Traffix Group

Traffic Engineering Assessment

Victoria Street and Bridge Road Activity Centres, Richmond

Prepared for
Yarra City Council

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1. Introduction

Yarra City Council has initiated a review of the interim built form controls for the Victoria Street and Bridge Road Activity Centres. These Built Form Frameworks will define 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 review will inform the preparation of permanent Design and Development Overlay (DDO) controls and policy for these areas.

Interim DDO21 and DDO22 applies to land in the Bridge Road and Victoria Street Activity Centres, respectively. These measures were gazetted in November 2018.

The review provides a guide as to what developmental changes can be expected within the Victoria Street and Bridge Road Activity Centres in the future at such time that they are implemented as DDO controls and ultimately, resulting in increased development. This increase in development has the potential to pose transport challenges for all modes along the Victoria Street and Bridge Road corridors and immediate areas.

In particular, a number of traffic engineering related issues have arisen through the creation and analysis of the framework process, including:

- concern in relation to the impact that additional development may have on the transport network, including the network performance of Victoria Street, Bridge Road and the local road network,
- likely Department of Transport (DoT) and PTV concerns relating to vehicle access arrangements to properties on Victoria Street and Bridge Road and the potential impact on the safety and efficiency of the road and tram network,
- the suitability of narrow laneways to provide appropriate access to new development and movement opportunities for people, cyclists, cars and service vehicles, and
- the need for an overall access and movement plan setting out the preferred arrangements for the Victoria Street and Bridge Road Activity Centres to support the level of development being proposed and to guide decision making and policy formulation.

While the traffic impacts of this growth on this constrained network this is acknowledged as a consideration, there is strong and committed strategic policy support to facilitate increased commercial and residential development in the Victoria Street and Bridge Road Activity Centres. 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 Victoria Street, Bridge Road and the local road network. 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 an assessment of the future access arrangements, 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 Activity Centres. The objective of the access and movement plans is to facilitate 'best practice' access controls to properties abutting Victoria Street and Bridge Road (or located within the 'study area') and specifically:

- To maximise the efficiency of Victoria Street and Bridge Road.
- To ensure appropriately managed vehicle access is provided to properties within the Activity Centres.
- To minimise the potential for vehicle conflicts within laneways, ensuring appropriate treatments are put into place to maximise the capacity of laneways and local roads.
- To minimise impacts on tram and public transport services.
- Provide a high-quality pedestrian environment along Victoria Street and Bridge Road.
- To minimise where possible the number of vehicle access points directly to arterial roads.
- Provide appropriate vehicle access to properties, including loading and waste collection considerations.

2. Scope & Methodology

The adopted methodology for undertaking this study was as follows:

- Undertake thorough site inspections of the entire study areas to document and map:
  - existing access arrangements for each individual property,
  - existing traffic management treatments for all arterial and local roads and rear laneways within the study areas,
  - existing configuration of each road and laneway within the study areas (including carriageway width and road reservation width), and
  - foreseeable access constraints to each individual property should development occur.
- Review and categorisation of laneways into 3 categories (unconstrained, partially constrained or highly constrained) in order to better understand their potential to currently accommodate additional traffic under their existing conditions and configuration. Key factors include laneway width, laneway length, laneway connections (i.e. continuous or dead-end) and physical layout (i.e. bends within the laneway network). These factors are discussed in more detail further in the report.
- High level review of the developmental changes forecast within the review of the current interim controls in regard to traffic impacts, in particular the intensity of traffic movements and vehicle circulation within the surrounding road network within the Victoria Street and Bridge Road Activity Centres.
- Review of the capacity for laneways and local roads to accommodate the forecast level of traffic based on development potential and their existing configuration.
- Review of what configuration or adjustments may be necessary to laneways or local road configurations to accommodate this increase in vehicle movements and to minimise potential for vehicle conflicts within the study areas. In particular, impacts on Arterial Roads to be minimised as much as practically possible.
- Liaise with stakeholders including representatives from Council to understand the relevant authority concerns and desirable access outcomes having regard to the potential impact on the safety and efficiency of the road and tram network.
- Prepare “access” maps showing the location and form of new, altered and retained access arrangements and laneways required to provide appropriate access to future developments.
- Prepare draft wording for the traffic engineering aspects of the permanent Design and Development Overlays, 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.

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 several key transport and urban planning objectives that the review of the interim built form controls aims to facilitate. The most relevant objectives are listed in the table below.

Table 1: Key Objectives of Plan Melbourne in relation to the Victoria and Bridge Road Activity Centres

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 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	Directions	Policy
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. Planning Policy Framework (PPF)

The PPF is the policy content of a planning scheme containing state policy (which includes regional policy) and local policy in a thematically integrated form. The PPF is complemented by a Municipal Planning Strategy at Clause 20 of the planning scheme. (Noting in Yarra, the inclusion of updated local policy and MPS are being implemented through Planning Scheme Amendment C269.)

Clause 18 of the PPF details state-wide and regional 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 state and regional PPF Transport objectives that are relevant to Yarra are set out in Table 2 below.

Table 2: PPF Transport Objectives

Clause	Objectives
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 Public Transport	To facilitate greater use of public transport and promote increased development close to high-quality public transport routes.
18.02-1R Sustainable personal transport - Metropolitan Melbourne	Improve local travel options for walking and cycling to support 20 minute neighbourhoods. Develop local cycling networks and new cycling facilities that support the development of 20-minute neighbourhoods and that link to and complement the metropolitan-wide network of bicycle routes - the Principal Bicycle Network.

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 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.

A copy of Clause 18 of the Planning Scheme is attached at Appendix A, and details the strategies and policy guidelines relating to each of the objectives listed.

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

3.3. Local Planning Policy Framework

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

It is noted that this section of the Planning Scheme is proposed to change through Planning Scheme Amendment C269. The amendment proposes to update the local policies in the Yarra Planning Scheme by replacing the Municipal Strategic Statement (MSS) at Clause 21 and Local Planning Policies at Clause 22 of the Yarra Planning Scheme with a Municipal Planning Strategy and local policies within the Planning Policy Framework (PPF), consistent with the structure introduced by Amendment VC148.

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

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.*

3.3.2. Planning Scheme Amendment 269 – Rewrite of local policies

A Planning Scheme Amendment 269 has been proposed by Yarra City Council, and is scheduled for a Panel Hearing later this year.

This amendment is not currently in the Planning Scheme, however these policies are being seriously contemplated for future inclusion.

The amendment aims to provide improved safety for pedestrians and cyclists, while also focusing on improved access to public transport and other sustainable form of travel.

The focus is on promoting environmentally sustainable transport through the introduction of a hierarchy that favours walking, cycling and public transport over the use of private vehicles.

The amendment also focuses on the potential for a reduction in car parking in favour of bays for car sharing vehicles.

Policies will define which areas should receive more growth and appropriately manage transport in the surrounds, with the Epworth Hospital Precinct (on Bridge Road) being defined as one of these areas.

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

3.3.3. Liveable Yarra Project

In the lead-up to the policy rewrite, Council carried out extensive consultation to ensure it understood the priorities and needs of the community.

Consultation for the redraft of Yarra's policies has been happening for the last 5 years, beginning with the 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."*

3.3.4. 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*".

3.3.5. 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.*

3.3.6. Yarra Parking Management Strategy 2013-2015

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.*

The stated overall goals of the City of Yarra Parking Strategy are to:

1. Reduce the number of cars needing to park in residential streets;

2. *Enable a reduction in the road pavement space used for parking where a community benefit can be achieved particularly where pedestrians, cyclists, public transport and persons waiting for public transport will benefit; and*
3. *Plan and manage transport and urban development to minimise the need for people to have to drive cars so that the demand for parking is contained and managed effectively.*

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.

The specific Access and Movement recommendations which were summarised in the "engagement summary" document is 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. Victoria Street/Bridge DDO Controls

Victoria Street and Bridge Road are important commercial and retail areas within the Yarra Local Government Area that has been identified in State and local planning policy documents as an area suitable for accommodating significant residential and commercial growth, principally through redevelopment of sites and development in new upper levels to existing buildings.

Updated permanent DDOs are being prepared for the Victoria Street and Bridge Road Activity Centres. These provide recommendations in relation to building heights and setbacks, amongst other areas and will guide the future form and development in these centres.

This report informs and supports the traffic engineering aspects of the DDOs. It seeks to manage the impact of new development by encouraging appropriate vehicle access outcomes, in particular the use of side and rear frontages for vehicle access instead of arterial roads. This strategy is important to promoting pedestrian and cycle friendly environments and support public transport services along these roads.

The development outcomes proposed under review of the interim built form controls have been taken into account when formulating our recommendations. In particular, the envisioned development intensity abutting and accessing the local road/laneway network has been a key factor in the recommendations of this report.

5. Existing Conditions

5.1. Study Areas

The study areas extend for approximately 2.1km and 2.2km long sections of Victoria Street and Bridge Road, respectively, between Hoddle Street/Punt Road and the Yarra River and effectively encompasses most properties adjacent to both Victoria Street and Bridge Road between Hoddle Street and the Yarra River as shown in the locality plan provided on the following page at Figure 1.

In addition to these properties, a number of other areas are included within the study areas, including properties along the rail corridor to the south of Victoria Street (i.e. Regent Street), amongst a number of smaller Precincts.

Land within the study areas is generally zoned 'Commercial 1 Zone' with a small section of 'Commercial 2 Zone' 'Mixed Use Zone' and residential uses at the east end of both Victoria Street and Bridge Road. There is also a large amount of land zoned either 'Priority Development Zone 1' or 'Comprehensive Development Zone 1' at the eastern end of Victoria Street. However this is included in wider Activity Centre area, but not included in the DDO study area. A land use zoning map of the study area is shown in Figure 2.

Significant land uses within and in the vicinity of the study area include:

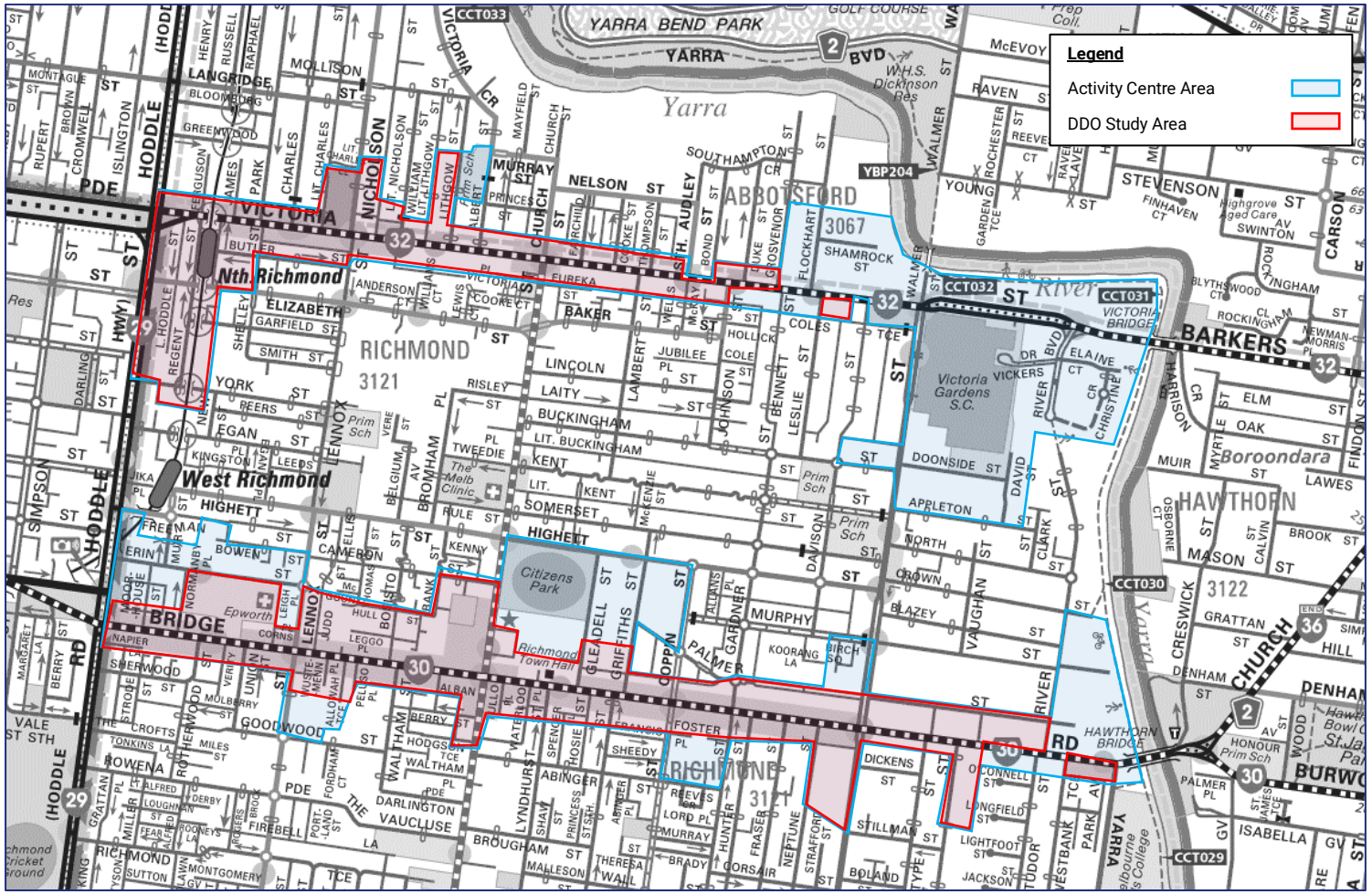
- **North Richmond Station**, located south of Victoria Street, between Hoddle Street and Church Street.
- **The Hive Shopping Centre**, located on Victoria Street, between Hoddle Street and Church Street.
- **Abbotsford Primary School**, located north of Victoria Street, between Hoddle Street and Church Street.
- **The Carlton United Brewery**, located north of Victoria Street, adjacent to the northern boundary of the site.
- **Victoria Gardens Shopping Centre**, located on Victoria Street at the eastern end of the study area.
- The **Epworth Hospital**, located on Bridge Road, east of Hoddle Street.
- **Richmond Plaza**, located on Bridge Road, at the intersection with Church Street.
- **Richmond Town Hall**, located on Bridge Road, between Church Street and Burnley Street.

In the wider area, the following Activity Centres and key land uses are located in close proximity to the study area:

- **West Richmond Station**, located between the Victoria Street and Bridge Road activity centres, east of Hoddle Street.
- **Melbourne's Sports Precinct** is located west of Punt Road/Hoddle Street, beginning to the south-west of the boundary of the study area.
- The **Melbourne CBD** begins approximately 2km from the western end of the study area.

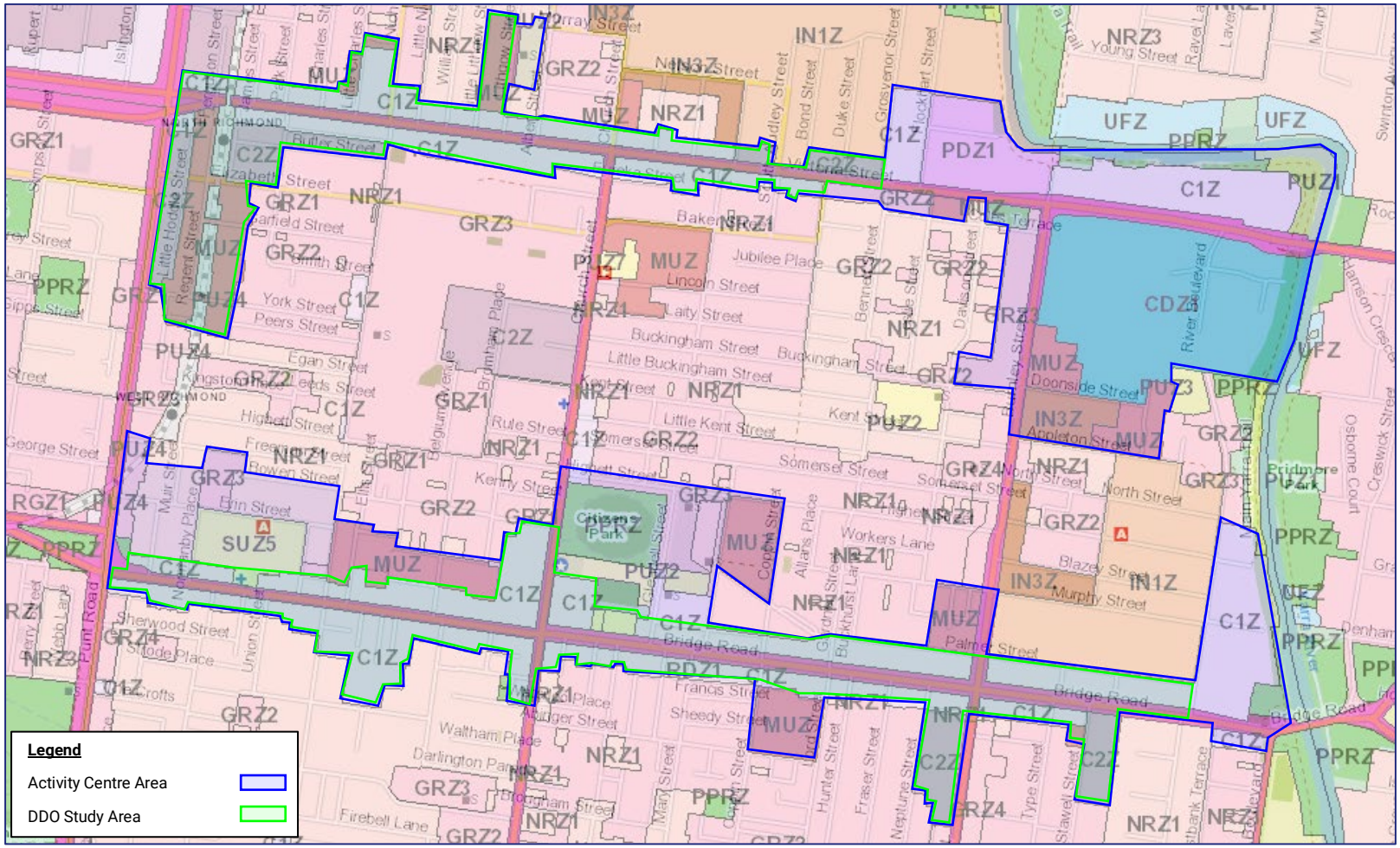
- **The Swan Street Road Activity Centre**, located approximately 800m south of Bridge Road.
- **The Smith Street Activity Centre**, located approximately 800m west of Victoria Street.

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



Source: Melways Publishing

Figure 1: Locality map



Source: Planning Schemes Online

Figure 2: Land use zoning map

5.2. Road Network

The following section describes the higher order roads within the study areas. This study has also reviewed the local roads and laneways within the study areas.

A detailed review of the existing traffic management measures on arterial and local roads within the study areas is provided at Appendix B.

A detailed review of the existing conditions of ROWs is included at Appendix C of this report.

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

Victoria Street is a DoT declared arterial road and Road Zone Category 1 which extends in an east-west direction for approximately 2km between Hoddle Street/Punt Road in the west (where it continues as Victoria Parade) and the Yarra River in the east (where it continues as Barkers Road).

Within the study area, Victoria Street typically provides with two through traffic lanes in each direction, with tram lines running within the central traffic lanes, with a total width of 14.0m. The outer traffic lanes also provide kerbside parallel parking with clearways applying during the AM peak (7am-9:15am) on the southern side of the street and during the PM peak (4:30pm-6:30pm) on the northern side of the street.

A number of the tram stops between Hoddle Street and Church Street are 'easy access stops' which have a raised kerbside lane adjacent to the tram stop. Parking is prohibited along these sections of road, and vehicle access is allowed in either lane.

U-turns are prohibited on Victoria Street due to the solid white centreline. West of Church Street, a 40km/h speed limit applies to Victoria Street. East of Church Street, a 60km/h speed limit applies.

Photographs of Victoria Street, depicting the typical cross section of Victoria Street are presented in Figure 3 and Figure 4.

Figure 3: Victoria Street - View East

Figure 4: Victoria Street - View West

Bridge Road is a DoT declared arterial road and Road Zone Category 1 which extends in an east-west direction for approximately 2km between Hoddle Street/Punt Road in the west (where it continues as Wellington Parade) and the Yarra River in the east (where it continues as Burwood Road).

Within the study area, Bridge Road typically provides with two through traffic lanes in each direction, with tram lines running within the central traffic lane or central fairway. The outer traffic lanes also provide kerbside parallel parking with clearways applying during the AM peak (7am-9:15am) on the southern side of the street and during the PM peak (4:30pm-6:30pm) on the northern side of the street. To the east of Church Street, Bridge road widens, to provide the tram tracks within a fairway (i.e. separated from the two traffic lanes in each direction by rumble strips).

A number of the tram stops between Hoddle Street/Punt Road and Church Street are 'easy access stops' which have a raised kerbside lane adjacent to the tram stop. Parking is prohibited along these sections of road, and vehicle access is allowed in either lane.

To the east of Church Street, the tram line is separated from vehicle traffic via a raised yellow dividing strip.

U-turns are prohibited on Bridge Road due to the solid white centreline. West of Burnley Street, a '40km/h 7am-midnight' speed limit applies to Victoria Street. Outside of these times a 60km/h speed limit applies. East of Burnley Street, a 60km/h speed limit applies at all times.

Photographs of Bridge Road, taken west of Church are presented in Figure 5 to Figure 8.

Figure 5: Bridge Road - View East

Figure 6: Bridge Road - View West

Figure 7: Bridge Road - View East (widened section)

Figure 8: Bridge Road - View West (widened section)

Church Street is a DoT declared arterial road and Road Zone Category 1 which extends in a north-south direction for approximately 3km between the Yarra River in the south (where it continues as Chapel Street) and the Yarra River in the north.

Within the study area, Church Street typically provides two through traffic lanes in each direction, with tram lines running within the central traffic lane and has a total overall width of approximately 15.5m. To the south of Bridge Road, a 40km/h speed limit applies, and to the north, a 60km/h speed limit applies.

Photographs of Church Street, taken at Cameron Street, are presented in Figure 9 and Figure 10.

Figure 9: Church Street - View North

Figure 10: Church Street - View South

Burnley Street is a DoT declared arterial road and Road Zone Category 1 which extends in a north-south direction between CityLink/Barkly Avenue and Victoria Street. Burnley Street is also nominated as a Traffic Route and Bicycle Priority Route.

Within the study area, Burnley Street provides a traffic lane, bicycle lane and kerbside parking lane in each direction. Intermittently, a dividing median is provided. A 60km/h speed limits applies to Burnley Street.

Photographs of Burnley Street, taken at Bridge Road, are presented in Figure 11 and Figure 12 below.

Figure 11: Burnley Street - View North

Figure 12: Burnley Street - View South

Lennox Street/Nicholson Street function as a Collector Road managed by Council. Lennox Street provides a north-south link between Swan Street and Victoria Street.

Between Bridge Road and Highett Street, Lennox Street provides a through traffic lane, bicycle lane and alternating kerbside parallel parking or angle parking in both directions.

Lennox Street narrows to the north of Highett Street, with no entry to Lennox Street in the northbound direction at Highett Street. North of Highett Street, a traffic lane is provided in each direction, and kerbside parking is provided on the west side of the road.

Between Elizabeth Street and Victoria Street, northbound traffic into Lennox Street at the Elizabeth intersection is prohibited, and southbound traffic into Lennox Street from Victoria Street is prohibited, with two-way flow in between these two roads.

To the north of Victoria Street, Lennox Street continues as Nicholson Street, where a traffic lane, bicycle lane and kerbside parking lane are provided in each direction.

Photographs of Lennox Street, taken at Corns Place, are presented in Figure 13 and Figure 14.

Figure 13: Lennox Street - View North

Figure 14: Lennox Street - View South

Coppin Street functions as a Collector Road managed by Council. Coppin Street provides a north-south link between Barkly Avenue and Highett Street. Coppin Street is a Bicycle Priority Route. Within the study area, Coppin Street provides a through traffic lane, bicycle lane and kerbside parallel parking in both directions. To the south of Bridge Road, the traffic lanes are separated by centrally located trees and to the north of Bridge Road, median parking is provided. Photographs of Coppin Street, taken at Bridge Road, are presented in Figure 15 and Figure 16 below.

Figure 15: Coppin Street - View North

Figure 16: Coppin Street - View South

Punt Road (also known as Hoddle Street in sections) is a DoT declared arterial road which extends in a north-south direction at the western boundary of the study area. Punt Road is a preferred traffic route and key north-south link on the eastern side of the Melbourne CBD.

5.2.1. 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
Victoria Street	
Btw Church/Hoddle	18,000
Btw Burnley/Church	18,500
Btw High/Burnley	23,000
Bridge Road	
Btw Hoddle/Lennox	17,400
Btw Lennox/Church	18,400
Btw Church/Coppin	19,300
Btw Coppin/Burnley	19,700
Btw Burnley/Yarra	25,000
Church Street	
Bridge to Highett	12,800
Highett to Elizabeth	13,000
Elizabeth to Victoria	12,600
Burnley Street	
Bridge to Victoria	12,600

5.2.2. Traffic Conditions

Many key intersections along Victoria Street and Bridge Road are operating at or near capacity during peak hours. This includes at Punt Road / Hoddle Street, Burnley Street and Church Street. Various traffic analysis conducted by Traffix Group and other consultants have found that these intersections operate at or near capacity during the commuter peak hours, with congestion on one or more legs at various times.

The provision of Clearways at commuter peak hours provides additional capacity in the peak direction, however both Bridge Road and Victoria Street can experience congestion at other times during the day and on the weekend.

5.3. Public Transport

The subject site is located in an area that is well serviced by rail and tram services as follows:

- North Richmond Station and West Richmond Station are located at the western end of the study area and provide access to the South Morang and Hurstbridge Lines.

- Tram Route 12 operates between Victoria Gardens and St Kilda via Richmond, the city and South Melbourne and runs along Victoria Street.
- Tram Route 109 operates between Box Hill and Port Melbourne via Mont Albert, the city and Southbank and runs along Victoria Street.
- Tram Route 48 operates between North Balwyn and Victoria Docklands via Kew Richmond and the City and runs along Bridge Road.
- Tram Route 75 operates between Docklands and Vermont South via Burwood, Hawthorn, Richmond and the city and runs along Bridge Road.
- Tram Route 78 operates between North Richmond and Balaclava via Prahran and runs along Church Street through the study area.
- A total of 11 different bus services operate along Punt Road/Hoddle Street to the western end of the study area, adjacent to the Victoria Parade/Hoddle Street intersection.

These public transport services are shown on the Public Transport Map at Figure 17 below.

Source: Public Transport Victoria

Figure 17: Public Transport Map

5.4. Sustainable Travel Modes

The study area is well served by alternative transport modes. Figure 18 below shows the Travel Smart Map for the study area.

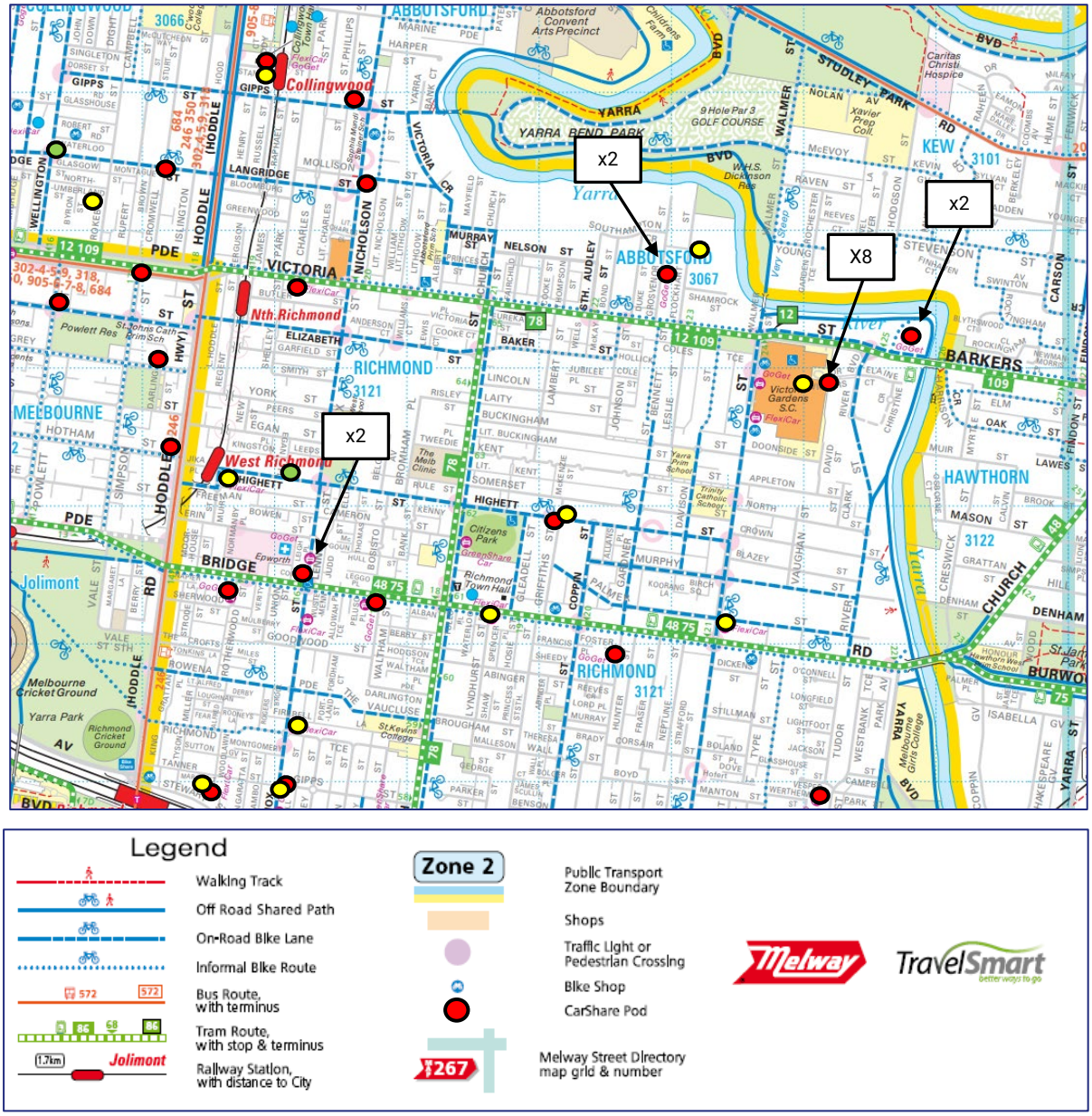


Figure 18: Travel Smart Map

Source: City of Yarra

5.4.1. Cycling

Victoria Street and Bridge Road are nominated as an informal bicycle routes. On-road bicycle lanes are provided on several of the north-south streets which intersect the study area including Church Street, Burnley Street and Coppin Street. Key off-road bicycle routes include the Capital City Trail along the Yarra River to the east and the Main Yarra Trail to the south.

The high level of bicycle infrastructure within and surrounding the study area provides cyclists with convenient access to the surrounding suburbs.

5.4.2. Walking

The study area is highly walkable with many everyday services and destinations within convenient walking distance. The Walkscore[1] map for Richmond is shown in the figure below, with most areas of Richmond scoring well over 90 (classified as a 'Walkers Paradise'). The Melbourne CBD, Swan Street and Smith Street Activity Centres are all within a walkable distance from the study area.

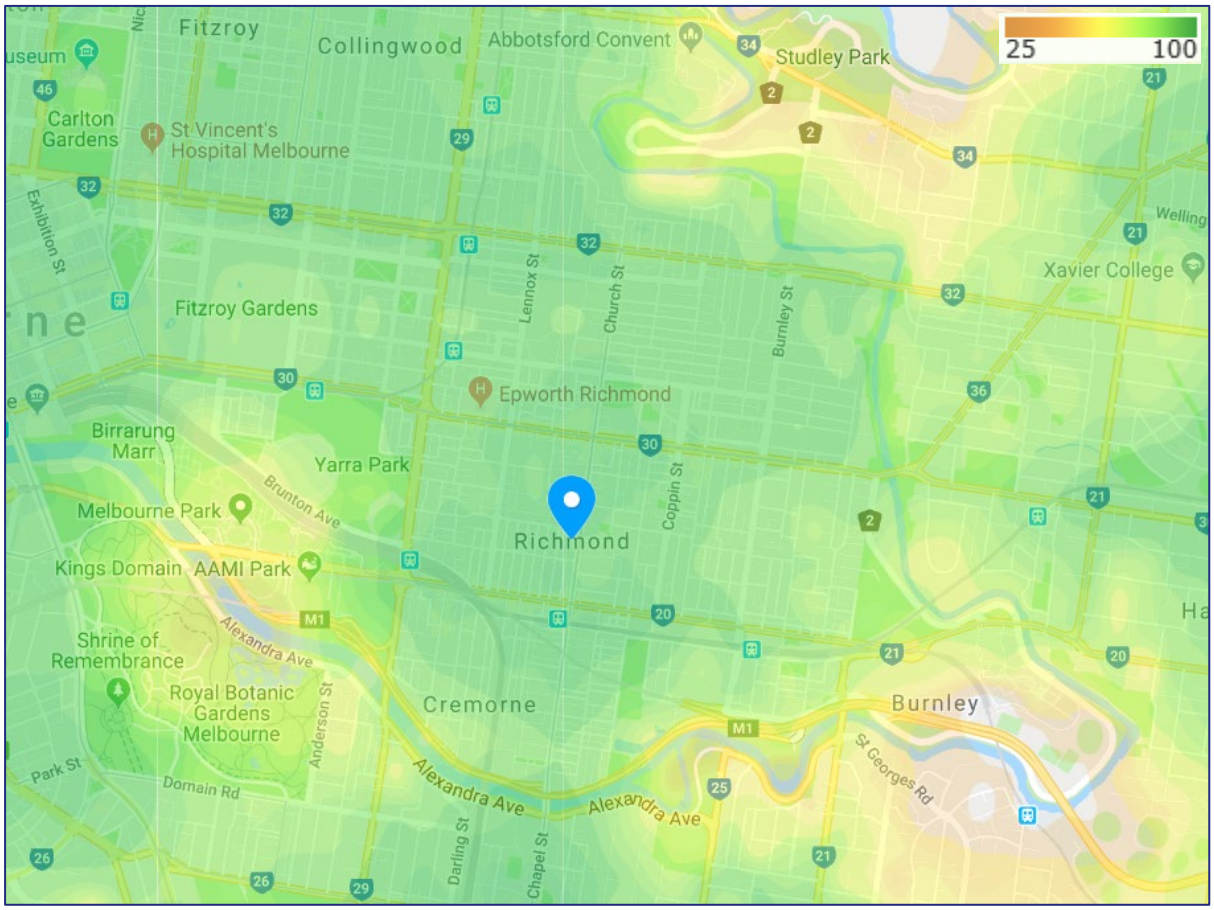


Figure 19: Walkscore Map – Richmond

[1] https://www.walkscore.com/score/richmond-victoria

5.4.3. Car Share

As shown on the TravelSmart map at Figure 18, there are a number of car share vehicles located within the study area and surrounding streets, particularly at the western end of the study area.

The provision of these car share vehicles provides drivers with a viable alternative to owning their own personal vehicle and actively encourages the use of alternative transport modes. Residents within Richmond do not need a car for everyday trips as they have convenient access to public transport and are within convenient walking and cycling distance of many activities within the Melbourne CBD and nearby Activity Centres. Car share vehicles provide a car on demand for those trips that specifically require a vehicle.

5.5. Demographics

5.5.1. Car Ownership

The majority of new dwellings within the study area will be apartment style dwellings. Table 6 presents a review of car ownership statistics for 'flats units and apartments' within the suburbs of Richmond and Abbotsford and the City of Yarra highlights the following average car ownership statistics as recorded by the Australian Bureau of Statistics (ABS) in the 2016 census.

Clause 52.06-5 of the Yarra Planning Scheme sets planning requirements for the provision of parking in dwellings. The minimum parking rates for residents is 1 car space per one/two-bedroom dwelling and 2 car spaces per three or more between dwelling. These statistics indicate that the parking requirements for new dwellings under the Planning Scheme are generally higher than the car ownership statistics for one and three-apartments in this locality.

Table 6: ABS car ownership statistics (2016) – Apartments

Type of Dwelling	Number of Cars	Richmond Suburb	Abbotsford Suburb	Yarra LGA
Studio/Bedsit Flat/Unit/Apartment in one or more storey block	Average no. of cars per dwelling	0.4	0.2	0.3
	0 cars	67%	82%	73%
	1 car	28%	18%	25%
	2 or more cars	6%	0%	3%
1 bedroom Flat/Unit/Apartment in one or more storey block	Average no. of cars per dwelling	0.8	0.7	0.7
	0 cars	34%	36%	38%
	1 car	58%	56%	55%
	2 or more cars	8%	8%	7%
2 bedroom Flat/Unit/Apartment in one or more storey block	Average no. of cars per dwelling	1.0	1.0	0.9
	0 cars	24%	22%	26%
	1 car	55%	58%	56%
	2 or more cars	21%	19%	19%
3 bedroom Flat/Unit/Apartment in one or more storey block	Average no. of cars per dwelling	1.1	1.7	1.2
	0 cars	25%	4%	20%
	1 car	45%	43%	48%
	2 or more cars	30%	53%	25%

5.5.2. Journey to Work Data

Table 7 presents a review of Journey to Work data for the suburbs of Richmond, Abbotsford, 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.

Table 7: Journey to Work Data: 2016 Census, ABS

% 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 work)			
	Richmond	Abbotsford	City of Yarra	Greater Melb.	Richmond SA2	Abbotsford SA2*	City of Yarra	Greater Melb.
Car as driver	41%	38%	38%	71%	56%	64%	56%	70%
Public Transport	34%	37%	32%	18%	28%	22%	27%	19%
Walking	14%	11%	14%	3%	7%	5%	7%	3%
Cycling	6%	9%	10%	2%	4%	4%	5%	2%
Other (car passenger, motorcycle, etc.)	5%	5%	6%	6%	5%	5%	5%	6%

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

6. Transport Impacts

The primary purpose of this study is to review the traffic engineering implications of the implementation of the DDO controls.

The key transport engineering impact of the proposed controls is the access controls for new developments within the study area. As a result, the use of laneways within the study area will increase, in some cases substantially. This study reviews the potential impacts of new development and makes recommendations to manage the increased use of these laneways.

The following sections provide:

- An overview of the likely traffic impacts of increased development along Victoria Street and Bridge Road, by reviewing a historic case study of Victoria Street, Richmond.
- A description of why laneways should be used for vehicle access.
- An outline of the methodology behind our categorisation of laneways within the study area.
- A description of laneway characteristics and how these affect the capacity of laneways to accommodate vehicles, pedestrians and cyclists.
- A detailed description for each of the options considered to improve the laneway network.
- Analysis of the potential capacity of each laneway to accommodate additional traffic and recommendations to improve individual laneways.

6.1. Traffic Impacts along Victoria Street and Bridge Road

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

We are satisfied that the findings of the case study data can also be applied to the Bridge Road study area also.

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 the two centres may evolve over time.

6.1.1. 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[2], 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 8 sets out the change in dwelling numbers along Victoria Street.

Table 9 sets out the change in commercial floor space along Victoria Street.

Table 8: 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.

[2] 2016 data is not available at the time of writing.

Figure 20: Change in dwelling density – 2007-2016

Table 9: 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

6.1.2. 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 10.

Table 10: Arterial Road Traffic Volumes (Source: VicRoads Arterial Road Database – April, 2018)

Road Name	Two-Way Annual Average Daily Traffic Volume[1] by Year					
	2007	2014	2015	2016	2017	Change 2007-2017
Swan Street						
Btw Church/Lennox	18,000	17,300	17,200	17,300	16,800	-1,200
Btw Coppin/Church	21,000	20,600	20,300	20,300	20,100	-900
Btw Burnley/Coppin	19,500	20,200	20,300	20,000	18,900	-600
Btw Madden/Burnley	15,300	15,600	15,600	15,300	14,800	-500
Victoria Street						
Btw Church/Hoddle	22,700	18,300	18,200	18,100	18,000	-4,700
Btw Burnley/Church	22,000	18,700	18,500	18,300	18,500	-3,500
Btw High/Burnley	24,000	23,000	23,000	23,000	23,000	-1,000
Bridge Road						
Btw Hoddle/Lennox	19,800	18,300	18,300	18,000	17,400	-2,400
Btw Lennox/Church	19,700	18,500	18,400	18,300	18,400	-1,300
Btw Church/Coppin	22,000	19,500	19,500	19,500	19,300	-2,700
Btw Coppin/Burnley	23,000	19,600	19,600	19,600	19,700	-3,300
Btw Burnley/Yarra	26,000	26,000	26,000	26,000	25,000	-1,000

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[3].

Furthermore, this decrease in traffic volumes is also reflected at key intersections during the commuter peak hours. Table 11 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 11: 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:
Data collected by Grogan Richards dated 11th July, 2006.
Data sourced from VicRoads by Cardno, dated 11-15th May, 2015.
Data sourced from VicRoads by Traffix Group, dated 7th June, 2012.
Data collected by Ratio Consultants dated 14th April, 2016.

[3] Accessible tram stops were installed in Bridge Road in 2013 and Victoria Street in 2016, however these continue to accommodate two traffic lanes during clearway times.

6.1.3. 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 12 presents data for journey to work based on place of residence within the City of Yarra.

Table 13 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 (an almost 90% 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 12: 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%	+1%
Total	100%	100%	100%	100%	

Table 13: 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%	56%	-12%
Car as Passenger	5%	4%	4%	3%	-1%
P/Trans	15%	19%	24%	28%	+13%
Motorcycle	0%	1%	1%	1%	+1%
Bicycle	1%	2%	3%	4%	+3%
Walked	5%	6%	6%	7%	+1%
Other	1%	1%	1%	1%	-
Total	100%	100%	100%	100%	

6.1.4. Changes 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[4].

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.

[4] http://web.archive.org/web/20140726093749/http://www.yarratrams.com.au/media-centre/news/articles/2014/capacity-boost-for-tram-passengers/

6.1.5. 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 Richmond and increased from 1% to 4% 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).

6.1.6. 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.

Phillip Boyle & Associates (dated 18th June, 2015) completed a review of 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).

6.1.7. Summary of Case Study

Based on the above, the following conclusions can be drawn from the development of Victoria Street over the 10 years leading up to2016:

- 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 have 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, and
- 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.
- We are satisfied that the transport impacts of the densification of Victoria Street and Bridge Road are manageable for the following key reasons:
  - The Activity Centres are highly accessible by existing public transport services, which supports both residents and workers within the centre. This reduces reliance on private car travel.

- The Activity Centres benefit from close proximity to a number of other Activity Centres and the Melbourne CBD, all of which are readily accessible by alternative transport modes to a private car.
- The mix of land uses and local services within the Activity Centre support local living by residents.

7. Access and Movement Plans

The following section sets out our recommended Access and Movement Plans for all properties within the study area.

The detailed Access Management Plans are attached at Appendix E. The Access Management Plan indicate how access can be controlled to sites within the study area to best manage traffic impacts.

The detailed Proposed Traffic Management Plans required to support the Access Management Plans are attached at Appendix F.

The Proposed Traffic Management Plans show the recommended traffic management controls (e.g. one-way, road widening etc. All of these are described in detail in the following sections).

7.1. 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 Victoria Street and Bridge Road, as inner-city areas (the western ends of which is less than 1.5km walking distance from the CBD), 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 permanent built form controls, having regard to the significant capacity constraints of the existing road network to accommodate additional private vehicle movements.

Accordingly, it is imperative that the planning for an increase in the density of development within the Victoria Street and Bridge Road Activity Centres 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 these important corridors.

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.*

Victoria Street and Bridge Road are Arterial Roads (Road Zone Category 1) and accordingly, they have an important role in the broader arterial road network context to provide for through traffic. Victoria Street and Bridge Road are both priority tram routes and part of the Principal Public Transport Network (PPTN).

These roles of Victoria Street and Bridge Road (arterial through traffic, priority public transport route and activated pedestrian links) create 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 Victoria Street and Bridge Road.

Accordingly, taking into account Victoria Street and Bridge Road's primary purpose, and noting that within the study areas the majority of properties have alternative access potential (via rear laneways and/or local roads), there should be strong policy support within any Planning Scheme amendment (such as a 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 Victoria Street and Bridge 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 Victoria Street and Bridge Road public realm, and this can be achieved by minimising (if not removing all together) intermediate 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, cyclists and trams in the top 3, 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 rear laneways and side streets wherever possible. Direct access to arterial roads being a last resort (with consideration for

"no parking provision" potentially being preferable for some sites), noting the importance of Bridge Road and Victoria Street for pedestrians and trams in particular.

7.2. Benefits of Limiting Vehicle Access to Victoria Street and Bridge Road

The principle of limiting direct vehicle access to both Victoria Street and Bridge 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 Victoria Street and Bridge Road. It also eliminates instances of vehicles blocking the footpath.
- It eliminates the potential conflict between the introduction of future accessible tram stop upgrades and property access points. The design of accessible tram stops is generally incompatible with property access points.
- It limits vehicle access to Victoria Street and Bridge 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.
- It reduces the number of locations where right turn movements occur, thereby potentially reducing delays to trams and improving road safety.

However, the benefits of limiting vehicle access to Victoria Street and Bridge Road need to be tempered against other competing demands, including:

- 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.
- Access to Victoria Street and Bridge Road for trucks undertaking on-site loading may be a desirable outcome (although any loading facilities should be internal to the building). This includes business deliveries, waste collection and providing a loading bay for residents to move into/out of buildings. These may not be possible from within laneways for some sites and depending on the land use proposed. Such movements would be infrequent and may be necessary if alternative access is not available.
- Some sites do not have alternative access options and have existing access points to Victoria Street and Bridge Road. It is not possible to deny access to sites that already have direct access to Victoria Street and Bridge Road and do not have reasonable 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.

7.3. Access Management Plans

The detailed Access Management Plans attached at Appendix E.

The plans classify road frontages into three categories:

- **Access not supported** – this category is where vehicle access is not desirable or supported. This classification generally relates to Victoria Street and Bridge Road frontages or frontages of other key local roads close to significant intersections (Church Street and Burnley Street)
- **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.

Any locations where access is ultimately taken a main road, left in/left out arrangements will be the preferred outcome.

There are a number of properties with only one frontage to an arterial road and the plan classifies this frontage as 'access not preferred'. These properties are typically narrow/small and the provision of direct vehicle access to the arterial road would negatively impact the road network. These lots could only support a limited amount of on-site car parking in most cases. This report recommends that for these properties, developments without car parking should be the preferred outcome by Council, given the negative impacts of providing car parking on these sites.

To implement these plans will require some changes to the existing traffic management treatments and the configuration of public roads and laneways. This includes:

- Effectively widening laneways to accommodate additional vehicle movements. 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).
- Provision of passing areas at the entrance to ROWs.
- Changing laneways to operate in a one-way direction.
- Provision of splays at laneway corners and intersections to increase their functionality.
- Recommending Council review the use of a shared zone.

Proposed Traffic 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 Victoria Street and Bridge Road.

The following section provides an outline of our methodology behind the recommendations of the Traffic Management Plans and detailed recommendations for individual laneways is attached at the ROW Recommendations within Appendix G.

8. Right-of-Way Management

The following sections provide:

- An outline of the methodology behind our categorisation of ROWs/laneways within the study area
- A description of ROWs/laneway characteristics and how these affect the capacity of laneways to accommodate vehicles, pedestrians and cyclists.
- A detailed description for each of the options considered to improve the ROW/laneway network.

8.1. Categorisation of Laneways

As part of the review process of the current capacity of existing laneways to accommodate additional future development traffic volumes, we have reviewed and categorised laneways within the study areas into 3 categories (unconstrained, partially constrained or highly constrained) in order to better understand their potential to currently accommodate additional traffic under their existing conditions and configuration.

Key factors include laneway width, laneway length, laneway connections (i.e. continuous or dead-end) and physical layout (i.e. bends within the laneway network). These factors are discussed in more detail below.

The laneway assessment classified all laneways within the study area by their potential to accommodate additional traffic. Laneways have initially been classified at three levels:

- **Unconstrained** – these laneways have very few, if any, development constraints. As a result, they are well suited to accommodating additional traffic. Changing the laneway to operate one-way (where possible) has not been considered as a constraint.
- **Partially Constrained** – these laneways have some potential constraints that limit their capacity to accommodate traffic, however they are generally easily addressed. Common issues include insufficient width, long length and lack of splays at critical locations.
- **Highly Constrained** – this laneway has fundamental issues that cannot easily resolved. This usually relates to very narrow laneways or heritage constraints that limit the opportunities to alter the laneways.

When assessing the capacity of laneways, a number of factors need to be considered. For most laneways, it is a combination of factors that contribute to its classification.

The key factors that influence the classification of a laneway are outlined below:

- **Laneway width.** This is the single most important factor to the operation and capacity of a laneway. To provide a single traffic lane, a laneway should be at least 3.0m wide. A width slightly less than 3.0m (down to 2.8m) is also functional, although constrained. Laneways less than 2.8m wide are problematic for vehicle access and should be considered as pedestrian only laneways and/or have very limited development potential (it is acknowledged that some narrow laneways within the study area are in practice used for vehicle access currently).
  Laneways become capable of supporting simultaneous two-way traffic at a width of 5.5m

if not built up (i.e. 5.5m between kerbs/carriageway) or 6.1m wide between building walls. This width removes most capacity constraints of laneways and effectively makes them unconstrained.

- **One-way or two-way operation.** For single width laneways, a one-way laneway has a significantly higher capacity than a laneway permitting two-way traffic. One-way operation eliminates vehicle conflict within the laneway and can support a high level of access/development from the laneway. One-way laneways are unconstrained in this assessment.
- **Continuous.** A continuous laneway can generally be made to operate in a one-way direction. Generally, a continuous, straight laneway was classified as unconstrained because it can be made one-way to address capacity constraints.
  A dead end laneway has less capacity to handle additional traffic and the laneway cannot be made one-way to manage traffic flow. However, this factor is only relevant for single width laneways, a laneway wide enough for two-way traffic is not constrained just because it has a dead end.
- **Laneway Length.** This factor ties into laneway width and whether it is a continuous laneway or not. A long, single width (3m up to 6.0m wide) laneway will experience a high level of vehicle conflict due to higher traffic volumes, higher development potential (more properties accessing it) and more chances of vehicles meeting the laneway.
  There are no set rules regarding the 'tipping point' for when two-way traffic in a single width laneway reaches capacity. It is a combination of factors including traffic volume, configuration and length that contribute to a laneway's capacity. Laneway length is therefore a contributing factor that impacts on laneways in combination with other factors.
- **Physical layout.** A straight laneway has the highest vehicle carrying capacity. Bends in laneways may create operational issues, particularly if:
  - There are no splays around the inside corner of the bend to facilitate vehicle access. For instance, a 90° bend between two 3m wide laneways is inaccessible to vehicles without a splay.
  - Due to a lack of sight distance, vehicles cannot see each other approaching the blind corner. For single lane laneways, this can be a serious issue if drivers meet near the bend, the laneways are long and there are no passing opportunities.
- **Number of Abutting Properties and Frontage.** The number of properties and their frontages are relevant to the potential future traffic conditions of a laneway. There are a number of ways this factor can influence laneways:
  - Short laneways may only serve a limited number properties and accordingly with a low development potential, a short laneway may effectively be 'unconstrained'.
  - A large number of narrow lots might make widening a laneway problematic.
  - If the number of abutting properties to the laneway is small, a short, narrow laneway is unlikely to be constrained.
- **Heritage constraints.** We are not heritage experts and we have relied on information provided by Council in this regard. Properties that have heritage value may create issues

in that they may not easily be modified and this was taken into account during our initial review. Heritage properties abutting a laneway may limit options to widen the laneway.

The following factors were not considered when assessing the development potential of laneways:

- The condition of the laneway (does it need maintenance? Is it in disrepair?).
- The material the laneway is constructed with or type of surface treatment (gravel, asphalt, bluestone, etc.).

As existing Council assets, the condition of the laneway is not especially relevant. It is Council's on-going responsibly to maintain laneways as appropriate.

Some larger developments will warrant upgrading the surface of laneways (for instance, from gravel to asphalt). However, the condition of the laneway is less relevant than its physical configuration. Council also has a number of methods of upgrading the surfaces of laneways, including as permit conditions for significant developments or special charge schemes of abutting properties. These issues are easier to resolve than physical issues with a laneway's configuration.

Summary

From the above, it is apparent that the capacities of laneways are impacted by a large number of factors. In addition, it is challenging to concisely quantify how all the various factors influence each other. There are very few 'hard and fast' rules that define when a laneway is constrained or not and accordingly, this assessment is somewhat subjective and our assessment is based on our engineering judgement and experience.

8.2. Upgrading the Capacity of Laneways

Capacity of a standard 3m wide laneway

Under Clause 56.06 of the Planning Scheme, Table C1 provides an outline of the design of roads, one of which includes an 'Access Lane', which is defined as *a side or rear lane principally providing access to parking on lots with another street frontage*. Table C1 continues on to state that an Access Lane has a traffic volume of up to 300 vehicles per day (vpd) and this is typically adopted as the environmental capacity laneway. This also represents an indicative peak volume of 30 vehicles per peak hour (two-way).

The options in terms of increasing the traffic capacity of existing laneways follows:

- **Conversion to one-way operation.** For single-width laneways, a one-way laneway has a significantly higher capacity than a laneway permitting two-way traffic. One-way operation eliminates vehicle conflicts within the laneway and can support a high level of access/development from the laneway. The key advantages of this option are that it is usually easy to implement and does not require/rely on additional land. For this reason, one-way operation is our preferred solution to upgrading laneways. One-way laneways are effectively unconstrained and their environmental capacity is typically taken as being in the order of 1,000 vehicles per day.

  Future development access can be planned around the laneway being one-way in the future. The change to one-way can be decided on a case-by-case basis if traffic

congestion in the laneway became an issue. For all areas where a one-way arrangement is proposed, a detailed traffic study can be undertaken confirming that the proposal to convert the laneway/road to one-way (including the direction of travel shown on the Access Map) is appropriate and does not have a detrimental impact to the surrounding road network.
If one-way operation cannot be achieved, then other options can be utilised to increase the capacity, such as the increase of width of the laneway or provision of passing areas within sections of the lane.

- **Laneway width.** One of the most important factors to the operation and capacity of a laneway. To provide a single traffic lane, a laneway should be at least 3.0m wide. A width slightly less than 3.0m (down to 2.8m) is also functional, although constrained. Laneways less than 2.8m wide are problematic for vehicle access and should be considered as pedestrian only laneways and/or have very limited development potential (it is acknowledged that some narrow laneways within the study area are in practice used for vehicle access currently).

  Laneways become capable of supporting simultaneous two-way traffic at a width of 6.1m, which removes most capacity constraints of laneways and makes them unconstrained. However, widening laneways can be problematic, particularly in situations where a large number of properties front a ROW or the subdivision pattern is finely grained.
  Where we have recommended laneway widening, the minimum road reserve width should be 6.0m. This can be achieved by setting back buildings, which are the overhang the ROW on the levels above. It is recommended that a height clearance of 3.5m is provided in these circumstances (which is usually achievable with ground floor commercial uses).

  For many properties with laneway access, car parking can only be arranged length-wise to the site. A 5m wide site only accommodates one car space in width, a second car may be parked in tandem. A 7m wide site might accommodate 2 car spaces side by side. In either case, options of providing additional car parking via car stackers is also limited. There is unlikely to be any significant gain in a 5m wide site. A 7m wide site may increase the car parking from 2 (4 in tandem) to 4 or 5 (up to 8 in tandem).

  It needs to be also recognised that for developments with access to 3m wide laneways, an increased setback is required to physically accommodate vehicle access as 3m is too narrow an access aisle for most car parking arrangements. As a general rule, new developments would typically need to setback the car parking approximately 3m from the edge of the laneway to facilitate vehicle access. This setback combined with the laneway effectively provides a 6m wide access aisle.
  Sketches of arrangements are shown in the figures below.

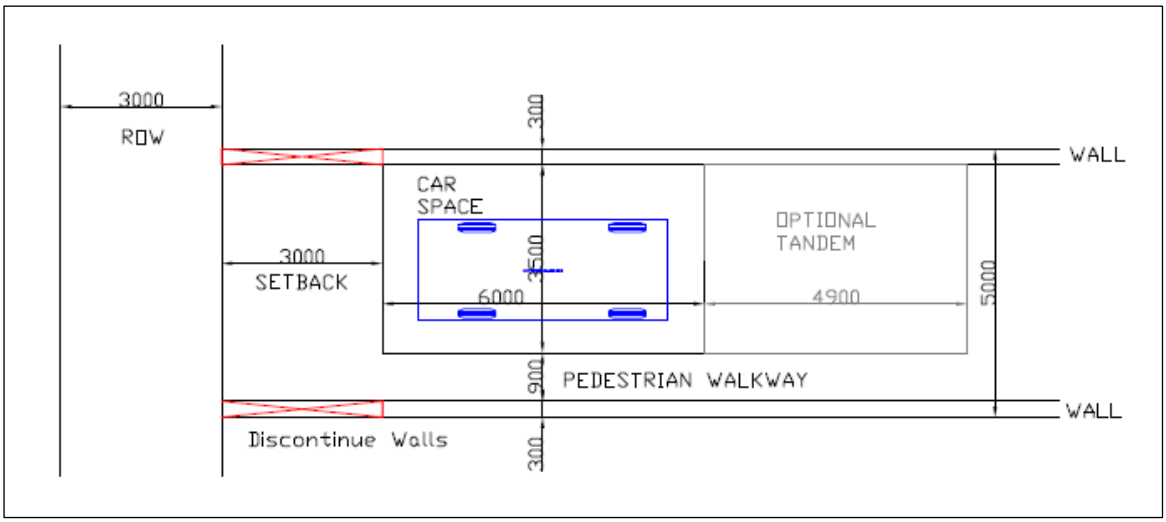


Figure 21: Example layout of a 5m wide site

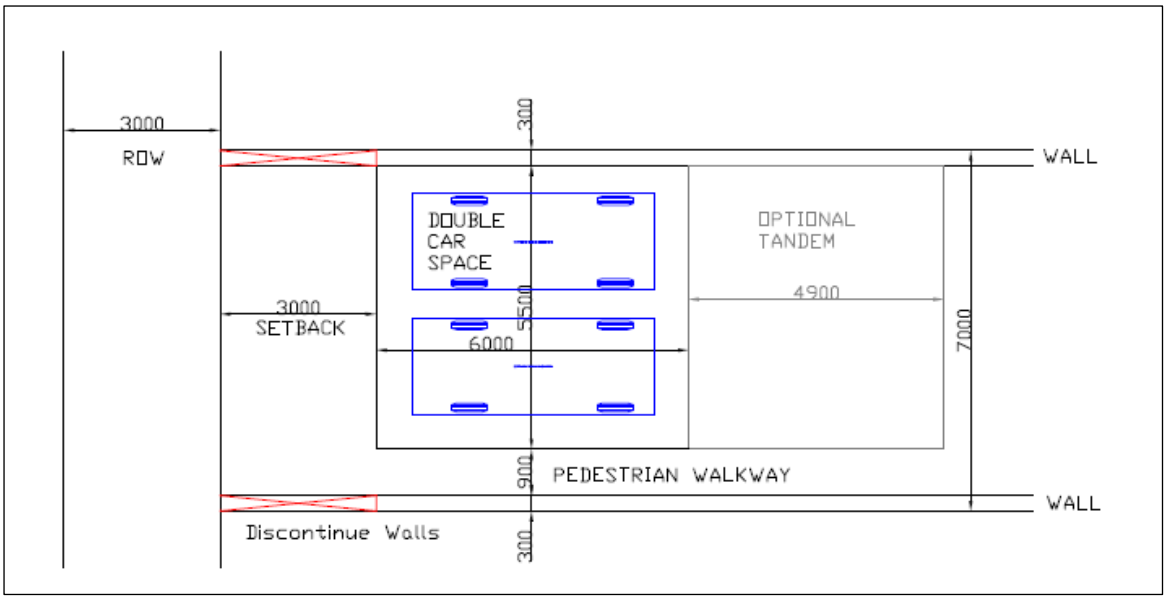


Figure 22: Example layout of 7m wide site

There is an opportunity to effectively widen the functional area of the laneways to 6m in width over time if a consistent 3m setback is applied to new developments (which is likely to be necessary for vehicle access to many individual sites in any event). It means that new developments should avoid constructing side walls out to the laneway within the 3m setback. The building could cantilever over the ground floor setback at upper floors (subject to other planning and structural requirements).

The above two diagrams are an example of commonly seen development types in our experience. Other arrangements are possible, such as a very wide single car garage with minimal setback. However, these examples provide a good illustration as to the type of car parking arrangements likely on the narrow sites common within the Victoria Street and Bridge Road Activity Centres.

- **Splays.** ROWs often incorporate bends and for narrow ROWs, splays are essential to facilitate vehicle access. This study recommends a universal splay of 3m x 3m is provided on the inside of all ROW bends and intersections between two ROWs. This splay facilitates access by vehicles up to the B99 design car from AS2890.1-2004 (i.e. not trucks), which is appropriate in our view.

  The shape of the splay can be vary depending on the width(s) of the intersecting ROWs. These arrangements are shown in the figures below.

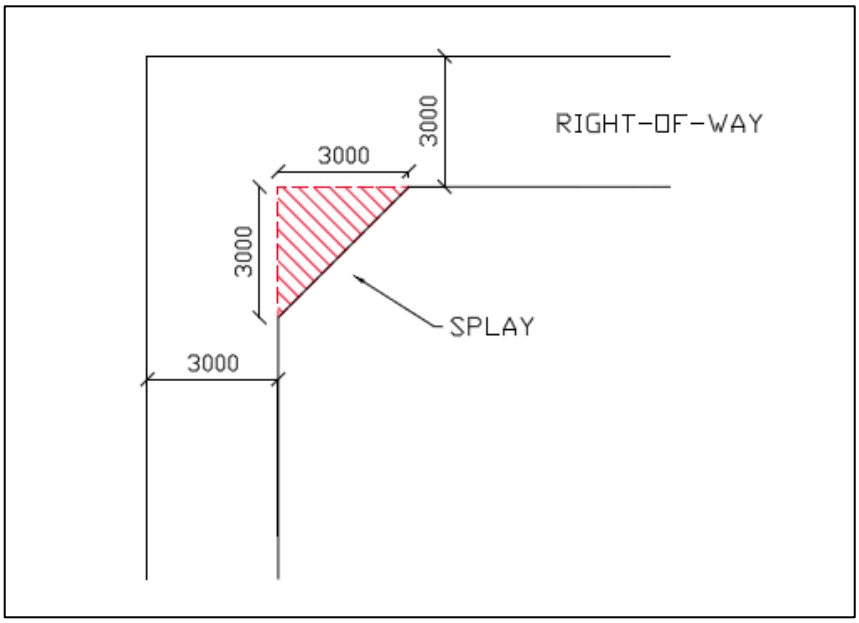


Figure 23: Standard 3m-wide ROW 90-degree Splay

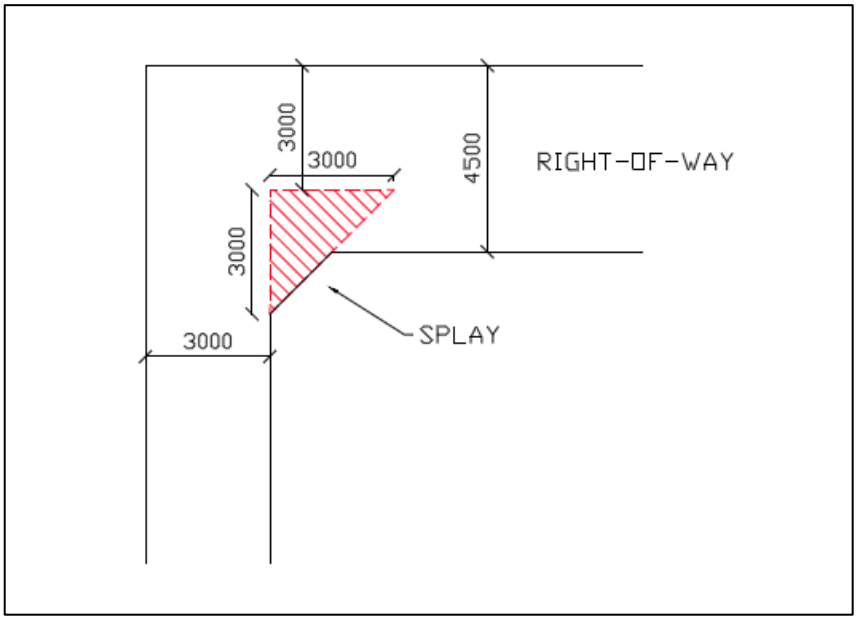


Figure 24: Non-Standard Varied-Width ROW Splay

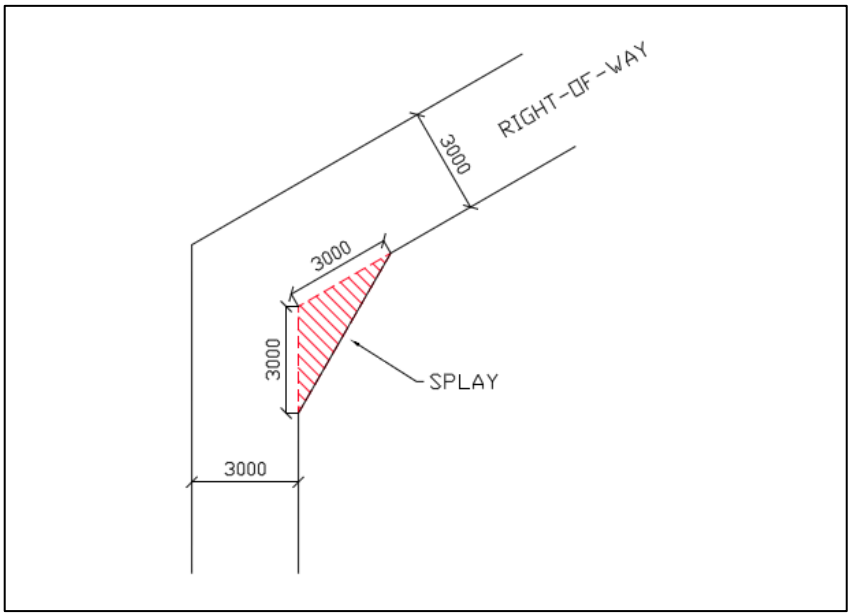


Figure 25: Standard 3m-wide ROW Non-Right-Angle Splay

Some laneways already have splays of various sizes. This study recommends that the splays available are standardised over time to be 3m x 3m.

- **Passing bay at entrance to laneway.** In some situations, it may not be possible to widen laneways or enforce a one-way operation due to varying constraints, including dead end laneways. A potential solution is to provide for a passing bay either at the entrance to the laneway (ideally) or elsewhere along the laneway.
  This passing area allows any conflicting vehicle movements to pass away from the road network and pedestrian footpaths. As a guide, Clause 52.06-9 (which applies to private accessways) requires passing areas to be 6.1m wide for a distance of at least 7m from the major road boundary.

  The width required to achieve this passing area would be required to be taken from one (or more) of the properties located on either side of the entry to the laneway. Alternatively, informal passing areas may be provided within the laneways as a result of buildings setting back their ground floor to facilitate vehicle access to and from their sites (i.e. car spaces or garages that are directly accessed from the laneway). This setback may allow for informal passing opportunities within laneways, thereby increasing the capacity of the laneway.

  A passing area allows drivers to manage vehicle conflicts within laneways more easily and raises the capacity of the laneway above 30 vehicles per hour. If all properties along a laneway are required to setback to achieve a 6m width (to increase the laneway capacity), each setback incrementally increases the capacity of the laneway and over time achieves a full two-way laneway.

8.3. Upgrading a Laneway to Accommodate Non-Vehicle Users

The sharing of the road space in laneways between pedestrians and vehicles is common practice and acceptable. Accordingly, there is no specific need or requirement to widen laneways to provide separate pedestrian spaces. Generally, issues only arise if laneways carry a high volume of vehicles.

For the most part, it is our view that laneways within the study areas should be used primarily for vehicle access, rather than pedestrian movement. It is our view is that in most cases, pedestrians within the activity centres should ideally be walking along the footpaths of main roads or other local roads where pedestrian amenity is higher, footpaths are wider and of higher quality and there is more activity along the street.

There are properties within the study area that may provide some uses accessed directly from laneways. For instance, dwellings that only front a laneway and rely on the laneway as their sole pedestrian access point. In these instances, new development should provide a pedestrian refuge area, which could be a separate footpath along the site's frontage or similar separation between the laneway and the building façade. A full pedestrian connection or separate footpath to the nearest road is not required, but a separate area for pedestrians to safely enter/exit a building directly fronting a laneway is necessary.

Cyclists generally don't use laneways, unless it is the final stage of their journey to a property. Most laneway surfaces can accommodate cyclists, although some bluestone laneways can be uncomfortable to use and cyclists may prefer to walk their bicycles the final stage of the journey. In our view, there is no need to upgrade laneway surfaces specifically for cyclists.

Shared Zones

There are a number of laneways within the study area that have intermediate widths (3-6m wide) that provide carriageways in the order of 3m wide and narrow footpaths (<1m) on one or both sides of the road. Often these footpaths are obstructed by poles. An example would be Tullo Place. These laneways would function better if reconfigured as Shared Zones. An example of which is Little Buckingham Street (between Church Street and Lambert Street) in Richmond. The essential feature of the Shared Zones is the removal of separate footpaths and provision of flush, shared surface. This provides an enhanced pedestrian environment and also assists vehicle access to abutting properties.

A shared zone is a road or network of roads where pedestrians, cyclists and vehicles shared the roadway. A shared zone provides improved amenity for pedestrians and an improved streetscape.

The VicRoads' Supplement to Austroads Guide to Traffic Management Part 8: Local Traffic Area Traffic Management (2008) (dated October, 2015), provides guidance as to appropriate locations for a shared zone, including design guidelines.

A summary of these guidelines is provided below:

Appropriate Locations

- Low volume streets where pedestrians outnumber motor vehicles and where the pedestrian needs are best met by walking on the roadway, and
- Where the street has been constructed or reconstructed to a sufficient degree to ensure significant visual interruption and where speed is physically restrained, and

- Where there is no cross traffic.

Inappropriate Locations

- Not suitable where traffic volumes exceed 200 vehicles in a peak hour, or over 1000 vehicles between 7am and 7pm.
- If there is a history of vehicle speed problems.
- Unprotected locations where approach speeds exceed 40-50km/h.

Design Guidelines

- The road should be discontinuous, and any kerb removed to enhance the sense of equality between pedestrians and vehicles.
- Speed reduction devices installed at a spacing of approximately 40m and staggered if possible.
- Straight lengths of no more than 50m without speed reduction devices.
- Maximum design speed of 20km/h – typically either 10km/h or 20km/h.
- Entry and exit points to be clearly signed.
- No provision for traffic to flow across the path.
- Surface texture treatment in order to differentiate between the shared zone and surrounding road network.

An example of a shared zone in a laneway environment is Little Buckingham Street in Richmond. An aerial view of how this treatment has been implemented for part of the laneway (the portion which has been recently developed) and a street level view are shown at Figure 26 and Figure 27, respectively.

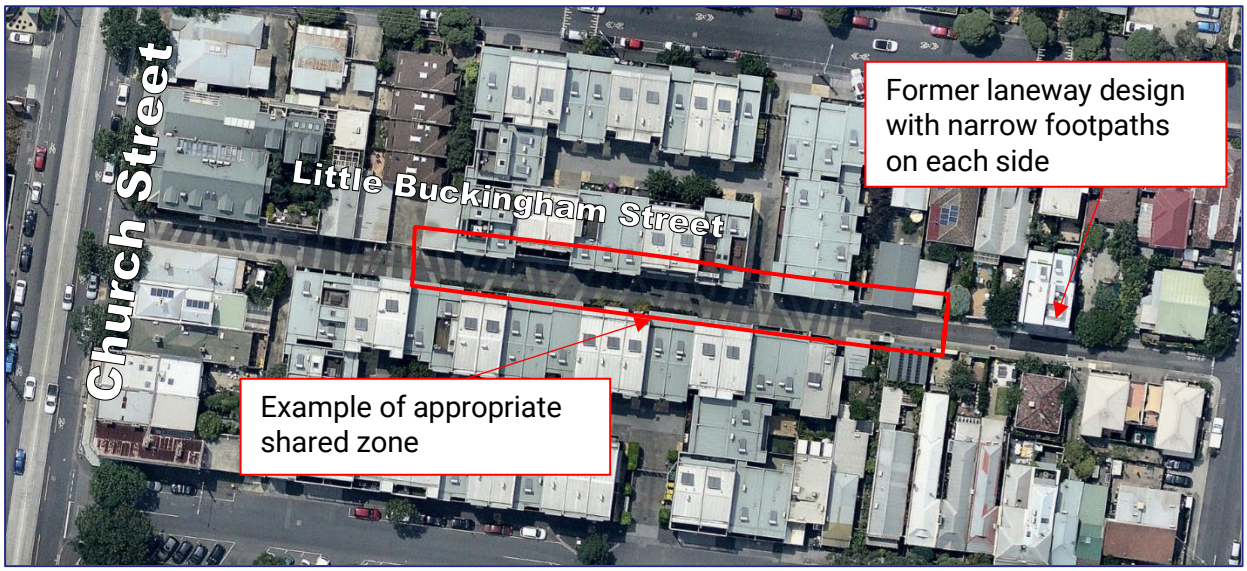


Figure 26: Shared Zone Example - Little Buckingham Street, Richmond

Figure 27: Shared Zone Example – Little Buckingham Street, Richmond

Other Considerations

Some consideration should be provided to allowing for 'pedestrian sight triangles' at the exit location of laneways at their intersections with roads. Under Clause 52.06 of the Planning Scheme and AS2890.1-2004, pedestrian sight triangles measuring 2.5m into the property and 2m along the property boundaries are required on both sides of a single-width accessway (i.e. 3m or similar), whilst in cases of widened accessways, a pedestrian sight triangle is only required on the departure side of the laneway. This is shown at Figure 28 below.

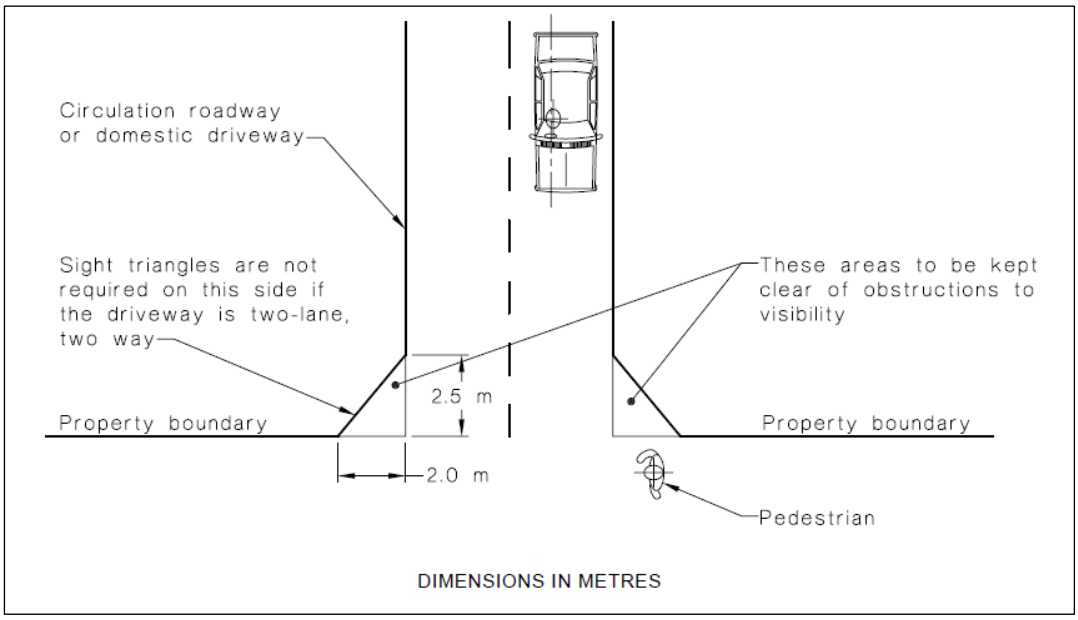


Figure 28: Minimum sight lines for pedestrian safety (Figure 3.3 - AS2890.1-2004)

Both standards refer to private driveways (not public roads), however the principle is valid. It should be acknowledged that in practice, most laneways in the City of Yarra would not provide pedestrian sight triangles and that providing sight triangles may be problematic for heritage sites.

For these reasons, we have not specifically recommended splays at every ROW entrance. Splays can be required of individual sites as part of future planning permit conditions.

8.4. Recommendations

Our recommendations regarding various laneway upgrades are attached at Appendix G.

The Appendix provides the detailed reason behind the recommendations for the various laneways within the study area.

9. Design and Development Overlay – Draft Schedules

We have been provided with a draft of the vehicle access requirements proposed in DDO21 and DDO22.

This schedule is attached at Appendix H.

Our review and response to the draft DDOs is presented in the table below.

Table 14: Response to draft DDOs

Item	Response
Vehicular access and carpark layout requirements	
Development should provide vehicular access from rear lanes or from side streets in the preferred locations in the Access and Movement Plan x of this schedule except in locations identified as "Left in - Left Out Access Permitted" in the Access and Movement Plan x of this schedule.	Our recommended wording is below: Development should provide vehicular access from rear lanes or from side streets in the preferred locations in the Access and Movement Plan x of this schedule. Where access is provided to an arterial road, access should be limited to left-in/left-out.
Development identified as "Left in - Left Out Access Permitted" in the Access and Movement Plan should limit the width of vehicle crossovers and incorporate 'Left in' and 'Left out' only vehicle access.	Deleted – is not required.
Development with redundant vehicle access points must reinstate the kerb, line mark parking bays, and relocate any parking signs.	Agree.
Car parking should be located within a basement or concealed from the public realm.	Not strictly a traffic engineering matter.
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 at XXXXX, as shown in Plan X, should include a rear setback, at ground floor, to facilitate the ongoing function of the laneway and allow for building services and car park access. The setback and laneway should be a minimum width of Xm in total. Between ground	The setback in the laneway should provide a minimum width between walls of 6.1m (including the existing laneway).

Item	Response
level and first floor, a headroom clearance of 3.5 metres minimum should be achieved.	
Properties on the inside corner of bends in laneways or at intersections between two laneways should provide a minimum 3m x 3m splay to facilitate vehicle access.	Add additional requirement: Or any alternative splay that facilitates movement by the B99 design vehicle, to the satisfaction of the Responsible Authority.
Add access and movement plans	Agree.
Pedestrian and Bicycle Access	
Pedestrian access to buildings must be from a street or a shared zone should be achieved via streets (or shared zone shown on the Access and Movement Plan X of this schedule) and avoid primary access from laneways. Where pedestrian access can only be provided from a laneway, the pedestrian entrance should be setback from the rear laneway or include a pedestrian refuge or landing and be well lit to enable safe access.	Agree.
Development should facilitate the creation of a shared zone where properties abut a future shared zone as shown on Plan X.	Agree.
Development should improve the pedestrian environment and amenity of streets and laneways that provide a pedestrian connection to XX Street, XX Street, North Richmond Train Station, and entrances to buildings.	Agree.
Ensure pedestrian entrances are clearly visible, secure and have an identifiable sense of address.	Agree.
Residential and commercial pedestrian entrances should be distinguishable from each other.	Not strictly a traffic engineering matter.
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.	Not strictly a traffic engineering matter.

Item	Response
Resident and staff bicycle parking should be located and designed to be secure and conveniently accessible from the street and associated uses.	Agree.

10. Conclusions

Access Management Plans have been prepared for all properties identified within the Victoria Street and Bridge Road Activity Centre study areas, which includes (but not limited to) properties abutting Victoria Street and Bridge Road, to map out how vehicle access to new developments can be managed to reduce the impact of vehicle access directly to Victoria Street and Bridge Road. Suitably designed and controlled vehicle access is a key component in achieving the objectives of maximising the efficiency of Victoria Street and Bridge Road for trams and vehicles and providing a high-quality pedestrian environment.

Traffic Management Plans have been prepared to support the Access Management Plan. These plans recommend changes to the laneway and local road networks to improve access to properties fronting arterial roads and support rear access outcomes.

This report also recommends a series of traffic engineering requirements for a future Design and Development Overlay.

Appendix A

Clause 18 of the Yarra Planning Scheme

18.01-2S Transport system

31/07/2018
VC148

Objective

To coordinate development of all transport modes to provide a comprehensive transport system.

Strategies

Reserve land for strategic transport infrastructure.

Require transport system management plans for key transport corridors and for major investment proposals.

Incorporate the provision of public transport, cycling and walking infrastructure in all major new state and local government road projects.

Locate transport routes to achieve the greatest overall benefit to the community to making the best use of existing social, cultural and economic infrastructure, minimising impacts on the environment and optimising accessibility, safety, emergency access, service and amenity.

Locate and design new transport routes and adjoining land uses to minimise disruption of residential communities and their amenity.

Plan or regulate new uses or development of land near an existing or proposed transport route to avoid detriment to and where possible enhance, the service, safety and amenity desirable for that transport route in the short and long terms.

Facilitate infrastructure that connects and improves train services between key regional cities and townships and Melbourne.

Ensure that pedestrian and cyclist access to public transport is facilitated and safeguarded.

Ensure the design, construction and management of all transport modes reduces environmental impacts.

Ensure careful selection of sites for freight generating facilities to minimise associated operational and transport impacts to other urban development and transport networks.

Consider all modes of travel, including walking, cycling, public transport, taxis and private vehicles (passenger and freight) in providing for access to new developments.

Policy guidelines

Consider as relevant:

- Any applicable highway strategy published by VicRoads.

Policy documents

Consider as relevant:

- *The Victorian Transport Plan* (Victorian Government, 2008)
- *Freight Futures: Victorian Freight Network Strategy for a more prosperous and liveable Victoria* (Victorian Government, 2008)
- *Public Transport: Guidelines for land use and development* (Victorian Government, 2008)

18.02-1S Sustainable personal transport

31/07/2018
VC148

Objective

To promote the use of sustainable personal transport.

Strategies

Ensure development and the planning for new suburbs, urban renewal precincts, greyfield redevelopment areas and transit-oriented development areas (such as railway stations) provide opportunities to promote more walking and cycling.

Encourage the use of walking and cycling by creating environments that are safe and attractive.

Develop high quality pedestrian environments that are accessible to footpath-bound vehicles such as wheelchairs, prams and scooters.

Ensure cycling routes and infrastructure are constructed early in new developments.

Provide direct and connected pedestrian and bicycle infrastructure to and between key destinations including activity centres, public transport interchanges, employment areas, urban renewal precincts and major attractions.

Ensure cycling infrastructure (on-road bicycle lanes and off-road bicycle paths) is planned to provide the most direct route practical and to separate cyclists from other road users, particularly motor vehicles.

Require the provision of adequate bicycle parking and related facilities to meet demand at education, recreation, transport, shopping and community facilities and other major attractions when issuing planning approvals.

Provide improved facilities, particularly storage, for cyclists at public transport interchanges, rail stations and major attractions.

Ensure provision of bicycle end-of-trip facilities in commercial buildings.

Policy documents

Consider as relevant:

- *Guide to Road Design, Part 6A: Paths for Walking and Cycling*
- *Cycling into the Future 2013–23* (Victorian Government, 2012)

18.02-1R Sustainable personal transport - Metropolitan Melbourne

31/07/2018
VC148

Strategies

Improve local travel options for walking and cycling to support 20 minute neighbourhoods.

Develop local cycling networks and new cycling facilities that support the development of 20-minute neighbourhoods and that link to and complement the metropolitan-wide network of bicycle routes - the Principal Bicycle Network.

18.02-2S Public Transport

31/07/2018
VC148

Objective

To facilitate greater use of public transport and promote increased development close to high-quality public transport routes.

Strategies

Maintain and strengthen passenger transport networks.

Connect activity centres, job rich areas and outer suburban areas through high-quality public transport.

Improve access to the public transport network by:

- Ensuring integration with walking and cycling networks.
- Providing end-of-trip facilities for pedestrians and cyclists at public transport interchanges.

Plan for bus services to meet the need for local travel.

Ensure development supports the delivery and operation of public transport services.

Plan for and deliver public transport in outer suburban areas that is integrated with land use and development.

Provide for bus routes and stops and public transport interchanges in new development areas.

Policy documents

Consider as relevant:

- *Public Transport Guidelines for Land Use and Development* (Victorian Government, 2008)
- *The Victorian Transport Plan* (Victorian Government, 2008)
- *Cycling into the Future 2013-23* (Victorian Government, 2012)

18.02-3S Road system

31/07/2018
VC148

Objective

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.

Strategies

Plan and regulate the design of transport routes and nearby areas to achieve visual standards appropriate to the importance of the route with particular reference to landscaping, the control of outdoor advertising and, where appropriate, the provision of buffer zones and resting places.

Provide for grade separation at railway crossings except with the approval of the Minister for Transport.

Make better use of roads for all road users through the provision of wider footpaths, bicycle lanes, transit lanes (for buses and taxis) and specific freight routes.

Selectively expand and upgrade the road network to provide for:

- High-quality connections between Metropolitan Melbourne and regional cities, and between regional cities.
- Upgrading of key freight routes.
- Ongoing development in outer suburban areas.
- Higher standards of on-road public transport.
- Improved key cross-town arterial links in the outer suburbs including circumferential and radial movement.

Ensure access to jobs and services in growth areas and outer suburban areas by improving roads for all road users.

Improve the management of key freight routes to make freight operations more efficient while reducing their external impacts.

Ensure that road space complements land use and is managed to meet community and business needs.

18.02-4S Car parking

31/07/2018
VC148

Objective

To ensure an adequate supply of car parking that is appropriately designed and located.

Strategies

Allocate or require land to be set aside for car parking subject to the existing and potential modes of access including public transport, the demand for off-street car parking, road capacity and the potential for demand management of car parking.

Encourage the efficient provision of car parking by consolidating car parking facilities.

Design and locate local car parking to:

- Protect the role and function of nearby roads.
- Enable easy and efficient use.
- Enable the movement and delivery of goods.
- Achieve a high standard of urban design and protect the amenity of the locality, including the amenity of pedestrians and other road users.
- Create a safe environment, particularly at night.
- Facilitate the use of public transport.

Protect the amenity of residential precincts from the effects of road congestion created by on-street parking.

Make adequate provision for taxi ranks as part of activity centres, transport interchanges and major commercial, retail and community facilities.

Policy documents

Consider as relevant:

- *Public Transport Guidelines for Land Use and Development* (Victorian Government, 2008)

Appendix B

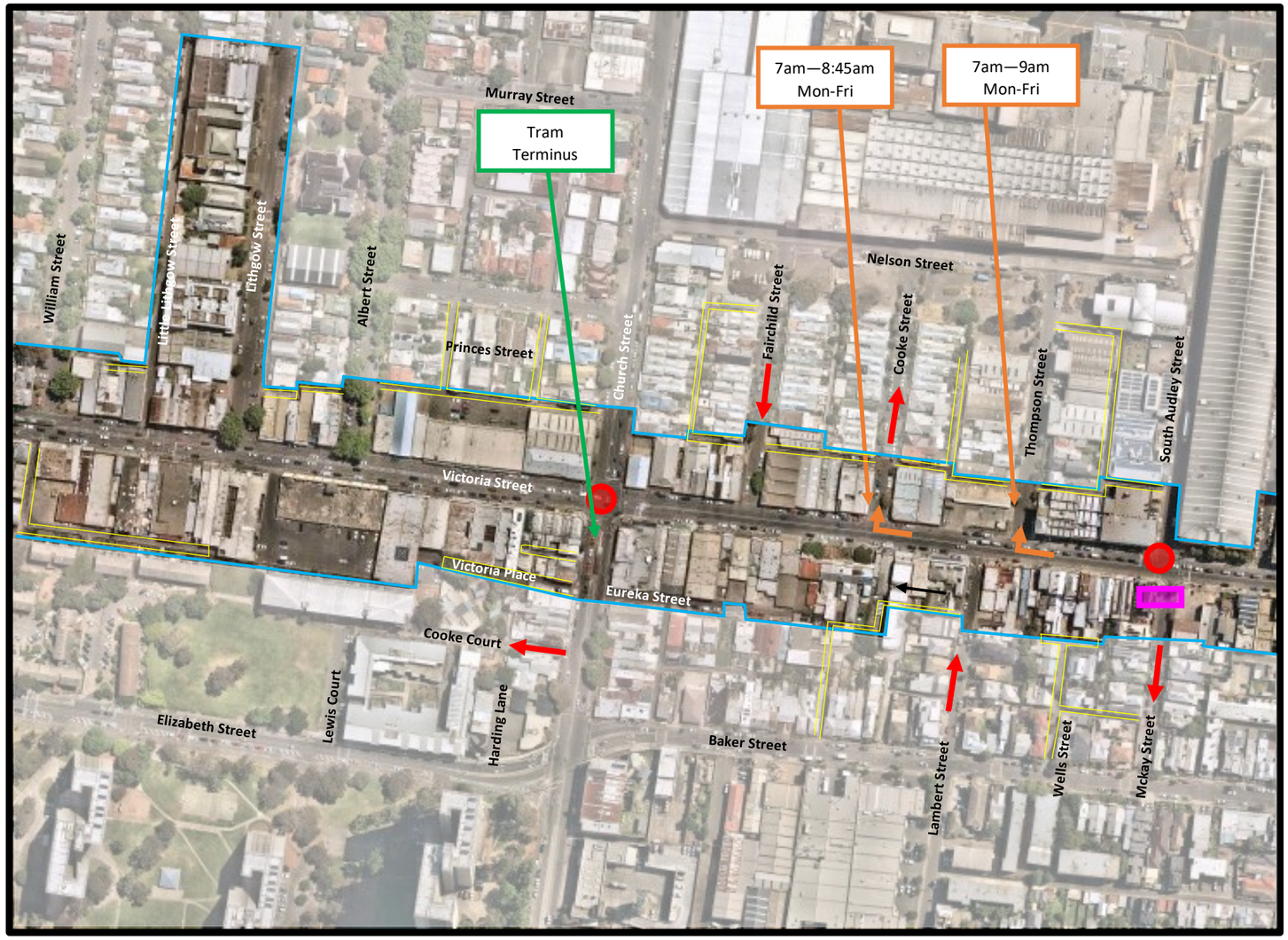
Existing Traffic Management Conditions

Legend – Existing Conditions

- Study Area Boundary
- Traffic Signals
- Pedestrian Signals
- Threshold Treatment
- U-Turn Ban
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade
- ROW Boundary

Legend – Existing Conditions

- Study Area Boundary
- Traffic Signals
- Pedestrian Signals
- Threshold Treatment
- U-Turn Ban
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade
- ROW Boundary

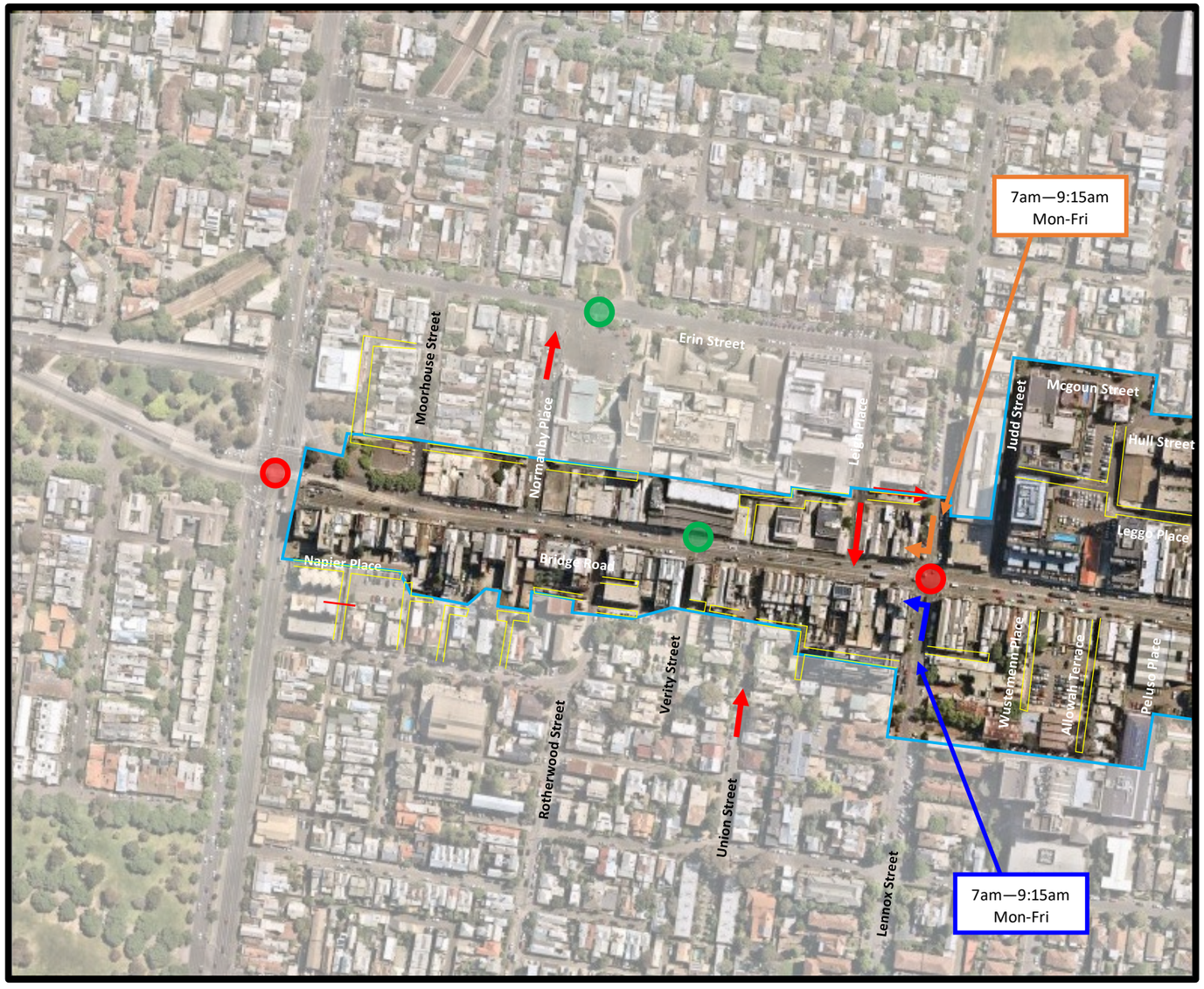


Legend – Existing Conditions

- Study Area Boundary
- Traffic Signals
- Pedestrian Signals
- Threshold Treatment
- U-Turn Ban
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade
- ROW Boundary

Legend – Existing Conditions

- Study Area Boundary
- Traffic Signals
- Pedestrian Signals
- Threshold Treatment
- U-Turn Ban
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade
- ROW Boundary

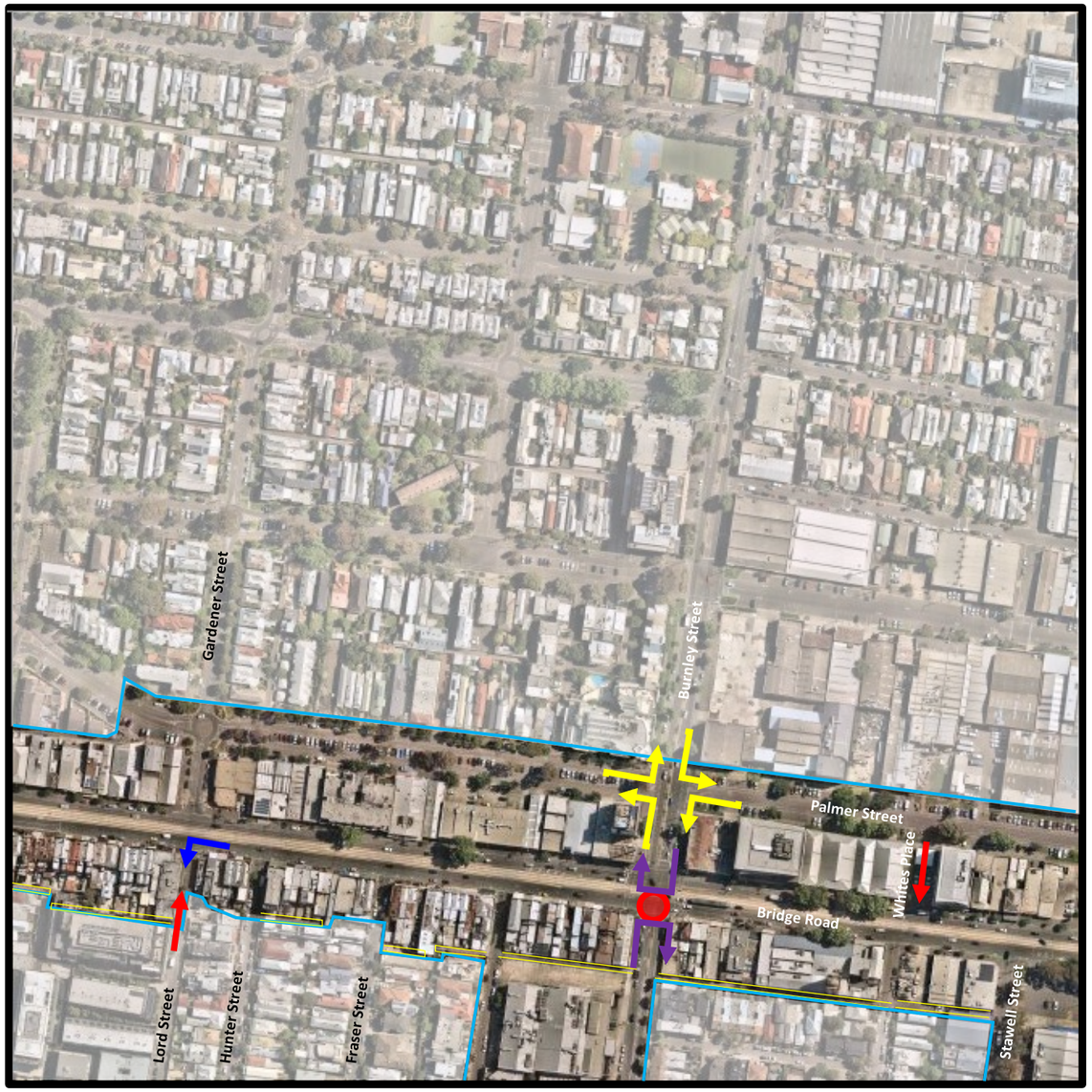


Legend – Existing Conditions

- Study Area Boundary
- Traffic Signals
- Pedestrian Signals
- Threshold Treatment
- U-Turn Ban
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade
- ROW Boundary

Legend – Existing Conditions

- Study Area Boundary
- Traffic Signals
- Pedestrian Signals
- Threshold Treatment
- U-Turn Ban
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade
- ROW Boundary



Legend – Existing Conditions

- Study Area Boundary
- Traffic Signals
- Pedestrian Signals
- Threshold Treatment
- U-Turn Ban
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade
- ROW Boundary

Legend – Existing Conditions

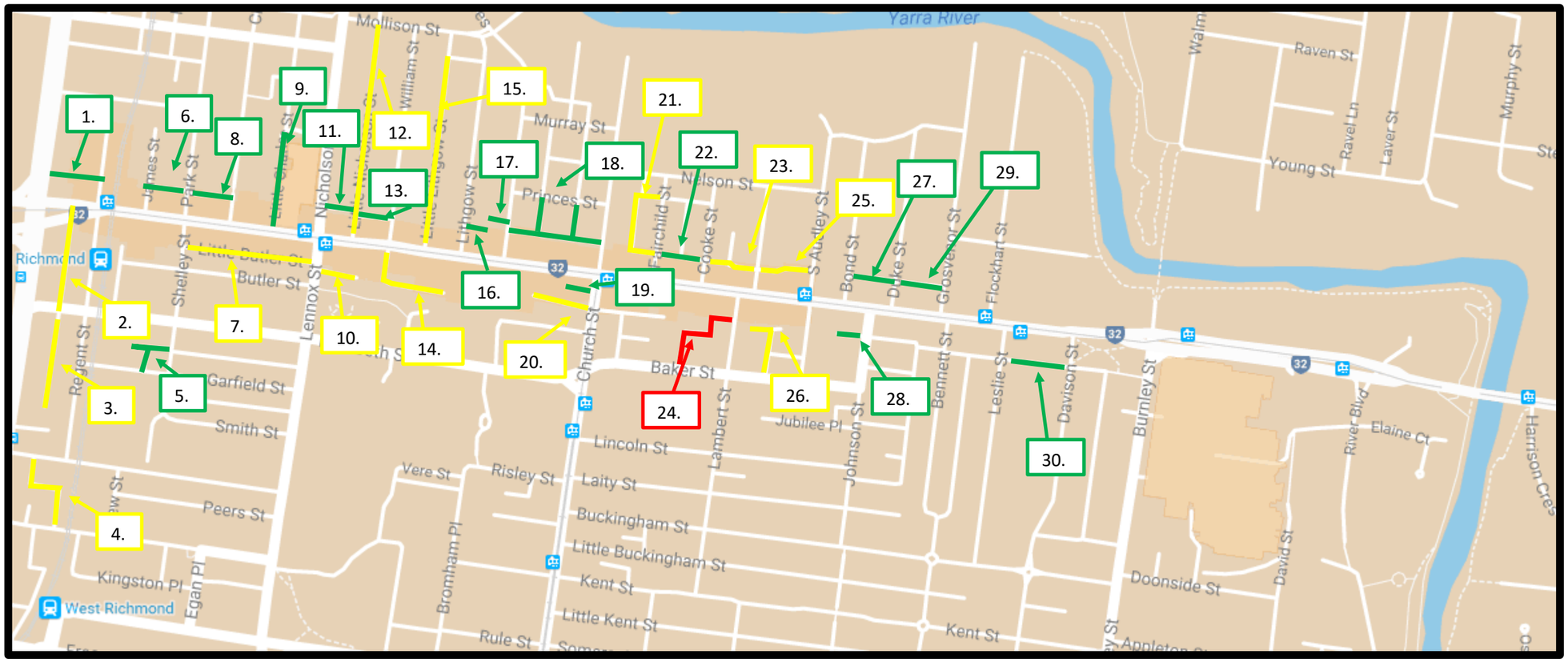
- Study Area Boundary
- Traffic Signals
- Pedestrian Signals
- Threshold Treatment
- U-Turn Ban
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade
- ROW Boundary

Legend – Existing Conditions

- Study Area Boundary
- Traffic Signals
- Pedestrian Signals
- Threshold Treatment
- U-Turn Ban
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade
- ROW Boundary

Appendix C

Existing Laneway Conditions



Legend

- Unconstrained Laneway
- Partially Constrained/Minor Improvement Required
- Highly Constrained/Challenging to Remedy

Street Name	Description	Photo
1: ROW (from Hoddle Street to Ferguson Street)	**Existing Conditions:** • Carriageway width – 2.85m-3.6m • Traffic management – Two-way • Parking – No parking • Footpaths – No footpaths • Material – Asphalt • Layout Features – continuous, generally straight **Constraints: Unconstrained laneway** • Short, straight and connected at both ends.	
2: Little Hoddle Street (from Elizabeth Street to Victoria Street)	**Existing Conditions:** • Carriageway width – 4.6m • Road reservation – 5.95m • Traffic management – Two-way • Parking – No parking • Footpaths – Narrow kerbside/footpath on both sides • Material – Asphalt • Layout features – continuous, straight **Constraints: Partially constrained** • Single lane for two-way traffic • Long length, some development potential • Could be made two-way by creating a shared zone and removing the footpaths	
3: Little Hoddle Street (from Elizabeth Street to END)	**Existing Conditions:** • Carriageway width – 3.7m-4.8m • Road Reserve – 4.85m-6m • Traffic management – Two-way • Parking – Parking along sections of the east side of the laneway • Footpaths – Narrow kerbing/path • Material – Asphalt • Layout features – dead end, straight, narrows down towards the south **Constraints: Partially Constrained** • Long • Narrower than 6m without road reserve • Parking Arrangements limit two-way flow	

Street Name	Description	Photo
4: Wrede Place (from York Street to Egan Street)	**Existing Conditions:** • Carriageway width – 3.4m-3.85m • Traffic management – Two-way • Parking – No parking • Footpaths – No footpaths • Material – Bluestone in sections and asphalt in sections • Layout features – continuous, s-shaped, no splays **Constraints: Partially Constrained** • Lack of splays makes navigating corners difficult	
5: ROW (from Shelley Street to Garfield Street)	**Existing Conditions:** • Carriageway width – 3.2m-3.95m • Traffic management – Two-way • Parking – No parking • Footpaths – No footpaths • Material – Asphalt • Layout features – continuous with a 90 degree bend and extending dead end section to the west, splays on south-east corner **Constraints: Unconstrained laneway** Short and connected at both ends.	
6: ROW (from James Street to Park Street)	**Existing Conditions:** • Carriageway width – 3m • Traffic management – Two-way, must turn right at Park Street • Parking – Shared off-street car park on south side of ROW • Footpaths – No footpaths • Material – Asphalt with bluestone kerbing • Layout features – continuous, straight **Constraints: Unconstrained laneway** Short, straight and connected at both ends.	

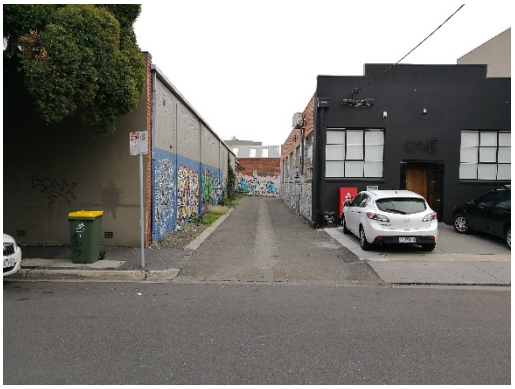
Street Name	Description	Photo
7: Little Butler Street (from Shelly Street to Lennox Street)	**Existing Conditions:** • Carriageway width – 2.7m-3m • Road reservation – 3.95m-4.75m • Traffic management – Two-way • Parking – kerbside parallel both sides • Footpaths – No footpaths • Materials – Asphalt • Layout features – continuous, straight **Constraints: Partially constrained** • Long length • Inability to easily widen for 2-way traffic flow • Could be made one-way	
8: ROW (from Park to Charles)	**Existing Conditions:** • Carriageway width – 3.1m • Traffic management – Two-way • Parking – Shared off-street car park on south side and west end of ROW • Footpath – No footpath • Material – Concrete • Layout features – continuous, straight **Constraints: Unconstrained laneway** • Unconstrained due to short length	
9: Little Charles Street (from Victoria Street to Little Charles Close)	**Existing Conditions:** • Carriageway width – 3.5m • Road reservation – 5.15m • Traffic management – One-way (southbound) • Parking – No parking • Footpath – Narrow path on east side, with traversal onto road required at power poles • Material – Asphalt **Constraints: Unconstrained laneway** • Unconstrained due to one-way nature	

Street Name	Description	Photo
10: ROW (from Lennox Street to END)	**Existing Conditions:** • Carriageway width – 3.5m • Traffic management – Two-way • Parking – Car Park at east end • Footpath – No footpaths • Material – Concrete • Layout features – slight bend to the south **Constraints: Partially Constrained** • Constrained due to dead end	
11: ROW (from Nicholson Street to Little Nicholson Street)	**Existing Conditions:** • Carriageway width – 4.55m • Traffic management – Two-way • Parking – No Parking • Footpath – No footpaths • Material – Concrete **Constraints: Unconstrained laneway** • Unconstrained due to short length	
12: Little Nicholson Street (from Victoria Street to Mollison Street)	**Existing Conditions:** • Carriageway width – 4.9m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Concrete • Layout Features – loading activity occurs frequently, blocking traversal of ROW **Constraints: Partially constrained** • Long length • Insufficient for 2-way flow • Could be made one-way	

Street Name	Description	Photo
13: ROW (from Little Nicholson Street to William Street)	**Existing Conditions:** • Carriageway width – 2.95m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Bluestone • Layout features – narrow **Constraints: Unconstrained laneway** • Unconstrained due to short length, continuous	
14: ROW (from Victoria Street to END, opposite William Street)	**Existing Conditions:** • Carriageway width – 4.75m for north-south section and 3m for east-west section • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Concrete • Layout Features – Splay provided at bend, over land of 176 Victoria Street **Constraints: Partially constrained** • Single Lane • Length • 90 degree bend • Some development potential • Would require widening for two-way traffic, particularly north-south leg	
15: Little Lithgow Street (from Victoria Street to Mollison Street)	**Existing Conditions:** • Carriageway width – 5.1m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Partially Constrained** • Slightly too narrow for two-way traffic flow	

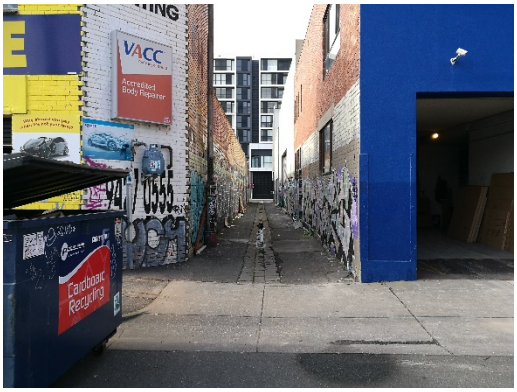
Street Name	Description	Photo
16: ROW (from Lithgow Street to END)	**Existing Conditions:** • Carriageway width – 5.4m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Concrete **Constraints: Unconstrained laneway** • Sufficient width for two-way traffic flow	
17: ROW (from Albert Street to END)	**Existing Conditions:** • Carriageway width – 3.2m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – concrete **Constraints: Unconstrained laneway** • Unconstrained due to short length	
18: ROW (from Albert Street to Church Street)	**Existing Conditions:** • Carriageway width – 4.4m • Traffic management – Two-way, right turn only at Fairchild Street • Parking – Car park at midpoint of ROW • Footpath – No footpath • Material – Concrete • Layout features – there is are two connecting north-south ROWs extending northerly **Constraints: Unconstrained laneway** • Unconstrained due to being continuous, could be one-way	

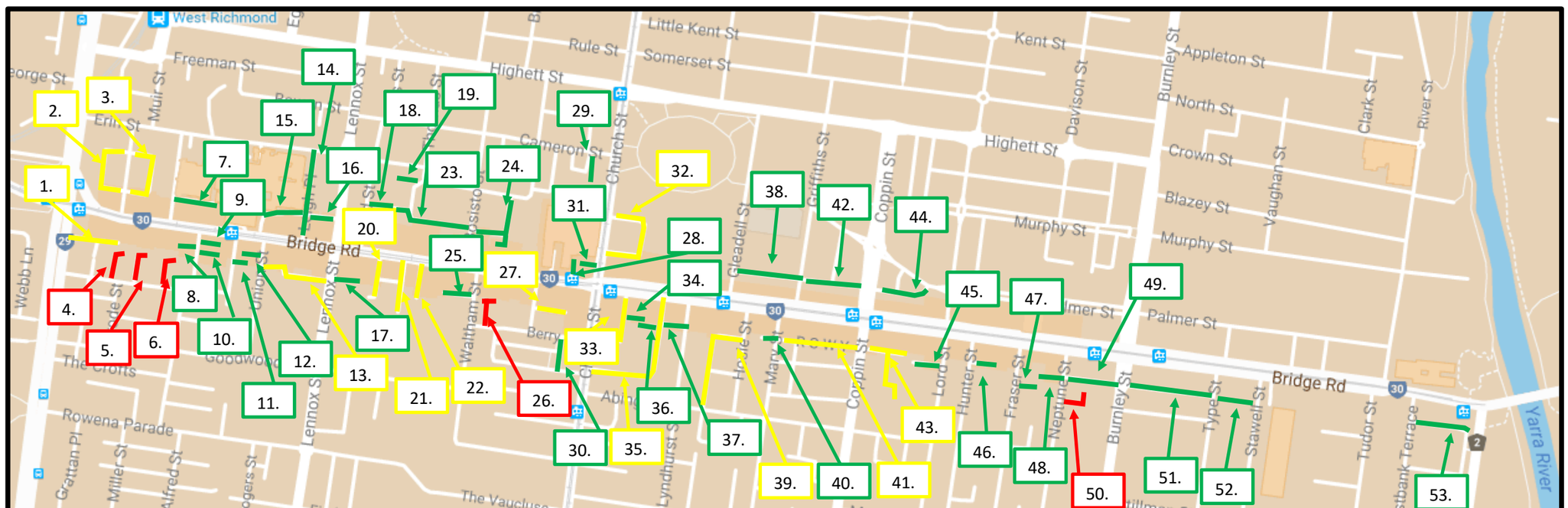
Street Name	Description	Photo
19: ROW (from Church Street to End)	**Existing Conditions:** • Carriageway width – 3.05m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Unconstrained due to short length	
20: Victoria Place (from Church Street to END)	**Existing Conditions:** • Carriageway width – 4.75m, 5.7m aisle for western car park • Traffic management – Two-way • Parking – Parking provided in car park at western end • Footpath – No footpath • Material – Concrete **Constraints: (Partially constrained)** • Dead end • Some development potential	
21: ROW (from Fairchild Street to Fairchild Street)	**Existing Conditions:** • Carriageway width – 3m • Traffic management – Two-way, must enter via right turn from Fairchild, exit via left turn to Fairchild • Parking – No parking • Footpath – No footpath • Material – Bluestone • Layout features – connects to ROW extending north-south that loops back to Fairchild Street **Constraints: Partially constrained** • No splay • Low development potential • Single lane • Length • Bends	

Street Name	Description	Photo
22: ROW (from Fairchild to Cooke Street)	**Existing Conditions:** • Carriageway width – 2.9m • Traffic management – Two-way, must travel south on Fairchild Street, and north on Cooke Street • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – there is a ROW that extends northerly, where there are no splays, making it difficult to traverse due to the narrow width **Constraints: Unconstrained laneway** • Unconstrained due to short length, continuous	
23: ROW (from Cooke Street to Thompson Street)	**Existing Conditions:** • Carriageway width – 3.1m-3.8m • Road Reservation – 3.1m-4.7m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout Features – there is a kink in the ROW at the midpoint, which is also where a northerly ROW also connects, the 4.2m width of the connecting ROW provides space to navigate this kink **Constraints: Partially constrained** • An improved splay would assist with the kink in the ROW, especially for service vehicles	

Street Name	Description	Photo
24: ROW (from Lambert Street to END)	**Existing Conditions:** • Carriageway width – 2.8m-4m • Traffic management – Two-way • Parking –No parking • Footpath – No footpath • Material – Asphalt and bluestone • Layout features – There are a number of bends in the ROW. Splays are provided in the narrower sections, but not for bends connecting to the 4m width section. The ROW also connects to Baker Street in the south **Constraints: Highly constrained** • Length, number of properties • Narrow • Bends with without splays • Properties at corners are outside of the study boundary	
25: ROW (from Thompson Street to South Audley Street)	**Existing Conditions:** • Carriageway width – 3.6m-3.7m • Traffic management – Two-way • Parking – Car park on the north side of the ROW, behind 2 Thompson Street • Footpath – No footpath • Material – Asphalt • Layout features – There is a kink in the middle of the ROW, where there is another northerly connected ROW. Potentially challenging to navigate the kink **Constraints: Partially constrained** • Kink • Lack of Splays	

Street Name	Description	Photo
26: ROW (East-west ROW connected to Wells Street)	**Existing Conditions:** • Carriageway width – 4.7m-4.85m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout Features – connects to the northern end of Wells Street. No splays are provided at the intersection **Constraints: Partially constrained** • 90 degree bends • Lack of splays	
27: ROW (from Bond Street to Duke Street)	**Existing Conditions:** • Carriageway width – 3.4m • Traffic management – Two-way, Bond Street is one-way northerly and Duke Street is one-way southerly • Parking – No Parking • Footpath – No Footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Unconstrained due to short length, continuous	
28: ROW (from Johnson Street to END, on west side of Johnson Street)	**Existing Conditions:** • Carriageway width – 4.55m-6.35m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: (Unconstrained laneway)** • Unconstrained due to short length	

Street Name	Description	Photo
29: ROW (from Duke Street to Grosvenor Street)	**Existing Conditions:** • Carriageway width – 3.4m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Unconstrained due to short length, continuous	
30: Coles Terrace (from Leslie Street to Davidson Street)	**Existing Conditions:** • Carriageway width – 3.15m • Traffic management – Two-way • Parking – No parking • Footpath – No footpaths • Material – Bluestone • Layout features - There is a connecting southerly ROW of 2.85m width with a slight splay on each corner. Corner is still quite difficult to traverse due to narrow width, and shallow depth of splay **Constraints: Unconstrained laneway** • Unconstrained due to short length, continuous	



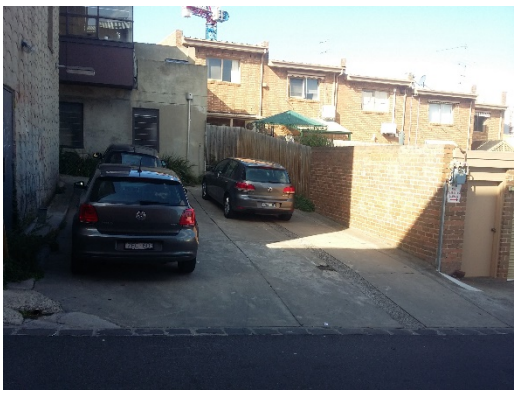
Legend

- Unconstrained Laneway
- Partially Constrained
- Highly Constrained

Street Name	Description	Photo
1: Napier Lane (from Hoddle Street to END)	**Existing Conditions:** • Carriageway width – 3.85m • Trafficable width – 4.3m • Traffic management – Two-way • Parking – Car park attached to eastern end of lane • Footpaths – No footpaths • Material – Bluestone • Layout features – There is a connecting ROW to the south which connects to Sherwood Street, however bollards block access. **Constraints: Partially Constrained** • Limited Carriageway	
2: ROW (from west side Moorhouse Street to END)	**Existing Conditions:** • Carriageway width – 3.15m • Traffic management – Two-way • Parking – No parking • Footpaths – No footpaths • Material – Bluestone • Layout features –there is a connecting northbound ROW which loops back to Moorhouse Street, with splays at the corners **Constraints: Partially Constrained** • Lack of passing opportunities • Lack of sight distance around bends.	
3: ROW (from east end of Moorhouse Street to END)	**Existing Conditions:** • Carriageway width – 3.2-3.25m • Traffic Management – Two-way • Parking – Car park at east end of ROW • Footpaths – No footpaths • Material – Bluestone • Layout features – connecting ROW to the north which loops back to Moorhouse Street, with splays on each corner **Constraints: Partially Constrained** • Lack of passing opportunities • Lack of sight distance around bends.	

Street Name	Description	Photo
4: ROW (East-West section of westernmost ROW from Sherwood Street)	**Existing Conditions:** • Carriageway width – 2.7m-3m • Road reservation – 3.95m-4.75m • Traffic management – Two-way • Parking – kerbside parallel both sides • Footpaths – No footpaths • Materials – Asphalt • Layout features – connected to ROW at the south, of width 3.6m, with no splays provided. **Constraints: Highly Constrained** • Single lane • No Splays at T-intersection • Limited potential to widen critical north-south link	
5: ROW (East-West section of middle ROW from Sherwood Street)	**Existing Conditions:** • Carriageway width – 4.6m • Traffic management – Two-way • Parking – No Parking • Footpath – No footpath • Material – Asphalt • Layout features – connected to ROW at the south, of width 3.5m, with no splays provided. **Constraints: Highly Constrained** • Single lane • No Splays at T-intersection • Limited potential to widen critical north-south link	
6: ROW (easternmost ROW from Sherwood Street to END)	**Existing Conditions:** • Carriageway width – 2.75m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – Narrow width and bend at north end. Setback property on western side. **Constraints: Highly Constrained** • Single lane • No Splays at T-intersection • Limited potential to widen critical north-south link	

Street Name	Description	Photo
7: ROW (from Normanby Place to END)	**Existing Conditions:** • Carriageway width – 3.3m, widens at intersection with Normanby Place • Traffic management – Two-way • Parking – No Parking • Footpath – No footpaths • Material – Asphalt • Layout features – Hospital uses this ROW **Constraints: Unconstrained laneway** • Passing area at entrance to laneway	
8: ROW (from west side of Rotherwood Street to END)	**Existing Conditions:** • Carriageway width – 5.3m • Traffic management – Two-way • Parking – No Parking • Footpath – No footpaths • Material – Bluestone **Constraints: Unconstrained laneway** • Wide enough for two-way traffic flow • Short length	
9: ROW (from from east side of Rotherwood Street to END)	**Existing Conditions:** • Carriageway width – 3.05m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – short and narrow **Constraints: Unconstrained laneway** • Short • Limited development potential	
10: ROW (from east side of Rotherwood Street to END)	**Existing Conditions:** • Carriageway width – 3.8m • Traffic management – Two-way • Parking – Car park on south side • Footpath – No footpath • Material – Concrete **Constraints: Unconstrained laneway** • Short • Limited development potential	

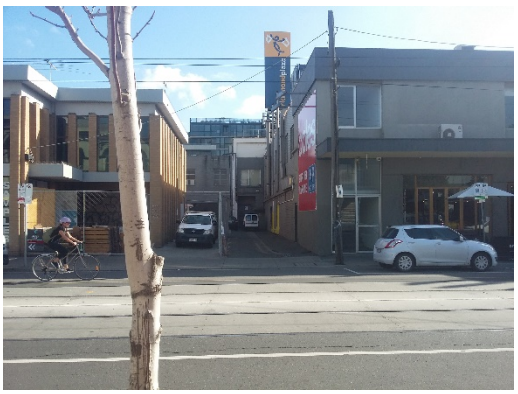
Street Name	Description	Photo
11: ROW (from Verity Street to END)	**Existing Conditions:** • Carriageway width – 6.05m • Traffic management – Two-way • Parking – Open tandem parking for adjacent properties • Footpath – No footpath • Material – Concrete **Constraints: Unconstrained laneway** • Short Limited development potential	
12: ROW (West side of Union Street to END)	**Existing Conditions:** • Carriageway width – 3m • Traffic management – Two-way, No Entry to Union Street from Bridge Road • Parking – No parking • Footpath – No footpath • Material – Bluestone **Constraints: Unconstrained laneway** • Short • Limited development potential	
13: ROW (East side of Union Street to Lennox Street)	**Existing Conditions:** • Carriageway width – 3.7m-3.75m • Traffic management – Two-way, No Entry to Union Street from Bridge Road • Parking – No parking • Footpath – No footpath • Material – Asphalt and Bluestone • Layout features – there is a kink involving two 90 degree bends. A splay is provided on one side of the northern bend **Constraints: Partially Constrained** • Non-functional kink breaks laneway into two parts	
14: Leigh Place (from Bridge Road to Erin Street)	**Existing Conditions:** • Carriageway width – 5.7m • Road reserve – 9m • Traffic management – Two-way for northern section, One-way for southern section connecting to Bridge Road • Parking – No parking • Footpath – Footpath on west side • Material – Asphalt **Constraints: Unconstrained laneway** • One-way	

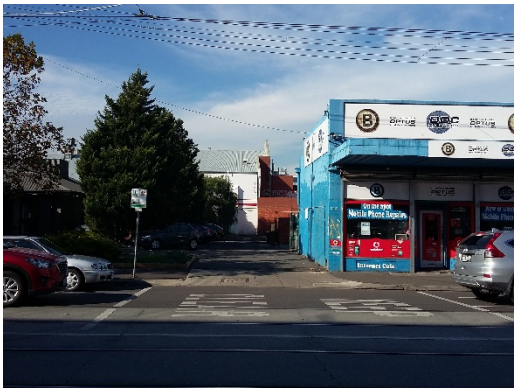
Street Name	Description	Photo
15: ROW (from Leigh Place to END)	**Existing Conditions:** • Carriageway width – 3.55m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – Slight kink at the middle, however offset is provided to building on southern side **Constraints: Unconstrained laneway** • Short	
16: Corns Place (from Leigh Place to Lennox Street)	**Existing Conditions:** • Carriageway width – 3.1m • Traffic management – Two-way, must turn left at Leigh Place • Parking – Car park at midpoint of ROW • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained** • Short • Continuous • Could be made one-way	
17: ROW (from Lennox Street to END)	**Existing Conditions:** • Carriageway width – 3.5m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: (Unconstrained laneway)** • Short • Low development potential	
18: ROW (from Judd Street to Carpark)	**Existing Conditions:** • Carriageway width – 6m (including mountable kerbing) • Traffic management – Two-way • Parking – No parking • Footpath – Mountable footpath on south side • Material – Asphalt **Constraints: (Unconstrained laneway)** • Short Mountable kerbing allows for two-way passing	

Street Name	Description	Photo
19: ROW (from Hull Street to END)	**Existing Conditions:** • Carriageway width – 3.15m • Traffic management – Two-way • Parking – Parking provided in car park at southern end • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Short • Small number of adjacent properties	
20: Wustemenn Place (from Bridge Road to END)	**Existing Conditions:** • Carriageway width – 2.65m • Traffic management – Two-way • Parking – Parking provided in car park at southern end • Footpath – No footpath • Material – Asphalt • Layout Features – Narrow width, shares car park with Allowah Terrace **Constraints: Partially constrained** • Lack of passing area • Dead end • Could be connected to Allowah Terrace	
21: Allowah Terrace (from Bridge Road to END)	**Existing Conditions:** • Carriageway width – 2.6m • Traffic management – Two-way • Parking – Parking provided in car park at southern end • Footpath – No footpath • Material – Bluestone • Layout features – Narrow width, shares car park with Wustemenn Place **Constraints: Partially constrained** • Lack of passing area • Dead end • Could be connected to Wustemenn Place	

Street Name	Description	Photo
22: Peluso Place (from Bridge Road to END)	**Existing Conditions:** • Carriageway width – 4.1m-4.85m • Traffic management – Two-way • Parking – Parking provided in car park at southern end • Footpath – No footpath • Material – Asphalt **Constraints: Partially constrained** • Lack of passing area • Dead end	
23: Leggo Place (from Bosisto Street to END)	**Existing Conditions:** • Carriageway width – 7.6m • Traffic management – Two-way • Parking – Large Car park at western end • Footpath – No footpath • Material – Asphalt • Layout Features – Has a kink at the end, and connects to a large car park **Constraints: Unconstrained laneway** • Sufficient width for two-way traffic	
24: ROW (from Bosisto Street to Hull Street)	**Existing Conditions:** • Carriageway width – 3.5m-4.3m • Traffic management – Two-way • Parking –No parking • Footpath – No footpath • Material – Asphalt • Layout features – Already 'built out' to a large degree **Constraints: Unconstrained Laneway** • Properties already developed	
25: Sheridan Place (from Waltham Street to END)	**Existing Conditions:** • Carriageway width – 3.55m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Short	

Street Name	Description	Photo
26: ROW (from Berry Street to END)	**Existing Conditions:** • Carriageway width – 3.05m-3.3mm • Traffic management – Two-way, Berry Street is one-way (westbound) • Parking – No parking • Footpath – No footpath • Material – Bluestone • Layout Features – has a T-intersection at the northern end, with splays on both corners. **Constraints: Highly constrained** • Length • T-shape	
27: Alban Street (from Eucalyptus Street to END)	**Existing Conditions:** • Carriageway width – 5.8m • Traffic management – Two-way • Parking – Parking along the north side of Alban Street • Footpath – No Footpath • Material – Asphalt **Constraints: Partially constrained** • Wide enough for two-way traffic • Parking arrangements make two-way traffic flow unachievable	
28: ROW (from Bridge Road to END, opposite Eucalyptus Street)	**Existing Conditions:** • Carriageway width – 3.65m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Short • Low development potential	
29: Henry Street (from Cameron Street to END)	**Existing Conditions:** • Carriageway width – 3.9m • Traffic management – Two-way, speed humps • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Short	

Street Name	Description	Photo
30: ROW (from Berry Street to Hodgson Terrace)	**Existing Conditions:** • Carriageway width – 4.15m • Traffic management – Two-way, Berry Street is one-way (westbound) • Parking – No parking • Footpath – No footpath • Material – Bluestone • Layout features – Berry Street is a narrow street (3.5m road), and a splay is provided on the southeast corner of the intersection with the ROW to assist movement. **Constraints: Unconstrained laneway** • Short • Low development potential	
31: ROW (from Church Street to END)	**Existing Conditions:** • Carriageway width – 3.7m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** Short	

Street Name	Description	Photo
32: ROW (from Church Street to Church Street)	**Existing Conditions:** • Carriageway width – 4m-4.7m • Traffic management – ROW is entry only for the northern section, however, an exit lane is provided via adjacent McDonalds car park, so is considered two-way for all practical purposes. • Parking –No parking • Footpath – No footpath • Material – Asphalt • Layout features – There are two 90 degree turns which loop the ROW back to Church Street. Splays are provided at each bend, and the ROW has enough width to allow for unimpeded turning. **Constraints: Partially constrained** • Narrow • U-shaped • Lack of passing without 'McDonalds' site, however surrounding McDonalds site means that access issues could be easily resolved with re-development	
33: Tullo Place (from Bridge Road to END)	**Existing Conditions:** • Carriageway width – 3.95m-4.55m • Road reserve – 6.2m-6.8m • Traffic management – Two-way, no right turn at Bridge Road • Parking – No Parking • Footpath – Footpath on west side • Material – Asphalt • Layout features – There is a connecting ROW on the east side of the road, with no splays provided **Constraints: Partially Constrained** • Lack of passing area • Could be converted shared zone for two-way traffic (footpath removed)	
34: ROW (from Tullo Place to END)	**Existing Conditions:** • Carriageway width – 3.3m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – Connected to Tullo Place, with no splays provided **Constraints: Unconstrained laneway** • Short • Low development potential	

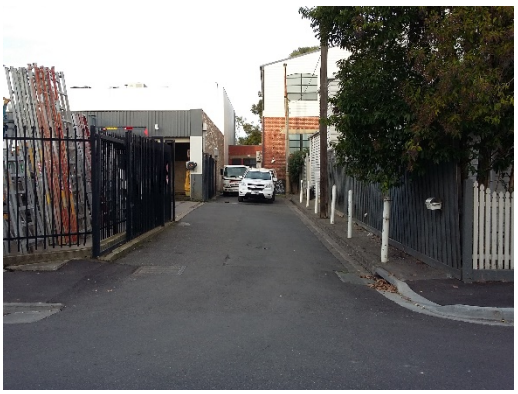
Street Name	Description	Photo
35: Waterloo Place (from Bridge Road to Church Street)	**Existing Conditions:** • Carriageway width – 4.4m • Road reserve – 6.2m • Traffic management – Two-way • Parking – No parking • Footpath – Narrow footpaths on both sides • Material – Asphalt • Layout features – Waterloo Place has a 90 degree bend connecting it from Bridge Road to Church Street. A splay is provided at the bend on the northwest corner. There are also two ROWs connected to Waterloo Place **Constraints: Partially Constrained** • Lack of two-way passing opportunities • Length • Could be made one-way	
36: ROW (from Waterloo Place to END)	**Existing Conditions:** • Carriageway width – 3.5m (with additional property boundary setback of 2.55m) • Traffic management – Two-way • Parking – Private parking on south side within property setback • Footpath – No footpath • Material – Bluestone • Layout features – A property boundary setback allows for turning into ROW from Waterloo Place **Constraints: Unconstrained laneway** • Short	
37: ROW (from Waterloo Place to Lyndhurst Street)	**Existing Conditions:** • Carriageway width – 3.2m • Traffic management – Two-way, Lyndhurst Street is one-way (northbound) • Parking – No parking • Footpath – No footpath • Material – Bluestone • Layout features – A splay on the southeast corner of Waterloo Place and the ROW is provided to assist turning. **Constraints: Unconstrained laneway** • Short • Continuous	

Street Name	Description	Photo
38: ROW (from Gleadell Street to Griffiths Street)	**Existing Conditions:** • Carriageway width – 3.15m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Continuous • Straight • Could be one-way	
39: Spencer Place (from Hosie Street to Abinger Street)	**Existing Conditions:** • Carriageway width – 3.45m-3.8m • Traffic management – Two-way, Hosie Street is one-way (northbound) • Parking – No parking • Footpath – No footpath • Material – Asphalt and bluestone • Layout features – There is a 90 degree bend in Spencer Place, with a splay provided on the southeast corner. There is another connecting ROW, which connects back to Hosie Street, with a splay also provided. **Constraints: Partially Constrained** • Long • Lack passing opportunities	
40: Pandoleon Lane (from Mary Street to END)	**Existing Conditions:** • Carriageway width – 3.65m • Traffic management – Two-way, Mary street is one-way (northbound) • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Short • Low development potential	

Street Name	Description	Photo
41: ROW (from Mary Street to Coppin Street)	**Existing Conditions:** • Carriageway width – 3.2m • Traffic management – Two-way, Mary Street is one-way (northbound) • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – Straight, limited splays on intersecting ROWs. **Constraints: Partially Constrained** • Length • No passing area • Continuous, could be one-way	
42: ROW (from Griffiths Street to Coppin Street)	**Existing Conditions:** • Carriageway width – 3.1m • Traffic management – Two-way, must enter and exit via left on Coppin Street • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – There is a connecting ROW to the north, with splays provided on both corners of the intersection. **Constraints: Unconstrained laneway** • Continuous • Straight • Could be one-way	
43: Foster Place (from Coppin Street to END)	Existing Conditions: • Carriageway width – 3.15m-3.45m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – There is a connecting ROW of 4m width to the south, with no splays provided. Constraints: Partially Constrained • Lack of passing area on east-west link • T intersection	

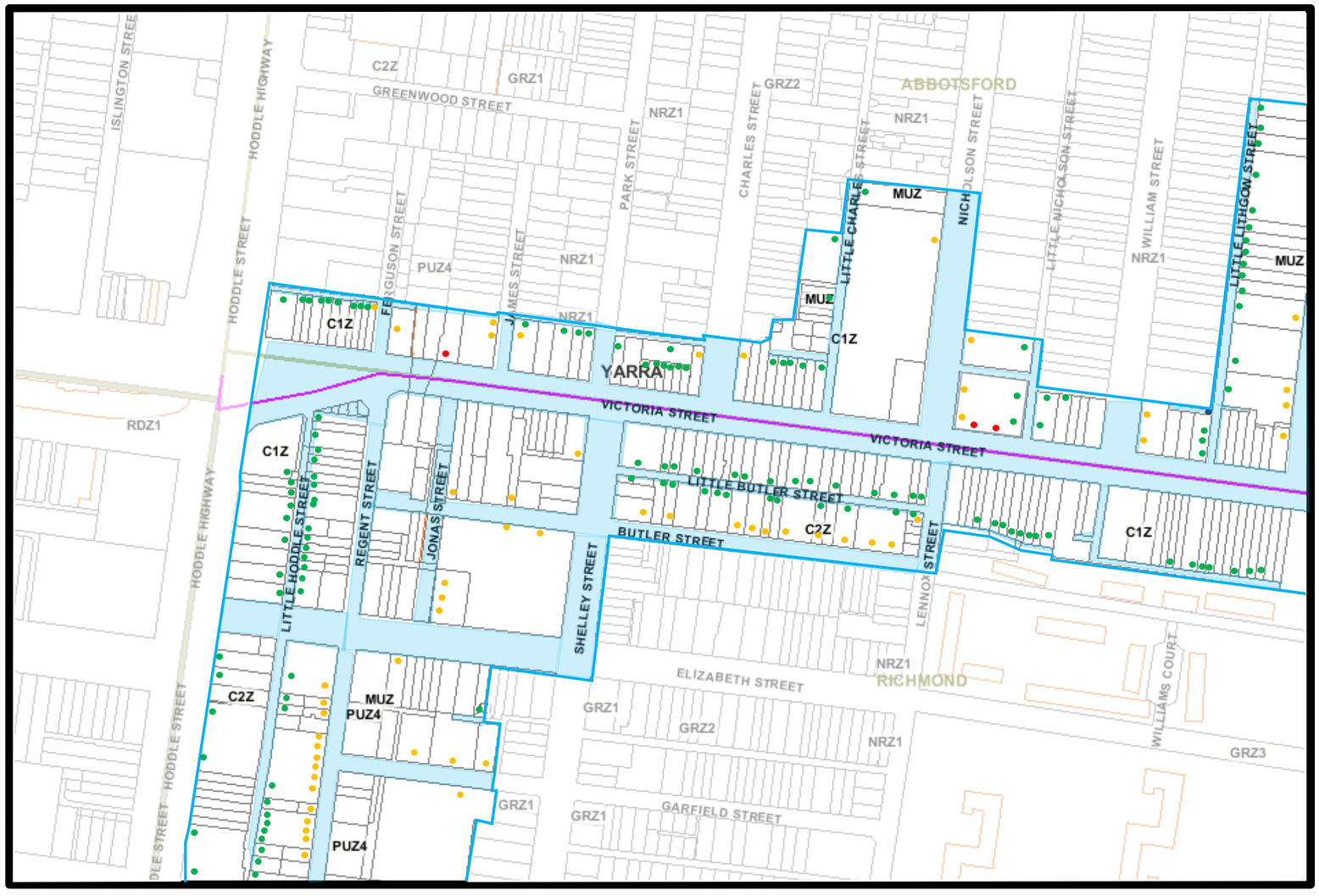
Street Name	Description	Photo
44: ROW (from Coppin Street to Palmer Street)	**Existing Conditions:** • Carriageway width – 3.7m-5.7m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – There is a connecting ROW to the north, with no splays provided at the intersection, however, properties on the south are set back. **Constraints: Unconstrained laneway** • Continuous • Short	
45: ROW (from Lord Street to END)	**Existing Conditions:** • Carriageway width – 3.55m, widened by adjacent development • Traffic management – Two-way, Lord Street is one-way (northbound) • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Provides two-way traffic	
46: ROW (from Hunter Street to END)	**Existing Conditions:** • Carriageway width – 3m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Short • Low development potential	
47: ROW (from Hunter Street to END)	**Existing Conditions:** • Carriageway width – 4.4m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Concrete • Layout features – appears to have been consumed as private property **Constraints: Unconstrained laneway** • Short Low development potential	

Street Name	Description	Photo
48: ROW (from Neptune Street to END)	**Existing Conditions:** • Carriageway width – 3m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Short • Low development potential	
49: ROW (from Neptune Street to Burnley Street)	**Existing Conditions:** • Carriageway width – 3m • Traffic management – Two-way, must exit/enter left at Burnley • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Continuous • Straight • Could be one-way	
450 ROW (from Neptune Street to END)	**Existing Conditions:** • Carriageway width – 3.15m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – ROW bends 90 to the north with no spays provided. North-south section is not trafficable and requires splays **Constraints: Highly Constrained** Requires splays on the corners	
51: ROW (from Burnley Street to Type Street)	**Existing Conditions:** • Carriageway width – 3.4m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – There is a connecting ROW to the south, with no splays provided at the intersection. **Constraints: Unconstrained laneway** • Continuous • Straight • Could be one-way	

Street Name	Description	Photo
52: ROW (from Type Street END)	**Existing Conditions:** • Carriageway width – 5m • Traffic management – Two-way • Parking – No parking • Footpath – Footpath on south side • Material – Asphalt **Constraints: Unconstrained laneway** • Continuous • Straight • Could be one-way	
53: Park Avenue (east-west section abutting Bridge Road properties from Westbank Terrace to bend)	**Existing Conditions:** • Carriageway width – 3.65m • Traffic management – Two-way • Parking – No parking • Footpath – Footpath on south side • Material – Asphalt **Constraints: Unconstrained laneway** • Continuous • Straight Could be one-way	

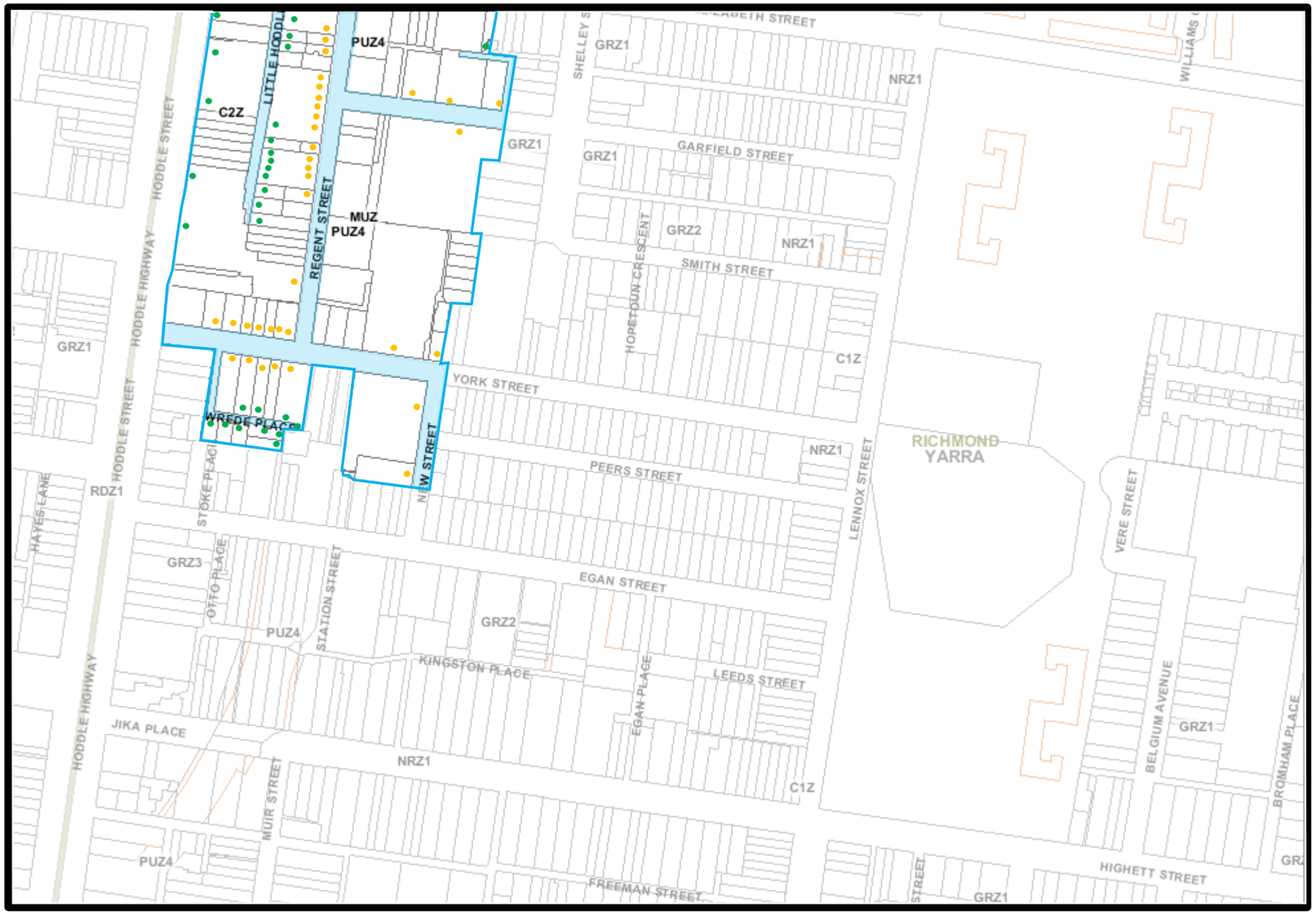
Appendix D

Existing Vehicle Access Arrangements



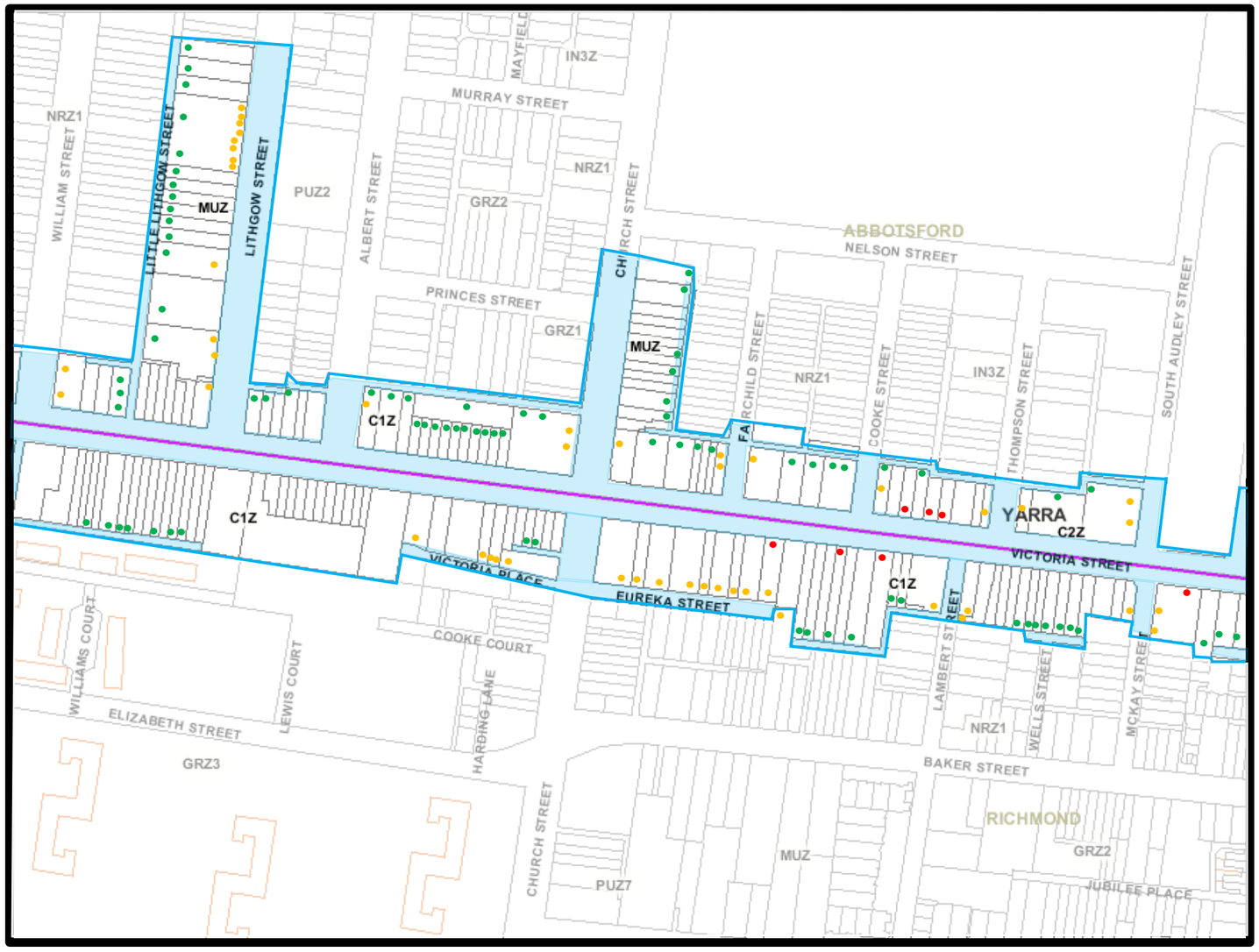
Legend

- Study Area Boundary
- Access to Victoria Street
- Access to side street
- Access to RoW



Legend

- Study Area Boundary
- Access to Victoria Street
- Access to side street
- Access to RoW

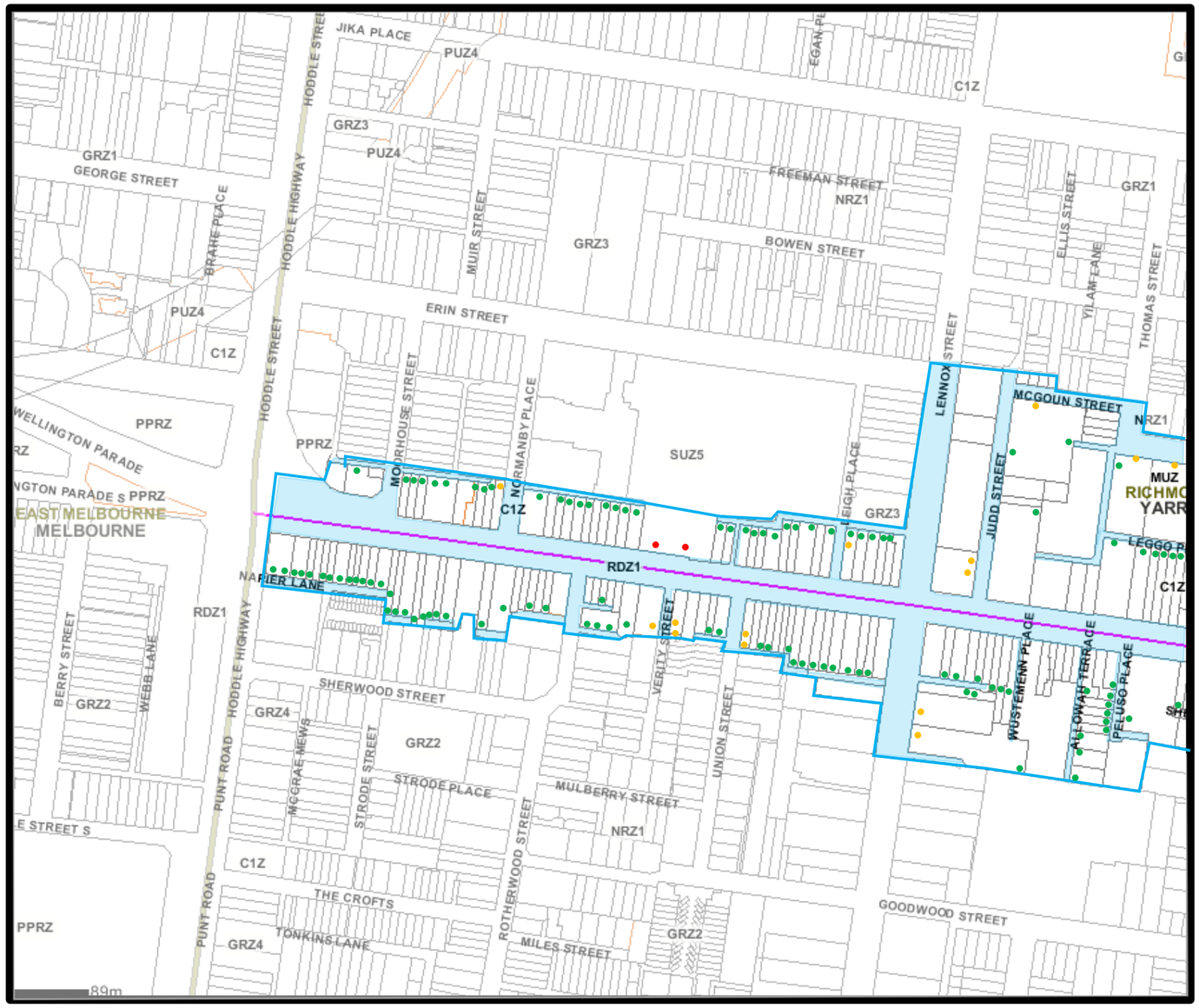


Legend

- Study Area Boundary
- Access to Victoria Street
- Access to side street
- Access to RoW

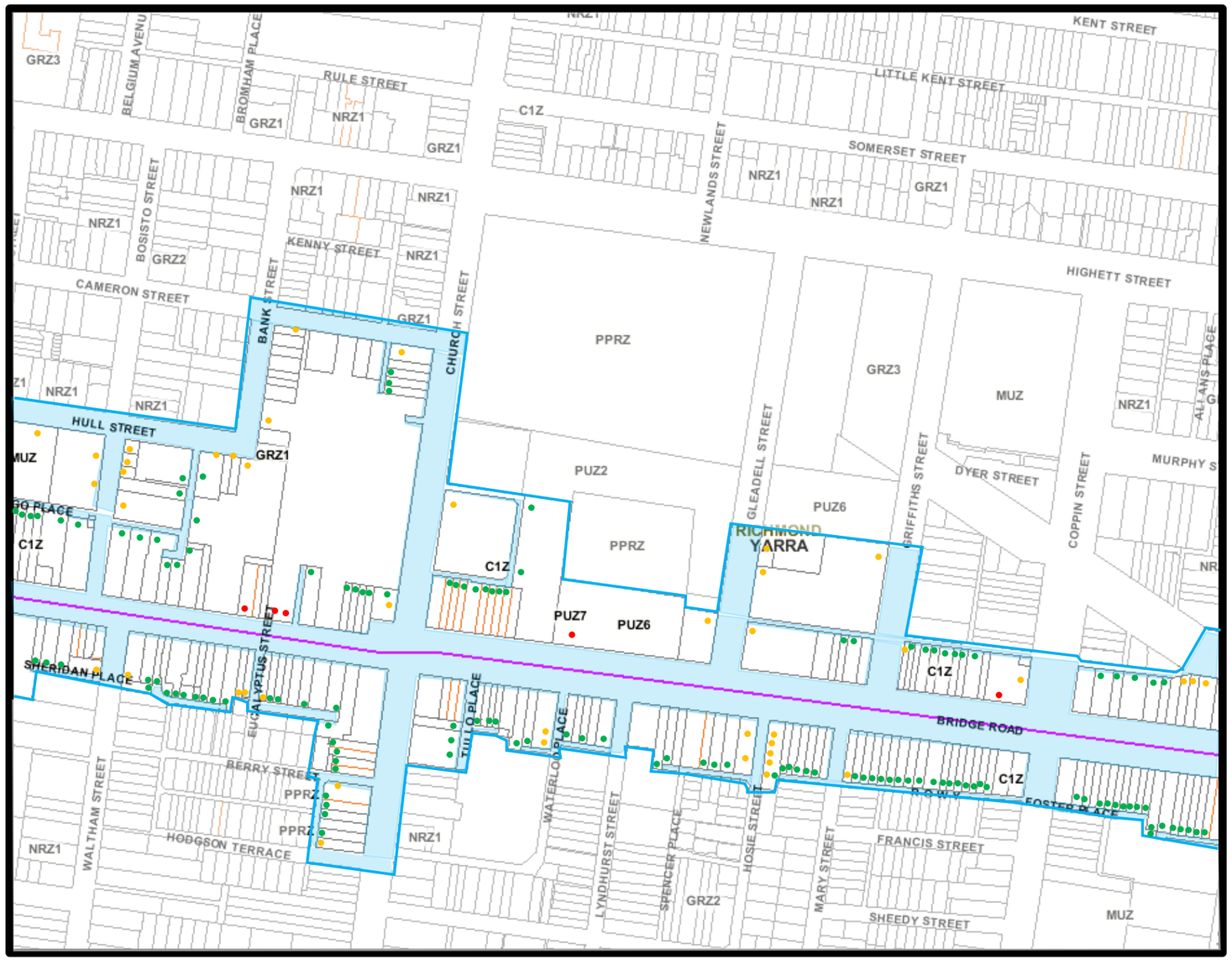
Legend

- Study Area Boundary
- Access to Victoria Street
- Access to side street
- Access to RoW



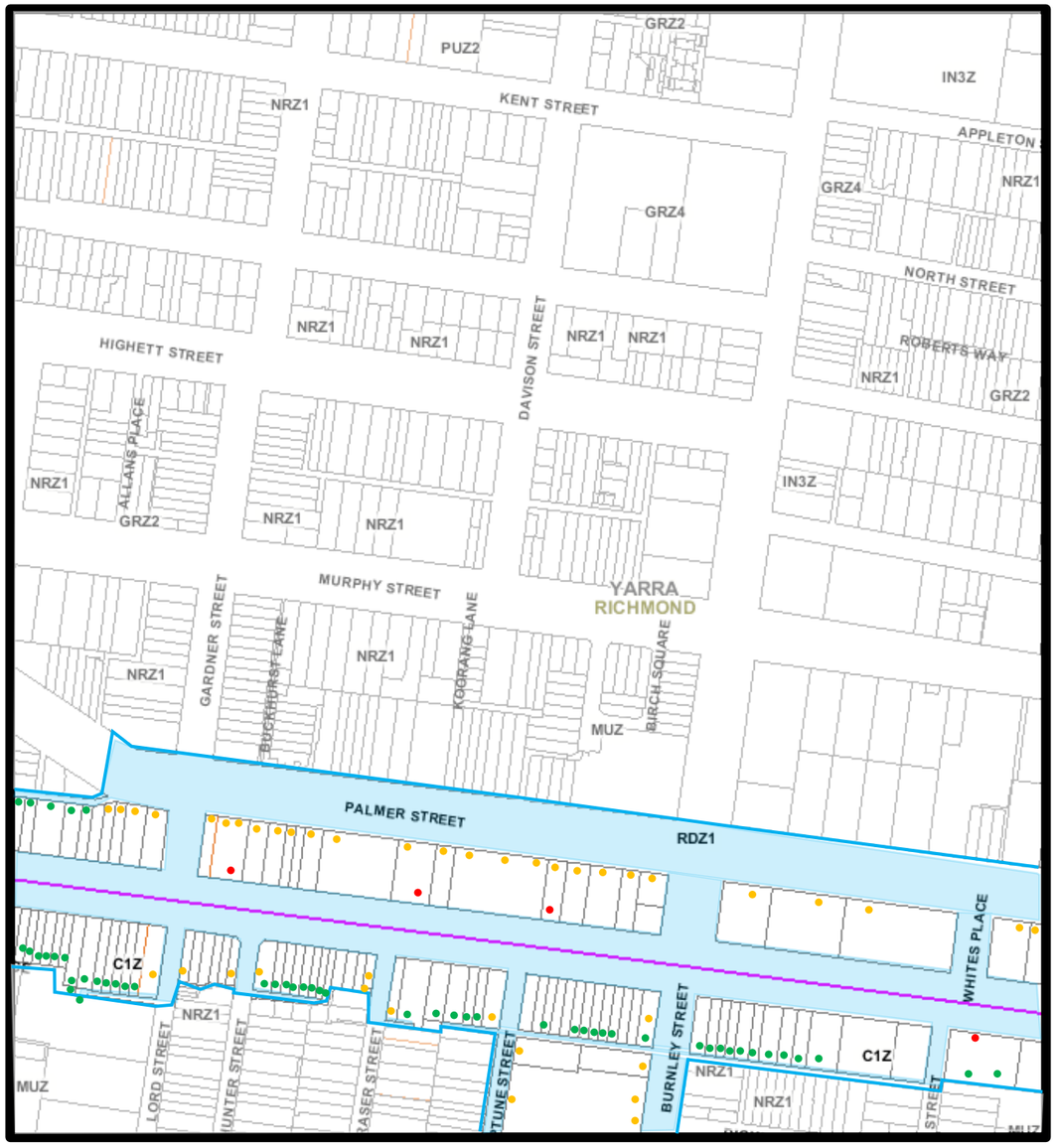
Legend

- Study Area Boundary
- Access to Bridge Road
- Access to side street
- Access to RoW



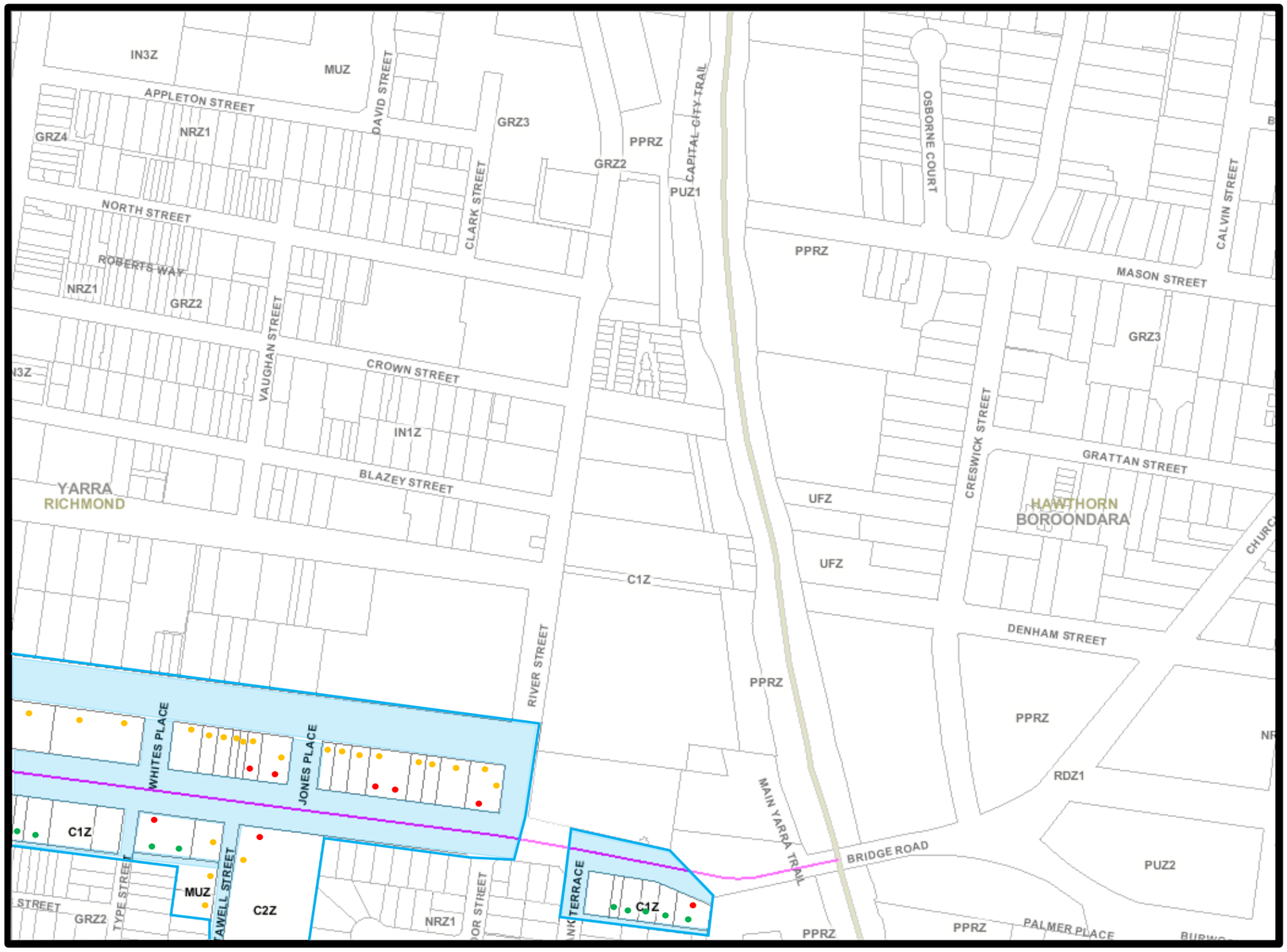
Legend

- Study Area Boundary
- Access to Bridge Road
- Access to side street
- Access to RoW



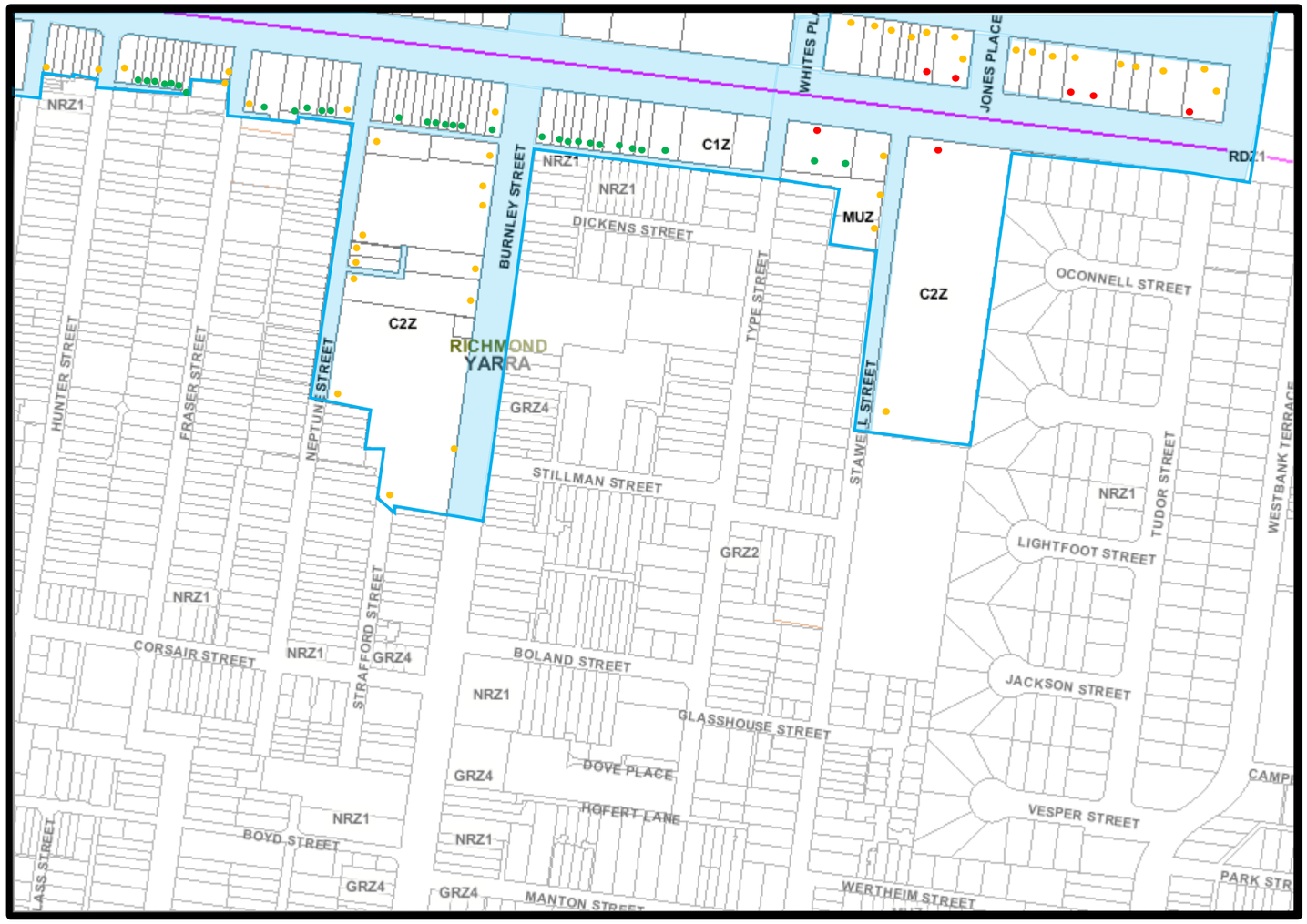
Legend

- Study Area Boundary
- Access to Bridge Road
- Access to side street
- Access to RoW



Legend

- Study Area Boundary
- Access to Bridge Road
- Access to side street
- Access to RoW

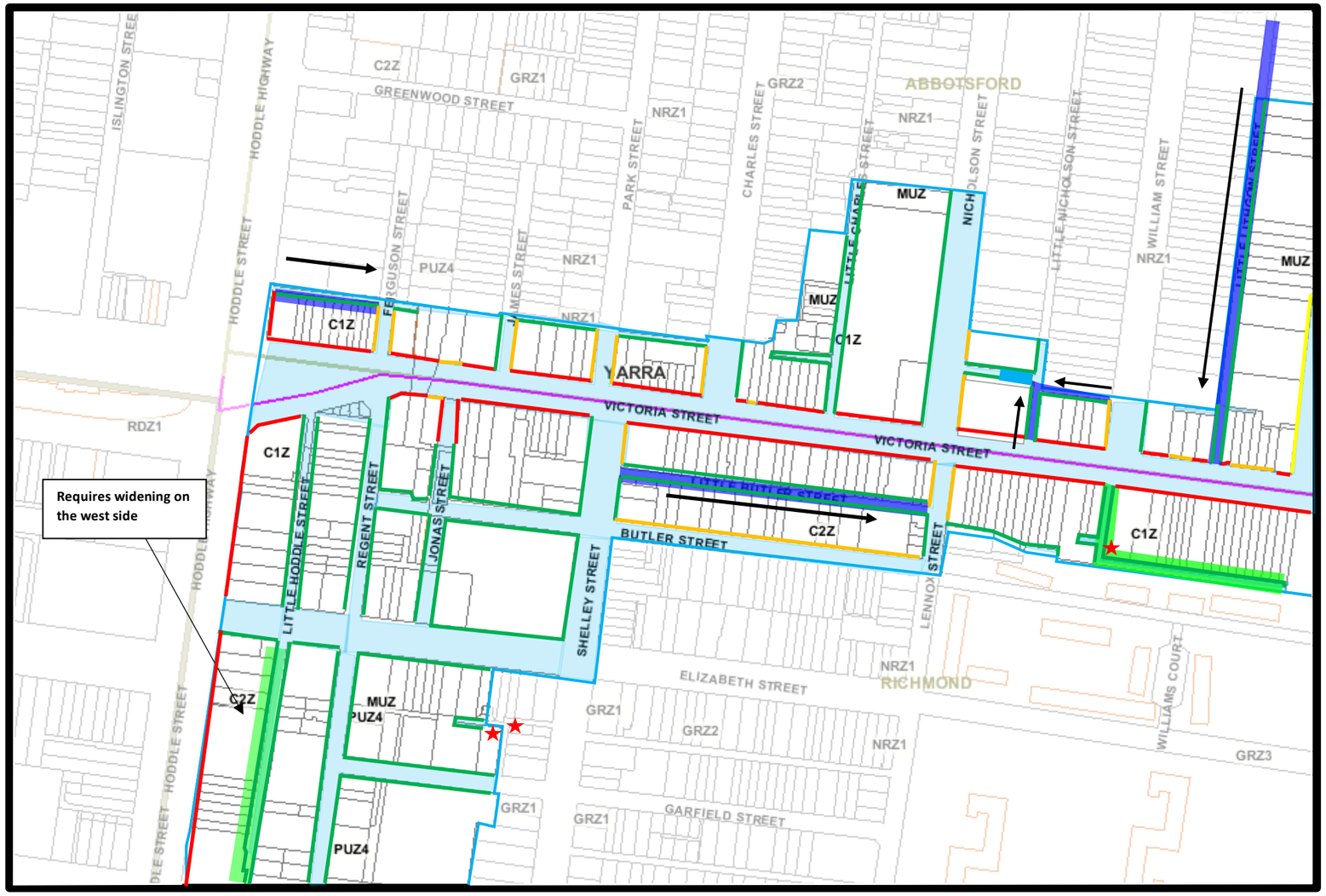


Legend

- Study Area Boundary
- Access to Bridge Road
- Access to side street
- Access to RoW

Appendix E

Access Management Plans

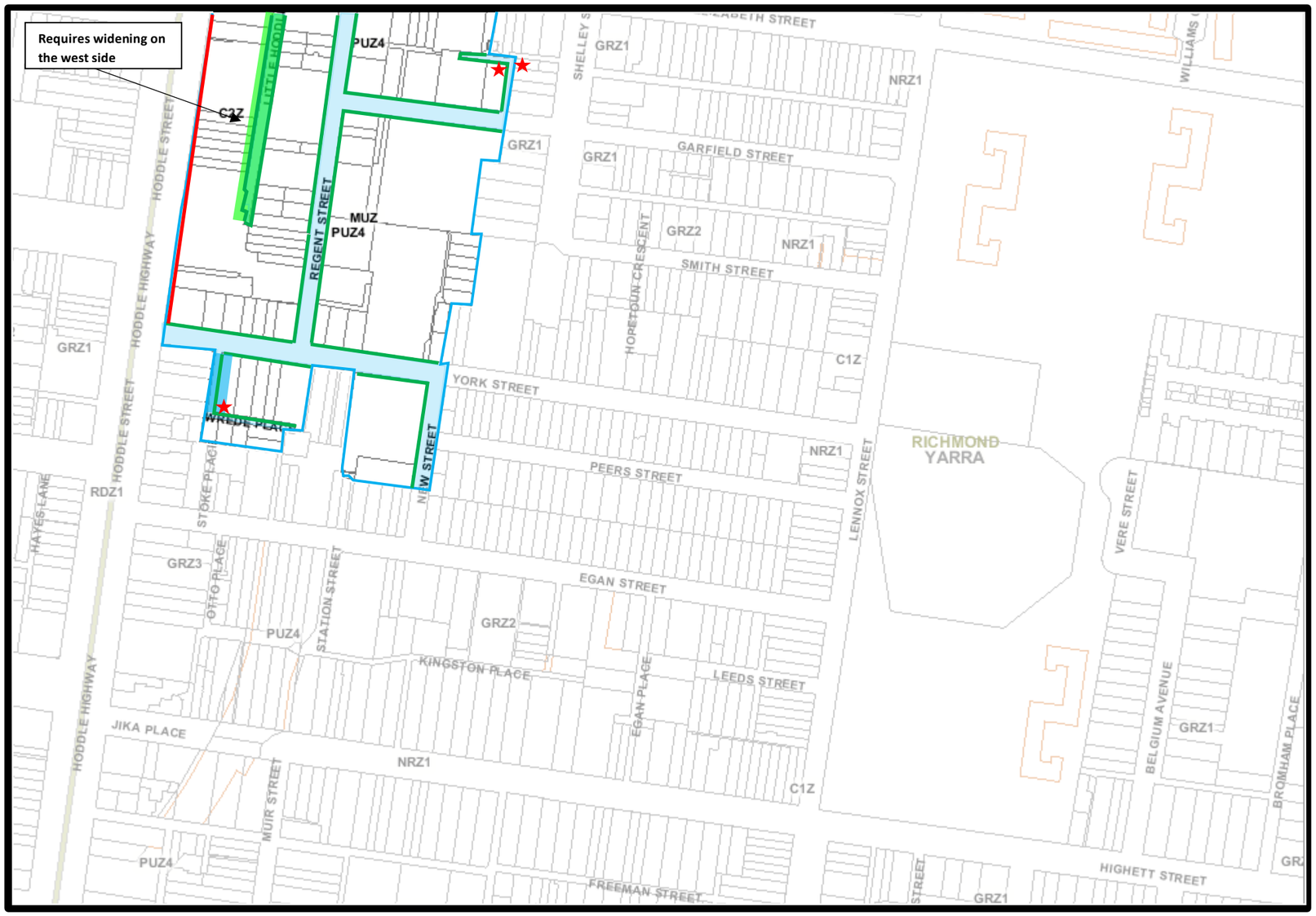


Legend – Recommended Access Controls

- Study Area Boundary
- Access Not Supported
- Access Not Preferred
- Access Preferred

Legend

- One-way (with indicative arrow)
- 6m wide shared zone
- 6m wide road
- Passing area
- Splay

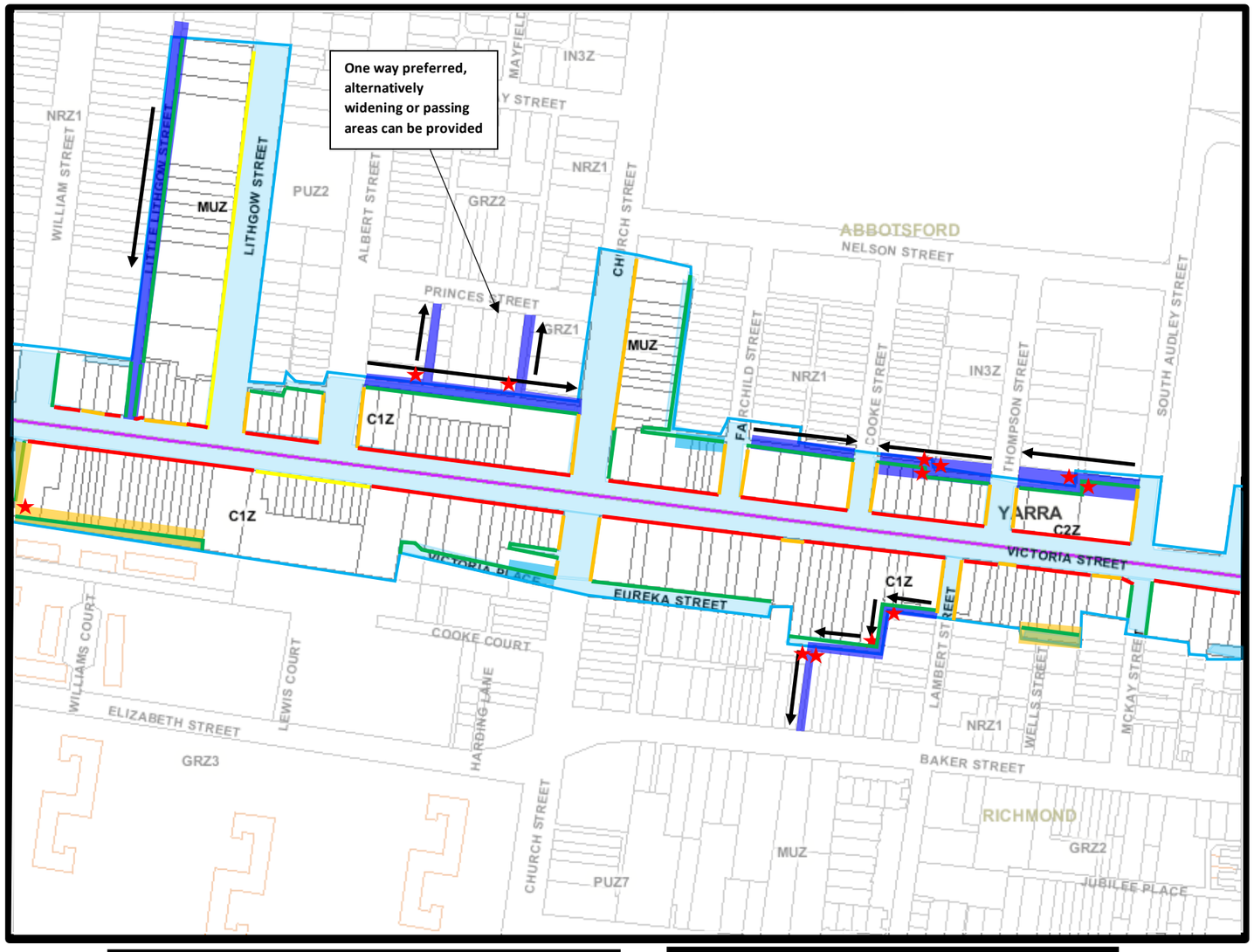


Legend – Recommended Access Controls

- Study Area Boundary
- Access Not Supported
- Access Not Preferred
- Access Preferred

Legend

- One-way (with indicative arrow)
- 6m wide shared zone
- 6m wide road
- Passing area
- Splay

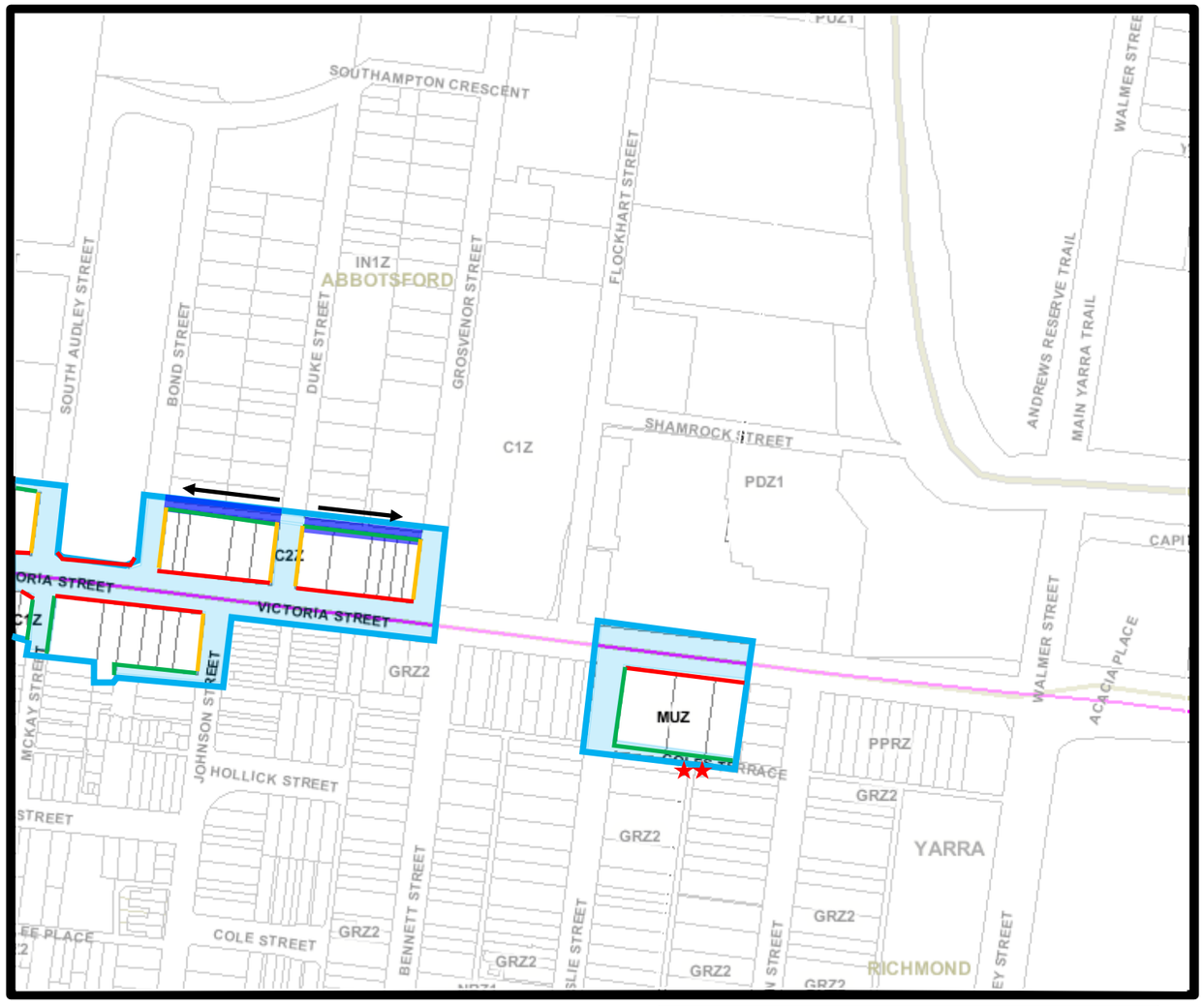


Legend – Recommended Access Controls

- Study Area Boundary
- Access Not Supported
- Access Not Preferred
- Access Preferred

Legend

- One-way (with indicative arrow)
- 6m wide shared zone
- 6m wide road
- Passing area
- Splay

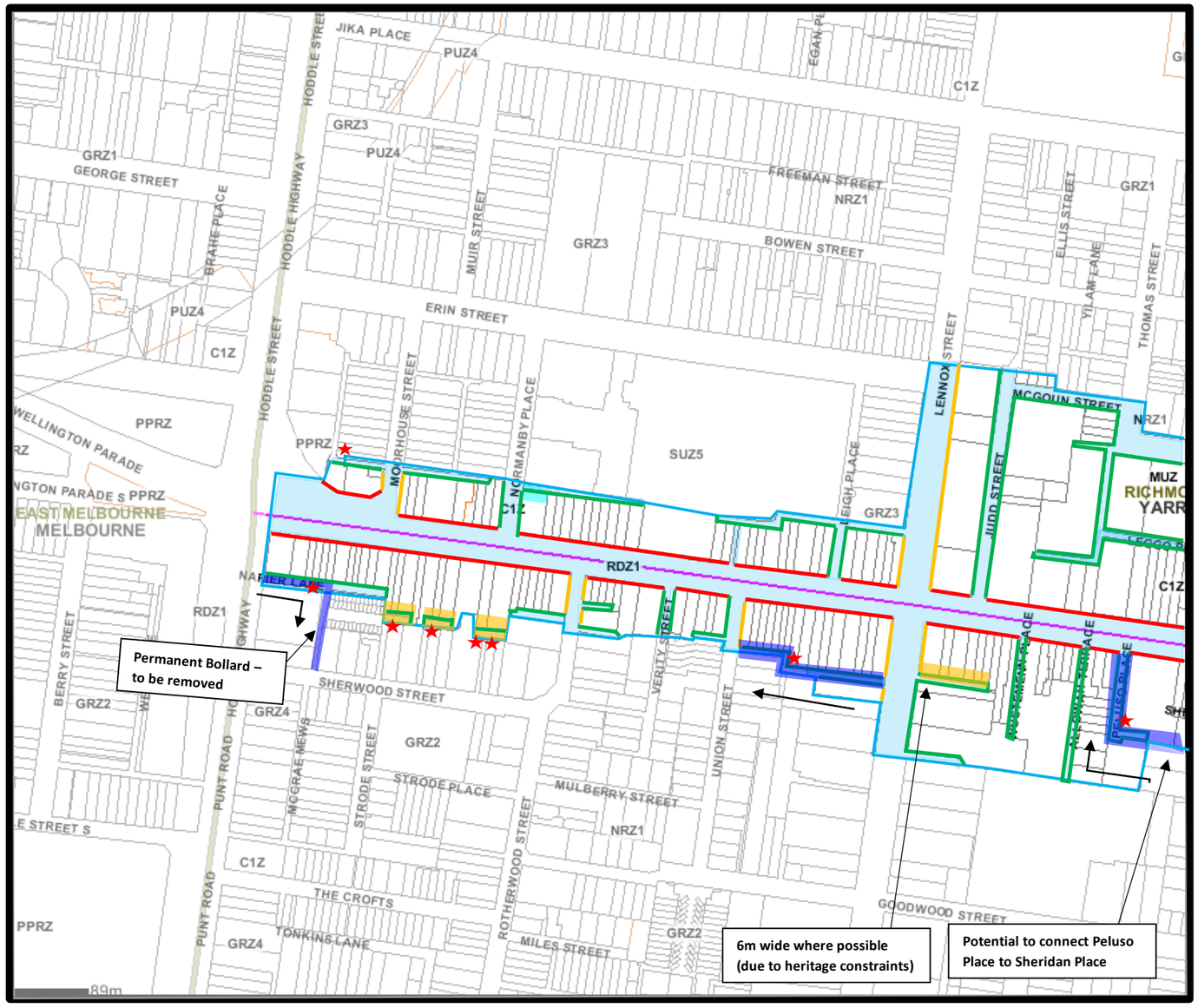


Legend – Recommended Access Controls

- Study Area Boundary
- Access Not Supported
- Access Not Preferred
- Access Preferred

Legend

- One-way (with indicative arrow)
- 6m wide shared zone
- 6m wide road
- Passing area
- Splay

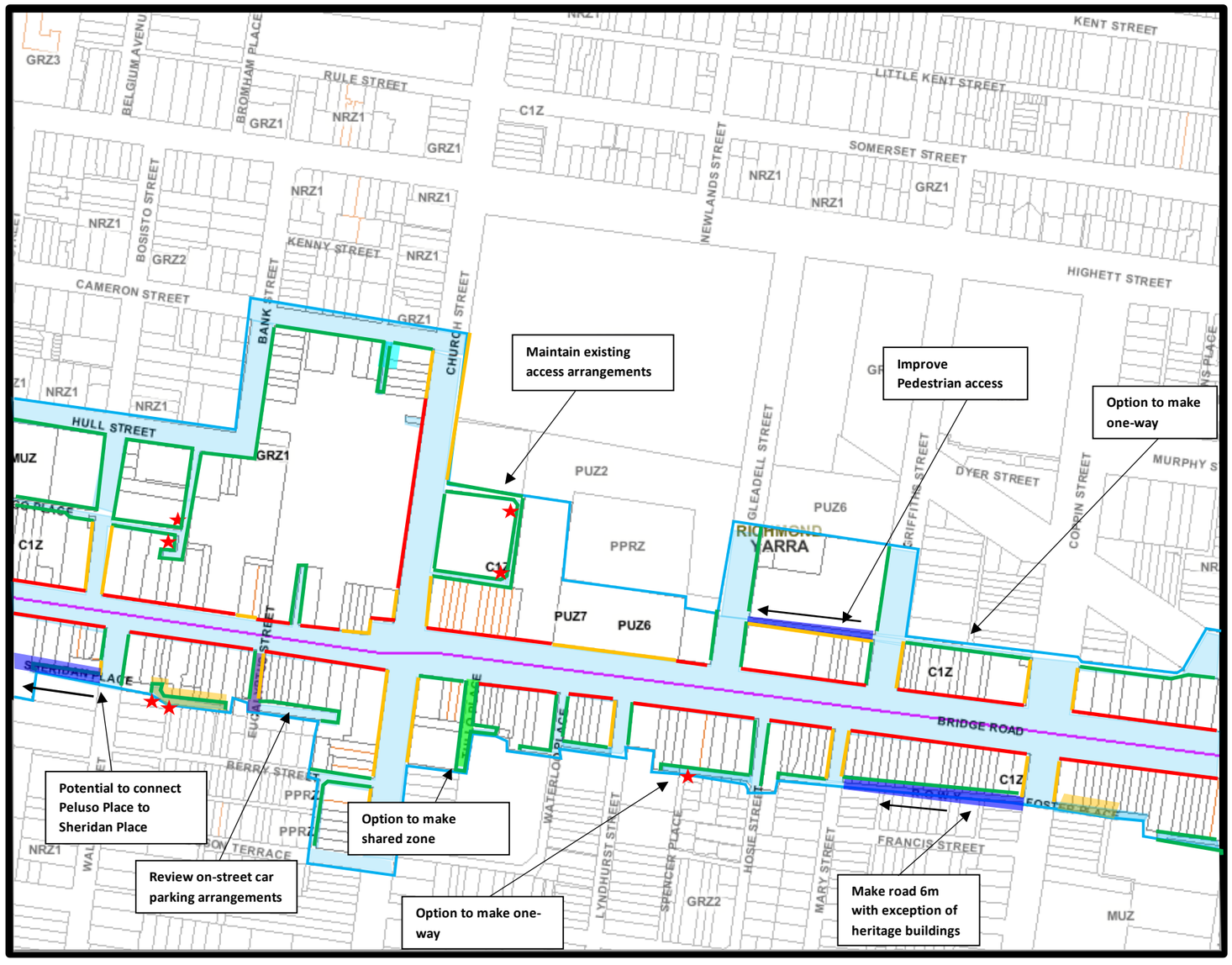


Legend – Recommended Access Controls

- Study Area Boundary
- Access Not Supported
- Access Not Preferred
- Access Preferred

Legend

- One-way (with indicative arrow)
- 6m wide shared zone
- 6m wide road
- Passing area
- Splay



Legend – Recommended Access Controls

- Study Area Boundary
- Access Not Supported
- Access Not Preferred
- Access Preferred

Legend

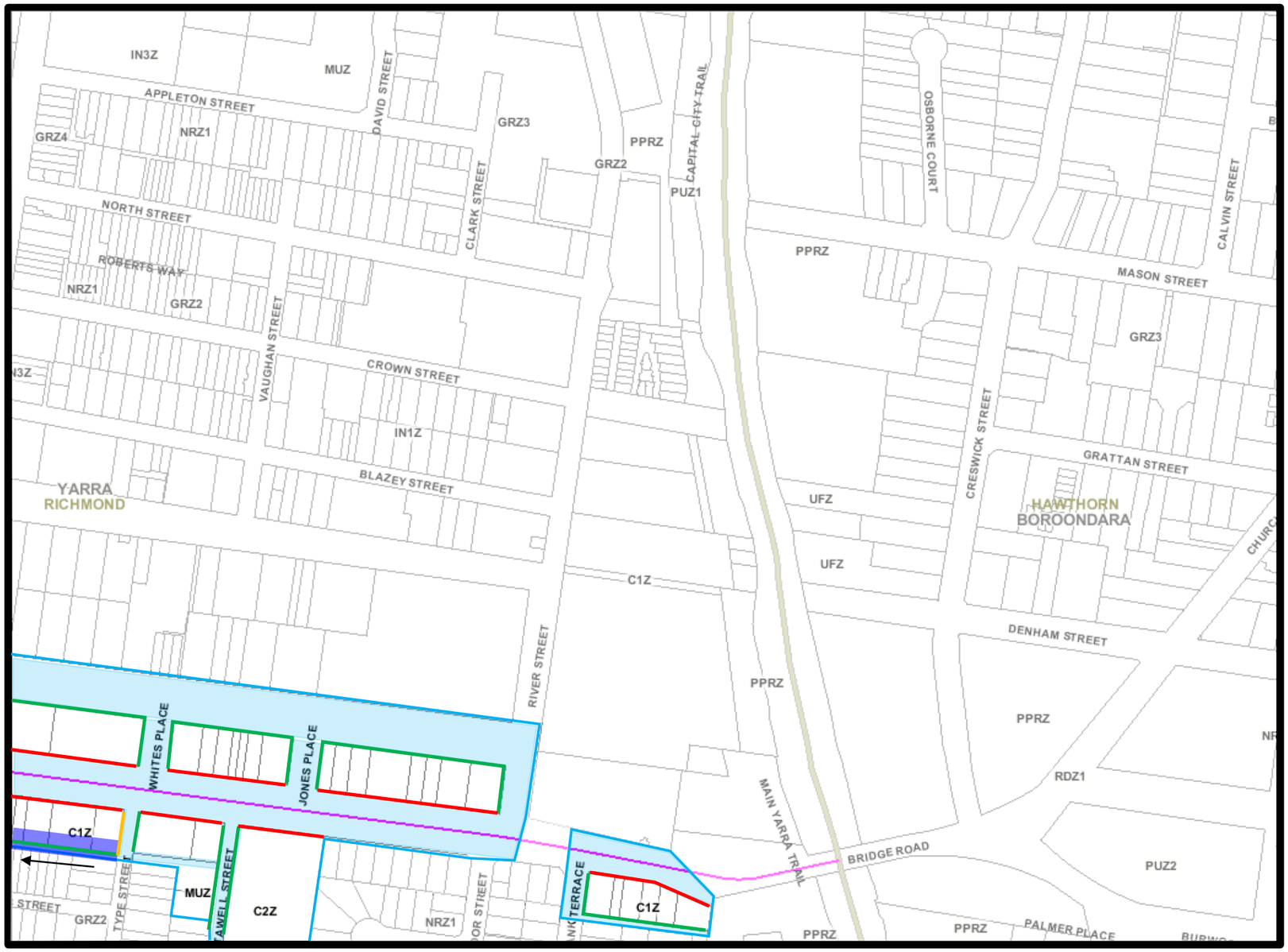
- One-way (with indicative arrow)
- 6m wide shared zone
- 6m wide road
- Passing area
- Splay

Legend – Recommended Access Controls

- Study Area Boundary
- Access Not Supported
- Access Not Preferred
- Access Preferred

Legend

- One-way (with indicative arrow)
- 6m wide shared zone
- 6m wide road
- Passing area
- Splay

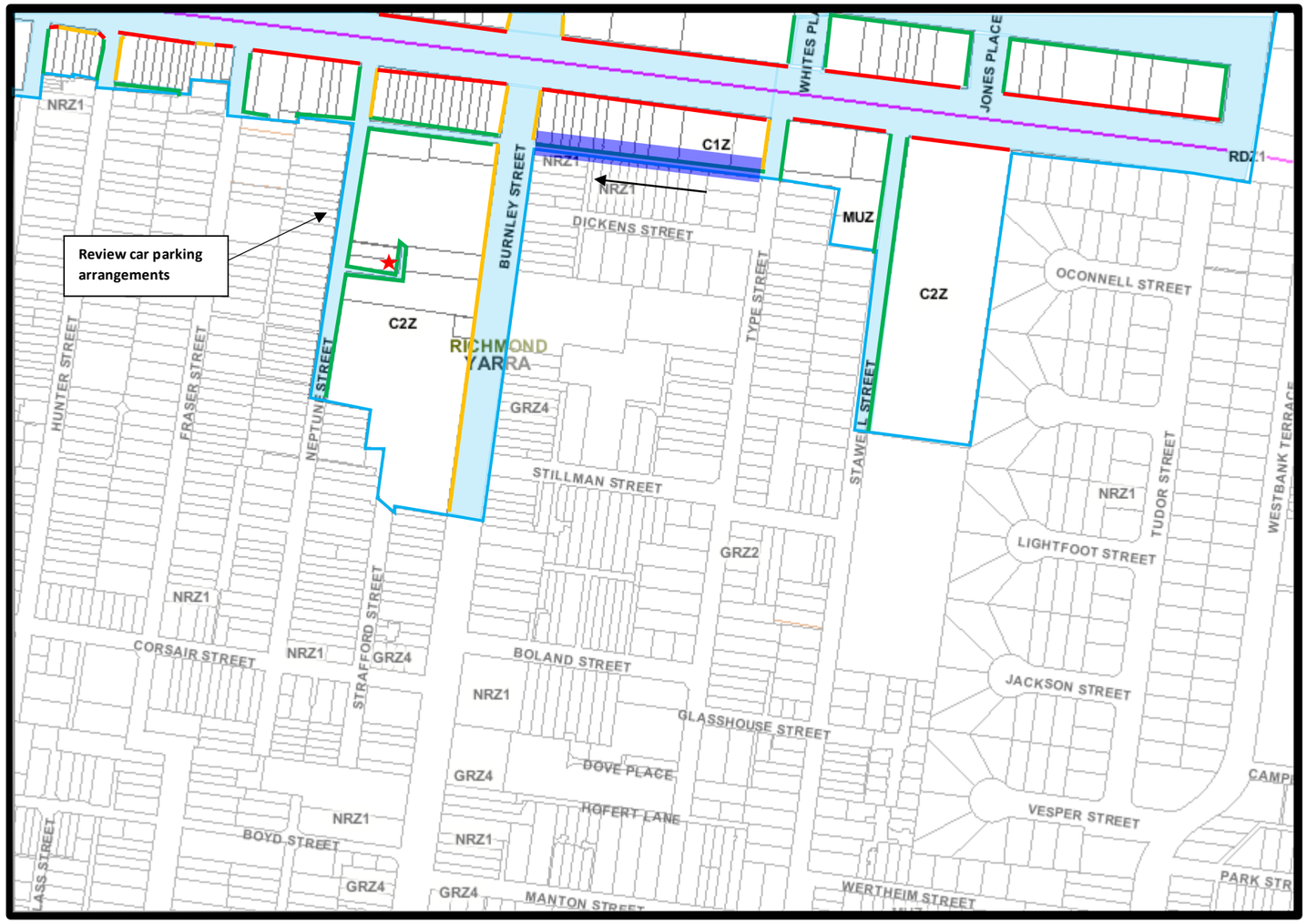


Legend – Recommended Access Controls

- Study Area Boundary
- Access Not Supported
- Access Not Preferred
- Access Preferred

Legend

- One-way (with indicative arrow)
- 6m wide shared zone
- 6m wide road
- Passing area
- Splay



Legend – Recommended Access Controls

- Study Area Boundary
- Access Not Supported
- Access Not Preferred
- Access Preferred

Legend

- One-way (with indicative arrow)
- 6m wide shared zone
- 6m wide road
- Passing area
- Splay

Appendix F

Proposed Traffic Management Plans

Legend – Recommended Changes

- One-way (with indicative arrow)
- 6m wide shared zone
- 6m wide road
- Passing area
- Splay

Legend – Existing Conditions

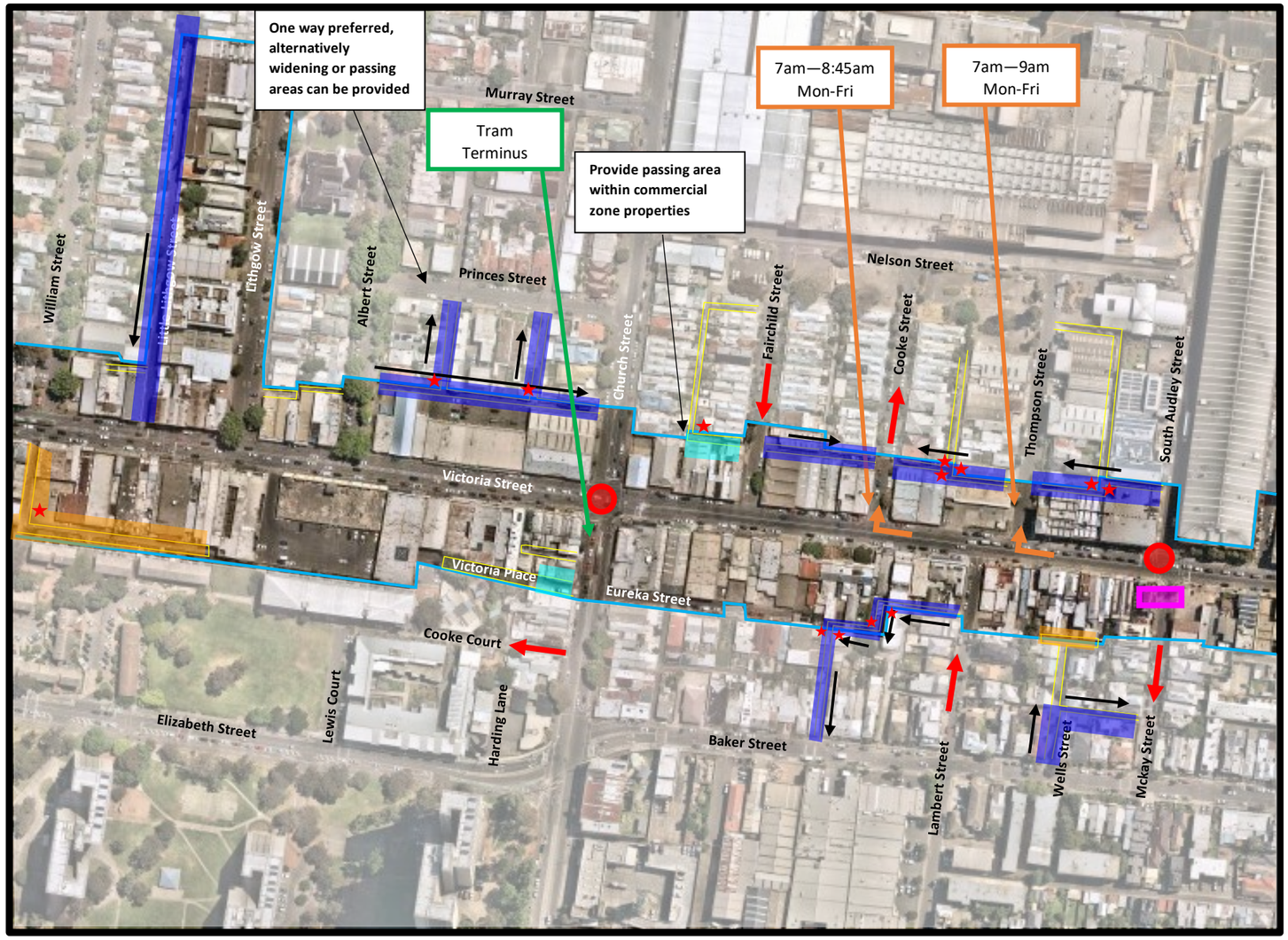
- Study Area Boundary
- Traffic Signals
- Pedestrian Signals
- Threshold Treatment
- U-Turn Ban
- Left Turn Ban
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade
- ROW Boundary

Legend – Recommended Changes

- One-way (with indicative arrow)
- 6m wide shared zone
- 6m wide road
- Passing area
- Splay

Legend – Existing Conditions

- Study Area Boundary
- Traffic Signals
- Pedestrian Signals
- Threshold Treatment
- U-Turn Ban
- Left Turn Ban
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade
- ROW Boundary

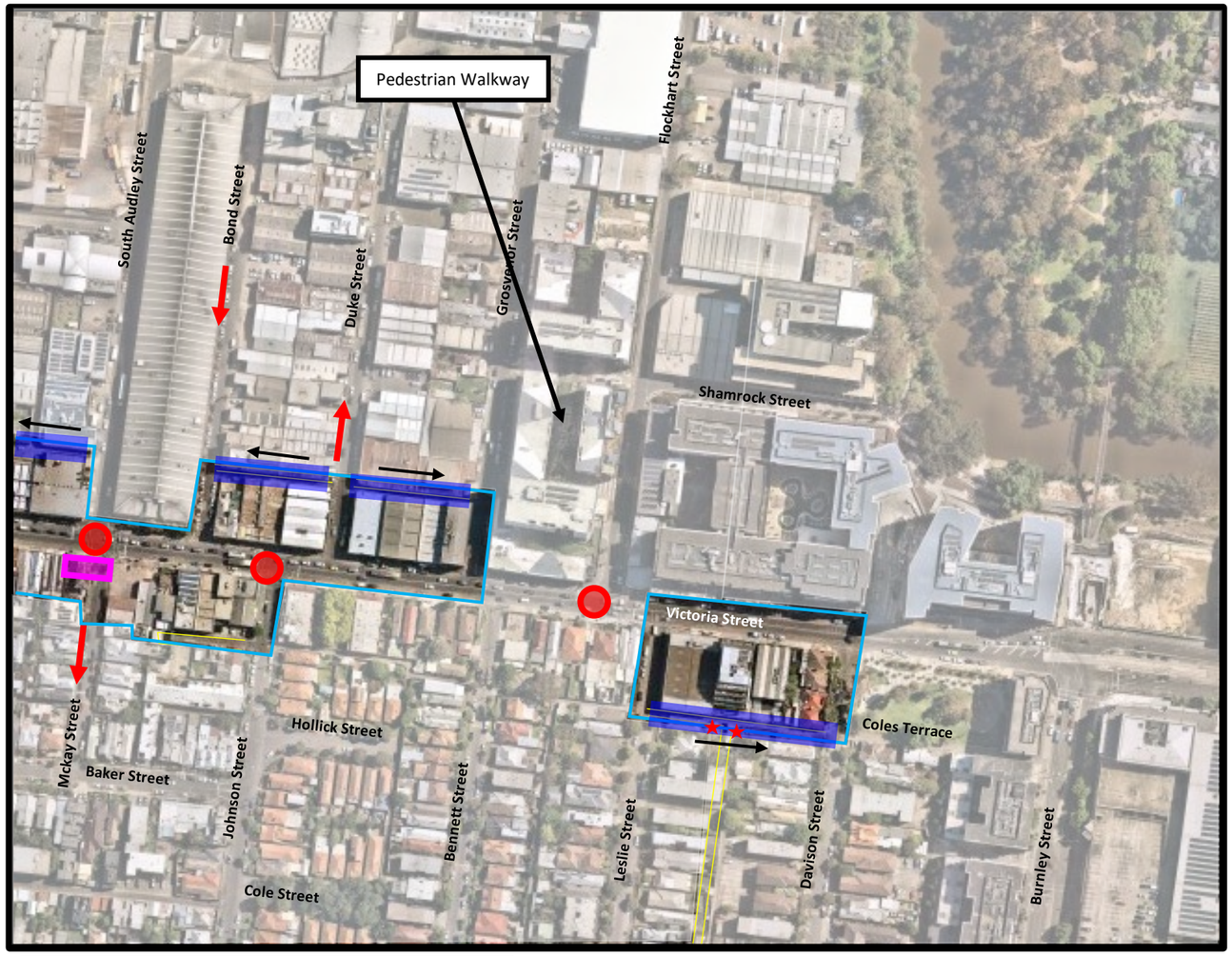


Legend – Recommended Changes

- One-way (with indicative arrow)
- 6m wide shared zone
- 6m wide road
- Passing area
- Splay

Legend – Existing Conditions

- Study Area Boundary
- Traffic Signals
- Pedestrian Signals
- Threshold Treatment
- U-Turn Ban
- Left Turn Ban
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade
- ROW Boundary

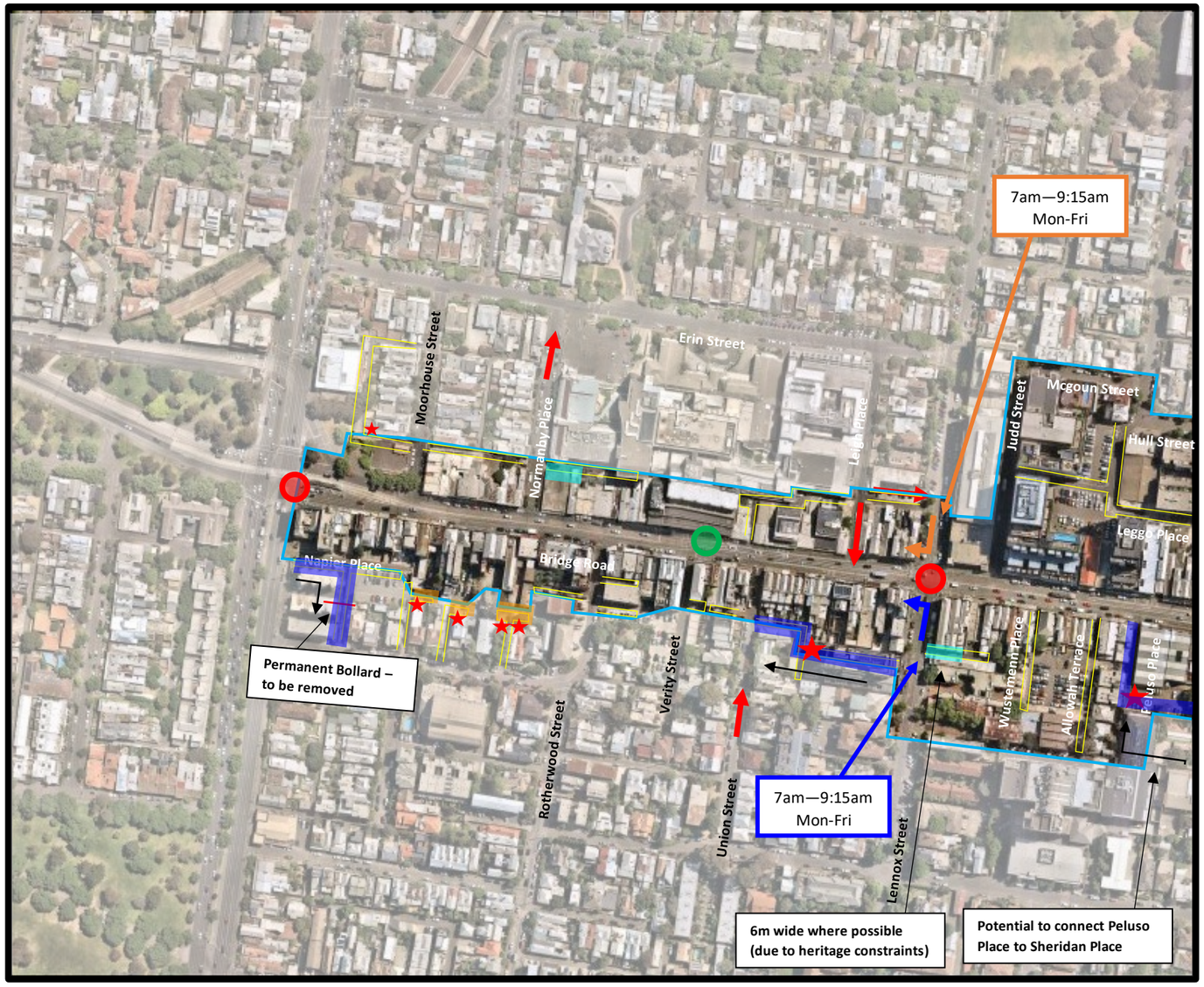


Legend – Recommended Changes

- One-way (with indicative arrow)
- 6m wide shared zone
- 6m wide road
- Passing area
- Splay

Legend – Existing Conditions

- Study Area Boundary
- Traffic Signals
- Pedestrian Signals
- Threshold Treatment
- U-Turn Ban
- Left Turn Ban
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade
- ROW Boundary

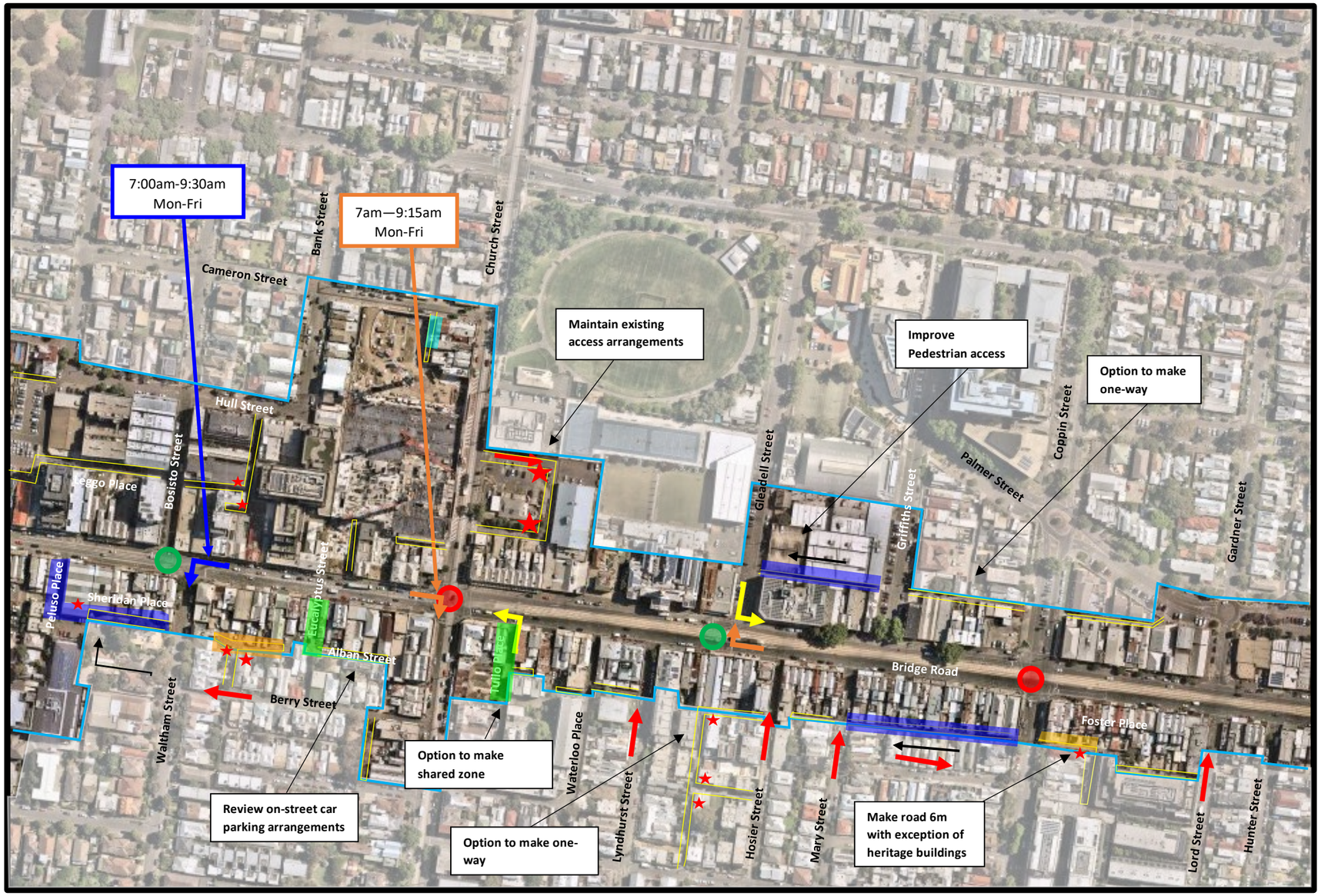


Legend – Recommended Changes

- One-way (with indicative arrow)
- 6m wide shared zone
- 6m wide road
- Passing area
- Splay

Legend – Existing Conditions

- Study Area Boundary
- Traffic Signals
- Pedestrian Signals
- Threshold Treatment
- U-Turn Ban
- Left Turn Ban
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade
- ROW Boundary



Legend – Recommended Changes

- One-way (with indicative arrow)
- 6m wide shared zone
- 6m wide road
- Passing area
- Splay

Legend – Existing Conditions

- Study Area Boundary
- Traffic Signals
- Pedestrian Signals
- Threshold Treatment
- U-Turn Ban
- Left Turn Ban
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade
- ROW Boundary

Legend – Recommended Changes

- One-way (with indicative arrow)
- 6m wide shared zone
- 6m wide road
- Passing area
- Splay

Legend – Existing Conditions

- Study Area Boundary
- Traffic Signals
- Pedestrian Signals
- Threshold Treatment
- U-Turn Ban
- Left Turn Ban
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade
- ROW Boundary

Legend – Recommended Changes

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Legend – Existing Conditions

- Study Area Boundary
- Traffic Signals
- Pedestrian Signals
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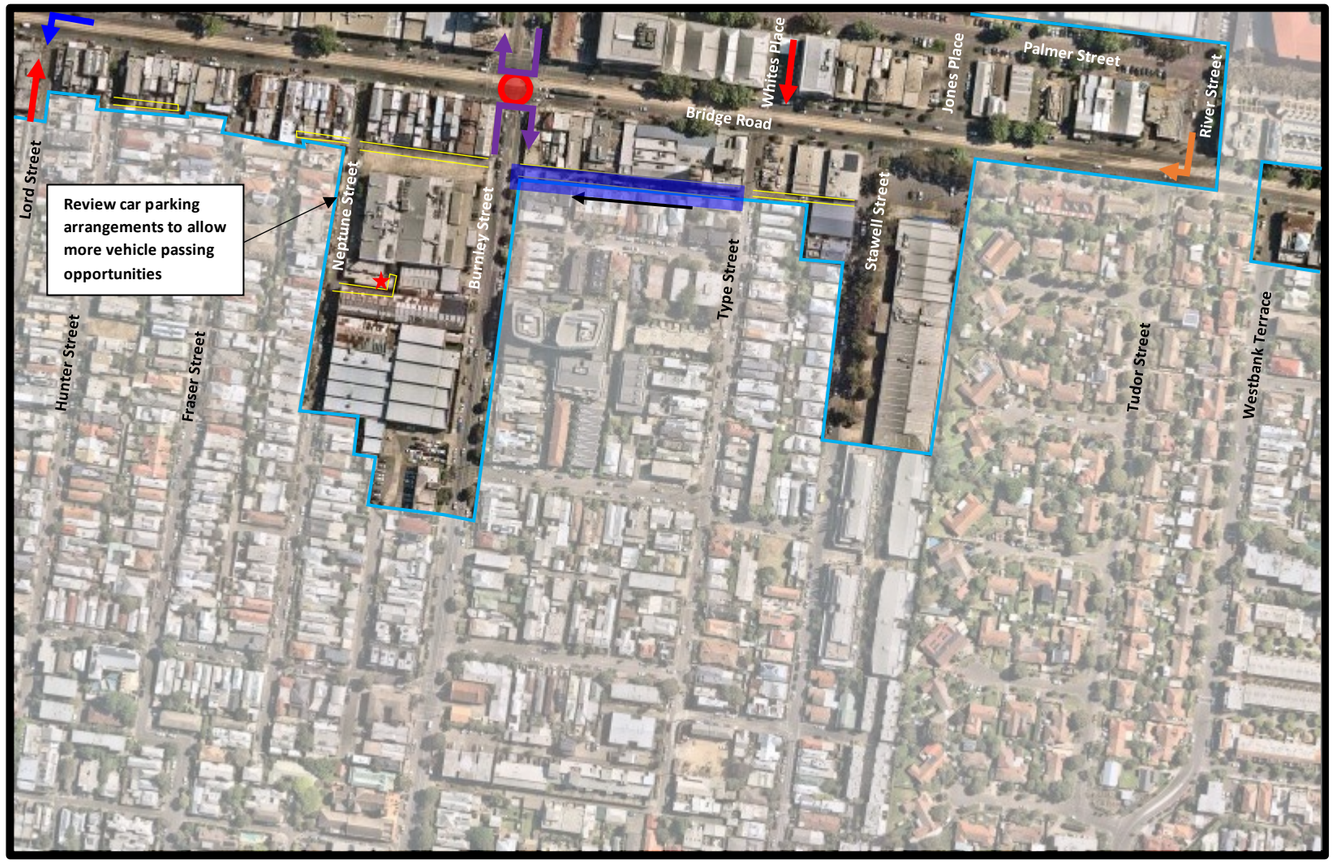
- U-Turn Ban
- Left Turn Ban
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade
- ROW Boundary



Legend – Recommended Changes

- One-way (with indicative arrow)
- 6m wide shared zone
- 6m wide road
- Passing area
- Splay

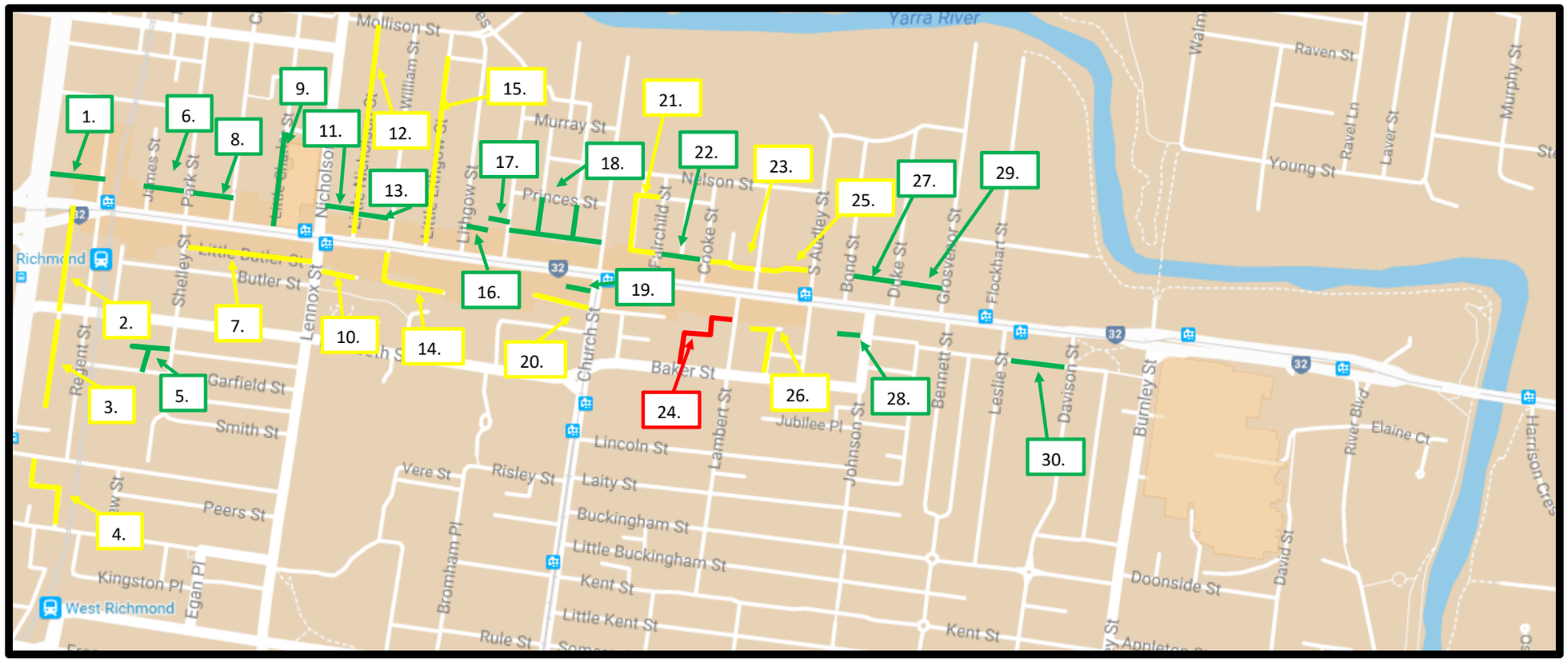
Legend – Existing Conditions

- Study Area Boundary
- Traffic Signals
- Pedestrian Signals
- Threshold Treatment
- U-Turn Ban
- Left Turn Ban
- Right Turn Ban
- Left-turn Only
- One-way
- No Through Road Blockade
- ROW Boundary

Appendix G

ROW Recommendations

Victoria Street



Legend

- Unconstrained Laneway
- Partially Constrained/Minor Improvement Required
- Highly Constrained/Challenging to Remedy

Street Name	Description	Recommended changes	Photo
1: ROW (from Hoddle Street to Ferguson Street)	**Existing Conditions:** • Carriageway width – 2.85m-3.6m • Traffic management – Two-way • Parking – No parking • Footpaths – No footpaths • Material – Asphalt • Layout Features – continuous, generally straight **Constraints: Unconstrained laneway** • Short, straight and connected at both ends.	One way in the eastbound direction **Reason:** Narrow width does not allow for passing. This may cause conflict at Hoddle Street between entering and exiting vehicles. The recommendation for one-way eastbound flow directs traffic away from Hoddle Street and eliminates vehicle conflict. Widening laneway challenging given multiple narrow properties accessed via ROW.	

Street Name	Description	Recommended changes	Photo
2: Little Hoddle Street (from Elizabeth Street to Victoria Street)	**Existing Conditions:** • Carriageway width – 4.6m • Road reservation – 5.95m • Traffic management – Two-way • Parking – No parking • Footpaths – Narrow kerbside/footpath on both sides • Material – Asphalt • Layout features – continuous, straight **Constraints: Partially constrained** • Single lane for two-way traffic • Long length, some development potential • Could be made two-way by creating a shared zone and removing the footpaths	Create shared zone for two-way flow using the whole carriageway width. **Reason:** Currently the carriageway too narrow for two-way traffic. Road reserve is wide enough to accommodate two-way traffic flow by removing the footpath to create a shared zone provides for vehicles and pedestrians. The current footpaths are inadequate for pedestrians and a shared zone would better serve all road users while supporting higher traffic volumes.	

Street Name	Description	Recommended changes	Photo
3: Little Hoddle Street (from Elizabeth Street to END)	**Existing Conditions:** • Carriageway width – 3.7m-4.8m • Road Reserve – 4.85m-6m • Traffic management – Two-way • Parking – Parking along sections of the east side of the laneway • Footpaths – Narrow kerbing/path • Material – Asphalt • Layout features – dead end, straight, narrows down towards the south **Constraints: Partially Constrained** • Long • Narrower than 6m without road reserve • Parking Arrangements limit two-way flow	Provide shared area by setting back properties on west side of Little Hoddle Street at ground level. **Reason:** The review of the interim DDO indicates that the properties on either side of the laneway have high development potential. Widening the ROW to 6m is necessary to accommodate the additional development potential. This laneway should be widened by setbacks of developments on the west side of the lane.	

Street Name	Description	Recommended changes	Photo
4: Wrede Place (from York Street to Egan Street)	**Existing Conditions:** • Carriageway width – 3.4m-3.85m • Traffic management – Two-way • Parking – No parking • Footpaths – No footpaths • Material – Bluestone in sections and asphalt in sections • Layout features – continuous, s-shaped, no splays **Constraints: Partially Constrained** • Lack of splays makes navigating corners difficult	Provide passing area at intersection with York Street at #2 York Street. Provide splays on south-west corner of #2 York Street and north-east corner of #30A Wrede Place. **Reason:** Providing a passing area will minimise conflicts within the lane. Fully 6m carriageway not considered necessary given development potential of abutting land. Splays required to increase manoeuvrability around corners.	

Street Name	Description	Recommended changes	Photo
5: ROW (from Shelley Street to Garfield Street)	**Existing Conditions:** • Carriageway width – 3.2m-3.95m • Traffic management – Two-way • Parking – No parking • Footpaths – No footpaths • Material – Asphalt • Layout features – continuous with a 90-degree bend and extending dead end section to the west, splays on south-east corner **Constraints: Unconstrained laneway** Short and connected at both ends.	No changes required. Largely built out.	

Street Name	Description	Recommended changes	Photo
6: ROW (from James Street to Park Street)	**Existing Conditions:** • Carriageway width – 3m • Traffic management – Two-way, must turn right at Park Street • Parking – Shared off-street car park on south side of ROW • Footpaths – No footpaths • Material – Asphalt with bluestone kerbing • Layout features – continuous, straight **Constraints: Unconstrained laneway** Short, straight and connected at both ends.	No changes required. Relatively short length means that vehicle conflicts are likely to be minimal and easily managed by drivers.	

Street Name	Description	Recommended changes	Photo
7: Little Butler Street (from Shelly Street to Lennox Street)	**Existing Conditions:** • Carriageway width – 2.7m-3m • Road reservation – 3.95m-4.75m • Traffic management – Two-way • Parking – kerbside parallel both sides • Footpaths – No footpaths • Materials – Asphalt • Layout features – continuous, straight **Constraints: Partially constrained** • Long length • Inability to easily widen for 2-way traffic flow • Could be made one-way	One way in the eastbound direction **Reason:** Narrow width does not allow for vehicle passing. Relatively long length and high number of abutting properties increases likelihood of vehicle conflict. One-way arrangement recommended over increasing width due to number of abutting properties. Alternatively, setbacks and passing bays can be provided along the laneway.	

Street Name	Description	Recommended changes	Photo
8: ROW (from Park to Charles)	**Existing Conditions:** • Carriageway width – 3.1m • Traffic management – Two-way • Parking – Shared off-street car park on south side and west end of ROW • Footpath – No footpath • Material – Concrete • Layout features – continuous, straight **Constraints: Unconstrained laneway** • Unconstrained due to short length	No changes required. Relatively short length means that vehicle conflicts are likely to be minimal and easily managed by drivers.	

Street Name	Description	Recommended changes	Photo
9: Little Charles Street (from Victoria Street to Little Charles Close)	**Existing Conditions:** • Carriageway width – 3.5m • Road reservation – 5.15m • Traffic management – One-way (southbound) • Parking – No parking • Footpath – Narrow path on east side, with traversal onto road required at power poles • Material – Asphalt **Constraints: Unconstrained laneway** • Unconstrained due to one-way nature	No changes required. Existing one-way arrangement.	

Street Name	Description	Recommended changes	Photo
10: ROW (from Lennox Street to END)	**Existing Conditions:** • Carriageway width – 3.5m • Traffic management – Two-way • Parking – Car Park at east end • Footpath – No footpaths • Material – Concrete • Layout features – slight bend to the south **Constraints: Partially Constrained** • Constrained due to dead end	Provide passing area at entrance, with setback to #136 Victoria Street. **Reason:** To minimise conflict within laneway.	
11: ROW (from Nicholson Street to Little Nicholson Street)	**Existing Conditions:** • Carriageway width – 4.55m • Traffic management – Two-way • Parking – No Parking • Footpath – No footpaths • Material – Concrete **Constraints: Unconstrained laneway** • Unconstrained due to short length	Provide passing area/ **Reason:** Already a planning permit for the car park site. Entrance to the car park is off the rear laneway closest to Little Nicholson. Development proposes a widened footpath on the southern side with building cantilevered. Relatively high development potential of abutting land.	

Street Name	Description	Recommended changes	Photo
12: Little Nicholson Street (from Victoria Street to Mollison Street)	**Existing Conditions:** • Carriageway width – 4.9m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Concrete • Layout Features – loading activity occurs frequently, blocking traversal of ROW **Constraints: Partially constrained** • Long length • Insufficient for 2-way flow • Could be made one-way	Provide a one-way section between Victoria Street and ROW #11 and #13 in the northbound direction. **Reason:** Little Nicholson Street is not wide enough to accommodate two-way vehicle flow. To minimise conflict one-way traffic flow should be provided northbound, where vehicles can either continue along Little Nicholson Street, or turn left onto ROW #11 to exit. Alternatively, setbacks and passing bays can be provided along the laneway.	

Street Name	Description	Recommended changes	Photo
13: ROW (from Little Nicholson Street to William Street)	**Existing Conditions:** • Carriageway width – 2.95m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Bluestone • Layout features – narrow **Constraints: Unconstrained laneway** • Unconstrained due to short length, continuous	Make one-way in the westbound direction **Reason:** Carriageway in not wide enough for two-way traffic flow. A one-way in the westbound direction will allow vehicles to continue along ROW #11.	

Street Name	Description	Recommended changes	Photo
14: ROW (from Victoria Street to END, opposite William Street)	**Existing Conditions:** • Carriageway width – 4.75m for north-south section and 3m for east-west section • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Concrete • Layout Features – Splay provided at bend, over land of 176 Victoria Street **Constraints: Partially constrained** • Single Lane • Length • 90-degree bend • Some development potential • Would require widening for two-way traffic, particularly north-south leg	Provide 6m two-way road for full length, with setback to all properties on the north and east side of the ROW. Review need for separate pedestrian path on north-south leg. **Reason:** Development potential of the laneway is high, and vehicles cannot currently pass one another without relying on private lane. Blind corner also creates conflict. This laneway is also a pedestrian route. This may require further width or implementation of a shared zone on the north-south leg. The proposal for pedestrianisation if this laneway is strong support by MGS (who are undertaking the review of built form controls).	

Street Name	Description	Recommended changes	Photo
15: Little Lithgow Street (from Victoria Street to Mollison Street)	**Existing Conditions:** • Carriageway width – 5.1m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Partially Constrained** • Slightly too narrow for two-way traffic flow	One-way in the southbound direction. **Reason:** Little Lithgow is slightly too narrow to allow two-way traffic flow. The long length of the lane creates a problem with conflict. Alternatively, setbacks could be required for buildings on one side of the laneway, which would gradually widen the laneway width over time.	
16: ROW (from Lithgow Street to END)	**Existing Conditions:** • Carriageway width – 5.4m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Concrete **Constraints: Unconstrained laneway** • Sufficient width for two-way traffic flow	No changes required. Short length and width mean vehicle conflict would be minimal.	

Street Name	Description	Recommended changes	Photo
17: ROW (from Albert Street to END)	**Existing Conditions:** • Carriageway width – 3.2m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – concrete **Constraints: Unconstrained laneway** • Unconstrained due to short length	No changes required. Short length and width mean vehicle conflict would be minimal.	

Street Name	Description	Recommended changes	Photo
18: ROW (from Albert Street to Church Street)	**Existing Conditions:** • Carriageway width – 4.4m • Traffic management – Two-way, right turn only at Fairchild Street • Parking – Car park at midpoint of ROW • Footpath – No footpath • Material – Concrete • Layout features – there is two connecting north-south ROWs extending northerly **Constraints: Unconstrained laneway** • Unconstrained due to being continuous, could be one-way	One-way eastbound from Albert Street to Church Street. North-south sections to be one-way northbound. **Reason:** High development potential. One-way arrangement addresses vehicle conflict issues.	

Street Name	Description	Recommended changes	Photo
19: ROW (from Church Street to End)	**Existing Conditions:** • Carriageway width – 3.05m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Unconstrained due to short length	No changes required due to short length.	
20: Victoria Place (from Church Street to END)	**Existing Conditions:** • Carriageway width – 4.75m, 5.7m aisle for western car park • Traffic management – Two-way • Parking – Parking provided in car park at western end • Footpath – No footpath • Material – Concrete **Constraints: (Partially constrained)** • Dead end • Some development potential	Provide passing area at entrance with setback to #6 Church Street. **Reason:** Connects directly to Church Street (arterial road) and a passing area eliminates vehicle conflict at this critical location.	

Street Name	Description	Recommended changes	Photo
21: ROW (from Fairchild Street to Fairchild Street)	**Existing Conditions:** • Carriageway width – 3m • Traffic management – Two-way, must enter via right turn from Fairchild Street, exit via left turn to Fairchild Street • Parking – No parking • Footpath – No footpath • Material – Bluestone • Layout features – connects to ROW extending north-south that loops back to Fairchild Street **Constraints: Partially constrained** • No splay • Low development potential • Single lane • Length • Bends	Provide passing area at southern connection to Fairchild Street with setback to #463 and #465 Victoria Street. **Reason:** A passing area to accommodate the development potential of the properties adjacent to Victoria Street.	

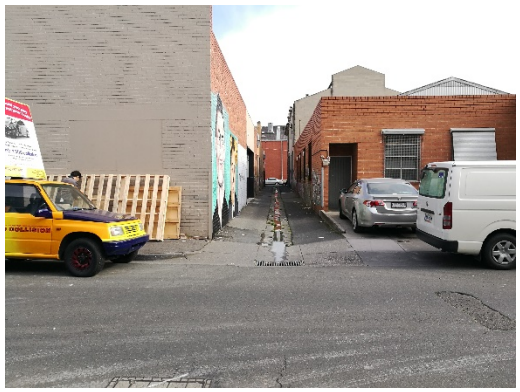
Street Name	Description	Recommended changes	Photo
22: ROW (from Fairchild to Cooke Street)	**Existing Conditions:** • Carriageway width – 2.9m • Traffic management – Two-way, must travel south on Fairchild Street, and north on Cooke Street • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – there is a ROW that extends northerly, where there are no splays, making it difficult to traverse due to the narrow width **Constraints: Unconstrained laneway** • Unconstrained due to short length, continuous	One way in the eastbound direction. **Reason:** The road is only wide enough for one-way flow, and due to the one-way restrictions already in place on Fairchild Street and Cooke Street, the eastbound direction is most appropriate.	

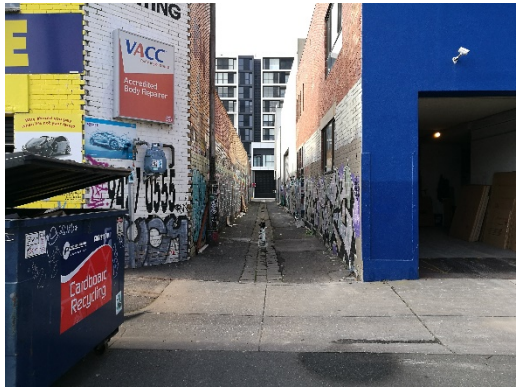
Street Name	Description	Recommended changes	Photo
23: ROW (from Cooke Street to Thompson Street)	**Existing Conditions:** • Carriageway width – 3.1m-3.8m • Road Reservation – 3.1m-4.7m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout Features – there is a kink in the ROW at the midpoint, which is also where a northerly ROW also connects, the 4.2m width of the connecting ROW provides space to navigate this kink **Constraints: Partially constrained** • An improved splay would assist with the kink in the ROW, especially for service vehicles	One way in the westbound direction. Splays on #1 & #6 Cooke Street and #493 Victoria Street. **Reason:** The road is only wide enough for one-way flow, and due to the one-way restrictions already in place on Cooke Street and Thompson Street, the westbound direction is most appropriate. Splays required to improve vehicle access at corners.	

Street Name	Description	Recommended changes	Photo
24: ROW (from Lambert Street to END)	**Existing Conditions:** • Carriageway width – 2.8m-4m • Traffic management – Two-way • Parking –No parking • Footpath – No footpath • Material – Asphalt and bluestone • Layout features – There are several bends in the ROW. Splays are provided in the narrower sections, but not for bends connecting to the 4m width section. The ROW also connects to Baker Street in the south **Constraints: Highly constrained** • Length, number of properties • Narrow • Bends with without splays • Properties at corners are outside of the study boundary	One-way from Lambert Street to Baker Street Splays required at corners of #2 Lambert Street, #332 Victoria Street, #31 Baker Street, and #24 Eureka Street. **Reason:** The lane is narrow and has significant potential for conflict due to having several 90° corners. Splays will need to be provided to make the lane fully trafficable.	

Street Name	Description	Recommended changes	Photo
25: ROW (from Thompson Street to South Audley Street)	**Existing Conditions:** • Carriageway width – 3.6m-3.7m • Traffic management – Two-way • Parking – Car park on the north side of the ROW, behind 2 Thompson Street • Footpath – No footpath • Material – Asphalt • Layout features – There is a kink in the middle of the ROW, where there is another northerly connected ROW. Potentially challenging to navigate the kink **Constraints: Partially constrained** • Kink • Lack of Splays	One way in the westbound direction Provide splay at #523 Victoria Street. Property setback for #2 Thompson Street will need to be maintained to facilitate movement. **Reason:** The road is only wide enough for one-way flow. One-way westbound encourages drivers to enter local road network at South Audley Street traffic signals. Splays will need to be provided to facilitate movement.	

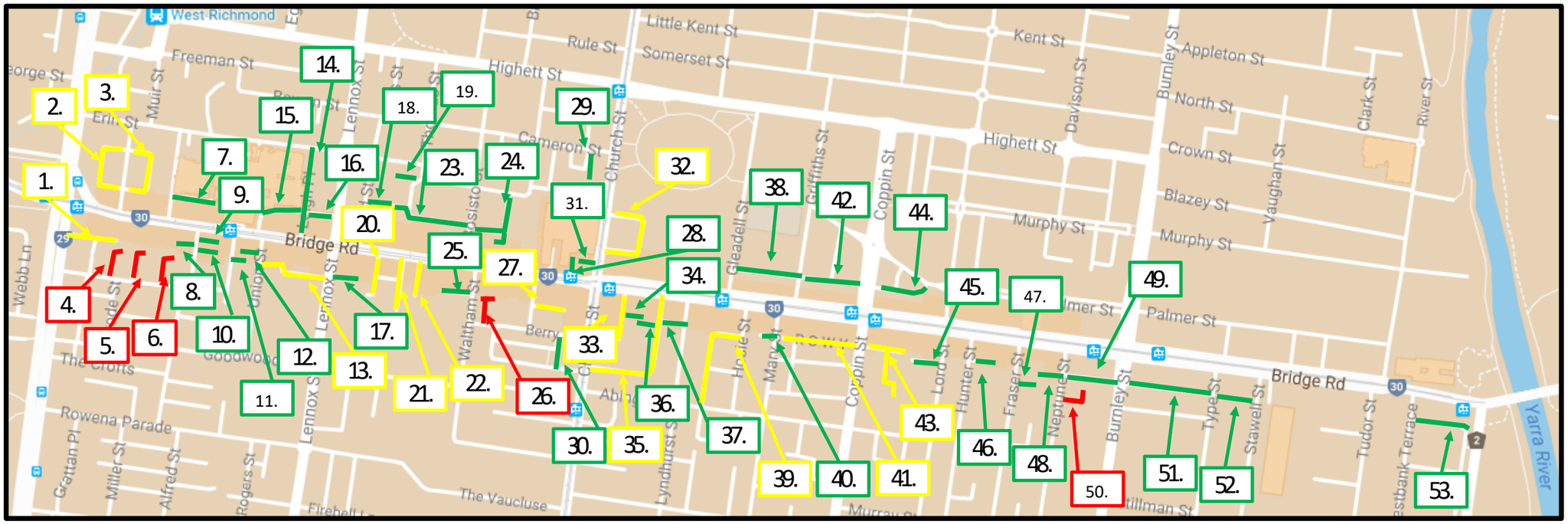
Street Name	Description	Recommended changes	Photo
26: ROW (East-west ROW connected to Wells Street)	**Existing Conditions:** • Carriageway width – 4.7m-4.85m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout Features – connects to the northern end of Wells Street. No splays are provided at the intersection **Constraints: Partially constrained** • 90-degree bends • Lack of splays	Widen to 6m for properties abutting Victoria Street. Make Wells Street one-way northbound from Baker Street to the east-west ROW connecting to McKay Street. East-west ROW one-way eastbound. **Reasons:** Widening ROW to 6m for properties abutting Victoria Street facilitates vehicle access to all properties and reduces vehicle conflict. One-way arrangement reduces vehicle conflict within Wells Street without need to widen street.	

Street Name	Description	Recommended changes	Photo
27: ROW (from Bond Street to Duke Street)	**Existing Conditions:** • Carriageway width – 3.4m • Traffic management – Two-way, Bond Street is one-way northerly, and Duke Street is one-way southerly • Parking – No Parking • Footpath – No Footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Unconstrained due to short length, continuous	Change to one-way westbound. **Reasons:** The road is only wide enough for one-way flow, and due to the one-way restrictions already in place on Duke Street and Bond Street, the westbound direction is most appropriate.	
28: ROW (from Johnson Street to END, on west side of Johnson Street)	**Existing Conditions:** • Carriageway width – 4.55m-6.35m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: (Unconstrained laneway)** • Unconstrained due to short length	No changes required due to width and short length.	

Street Name	Description	Recommended changes	Photo
29: ROW (from Duke Street to Grosvenor Street)	**Existing Conditions:** • Carriageway width – 3.4m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Unconstrained due to short length, continuous	Change to one-way eastbound. **Reasons:** The road is only wide enough for one-way flow, and due to the one-way restrictions already in place on Duke Street, the eastbound direction is most appropriate.	

Street Name	Description	Recommended changes	Photo
30: Coles Terrace (from Leslie Street to Davidson Street)	**Existing Conditions:** • Carriageway width – 3.15m • Traffic management – Two-way • Parking – No parking • Footpath – No footpaths • Material – Bluestone • Layout features - There is a connecting southerly ROW of 2.85m width with a slight splay on each corner. Corner is still quite difficult to traverse due to narrow width, and shallow depth of splay **Constraints: Unconstrained laneway** • Unconstrained due to short length, continuous	One-way in the eastbound direction. **Reason:** Due to development potential of laneway, change to one-way flow to minimise vehicle conflicts.	

Bridge Road



Legend

- Unconstrained Laneway
- Partially Constrained
- Highly Constrained

Street Name	Description	Recommended Changes	Photo
1: Napier Lane (from Hoddle Street to END)	**Existing Conditions:** • Carriageway width – 3.85m • Trafficable width – 4.3m • Traffic management – Two-way • Parking – Car park attached to eastern end of lane • Footpaths – No footpaths • Material – Bluestone • Layout features – There is a connecting ROW to the south which connects to Sherwood Street, however bollards block access. **Constraints: Partially Constrained** • Limited Carriageway	Remove road block in the north-south connecting ROW to allow for one-way flow from Hoddle Street to Sherwood Street. **Reason:** If the road block is removed, then one-way flow can be achieved and should be directed away from Hoddle Street. This eliminates vehicle conflict without the need for widening.	

Street Name	Description	Recommended Changes	Photo
2: ROW (from west side Moorhouse Street to END)	**Existing Conditions:** • Carriageway width – 3.15m • Traffic management – Two-way • Parking – No parking • Footpaths – No footpaths • Material – Bluestone • Layout features –there is a connecting northbound ROW which loops back to Moorhouse Street, with splays at the corners **Constraints: Partially Constrained** • Lack of passing opportunities • Lack of sight distance around bends.	No changes required due to short length serving properties to be developed.	

Street Name	Description	Recommended Changes	Photo
3: ROW (from east end of Moorhouse Street to END)	**Existing Conditions:** • Carriageway width – 3.2-3.25m • Traffic Management – Two-way • Parking – Car park at east end of ROW • Footpaths – No footpaths • Material – Bluestone • Layout features – connecting ROW to the north which loops back to Moorhouse Street, with splays on each corner **Constraints: Partially Constrained** • Lack of passing opportunities • Lack of sight distance around bends.	No changes required due to short length serving properties to be developed.	

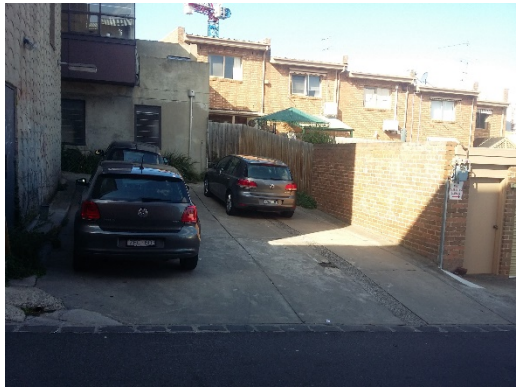
Street Name	Description	Recommended Changes	Photo
4: ROW (East-West section of westernmost ROW from Sherwood Street)	**Existing Conditions:** • Carriageway width – 2.7m-3m • Road reservation – 3.95m-4.75m • Traffic management – Two-way • Parking – kerbside parallel both sides • Footpaths – No footpaths • Materials – Asphalt • Layout features – connected to ROW at the south, of width 3.6m, with no splays provided. **Constraints: Highly Constrained** • Single lane • No Splays at T-intersection • Limited potential to widen critical north-south link	Increase width of road to 6m for east-west section by setting back properties along Bridge Road. **Reason:** To facilitate rear vehicle access to properties fronting Bridge Road, an increased ground level setback is necessary. This manages vehicle conflict in the laneway by providing space for vehicles to pass and facilitates vehicle turning at the bend of the ROW.	

Street Name	Description	Recommended Changes	Photo
5: ROW (East-West section of middle ROW from Sherwood Street)	**Existing Conditions:** • Carriageway width – 4.6m • Traffic management – Two-way • Parking – No Parking • Footpath – No footpath • Material – Asphalt • Layout features – connected to ROW at the south, of width 3.5m, with no splays provided. **Constraints: Highly Constrained** • Single lane • No Splays at T-intersection • Limited potential to widen critical north-south link	Increase width of road to 6m for east-west section by setting back properties along Bridge Road. **Reason:** To facilitate rear vehicle access to properties fronting Bridge Road, an increased setback is necessary. This manages vehicle conflict in the laneway by providing space for vehicles to pass and facilitates vehicle turning at the bend of the ROW.	

Street Name	Description	Recommended Changes	Photo
6: ROW (easternmost ROW from Sherwood Street to END)	**Existing Conditions:** • Carriageway width – 2.75m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – Narrow width and bend at north end. Setback property on western side. **Constraints: Highly Constrained** • Single lane • No Splays at T-intersection • Limited potential to widen critical north-south link	Increase width of road to 6m for east-west section by setting back properties along Bridge Road. **Reason:** To facilitate rear vehicle access to properties fronting Bridge Road, an increased setback is necessary. This manages vehicle conflict in the laneway by providing space for vehicles to pass and facilitates vehicle turning at the bend of the ROW.	

Street Name	Description	Recommended Changes	Photo
7: ROW (from Normanby Place to END)	**Existing Conditions:** • Carriageway width – 3.3m, widens at intersection with Normanby Place • Traffic management – Two-way • Parking – No Parking • Footpath – No footpaths • Material – Asphalt • Layout features – Hospital uses this ROW **Constraints: Unconstrained laneway** • Passing area at entrance to laneway	No Changes. Maintain existing passing area at entrance.	
8: ROW (from west side of Rotherwood Street to END)	**Existing Conditions:** • Carriageway width – 5.3m • Traffic management – Two-way • Parking – No Parking • Footpath – No footpaths • Material – Bluestone **Constraints: Unconstrained laneway** • Wide enough for two-way traffic flow • Short length	No changes required due to short length.	

Street Name	Description	Recommended Changes	Photo
9: ROW (from east side of Rotherwood Street to END)	**Existing Conditions:** • Carriageway width – 3.05m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – short and narrow **Constraints: Unconstrained laneway** • Short • Limited development potential	No changes required due to short length.	
10: ROW (from east side of Rotherwood Street to END)	**Existing Conditions:** • Carriageway width – 3.8m • Traffic management – Two-way • Parking – Car park on south side • Footpath – No footpath • Material – Concrete **Constraints: Unconstrained laneway** • Short • Limited development potential	No changes required due to short length.	

Street Name	Description	Recommended Changes	Photo
11: ROW (from Verity Street to END)	**Existing Conditions:** • Carriageway width – 6.05m • Traffic management – Two-way • Parking – Open tandem parking for adjacent properties • Footpath – No footpath • Material – Concrete **Constraints: Unconstrained laneway** • Short Limited development potential	No changes required due to short length.	
12: ROW (West side of Union Street to END)	**Existing Conditions:** • Carriageway width – 3m • Traffic management – Two-way, No Entry to Union Street from Bridge Road • Parking – No parking • Footpath – No footpath • Material – Bluestone **Constraints: Unconstrained laneway** • Short • Limited development potential	No changes required due to short length.	

Street Name	Description	Recommended Changes	Photo
13: ROW (East side of Union Street to Lennox Street)	**Existing Conditions:** • Carriageway width – 3.7m-3.75m • Traffic management – Two-way, No Entry to Union Street from Bridge Road • Parking – No parking • Footpath – No footpath • Material – Asphalt and Bluestone • Layout features – there is a kink involving two 90-degree bends. A splay is provided on one side of the northern bend **Constraints: Partially Constrained** • Non-functional kink breaks laneway into two parts	Make one-way from Lennox Street to Union Street. **Reasons:** Passing area is not possible, due to heritage buildings.	

Street Name	Description	Recommended Changes	Photo
14: Leigh Place (from Bridge Road to Erin Street)	**Existing Conditions:** • Carriageway width – 5.7m • Road reserve – 9m • Traffic management – Two-way for northern section, One-way for southern section connecting to Bridge Road • Parking – No parking • Footpath – Footpath on west side • Material – Asphalt **Constraints: Unconstrained laneway** • One-way	No changes required.	

Street Name	Description	Recommended Changes	Photo
15: ROW (from Leigh Place to END)	**Existing Conditions:** • Carriageway width – 3.55m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – Slight kink at the middle, still easily traversable **Constraints: Unconstrained laneway** • Short	No changes required.	

Street Name	Description	Recommended Changes	Photo
16: Corns Place (from Leigh Place to Lennox Street)	**Existing Conditions:** • Carriageway width – 3.1m • Traffic management – Two-way, must turn left at Leigh Place • Parking – Car park at midpoint of ROW • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained** • Short • Continuous • Could be made one-way	No changes required.	
17: Kurnagar Lane (from Lennox Street to END)	**Existing Conditions:** • Carriageway width – 3.5m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: (Unconstrained laneway)** • Short • Low development potential	Passing area required at entrance to manage vehicle conflict onto Lennox Street by a setback of #132 Bridge Road. Heritage building at #132 Bridge Road a potential constraint. **Reason:** Avoid vehicle conflict and queuing on Lennox Street.	

Street Name	Description	Recommended Changes	Photo
18: ROW (from Judd Street to Carpark)	**Existing Conditions:** • Carriageway width – 6m (including mountable kerbing) • Traffic management – Two-way • Parking – No parking • Footpath – Mountable footpath on south side • Material – Asphalt **Constraints: (Unconstrained laneway)** • Short Mountable kerbing allows for two-way passing	No changes required.	

Street Name	Description	Recommended Changes	Photo
19: ROW (from Hull Street to END)	**Existing Conditions:** • Carriageway width – 3.15m • Traffic management – Two-way • Parking – Parking provided in car park at southern end • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Short • Small number of adjacent properties	No changes required.	

Street Name	Description	Recommended Changes	Photo
20: Wustemenn Place (from Bridge Road to END)	**Existing Conditions:** • Carriageway width – 2.65m • Traffic management – Two-way • Parking – Parking provided in car park at southern end • Footpath – No footpath • Material – Asphalt • Layout Features – Narrow width, shares car park with Allowah Terrace **Constraints: Partially constrained** • Lack of passing area • Dead end • Could be connected to Allowah Terrace	No changes.	

Street Name	Description	Recommended Changes	Photo
21: Allowah Terrace (from Bridge Road to END)	**Existing Conditions:** • Carriageway width – 2.6m • Traffic management – Two-way • Parking – Parking provided in car park at southern end • Footpath – No footpath • Material – Bluestone • Layout features – Narrow width, shares car park with Wustemenn Place **Constraints: Partially constrained** • Lack of passing area • Dead end • Could be connected to Wustemenn Place	No changes.	

Street Name	Description	Recommended Changes	Photo
22: Peluso Place (from Bridge Road to END)	**Existing Conditions:** • Carriageway width – 4.1m-4.85m • Traffic management – Two-way • Parking – Parking provided in car park at southern end • Footpath – No footpath • Material – Asphalt **Constraints: Partially constrained** • Lack of passing area • Dead end	Connect to Sheridan Place (#25) and make one-way westbound. **Reason:** Heritage buildings prevent providing a passing area. A one-way arrangement will limit vehicle conflict on Bridge Road with access to Sheridan Place.	

Street Name	Description	Recommended Changes	Photo
23: Leggo Place (from Bosisto Street to END)	**Existing Conditions:** • Carriageway width – 7.6m • Traffic management – Two-way • Parking – Large Car park at western end • Footpath – No footpath • Material – Asphalt • Layout Features – Has a kink at the end, and connects to a large car park **Constraints: Unconstrained laneway** • Sufficient width for two-way traffic	No changes required, sufficient width for two-way operation.	

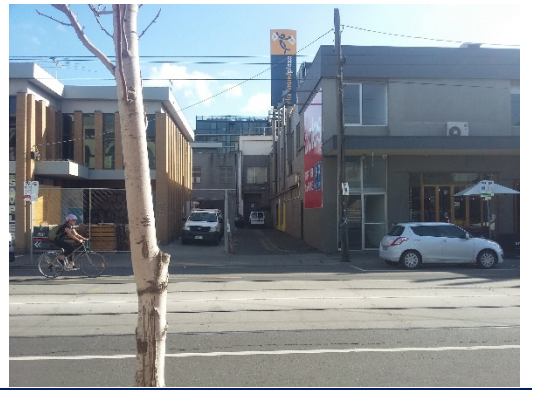
Street Name	Description	Recommended Changes	Photo
24: ROW (from Bosisto Street to Hull Street)	**Existing Conditions:** • Carriageway width – 3.5m-4.3m • Traffic management – Two-way • Parking –No parking • Footpath – No footpath • Material – Asphalt • Layout features – Already 'built out' to a large degree **Constraints: Unconstrained Laneway** • Properties already developed	No changes required, laneway already 'built out'.	
25: Sheridan Place (from Waltham Street to END)	**Existing Conditions:** • Carriageway width – 3.55m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Short	Connect to Peluso Place (#22) and make one-way. **Reason:** Heritage buildings prevent providing a passing area. A one-way arrangement will limit vehicle conflict on Bridge Road/Lennox Street.	

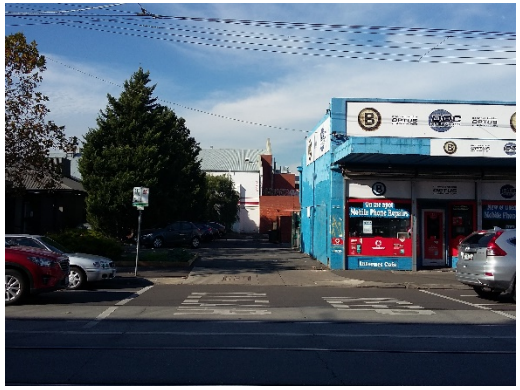
Street Name	Description	Recommended Changes	Photo
26: ROW (from Berry Street to END)	**Existing Conditions:** • Carriageway width – 3.05m-3.3mm • Traffic management – Two-way, Berry Street is one-way (westbound) • Parking – No parking • Footpath – No footpath • Material – Bluestone • Layout Features – has a T-intersection at the northern end, with splays on both corners. **Constraints: Highly constrained** • Length • T-shape	Provide a width of 6m for the east-west section by setting back properties fronting Bridge Road. It is preferred to minimise parking and access given the narrow laneway and need to divert traffic through Berry Street. **Reason:** This widening allows for vehicle access to properties fronting Bridge Road, vehicle passing and vehicle access around the 'T' intersection of the ROW.	

Street Name	Description	Recommended Changes	Photo
27: Alban Street (from Eucalyptus Street to END)	**Existing Conditions:** • Carriageway width – 5.8m • Traffic management – Two-way • Parking – Parking along the north side of Alban Street • Footpath – No Footpath • Material – Asphalt **Constraints: Partially constrained** • Wide enough for two-way traffic • Parking arrangements make two-way traffic flow unachievable	Review on-street car parking arrangements. **Reason:** Review car parking as under current arrangements, two-way flow is not achievable when vehicles are parked within Alban Street. Changes should be made when or if required, given development potential from Alban Street is low and length of laneway is short.	
28: ROW (from Bridge Road to END, opposite Eucalyptus Street)	**Existing Conditions:** • Carriageway width – 3.65m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Short • Low development potential	No changes required. A redevelopment of Richmond Plaza is unlikely to use this lane for vehicle access.	

Street Name	Description	Recommended Changes	Photo
29: Henry Street (from Cameron Street to END)	**Existing Conditions:** • Carriageway width – 3.9m • Traffic management – Two-way, speed humps • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Short	Passing area required at entrance using #196-198 Church Street. **Reason:** Significant development potential off this laneway is likely to require a passing area.	

Street Name	Description	Recommended Changes	Photo
30: ROW (from Berry Street to Hodgson Terrace)	**Existing Conditions:** • Carriageway width – 4.15m • Traffic management – Two-way, Berry Street is one-way (westbound) • Parking – No parking • Footpath – No footpath • Material – Bluestone • Layout features – Berry Street is a narrow street (3.5m road), and a splay is provided on the southeast corner of the intersection with the ROW to assist movement. **Constraints: Unconstrained laneway** • Short • Low development potential	No changes required due to short length and low development potential.	

Street Name	Description	Recommended Changes	Photo
31: ROW (from Church Street to END)	**Existing Conditions:** • Carriageway width – 3.7m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** Short	No changes required due to short length.	

Street Name	Description	Recommended Changes	Photo
32: ROW (from Church Street to Church Street)	**Existing Conditions:** • Carriageway width – 4m-4.7m • Traffic management – ROW is entry only for the northern section, however, an exit lane is provided via adjacent McDonalds car park, so is considered two-way for all practical purposes. • Parking –No parking • Footpath – No footpath • Material – Asphalt • Layout features – There are two 90 degree turns which loop the ROW back to Church Street. Splays are provided at each bend, and the ROW has enough width to allow for unimpeded turning. **Constraints: Partially constrained** • Narrow • U-shaped • Lack of passing without 'McDonalds' site, however surrounding McDonalds site means that access issues could be easily resolved with re-development	Maintain current layout in any future development of the McDonalds site. **Reason:** Current layout which includes the land of #227-235 (McDonalds) and loops around the existing building from the north to the south. Given this loop arrangement, vehicle conflict can be managed through a one-way arrangement (i.e. enter ROW from north entrance, exit at south).	

Street Name	Description	Recommended Changes	Photo
33: Tullo Place (from Bridge Road to END)	**Existing Conditions:** • Carriageway width – 3.95m-4.55m • Road reserve – 6.2m-6.8m • Traffic management – Two-way, no right turn at Bridge Road • Parking – No Parking • Footpath – Footpath on west side • Material – Asphalt • Layout features – There is a connecting ROW on the east side of the road, with no splays provided **Constraints: Partially Constrained** • Lack of passing area • Could be converted shared zone for two-way traffic (footpath removed)	Option to create shared zone for vehicles and pedestrians. **Reason:** Footpath can be removed to allow for a carriageway width that provides for two-way traffic flow while improving the pedestrian environment. Passing area reduces vehicle conflict at Bridge Road.	

Street Name	Description	Recommended Changes	Photo
34: ROW (from Tullo Place to END)	**Existing Conditions:** • Carriageway width – 3.3m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – Connected to Tullo Place, with no splays provided **Constraints: Unconstrained laneway** • Short • Low development potential	No changes required due to short length.	

Street Name	Description	Recommended Changes	Photo
35: Waterloo Place (from Bridge Road to Church Street)	**Existing Conditions:** • Carriageway width – 4.4m • Road reserve – 6.2m • Traffic management – Two-way • Parking – No parking • Footpath – Narrow footpaths on both sides • Material – Asphalt • Layout features – Waterloo Place has a 90-degree bend connecting it from Bridge Road to Church Street. A splay is provided at the bend on the northwest corner. There are also two ROWs connected to Waterloo Place **Constraints: Partially Constrained** • Lack of two-way passing opportunities • Length • Could be made one-way	No changes required. This laneway abuts properties largely outside of the study area. It has sufficient width for future conversion into a shared zone or to be made one-way, if required.	

Street Name	Description	Recommended Changes	Photo
36: ROW (from Waterloo Place to END)	**Existing Conditions:** • Carriageway width – 3.5m (with additional property boundary setback of 2.55m) • Traffic management – Two-way • Parking – Private parking on south side within property setback • Footpath – No footpath • Material – Bluestone • Layout features – A property boundary setback allows for turning into ROW from Waterloo Place **Constraints: Unconstrained laneway** • Short	No changes required due to short length.	

Street Name	Description	Recommended Changes	Photo
37: ROW (from Waterloo Place to Lyndhurst Street)	**Existing Conditions:** • Carriageway width – 3.2m • Traffic management – Two-way, Lyndhurst Street is one-way (northbound) • Parking – No parking • Footpath – No footpath • Material – Bluestone • Layout features – A splay on the southeast corner of Waterloo Place and the ROW is provided to assist turning. **Constraints: Unconstrained laneway** • Short • Continuous	No changes required due to short length.	

Street Name	Description	Recommended Changes	Photo
38: ROW (from Gleadell Street to Griffiths Street)	**Existing Conditions:** • Carriageway width – 3.15m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Continuous • Straight • Could be one-way	One way in the westbound direction. **Reason:** The road is only wide enough for one-way flow. One-way westbound provides a higher level of access compared to eastbound due to existing turn bans at Gleadell Street. Alternatively, setbacks and passing bays can be provided along the laneway. One way reduces vehicle conflict, and assists management of pedestrian volumes in laneway under existing conditions.	

Street Name	Description	Recommended Changes	Photo
39: Spencer Place (from Hosie Street to Abinger Street)	**Existing Conditions:** • Carriageway width – 3.45m-3.8m • Traffic management – Two-way, Hosie Street is one-way (northbound) • Parking – No parking • Footpath – No footpath • Material – Asphalt and bluestone • Layout features – There is a 90 degree bend in Spencer Place, with a splay provided on the southeast corner. There is another connecting ROW, which connects back to Hosie Street, with a splay also provided. **Constraints: Partially Constrained** • Long • Lack passing opportunities	No changes required. A future change to one-way operation is a potential option, if required.	

Street Name	Description	Recommended Changes	Photo
40: Pandoleon Lane (from Mary Street to END)	**Existing Conditions:** • Carriageway width – 3.65m • Traffic management – Two-way, Mary street is one-way (northbound) • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Short • Low development potential	No changes required.	

Street Name	Description	Recommended Changes	Photo
41: ROW (from Mary Street to Coppin Street)	**Existing Conditions:** • Carriageway width – 3.2m • Traffic management – Two-way, Mary Street is one-way (northbound) • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – Straight, limited splays on intersecting ROWs. **Constraints: Partially Constrained** • Length • No passing area • Continuous, could be one-way	One-way in the westbound direction. **Reason:** Lane is long with no passing opportunities. This allows for current one-way arrangements on Mary Street to be maintained. Alternatively, setbacks and passing bays can be provided along the laneway.	

Street Name	Description	Recommended Changes	Photo
42: ROW (from Griffiths Street to Coppin Street)	**Existing Conditions:** • Carriageway width – 3.1m • Traffic management – Two-way, must enter and exit via left on Coppin Street • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – There is a connecting ROW to the north, with splays provided on both corners of the intersection. **Constraints: Unconstrained laneway** • Continuous • Straight • Could be one-way	No changes required due to low development potential. Can be made one-way in future if required.	

Street Name	Description	Recommended Changes	Photo
43: Foster Place (from Coppin Street to END)	Existing Conditions: • Carriageway width – 3.15m-3.45m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – There is a connecting ROW of 4m width to the south, with no splays provided. Constraints: Partially Constrained • Lack of passing area on east-west link • T intersection	Provide 6m passing area where possible, avoiding heritage buildings. **Reason:** Lane is narrow and does not allow for two-way flow. A passing area cannot be provided at the entrance due to a heritage building.	

Street Name	Description	Recommended Changes	Photo
44: ROW (from Coppin Street to Palmer Street)	**Existing Conditions:** • Carriageway width – 3.7m-5.7m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – There is a connecting ROW to the north, with no splays provided at the intersection, however, properties on the south are set back. **Constraints: Unconstrained laneway** • Continuous • Short	No changes required. Can be made one-way in future if required.	

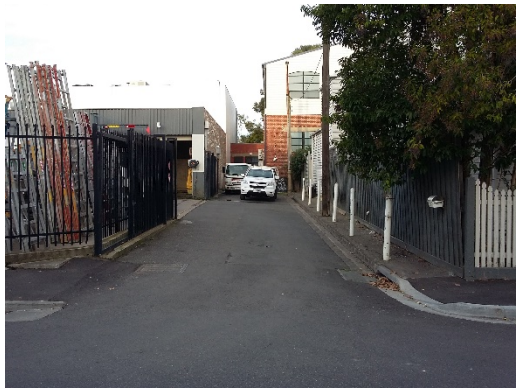
Street Name	Description	Recommended Changes	Photo
45: ROW (from Lord Street to END)	**Existing Conditions:** • Carriageway width – 3.55m, widened by adjacent development • Traffic management – Two-way, Lord Street is one-way (northbound) • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Provides two-way traffic	No changes required due to short length and effective widening has already taken place.	
46: ROW (from Hunter Street to END)	**Existing Conditions:** • Carriageway width – 3m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Short • Low development potential	No changes required due to short length.	

Street Name	Description	Recommended Changes	Photo
47: ROW (from Hunter Street to END)	**Existing Conditions:** • Carriageway width – 4.4m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Concrete • Layout features – appears to have been consumed as private property **Constraints: Unconstrained laneway** • Short Low development potential	No changes required due to short length.	
48: ROW (from Neptune Street to END)	**Existing Conditions:** • Carriageway width – 3m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Short • Low development potential	No changes required. Parking arrangements at Neptune Street could be reviewed to allow for more passing opportunities.	

Street Name	Description	Recommended Changes	Photo
49: ROW (from Neptune Street to Burnley Street)	**Existing Conditions:** • Carriageway width – 3m • Traffic management – Two-way, must exit/enter left at Burnley • Parking – No parking • Footpath – No footpath • Material – Asphalt **Constraints: Unconstrained laneway** • Continuous • Straight • Could be one-way	No changes required due to short length, and connection at both ends. Changes are unlikely to be required.	

Street Name	Description	Recommended Changes	Photo
50: ROW (from Neptune Street to END)	**Existing Conditions:** • Carriageway width – 3.15m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – ROW bends 90 to the north with no spays provided. North-south section is not trafficable and requires splays **Constraints: Highly Constrained** Requires splays on the corners	Splays required on #23 to make trafficable.	

Street Name	Description	Recommended Changes	Photo
51: ROW (from Burnley Street to Type Street)	**Existing Conditions:** • Carriageway width – 3.4m • Traffic management – Two-way • Parking – No parking • Footpath – No footpath • Material – Asphalt • Layout features – There is a connecting ROW to the south, with no splays provided at the intersection. **Constraints: Unconstrained laneway** • Continuous • Straight • Could be one-way	One-way in the westbound direction. **Reason:** Long laneway width no passing opportunities.	

Street Name	Description	Recommended Changes	Photo
52: ROW (from Type Street END)	**Existing Conditions:** • Carriageway width – 5m • Traffic management – Two-way • Parking – No parking • Footpath – Footpath on south side • Material – Asphalt **Constraints: Unconstrained laneway** • Continuous • Straight • Could be one-way	No changes required due to low development potential and short length. Can be made one-way in future if required.	
53: Park Avenue (east-west section abutting Bridge Road properties from Westbank Terrace to bend)	**Existing Conditions:** • Carriageway width – 3.65m • Traffic management – Two-way • Parking – No parking • Footpath – Footpath on south side • Material – Asphalt **Constraints: Unconstrained laneway** • Continuous • Straight, could be one-way	No changes required due to low development potential. Can be made one-way in future if required.	

Street Name	Description	Recommended Changes	Photo
Eucalyptus Street	**Existing Conditions:** • Carriageway width – 3.45m-5.95m • Road Reserve – 5.95m • Traffic management – Two-way • Parking – No Parking • Footpaths – Narrow footpath on both sides • Material – Asphalt Layout features – Road provides passing area at intersection with Bridge Road, however road narrows soon after, providing no other opportunities for passing.	Review convesion into a true shared zone where pedestrians and vehicles share road space and allow two vehicles to pass one another, particularly at Bridge Road.	
Neptune Street	**Existing Conditions:** • Carriageway width – 7.1m • Road Reserve – 9.8m • Traffic management – Two-way • Parking – Parallel parking on both sides • Footpaths – Narrow footpath on both sides • Material – Asphalt Layout features – Parking on each side of the road only allows for one-way traffic flow.	On-street car parking arrangements to be reviewed. **Reason:** Carraigeway currently allows parking on both sides of the road and a single lane for two-way traffic. Development potential accessing Neptune Street might necessitate removing some on-street parking to provide passing areas along Neptune Street.	

Appendix H

Draft DDOs

Vehicular Access Requirements – Victoria Street and Bridge Road

NB – The provisions of DDO21 – Bridge Road and DDO22 – Victoria Street have been edited as below. In the permanent controls, it is anticipated that each of the 10 precincts in Victoria Street and Bridge Road will have a separate DDO.

Additions or changes are underlined or ~~struck through~~. The changes are based on recent amendments such as Swan Street, Queens Parade and proposed interims in Collingwood / Fitzroy. They will be finalised based on the outcomes of the Access and Movement review being undertaken by Traffix and will be tailored to the specific precinct.

Vehicular, car parking and loading access requirements

Development ~~must~~ should provide vehicular access from rear lanes or from side streets in the preferred locations in the Access and Movement Plan x of this schedule. (ADD IN EXCEPTIPN FOR LEFT IN/LEFT OUT IF NEEDED ie except in locations identified as "Left in - Left Out Access Permitted" in the Access and Movement Plan x of this schedule.)

Development identified as "Left in - Left Out Access Permitted" in the Access and Movement Plan should limit the width of vehicle crossovers and incorporate 'Left in' and 'Left out' only vehicle access. (ONLY ADDED IF NEEDED)

Development with redundant vehicle access points must reinstate the kerb, line mark parking bays, and relocate any parking signs.

Car parking should be located within a basement or concealed from the public realm.

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 at XXXXX, as shown in Plan X, should include a rear setback, at ground floor, to facilitate the ongoing function of the laneway and allow for building services and car park access. The setback and laneway should be a minimum width of Xm in total. Between ground level and first floor, a headroom clearance of 3.5 metres minimum should be achieved.

Properties on the inside corner of bends in laneways or at intersections between two laneways should provide a minimum 3m x 3m splay to facilitate vehicle access.

ADD ACCESS AND MOVEMENT PLANS (ONE FOR EACH PRECINCT)

Pedestrian and Bicycle Access

Pedestrian access to buildings~~, including upper level apartments, must be from a street or a shared zone~~ should be achieved via streets (or shared zone shown on the Access and Movement Plan X of this schedule) and avoid primary access from laneways. Where pedestrian access can only be provided from a laneway, the pedestrian entrance ~~must~~ should be setback from the rear laneway or include a pedestrian refuge or landing and be well lit to enable safe access.

Development should facilitate the creation of a shared zone where properties abut a future shared zone as shown on Plan X.

Development should improve the pedestrian environment and amenity of streets and laneways that provide a pedestrian connection to XX Street, XX Street, North Richmond Train Station, and entrances to buildings.

Ensure pedestrian entrances are clearly visible, secure and have an identifiable sense of address.

Residential and commercial pedestrian entrances should be distinguishable from each other.

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.

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