Traffix Group

Traffic and Vehicle Access Assessment

Heidelberg Road, Fairfield / Alphington

Prepared for
City of Yarra

November 2019

G27460R-01B

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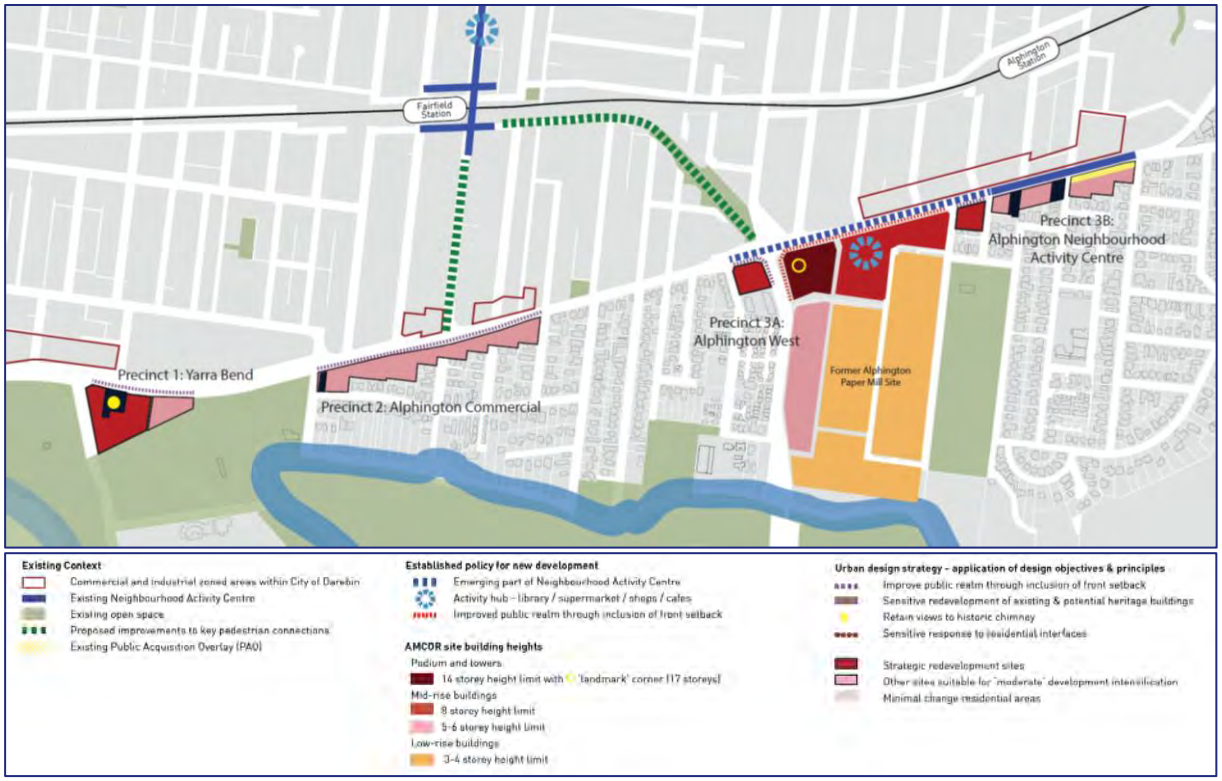
1. Introduction

Yarra City Council has completed a Built Form Framework study for the Heidelberg Road Corridor in Fairfield and Alphington. This Built Form Framework defines the preferred future built form character of the precincts and include principles, guidelines and requirements to guide future development and to manage the level of change. Importantly, this framework will inform the preparation of Design and Development Overlay (DDO) controls and policy for the area.

The study area is detailed in the following figure, as set out within the Urban Design Strategy – Summary Plan (prepared by Hodyl & Co), and comprises Heidelberg Road between Merri Creek and Darebin Creek, development/access to C1Z, C2Z and MUZ areas on the south side of Heidelberg Road (the Yarra CC side of the road) as well as impacts to the adjacent local road network. We note that the study area does not include the Former Alphington Paper Mill Site.



The current use of the land within the study area is currently predominantly commercial in nature. This will change towards a greater proportion of residential development within the commercially zoned land.

The likely increase in residential development throughout the area poses transport challenges for all modes along the Heidelberg Road Corridor and the immediate area. Specific issues which have arisen as part of the local area plan insofar as they relate to transport matters include:

- The increase in overall traffic movements is likely to exacerbate existing issues, including potentially increasing conflicts with other vulnerable road users, increase to bus travel times. The development of the Alphington Paper Mill site is likely to further exacerbate these isues.
- The limited bus operating times, lack of bus shelters and lack of priority movements along Heidelberg Road and at intersections are likely detractors from utilising bus services.
- Inconsistent, shared nature and non-existent provision of bicycle lanes along Heidelberg Road through the precinct discourages bicycle riders (particularly less confident riders).
- A lack of separation from fast moving traffic, lack of crossing opportunities and short traffic light cycles and associated long waiting times for pedestrians make walking less attractive, limit accessibility to services and reduce the potential synergies between businesses on either side of Heidelberg Road.
- Uncertainty with regard to the intention of the Public Acquisition Overlay to potentially widen Heidelberg Road.
- Challenges with regard to vehicle access to potential development sites which do not have frontages to local roads or laneways.

While the traffic impacts of growth along the Heidelberg Road Corridor is acknowledged as a consideration, there is strategic policy support to facilitate increased commercial and residential development in this area. In considering the planning of similar centres across Melbourne, Planning Panels have acknowledged that “future congestion should not stifle development” and the “challenge of managing the road network should not prevent the Amendment from progressing”.

It is important that this project recognises the network constraints, the strong strategic support for development in the precinct, and the approach of Planning Panels in the discussion and advice on the future traffic conditions and future performance of Heidelberg Road and the local road network. In particular, this project must help to ensure that future consideration of traffic issues is focused on how best to manage the impacts of future development through improved access arrangements and measures to promote sustainable and active modes of travel through new development.

Traffix Group has been engaged by Yarra City Council to undertake a high level assessment of the future traffic conditions and performance of Heidelberg Road and the local street network taking into account the planned future development, prepare access and movement plans and provide input into the content of the future Design and Development Overlay to facilitate appropriate access and movement throughout the Heidelberg Road Corridor. The objective of the access and movement plans and the DDO is to facilitate ‘best practice’ access controls to properties abutting Heidelberg Road.

2. Scope & Methodology

The purpose of this study is to provide:

- a high level assessment of the future traffic conditions and performance of Heidelberg Road and local street network, with the planned future development,
- access and movement plan for the study area showing the location and form of new, altered and retained access arrangements and laneways required to provide appropriate access to future developments,
- advice on the content of the future Design and Development Overlay to facilitate appropriate access and movement through new development, and
- undertake a review of the existing public transport, bicycle and pedestrian considerations and infrastructure within the study area.

2.1. Methodology

The adopted methodology for undertaking this study was as follows:

- Undertake a case study of Victoria Street, which is a similar nearby inner urban area which has experienced significant growth in residential development along the corridor over the past 10 years, focusing on the “before” and “after” data for key transport measures, including traffic volumes, bicycle usage and public transport changes.
- Use the Victoria Street example as a basis for assessing the potential impacts additional development may have on the transport network, including the network performance of Heidelberg Road and the local road network as well as increased public transport use and the like.
- Undertake thorough site inspections of the entire study area to document and map:
  - existing access arrangements for each individual property,
  - existing traffic management treatments for all arterial and local roads and laneways/carriageway easements within the study area,
  - existing configuration of each road and laneway/carriageway easement within the study area (including carriageway width and road reservation width), and
  - foreseeable access constraints to each individual property should development occur.
- Liaise with representatives from Council to understand the relevant concerns and desirable access outcomes having regard to the potential impact on the safety and efficiency of the road network.
- Prepare “access” maps showing the preferred location and form of new, altered and retained access arrangements and laneways required to provide appropriate access to future developments, in consultation with Council.
- Review the traffic engineering and transport aspects of the future Design and Development Overlay, which sets out design objectives and outcomes, permit application requirements, and decision guidelines for assessing future planning permit applications, based on the desired access outcomes for future development.

2.2. Reference documents

The following reference documents were used in relation to this assessment

- Heidelberg Road Built Form Framework, Urban Context Analysis - Part 1, prepared by Hodyl & Co (dated September, 2019),
- Heidelberg Road Built Form Framework, Design Strategy & Recommendations - Part 2, prepared by Hodyl & Co (dated September, 2019),
- Heidelberg Road Corridor – Background Issues and Discussion Paper (dated 10th September, 2019),
- Heidelberg Road Corridor Draft Local Area Plan (dated 15th August, 2019), and
- Heidelberg Road – Transport Relevant Sections of proposed interim Design and Development Overlay.

3. Policy Context

3.1. Plan Melbourne 2017-2050

Plan Melbourne is the State Government plan that will guide the growth of Melbourne city for the next 35 years. It sets the strategy for supporting jobs, housing and transport, while building on Melbourne's legacy of distinctiveness, liveability and sustainability.

The plan includes a number of key transport and urban planning objectives that are relevant to the Heidelberg Road Corridor. The most relevant objectives are listed in the table below.

Table 1: Key Objectives of Plan Melbourne in relation to the Heidelberg Road Corridor

Outcome	Directions	Policy
Outcome 2 Melbourne provides housing choice in locations close to jobs and services.	Manage the supply of new housing in the right locations to meet population growth and create a sustainable city.	Facilitate an increased percentage of new housing in established areas to create a city of 20-minute neighbourhoods close to existing services, jobs and public transport.
	Deliver more housing closer to jobs and public transport.	Facilitate well-designed, high-density residential developments that support a vibrant public realm in Melbourne's central city. Direct new housing and mixed-use development to urban renewal precincts and sites across Melbourne. Support new housing in activity centres and other places that offer good access to jobs, services and public transport Provide support and guidance for greyfield areas to deliver more housing choice and diversity.

Outcome	Directions	Policy
Outcome 3 Melbourne has an integrated transport system that connects people to jobs and services and goods to market.	Transform Melbourne's transport system to support a productive city.	Provide high-quality public transport access to job-rich areas. Improve arterial road connections across Melbourne for all road users. Provide guidance and certainty for land use and transport development through the Principal Public Transport Network and the Principal Freight Network. Improve the efficiency of the motorway network. Support cycling for commuting.
	Improve local travel options to support 20-minute neighbourhoods.	Create pedestrian-friendly neighbourhoods. Create a network of cycling links for local trips. Improve local transport choices.
Outcome 5 Melbourne is a city of inclusive, vibrant and healthy neighbourhoods.	Create a city of 20-minute neighbourhoods.	Create mixed-use neighbourhoods at varying densities. Support a network of vibrant neighbourhood activity centres.
	Create neighbourhoods that support safe communities and healthy lifestyles.	Improve neighbourhoods to enable walking and cycling as a part of daily life.

3.2. State Planning Policy Framework (SPPF)

Clause 18 of the SPPF details state-wide objectives, strategies and policy guidelines relating to transport, including land use and transport planning, the transport system, walking, cycling, the principal public transport network, management of the road system, car parking ports, airports and freights.

The SPPF Transport objectives that are relevant to Yarra are set out in Table 2 below.

Table 2: SPPF Transport Objectives

Clause	Objectives
18.01-1 Land Use and Transport Planning	To create a safe and sustainable transport system by integrating land-use and transport.
18.01-2S Transport System	To coordinate development of all transport modes to provide a comprehensive transport system.
18.02-1S Sustainable Personal Transport	To promote the use of sustainable personal transport.
18.02-2S Cycling	To integrate planning for cycling with land use and development planning and encourage as alternative modes of travel.

Clause	Objectives
18.02-2R Principal Public Transport Network	To upgrade and develop the Principal Public Transport Network and local public transport services in Metropolitan Melbourne to connect activity centres, link activities in employment corridors and link Melbourne to the regional cities.
18.02-3S Management of the Road System	To manage the road system to achieve integration, choice and balance by developing an efficient and safe network and making the most of existing infrastructure.
18.02-4S Car Parking	To ensure an adequate supply of car parking that is appropriately design and located.

Detailed state-wide requirements in relation to car parking, loading and bicycle parking are set out at Clause 52.06, 65.01 and 52.34 of the Planning Scheme respectively.

3.3. Local Planning Policy Framework

While Clause 18 sets out the state-wide planning policy in relation to transport, each Council also sets its own local policies at Clauses 20, 21 and 22 of the Planning Scheme.

Clause 21 sets out the Municipal Strategic Statement (MSS).

Clause 21.03 sets out the vision for the municipality, as follows:

Land Use

- *The City will accommodate a diverse range of people, including families, the aged, the disabled, and those who are socially or economically disadvantaged.*
- *Yarra will have increased opportunities for employment.*
- *There will be an increased provision of public open space.*
- *The complex land use mix characteristic of the inner City will provide for a range of activities to meet the needs of the community.*
- *Yarra's exciting retail strip shopping centres will provide for the needs of local residents, and attract people from across Melbourne.*

Built Form

- *Yarra's historic fabric which demonstrates the development of metropolitan Melbourne will be internationally recognised.*
- *Yarra will have a distinctive identity as a low-rise urban form, with areas of higher development and highly valued landmarks.*
- *People will safely get together and socialise in public spaces across the City.*
- *All new development will demonstrate design excellence.*

Transport

- *Local streets will be dominated by walkers and cyclists.*

- *Most people will walk, cycle and use public transport for the journey to work.*

Environmental sustainability

- *Buildings throughout the City will adopt state-of the-art environmental design.*
- *Our natural environment will support additional species of flora and fauna.*

This vision is pursued by the objectives and strategies set out in the land use, built form, transport, environmental sustainability and neighbourhood sections under Clauses 21.04-21.08.

Clause 21.06 sets out Yarra's detailed local Transport policy. The preamble states the following:

Yarra needs to reduce car dependence by promoting walking, cycling and public transport use as viable and preferable alternatives. This is also a key message of Melbourne 2030 and fundamental to the health and well-being of the community.

While the scope of the planning scheme in managing an integrated transport system is limited, Council will work towards improving the quality of walking and cycling infrastructure as a priority. Note that the term "walking" includes people who use wheelchairs.

Parking availability is important for many people, however in Yarra unrestricted car use and parking is neither practical nor achievable. Car parking will be managed to optimise its use and to encourage sustainable transport options.

The specific objectives and strategies for Transport management in Yarra are detailed in Table 3 below.

Table 3: LPPF Transport Objectives & Strategies

Clause	Objective	Strategies
21.06-1 Walking & Cycling	To provide safe and convenient pedestrian and bicycle environments.	30.1 Improve pedestrian and cycling links in association with new development where possible. 30.2 Minimise vehicle crossovers on street frontages. 30.3 Use rear laneway access to reduce vehicle crossovers.
21.06-2 Public Transport	To facilitate public transport usage.	31.1 Require new development that generates high numbers of trips to be easily accessible by public transport.
21.06-3 The Road System & Parking	To reduce the reliance on the private motor car.	32.1 Provide efficient shared parking facilities in activity centres. 32.2 Require all new large developments to prepare and implement integrated transport plans to reduce the use of private cars and to encourage walking, cycling and public transport.
	To reduce the impact of traffic.	33.1 ensure access arrangements maintain the safety and efficiency of the arterial and local road networks. 33.2 Ensure the level of service needed for new industrial and commercial operations does not

Clause	Objective	Strategies
		prejudice the reasonable needs of existing industrial and commercial operations to access Yarra's roads.

The City of Yarra is currently undertaking a review of a number of Municipal Strategic Statement (MSS) policy themes, including Transport.

Yarra's Planning Scheme Review – Report on Findings (October 2014) sets out the following in relation to the current Transport policy in the Planning Scheme:

> *An effective and efficient transport network is at the heart of a vibrant, equitable and prosperous municipality. In inner city environments, the management of the limited road and transport space and resources can require balancing of a number of objectives. This is a particular challenge in Yarra, due to the travel demands generated by:*
>
> - *the strategic location of the municipality on the edge of the central city*
> - *the significant and growing mobile population, and*
> - *the presence and proximity of major event attractors.*
>
> *Transport is currently addressed separately in the Context and Vision provisions of the Scheme as well as in strategy at Clause 21.06. It is also addressed in some specific policies such as the parking, access and traffic provisions of Built Form and Design Policy (Clause 22.10).*
>
> *The current policy expresses a preference to reduce car dependency and encourage walking, cycling and public transport use. This appears to have had some success, with Yarra having a higher bicycle use rate than other parts of Melbourne.*
>
> *There are still, however, inconsistencies regarding the requirement for Green Travel Plans, the use of car share schemes and reductions or waiving of on-site car parking.*
>
> *Carparking was considered a particularly contested political issue in the initial consultation; any position or strategy regarding carparking is unlikely to satisfy all stakeholders. The Parking Strategy and Local Area Transport Management Policy provides a framework for the development of local area traffic management schemes.*
>
> *The Scheme would be assisted with clear direction about how Council seeks to facilitate greater use of public transport, walking and cycling, and how and in what circumstances this will translate into reduced car parking, car sharing schemes and the like. The approach should include consideration of car parking in activity centres on a precinct wide basis (rather than site-by-site) as well as strategies relating to visitor car parking and increased bicycle parking.*

3.3.1. Clause 22.07 – Development Abutting Laneways

The City of Yarra has a specific policy in relation to development abutting laneways.

The local policy identifies the need to retain existing laneways and enhance their amenity. It also states that, where appropriate, laneway access for vehicles is to be used in preference to street frontages to reduce vehicle crossovers.

Objectives

- *To provide an environment which has a feeling of safety for users of the laneway.*
- *To ensure that development along a laneway acknowledges the unique character of the laneway.*
- *To ensure that where development is accessed off a laneway, all services can be provided to the development.*
- *To ensure that development along a laneway is provided with safe pedestrian and vehicular access.*

Policy

It is policy that:

- *Where vehicular movement in the laneway is expected to cause a material traffic impact, a traffic impact assessment report be provided to demonstrate that the laneway can safely accommodate the increased traffic.*
- *Where alternative street frontage is available, pedestrian access from the street be provided.*
- *Pedestrian entries be separate from vehicle entries.*
- *Pedestrian entries be well lit to foster a sense of safety and address to a development. Existing lights may need to be realigned, or have brackets or shields attached or additional lighting may be required.*
- *Lighting be designed to avoid light spill into adjacent private open space and habitable rooms.*
- *Vehicle access be provided to ensure ingress and egress does not require multiple vehicular movements.*
- *Windows and balconies overlook laneways but do not unreasonably overlook private open space or habitable rooms on the opposite side of the laneway.*
- *Development respect the scale of the surrounding built form*
- *Development not obstruct existing access to other properties in the laneway.*
- *Doors to car storage areas (garages) not protrude into the laneway.*
- *The laneway not be used for refuse storage.*
- *All laneway upgradings which provide improved access to the development be funded by the developer.*
- *The laneway meet emergency services access requirements.*

Relevant additional policies and studies (which do not form part of the Planning Scheme) are summarised below.

3.3.2. Council Transport Statement 2006

City of Yarra's Strategic Transport Statement 2006 sets out a clear desire to reduce car dependence in the City of Yarra by promoting walking, cycling and public transport use as viable and preferable alternatives.

The Strategic Transport Statement sets out the following hierarchy of transport modes which forms the basis for decision making and actions related to transport in the City:

1. Pedestrians (including wheelchairs and walking with prams)
2. Cyclists
3. Tram
4. Bus/train
5. Taxi users/car sharers
6. Freight vehicles
7. Motorcyclists
8. Multiple occupants local traffic
9. Single occupants local traffic
10. Multiple occupants through traffic
11. Single occupants through traffic

The vision of Council's Transport Statement 2006 is … *"to create a city which is accessible to everyone irrespective of levels of personal mobility and where a fulfilling life can be had without the need for a car"*.

There are seven key Strategic Transport Objectives (STO) to achieve this vision.

Of particular relevance is STO 5, which is to … *"ensure Council's response to parking demand is based on Yarra's hierarchy and sustainable transport principles"*.

3.3.3. Transport Statement Review 2012

The City of Yarra's Strategic Transport Statement was reviewed in 2012.

Relevant key actions include the following:

- *Develop guidelines for assessing planning permit applications for car parking dispensation.*
- *Develop guidelines for car share operators that address the issues of location, number of bays and signage so that operators are clear as to the process and responsibilities.*

3.3.4. Yarra Parking Management Strategy

The Yarra Parking Management Strategy provides the framework around Yarra's policies for parking permit schemes, parking enforcement, the provision of disability access parking, managing parking around shopping strips, signage and all other parking-related issues and topics.

Council's website states that the fundamental aims of the Strategy are:

- *to reduce the number of cars parking in Yarra,*
- *to promote public transport as an alternative to driving, and*
- *to ensure visitors contribute to the cost of providing Yarra's parking infrastructure.*

A key aim underpinning this strategy is Council's desire to promote sustainable travel, such as cycling, walking and public transport.

Action Area 4 of Council's Parking Management Strategy is an integrated approach for Municipal Parking Strategy and in particular identifies a need to further develop Yarra's policy to provide a disincentive to car ownership and use by working with other sections of Council to promote behaviour change, sustainable transport and introduce more sustainable transport infrastructure.

3.3.5. Liveable Yarra Project

In 2015 Council undertook an extensive community engagement process known as the "Liveable Yarra Project". The consultation consisted of a number of elements including a People's Panel, Advisory Committees, and Targeted Community Workshops, and covered a range of topics, one of which was "Access and Movement".

The "engagement summary" document prepared by Capire Consulting Group (January 2016) summarised the consultation in relation to access and movement as follows:

> *"Access and movement received the highest number of priority votes at 64. Actions around the improvement of cycling, walking and non-automotive transport modes were strongly supported. Panel members suggested trialling street closures to "reclaim" street share for cyclists and pedestrians. The trade-off of busier arterials was seen as largely acceptable pending the trials. Panel members were very supportive of Council efforts to lobby for public transport upgrades."*

The specific Access and Movement recommendations which were summarised in the "engagement summary" document are as set out in Table 4 below.

Table 4: Summary of Parking Recommendations from Liveable Yarra Project

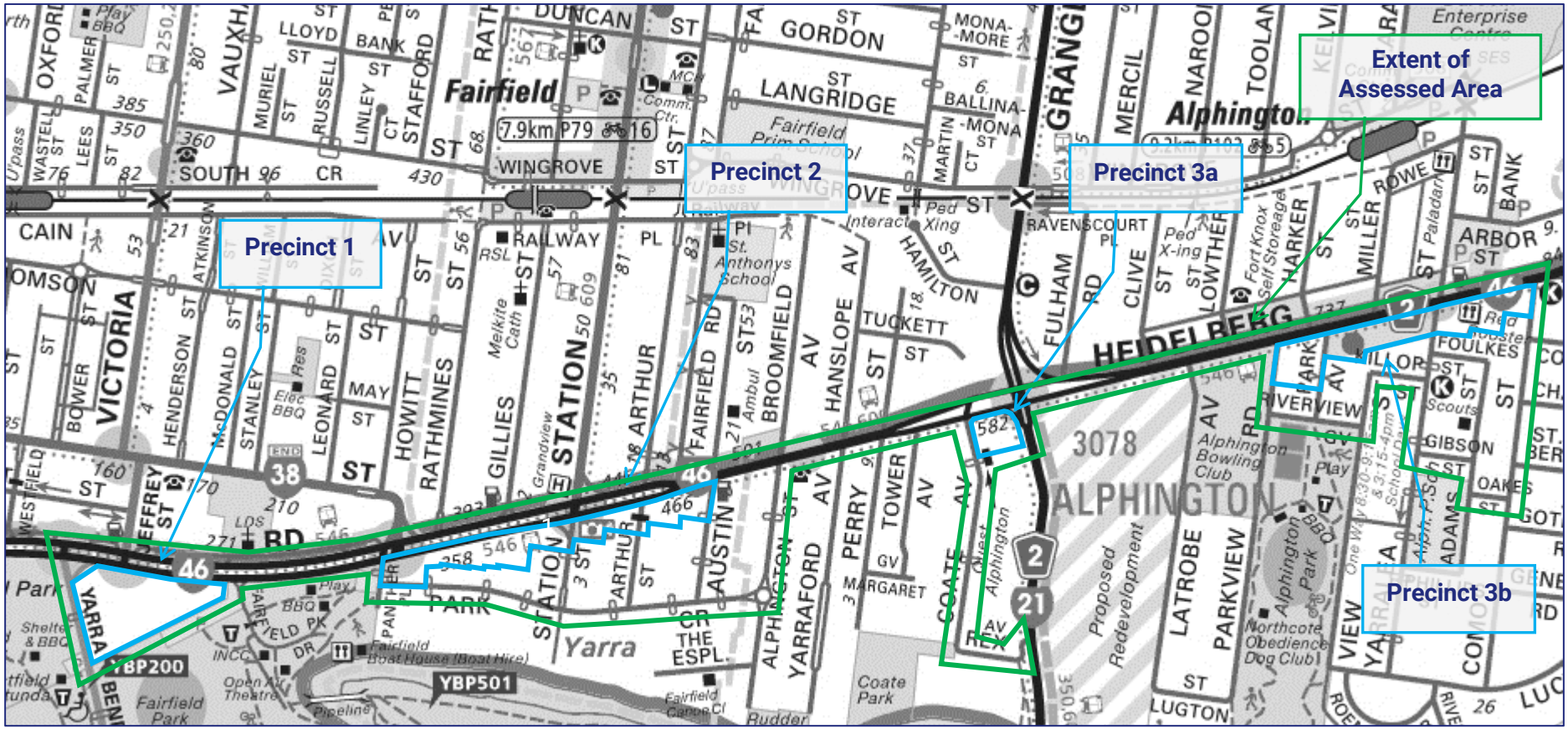
Action No.	Action	Support from People's Panel
1	Articulate targets for street share. Develop a municipality wide plan for transport and access.	86% support 12% not sure 2% disagree
2	Close local (residential) streets to through traffic including living streets.	36% support 48% not sure 16% disagree
3	Increase space for pedestrians and bikes, dedicated lanes/corridors. Decrease car space on the streets.	63% support 22% not sure 15% disagree
4	Require better bicycle parking as part of major development.	76% support 14% not sure 10% disagree
5	Reduce barriers that discourage riding, improve safety, connections, lighting. Council to provide additional cycling infrastructure – a comprehensive network that consistently provides a good level of service.	75% support 18% not sure 7% disagree
6	Move away from a "predict and provide" approach to providing car parking in new development.	86% support 12% not sure 2% disagree
7	Continue to work with State Government to improve performance of current public transport infrastructure assets.	36% support 48% not sure 16% disagree
8	Continue lobbying for improved public transport (new infrastructure and services).	63% support 22% not sure 15% disagree

4. Existing Conditions

4.1. Study Area

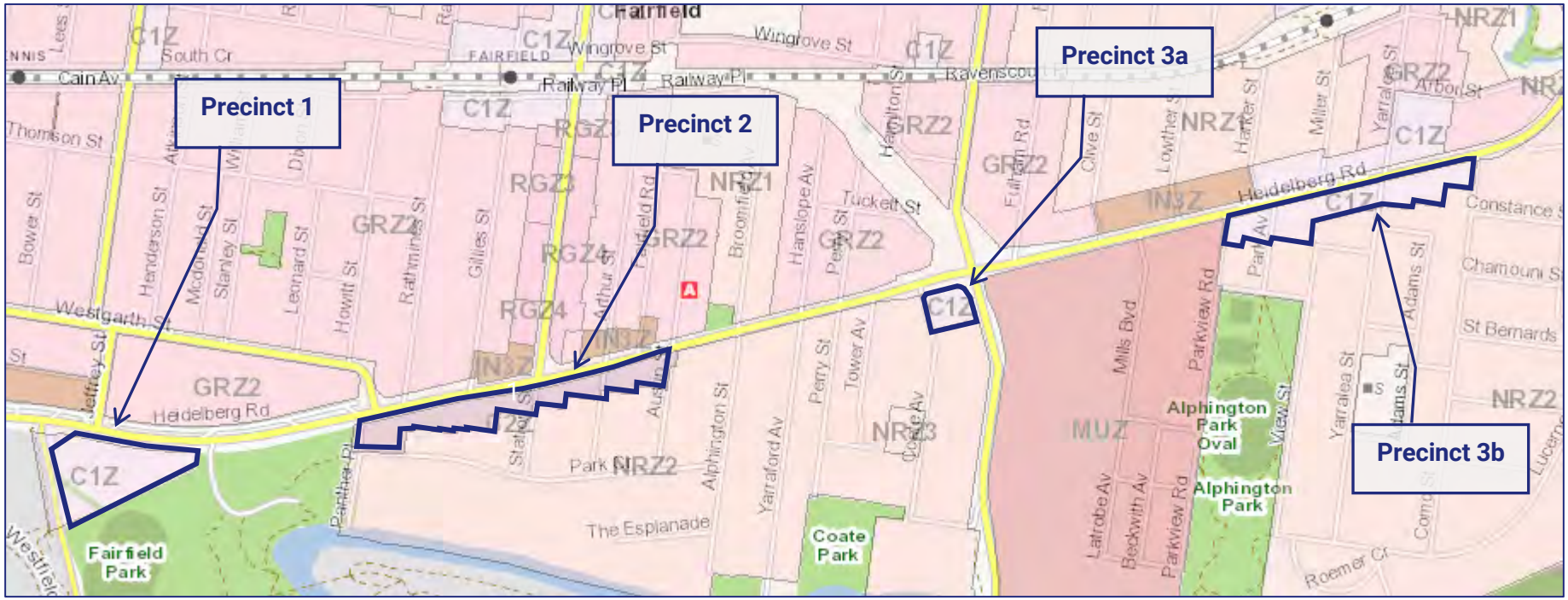
The study area extends for an approximately 1.2km long section of Heidelberg Road between Yarra Bend Road and Como Street as shown in the locality plan provided on the following page at Figure 1. The total study area is spread out along this stretch of Heidelberg Road and comprises of 4 precincts (Precincts 1, 2, 3a and 3b). The study area straddles City of Yarra and City of Darebin with Heidelberg Road separating the two municipalities.

Land within the study area is generally zoned either 'Commercial 1 Zone' or 'Commercial 2 Zone', as detailed in the Land Use Zoning Map at Figure 2.



Source: Melway

Figure 1: Locality Map



Source: VicPlan

Figure 2: Land Use Zoning Map

Land use within the study area generally comprises a mixture of commercial and industrial use along Heidelberg Road and residential areas immediately north and south of Heidelberg Road.

Key features and land uses located in close proximity of the study area include:

- Alphington Station, located at the north-east corner of the study area.
- Fairfield Station, located west of Station Street and centrally north of the study area.
- Former Alphington Paper Mill, a proposed redevelopment of a mixed use precinct within Precinct 3a on the corner of Chandler Highway and Heidelberg Road.
- Alphington Park, located at the intersection of Parkview Road and Riverview Grove.
- Fairfield Park, located west of Panther Place.
- Yarra Bend Park, located west of Yarra Bend Road.
- Yarra River, located south of the study area.
- Heidelberg Road Neighbourhood Activity Centre is located at the east end of the study area.
- Fairfield Village Neighbourhood Activity Centre is located approximately 450m north of Heidelberg Road.
- Eastern Freeway, located approximately 1km south of the study area.

All of these areas are readily accessible from various parts of the study area via walking, cycling or a short public transport trip.

4.2. Alphington Paper Mill Site

Whilst not located within the study area, the former Alphington Paper Mills site is located in between Precinct 3a and 3b, and accordingly the considerations of the associated development plan for this site is relevant to our assessment of the overall study area.

The Development Plan for the former Alphington Paper Mills site was endorsed in May, 2016, with the following key elements included within the overall plan (quoted from Council's website):

- *4.5% open space*
- *1700 square metres of community facilities and multi-purpose sports court*
- *30 metre wide buffer to the Yarra River*
- *5% affordable housing provision*
- *13,500 square meters of retail and commercial floor space*
- *Estimated 2500 dwelling in the form of town houses and apartments.*

The development plan has been informed by the following objectives (as set out within the overview of the Development Plan documentation:

- *A vibrant community that retains links to the former Alphington Paper Mill and industrial structures of heritage significance. These structures will be adapted and / or interpreted where practical to maintain a visual link to the site's industrial history.*
- *Thriving mixed use precincts, including a well-connected town centre, a village piazza and a community and learning hub. Provide increased live / work opportunities, education and community uses, affordable housing, higher density housing, retail and hospitality.*
- *An increased range of dwelling types that contribute to increased diversity within the local area and respond to changing household sizes, includes 5 per cent of the total dwellings as affordable housing.*
- *A traditional street pattern that efficiently utilises the existing street network, provides a street frontage to the heritage structures to be retained and responds to the topography of the site.*
- *A landscape character relative to the scale of development proposed, which brings the leafy character of Alphington Park and streets into the site before transitioning to the main street landscape envisioned for the northwest corner of the site. North / south corridors link to an industrial heritage landscape and the Yarra River as well as the 'Paper Trail' linear park. These distinctive landscapes contribute to the identification of a series of neighbourhoods with diverse identities and character.*

4.3. Road Network

The following describes the higher order roads within close proximity to the study area, and which have a direct impact on the study area. This study has also reviewed the local roads and laneways within the study area and a detailed review of the existing conditions of these streets is included at Appendix A of this report.

Due to the location of the Yarra River, and associated lack of north-south routes, travelling to and from the south from the Heidelberg Road corridor is somewhat restricted and can only be provided via Chandler Highway. This has impacts on all modes of transport, particularly on cycling and walking

The configuration of **Heidelberg Road** varies considerably throughout each of the precincts. Along its entirety, Heidelberg Road is a VicRoads declared arterial road and Road Zone Category 1 and extends throughout the study area in an east-west direction.

At **Precinct 1**, Heidelberg Road is configured with three lanes in each direction separated by a central median. The westbound carriageway accommodates a kerbside bicycle lane/car parking lane. The westbound carriageway accommodated a kerbside bicycle lane and a service road accommodating one lane for eastbound traffic and kerbside car parking.

The speed limit within this precinct is 60km/h.

Figure 3: Precinct 1 – Heidelberg Road – view east

Figure 4: Precinct 1 – Heidelberg Road – view west

At **Precinct 2**, Heidelberg Road is generally configured with three lanes in each direction separated by a central median with the kerbside lanes accommodating on-street car parking outside of Clearway times. Localised widening occurs at the signalised intersections to accommodate turn lanes. Towards the east end of the precinct, Heidelberg Road narrows to two-lanes in each direction.

The speed limit within this precinct is 60km/h.

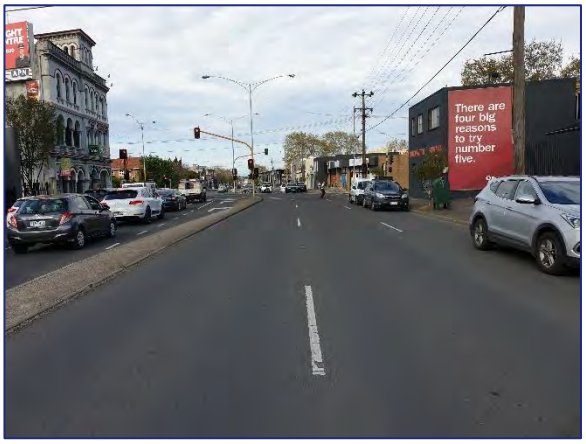


Figure 5: Precinct 2 – Heidelberg Road – view east

Figure 6: Precinct 2 – Heidelberg Road – view west

Either side of **Precinct 3a**, Heidelberg Road is configured with two lanes in each direction, with the kerbside lanes accommodating on-street car parking outside of Clearway times. Localised widening occurs at the signalised intersection with Chandler Highway to accommodate three lanes and turn lanes.

The speed limit within this precinct is 60km/h.

Figure 7: Precinct 3a – Heidelberg Road – view east

Figure 8: Precinct 3a – Heidelberg Road – view west

At **Precinct 3b**, Heidelberg Road is configured with two lanes in each direction, with the kerbside lanes accommodating on-street car parking outside of Clearway times. Localised widening occurs at the signalised intersection with Yarralea Street to accommodate right turn lanes from Heidelberg Road.

The speed limit within this precinct is generally 60km/h, with a 40km/h limit applying west of Park Avenue, relating to roadwork.

Figure 9: Precinct 3b – Heidelberg Road – view east

Figure 10: Precinct 3b – Heidelberg Road – view west

Chandler Highway is a VicRoads declared arterial road and Road Zone Category 1 which extends in a north-south direction between Heidelberg Road in the north (where it continues as Grange Road) and the Earl Street in the south (where it continues as Princess Street).

Chandler Highway is separated by a central median and typically provides three through traffic lanes in each direction, with kerbside bicycle lanes on both sides. No Stopping restrictions apply along both sides of Chandler Highway.

A posted speed limit of 60km/h applies to Chandler Highway in the vicinity of the study area.

Within the study area (south of Heidelberg Road), **Station Street** is a local road[1] which extends in a north-south direction between Heidelberg Road in the north, where it becomes a VicRoads declared arterial road and Road Zone Category 1, and a dead end in the south.

Station Street typically provides one through traffic lane in each direction with indented kerbside parallel parking on both sides. On-street parking is typically short-term (2P).

A posted speed limit of 40km/h applies to Station Street south of Heidelberg Road.

Figure 11: Station Street - view north

Figure 12: Station Street - view south

Westgarth Street is a VicRoads declared arterial road and Road Zone Category 1 which extends in an east-west direction between Heidelberg Road in the east and Merri Parade in the west.

Westgarth Street typically provides one through traffic lane in each direction, with dedicated bicycle lane on both sides. Kerbside parking is provided adjacent to the bicycle lanes on both sides. On-street parking is generally unrestricted.

A posted speed limit of 60km/h applies to Westgarth Street.

Yarra Bend Road is a local road[1]which extends in a north-south direction between Heidelberg Road in the north and a loop road to the south, which provides access to the parklands.

Yarra Bend Road provides one through traffic lane in each direction. No kerbside parking is provided on both sides of Yarra Bend Road and limited indented parking are provided on the west side of the road.

The default suburban speed limit of 50km/h applies to Yarra Bend Road.

[1] As defined in the City of Yarra Road Management Plan Register of Public Roads, dated 4th July, 2017.

Figure 13: Yarra Bend Road - view north

Figure 14: Yarra Bend Road - view south

4.3.1. Arterial Road Traffic Volumes

The following table sets out the Average Annual Daily Traffic Volumes of the arterial roads within the study area. This information is sourced from the VicRoads Arterial Road Database (April, 2018).

Table 5: Arterial Road Traffic Volumes (Source: VicRoads Arterial Road Database – April 2018)

Road Name	Average Annual Daily Traffic Volume (two-way)
Heidelberg Road (each precinct)	
Btw Westfield St/Jeffrey St (Precinct 1)	30,000
Btw Jeffery St/Westgarth St (Precinct 1)	30,000
Btw Westgarth St/Station St (Precinct 2)	29,000
Btw Station St/Chandler Hwy (Precinct 3a)	28,000
Chandler Highway	
Btw Heidelberg Rd/Yarra Bvd	40,000
Grange Road	
Btw Chandler Hwy/Separation St	22,000
Station Street	
Btw Heidelberg Rd/Separation St	16,900
Westgarth Street (north and south)	
Btw Heidelberg Rd/Jeffrey St	6,400

4.3.2. Existing Parking Conditions

On-street parking within the study area is a mixture of short-term (2P or less), medium-term (3 & 4P), unrestricted and permit zone restrictions.

Parking along the south side of Heidelberg Road within the study area is generally unrestricted outside of Clearway 6:30am-9:30am Mon-Fri times, with some short-term parking within Precinct 3b.

Parking within the local streets in the vicinity of the study area is generally controlled by short-term restrictions.

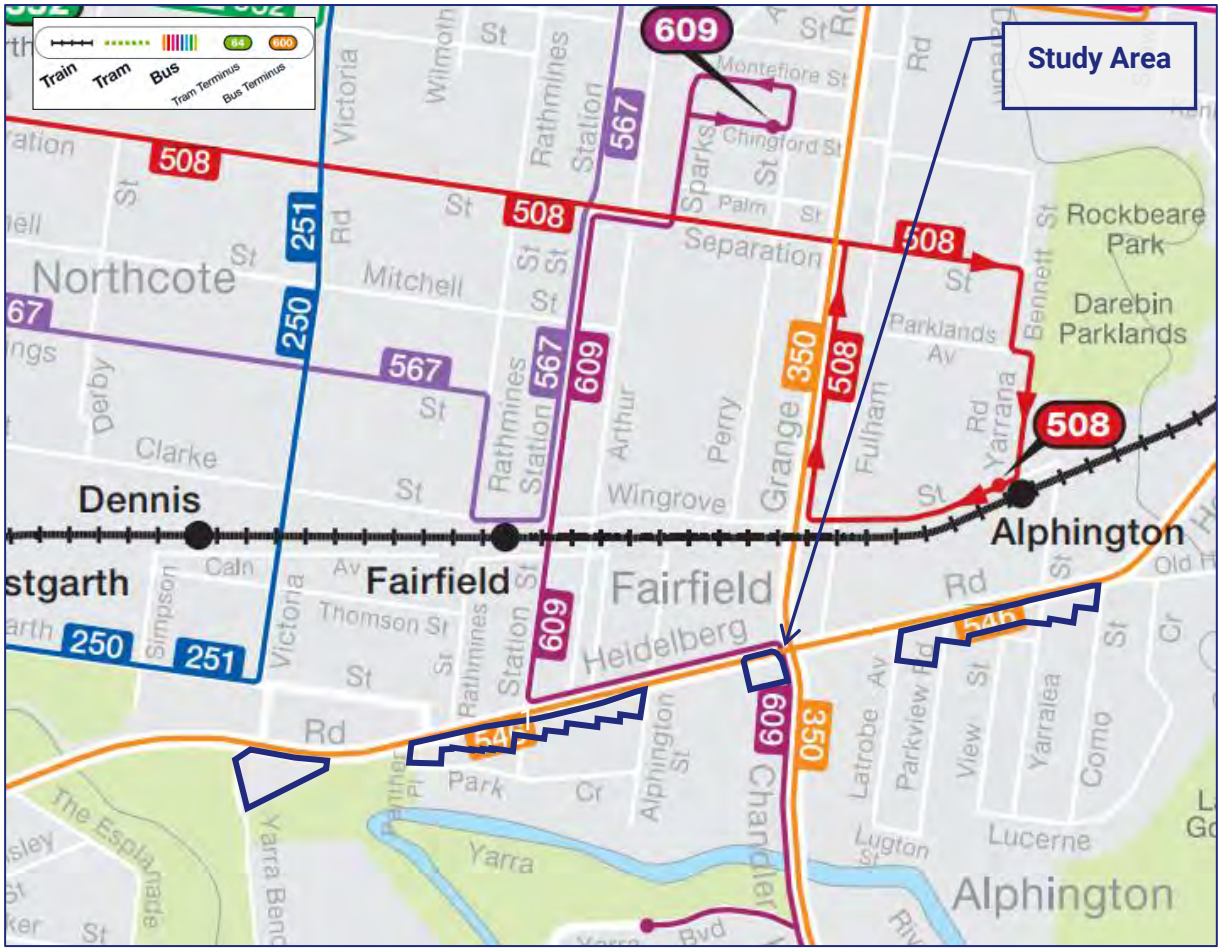
A map detailing the various car parking restrictions throughout each precinct is provided at Appendix B.

4.4. Public Transport

The study area has access to a number of public transport services including rail and bus services within walking distance of the study area.

The existing public transport services within close proximity of the study area are shown on the Public Transport Map at Figure 15 and a summary provided at Table 6.

The study area is partially located within the PPTN Area, as detailed in the map at Figure 16.



Source: Public Transport Victoria

Figure 15: Public Transport Map

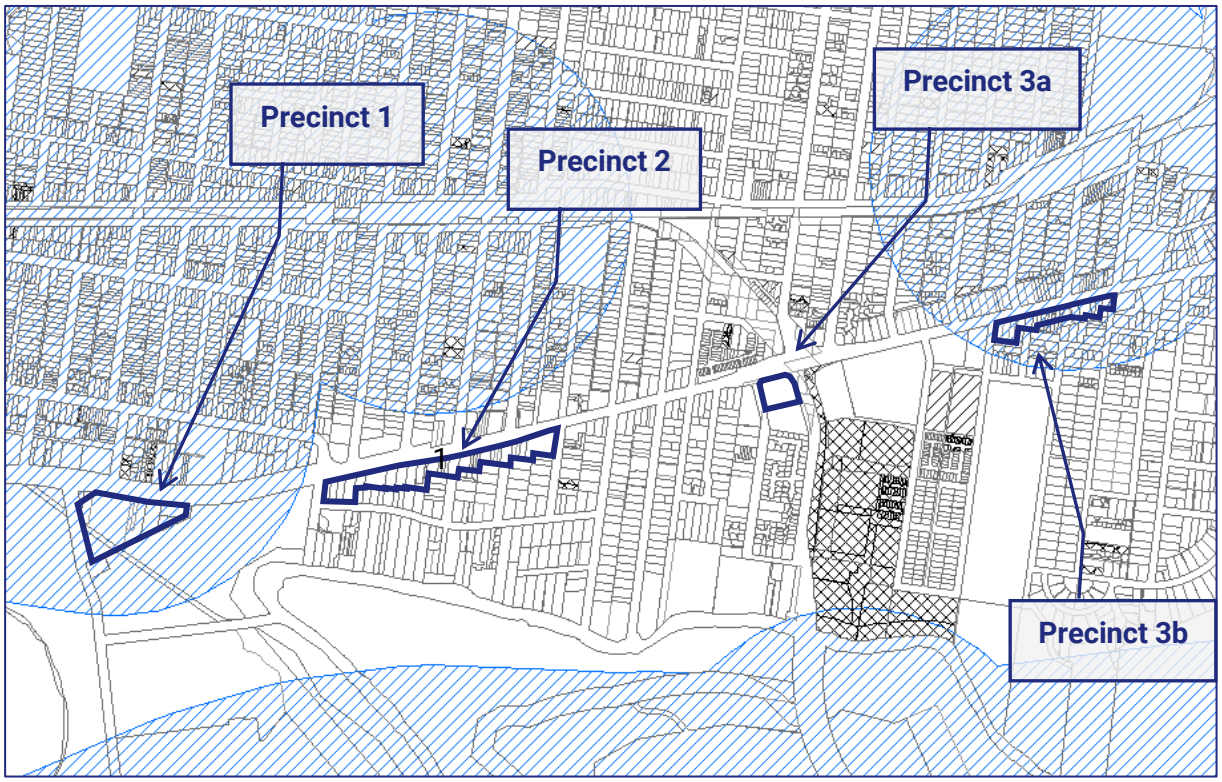


Figure 16: PPTN Map

Table 6: Summary of Public Transport Services

Service	Between	Via	Operating Times (Frequency)		
			Weekday	Saturday	Sunday
Dennis Station, Fairfield Station and Alphington Station – located north of study area					
Hurstbridge Line	Hurstbridge & City	Alphington	Operate at high frequency		
Heidelberg Road – operates through the study area					
Bus Route 546	Heidelberg Station & Queen Victoria Market	Clifton Hill & Carlton	6:20am-6:50pm 30 minutes	Does Not Operate	
Bus Route 609	Hawthorn & Fairfield	Kew	8:05am-1:55pm 60 minutes	Does Not Operate	
Grange Road – located north of the study area					

Service	Between	Via	Operating Times (Frequency)		
			Weekday	Saturday	Sunday
Bus Route 350	La Trobe University & City	Eastern Freeway	7:05am-6:30pm 20 minutes	Does Not Operate	
Westgarth Street – located north of the study area					
Bus Route 250	La Trobe University & City	Westgarth	5:30am-11:20pm 20-30 minutes	6:15am-11:45pm 30-40 minutes	6:40am-10:45pm 30 minutes
Bus Route 251	Northland SC & City	Westgarth	6:50am-8:50pm 20 minutes	7:20am-7:10pm 30-40 minutes	8:25am-5:45pm 40 minutes
Wingrove Street – located north of the study area					
Bus Route 508	Alphington Railway Station & Moonee Ponds	Northcote & Brunswick	5:30am-10:35pm 10-20 minutes	6am-11:35pm 30-60 minutes	8:20am-10:40pm 40-60 minutes

We note that the bus services which travel south, along Chandler Highway, do not operate on the weekend and as such, it is not possible to travel south of the Yarra river efficiently on the weekends.

Similarly, the bus routes which operate along the Heidelberg Road throughout the study area do not operate on the weekends.

The remaining bus services do not operate at high frequency during peak or off-peak times.

4.5. Sustainable Travel Modes

The study area is served by an adequate network of bicycle routes, albeit with some discontinuity and functionality issues. Figure 17 below shows the Travel Smart Map for the study area.

Figure 17: Travelsmart Map

Source: City of Yarra

4.5.1. Cycling

Heidelberg Road provides on-road bicycle lane between Yarra Bend Road/Station Street and Coates Avenue/Chandler Highway. The other sections of Heidelberg Road within the study area are nominated as an informal bicycle route. The bicycle lanes along Heidelberg Road within the study area are disconnected are inconsistent. They are relatively unsafe and not well suited to less experienced cyclists. While there are dedicated bike lanes in some sections many parts of Heidelberg Road either have no bike lane or one shared with parked cars outside the clearway times. In practice the discontinuous route will be of little value to inexperienced cyclists.

On-road bicycle lanes are provided on several of the north-south streets which intersect the study area including Westgarth Street, Station Street, and Chandler Highway. Key off-road bicycle routes include the Capital City Trail to the west, the Main Yarra Trail along the Yarra River to the south and a bicycle trail which extends along the Eastern Freeway.

Chandler Highway provides a good connection from the study area to the south, via dedicated on-street bicycle lanes from Heidelberg Road to the Eastern Freeway. To the south of the Eastern Freeway an-off-road shared path continues to the south-east.

4.5.2. Car Share

As shown on the TravelSmart map at Figure 17, two car share vehicles located north of the study area, in the vicinity of Fairfield Railway Station.

4.5.3. Walking

The study area is somewhat walkable where only some services and destinations are within a convenient walking distance. The Walkscore[2] map for Fairfield and Alphington is illustrated in Figure 18, with a score of 69. This is a measure of the level of accessibility to local services by walking. The score is classified as 'Somewhat Walkable', which states that some errands can be accomplished on foot.

We note that the main pedestrian connection to local services within close proximity to the study area is via Heidelberg Road. The main shopping precinct in close proximity to the study area is Fairfield Village, which is located at least 500m from Precinct 2 of the study area, with greater walking distance for the remaining precincts. We note that level of accessibility to local services within the study area will increase when the development at Alphington Paper Mill site is complete. Upon completion, the development will add additional services including retail shops, restaurant, banks, post office and commercial uses.

The following railway stations are within close proximity to the study area:

- **Dennis Station**, located approximately 750m walking distance from Precinct 1 (10 minutes walk).
- **Fairfield Station**, located approximately 700m walking distance from Precinct 2 (10 minutes walk).

[2] https://www.walkscore.com/AU-VIC/Melbourne/Alphington

- **Alphington Station,** located approximately 850m walking distance from Precinct 3a and 550m walking distance from the east end of Precinct 3b (7-10 minutes walk).

The study area also has access to several walking routes including The Main Yarra Trail along the Yarra River and walking paths through Coate Park and Alphington Park.

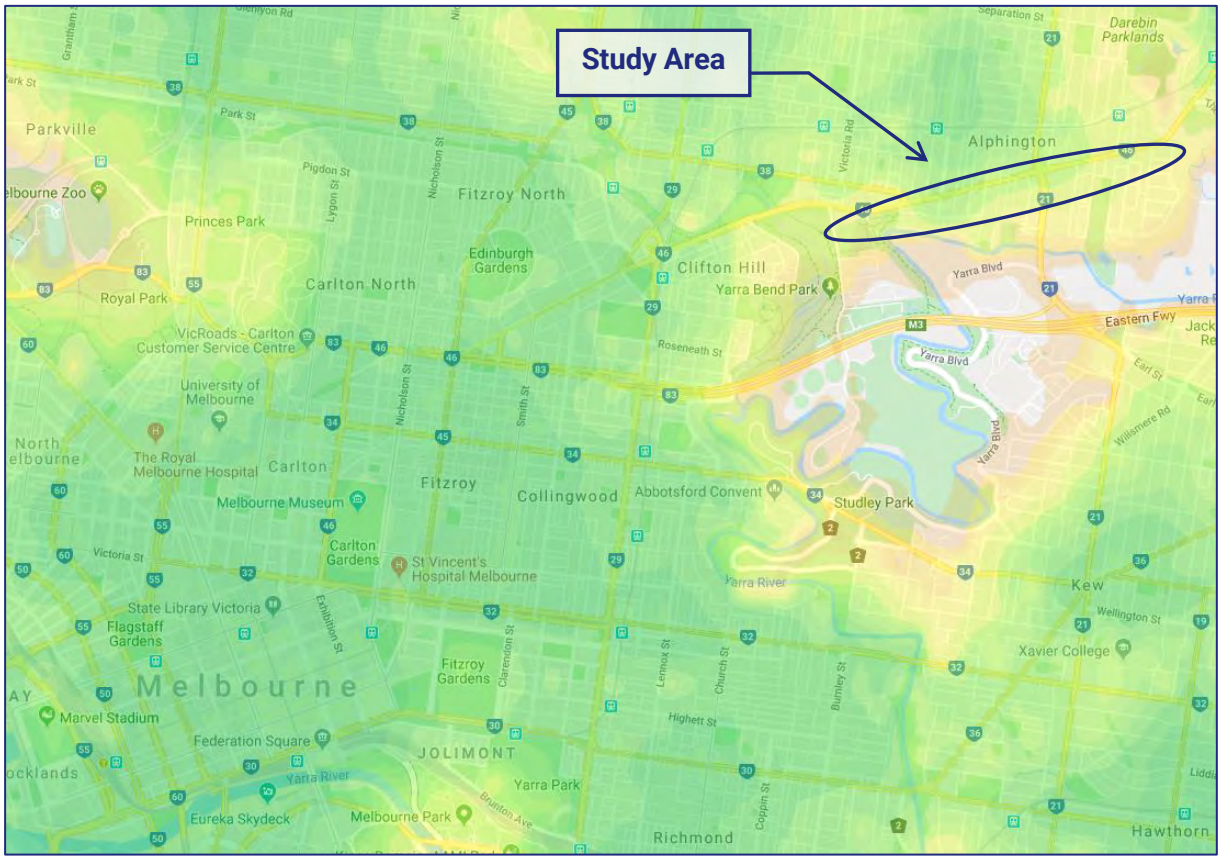


Figure 18: Walkscore Map - Fairfield & Alphington

4.6. Demographics

4.6.1. Car Ownership Statistics

The majority of new dwellings within the study area will be apartment style dwellings. A review of car ownership statistics for 'flats units and apartments' within the suburbs of Fairfield and Alphington and the City of Yarra highlights the following average car ownership statistics. This data was recorded by the Australian Bureau of Statistics (ABS) in the 2016 census.

We note that the sample size for these suburbs is quite limited, as the housing stock is still mostly semi-detached and detached dwellings, rather than apartments. However, the level of apartments is expected to increase in the near future.

These statistics indicate that the parking requirements for dwellings set out under Clause 52.06-5 of the Planning Scheme are generally higher than the car ownership statistics for one and three-apartments in this locality.

Table 7: ABS Census Car Ownership Statistics (2016) – Flat/Unit/Apartment

Type of Dwelling	Number of Cars	Alphington Suburb	Fairfield Suburb	Yarra LGA
1 bedroom Flat/Unit/Apartment in one or more storey block	**Average no. of cars per dwelling**	**0.9**	**0.8**	**0.7**
	0 cars	20%	28%	38%
	1 car	71%	67%	55%
	2 or more cars	9%	5%	7%
2 bedroom Flat/Unit/Apartment in one or more storey block	**Average no. of cars per dwelling**	**1.2**	**1.2**	**0.9**
	0 cars	13%	15%	26%
	1 car	56%	61%	56%
	2 or more cars	31%	24%	19%
3 bedroom Flat/Unit/Apartment in one or more storey block	**Average no. of cars per dwelling**	**1.8**	**1.6**	**1.2**
	0 cars	8%	0%	20%
	1 car	22%	37%	48%
	2 or more cars	70%	63%	33%

4.6.2. Journey to Work Data

A review of Journey to Work data for the suburbs of Alphington and Fairfield, the City of Yarra and the Greater Melbourne highlights the following statistics. This data was recorded by the Australian Bureau of Statistics (ABS) in the 2016 Census.

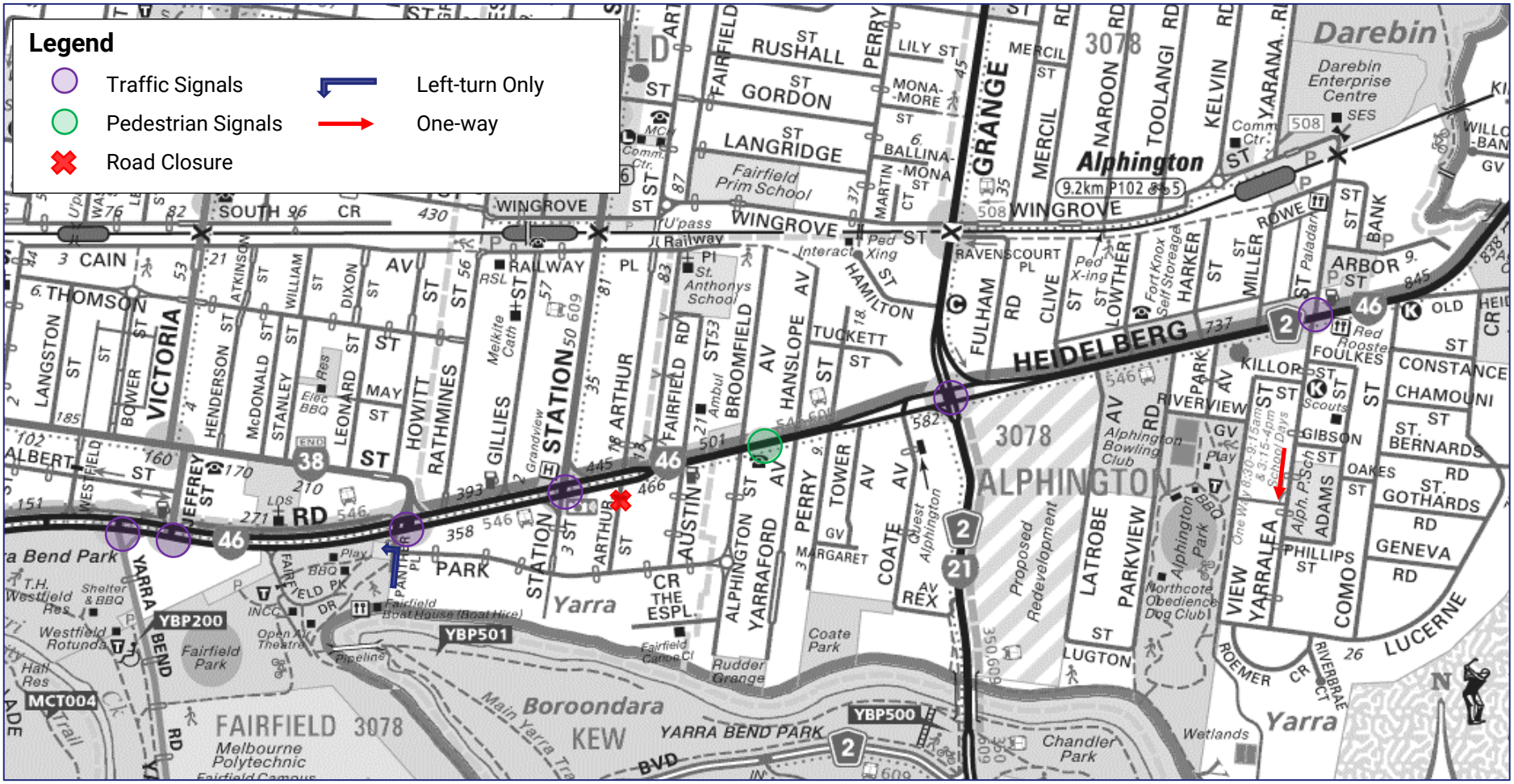
This data highlights a stronger reliance on public transport, walking and cycling for those living (in particular) within the study area compared with the Melbourne metropolitan area.

Table 8: ABS Census Journey to Work Data (2016)

% mode of travel for 'journey to work' trip	Live within the area (i.e. place of residence)				Work within the area (i.e. place of employment)		
	Alphington	**Fairfield**	**City of Yarra**	**Greater Melb.**	**Alphington-Fairfield SA2***	**City of Yarra**	**Greater Melb.**
Car as driver	48.3%	43.4%	32.8%	60.2%	68.8%	48.5%	59.8%
Public Transport	22.2%	27.4%	28%	15.4%	6.9%	23.7%	15.8%
Walking	2.6%	3.2%	12.4%	3%	3.5%	5.9%	3.1%
Cycling	6.4%	6.5%	8.6%	1.4%	1.9%	4.3%	1.4%
Other (car passenger, motorcycle, taxi)	3.3%	3.3%	2.9%	4.5%	3.4%	3.4%	4.4%
Other Data (worked at home, did not go to work, mode not stated)	15.6%	14.4%	13.1%	13.8%	14.5%	12.5%	13.9%

4.7. Traffic Management

A detailed review of the existing traffic management measures within the study area is provided at Appendix C. The following map summarises the traffic management measures along or immediately adjacent to Heidelberg Road.



Source: Melway

Figure 19: Traffic Management Map

5. Transport Impacts

The primary purpose of this study is to review the traffic engineering implications of the implementation of the Design and Development Overlay, which introduces a range of built form controls to the Yarra Planning Scheme. This amendment is required to implement the recommendations of the Heidelberg Road Built Form Framework prepared by Hodyl & Co in order to allow for more intense development along the Heidelberg Road Corridor.

The key transport engineering impact of the proposed controls is the direction to use local roads and rear laneways for vehicle access to new developments wherever possible and avoid new crossovers to Heidelberg Road. As a result, the use of the laneways and local roads with the study area will increase. This study reviews the potential impacts of new development and makes recommendations to manage the increased use of local roads and laneways.

The following sections provide:

- An overview of the likely traffic impacts of increased development along Heidelberg Road, by reviewing a case study of Victoria Street, Richmond.
- A discussion regarding access to Heidelberg Road being avoided if possible, for vehicle access.
- Identification of locations which may require additional analysis to be completed as part of a development application.
- Recommendations for provision of car parking within each precinct.
- Analysis of potential capacity of the road network to accommodate on-street parking generated from developments.

This study does not seek to undertake detailed traffic modelling of Heidelberg Road or its key intersections. Traditional traffic modelling relies on estimates of future growth of land use intensity and assumptions about future trip generation rates and transport mode choice to assess the impact on a transport network. In our view, these critical modelling assumptions cannot be determined with any certainty for this area.

There are a number of factors that mean that preparing a detailed traffic model for this Activity Centre is not possible. At this time, Yarra City Council has not completed a detailed study regarding possible increases in dwelling numbers or commercial floor space on specific sites, which is an essential requirement of any model.

Future policy on car parking provision is expected to move away from a 'predicted and provide' approach to car parking provision (as identified by the Liveable Yarra Project) towards using car parking as a tool to encourage sustainable transport choices. Car parking provision rates are expected to be lower than have historically been required. The provision of car parking can have a significant impact on the traffic generated by a development site and the mode choice of trips generated by any development and this will greatly affect any assessment of future traffic conditions.

Fundamentally though, a detailed traffic model would not assist in achieving the key objectives of this study, which is to best manage the transport challenges posed by new

development. This is primarily achieved by applying best principles access management techniques to manage this new development.

This study aims to promote alternative transport modes in the following key ways:

Public Transport

- Maximise the accessibility of public transport, including fixed rail and bus services

Walking

- Provide a high quality pedestrian environment, including minimising the impact of vehicle access points along key pedestrian routes, especially Heidelberg Road
- To protect and enhance pedestrian connectivity to key destinations
- Promote public transport by providing good pedestrian and cycling links to public transport stops

Cycling

- Promote a safe cycling environment by minimising the number of conflict points with vehicles

Key outcome of this assessment is an Access and Movement Plan for properties abutting Heidelberg Road. This plan applies best practice vehicle access management techniques to properties abutting Heidelberg Road to manage the impacts of vehicle access to abutting properties on these three modes and maximise the efficiency of the arterial road network. A detailed model of traffic movement along Heidelberg Road would be of no assistance to this assessment. These techniques would be recommended notwithstanding any traffic model.

To take a historical example, a detailed traffic model of the Swan Street/Lennox Street intersection or Swan Street/Church Street intersection would have no impact on vehicle access locations adopted for the Dimmeys redevelopment at 140 Swan Street. Vehicle access to the rear and side of the property, rather than directly to Swan Street was chosen on best practice access management principles.

This report does include a detailed review of Victoria Street, Richmond, as a case study of how traffic conditions on Heidelberg Road are likely to change over time. Victoria Street has a number of parallels with Heidelberg Road and has and will experience some significant development. This case study provides a high level overview of how additional development on Heidelberg Road will change the transport conditions along Heidelberg Road. In our view, this case study provides a better guide to the likely future transport conditions along Heidelberg Road than any mathematical model, which would be based on highly uncertain assumptions regarding development scale, future trip generation rates and mode choices.

5.1. Traffic impacts along Heidelberg Road

In order to assess the likely traffic impacts of increased development along Heidelberg Road, we have undertaken a case study and review of Victoria Street, Richmond. The review generally covers the period between 2006 and 2016.

In April, 2010, Yarra City Council adopted the Victoria Street Structure Plan, a document that built on planning work that occurred between 2002 and 2010. Since that time, significant redevelopment has occurred, particularly within the eastern and western precincts identified by this structure plan.

The following reviews the changes to Victoria Street and the changes in transport along Victoria Street as a model for how Heidelberg Road may evolve over time.

It should be noted that there are some similarities and differences between Heidelberg Road and Victoria Street. Both are key arterial roads located within inner Melbourne providing important routes for travel from outer areas through to the CBD. However, a distinction needs to be made in comparing between Victoria Street as it is now and Heidelberg Road as it is currently.

Victoria Street does perform better in a number of areas compared to Heidelberg Road in terms of its sustainable transport characteristics. This includes closeness to the CBD, the availability of on-road public transport services, walkability and availability of local services. However, access to metropolitan rail services is higher for most of Heidelberg Road than Victoria Street. This provides a different level of public transport access to the CBD (and wider Melbourne).

However, it should be recognised that many of Victoria Streets sustainable transport characteristics have improved markedly in the last 20 years, including increased tram services, number and quality of bicycle connections and changing land use all occurred over the review period.

Heidelberg Road has significant scope for improvement in the areas of cycling, walking and access to local services. This includes the provision of increased on-road public transport services, where there is significant scope to extend the frequency and hours of operation of existing bus services. The full development of the Paper Mill site will provide a much higher level of access to local services within a walkable distance than at present. There are also opportunities to increase the walking and cycling environment along Heidelberg Road.

From a transport perspective, the study area has considerable potential to improve in the key areas that have assisted in achieving the shift in travel patterns seen in Victoria Street.

5.2. Case Study – Victoria Street

In order to assess the likely traffic impacts of increased development along Heidelberg Road, we have undertaken a case study and review of Victoria Street, Richmond. The review generally covers the period between 2006 and 2016. ‘

The case study is provided in detail at Appendix D.

5.2.1. Summary of Case Study

Based on the study, the following conclusions can be drawn from the development of Victoria Street over the last 10 years:

- Victoria Street has experienced significant development over the last 10 years, with over 3,000 new dwellings being constructed on properties that directly abut Victoria Street.
- The daily volume of traffic on Victoria Street has decreased, in some sections by up to 25%.
- Sustainable transport modes for journey to work purposes have significantly increased within the City of Yarra and Richmond for both residents and employees in Richmond.
- Public transport services (trams) on Victoria Street have doubled.
- Bicycle usage has increased significantly as a transport mode within Richmond and Victoria Street.
- Alternative transport modes such as car share vehicles have become available over time.

From the review of case study data, a modal shift is certainly occurring and it is modal shift that is accommodating the increased transportation activity within Richmond. While the population and development intensity along Victoria Street has increased, the daily traffic volumes along Victoria Street and parallel traffic routes has reduced over time and been taken up by alternative transport modes.

It is not evident from the arterial road volume data that non-local traffic is dispersing to other routes. The traffic volumes on Victoria Street, Bridge Road and Swan Street have all fallen over the last 10 years. While, locally generated traffic within Richmond would be displacing non-local or through traffic, however the main shift appears to be towards sustainable transport modes.

A key driver of this change is due to:

- Changes in land use over time along Victoria Street with a shift away from manufacturing towards service and professional industries.
- An increasing mix of land uses including a significant increase in dwellings and new mix of commercial uses in place of industrial uses.
- A change in demographic with the gentrification of Richmond. Residents of Richmond are increasingly younger persons employed in professional industries who live and work locally (including the CBD and nearby Activity Centres). Travel by private car is not necessarily the most convenient mode of travel for many trips to either work or everyday destinations (shopping, etc.). The increased number of dwellings on Victoria Street are well served for everyday needs by a short walk to Victoria Gardens.

5.3. Traffic Impacts to Local Road Network

The following sets out our high level review of the potential traffic impacts to local roads within the study area generated by the proposed height controls and level of development that could potentially occur within the area. The following highlights any locations that should be further analysed during the application process for vehicle access to certain streets.

5.3.1. Precinct 1

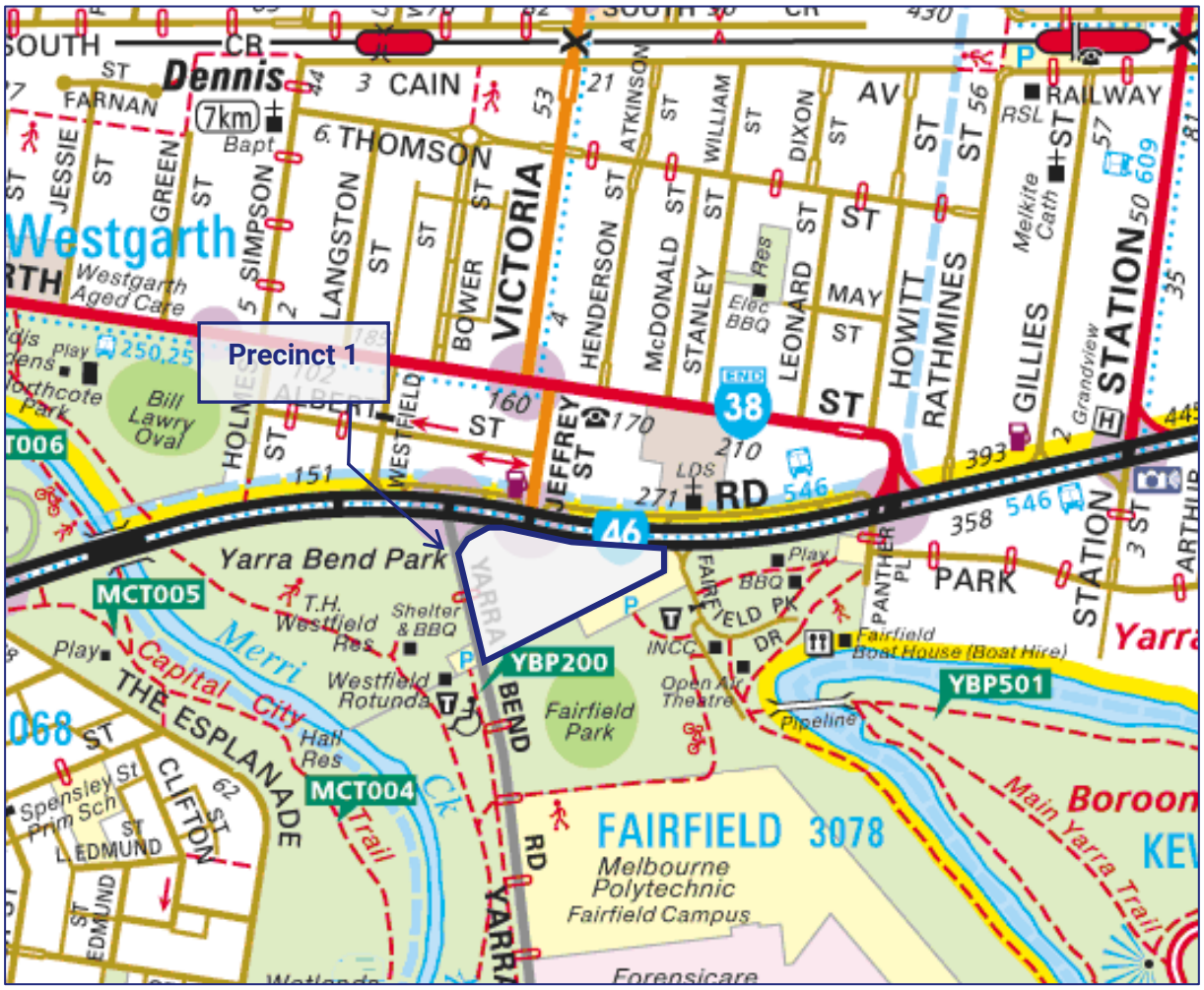


Figure 20: Precinct 1 Map

We understand that the redevelopment of the land in this precinct is likely to be largely residential, with a small amount of commercial. Based on the access and movement plan detailed in Section **Error! Reference source not found.**, vehicle access for the western part of the precinct should be undertaken via Yarra Bend Road, with the remaining properties accessing Heidelberg Road directly.

Existing usage of Yarra Bend Road includes recreational uses associated with Yarra Bend Park, as well as Melbourne Polytechnic and the Thomas Embling Hospital.

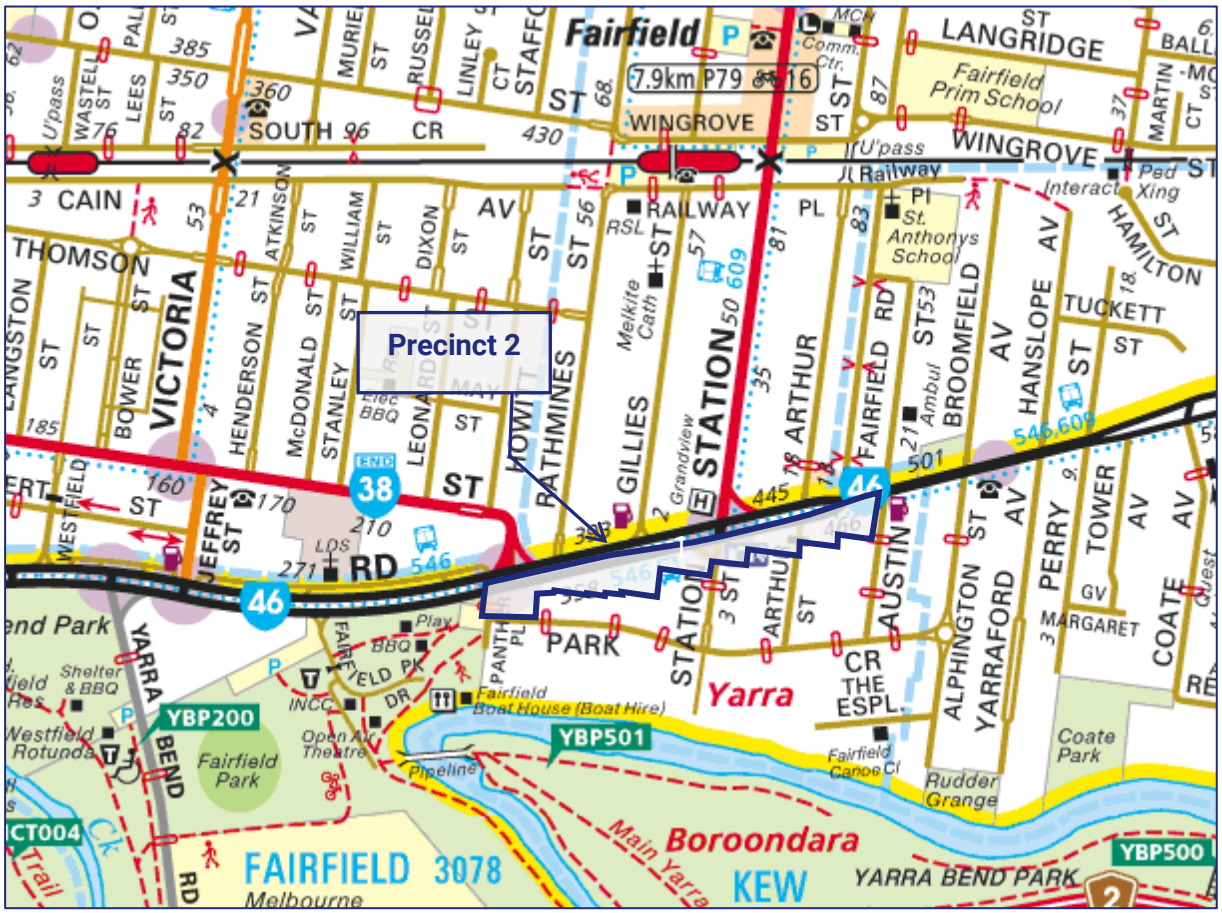
We are satisfied that the level of traffic likely to be generated by Precinct 1 to Yarra Bend Road is expected to be able to be accommodated by Yarra Bend Road, particularly given that the Yarra Bend Road/Heidelberg Road intersection is controlled by traffic signals.

Further, the portion of the precinct which will take vehicle access to Yarra Bend Road is currently occupied by industrial uses, which are likely to be generators of traffic and would include heavy vehicle traffic.

Accordingly, we do not believe the level of traffic generated by the level of development proposed for this precinct will pose a significant issue for the operation of Yarra Bend Road or its intersection with Heidelberg Road.

For any redevelopment of this site utilising Yarra Bend Road for access, the application material would need to include detailed traffic analysis including Sidra analysis of the intersection to ensure that the capacity of the intersection is not exceeded.

5.3.2. Precinct 2



The level of traffic generated as a result of the development proposed for this precinct of a 5 storey height limit is not expected to be significant. We do not expect that the level of traffic will increase to a detrimental level on any of the adjoining local roads.

The block bound by Panther Place and Station Street includes a significant number of properties which will be required to either continue to take vehicle access directly to Heidelberg Road, or not provide parking on the site. The remaining properties accessing the local road network directly do not have the development potential to cause a detrimental impact to Panther Place or Station Street.

We note that Panther Place and Station Street are both controlled by traffic signals at their intersections with Heidelberg Road.

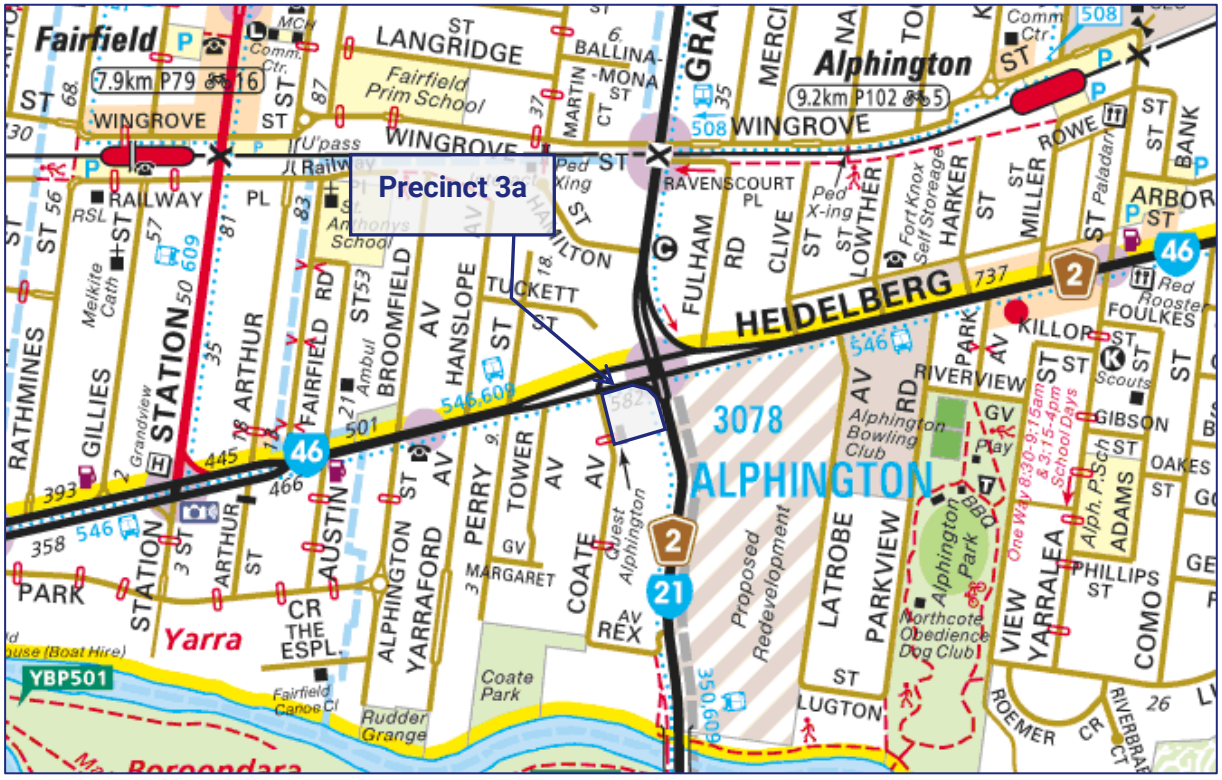
Arthur Street includes a road closure which is located close to the intersection with Heidelberg Road. This road closure will only allow for the properties within the DDO area to access Heidelberg Road. All other properties to the south (and outside the study area) cannot access Heidelberg Road from Arthur Street. Accordingly, it will only be the two sites on either side of Arthur Street which will take access to this section of Arthur Street.

Arthur Street is restricted to left-in/left-out and accordingly, we are satisfied that the likely traffic increase to the intersection will be minor and accommodated by the left-in/left-out nature of the road.

The Heidelberg Road Built Form Framework does not indicate that the intention is for vehicle access to be undertaken via Austin Street. In the access maps discussed at Section 6.3.1 and attached at Appendix F, we are satisfied that vehicle access could be taken to Austin Street and it would be beneficial to do so for the block bound by Austin Street and Arthur Street.

If vehicle access were taken to Austin Street we do not believe this would have a significant impact to Austin Street, as the current use of the site as a car dealership with service centre included would generate a level of traffic which would be potentially comparable to the development potential of this land.

5.3.3. Precinct 3a



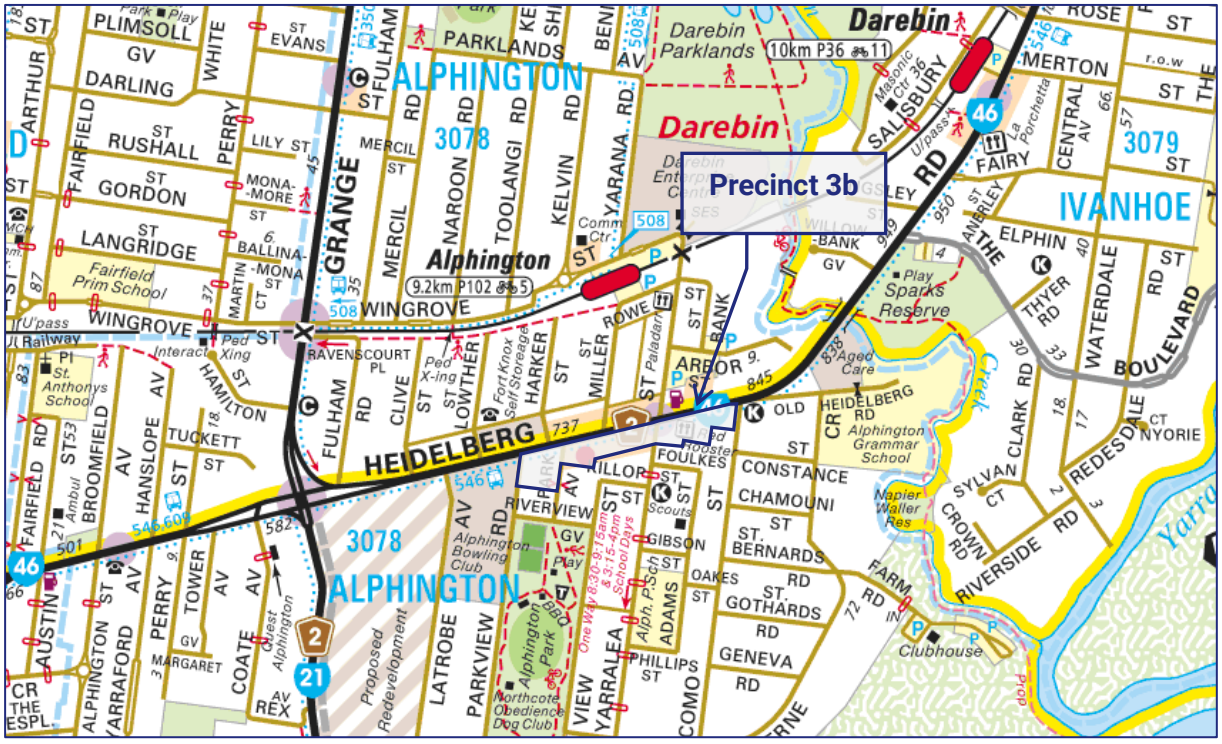
The level of traffic impact from any redevelopment of this site would need to be assessed as part of any development proposal submitted.

The level of development is potentially quite significant and given there is only one option for vehicle access, to Coate Avenue, this would need to be critically assessed.

However, given the Coate Avenue/Heidelberg Road intersection is downstream from the Chandler Highway intersection, there are large gaps in the traffic which can be used by vehicles to enter (via right turn) or exit via left or staged right turn during the large breaks in the traffic.

The site is already occupied by a two-storey office development with associated carpark (94 spaces). Accordingly, it is likely that this development is already generating a moderate level of traffic. Any traffic surveys and analysis should ensure that the existing traffic generated by this site is taken into account during the assessment.

5.3.4. Precinct 3b



The level of traffic generated as a result of the level of development proposed for this precinct, of a mostly 5 storey height limit, is not expected to have a significant traffic impact to local roads. We do not expect that the level of traffic will increase to a detrimental level on any of the adjoining local roads.

The block bound by Parkview Road and Park Avenue, known as 700-718 Heidelberg Road has received a Planning Permit from VCAT (Aleks Nominees Pty Ltd v Yarra CC [2018] VCAT 1315) for an 8 storey mixed use building over 3 levels of basement parking. The building is to contain 2 retail tenancies, 105 dwellings and 153 car spaces, accessed via both Parkview Road and Park Avenue.

The traffic associated with the use of this land will effectively be split between two local roads. We do not believe that either of these roads will be greatly impacted by this development, or similar development in the event an amended permit was to be issued.

The block bound by Park Avenue and Yarralea Street includes a significant number of properties which will be required to either continue to take vehicle access directly to Heidelberg Road (due to no alternative), or not provide car parking on the site. The remaining properties accessing the local road network directly do not have the development potential to cause a detrimental impact to Park Avenue or Yarralea Street. We note that Yarralea Street is controlled by traffic signals at its intersection with Heidelberg Road.

Property No's 774 and 782 will each have vehicle access to Yarralea Street. Given that the intersection of Yarralea Street is controlled by a set of traffic signals we do not believe there would be a detrimental impact to Yarralea Street as vehicle access to Heidelberg Road is controlled already. However, for any redevelopment of this site utilising Yarralea Street for access, the application material would need to include detailed traffic analysis, including Sidra analysis of the intersection to ensure that the capacity of the intersection is not exceeded.

We do not expect any further increase to traffic along Como Street as the only site which would require vehicle access already provides what is described under the design strategy as 'Existing medium-density, mid-rise housing'. This is a relatively new development and is highly unlikely to be redeveloped further in the short/medium term.

5.3.5. Summary

Overall, we are satisfied that the traffic generated as a result of this fairly moderate level of development across each of the precincts will not have a detrimental impact to the operation of the local road network.

Given the level of development potential and number of properties which are served, the locations that may require intersection analysis to form part of any application material are:

- the Yarra Bend Road/Heidelberg Road intersection,
- the Coate Avenue/Heidelberg Road intersection, and
- the Yarralea Street/Heidelberg Road intersection.

5.4. Parking Impacts to Local Road Network

The following sets out the general approach to parking demands within each of the different precincts. Each of the precincts has different locational attributes which would be more or less conducive to allowing for car parking reductions.

Precinct 1 and 3b are located within the PPTN area and as such are more conducive to allowing for car parking reductions. Whereas, Precincts 2 and 3a are not, and may be less conducive.

Maps detailing the on-street car parking restrictions within the study area are provided at Appendix B.

The below recommendations assume that an improvement to the overall bicycle connectivity is improved generally in line with the recommendations set out within Section 7

5.4.1. Precinct 1

Whilst located within the PPTN area, the sites located within Precinct 1 are located 700m from the nearest railway station (Dennis Railway Station). The site is located within the PPTN due to its proximity to Westgarth Street, where Bus Routes 250 and 251 operate. These bus routes only operate at 20 minute frequencies during the peak periods and as such does not offer a high level of service.

Accordingly, whilst located within the PPTN, we do not believe there is much scope for properties within this area to receive a car parking reduction for long term parking (staff or residents).

Accordingly, consideration can be given to potential car parking reductions in this precinct. However, an application would need to include a robust assessment of the likely car parking demand so a the proposed use.

For general retail uses, such as shops, food and drink or restaurants, a car parking reduction could be granted for the customer components (i.e. short term users), whereas the staff component should generally provided.

Under existing conditions, the on-street carparking along Heidelberg Road in this precinct is unrestricted outside of Clearway Times. During our site inspection these car spaces were in high demand and were likely associated with long-term car parking for staff of the commercial/industrial uses of the precinct.

The residential uses permitted within this precinct will generate visitor car parking demands. These demands do not need to be provided on the sites as they are located within the PPTN, where there is no requirement for visitor parking. Accordingly, the most proximate area for visitor parking is along the site's frontage to Heidelberg Road. If this is occupied by long-term car parking which is not turning over during the day, there will be limited capacity for visitor or customer parking to occur and visitors will overflow into the car parking for Fairfield Park and Yarra Bend Park.

This should be avoided, and as such Council should explore restricting car parking along Heidelberg Road to short-term parking.

5.4.2. Precinct 2

Precinct 2 is located within a commercial precinct which comprises a mixture of retail and restricted retail uses. Accordingly, any redevelopment of this precinct will include an intensification of the commercial uses on the site.

The general approach to finer grain retail uses on narrower sites would be to ensure that staff parking is provided on the site, with all customer car parking accommodated on-street within the area consistent with a centre based approach to parking demands.

However, for larger sites and for bulky goods (i.e. restricted retail uses) an on-site customer car parking provision may be beneficial for a specific use which includes picking up of goods. Short term loading spaces could be included within the design of a specific site.

Generally speaking, customer car parking demands can be accommodated off-site in the nearby area.

For sites which do not have car parking along their site's frontage, it may be appropriate to require some level of on-site visitor parking to be provided. The provision of visitor car parking should be considered for property numbers 358 to 376, on the corner of Panther Place and Heidelberg Road, where the only street frontage with on-street parking is Park Crescent, a residentially sensitive area.

The remainder of the block between Panther Place and Station Street may also need to provide some level of visitor parking, as there is limited availability of on-street parking available to these sites. The majority of these sites are quite deep with limited street frontage and therefore limited car parking availability directly adjacent. Accordingly, the overflow generated by their development potential is likely to exceed the on-street parking adjacent to the land.

The remainder of the precinct has access to a higher number of street frontages and therefore on-street car parking. Accordingly, these sites could potentially achieve a higher level of car parking reduction for visitor and customer car parking.

The block between Station Street and Arthur Street includes a number of fine-grained sites and as such may not be conducive to providing on site car parking, particularly for visitors or customers. In some cases, commercial uses could also be provided without or with very limited car parking.

On narrow sites that are difficult to provide parking on, the inability to provide car parking should not be a limiting factor in the development potential of a site. Rather, the provision of alternative travel modes, such as bicycles, motorcycles and scooter parking should be explored as an alternative to car parking.

For example, the space that is required for a single car space, can accommodate up to 8 bicycle spaces (potentially more if you take into account the space required for manoeuvrability of a car), as detailed below. Accordingly, for some developments this may be more beneficial to providing a very small number of car spaces.

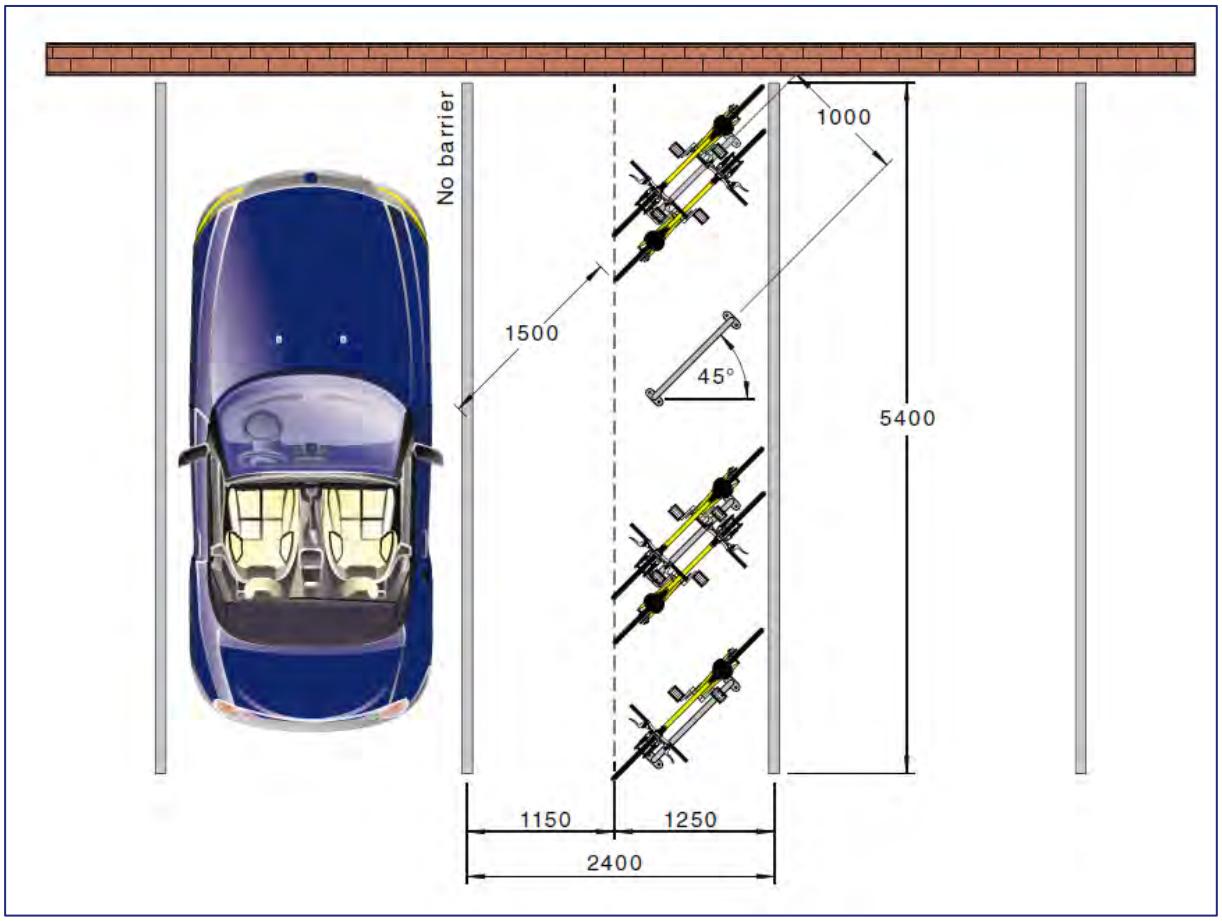


Figure 21: Conversion of Car Space to Bicycle Spaces (AS2890.3-2015)

5.4.3. Precinct 3a

The site located within Precinct 3a has only one street frontage that can accommodate on-street parking, Coate Avenue. The remaining street frontages are Heidelberg Road and Chandler Highway which do not provide for on-street car parking in this location.

The adjoining land uses to the south of the site are residential in nature. Accordingly, any overflow car parking demand should be confined to along the site's frontage to Coate Avenue, such that the car parking impact is limited.

Accordingly, the car parking demand generated by the site should be accommodated on the site, with a short-term overflow which is limited to the number of car spaces which can be accommodated along the site's frontage.

5.4.4. Precinct 3b

Precinct 3b is located within a commercial precinct which comprises a mixture of retail and restricted retail uses. Accordingly, any redevelopment of this precinct will include a retail presence on the ground floor and potentially residential uses above.

The general approach to finer grain retail uses on narrower sites would be to ensure that all staff parking is provided on the site, with all customer car parking accommodated on-street within the area consistent with a centre based approach to parking demands.

However, for larger sites and for bulky goods (i.e. restricted retail uses) an on-site customer car parking provision may be beneficial for a specific use which includes picking up of goods. Short term loading spaces could be included within the design of a specific site.

Visitor demands generally peak at opposing times to retail uses, with retail customers typically peaking during the day, whilst residential visitor parking typically peaks during the evening and on weekends. Accordingly, the sharing of the on-street car parking resources is appropriate in this case and can be accommodated within the area, without significant encroachment into residentially sensitive areas.

The precinct is located within the PPTN Area and as such, no residential visitor car parking is required on any of these sites.

The block between Park Avenue and Yarralea Street includes a number of fine-grained sites and as such may not be conducive to providing on site car parking. In some cases, depending on the site constraints and limitations, dwellings and retail uses could also be provided without or with very limited car parking.

On narrow sites that are difficult to provide parking on, the inability to provide car parking should not be a limiting factor in the development potential of a site. Rather, the provision of alternative travel modes, such as bicycles, motorcycles and scooter parking should be explored as an alternative to car parking.

The local streets to the south of Precinct 3b includes significant 'unrestricted' car parking. Accordingly, once development increases along the corridor, overflow car parking may encroach into these residentially sensitive areas.

Council could consider introducing short-term car parking for these residentially sensitive areas to protect existing residents from significant encroachment from new development, where unrestricted car parking prevails.

5.4.5. Summary

Overall, we are satisfied that the parking impacts of the redeveloped sites will not have a detrimental impact to the parking availability of the area.

Generally speaking all long-term car parking demand should be provided on the site, with short-term car parking accommodated on-street. Short-term car parking may be required to be provided on the site if:

- the site does not have access to on-street car parking adjacent to the site,
- any overflow car parking would encroach significantly into residentially sensitive areas, or
- access for customers to collect goods for larger retail uses.

We note that visitor parking cannot be requested to be provided on sites within the PPTN Area.

The residential areas which abut the commercial areas to the south generally have car parking restrictions which protect these areas from parking associated with the commercial

precincts. i.e. short/medium term and permit zones. Accordingly, these parking restrictions will continue to protect the residential areas when development increases along the corridor.

Those on-street car parking areas which are not currently protected by timed or 'Permit Zone; restrictions should be contemplated by Council.

A reduction of long-term car parking for staff or residents could be considered for fine grained sites where vehicle access would be required to Heidelberg Road or if the provision would be low due to the width of the site or other access constraints.

This would be appropriate in this area, as the area is served by fixed rail and it is not necessary that each individual development achieve an exact mix of parking rates as some will be able to readily provide parking and some will not.

6. Access and Movement Plans

A map of existing vehicle access points to properties within the study area is included at Appendix E of this report.

The following section sets out our recommended Access and Movement Plans for all properties within the study area. The detailed Access and Movement Plans are attached at Appendix F.

6.1. Access Management Principles

VicRoads generally adopts the AustRoads Guide to Traffic Management with regard to its access management principles for managing the arterial road network. In particular, the AustRoads Guide to Traffic Management Part 5: Road Management sets out the following relevant guiding principles:

- *Transport and other functions served by roads, the needs of abutting land use, along with wider government strategic objectives, all influence how roads are managed. The functional classification of a road relates to its role within the road network. There are two main functions of road networks and roads:*
  - *'mobility' that is concerned with the movement of through traffic and focussed on the efficient movement of people and freight, and*
  - *'access' that relates to the ease with which traffic from land abutting roads can enter or leave the road.*
- *Recent developments in policy and strategic planning initiatives are aimed at giving greater recognition to walking activity in road and transport planning. This has arisen from policy settings in the transport and health sectors recognising the need to move towards more sustainable forms of transport (by foot, bicycle or public transport) and towards healthier activity (walking, cycling) by the community generally (AustRoads 2013a).*
- *This has led to recognition of the need for planning and providing a road network which caters for the potential increase in active travel such as walking and cycling. This is a fundamental factor for consideration in striving for balance between the mobility and access functions of roads in the network.*

Importantly, in the context of the Heidelberg Road corridor, as an inner area, the move to sustainable forms of transport (foot, bicycle or public transport) has more than just health benefits. It is an integral component to the success of the implementation of the Heidelberg Road corridor DDO, having regard to the capacity constraints of Heidelberg Road to accommodate additional vehicle movements.

Accordingly, it is imperative that the planning for an increase in the density of development is accompanied by an access management strategy that recognises the importance of these sustainable transport modes, and also plans for the inevitable increase in pedestrians and cyclists as well as improvements to the public transport network along this important corridor.

The AustRoads Guide to Traffic Management Part 5: Road Management states the following in relation to the role of different road types:

- *The primary function or balance of different functions may be reflected in the classification of a road. In its purest form, road classification may consist of two basic road types which have fundamentally different traffic and environmental goals:*
  - *arterial roads, the main function of which is to provide for the safe and efficient movement of people and freight, and*
  - *local roads, which provide direct access to abutting land uses and which contribute to the overall functioning of areas bounded by arterial roads or other barriers. The basic function of a local road is to provide a good environment in which to live or conduct a business and to enable vehicular access to abutting land.*
- *The need for access planning and management arises because vehicle movements generated by abutting properties can potentially create interruptions in the traffic flow along a road. On many roads, these interruptions are of little or no concern. However, on arterial roads carrying high traffic volumes or fast moving traffic, where traffic efficiency is of greater importance, these interruptions can create a greater risk of crashes, inefficiencies and other costs to the community. An effective access management strategy for a road or site contributes to the best outcome for the community by protecting the level of traffic service on important through traffic routes while providing road users with safe and appropriate access to adjacent land.*

Heidelberg Road is an arterial road (Road Zone Category 1) and accordingly it has an important role in the broader arterial road network context to provide for through traffic. Heidelberg Road is also located on the Principle Bicycle Network (PBN).

The role of Heidelberg Road creates an environment which is not conducive to providing direct vehicular access to properties which could create interruptions in the flow of both vehicular and pedestrian traffic along Heidelberg Road.

Accordingly, taking into account Heidelberg Road's primary purpose, and noting that within the study area the majority of properties have alternative access potential (generally via local roads and some laneways/carriageway easements), there should be strong policy support within any Planning Scheme amendment (such as the DDO) to guide future access to development to be via the lower order road network.

Safety

Part 13 of the AustRoads Guide to Traffic Management addresses Road Environment Safety, as follows:

- *Managing safety in the road environment means managing the risk that injury will occur, whether it arises from the behaviour of road users, the performance of vehicles or the characteristics of the road environment. Making roads safer means reducing the risk. This applies to all road users – vehicle drivers, riders, passengers, cyclists, and pedestrians.*
- *Safe operation of the road and traffic system is a fundamental goal for road designers and traffic engineers who have a prime responsibility for addressing the safety factors related directly to the road environment itself.*

Fundamental principles for managing safety in road design, traffic management and remedial treatment practice include:

- speed management,
- conflict management,
- hazard management, and
- road user information management.

In the context of managing vehicular access to Heidelberg Road, conflict management is the primary safety principle which can be influenced.

Notably, it is important to provide a continuous safe environment for pedestrians at-grade along the Heidelberg Road public realm, and this can be achieved by minimising private property access points.

Policy Support

Council's Strategic Transport Statement sets out the following hierarchy of transport modes which forms the basis for decision making and actions related to transport in the City:

1. Pedestrians (including wheelchairs and walking with prams)
2. Cyclists
3. Tram
4. Bus/train
5. Taxi users/car sharers
6. Freight vehicles
7. Motorcyclists
8. Multiple occupants local traffic
9. Single occupants local traffic
10. Multiple occupants through traffic
11. Single occupants through traffic

Council's transport modal hierarchy for decision making places pedestrians and cyclists in the top 2, and places vehicular traffic at the bottom.

This hierarchy recognises the importance of sustainable modes into the future, and supports the recommended access management strategy to utilise lower order roads for vehicle access wherever possible, with direct access to Heidelberg Road being a last resort (with consideration for "no parking provision" potentially being preferable for some individual sites).

6.2. Benefits of Limiting Vehicle Access to Heidelberg Road

The principle of limiting direct vehicle access to Heidelberg Road provides the following key benefits:

- It promotes a safe and friendly pedestrian walking environment, by reducing breaks in the footpath, reducing pedestrian-vehicle conflict points and increasing the amount of active street frontage along Heidelberg Road. It also eliminates instances of vehicles blocking the footpath.
- It limits vehicle access to Heidelberg Road to public road intersections, where Council and VicRoads have a greater degree of control in the implementation of traffic management measures. This improves the efficiency and safety of the road network for all users.
- The reduced number of intersections allows the concentration of effort of traffic management measures and safety improvements at a limited number of locations.

However, the benefits of limiting vehicle access to Heidelberg Road need to be tempered against other competing demands, including:

- Some sites do not have alternative access options and have existing access points to Heidelberg Road. It is not possible to deny access to sites that already have direct access to Heidelberg Road and do not have viable alternatives. However, upon redevelopment these accesses can include new controls to limit their impact, in particular left-in/left-out restrictions. A left-in/left-out restrictions results in the smallest impact on the arterial road network from an efficiency and safety perspective. Noting that most sites (except in Precinct 3b) are opposite a central median separating east and west-bound movements and will need to be left-in/left-out regardless.
- For some land uses (such as supermarkets), convenient and direct access to the arterial road network is important for the viability of the use and to minimise impact on local roads.

6.3. Access and Movement Plans

The detailed access and movement plans are attached at Appendix F.

To implement these plans will require some changes to the existing traffic management treatments and the configuration of public roads and laneways. This includes widening laneways to accommodate additional vehicle movements, specifically to accommodate simultaneous two-way traffic flow. This would involve developments abutting certain laneways being required to setback at ground level (although the building could extend over the laneway at upper levels).

Proposed access management plans attached at Appendix F show the recommended traffic management changes and instances where laneways should be widened, to accommodate a rear outcome for redevelopment sites fronting Heidelberg Road.

The plans classify road frontages into three categories:

- **Access prohibited (unless there is no reasonable alternative)** – this category is where vehicle access is not desirable or supported. This classification generally relates to Heidelberg Road frontages (or Chandler Highway, in Precinct 3a).
- **Access not preferred** – this category relates to locations where access is not preferred in favour of alternatives. However, these sites may not have reasonable alternative access locations (i.e. vehicle access to these sections may be the only option available to the site). Vehicle access solutions that do not involve access to these locations are encouraged. This may include consolidation of sites that allow vehicle access to a preferred location or the non-provision of car parking for smaller development sites.
- **Access preferred** – vehicle access to these frontages is supported and encouraged.

It is noted that there are a number of areas, where access is not currently available via either a side (local) road or a rear laneway or are otherwise constrained, as follows:

6.3.1. Precinct 2

Location 1: corner of Heidelberg road and Panther Place (property numbers 358 to 376)

Location 2: south-west corner of Heidelberg road and Station Street (property numbers 416 to 438)

Location 3: south-east corner of Heidelberg road and Station Street (property numbers 440 to 452)

Location 4: block between Arthur Street and Austin Street (property numbers 468 to 484, currently occupied by Mercedes car dealership)

6.3.2. Precinct 3b

Location 5: block between Parkview Road and Park Avenue (property number 712)

Location 6: south-east corner of Park Avenue and Heidelberg Road (property numbers 720-734)

Location 7: property numbers 754 and 756

The following sets out our review of each of the abovementioned areas.

Location 1 - corner of Heidelberg road and Panther Place (property numbers 358 to 376)

Location 1 is shown in the figure below, indicated by the yellow line.

Source: Nearmap

Figure 22: Aerial Photo – Location 1

Property number 358 has three street frontages with a wide frontage to Panther Place, and two narrow frontages to Heidelberg Road and Park Crescent. This site currently has 3 vehicle access points, including one to Heidelberg Road and two to Panther Place.

The site is also noted as "Sensitive redevelopment of existing & potential heritage buildings" as set out within the Urban design strategy. Accordingly, any redevelopment of the site needs to also take into consideration the heritage aspects of the building and associated constraints.

The following discussion is undertaken purely from a traffic engineering and access planning perspective.

Vehicle access should not be permitted to Heidelberg Road as the intention of the DDO is to limit the number of vehicle access points to Heidelberg Road. The question then becomes where is the best location for vehicle access along Panther Place or Park Crescent. The options for vehicle access are as follows:

1. The northern most existing access location to Panther Place.
2. The existing approximate mid-block crossover to Panther Place.
3. Creating a new crossover at the eastern boundary of the site to Park Crescent.
4. Consolidating the site with the adjacent site at No. 364 and creating a new crossover at the site's consolidated eastern boundary.

Table 9: Review of Access Options – Location 1

Option		Advantages	Disadvantages/Challenges	Recommendation
1.	The northern most existing access location to Panther Place	• No impact to Heidelberg Road frontage.	• Unable to turn right out of the site due to the location of infrastructure associated with the traffic signals • Limited sight distance to the Heidelberg Road intersection • Difficult location to provide access whilst maintaining active street frontage to Heidelberg Road	Discard. The safety impacts associated with the limited sight distance is not acceptable.
2.	The existing approximate mid-block crossover to Panther Place.	• No impact to Heidelberg Road frontage. • Location with the best sight distance for this site. • Facilitates safest vehicle access to this site	• Difficulty in turning right out of the site, due to likely queues forming across the access from Heidelberg Road. Keep Clear line marking could be provided to ensure that egress from the site can be provided Otherwise, may be required to be left-out only. • Difficult location to maintain street presence to Heidelberg Road	Consider. May be problematic for building design reasons.
3.	New crossover at the eastern boundary of the site to Park Crescent	• No impact to Heidelberg Road frontage. • Maintains street presence at Heidelberg Road	• Limited sight distance to the bend at Panther Place/Park Crescent • Will require removal of vegetation along verge on Park Crescent.	Discard. The safety impacts associated with the limited sight distance is not acceptable.

Option		Advantages	Disadvantages/Challenges	Recommendation
4.	Consolidating with the adjacent site and new crossover at eastern boundary.	• No impact to Heidelberg Road frontage. • Maintains street presence at Heidelberg Road • Acceptable sight distance to the bend to the west	• Will require removal of vegetation along verge on Park Crescent. • Complexity with regard to agreements between the two sites with regard to consolidation.	Preferred option. But only if Council deems it appropriate to consider approaching land owners regarding consolidation.

Property No's 364 and 376 should both create vehicle access to Park Crescent, in preference to Heidelberg Road.

The vehicle access points to No. 364 is too close to the Heidelberg Road/Panther Place/Westgarth Street intersection and as such should be removed and reinstated as kerb and channel. Entering traffic in this location would reduce the efficiency of through vehicle movements (including bicycles) through the intersection.

Similarly, access to and from the site would be problematic, as when accessing the site from the west (i.e. from the city) would require a vehicle to travel past the site and perform a U-Turn at the Station Street/Heidelberg Road intersection, impacting this intersection.

If vehicle access to this site is provided to Park Crescent, the issues regarding access from the west would be removed as access from the west could be facilitated via the right turn movement at Panther Place.

The Design Strategy for Precinct 2 indicates that the existing access to No. 376 should be retained for a redeveloped site. Our preferred access to this site is to Park Crescent. Whilst there is an existing two-way accessway to Heidelberg Road in this location, the crossover is of a substandard design and includes a street pole in the centre of the access, separating entry and exit movements. This is problematic in terms of clearances to the pole, particularly for larger vehicle access. The figure below shows this arrangement.

Figure 23: Existing Vehicle Access to No. 376

Maintaining access to Heidelberg Road for No. 376 creates the same issues with regard to vehicle access as described for No. 364

The preferred access location to Park Crescent is the existing crossover to this site, which is located at the eastern boundary.

This access location will increase traffic along Park Crescent. However, given this area is indicated as suitable for moderate redevelopment intensification for a height limit of 5 storeys, the associated traffic impact is expected to be low. We also expect traffic to be distributed to the east and west depending on direction of travel.

Vehicle access to Heidelberg Road for loading requirements may be maintained if cannot be facilitated to Park Crescent.

Location 2 - south-west corner of Heidelberg road and Station Street (property numbers 416 to 438)

Location 2 is shown in the figure below, indicated by the yellow line, with the indicative location of the ROW shown in green.

Figure 24: Aerial Photo – Location 2

Property No's 416 to 432 each have frontages to the ROW which extends in an L-shape from Heidelberg Road to the south-east corner of No. 416.

Each of these sites currently have vehicle access to the ROW, either by property access or by car parking within a setback arrangement.

Our recommendation is that vehicle access to the ROW continues, post redevelopment of each of these sites.

The ROW is currently provided at a width of 5.0m as it connects to Heidelberg Road. Under the ultimate arrangement of the ROW, it should be at least 6.1m wide to accommodate two-way movements.

The logical way to ensure that this occurs is to require sites No. 420 and No. 432 to set back their buildings equally to ensure that the necessary widening occurs and is equally distributed between the two sites. The necessary widening is detailed in the figure below.

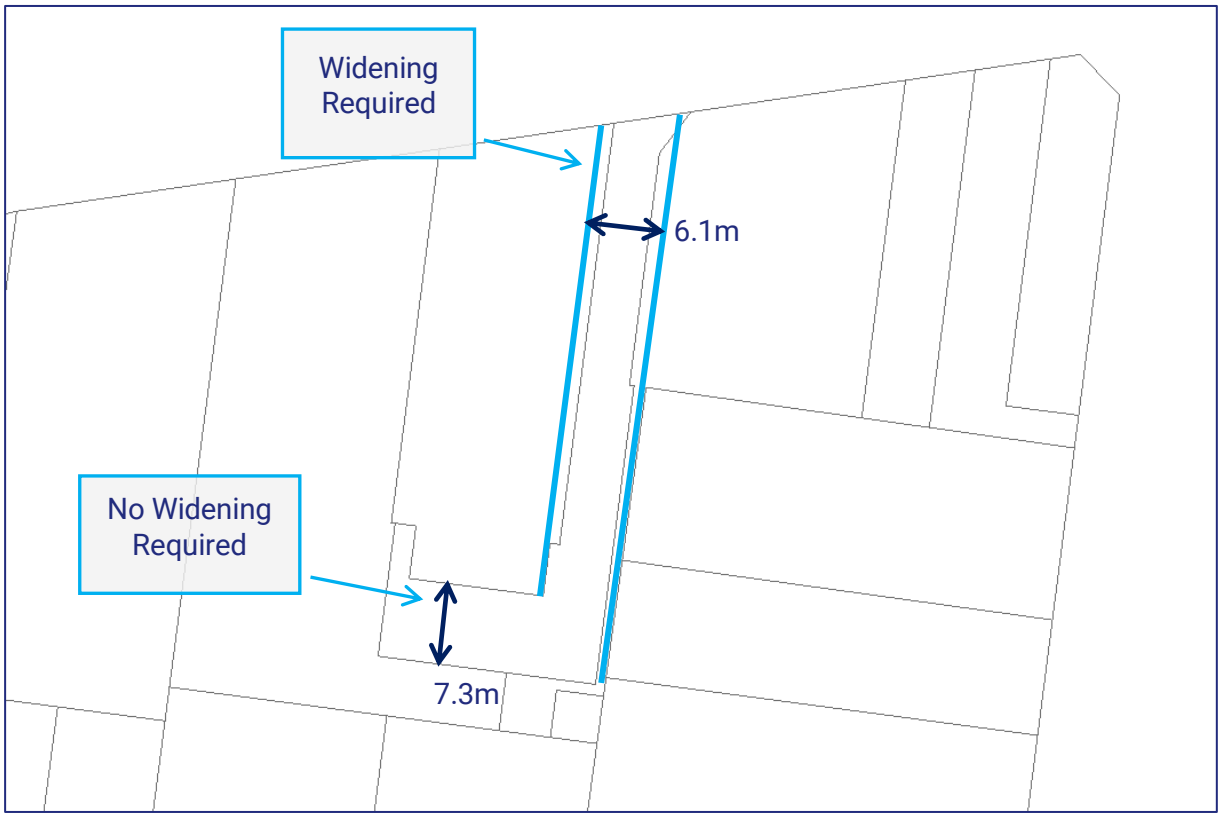


Figure 25: Require Lane Widening

We note that the current width of the lane is sufficient to provide for constrained two-way movements. Accordingly, we do not believe there will be an issue arising with regard to the order with which the site develop. For example, if No. 416 develops before the other two, the laneway will practically operate as allowing for two-way movements, such that the environmental capacity of the laneway will not be exceeded.

We understand that through discussions with Council that Property No 434-438 are likely to be developed as one consolidated site due to the ownership of the land. Accordingly, the access to the site should be provided to Station Street as far south as possible.

Location 3 - south-east corner of Heidelberg road and Station Street (property numbers 440 to 452)

Location 3 is shown in the figure below, indicated by the yellow line, with the indicative location of the carriageway easement shown in green.

Figure 26: Aerial Photo – Location 3

We understand that a carriageway easement is provided in favour of each of the properties detailed below. Under existing conditions each of these properties have vehicle access to the carriageway easement either via property access or by car parking within a setback arrangement.

We recommend that each of these properties, upon redevelopment, continue to rely on this carriageway easement for vehicle access.

Given the level of development that is identified within this precinct, we do not expect these sites to generate the level of traffic that would necessitate the need for widening the easement to accommodate two-way movements (i.e. over 30 movements per peak hour), particularly given the size of No's 448, 450 and 452.

However, if No. 440 did develop beyond the 5 storey height limit and generate significant traffic that would cause the easement to exceed its environmental capacity, this may necessitate the need to, at a minimum, create a passing opportunity along this property's

frontage. As the largest site, with access to the easement, No. 440 is the driver as to whether widening of the laneway were to be required.

It may not be possible to provide for a passing area at the entrance to the carriageway easement due to the presence of a significant street tree which may need to be preserved (others to advise on).

However, a passing bay along the frontage to No. 440 would suffice if this situation arose. It is highly unlikely that the development of No's 448, 450 and 452 would be the driving force behind widening the easement.

As discussed at Section 5.4, given their width, No's 448, 450 and 452 are ideally dimensioned for the provision of low or no parking to be provided. Accordingly, if this were the case, no traffic impacts would result.

Vehicle access to Heidelberg Road should be prohibited for each of the abovementioned sites.

Location 4 - block between Arthur Street and Austin Street (property numbers 468 to 484, currently occupied by Mercedes car dealership)

We note that the Design Strategy details vehicle access to No's 468 to 484 is to Arthur Street, but not to Austin Street.

From an accessibility perspective, vehicle access to Austin Street is a more preferable option. The Austin Street/Heidelberg Road intersection allows for all movements, as opposed to the Arthur Street/Heidelberg Road intersection, which is restricted to left-in/left-out movements.

Whilst either location would be acceptable for access to No's 468 to 484, from an access perspective Austin Street would be preferable.

Location 5 - block between Parkview Road and Park Avenue (property number 700-718)

We note that the Design Strategy does not detail an access location to No. 700-718. This site has three street frontages, including Heidelberg Road, Park Avenue and Parkview Road.

Heidelberg Road would not be acceptable from a vehicle access perspective, given.

The former Paper Mills site development site lies directly to the west of this land parcel, and has vehicle access to Parkview Road. The Paper Mills development site is significant and will accordingly generate significant traffic to the network

Accordingly, it would be preferential if vehicle access to No. 712 were to occur to Park Avenue, rather than Parkview Road in order to distribute traffic throughout the network rather than concentrate it to Parkview Road.

However, both local streets would be appropriate for vehicle access provided the necessary capacity analysis was completed for the Parkview Road.

We note that this site received a Planning Permit from VCAT (Aleks Nominees Pty Ltd v Yarra CC [2018] VCAT 1315) for an 8 storey mixed use building over 3 levels of basement parking. The building is to contain 2 retail tenancies, 105 dwellings and 153 car spaces, accessed via both Parkview Road and Park Avenue. This is a satisfactory arrangement and is likely to distribute the traffic appropriately.

Location 6 - south-east corner of Park Avenue and Heidelberg Road (property numbers 720-734)

Location 6 is shown in the figure below, indicated by the yellow line, with the ROW location shown in green.

Figure 27: Aerial Photo – Location 6

Properties 720 to 732 each have vehicle access to the laneway which extends to Park Avenue under exiting conditions. In addition to these properties, the carpark (accommodating approximately 23 car spaces) located on the south side of the laneway associated with the office on the north side also has vehicle access to the laneway.

We recommend that each of these properties, upon redevelopment, continue to rely on this laneway for vehicle access.

Assuming the continuing use of the carpark (or redevelopment of the carpark maintaining vehicle access to the ROW) and taking into account the development potential of the sites on the north side of the ROW, it is likely that the ROW will require a passing area to be provided at the entrance to the ROW.

This would increase the capacity such that vehicle access to each of the sites can be accommodated.

The passing area should be designed such that a vehicle can enter the ROW, prop clear of the footpath and allow another vehicle to pass. It should be a minimum of 6.1m wide to accord with AS2890.1-2004 for two-lane, two-way access.

As discussed at Section 5.4, given their width and challenges associated with providing adequate access to Heidelberg Road, No's 728, 730, 732 and 734 are suited for consideration for a zero-parking solution. Accordingly, if this were the case, no traffic impacts would result.

Vehicle access to Heidelberg Road should be prohibited for each of the abovementioned sites.

Location 7 - property numbers 754 and 756

Location 7 is shown in the figure below, indicated by the yellow line.

Figure 28: Aerial Photo – Location 7

As discussed at Section 5.4, given their width and challenges associated with providing adequate access to Heidelberg Road, a Road Zone Category 1, No's 754 and 756 are ideally suited for the provision of no parking to be provided. Accordingly, if this were the case, no traffic impacts would result.

These sites are particularly difficult to provide access to, as an accessway would need to be at least 6.1m wide (assuming that over 10 car spaces are provided, being the threshold for a two-way accessway to a Road Zone).

Accordingly, the majority of their 12-14m frontages would be occupied by vehicle accessways, within close very close proximity, which would compromise the pedestrian experience/safety and other non-traffic engineering related considerations.

There is added complexity associated with No. 756 as it also identified as 'Sensitive redevelopment of existing & potential heritage buildings', as well as being restricted by an existing heritage overlay.

The option of providing a development with zero parking may be preferential to providing vehicle access to Heidelberg Road.

We also note that this site is located within 400m of Alphington Railway Station and is one of the most well located with respect to public transport in the study area.

7. Alternative Transport

7.1. Bicycle Infrastructure

As set out within Section 4.5.1, the current bicycle conditions throughout the study area vary at different points along Heidelberg Road and is discontinuous. Accordingly, this results in a confusing and potentially dangerous environment for cyclists, which discourages use of bicycles along Heidelberg Road.

The bike lanes through the corridor commonly share the kerb space with parked vehicles outside of Clearway times. Accordingly, outside of Clearway times, the bicycle lanes are not able to be used.

We note that during clearway times in some locations, the bicycle lanes are narrow, resulting in cyclists travelling quite close to adjacent traffic lanes.

The treatments at signalised intersections is inconsistent throughout the study area. This ranges between a high level at the Heidelberg Road/Chandler Highway intersection which includes kerbside bicycle lanes on the arrival and departure lanes, head-start areas and hook turn storage boxes, compared with a very poor level of infrastructure at a number of intersections.

In each of the precincts all redevelopment should provide for bicycle parking with provisions at least in line with Clause 52.34 of the Planning Scheme. If dwellings without car parking are provided, additional bicycle parking should be provided to ensure no dwelling is at a transport disadvantage.

The design of the bicycle parking facilities should be provided in accordance with the requirements of AS2890.3-2015, including the provision of 20% of spaces designed as a floor mounted space.

Any development within the study area should ensure that bicycles are logically placed with respect to the bicycle paths and bicycle lanes to ensure easy access to designated bicycle routes.

7.1.1. Precinct 1

The sites located within Precinct 1 are particularly well located with respect to bicycle infrastructure, with bicycle lanes located adjacent the site on Heidelberg Road (both directions) and off-road shared paths located to the south of the site throughout the parklands.

There are also good cycling connections from the site to Dennis Railway Station via Jeffrey Street and Victoria Street.

The design strategy for Precinct 1 demonstrates that the bicycle lanes will be maintained along Heidelberg Road.

Whilst the existing infrastructure is suitable, some improvements can be made in some areas. We recommend liaising with the relevant authorities, i.e. Department of Transport (PTV and VicRoads) and Darebin City Council in relation to considering the following, which is currently lacking:

- head-start areas for bicycles at the Heidelberg Road/Yarra Bend Road and Heidelberg Road/Jeffrey Street intersections, and
- additional bicycle parking for Dennis Railway Station to encourage bicycle access to the railway station.

7.1.2. Precinct 2

The bicycle lanes which extend along Heidelberg Road within Precinct 2 do not continue through the intersection with Station Street creating an unsafe arrangement. This is a deterrent for bicycle travel along this stretch of Heidelberg Road.

Bicycle lanes are provided along Westgarth Street and Station Street, providing for convenient bicycle access to Dennis Railway Station (via Westgarth Street and Victoria Street) and Fairfield Railway Station via (Station Street).

The existing bicycle infrastructure is lacking in this area. We recommend liaising with the relevant authorities, i.e. Department of Transport (PTV and VicRoads) and Darebin City Council in relation to the following:

- bicycle consideration at the Station Street/Heidelberg Road intersection to redesign the intersection to incorporate high quality bicycle infrastructure to encourage bicycle usage and increase safety at the intersection for cyclists, and
- additional bicycle parking for Fairfield Railway Station to encourage bicycle access to the railway station.

7.1.3. Precinct 3a

The recent upgrade to the intersection of the Heidelberg Road/Chandler Highway intersection has included significant provisions for bicycles including kerbside bicycle lanes on the arrival and departure lanes, head-start areas and hook turn storage boxes. Accordingly, the bicycle infrastructure in this precinct is good.

7.1.4. Precinct 3b

Bicycle lanes extend along Heidelberg Road within the western portion of Precinct 3b, but do not continue east of Miller Street and through the intersection with Yarralea Street and then do not continue to the east of this intersection. The non-provision of bicycle lanes in this area and restriction of bicycle lanes outside of clearway times by parked cars acts as a deterrent for bicycle travel along this stretch of Heidelberg Road.

Similarly, bicycle lanes are not present on Yarralea Street to assist access to Alphington Railway Station.

The existing bicycle infrastructure is lacking in this precinct. We recommend liaising with the relevant authorities, i.e. Department of Transport (PTV and VicRoads) and Darebin City Council in relation to considering the following, which is currently lacking:

- investigate the provision of bicycle lanes if the Public Acquisition Overlay is acted upon by the Department of Transport,
- bicycle consideration at the Yarralea Street/Heidelberg Road intersection to redesign the intersection to incorporate high quality bicycle infrastructure to encourage bicycle usage and increase safety at the intersection for cyclists, and
- additional bicycle parking for Alphington Railway Station to encourage bicycle access to the railway station.

7.1.5. Summary

Overall the bicycle infrastructure within the study area is lacking in most areas and should be improved. We recommend liaising with the relevant authorities, i.e. Department of Transport (PTV and VicRoads) and Darebin City Council in relation to considering the following, which is currently lacking:

- bicycle consideration at signalised intersections within the study area, intersection to redesign intersections to incorporate high quality bicycle infrastructure to encourage bicycle usage and increase safety at the intersection for cyclists. This could include continuous bicycle lanes through the intersection or head start areas for bicycles,
- additional bicycle parking at Dennis, Fairfield and Alphington Railway Stations to encourage bicycle access to the railway station, and
- creating a be a continuous safe bike lane which is not interrupted at intersections or by parked vehicles.

7.2. Public Transport

7.2.1. Fixed Rail

The study area has access to three railway stations within close proximity, including Dennis, Fairfield and Alphington Railway Stations. These railway stations are located on the Hurstbridge line and offer a high level of service to and from the City with services operating every 5-10 minutes during peak periods and every 20 minutes during off-peak times.

We do note however, that there appears to be a lack of bicycle parking at these railway stations which could create a detraction for potential users of the train services, given the lack of car parking at the stations.

As stated on Metro Train's website:

> *Parkiteer bike cages provide a convenient, undercover and secure place to park your bike, allowing fast access to the station to continue your journey by public transport.*

Accordingly, providing a secure undercover space to park a bicycle would potentially attract additional users of fixed rail for the existing population, as well as any new residents to the area.

7.2.2. Bus Services

A detailed summary of the bus routes available within close proximity to the study area is provided at Section 4.4. The majority of the bus services provided within the study area do not provide a high level of service, with services ranging from every 20 minutes to every 60 minutes during the peak periods. Some services do not operate on the weekend, including along Heidelberg Road. i.e. on the weekend no bus services operate along Heidelberg Road.

Furthermore, there is a lack of bus shelters provided along Heidelberg Road which could be a detractor for potential users of the services.

We recommend liaising with PTV to increase the frequency of services for the existing bus routes within the area and potentially for services to operate during the weekend. Particularly Bus Route 546, which could create a convenient connection through the study area, enabling access to the retail and community services which will be offered as part of the redevelopment of the former Paper Mills site.

We also recommend liaising with the Department of Transport in relation to incorporating considerations for buses within any widening of Heidelberg Road, as well as additional bus shelters at regular intervals along Heidelberg Road.

7.2.3. Walking

The study area is somewhat walkable where only some services and destinations are within a convenient walking distance. We note that the main pedestrian path connecting the study area to local services in close proximity is via Heidelberg Road.

We also note that access to the nearest railway stations within the study area is not ideal, with Precinct 3a located at least 850m walking distance to the nearest railway station. Given its greater distance, this could discourage potential users of the train services.

Accordingly, providing a possible pedestrian link to Fairfield Station along the disused Outer Circle train line can improve pedestrian connectivity to Precinct 2 and 3a (both of which are located outside the PPTN area). This could potentially attract additional users of the train services and Fairfield Village shopping precinct for the existing population, as well as any new residents to the area. This is consistent with the recommendation put forward in the Alphington Paper Mill Development Plan.

8. Interim Design and Development Overlay – Working Draft

The following table sets out our discussion and recommendations for the transport engineering aspects of the interim Design and Development Overlay. This Extract is provided at Appendix G.

Table 10: Review of Design and Development Overlay

Current Text from Working Draft	Comments	Potential Re-Wording
Access, parking and loading areas requirements Car parking should be located within a basement or concealed from the main and side streets.	Agree	-
Providing recessed parking spaces at the ground floor of buildings and onsite parking spaces at the front of properties should be avoided, except for development east of Yarralea Street, Alphington.	There will be some instances where car parking may be recessed on the ground level from laneways or carriageway easements. We assume that the reasoning behind providing no parking within the front setbacks of buildings east of Yarralea Street is due to the PAO, which if enforced, would need to be removed. Accordingly, any car parking which is provided within the front setbacks in these areas should be of little consequence to the overall viability of the developments, and should include car spaces such as visitors or customers. Rather than resident or staff parking.	Providing recessed parking spaces at the ground floor of buildings and onsite parking spaces at the front of properties should be avoided, except for development which includes vehicle access to laneways and for development east of Yarralea Street, Alphington.
Pedestrian access to buildings should be achieved via Heidelberg Road or side streets and must be clearly visible, secure and have an identifiable sense of address. Residential and commercial entrances should be distinguishable from each other. Primary access from laneways should be avoided.	Agree.	-

Current Text from Working Draft	Comments	Potential Re-Wording
The common pedestrian areas of new buildings should be designed with legible and convenient access, with hallway and lobby areas of a size that reflects the quantity of apartments serviced and which can be naturally lit and ventilated.	Agree.	-
Bicycle parking should be located and designed to be secure and conveniently accessible from the street and associated uses.	Agree.	-
Vehicle ingress and egress into development, including loading facilities and building servicing, should be designed to ensure a high quality pedestrian amenity and limit potential conflict between vehicle movements and pedestrian activity.	Agree.	-
Development must not provide new vehicular access from Heidelberg Road.	As detailed extensively at Section 6.3, there will be instances when vehicle access to Heidelberg Road is the only viable option for vehicle access. The word 'must' does not allow for any variation to allow for access to Heidelberg Road in the aforementioned situations.	Development must not provide new vehicular access from Heidelberg Road, unless there is no reasonable alternative. In the event that access is taken to Heidelberg Road, only one crossover to a development site will be permitted to Heidelberg Road.
Development with redundant vehicle access points to Heidelberg Road should reinstate the kerb, linemarked parking bays, and relocate any parking signs.	Agree.	-

Current Text from Working Draft	Comments	Potential Re-Wording
Application Requirements The following application requirements apply to an application for a permit under Clause 43.02, in addition to those specified elsewhere in the scheme and must accompany an application, as appropriate, to the satisfaction of the responsible authority: A Traffic and Parking Assessment Report which includes an assessment of the cumulative impacts of traffic and parking in the Precinct including an assessment of the ongoing functionality of laneway/s, where applicable.	We agree with these requirements for an application. We also recommend that the cumulative impact should extend to any other developments which may not be located within the precinct, but would still impact upon the proposed development. As well as the functionality of laneway/s, the assessment should also assess the impact to any relevant intersections with Heidelberg Road.	A Traffic and Parking Assessment Report undertaken by a suitable qualified traffic engineer which includes an assessment of the cumulative impacts of traffic and parking in the nearby area including an assessment of the ongoing functionality of laneway/s, any relevant intersection and local roads where applicable.
Decision Guidelines The following decision guidelines apply to an application for a permit under Clause 43.02, in addition to those specified in Clause 43.02 and elsewhere in the scheme which must be considered, as appropriate, by the responsible authority: The cumulative impact of development on traffic and parking in the nearby area, including on the functionality of laneway's.	See above.	The cumulative impact of development on traffic and parking in the nearby area, including on the functionality of laneways, any relevant intersection and local roads.

9. Conclusions and Recommendations

Traffix Group has been engaged by Yarra City Council to undertake the following:

- a high level assessment of the future traffic conditions and performance of Heidelberg Road and local street network with the planned future development,
- access and movement plans for the study area showing the location and form of new, altered and retained access arrangements and laneways required to provide appropriate access to future developments,
- advice on the content of the future Design and Development Overlay to facilitate appropriate access and movement through new development, and
- undertake a review of the existing public transport, bicycle and pedestrian considerations and infrastructure within the study area.

The assessment of future traffic conditions is in the form of a case study regarding the changes to transport patterns over the last 10 years along Victoria Street, where significant development has been undertaken. This review found that there has been a significant mode shift in the area, resulting in reduction in traffic on the arterial road network. This is due to a combination of factors including changes in land use patterns, the changing demographics of Richmond and additional residents working and living locally.

The Heidelberg Road corridor is placed to encourage each of these outcomes. Heidelberg Road is readily accessible by public transport and alternative transport modes and can readily encourage local living through a greater diversity of land uses. As such, we are satisfied that the traffic impacts of new development on Heidelberg Road can be managed, with a large proportion of the new trips generated, being taken up by travel modes other than private car.

Access and Movement Plans have been prepared for all properties abutting Heidelberg Road to map out how vehicle access to new developments can be managed to reduce the impact of vehicle access directly to Heidelberg Road. Suitably designed and controlled vehicle access is a key component in achieving the objectives of maximising the efficiency of Heidelberg Road for vehicles, cyclists and providing a high quality pedestrian environment.

Additional studies may be required for some locations to determine whether laneway widening is required as a result of some development. Additional studies may also be required to determine any detrimental impacts on signalised intersections within the precincts.

Recommendations have been made in relation to liaising with other stakeholders in relation to upgrading bicycle infrastructure throughout the precincts, improving the connectivity to nearby railway stations and improving the level of service for buses within the area.

This report also undertakes a review of the transport related aspects of the interim Design and Development Overlay and outlines any alterations required in this regard.

Appendix A

Road Network

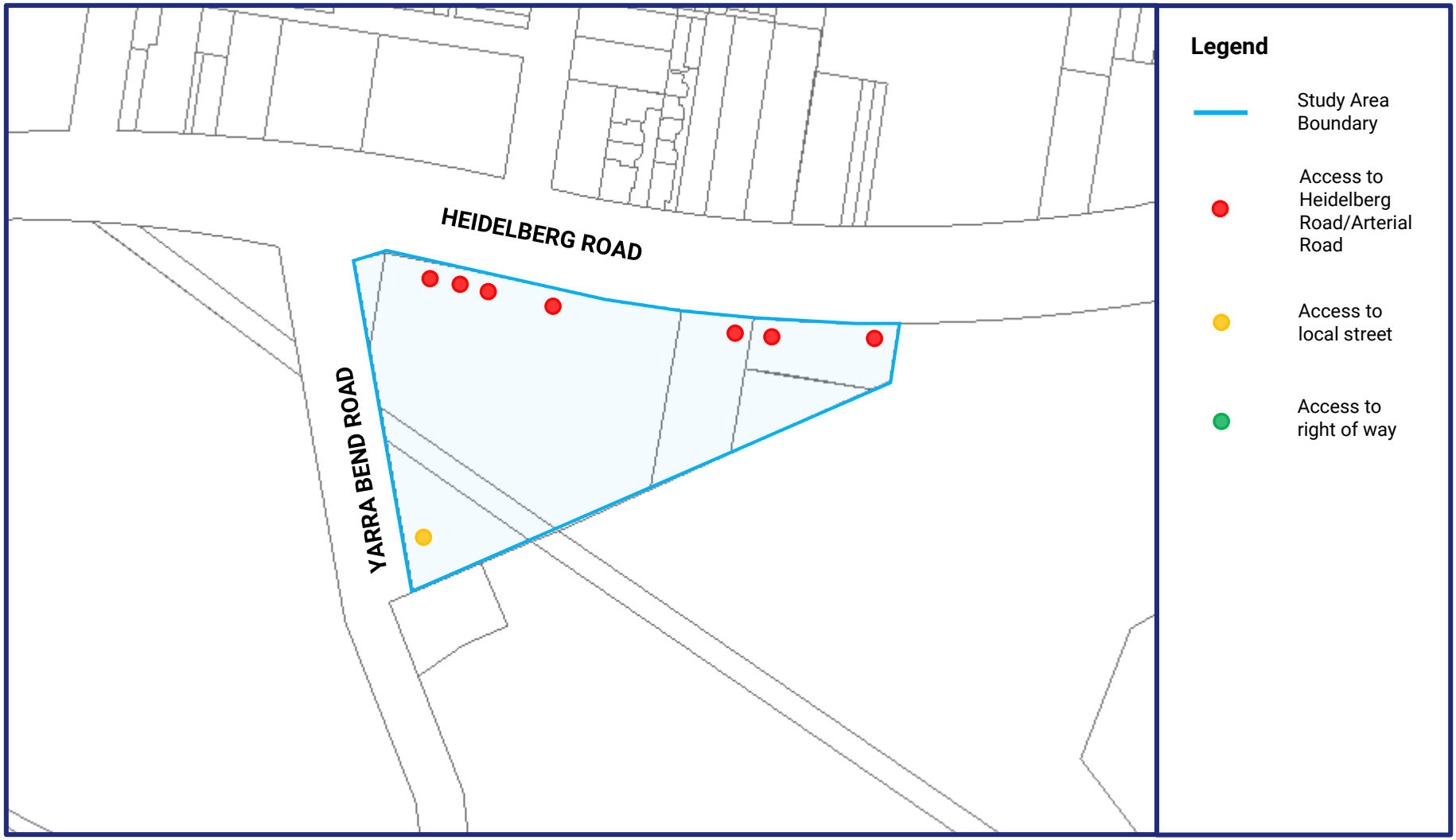


Figure E1: Precinct 1

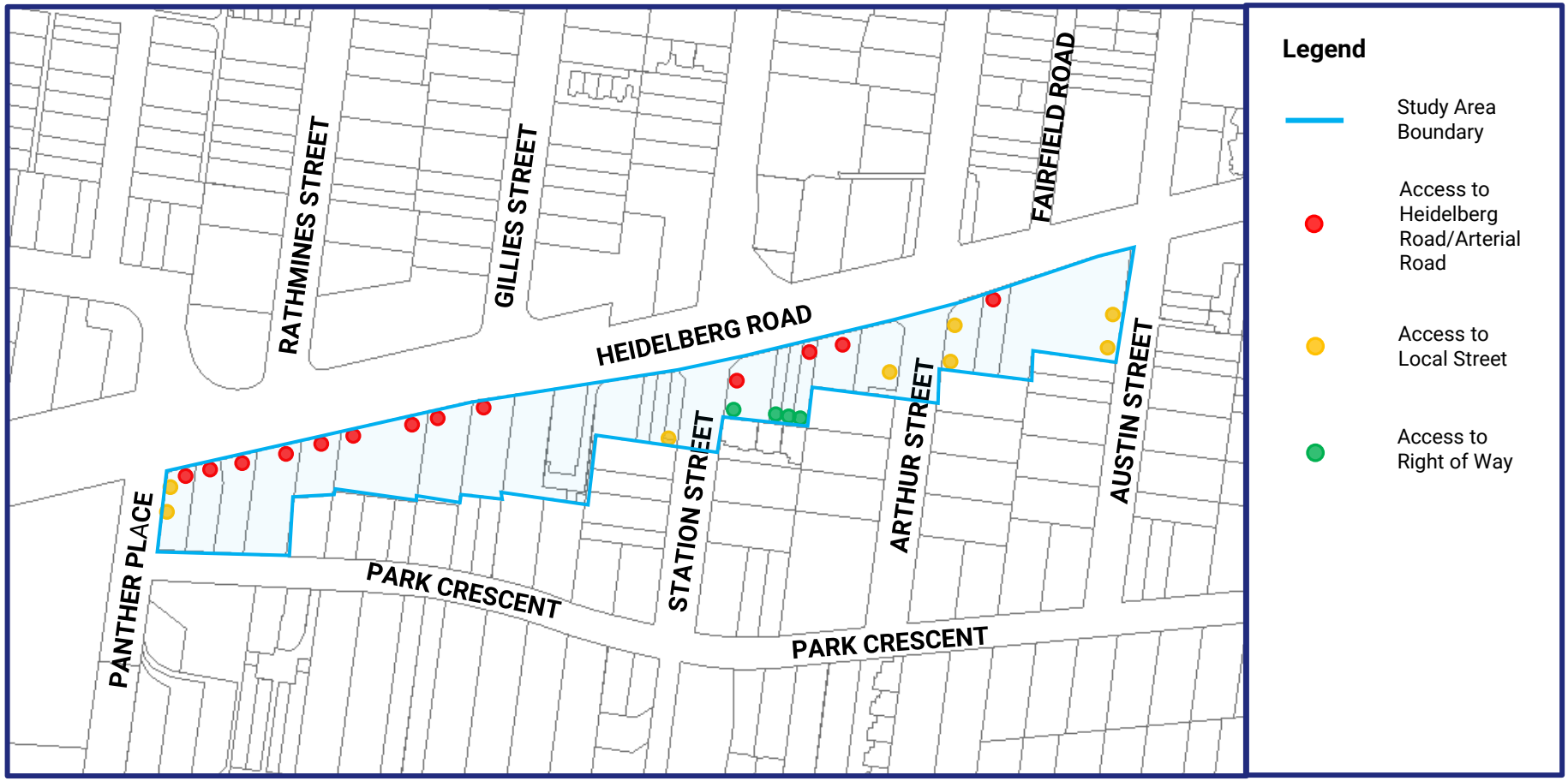


Figure E2: Precinct 2

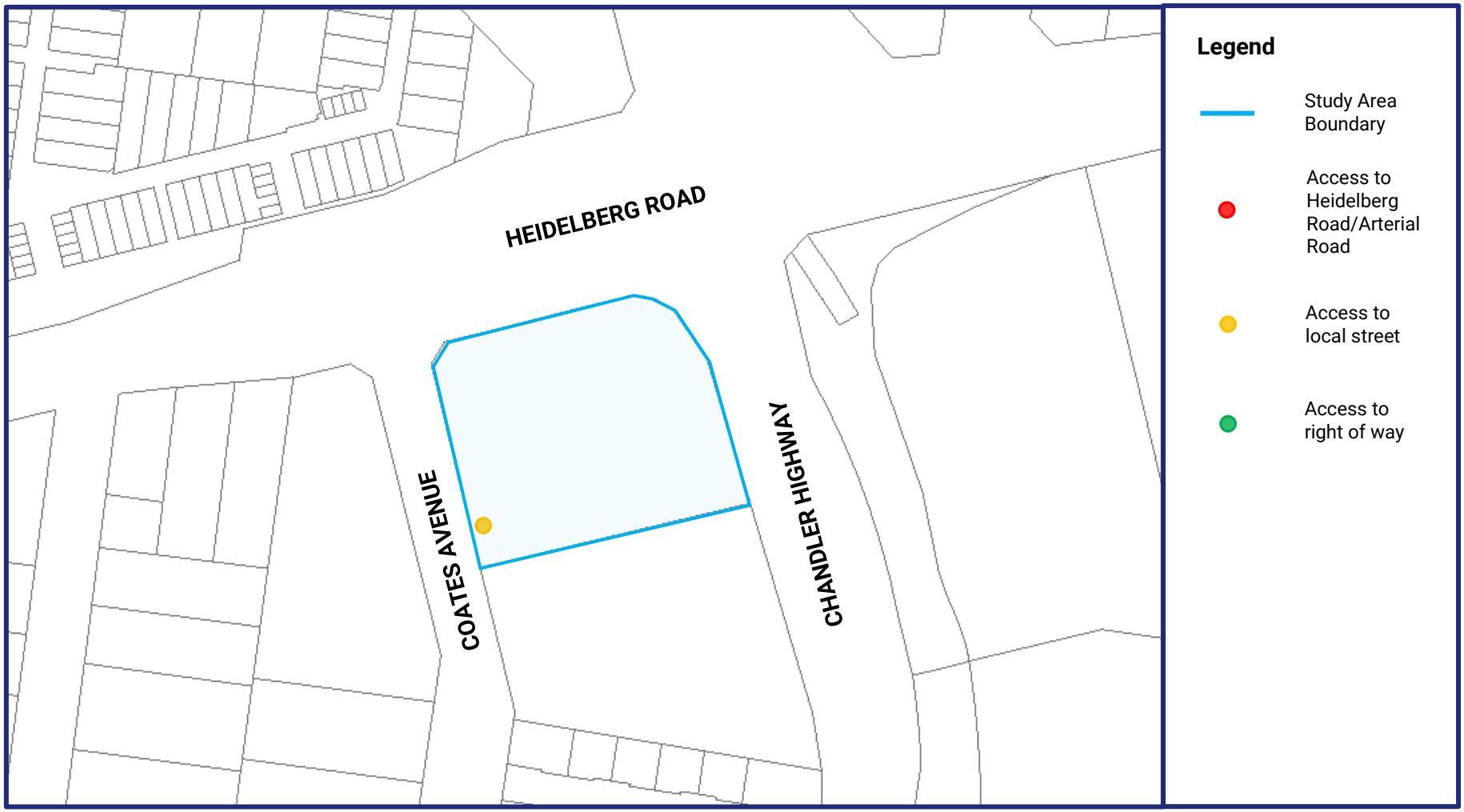


Figure E3: Precinct 3a

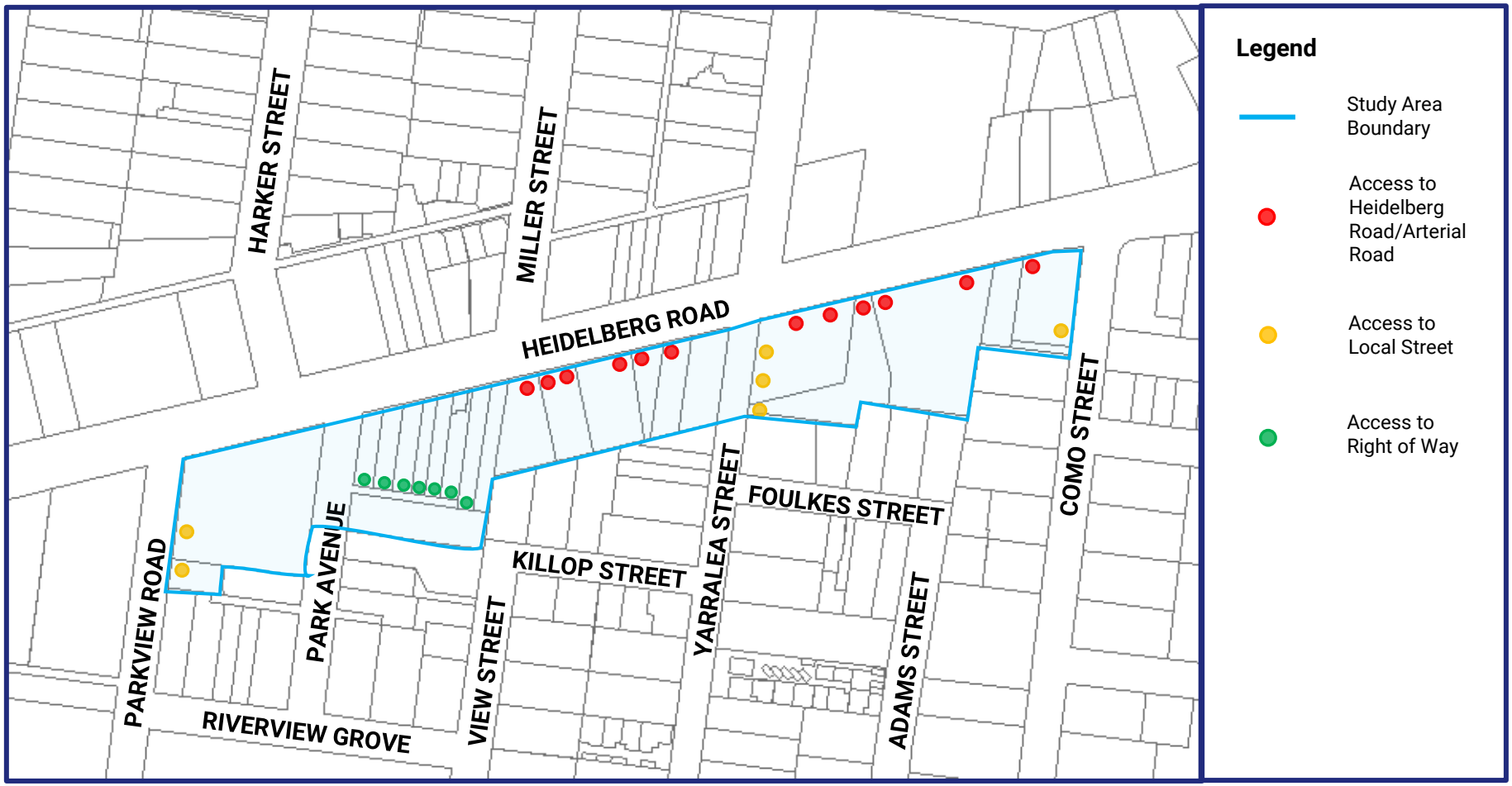


Figure E4: Precinct 3b

Appendix B

Existing Car Parking Restrictions

Traffix Group

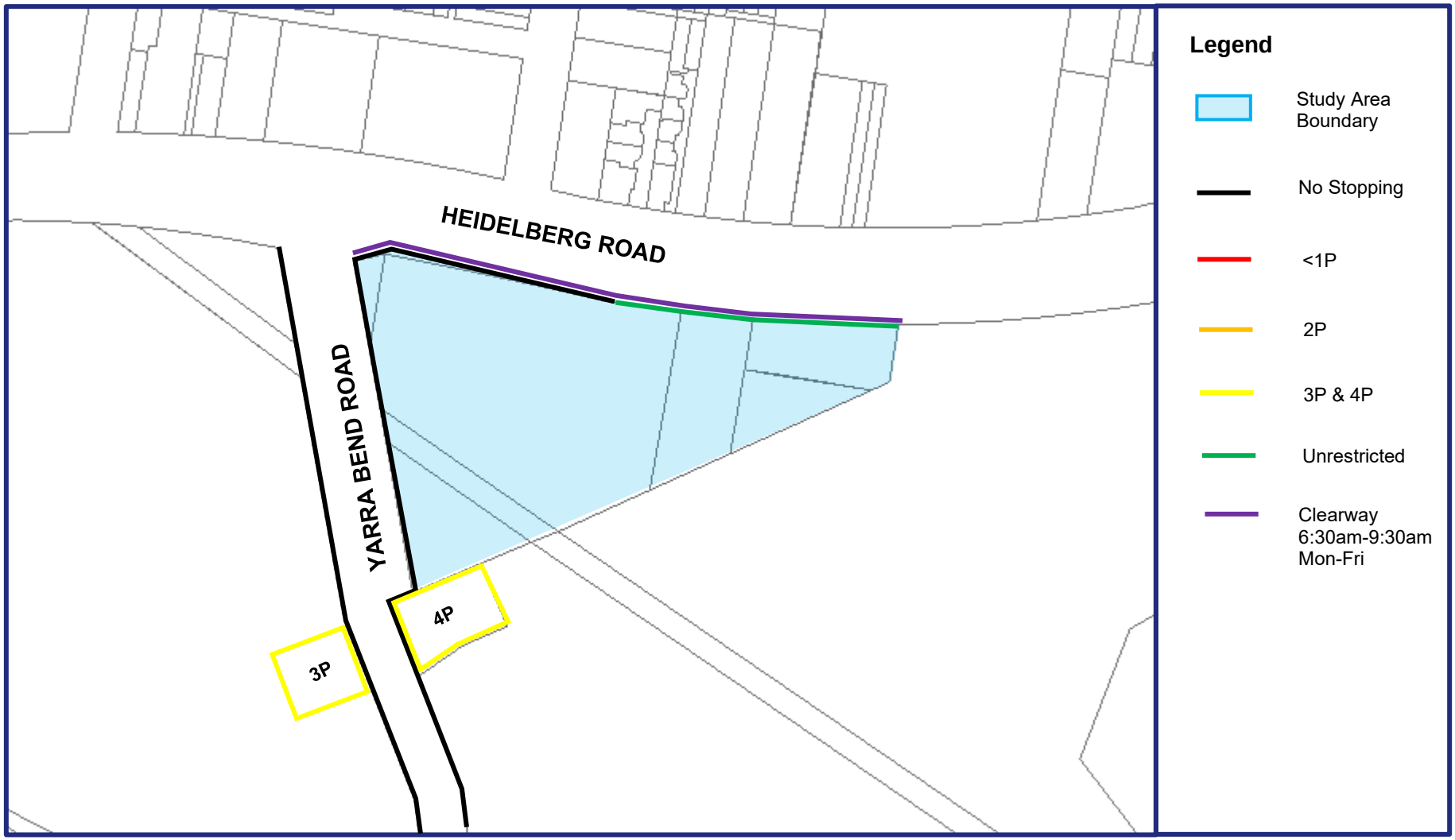


Figure B1: Precinct 1

Traffix Group

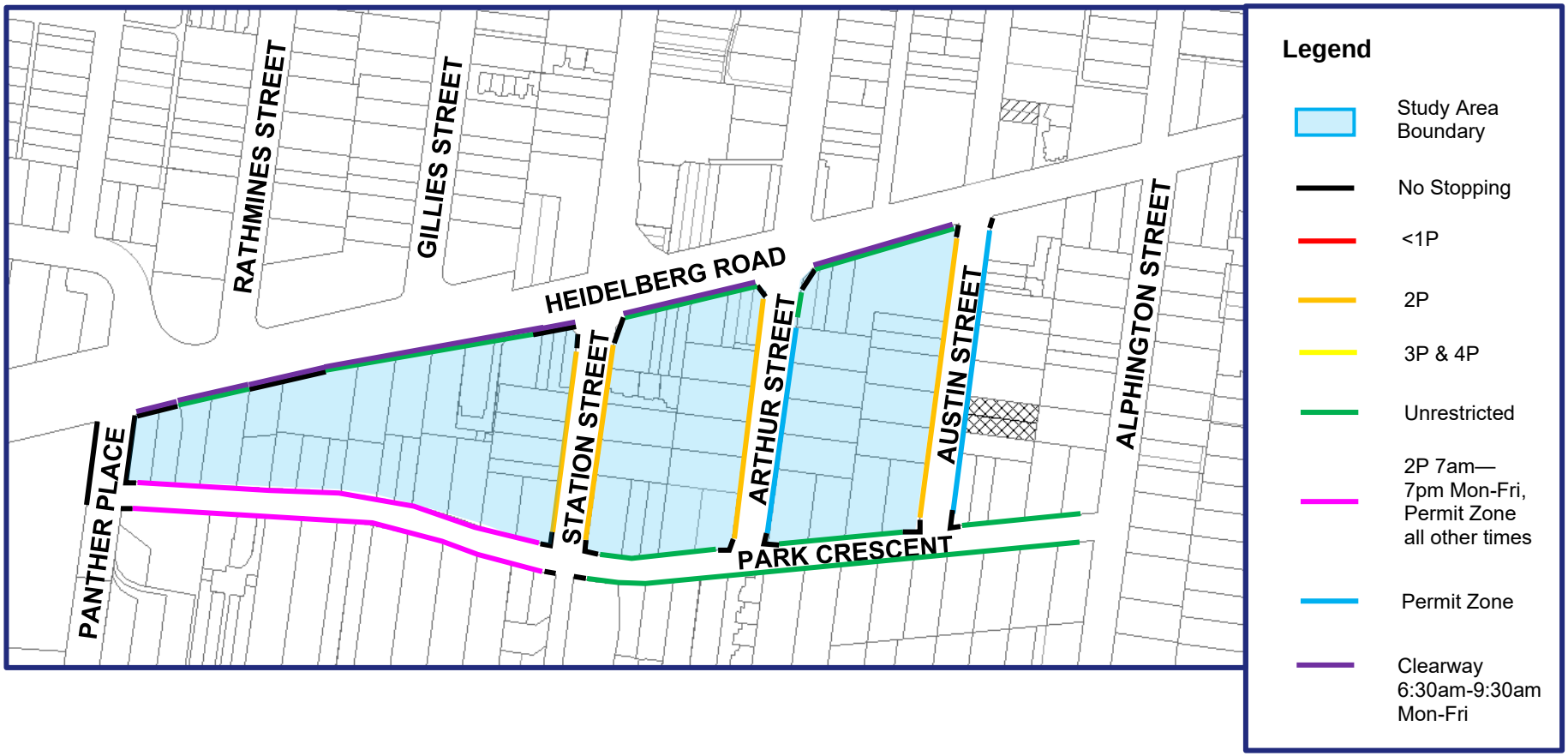


Figure B2: Precinct 2

Traffix Group

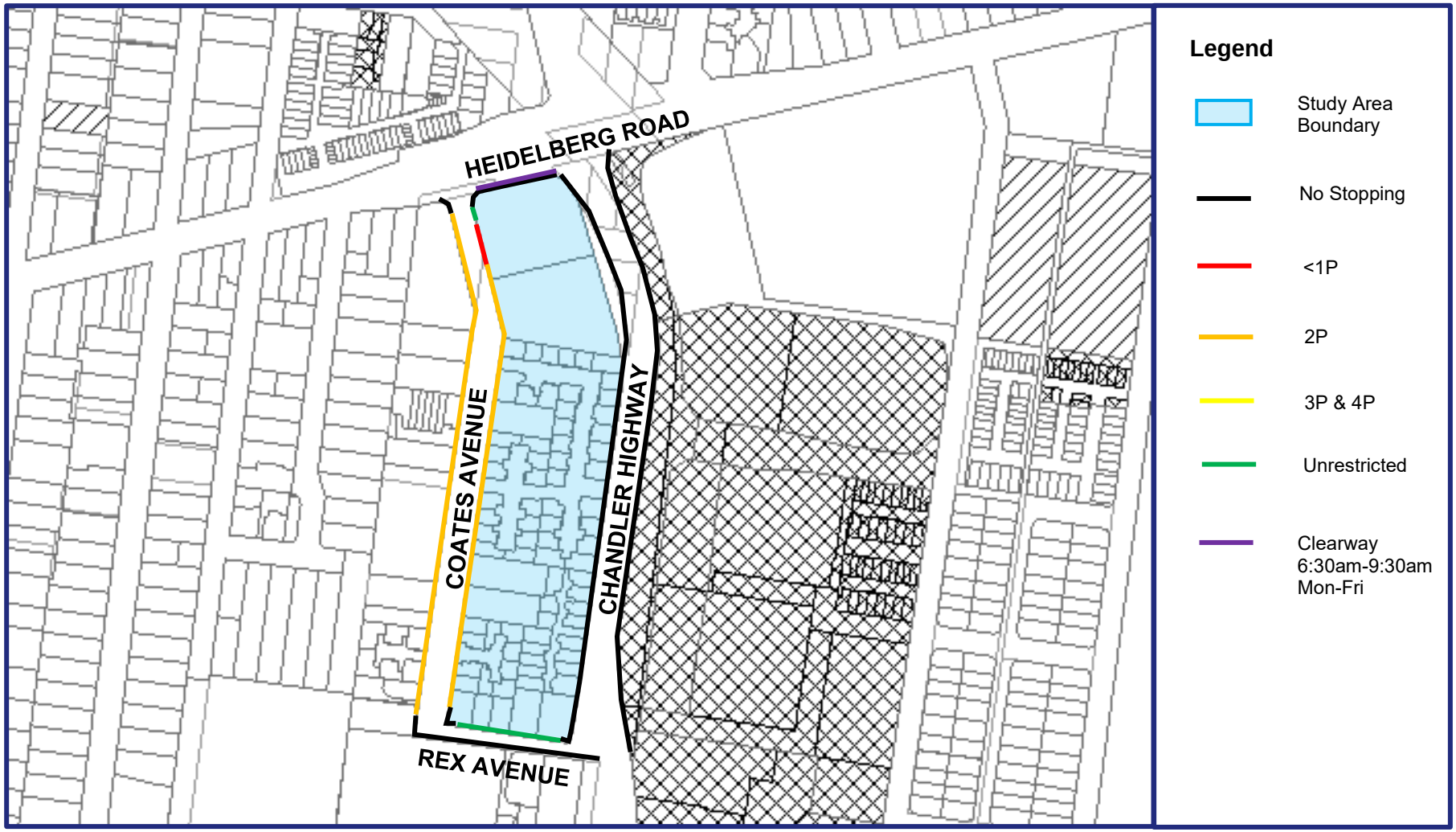


Figure B3: Precinct 3A

Traffix Group

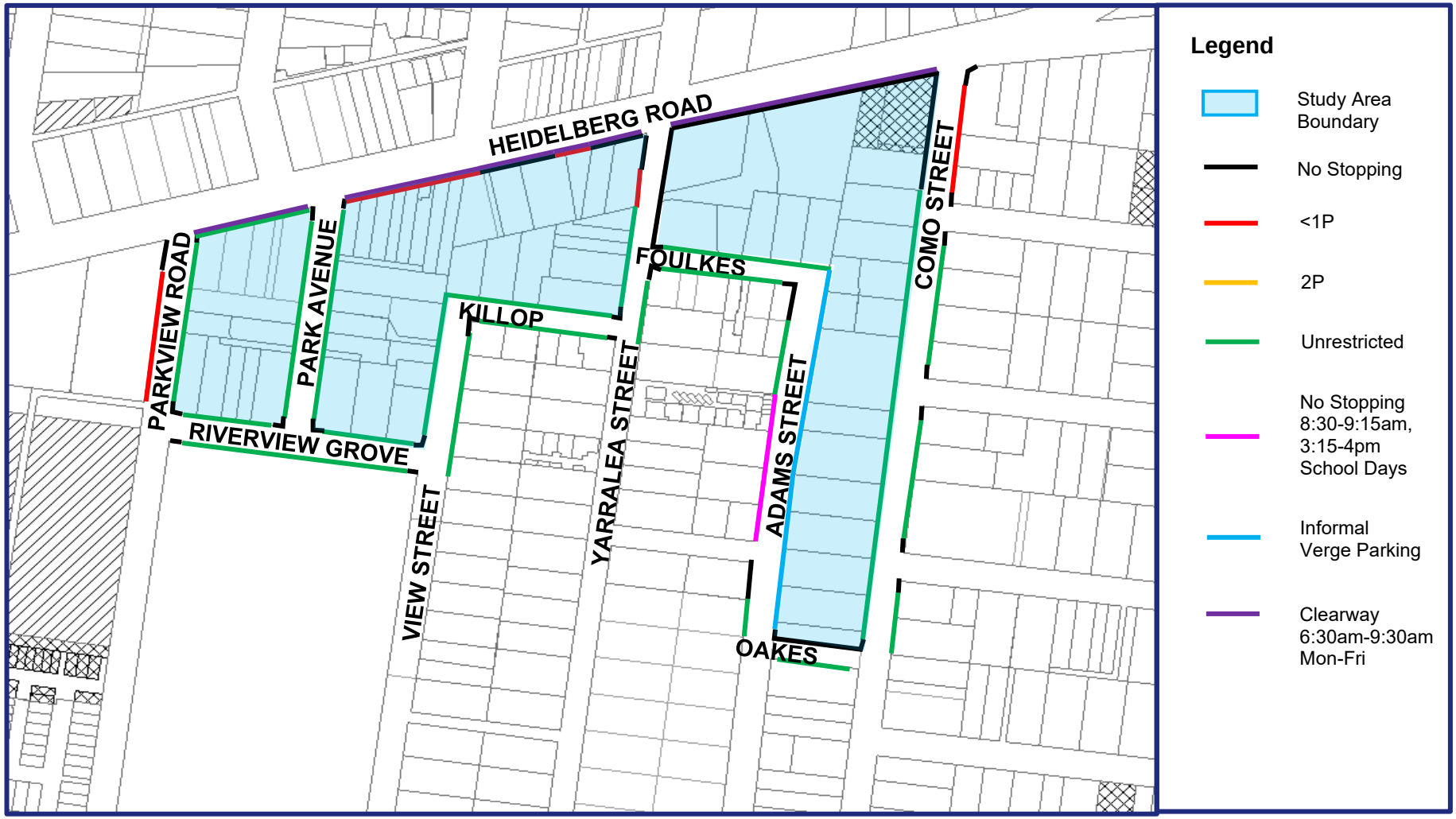


Figure B4: Precinct 3B

Appendix C

Existing Traffic Management

Figure C1: Precinct Area 1

Traffix Group

Figure C2: Precinct 2

Figure C3: Precinct 3A

Figure C4: Precinct 3B

Appendix D

Victoria Street Case Study

Victoria Street Description

Victoria Street is similar to Heidelberg Road in many respects, including:

- It is a parallel east-west transport route between Melbourne's inner eastern suburbs and the CBD.
- It has a large number of intersections with minor local roads.
- Land use is a mixture of residential, commercial and industrial land uses.

In April, 2010, Yarra City Council adopted the Victoria Street Structure Plan, a document that built on planning work that occurred between 2002 and 2010. Since that time, significant redevelopment has occurred, particularly within the eastern and western precincts identified by this structure plan.

The following reviews the changes to Victoria Street and the changes in transport along Victoria Street as a model for how Heidelberg Road may evolve over time.

Increase in Activity along Victoria Street

The number of people living within the Richmond Statistical Local Area has increased from 23,797 people in in 2001 to 26,121 in 2011, which is a 9.7% increase over that time period.

Yarra City Council has provided data on the increased development that has occurred directly adjacent to Victoria Street in the last 10 years. This data was sourced from the valuation and permit information data by Council and Housing Dwelling Development data provided by the State Government.

Table D1 sets out the change in dwelling numbers along Victoria Street and Table D2 sets out the change in commercial floor space along Victoria Street.

Table D1: Change in Dwelling Numbers along Victoria Street – 2007-2016

Year	Total Dwellings	Yearly Change	Net Change Since 2007
2007	135		
2008	139	+4	**+4**
2009	200	+61	**+65**
2010	254	+54	**+119**
2011	347	+93	**+212**
2012	626	+279	**+491**
2013	1499	+873	**+1364**
2014	2119	+620	**+1984**
2015-2016	2490	+371	**+2355**

The change in dwelling density is highlighted in the following two maps.

Figure D1: Change in dwelling density – 2007-2016

Table D2: Change in Commercial Floor Space along Victoria Street – 2007-2013

Year	Commercial Floor Space	Yearly Change	Net Change Since 2007
Pre-2007	46,737m^2		
2009	45,006m^2	-1,731m^2	**-1,731m^2**
2010	46,609m^2	1,603m^2	**-128m^2**
2013	42,814m^2	-3,795m^2	**-3,923m^2**

Review of Arterial Road Traffic Volumes

The following presents a review of arterial road traffic volumes over the last 10 years of available data for the three key parallel traffic routes through Richmond, Swan Street, Victoria Street and Bridge Road. This is set out in detail in Table D3.

Table D3: Arterial Road Traffic Volumes (Source: VicRoads Arterial Road Database - Feb 2017)

Road Name	Two-Way Annual Average Daily Traffic Volume[1] by Year					
	2006	2013	2014	2015	2016	Change 2006-2016
Swan Street						
Btw Church/Lennox	18,000	17,800	17,300	17,200	17,200	-800
Btw Coppin/Church	21,000	21,000	20,600	20,300	20,300	-700
Btw Burnley/Coppin	19,600	20,300	20,200	20,300	20,200	+600
Btw Madden/Burnley	15,300	15,600	15,600	15,600	15,200	-100
Victoria Street						
Btw Church/Hoddle	22,700	18,600	18,300	18,200	18,000	-4,700
Btw Burnley/Church	22,000	20,000	18,800	18,500	18,300	-3,700
Btw High/Burnley	24,000	23,000	23,000	23,000	23,000	-1,000

Road Name	Two-Way Annual Average Daily Traffic Volume[1] by Year					
	2006	2013	2014	2015	2016	Change 2006-2016
Bridge Road						
Btw Hoddle/Lennox	20,000	18,400	18,300	18,300	17,900	-2,100
Btw Lennox/Church	19,500	18,700	18,500	18,400	18,200	-1,300
Btw Church/Coppin	22,000	20,800	19,500	19,500	18,600	-3,400
Btw Coppin/Burnley	23,000	20,700	20,600	20,600	20,600	-2,400
Btw Burnley/Yarra	27,000	24,000	24,000	23,000	23,000	-4,000
Note: Annual Average Daily Traffic Volume is the sum of all traffic over the year divided by 365						

The above illustrates that arterial road traffic volumes have generally fallen between 2006 and 2016. Traffic volumes on Victoria Street in particular have fallen substantially over the last 10 years. There has not been a significant change to the traffic carrying capacity of these streets within this time period .

Furthermore, this decrease in traffic volumes is also reflected at key intersections during the commuter peak hours. Table D4 provides a comparison between current and historical data for two key intersections along Victoria Street and illustrates a drop in traffic volumes at these locations during peak hours. The Burnley Street/Victoria Street and Flockhart Street/Victoria Street intersections are the closest signalised intersections to where the highest level of development has occurred.

Table D4: Review of Peak Hour Traffic on Victoria Street

Intersection & Year of Survey	Two-Way Peak Hour Traffic Volume on Victoria Street	
	AM Peak	PM Peak
Flockhart Street (west of)		
2006[1]	2,203	2,267
2015[2]	1,827	1,957
Change	-376 (-21%)	-310 (-16%)
Burnley Street (east of)		
2012[3]	1,933	1,831
2016[4]	1,709	1,649
Change	-224 (-13%)	-182 (-11%)

Notes:

1. Data collected by Grogan Richards dated 11th July, 2006.
2. Data sourced from VicRoads by Cardno, dated 11-15th May, 2015.
3. Data sourced from VicRoads by Traffix Group, dated 7th June, 2012.
4. Data collected by Ratio Consultants dated 14th April, 2016.

Review of Travel to Work Behaviour

The follow tables review the journey to work data sourced from the Australian Bureau of Statistics for the period from 2001 to 2016.

Table D5 presents data for journey to work based on place of residence within the City of Yarra.

Table D6 presents data for journey to work for people working within the Richmond Statistical Local Area (workers do not necessarily need to reside within Richmond).

The data indicates a clear trend over time for a decrease in the mode share of private cars. For people living within the City of Yarra, this decrease is realised by an increase in bicycle and walking trips. This is a strong indication of local living and working locally.

For people working within Richmond, the decrease in mode share of cars is higher. The change has resulted in a significant increase in public transport use (a relative 60% increase) and to a lesser extent walking and cycling. This is reflective of residents outside of Richmond travelling further and accordingly cycling and walking in particular are not a suitable mode for these longer trips.

Table D5: Journey to Work Data - Place of Residence within City of Yarra

Mode of Travel	Year				Change 2001-2016
	2001	2006	2011	2016	
Car as Driver	48%	43%	40%	38%	-10%
Car as Passenger	4%	3%	3%	2%	-2%
P/Trans	30%	28%	30%	32%	+2%
Motorcycle	1%	1%	1%	1%	-
Bicycle	5%	8%	10%	10%	+5%
Walked	11%	15%	13%	14%	+3%
Other	1%	2%	3%	3%	+2%
Total	100%	100%	100%	100%	

Table D6: Journey to Work Data - Place of Work within Richmond SLA

Mode of Travel	Year				Change 2001-2016
	2001	2006	2011	2016	
Car as Driver	73%	67%	61%	41%	-32%
Car as Passenger	5%	4%	4%	2%	-3%
P/Trans	15%	19%	24%	34%	+19%
Motorcycle	0%	1%	1%	1%	+1%
Bicycle	1%	2%	3%	6%	+4%
Walked	5%	6%	6%	14%	+9%
Other	1%	1%	1%	2%	-
Total	100%	100%	100%		

Change in Public Transport Services

The key public transport service for Victoria Street is tram services that run the length of the Activity Centre. Victoria Street is currently serviced by the following tram routes:

- Route 109 – service between Box Hill and Port Melbourne via the CBD.
- Route 12 – service between Victoria Gardens and St Kilda. This route commenced operation in July, 2014.

The changes in July, 2014 doubled the number of services between Victoria Street, Richmond and the CBD. While Tram Route 24 was removed at the same time, this service only operated during the AM and PM peak periods (approximately 7-9am and 4:30-6:30pm).

On Church Street, the peak hour only service Route 79 was terminated with Route 78 being extended to operate more than 18 hours per day.

Bus Route 684 used to operate along Victoria Street, however this service did not stop along Victoria Street (service between the CBD and Eildon via Healesville).

The key public transport service on Victoria Street is the tram services along Victoria Street and these have significantly improved in frequency over the last 10 years.

Increase in Bicycle Use

As set out above, the mode share of bicycles for journey to work purposes has increased from 5% to 10% by residents of Yarra and increased from 1% to 6% for employees within Richmond.

For Victoria Street, the Super Tuesday bicycle counts undertaken by Bicycle Network illustrate an increase in cycling numbers. The Super Tuesday counts are undertaken on an annual basis over the surveyed two hour, 7-9am commuter peak hour.

For the intersection of Victoria Street/Burnley Street/Walmer Street (which connects to the Capital City Trail along the Yarra River), the number of cyclists increased from 298 to 483 cyclists over the two hour period between 2011 and 2015 (62% increase).

Rise of Car Share

Car sharing schemes provide an alternative to car ownership for residents and actively encourage the use of alternative transport modes. Residents within Richmond do not need a car for everyday trips as they have easy access to public transport and are within convenient walking and cycling distance of many activities within the Melbourne CBD and Activity Centres. Car share vehicles provide a car on demand for those trips that specifically require a vehicle.

A study by Phillip Boyle & Associates (dated 18th June, 2015) was recently completed on behalf of the City of Melbourne, which reviewed car share policy in the City of Melbourne. This review found that car share significantly reduced car ownership and car use by members. The review identified that each new car share vehicle results in residents disposing of 10 privately owned vehicles (a net reduction of nine vehicles).

The study found that car ownership is reduced by:

- People replacing a private car with a car share membership as it is more cost-effective if you travel low kilometres (less than 15,000km per annum) and use alternative modes for many trips, and
- People who do not own a car, postpone or avoid purchasing a car by using a car share service.

In 2006, car share was in its infancy. The two leading car share company's today in Melbourne are Fleixcar (founded in 2004) and GoGet (arrived in Melbourne in 2004).

There are now multiple car share pods operated by three companies within close proximity of Victoria Street. The availability of these car share pods supports residents who do not own a car and businesses by providing a share car for work-based business trips (which allows employees not to drive to work).

Appendix E

Existing Vehicle Access Points

Traffix Group

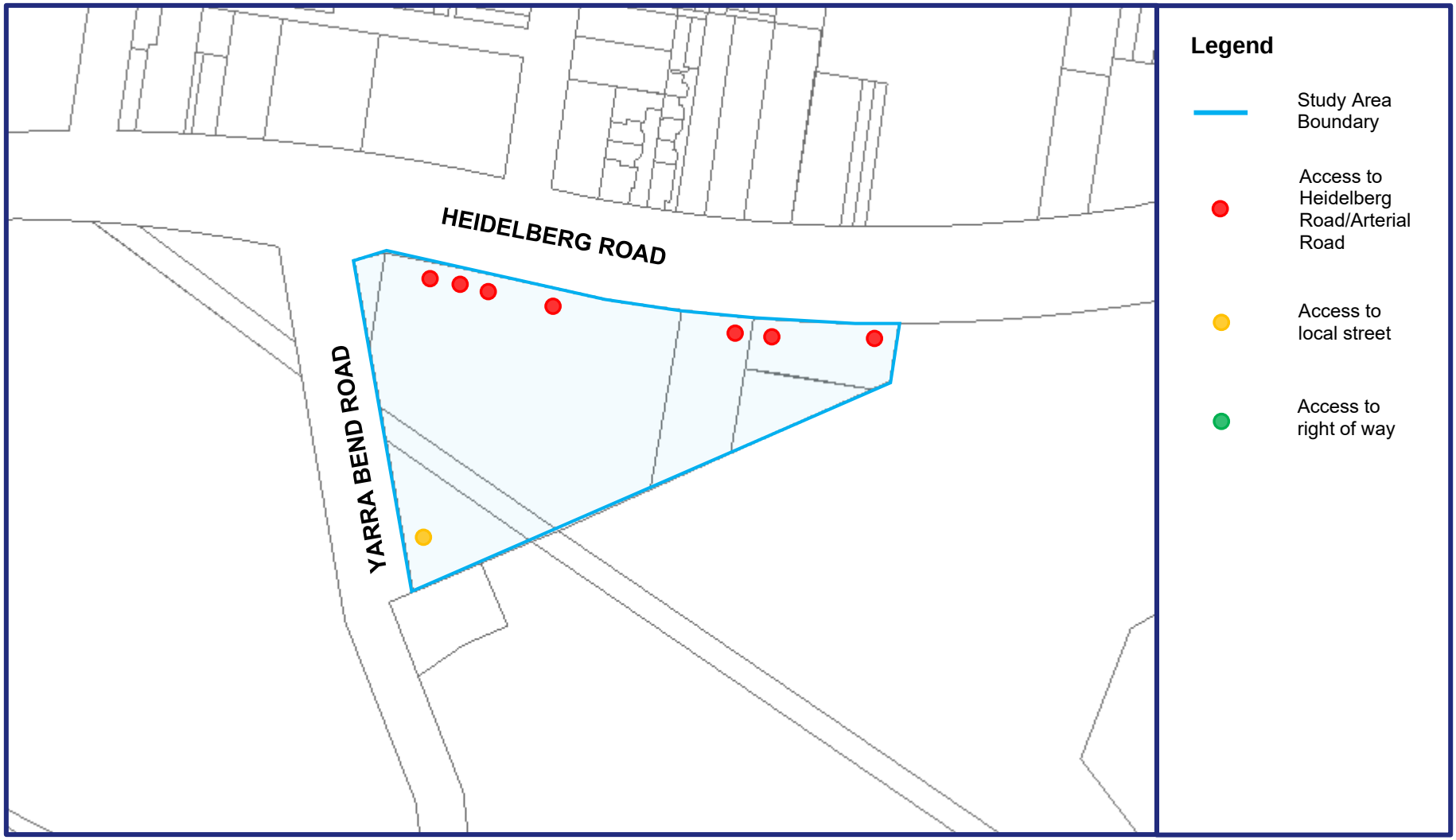


Figure E1: Precinct 1

Traffix Group

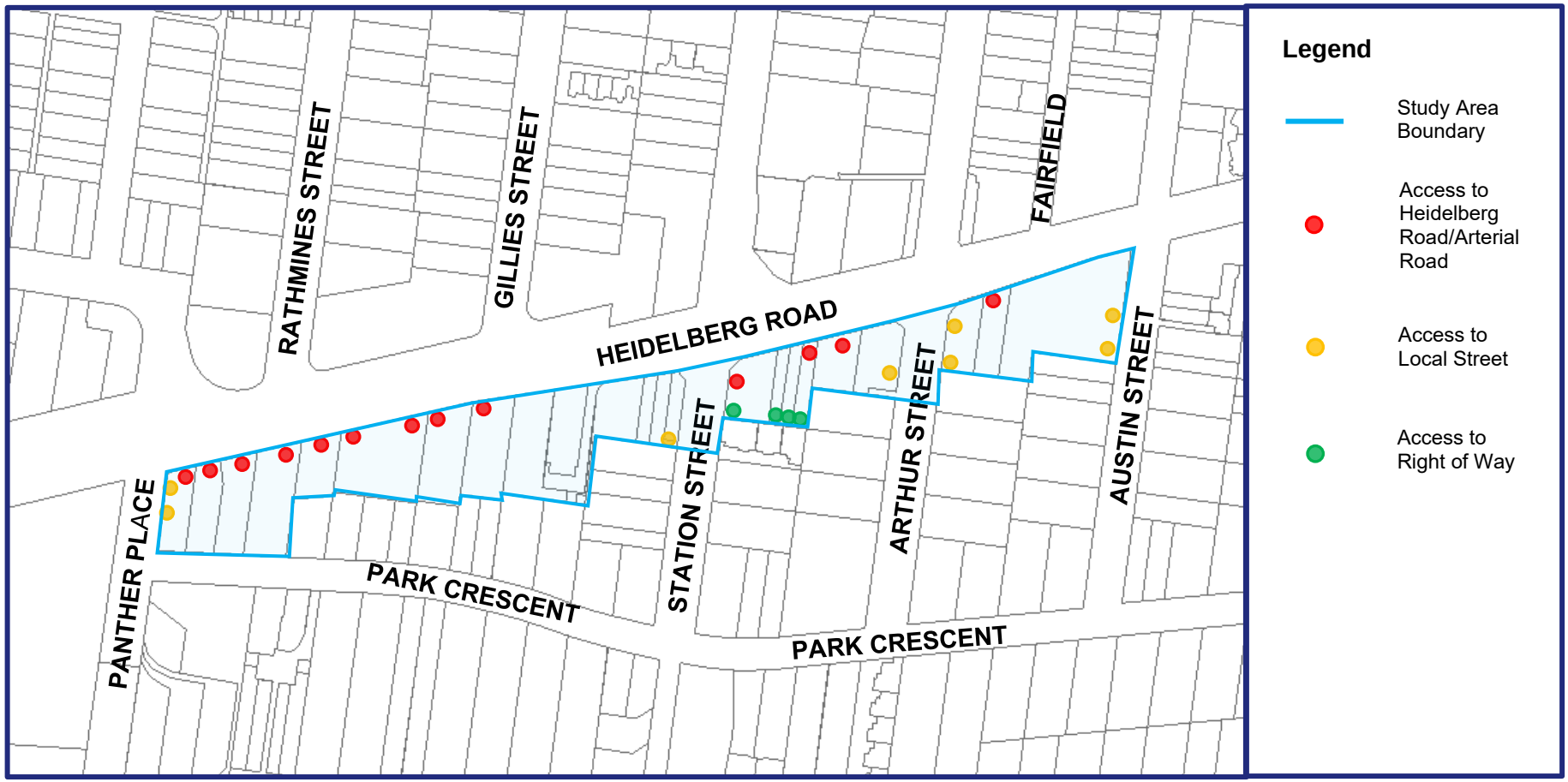


Figure E2: Precinct 2

Traffix Group

Figure E3: Precinct 3a

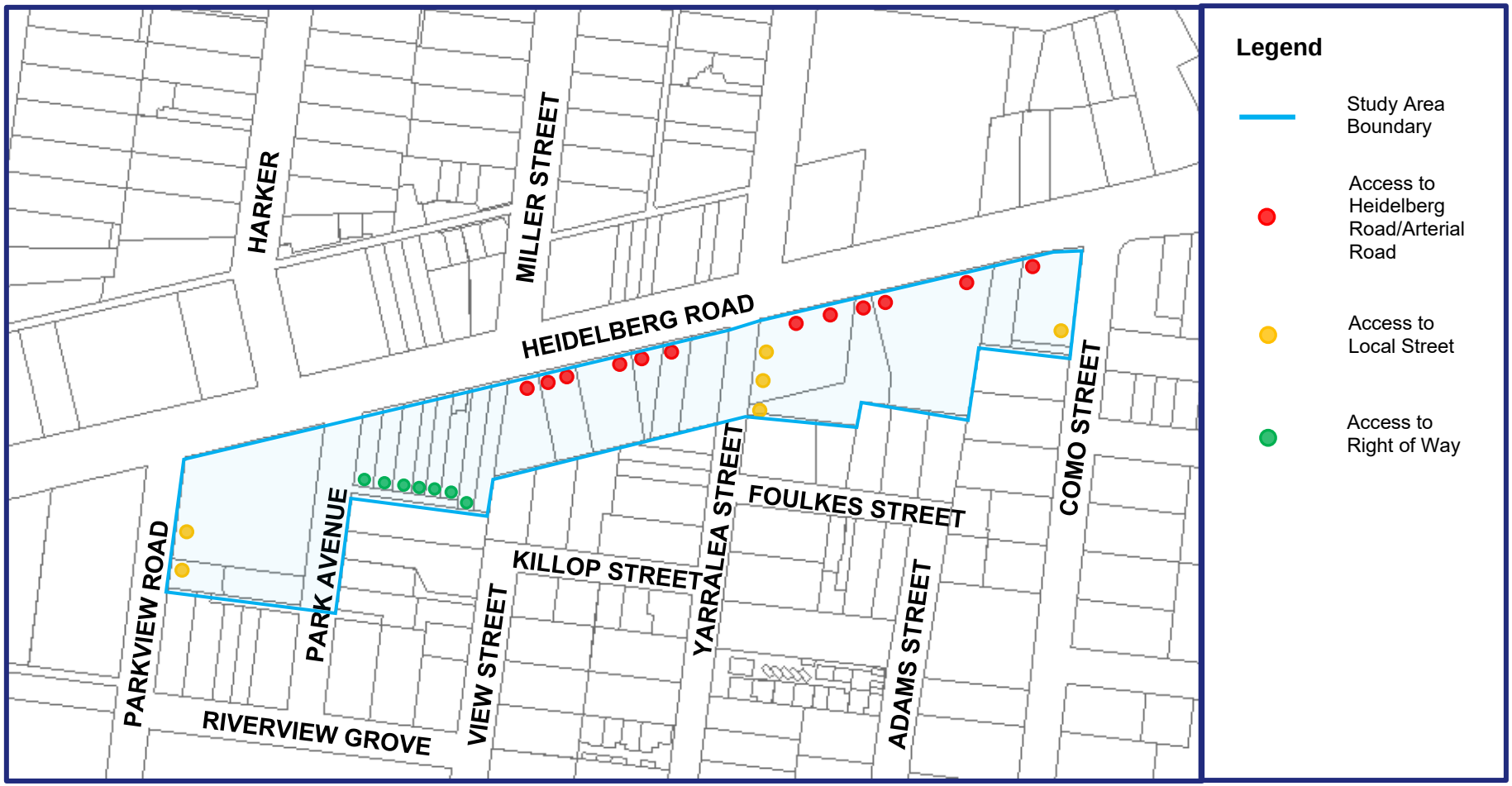


Figure E4: Precinct 3b

Appendix F

Access and Movement Plans

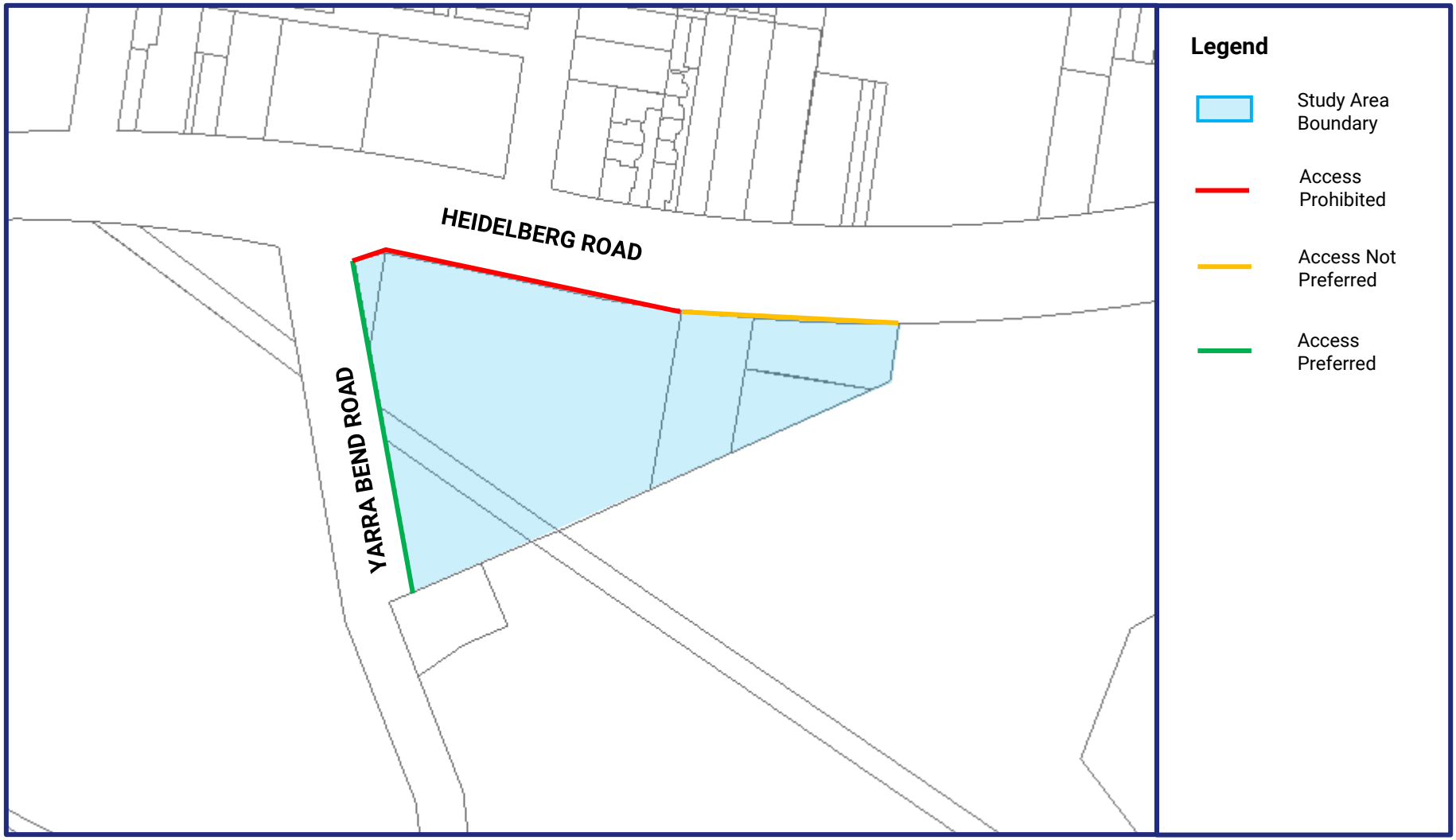


Figure F1: Precinct Area 1

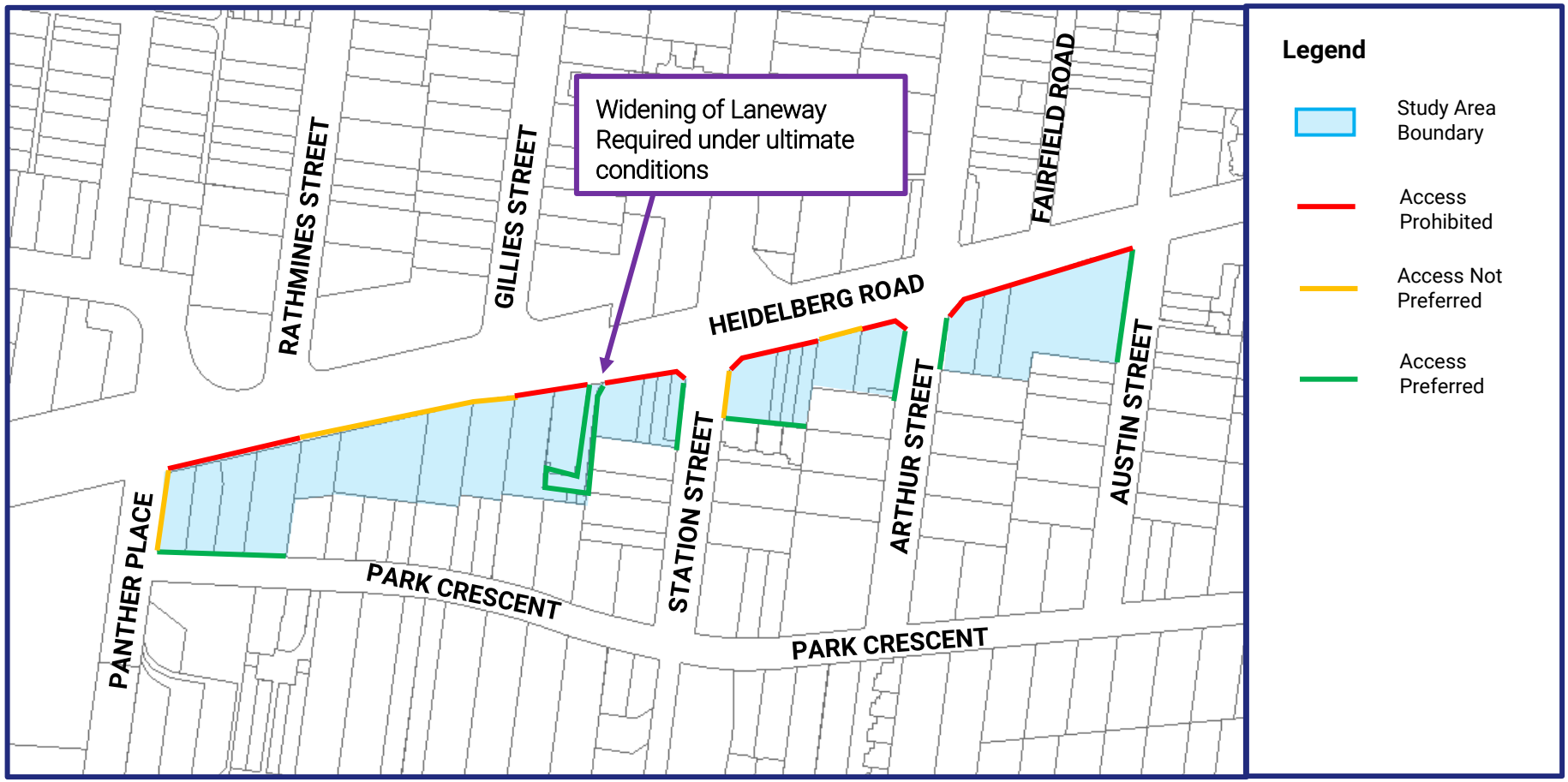


Figure F2: Precinct 2

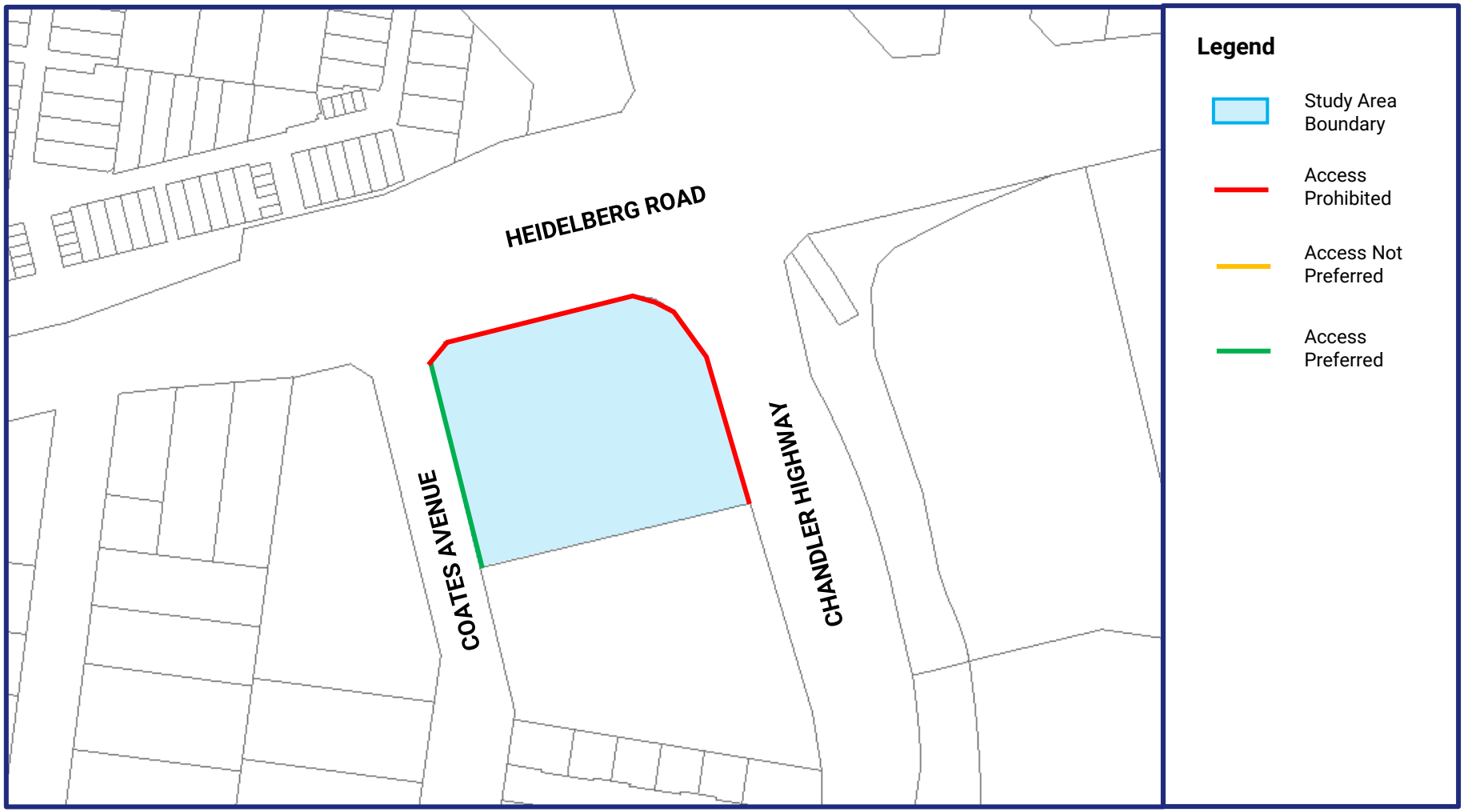


Figure F3: Precinct 3A

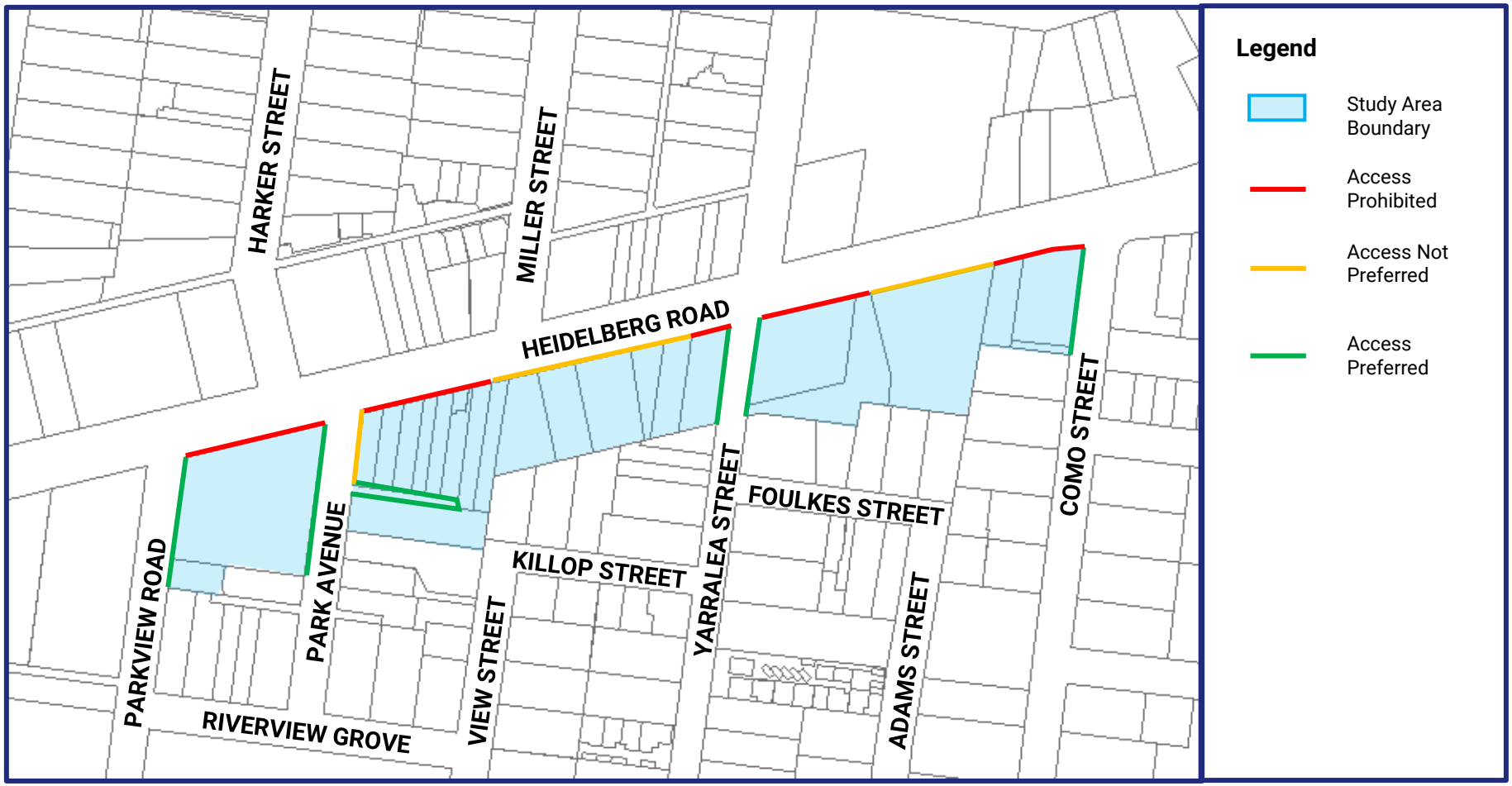


Figure F4: Precinct 3B

Appendix G

Interim Design and Development Overlay

Heidelberg Road – Transport Relevant Sections of an interim Design and Development Overlay

The below is an extract from the working draft of the proposed interim Design and Development Overlay that, if Council adopts it, would apply to the Commercial 1 Zone areas within the City of Yarra along Heidelberg Road.

The most transport-relevant passages have been extracted.

Objectives

Provide a greater sense of openness towards the Heidelberg Road footpath via small front setbacks and still achieves activated, pedestrian-oriented façades and passive surveillance.

Definitions

Laneway means a road reserve of a public highway 9 metres or less wide.

Road boundary means the boundary between the public road and the private property.

Shared zone means a road or network of roads where pedestrians, cyclists, and vehicles share the roadway.

Street-wall means the facade of a building at the street boundary, or, if the existing heritage building is set back from the street boundary, the front of the existing building.

General Requirements

A permit cannot be granted under this Design and Development Overlay to vary a requirement expressed with the term 'must'.

The below requirements apply to an application to construct a building or construct or carry out works.

Street Wall Height and Boundary Set Back Requirements

Towards Heidelberg Road, development

- in Precincts 1 and 3A must achieve a minimum 3 metres front setback, including side boundary walls, to provide better separation with Heidelberg Road and space for circulation and canopy landscaping
- in Precincts 2 should achieve a minimum 3 metres front setback, including side boundary walls, to provide better separation with Heidelberg Road and space for circulation and canopy landscaping.
- in Precinct 3B, between Park Avenue and Yarralea Street, should achieve a continuous street wall with no front setback.

Front Setback Design Requirements

Front setbacks should be designed to create a sense of openness and clear line of sight at pedestrian level between the public footpath and street wall and include:

- unobstructed access by avoiding steps, fences and narrow spaces between planting areas
- canopy trees
- creating a subtle distinction towards the public realm, including but not limited to different paving material, pattern and/or placement of planting.

Access, parking and loading areas requirements

Car parking should be located within a basement or concealed from the main and side streets.

Providing recessed parking spaces at the ground floor of buildings and onsite parking spaces at the front of properties should be avoided, except for development east of Yarralea Street, Alphington.

Pedestrian access to buildings should be achieved via Heidelberg Road or side streets and must be clearly visible, secure and have an identifiable sense of address. Residential and commercial entrances should be distinguishable from each other. Primary access from laneways should be avoided.

The common pedestrian areas of new buildings should be designed with legible and convenient access, with hallway and lobby areas of a size that reflects the quantity of apartments serviced and which can be naturally lit and ventilated.

Bicycle parking should be located and designed to be secure and conveniently accessible from the street and associated uses.

Vehicle ingress and egress into development, including loading facilities and building servicing, should be designed to ensure a high quality pedestrian amenity and limit potential conflict between vehicle movements and pedestrian activity.

Development must not provide new vehicular access from Heidelberg Road.

Development with redundant vehicle access points to Heidelberg Road should reinstate the kerb, linemarked parking bays, and relocate any parking signs.

Application Requirements

The following application requirements apply to an application for a permit under Clause 43.02, in addition to those specified elsewhere in the scheme and must accompany an application, as appropriate, to the satisfaction of the responsible authority:

- A site analysis and urban design context report which demonstrates how the proposal achieves the Design Objectives and Requirements of this schedule.
- To the satisfaction of the Responsible Authority, development proposals should be accompanied by a wind study analysis to demonstrate that pedestrian spaces, balconies, communal areas and secluded private open spaces will not be adversely affected by wind effects.

- A Traffic and Parking Assessment Report which includes an assessment of the cumulative impacts of traffic and parking in the Precinct including an assessment of the ongoing functionality of laneway/s, where applicable.

Decision Guidelines

The following decision guidelines apply to an application for a permit under Clause 43.02, in addition to those specified in Clause 43.02 and elsewhere in the scheme which must be considered, as appropriate, by the responsible authority:

- Whether the design of the streetscape interface makes a positive contribution to an active, pedestrian-oriented street environment and/or public realm.
- The design of the retail streetscape interface along the main street frontage.
- Whether the development delivers design excellence, including but not limited to building siting, scale, massing, articulation and materials.
- Whether the development mitigates negative wind effects for the public realm and surrounding sites.
- The cumulative impact of development on traffic and parking in the nearby area, including on the functionality of laneway's.