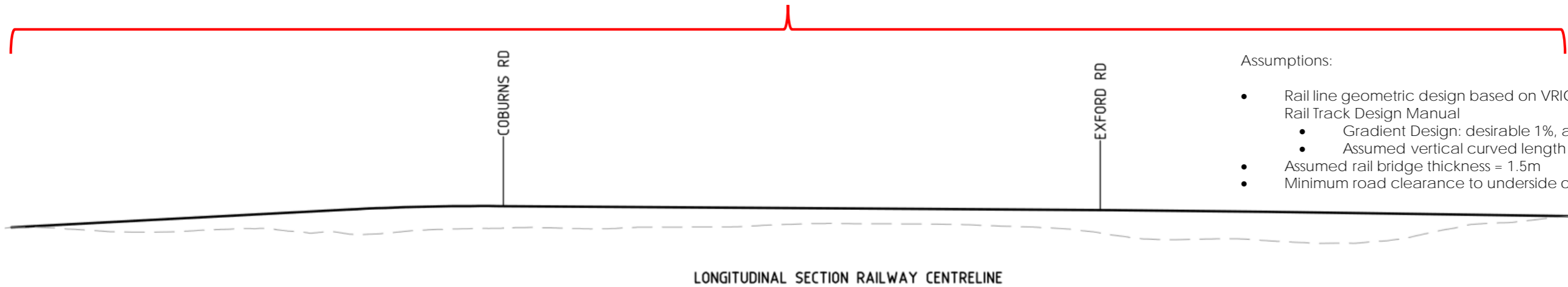
Issues & Opportunities:

- Road under rail along Station Road and Exford Road does not seem practical, because it would extend beyond adjacent intersections in both directions, including Brooklyn Road / Abey Road intersection
- Would impact access to the station and various properties
- Pedestrian and bicycle facilities should be included in the scheme
- Rail line still forms a significant movement barrier
- Road over rail would require a longer structure as height clearance over rail is higher than road clearance under



Rail Over - Ballarat Rail Line

Approx. 2,500m



Assumptions:

- Rail line geometric design based on VRIOGS 004.1 Heavy Rail Track Design Manual
 - Gradient Design: desirable 1%, absolute limit 2%
 - Assumed vertical curved length 240m
- Assumed rail bridge thickness = 1.5m
- Minimum road clearance to underside of bridge = 5.4m



Issues & Opportunities:

- High cost option given extent of rail infrastructure needing to be raised
- Rail line would extend beyond Toolern Creek to the east before tying back into existing levels
- Would have increased visual and noise impacts
- Would require the station to be raised, so require pedestrian ramps to access
- Limits opportunities to co-locate stabling facilities (in response to future electrification), or would also need to be raised
- Would significantly improve pedestrian and bicycle permeability through the precinct
- Provides opportunities for ground floor development if suitable uses can be identified

MELTON SOUTH STRUCTURE PLAN

