



Cremorne Streets and Movement Strategy

June 2020



hansen

Contents

1. Purpose of this document	2
2. Cremorne in Context	2
2.1. Precinct Vision	3
2.2. Key Challenges and Opportunities.....	3
2.3. What the Community has told us	5
3. Project Approach	6
3.1. Best Practice Principles.....	6
3.2. Key Objectives.....	8
4. Strategic Response	9
4.1. Foundations of the Response	9
4.2. Street Network Classification	10
4.3. Access Network Options.....	13
5. Strategic Policy Outcomes	37
6. Implementation	38
Figure 1 - Street Network Classification Map.....	12
Figure 2 - Proposed Network Layout Option A - with Punt Road/Kelso Street signalised intersection.....	20
Figure 3 – Hotspot 1 concept design: Kelso Street - Punt Road intersection.....	21
Figure 4 – Hotspot 2 concept design: Cremorne Street – Kelso Street intersection	22
Figure 5 – Hotspot 3 concept design: Cremorne Street - Swan Street intersection.....	26
Figure 6 – Hotspot 4 concept design: Balmain Street west of underpass.....	27
Figure 7 – Hotspot 5 concept design: Balmain Street- Church Street- Cotter Street intersection.....	29
Figure 8 - Network Layout - Option B – without Punt Road/Kelso Street signalised intersection.....	35

1. Purpose of this document

The purpose of the Cremorne Streets and Movement Strategy is to assist Council in the effective planning for a major increase in trip demand associated with land use change and intensification on a movement network which is already operating at, or near, peak vehicle capacity. The Strategy aims to identify and address a set of design measures that can be implemented at key hotspots on the network to meet a range of precinct objectives relating to liveability, sustainability and equity.

The Strategy is based on a range of supporting documentation and analysis which is set out in the Appendices. Of particular note is the Issues and Opportunities report which addresses a range of State and Local policy guidance, background studies and data as well as analysis of the impact of forecast changes to the land use and transport environment to form the basis of the response set out in this Strategy. The report also identified gaps in understanding and analysis which need to be addressed to ensure future decisions are evidenced based and well-informed.

Further detail on the Street Network Classification approach presented in this report is also included in the Appendices.

It should be noted that all designs presented in this Strategy are conceptual and indicative only and subject to change and refinement through more detailed investigation. The designs represent possible responses to achieve the vision, best practice approaches set out in this report.

2. Cremorne in Context

The Cremorne Precinct study area is bounded by Swan Street, Brighton Street, Punt Road and the Yarra River. It comprises land zoned for commercial uses and occupied predominantly by a range of tech, finance and advanced manufacturing businesses. On the southern side of Swan Street and along Church Street the business mix is focussed on entertainment and retail with a strong furniture and homewares clustering along Church Street.

There are pockets of residential zoned land comprising largely heritage terraced housing immediately east of Punt Road, east of the train line and around Dover Street. In the south west and south east corners, adjoining the Yarra River, there are recently constructed and planned mixed use developments which are adding to the mix of employment, housing and entertainment offer in the precinct.

The precinct is proximate, though currently poorly connected, to major infrastructure and community assets that provide businesses and employees with ready access to a high-quality transport, retail and entertainment offer. To the north is Richmond train station, and an array of entertainment options and local services for employees in the Swan Street Activity Centre. To the west is the open space and the sporting precinct of Melbourne Park. To the south is the Yarra River and capital city trail with South Yarra station, the Botanical Gardens and the entertainment and retail offering of Chapel Street beyond.

Within the precinct, there is a small but growing offer of cafes, bars and restaurants, and new businesses are bringing shared workspaces and communal spaces that are accessible to the broader business community.

A range of investigations and planning documents have been prepared in recent years by Council and by others for differing purposes. These provide a sound and robust understanding of the issues and opportunities for the Cremorne Precinct. VCAT decisions and community consultation also provide vital insights to the issues and opportunities for the Cremorne Precinct.

2.1. Precinct Vision

Cremorne will be Melbourne's epicentre of creative tech industries, where budding start-ups, enterprises and residents thrive among historic industrial buildings and workers cottages. Cremorne's vibrant streets, sustainable transport and quality open spaces will make it an eminent precinct for Melbournians to work and to live.

2.2. Key Challenges and Opportunities

The range of issues and opportunities identified in relation to Access and Movement in Cremorne have been well documented through extensive background reporting and analysis. The existing conditions and issues are addressed in the Issues and Opportunities Report which forms a background paper to this Strategy and is included as Appendix 2.

The findings of this paper have been incorporated into the following section.

2.2.1. Managing the change in land use and development intensity

A key challenge of this project is understanding the implications of the scale of land use change both within and surrounding the precinct. As experienced throughout Melbourne, this shift in land use intensity and

type places greater pressure on the streets to deliver more beyond just catering for vehicle movement.

Careful consideration needs to be given to ensuring the liveability of Cremorne is protected for the existing community, while understanding how to influence the travel behaviour and provide a high quality and functional urban environment for future workers, residents and visitors to the precinct.

2.2.2. Promoting sustainable and efficient access.

Cremorne is in close proximity to Melbourne CBD and forms part of a busy inner-metropolitan urban environment, but in many ways effectively operates as an island due to the range of existing precinct access constraints and barriers to permeability. These barriers to movement and constrained street network make orientation and wayfinding through the precinct difficult for all transport users and visitors to the area.

The precinct is well located in relation to public transport but is experiencing increasing and competing demands for space on a restricted and often congested street network. This demand is not spread evenly across all streets but focussed on key links and gateways to the precinct, including Cremorne Street, Balmain Street and intersections with the arterial road network at Swan Street and Church Street, which constitute areas of very high activity, demand and conflict.

Within inner city urban areas such as Cremorne it is important that traffic is limited to that which has an origin or destination within the precinct, rather than accommodating traffic which should otherwise be travelling along a more appropriate route. Recent studies suggest up to 30% of

traffic movement on key routes such as Cremorne and Balmain Streets may be through traffic

Due to forecast growth in trip demand and minimal capacity for the network to accommodate more car movements, there is a need to improve and promote sustainable transport modes, focussing on pedestrian safety and level of service on the network.

2.2.3. Recognising streets as people places

There is increased expectation for streets to serve as social, convenient, and interactive spaces for workers, residents and visitors to engage with the environment and each other, as an extension of their homes and workplaces.

Acknowledging the widespread phenomenon of ‘public space for people’ and the challenges of decades of priority planning for the automobile. Spaces around Cremorne are designated for movement, but this role can be complemented by remarkable places to stop, spend and rest.

There is limited access to open space and the existing public realm offers much potential for improvement. Due to a lack of large sites in public sector ownership, when considering planning permits for large privately held sites, built form controls that contribute to increased pedestrian or public space or precinct permeability through linkages through large sites can play an important role in realising access and movement objectives.

2.2.4. Understanding the impact of technology

Appreciation of how emerging technologies such as car share, Uber and food delivery services (vehicle, scooter and bicycle modes) and eventually driverless vehicles will transform the role of our streets and

ability to prioritise local pedestrian movement. While this technology is highly convenient and popular in urban areas throughout the world, consideration into the implications for parking, pedestrian and cycle connectivity is critical.

2.2.5. Understanding trade-offs

It is critical to clearly communicate the key outcomes of the project in an understandable way. Clearly showing the community what can be *gained* from changes to the transport environment will be crucial to generating support.

While planning for sustainable transport priority on key corridors, provision also needs to be made to retain vehicle access to support the needs and requirements of existing residents and businesses operating in the precinct.

Although changes to car parking are often contentious, there exists an opportunity within Cremorne to trial different approaches to off-street parking provision and management, and on-street use of space that can be more fully developed in further work by Council.

2.3. What the Community has told us

In order to inform the Cremorne Place Implementation Plan, the Victorian Planning Authority, in partnership with Council, undertook a program of community engagement in November-December 2019. During this period a total of 1307 people visited the website, and 469 people participated directly in the engagement.

The relevant outcome and feedback gained through the engagement is summarised as follows:

- i. Many participants commented on transport throughout discussion of other key themes, with most comments related to parking and traffic congestion and the ability of workers, residents, customers and visitors to move through/around the area with ease.
- ii. There was strong support for the prioritisation of pedestrian and cyclist safety, amenity and access.
- iii. There was common concern over parking and traffic congestion, with division as to how to address these issues. The major points are summarised as follows:
 - o some participants argued against reductions to on-street carparking, indicating it was already too difficult to find parking.
 - o some participants expressed support for reducing dependence on cars in the Cremorne area.
 - o participants were divided on the issue of removing on-street car parking spaces for public space, bicycle lanes or other purposes.
- iv. There was concern for safety when accessing transport at night.

- v. The strongest overall support was for walking as a priority mode of transport and improvements to public transport.
- vi. Participants also strongly supported reviewing car parking provisions, improving the cycling and pedestrian networks, installing protected bike lanes, and piloting other safety measures such as reduced speed limits to protect cyclists and pedestrians.
- vii. Car sharing and bike hire schemes were least supported. This may be due to a perceived importance of addressing transport congestion in Cremorne.

In response to the presented action ideas, participants were asked '*What else do you think we should consider to support Cremorne's transport and movement?*'. A wide range of ideas, suggestions and comments were received on the topic, including:

- improvements to pedestrian, cycling networks in order to improve safety, increase uptake and reduce congestion.
- for improved frequency and service across all modes of public transport with amenity at and access to Richmond Station identified as a key priority.
- Traffic congestion is a core issue for many contributors and must be addressed by discouraging car use and exploring one-way or local traffic only streets.
- improvements to parking design and management, including revision of minimum and maximum requirements in buildings of paid parking, permit parking and overstay detection technologies.
- safety improvements through street lighting and addressing conflict between road users.

3. Project Approach

The objective of the Streets and Movement Strategy is to set the foundations for an access network hierarchy for all modes that, where possible, provides the most efficient use of street space by matching cross-section design with movement demand and provides improved safety, access and amenity.

3.1. Best Practice Principles

The proposed Strategy is guided by an industry best practice approach which incorporates the following principles:

3.1.1. Movement and Place

The concepts of 'Movement' and 'Place' provide the basis for developing a comprehensive street classification to assist in determining the priority and design of any part of the street network. This is done through defining Movement and Place categories, which reflect the relative importance of each function.

For example, the Movement categories may make use of an existing road classification system (e.g. from principal routes down to local access roads); while Place categories may reflect the size of the catchment area for activities associated with that street (e.g. for shops and services) or the cultural or heritage significance of the buildings fronting that section of street.

It is important to consider that not all traffic and transport-related activities observed on urban streets are part of that street's Movement function. There are also some types of Place-related activities that are

directly connected with traffic and transport and occur within and adjacent to the carriageway. For example: loading/unloading; parking by employees, customers, residents, etc.; and buses, trams and taxis stopping to drop off/pick up passengers.

The Movement and Place network planning principles have been adopted by Department of Transport to enable Network Planning to consider the role streets play as a destination, not just as a means to move traffic.

Movement and Place principles can assist Council through providing a framework to identify the function and role of any part of the local street network, enabling Council to then determine the appropriate street treatment and priority.

3.1.2. Planning for Complete Streets

A complete street is one that provides a high level of service to multiple modes of transport, with an emphasis on a high-quality pedestrian environment. The concept is based on reallocating road space to prioritise access and safety for pedestrians, cyclists and public transport users.

Complete Streets represents a response to heavily trafficked arterial road networks that fail to produce vibrant, safe streetscapes that serve a multitude of roles (e.g. transport, commercial, social, environmental).

In addition to increasing the level of service offered for public transport, walking and cycling, complete streets also recognise the social and commercial dimensions of streets and seek to build in features that encourage people to linger, such as shade trees, active street frontages, wider footpaths, textured pavements, street furniture and street designs that reduce traffic speeds.

The US National Association of City and Transport Officials (NACTO) recognises that cities are leading the movement to redesign and reinvest in streets as cherished public spaces for people, as well as critical arteries for traffic. The NACTO The Urban Street Design Guide provides a blueprint for designing 21st century streets, including a toolbox and the tactics cities use to make streets safer, more liveable, and more economically vibrant. This document is considered as a reference of industry best practice.

The proposals within this Strategy identify appropriate locations to apply elements of the NACTO design guidance to create people places at important junctures and locations throughout Cremorne, with an aim to provide an enhanced public realm better able to provide a range of functions for the local community and visitors.

3.1.3. Pedestrian Oriented Design

Pedestrian Oriented Design is an approach to providing a street network that encourages and promotes walking, through considering and prioritising:

- Amenities near transport interchanges - Locating local convenience services around transport hubs establishes a strong connection and opportunities for integration between the transport network and other land uses.
- Alternative street connections with active and vibrant street frontages - Street connections provide scope for active frontages to capture the commercial opportunities, help to create on-street activity and enhance property values.

- Frequent and safe pedestrian crossings – Establishing pedestrian priority through well designed ground level pedestrian crossings along pedestrian desire lines allowing access from all directions.
- Information boards and wayfinding - Providing signage and other directional markers, such as pavement markings, assists users in seeking out the simplest and most direct route.
- Landscaping and street lighting - The pedestrian network must incorporate safe design measures such as clear sight lines, well-lit pathways, surveillance by surrounding land uses and provision for mobility and vision impaired users.
- Waiting and seating areas - Informal meeting and resting points, gathering places and landmarks all play an important role in providing a comfortable, usable pedestrian network.
- Indoor connection through buildings - Indoor pedestrian links to provide protection from the elements, increased user safety and amenity and commercial opportunities. Such pathways can also increase permeability through urban block structures and offer greater route choice.

3.1.4. 8-80 design

8-80 is an international design movement which recognises a need to design cities to accommodate changing needs from young children to the elderly. Accessibility planning needs to consider designing cities, neighbourhoods, places and spaces that can adapt and are inclusive, accommodating people with disabilities but also limited mobility, such as wheelchair users. This means we need to design transport systems that can accommodate a society with changing needs across a lifetime.

3.2. Key Objectives

A combination of State and Local Government strategic policy guidance, the Precinct vision, best practice integrated transport and land use planning principles and community feedback outlined above provides clear guidance on the key access and movement objectives, and considerations for the future success of Cremorne, which are set out below:

3.2.1. Provide a safe network for all users

- Minimise conflict between pedestrians, cyclists, and vehicles.
- Address perceived threats to safety on the network – ie related to lack of space, speeding vehicles, crossing points, lighting, and sightlines.
- Encourage lower traffic speed through 30kph speed limits and design intervention.
- Provide a network that is compliant with the provisions of the Disability Discrimination Act (1992) and safely caters for all users.

3.2.2. Prioritise sustainable and space efficient transport - walking, cycling and public transport

- Private vehicle travel is not considered a priority or mass transit mode in this area, and future planning must recognise the limitations of car access into and through Cremorne, while protecting the ability of the network to support existing and future economic and residential activity.
- Identify safe, attractive and connected walking and cycling networks and a level of service based around safest and most

direct routes between key origins and destinations such as open space, public transport services and external networks.

- Recognise Public Transport hubs as key drivers of pedestrian activity – identify opportunities for surrounding land uses to complement these areas of high activity, ie through provision of extra space, surveillance, complimentary adjacent land uses and services.
- Provide high improved amenity in streetscapes, public space and where opportunities exist in redevelopment sites through the provision of on-street seating, shade, meeting points, lighting and tree planting.
- Integrate movement network planning with land use form through ground level links through new development sites and identification of opportunities to improve and provide new sustainable transport infrastructure.

3.2.3. Recognise the needs of the existing community and businesses.

- Consider impact of all initiatives on existing residents and employees, continue to provide vehicle access and on-street parking for residents and visitors to the precinct with limited travel options.
- Identify high/medium/low (or no) change areas of the street network to assist in project prioritisation and clarity of intent.
- Recognise the role of the street network in providing site access and servicing requirements for existing business operations.
- Identify areas of highest change or land use intensification that can act as catalysts for access network improvements.

3.2.4. Improve access to public open space.

- Recognise the role of the street network in contributing to high quality public space, and identify opportunities for the same space to perform different functions across the day/week
- Investigate opportunities to improve links to open space to the east, west and south, through wayfinding, street design, and potential new crossing of Punt Road at Kelso Street signals.

3.2.5. Promote the most efficient management and use of car parking

- Identify opportunities to convert on-street car parking to public open space and provide additional space and capacity on priority walking and cycling routes.
- Consider impact of all initiatives on existing residents, continue to provide vehicle access and level of on-street parking for residents. There are also a limited number of newer residential elements within mixed use development.
- Encourage greater use of car share schemes, through allocation of on-street spaces, or spaces in off-street parking facilities.

4. Strategic Response

To address and move towards achieving the network objectives, the strategic approach set out below has been applied. It is recognised that the outcome of this response, while based on evidence, best practice and expert analysis, represents one way of approaching the challenges within the Cremorne precinct, focussing on and prioritising the influence of the access and movement network on a range of other factors. It is likely, and recommended, that a broad range of input and disciplines are considered and there may be alternate methods of addressing challenges and from other perspectives.

4.1. Foundations of the Response

- i. The challenges identified in relation to the access and movement network in Cremorne are typical of many inner urban precincts.
- ii. There will be a large number of new workers, visitors and residents in Cremorne in future.
- iii. The major barriers to access and movement (Yarra River, Punt Road, rail corridors) are likely to remain unchanged.
- iv. The existing street and movement network and available area of public space within the precinct will remain largely unchanged.
- v. Action is necessary as congestion is increasing which will result in adverse impacts on all workers, residents and visitors to the precinct.
- vi. There is a need to promote and prioritise the most space efficient modes of transport.
- vii. The existing pedestrian network is not able to provide the required standard of safety, comfort and access for all users.

- viii. Cyclist safety, connectivity and access both within, and to/from the precinct needs to be improved.
- ix. On-street car parking is at capacity in many parts of Cremorne.
- x. Introduction of more cars in new developments will increase congestion and demand for car travel.

4.2. Street Network Classification

There is an opportunity to establish improved accessibility through establishing a Complete Street approach to upgrading key movement corridors within Cremorne. A Complete Street is one that provides a high level of service to multiple modes of transport, with an emphasis on a high-quality pedestrian environment. The concept is based on reallocating road space to prioritise access and safety for pedestrians, cyclists and public transport users.

This approach is aimed at recognising the most efficient use of street space by matching cross-section design with movement demand and provides improved safety, access and amenity.

The increasing demands on street space driven by land use intensity within Cremorne requires greater priority to be allocated to more space-efficient travel modes (walking, cycling, train, tram, bus) whilst still recognising the importance of providing space for essential services, deliveries, residents and those with special needs. Private vehicle travel is not considered a priority or mass transit mode in this area, and future planning must recognise the limitations of car access into and through Cremorne, while protecting the ability of the network to support existing and future economic activity.

In order to provide a clear network hierarchy that more effectively improves safety and network efficiency for all modes within Cremorne,

Movement and Place principles have been applied to identify opportunities to match street design and road space use with future aspirations of the place and activities that the streets need to support.

The Cremorne Streets and Movement Strategy network classification is based on a range of factors that determine the role of each street in supporting the future success of Cremorne, including:

- Existing land use and zoning – including block sizes
- Areas of proposed land use change – including future development sites
- Existing street network function and role – including current traffic volumes and pedestrian/cycle data
- Identified pathways to key origins and destinations, including public transport stops and gateway sites
- External (regional) connectors and internal (local) connectors
- Existing network street space and cross sections to determine potential for change

The classification recognises the diverse character of the network and seeks to enable identification and assessment of a range of potential treatment options to recognise and promote priority uses. The Street Network Classification map is included below, and based on the following categories and network roles:

- i. *Movement* - Prioritise and enable the safe and space-efficient movement of people and goods into and out of Cremorne.
- ii. *Gateway* - Identify, prioritise and improve key sites of access to and within Cremorne.
- iii. *Local* - Prioritise and protect local access and recognise place role.

- iv. *Walking and Cycling* - Provide a network of safe access routes for all pedestrians and cyclists to/from and through Cremorne.
- v. *People Place*- Areas where streets can be utilised for public open space and play a higher place role.

A more comprehensive analysis including information on and a description of each category and application to Cremorne is provided in the summary table at Appendix 1 and within the Issues and Opportunities report included as Appendix 2.

Figure 1 - Street Network Classification Map



4.3. Access Network Options

To achieve key objectives for the Cremorne Precinct related to access and movement, two options for an updated access network have been proposed. The proposed access network options are based on the Street Network Classification analysis and also incorporate:

- community input
- findings and recommendations of previous studies
- State and Local Government policy direction
- industry best practice.

The Network Options have been designed to reflect the foundations of the response set out in 4.1 above and are built around identifying the most appropriate and efficient use of the existing street network and public space to achieve project objectives. In particular, these options provide guidance and justification to Council on the key moves, or enabling actions, that need to be considered to meet the future access requirements to/from and within the precinct. The options are built around recognising the role of key connector streets for vehicle access, while improving and maintaining safety, permeability and access for sustainable transport modes.

It is acknowledged that while these Network Options have been developed through careful analysis and considering a range of network priorities and demands, there may be alternate treatments or approaches to achieving network objectives identified as a result of more detailed design work and site analysis.

Access Network Option A layout is dependent upon the establishment of signalised intersection at Kelso Street and Punt Road, one of the key Hot Spots addressed below. This layout is presented as Figure 1, with supporting cross sections following.

It is acknowledged that reliance on one major upgrade, which is out of the direct control of Council, may weaken the Strategy and limit Council options to plan and deliver upgrades in the required manner. Whilst this action is strongly recommended for reasons set out below, an alternative option which retains the current layout of the intersection has also been included as Option B, presented as Figure 8 with accompanying updated cross sections where required.

It is also recognised that the deliverability and timing of key moves or recommendations and the actions of key stakeholders will determine staging and feasibility of other aspects of project delivery.

The access network options are set out below.

4.3.1. Option A

The Key Movement Network is presented in Figure 1 and incorporates the following features:

- 30kph speed limits on all streets to improve safety, particularly in areas where space is shared between road users.
- Increased footpath space and pedestrian safety improvements in areas of highest demand connecting key origins and destinations based on pedestrian survey data.
- Opportunities to improve place function of public spaces, to incorporate seating, pause points, wayfinding, and shelter.

- Focus on the key movement network and high change areas to protect amenity for the existing residential community.
- Removal of some on-street car parking in areas of highest movement priority, based on traffic and pedestrian data.
- Improved cycle connectivity and safety to/from and within precinct through upgraded cycling infrastructure on Kelso Street, Balmain Street, Church Street and Cotter Street, along with measures to slow traffic and provide more priority for cyclists on other components of network.
- Improved pedestrian access to Public Transport services including Church Street and Swan Street tram stops, Richmond and East Richmond Rail stations and the 246-bus route running along Punt Road.
- Increased movement role for Stephenson Street – recognising this as a key link connecting access points through rail barriers.
- Establishment of a signalised intersection at Kelso Street and Punt Road to provide a safe crossing point for pedestrians and cyclists across Punt Road and improve precinct access for vehicles.
- Cremorne Street closure to through traffic while retaining property access for servicing.

Proposed updates to the network for each mode are addressed below and described in more detail in individual hotspot designs and cross sections.

4.3.1.1. Pedestrian Access

The updated network plan recognises the role of the key movement streets in providing for safe, convenient and comfortable walking access as a priority. As set out in more detail below, this has been achieved

mostly through widening footpaths to increase pedestrian space and capacity, mostly through replacing areas of on-street car parking.

Pedestrian accessibility around key hotspots has also been improved to ensure strong links to public transport and gateways into and out of the precinct.

A large proportion of future increased trip demand will need to be accommodated on the pedestrian network – in order to facilitate this it is crucial changes are made early and infrastructure improvements incorporated into any project actions, on public or private land areas within the Precinct.

4.3.1.2. Cycling Access

The network plan proposes a local cycling network based around primary access from the north and south via Church Street, east via Cotter Street and west via Kelso Street into the movement gateways via upgraded cycling infrastructure and facilities. It must be emphasised that the network is not attempting to accommodate a high volume of through cycle trips as the presence of the Capital City Trail along the Yarra River to the south generally provides for this.

The focus of the cycle access network is providing high quality pathways and better links to/from regional connector, improving safety on other streets where cyclist and motorist would share the road through reduction in vehicle speed and also volume through discouraging through movements on key links, and redistribution of movement patterns.

The cycling network recognises the policy intent of connecting south across the Yarra River via the rail bridge to South Yarra, and

improvement to the underpass at East Richmond Station, but also acknowledges these improvements are potentially some way into the future and requiring advocacy from Council to relevant stakeholders.

4.3.1.3. Vehicle Access

The primary aims of the updated Network Plan in relation to vehicles is to retain local access and discourage through movements, while still providing for site servicing to support the local business and residential community.

The key change in the proposed network plan (Option A) is a point closure of Cremorne Street to all through traffic at Kelso Street intersection. Traffic access to the west and north from the precinct would be retained through the signalisation of Kelso Street intersection. The intent of this change is to discourage rat-running and through traffic movements, while still providing southbound movements onto Kelso Street east of Cremorne Street (with an updated cross section) for precinct access and circulation for servicing and local traffic and cycle movement.

This change would potentially result in some redistribution of traffic onto Dover Street, Cubitt Street and Gwynne Streets for access to/from areas south of Balmain Street. Given the current relatively low volumes of traffic on these distributor streets, it is considered there is sufficient capacity to support this spreading of the local traffic task.

Under this scenario, Stephenson Street would remain one-way northbound to the Dunn Street underpass and have a greater role to play in accommodating traffic movement through the precinct, while offering a slightly more circuitous route to discourage through traffic movements.

The Dunn Street underpass could utilise more to accommodate east-west movements through the precinct and take pressure off the Balmain Street underpass by providing access to/from the precinct and Church Street via Green Street, Adolph Street and Chapel Street.

Given the emphasis on encouraging and prioritising active travel, it is recommended a blanket 30kph speed limit is set within Cremorne. Traffic speed data collected by GTA Consultants in 2019 demonstrates that most of the movement network has an 85th percentile speed of under 35kph. A reduction in speed limits to 30kph would not adversely affect vehicle travel time or patterns (other network changes notwithstanding), improve safety for all road users and enable the introduction of design measures that improve local amenity and enable greater walking and cycling priority.

4.3.1.4. Key Elements and Changes

The proposed key changes and network updates focus on the movement streets and gateways as identified in the Street Classification and are explained further below.

i. Kelso Street – Punt Road signalised intersection

Previous studies (in particular GTA Consultants Cremorne Traffic Assessment 2019) have identified a range of traffic movement and capacity benefits which could be achieved through making the Kelso Street and Punt Road intersection fully signalised to provide an alternative exit point for northbound traffic onto Punt Road.

This would allow a second option for road users travelling north or west from the Cremorne precinct and alleviate queuing and reduce demand on Cremorne Street at Swan Street.

This would also create an opportunity for improved pedestrian and cyclist connections to the Main Yarra Trail and create an opportunity to further connect to Gosch's Paddock. This could reduce the perception of Punt Road as a barrier and improve the connection between Cremorne and the Melbourne and Olympic Park precincts. This could also be a better option as an exit for larger vehicles that may potentially be constrained at the re-modelled Swan Street / Cremorne Street intersection due to tram separators etc. It is noted that the network layout must retain a number of options for large vehicles to enter and exit Cremorne without having to travel through the height restrictions presented by rail bridges on Balmain Street and Dunn Street.

The benefit of this controlled intersection would be that the traffic being removed from the Swan Street intersection would be traffic travelling north and west (those travelling south would most likely already be using Gough Street). It is understood that some eastbound traffic on Olympic Boulevard with a destination to the south may currently use the Swan Street – Cremorne Street – Kelso Street link to avoid a right turn movement directly onto Punt Road. This proposed change would also prevent this and further remove unnecessary through traffic movements from the precinct.

That means that when reaching the Punt Road / Olympic Boulevard / Swan Street intersection they are either through traffic or left turners. GTA Consultants recognised that this works well with the 'Streamlining'

Hoddle Street line of thinking, prioritising through traffic and avoiding the east-west or p-turn movement if approaching from Swan Street.

The network plan presented proposes one-way westbound traffic on Kelso Street to enable the provision of a separated two-way cycle facility on the north side of the street. This provides the opportunity for the intersection to function as an active transport gateway to Cremorne from the west and improved connectivity to the CBD.

The removal of one lane of traffic movement enables the two-way protected cycle facility to be established with minimum impact on parking. Some design consideration would need to be given to access to properties via existing crossovers on the north side of Kelso Street, noting most have rear access via Parkins Lane.

Consideration was given to a signalised intersection at Blanche Street instead of Kelso Street to provide more direct access to Gosch's Paddock in particular. However, Kelso Street was considered the preferred option for the following reasons:

- space constraints of Blanche Street which at the completion of the 60 Cremorne Street development will have a proposed 5.1m distance between property boundaries, much narrower than Kelso Street providing approximately 12m for the same measure.
- the extension of Kelso Street further to the west providing a more direct bicycle connection into the precinct
- the existing geometry and lane configuration of Punt Road at the Kelso Street intersection
- proximity to Swan Street/Olympic Boulevard intersection.
- Streetscape upgrade and transition to shared space proposed for Blanche Street as part of adjacent site development (Seek).

The concept design and supporting cross sections for this proposed change are presented in the Figures below.

ii. Cremorne Street

The key network change to Cremorne Street is a closure to northbound through traffic at Kelso Street to discourage rat-running and through traffic movements, while still providing southbound movements for precinct access and circulation for servicing and local traffic and cycle movement.

This change is complemented by an updated cross section on Cremorne Street which incorporates extended footpaths through removal of on-street car parking on one side of the street.

Cremorne Street is recognised through the study (supported by data and evidence) as the primary pedestrian connection from the precinct to a range of attractors to the north, including public transport services (in particular Richmond Station), Swan Street and the Olympic Park precinct. The use of valuable street space for on-street car parking is not supported by the strategy. The current space allocation on this key movement corridor is approximately 24% pedestrian, 43% movement (vehicles and bicycles) and 33% car parking. The updated cross section proposed addresses this imbalance.

Cremorne Street is not considered as a priority cycling connector, with cycling access to the precinct from the north provided by Church Street and the East Richmond Station underpass, but the network plan makes provision for local access cyclists to mix with traffic travelling at slow speeds.

It is recognised Cremorne does, and will continue to, play a key role in providing service vehicle access. The proposed network layout still allows vehicles to travel north and south on Cremorne Street, and also an outlet for large southbound delivery vehicles east along Kelso Street to Stephenson Street and either out to Church Street via the Dunn Street underpass and Green Street, or back to Cremorne Street. Delivery vehicles travelling east to Stephenson Street may also rely on Dover Street and Gwynne Street to return to Balmain Street.

iii. Balmain Street

Balmain Street is the key east-west movement connector through the Cremorne precinct, and will be required to accommodate a much higher demand for trips in future. Given existing levels of congestion, safety concerns and space constraints, this trip demand must be met by active transport modes. For this reason, the network plan proposes to remove car parking from Balmain Street to provide improved cycle facilities along the entire length.

From Church Street to the rail underpass, Balmain Street will provide two-way separated, protected cycle infrastructure and widened footpaths to improve safety and capacity for pedestrians and cyclists. Due to space constraints to the west of Gwynne Street and priority given to creating more space for pedestrians through footpath widening, cyclists will share on-street lanes with traffic. However, due to other network changes it is anticipated traffic volumes and speeds in this section can be reduced, improving cycling safety and access.

The geometry and road space available currently prevent the provision of separated bicycle lanes through the underpass. However, it is recommended that traffic calming treatment and kerb extensions around

the Green Street – Balmain Street intersection are also implemented to create an internal precinct gateway leading to the underpass, reminding motorists they are entering an area shared with cyclists and other road users. In combination with the hotspot treatments on the west side of the underpass it is considered traffic volumes and speeds can be reduced in this area, improving conditions for cycling.

The Green Street – Balmain Street intersection could be considered another key internal precinct hotspot, and it is recommended as a site of further design focus to compliment Option A.

It is anticipated Balmain Street will primarily accommodate cycling access to/from the precinct from the eastern and western gateway, not through cyclists without an origin or destination in the precinct, who would be more likely to use the off-road pathways either side of the Yarra River.

iv. Church Street

Church Street is designated an arterial road on the State's Declared Road network and therefore must safely accommodate a wide range of functions, related to both regional and local access. The demands on Church Street in this location include tram and traffic movement, local and regional cycle access, pedestrian movement, retail frontages and footpath trading and providing a linkage from the Cremorne precinct to regional movement networks.

Church Street has been designated by the State Government as a Strategic Cycle Corridor connecting to Chapel Street and the Yarra River pathways to the south and Swan Street/Lennox Street to the north. Church Street will continue to experience land use change and

intensification which has seen it become a generator of high trip demands and an important regional destination for employment.

The presence of the 58 Tram Route on Church Street provides a key North-South public transport service linking to East Richmond Station, the Swan Street and Victoria Street tram corridors to the north, and South Yarra Station, Chapel Street and Balaclava and St Kilda further to the south. However, the fixed tram tracks also provide some challenges when considering potential redistribution of roadspace towards walking, cycling and streetscape.

While accommodating these regional functions, Church Street is also an important part of the Cremorne precinct, and must be planned according to the same guiding principles and objectives.

The updated Network Plan retains the important movement role of Church Street and seeks to improve walking and cycling infrastructure and safety through widened footpaths on the east side of the street and dedicated on-street cycle lanes with 1m/0.5m buffers to traffic through the removal of one side of on-street car parking.

It is also recommended that new accessible tram stops are implemented at the Howard Street stop, in close proximity to the Balmain Street/Cotter Street intersection, and between the rail bridge and Swan Street to improve tram service access.

Although the presence of tram tracks in the centre of Church Street limit changes to the cross section, but a redistribution of space in this manner goes some way to achieving State and Local Policy guidance around improving access to public transport, encouraging sustainable modes

and application of integrated transport and land use planning best practice.

v. Cotter Street

Under the proposed Network Plan, Cotter Street is recognised as having an important role in the provision of safe east-west cycle connections between Balmain Street and the regional cycle network and off-road pathways to the east. Cotter Street is also predominantly residential street, so the plan seeks to create a balance between the needs of the local community and wider precinct access requirements.

To achieve this, it is proposed to convert Cotter Street to one-way traffic access westbound only to provide space for improved cycle infrastructure and retain on-street parking on one side. This change would also remove any turning movements from Church Street into Cotter Street, which brings local safety and reliability improvements for tram services.

It is considered that access to Cotter Street properties from the west would be provided via Brighton Street from Amsterdam Street 75m to the south, and Willis Street 120m to north.

4.3.1.5. Network Hot Spots

The proposed access network updates are enacted through addressing a series of five 'Hot Spots' or areas which act as internal and external gateways to the precinct. These are sites which experience the highest intensity of competing demands on road space, connect Cremorne to collector and arterial road and regional public transport facilities and play

an important role in shaping access patterns into, out of and through the area.

The selected Hot Spots generally represent areas where careful consideration is required to achieve both movement and place outcomes, and the convergence of public and private realm, transport and land use mean the successful planning and management of each site is highly influential in achieving the overall vision for Cremorne.

The five Hot Spot sites presented under the proposed network layout Option A are

- i. Punt Road – Kelso Street intersection
- ii. Cremorne Street - Kelso Street intersection
- iii. Cremorne Street – Swan Street intersection
- iv. Balmain Street – west of rail underpass
- v. Church Street – Balmain Street – Cotter Street intersection

The Hot Spots concept designs and accompanying street cross-sections are provided - refer pages 21 - 29 of this document.

Figure 2 - Proposed Network Layout Option A - with Punt Road/Kelso Street signalled intersection

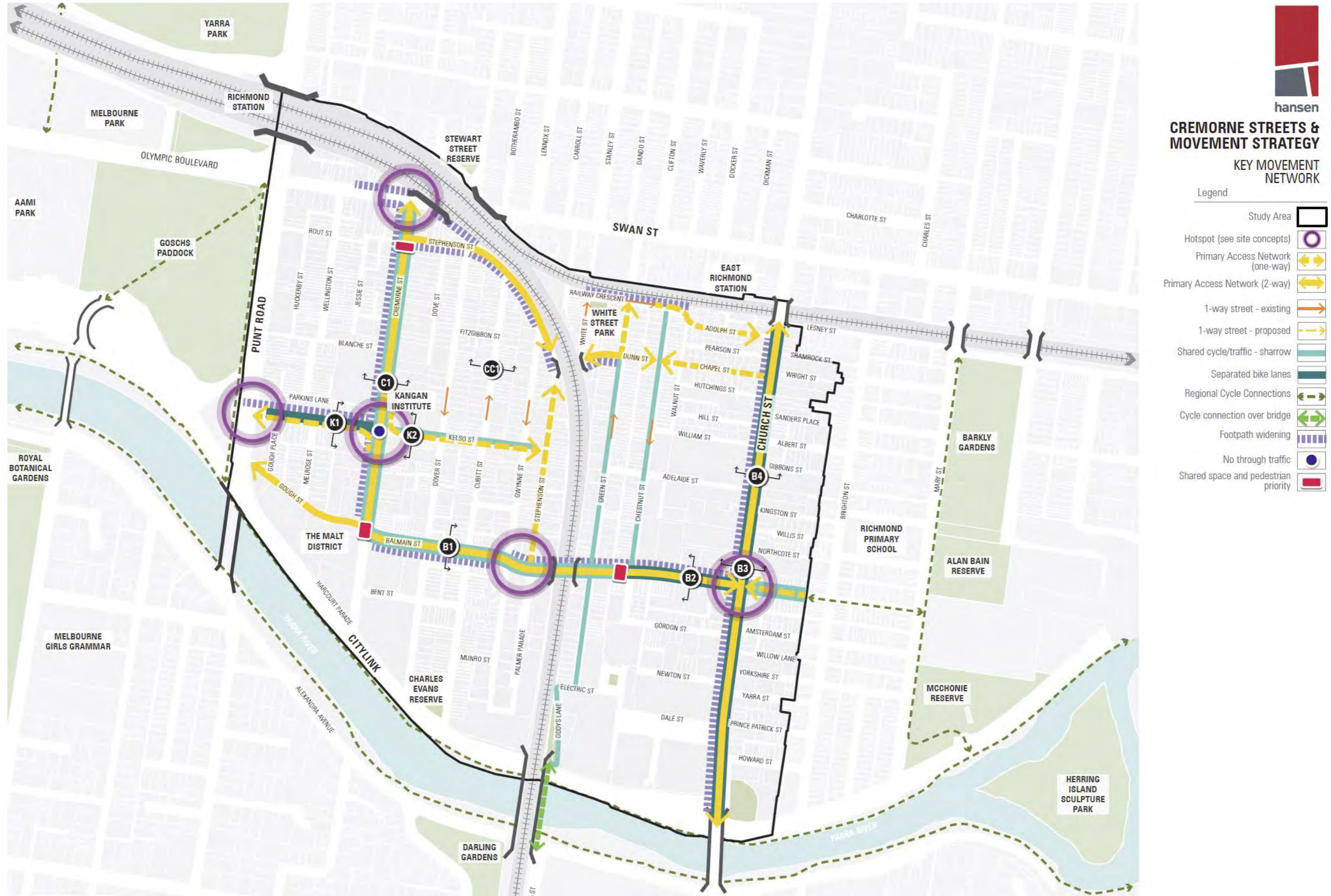


Figure 3 – Hotspot 1 concept design: Kelso Street - Punt Road intersection



Reason for intervention

Punt Road is currently a major barrier for pedestrian and cycling access to the west. The closest safe crossing point is at the Swan Street, 360m to the north, or Alexandra Avenue 280m to the south (via a crossing of the CityLink on-ramp).

Objective

Provide a new, safe crossing of Punt Road for pedestrians and cyclists connecting to public open space and the CBD and creating a western gateway to the precinct.

Design Features

A fully signalised intersection, incorporating:

- a pedestrian crossing
- separate two-way cycle crossing
- left-out and right-out traffic movements from Kelso St.
- no traffic access to Kelso Street
- removal of car parking on north side of Kelso Street
- Opportunities for planting, seating on west side of Punt Road,

Outcome

A safe pathway for local and regional active transport access to and from the precinct while retaining a one-way traffic movement function.

Figure 4 – Hotspot 2 concept design: Cremorne Street – Kelso Street intersection



Reasons for intervention

- To address traffic using Cremorne Street as a rat-run without an origin or destination within the precinct.
- To provide increased pedestrian space and priority at the intersection - pedestrian count data indicates that in the AM peak and PM peak hours there are over 800 north-south pedestrian movements on Cremorne Street crossing Kelso Street.

Objective

Prevent through traffic on Cremorne Street while retaining precinct access. Provide a safer environment for cycling and walking at this intersection.

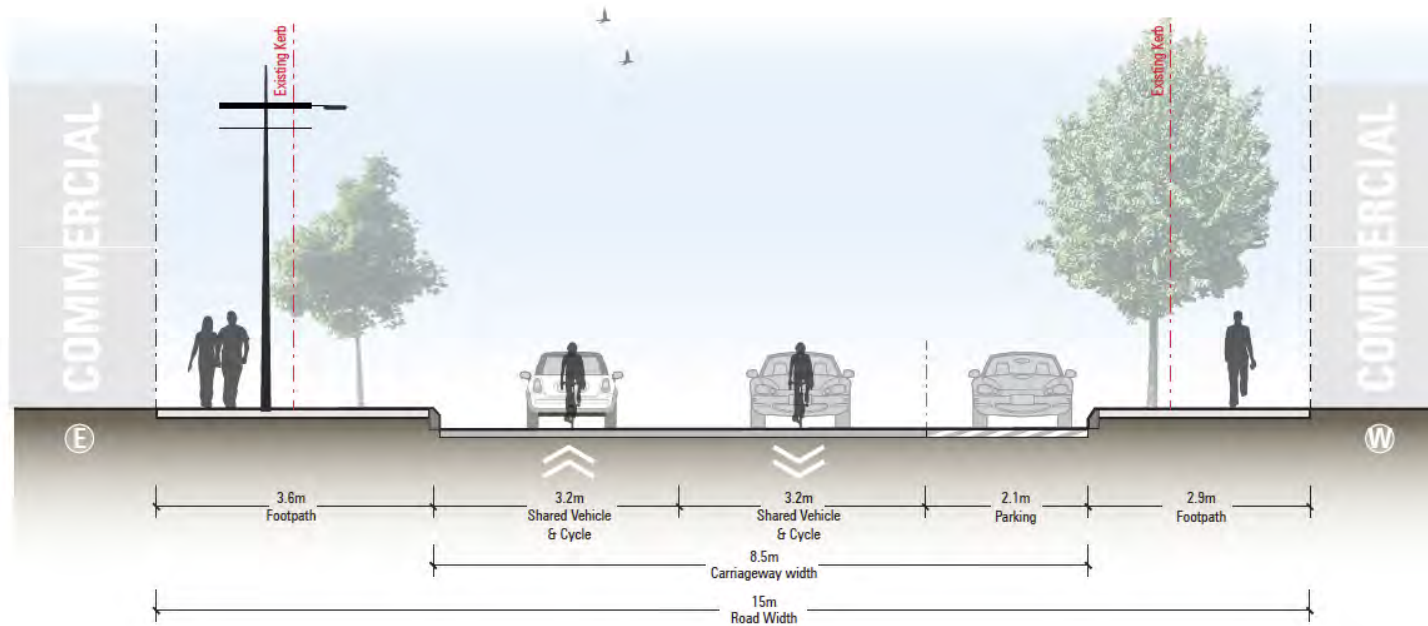
Design Features

- Cremorne Street closed to through traffic
- Cremorne Street southbound access onto Kelso Street east which is converted to one-way eastbound
- Cremorne Street northbound access onto Kelso Street west which is converted to one-way westbound.
- All cycle movements are provided for
- Pedestrian crossings on all links
- Opportunities for planting, seating and pause points on extended foot path space.

Outcome

A safer walking and cycling environment, with retention of precinct access though better utilisation of the local movement network while discouraging rat-running traffic.

**SECTION C1 :
CREMORNE STREET
1 to 50 @ A3**



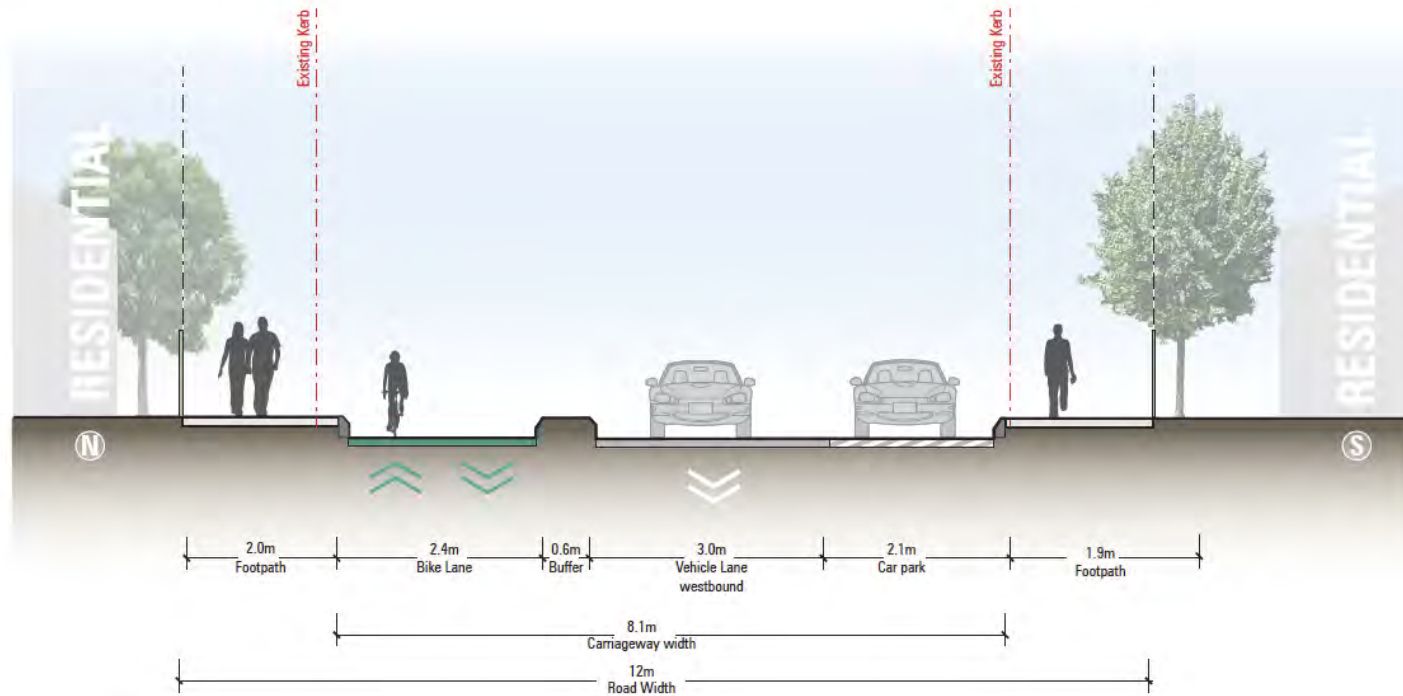
Design Features

- Expanded footpaths on both sides of the street to provide more pedestrian space and capacity and amenity features such as planting and seating.
- A removal of car parking on one side of the street
- Shared cycle and traffic lanes providing for local movements

Outcome

A redistribution of space from existing 24% ped, 33% car parking and 43% movement to 41% ped, 17% car parking and 43% movement.

**SECTION K1 :
KELSO STREET WEST
1 to 50 @ A3**



Design Features

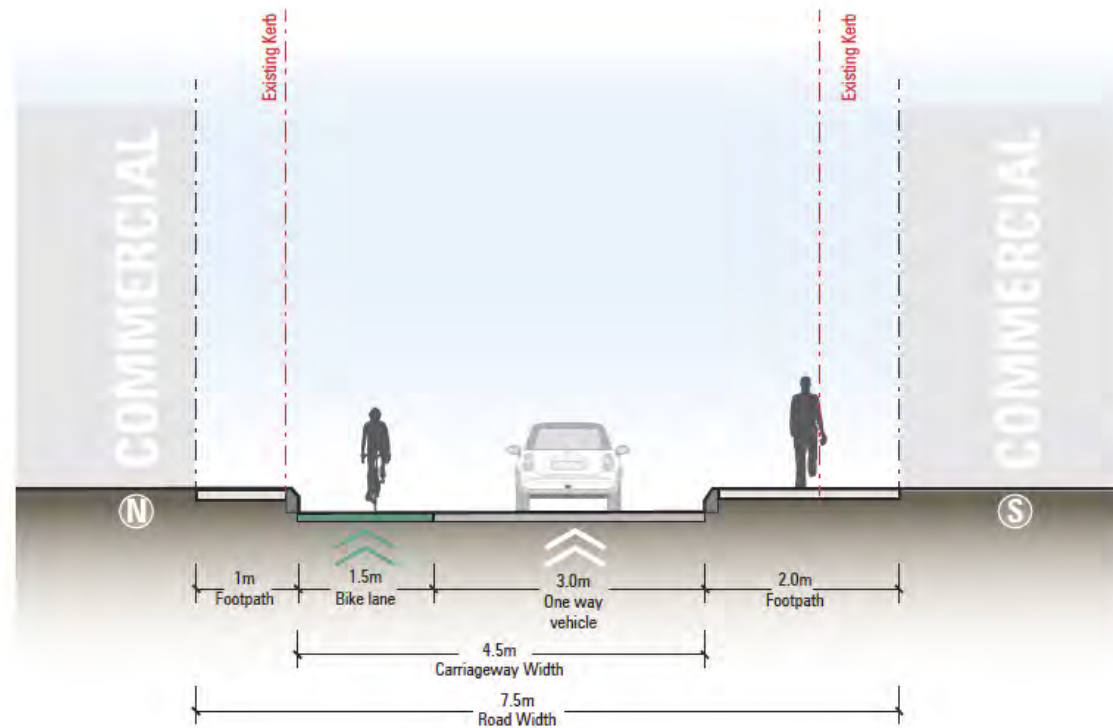
Treatment from Cremorne Street west to Punt Road.

- Change to one-way traffic access westbound only
- Provision of a new 2-way protected bicycle lane providing for east-west bicycle movement connecting to the precinct gateway at a new signalised crossing of Punt Road.
- Widening of footpath on northern side
- Retention of on-street car parking on southern side

Outcome

A redistribution of space from existing 31% ped, 18% car parking and 51% movement to 32% ped, 25% bicycle movement, 18% car parking and 25% vehicle movement.

**SECTION K2 :
KELSO STREET EAST
1 to 50 @ A3**



Design Features

Treatment from Cremorne Street east.

- Widened footpath on south side of street for increased pedestrian capacity and safety
- New 1.5m on-street cycle lane providing eastbound cycle movement and access into precinct
- Change to one-way eastbound only traffic movement
- Removal of car parking on south side of street, affecting approximately 6 spaces.

Outcome

A redistribution of space from existing 31% ped, 26% car parking and 43% movement to 40% ped, 20% bicycle movement and 40% vehicle movement.

Figure 5 – Hotspot 3 concept design: Cremonne Street - Swan Street intersection



Reason for intervention

Key gateway and link to public transport with the highest pedestrian volumes in the precinct. Requires safety improvement for all sustainable transport users.

Pedestrian counts for peak hour AM and PM:

- N-S on Cremonne Street– 1448
- E-W across Cremonne Street– 1467
- N-S across Swan Street– 2214

A total of 5,149 pedestrian movements in 2 hours across AM/PM peak.

Traffic movements N-S on Cremonne Street for same 2hr AM/PM peak = 713 and for average weekday (24hr) – 5289.

Objectives

Improved pedestrian access, safety and capacity to address a key movement barrier whilst providing for regional vehicle and Tram movements. Creation of a northern gateway for Cremonne linking to Richmond Station and 246 bus services (Punt Rd).

Design Features

- Pedestrian crossing points on all legs of the intersection and dedicated pedestrian crossing phase to enable scramble/all directions crossing.
- Kerb build-outs and footpath extensions into currently vacant Government-owned sites to increase pedestrian capacity and open space.
- Car parking removal to allow for left and right-out traffic movement and retain one southbound lane into Cremonne Street.

Outcome

Rebalancing of movement priority towards sustainable transport, increased safety, amenity and precinct access.

Figure 6 – Hotspot 4 concept design: Balmain Street west of underpass



Reason for intervention

High pedestrian activity in the unofficial 'centre' of Cremorne.
 Already subject to a range of place interventions.
 Pedestrian counts for peak hour AM and PM:

- E-W through underpass - 685
- N-S across Balmain Street – 474

Total 1,059 pedestrian movements in 2 hours.

Traffic volume on Balmain Street for same 2hr AM/PM peak = 758. Weekday 24hr average = 3826.
 Up to 30% of peak hour movements are through traffic.

Objective

Reprioritise space toward improved place function and strengthen as internal gateway while providing increased pedestrian safety and access both to/from and within.

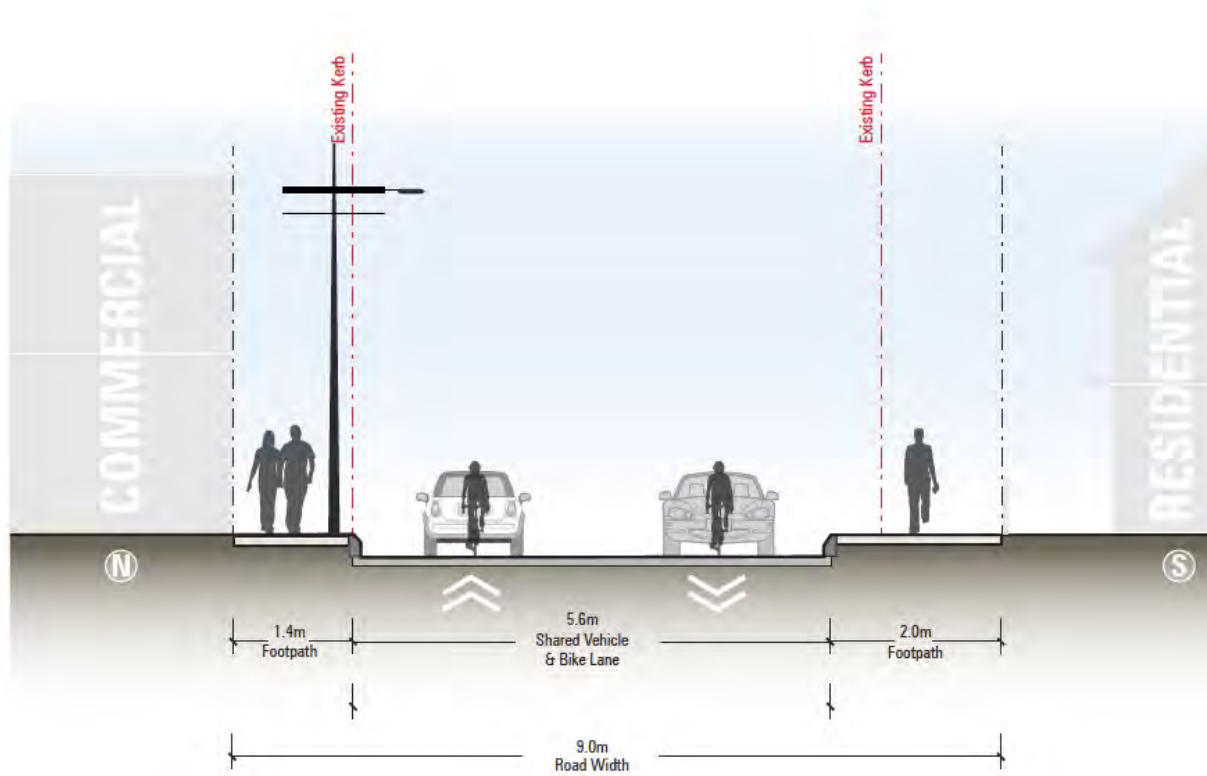
Design Features

- Widened pedestrian footpaths under rail bridge
- Formalised pedestrian crossings of all roadways
- Further expand raised table and increased planting and seating

Outcome

Higher place priority and function and building towards a centre or heart of Cremorne.

**SECTION B1 :
BALMAIN STREET WEST
1 to 50 @ A3**



Design Features

Treatment between Gwynne Street and Cremorne Street.

- Increased footpath space on both north and south sides of Balmain St
- Retain 2-way traffic access as key movement corridor.
- Implement 30kph design speed and speed limit
- Bicycle shared with traffic via sharrow markings
- Removal of on-street car parking

Figure 7 – Hotspot 5 concept design: Balmain Street- Church Street- Cotter Street intersection



Reason for intervention

Important gateway within and to/from precinct to regional public transport, cycling and traffic connectors as well as Church Street services
 Site of high pedestrian activity - counts indicate peak hour AM/PM movements:

- N-S on Church Street– 905
- E-W crossing Church Street- 255
- E-W on Balmain Street– 317
- E-W on Cotter Street– 132

A total of 1,489 pedestrian movements in 2 hours in AM/PM peak.

Cotter Street important link to regional cycling network to the east (the main Yarra Trail and Gardiners Creek Trail).

Objectives

Create an improved internal and eastern gateway and a safer pedestrian environment. Rebalance the space towards sustainable transport priority.

Improve links to regional public transport and cycling connections while retaining important through movement functions.

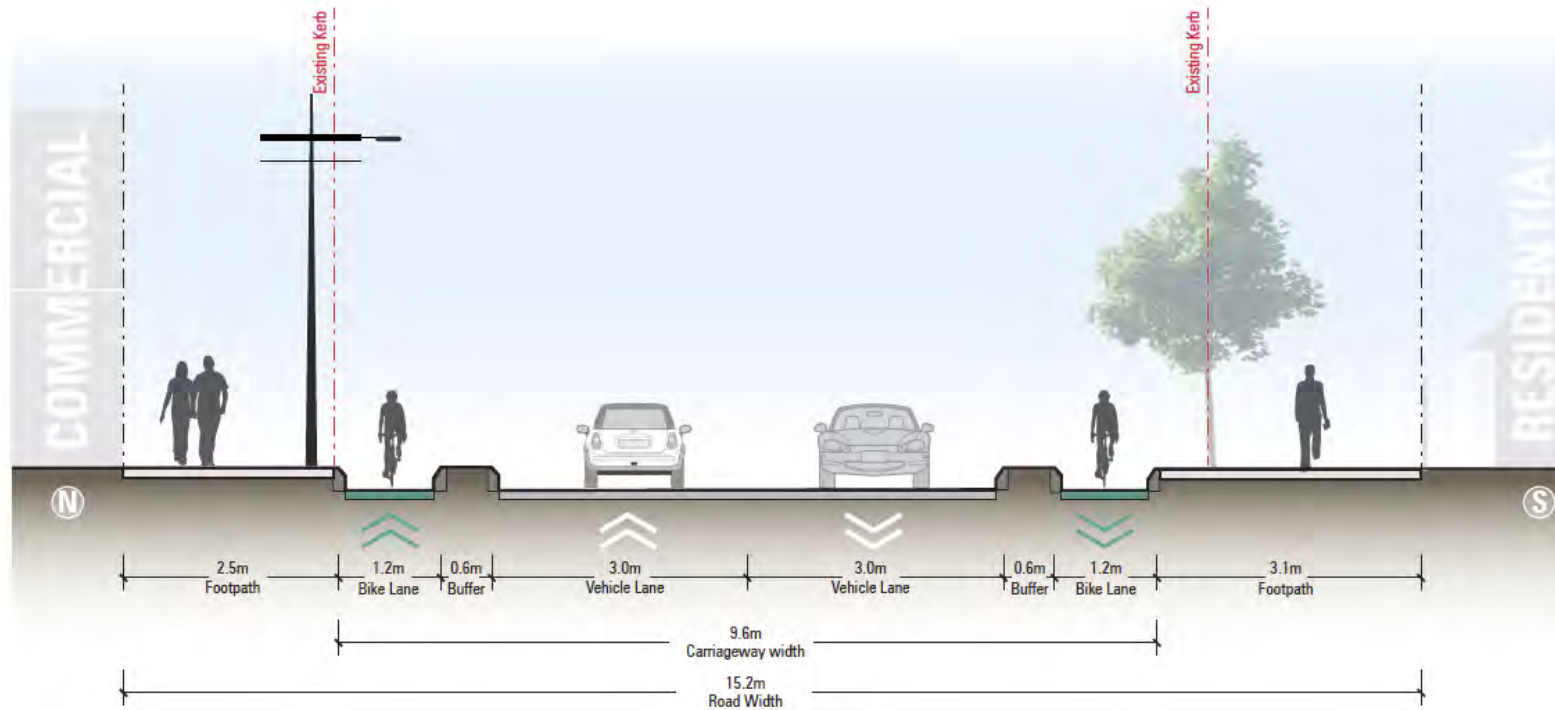
Design Features

- Balmain Street separated cycle infrastructure, widened footpaths and removal of one side of on-street parking.
- Church Street on-street cycle lanes with buffer widened footpaths and removal of one side on-street parking.
- Cotter Street on-street cycle facilities and one-way traffic westbound allowing out only onto Church Street.
- Integrated accessible tram stop.

Outcome

Creation of a high-quality internal gateway while allowing for regional through movements.

**SECTION B2 :
 BALMAIN STREET EAST
 1 to 50 @ A3**



Design Features

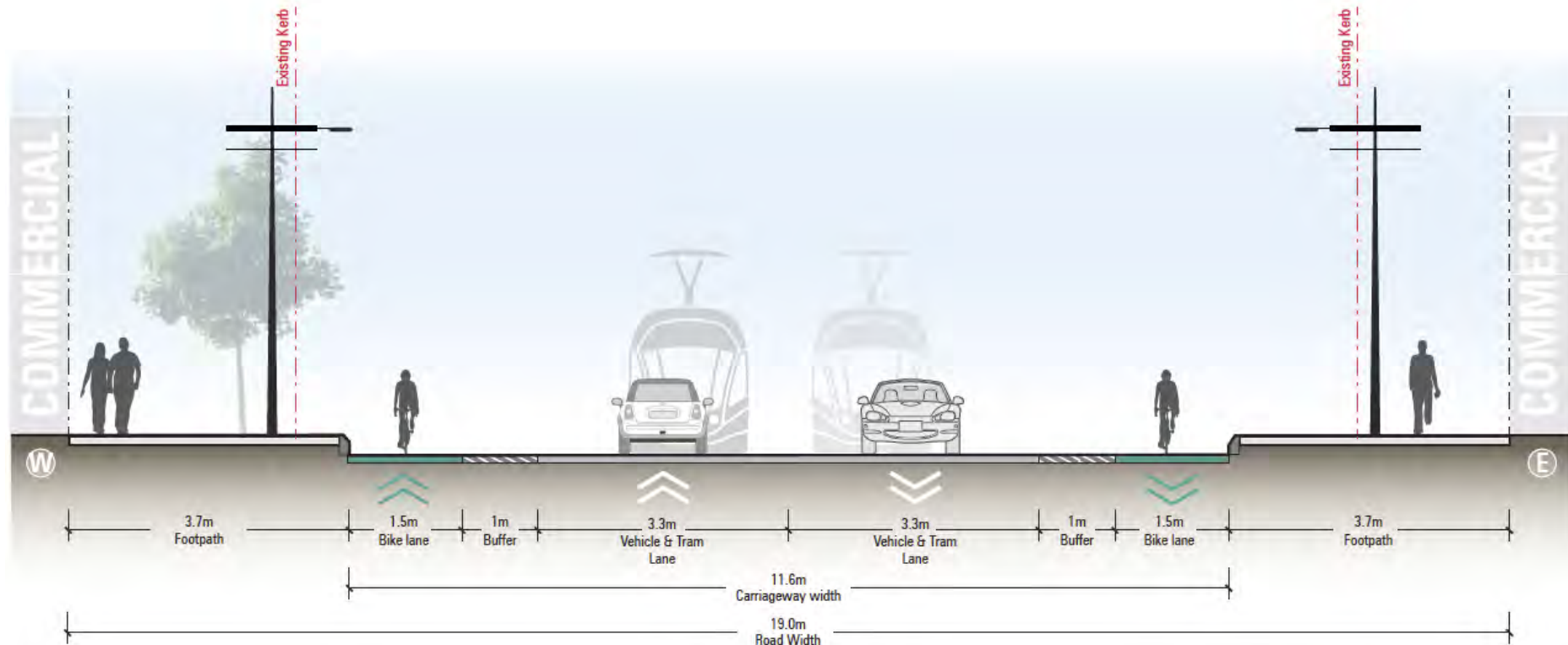
- Footpath widening on south side providing increased pedestrian safety and capacity
- Protected 1.2 m bicycle lanes with 0.6m kerb buffer to traffic to provide for east and west bicycle movements

- Two 3.0m traffic lanes for east and west vehicle movements
- Removal of on-street car parking

Outcome

A redistribution of space from existing 33% ped, 28% car parking and 39% movement to 37% ped, 24% bicycle movement and 39% vehicle movement.

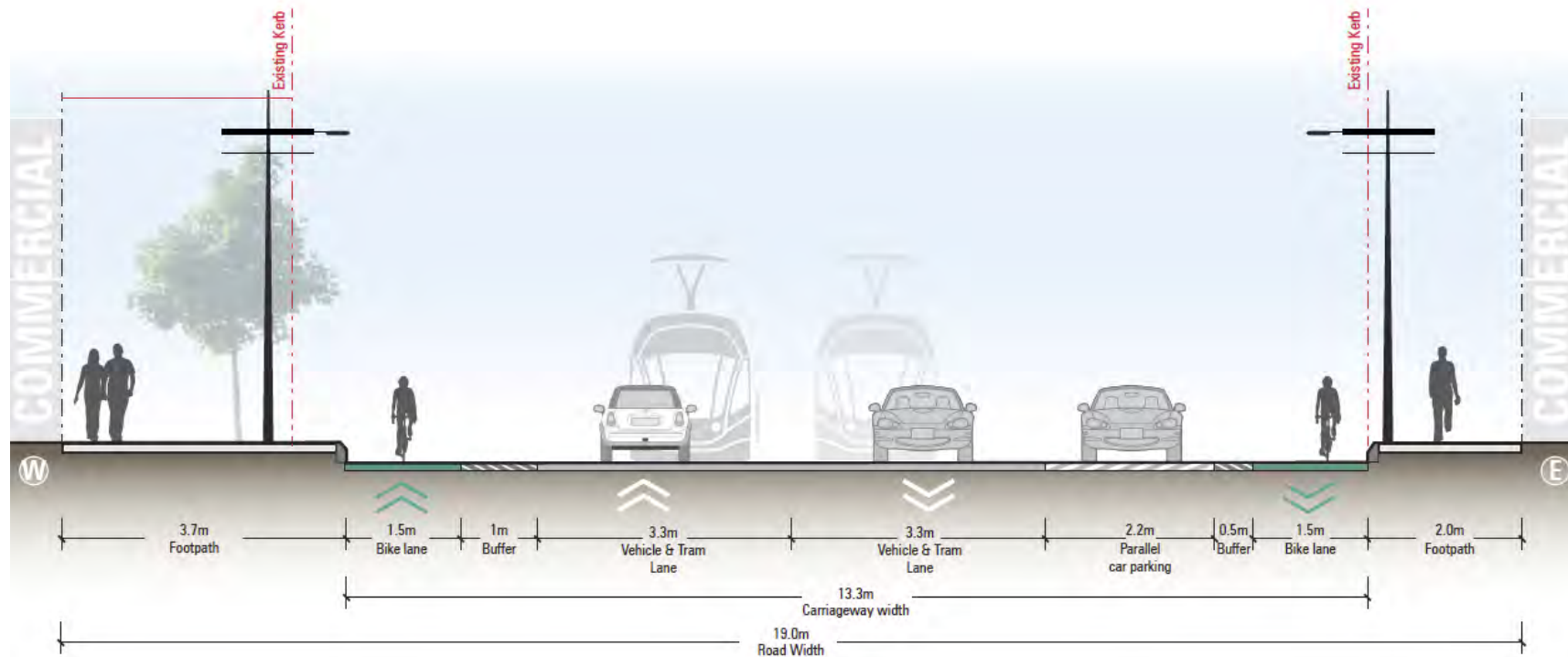
SECTION B3 : CHURCH ST AT BALMAIN ST INTERSECTION 1 to 50 @ A3



Design Features

- Footpath widening to 3.7m on both sides providing increased pedestrian safety and capacity at key public transport node
- On street 1.5 m bicycle lanes 1m buffer to traffic to provide for improved cycle access and safety on key N-S corridor
- Removal of on-street parking both sides at intersection to provide space for kerb extensions and cycle lanes and address key safety risk (dooring) for cyclists
- Two 3.3m traffic lanes for shared tram and vehicle movements

**SECTION B4 :
 CHURCH STREET MID-BLOCK
 1 to 50 @ A3**



Design Features

- Footpath widening on west side providing increased pedestrian safety and capacity and increased capacity for on-street dining
- On street 1.5 m bicycle northbound with 1m buffer to traffic and 1.2m Copenhagen lane southbound with 0.5m buffer to parked cars to provide for improved cycle access and safety on key N-S corridor

- Removal of on-street parking one side to provide space for cycle lanes and address key safety risk (dooring) for cyclists
- Two 3.3m traffic lanes for shared tram and vehicle movements

Outcome

Increased space, safety and priority for pedestrians and cyclists while retaining important 2-way tram and traffic movement for regional connectivity function.

4.3.2. Alternate Network Layout - Option B

As noted earlier, the Access Network layout Option A is dependent upon the establishment of signalised intersection at Kelso Street and Punt Road. It is acknowledged that reliance on this major upgrade, which is out of the direct control of Council, may weaken the Strategy and limit Council options to plan and deliver upgrades in the required manner.

An alternative Option B which retains the current layout of the intersection has also been included, presented as Figure 7 with accompanying updated cross sections for Kelso Street and Balmain Street.

4.3.2.1. Design Features

The alternative network layout Option B incorporates the following features:

- 30kph speed limits on all streets to improve safety, particularly in areas where space is shared between road users.
- Increased footpath space and pedestrian safety improvements in areas of highest demand connecting key origins and destinations based on pedestrian survey data.
- Improved cycle connectivity and safety to/from and within precinct through upgraded cycling infrastructure on Balmain Street, Church Street and Cotter Street, along with measures to slow traffic and provide more priority for cyclists on other components of network.
- Removal of some on-street car parking in areas of highest movement priority, based on traffic and pedestrian data.

- Increased movement role for Stephenson Street – recognising this as a key link connecting access points through rail barriers.
- Cremorne Street closure to northbound through traffic while retaining property access for servicing.
- Improved pedestrian access to Public Transport services including Church Street and Swan Street tram stops, Richmond and East Richmond Rail stations
- Opportunities to improve place function of public spaces, to incorporate seating, pause points, wayfinding and shelter.
- Focus on the key movement network and high change areas to protect amenity for the existing residential community.

4.3.2.2. Key differences from Option A

i. Pedestrian Access

Option B removes the signalised pedestrian crossing of Punt Road and therefore does not address this major barrier to safe pedestrian movement to the west to/from the Precinct. This also removes the gateway for the precinct to the west and instead retains Gough Street as the pedestrian pathway to the Yarra River, and Swan Street as the pathway to the CBD and open space.

ii. Bicycle Access

As above, Option B removes any bicycle facility on Kelso Street west of Cremorne street and the signalised bicycle crossing of Punt Road. This Option therefore does not address this major barrier to safe bicycle movement to the west to/from the Precinct. Gough Street and Punt Road

are retained as the western bicycle link to regional trails, open space, the CBD and destinations beyond.

Option B incorporates a separated two-way east-west cycle facility on Balmain Street between Gwynne Street and Cremorne Street. This is enabled through a change to one-way westbound traffic movement only on this section of Balmain Street, which is not as desirable under the Option A traffic network plan.

This facility provides enhanced cyclist safety and access through the precinct via Balmain Street and links with similar protected cycle lanes to the east of the rail underpass on Balmain Street. However, this facility only improves conditions for bicycle access within this part of the precinct, as space restrictions and the retention of two-way traffic movement on Gough Street do not allow the treatment to be extended. Cycle facilities and connections to/from the west via Punt Road remain poor and dangerous for cyclists.

iii. Vehicle Access

As addressed above, the two key changes for vehicle access under Option B are:

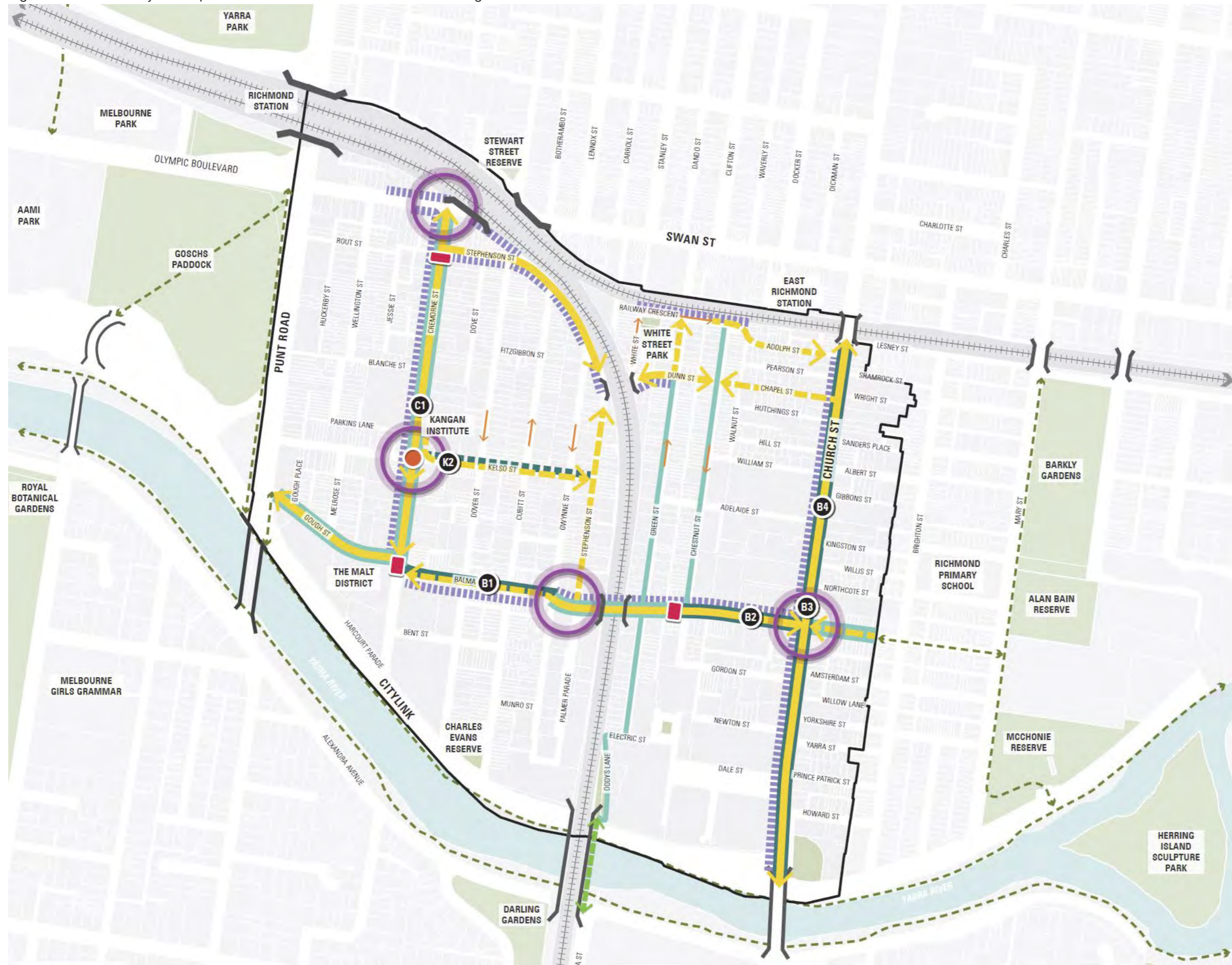
- The retention of Kelso Street west of Cremorne Street as existing with two-way traffic movement and left-in/left-out access to/from Punt Road
- Implement one-way only westbound vehicle movement on Balmain Street between Gwynne Street and Cremorne Street. This change is designed to provide space for a two-way protected

cycle facility while still allowing precinct access and widened footpaths to improve pedestrian safety and capacity.

The change to one-way access for Balmain Street would prevent through traffic access westbound from Punt Road along Balmain Street and help improve safety for all road users in this area. It is acknowledged that residents and business owners in the area south of Balmain Street that currently utilise this street for eastbound access would be inconvenienced. However, alternate vehicle pathways and a local access and servicing network still exists via Bent Street, Dover Street, Gwynne Street, Munro Street and Kelso Street. It is not anticipated these streets would experience a significant amount of additional traffic and there are no proposals to change operations of these streets.

Furthermore, the reprioritisation of road space on Balmain Street would be likely to enable and encourage a more even distribution of local traffic on the access network.

Figure 8 - Network Layout - Option B – without Punt Road/Kelso Street signalised intersection



hansen

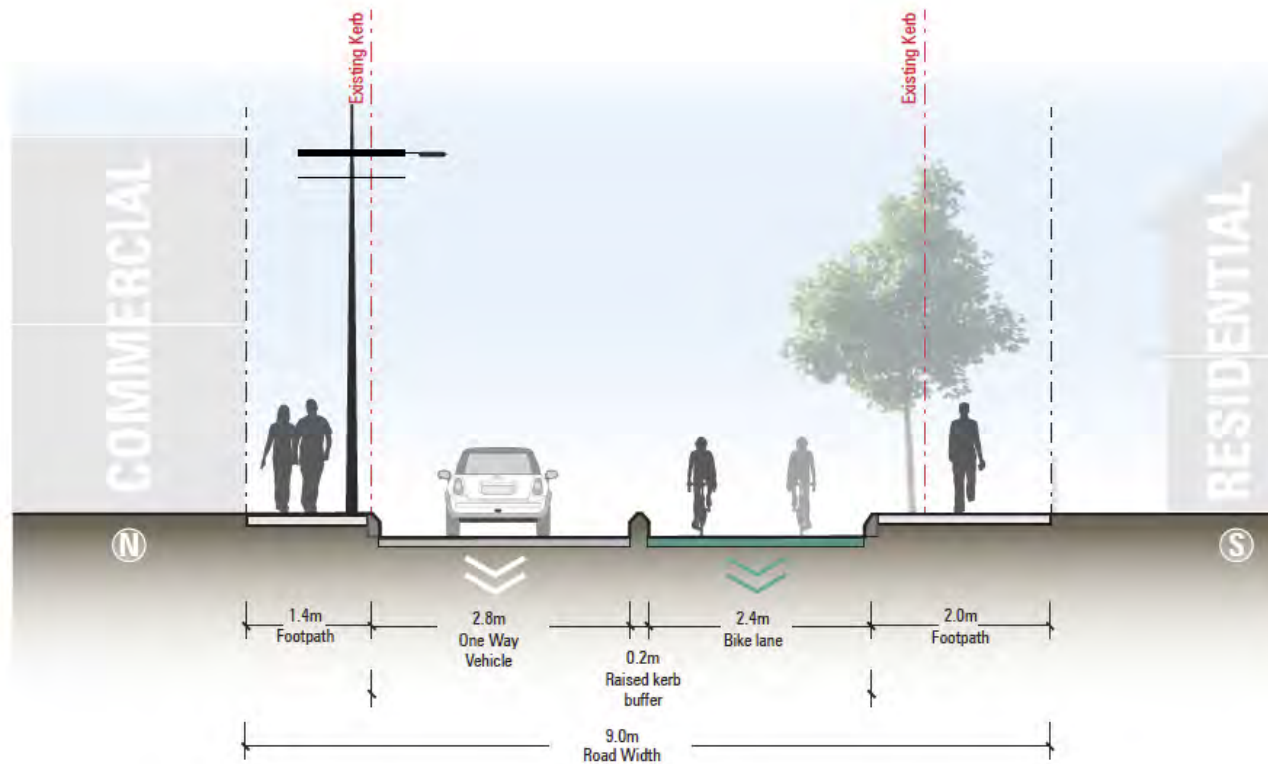
CREMORNE STREETS & MOVEMENT STRATEGY

KEY MOVEMENT NETWORK Option B

Legend

- Study Area
- Hotspot (see site concepts)
- Primary Access Network (one-way)
- Primary Access Network (2-way)
- 1-way street - existing
- 1-way street - proposed
- Shared cycle/traffic - sharrow
- Separated bike lanes
- Separated 1-way bike lane
- Regional Cycle Connections
- Cycle connection over bridge
- Footpath widening
- No through traffic north bound
- Shared space and pedestrian priority

**SECTION B1 (OPTION 2):
BALMAIN STREET WEST
1 to 50 @ A3**



Design Features

Treatment between Gwynne Street and Cremorne Street.

- Change to one-way traffic access westbound only
- Provision of a new 2-way protected bicycle lane providing for east-west bicycle movement connecting to Gough Street and the regional network via Punt Road
- Widening of footpath on southern side
- Removal of on-street car parking

Outcome

A redistribution of space from existing 31% ped, 23% car parking and 46% movement to 38% ped, 29% bicycle movement and 31% vehicle movement.

5. Strategic Policy Outcomes

The Network Layout Options presented above are designed to achieve key State and Local Government policy direction and objectives in relation to integrated transport and land use planning, including:

- i. 'Transport choice' is central to providing equitable access to employment and services. Transport choice means that there are a number of viable and attractive options, such as walking, cycling, public transport or private vehicles. Transport choice is also intrinsically linked to urban form. Providing activity centres with a range of employment, retail, educational and community services in close proximity to where people live means that people will have more transport choices.
- ii. Investment decisions in the transport network should be informed by a road user hierarchy and a Movement and Place based assessment approach.
- iii. Promoting sustainable transport (walking, cycling and public transport) is considered best practice on a State-wide basis and can help recognise the following benefits:
 - Healthy, active communities – there is a strong link between active transport and health.
 - Socially connected, liveable communities – places where people walk, cycle and use public transport are likely to perform better on a range of social indicators.
 - Transport efficiency – increased use of sustainable transport has environmental and economic benefits through reduced greenhouse emissions and reduced space required for vehicle movement and storage.
- iv. Planning for new development must consider providing for and promoting sustainable and active transport modes in accordance with the road user hierarchy. This includes a requirement for major developments to integrate with the transport network, including public transport and cycling.
- v. The City of Yarra policy guidance prioritises sustainable transport modes in meeting future transport demands within the municipality and has a number of specific policies and strategies to promote increased walking, cycling and public transport modeshare.
- vi. Private vehicle travel is not considered a priority or mass transit mode in this location, and future planning policy must recognise the limitations of car access into Cremorne.
 - Access for all members of the community – a large number of people in the community do not or cannot drive, and the provision of attractive and viable alternative means of transport is a key factor in whether a community is affected by transport disadvantage.
 - Safety – Increased sustainable and active transport improves safety and perceptions of safety.

6. Implementation

The successful realisation of the Streets and Movement Strategy rests on delivery of the five identified precinct hotspots – which represent the ‘big-ticket’ items and are the key enablers of the Network Layout options. These components represent the sites of highest priority, activity and conflict within the Cremorne network.

Three of the five hotspots are located on the State declared road network, and another (Kelso Street – Cremorne Street intersection) has significant implications on the functioning of regional access routes. Although the Strategy aims to focus on what Council can achieve and initiate, moving forward with the recommendations of the Streets and Movement Strategy is dependent upon Council commitment to further investigation, design development and stakeholder engagement to advocate to and pursue a partnership with State Government for the delivery of the identified key hotspots.

Given the current project delivery environment, it will be necessary for Council to identify and take initiative on forming the appropriate governance structures and committing to the level of resourcing required to effectively deliver and monitor development of these sites.

Of primary influence in determining future Network Layout will be the Punt Road – Kelso Street signalisation. It has been acknowledged that delivery of this component will have a range of significant benefits and achieve a range of policy objectives. However, delay, or non-delivery, of this component will require an alternate approach as set out in Network Layout Option B.

The street network cross-sections and other complimentary measures on the local street network around the hotspots can be planned and designed by Council, in partnership with the local community, but will be implemented as a second stage and rely on the delivery of the hotspot initiatives.

Prioritisation of hotspots will be influenced by a number of factors including; project work already underway; the ability to deliver the most significant (and measurable) sustainable transport outcomes, safety and amenity impacts; feasibility of implementation; cost, and the ability to deliver the best possible community benefits within Council’s resources.

In order to move forward and prepare for the implementation of the Strategy, it is recommended that Council establish and maintain regular dialogue and a meeting schedule with external stakeholders who are important partners in the delivery of transport actions. Such groups would include representatives of Department of Transport, Victorian Planning Authority, public transport operators, major public and private landowners, and local interest groups.

Appendices and Supporting Information

Appendix 1 – Street Network Classification Table

Category	Role	Description and Characteristics	Treatment types – what does it look like?	Proposed example locations
Movement	Prioritise and enable the safe and efficient movement of people and goods into and out of Cremorne	<ul style="list-style-type: none"> Experience average traffic volumes of over 1000vpd Provide links between gateways and key origins/destinations/places within Cremorne Support areas of highest pedestrian demand leading to public transport services Experience high levels of congestion, conflict and competing demands for space. 	<ul style="list-style-type: none"> removal of on-street car parking one-way vehicle access on-street space for essential vehicle access via disabled bays, car share spaces, or short-term parking for drop-off and deliveries. limit through traffic movement, in particular between regional connectors via Cremorne and Balmain Streets. provide street level setbacks shared servicing areas and removal of street clutter, undergrounding of power to remove infrastructure obstructions from the street. 	<ul style="list-style-type: none"> Cremorne Street Balmain Street Kelso Street Gough Street Stephenson Street Cotter Street Dunn Street Chapel Street
Gateway	Identify, prioritise and improve key sites of access to and within Cremorne	<ul style="list-style-type: none"> provides for highest movement volumes, with significant peak demand profiles. act as a transition point to major regional connectors – public transport stations and stops, Church St, Swan St, Punt Road. located at intersections or pathways through movement barriers, and experience high levels of conflict within a restricted space 	<ul style="list-style-type: none"> intersections to more accurately accommodate the actual movement demand by each mode. dedicated full movement ped crossing phases with crossing from both sides greater tram priority and separation new site development required to provide built form setbacks and a contribution to public space. one-way access streets turn bans and restrictions through LATM to provide safer access and greater ped priority 	<ul style="list-style-type: none"> Swan St/Cremorne St Church St/Balmain St Church St/East Richmond Cremorne St/Kelso St Punt Road/Kelso St Punt Road/Gough St Balmain Street underpass Dunn Street underpass
Local	Prioritise and protect local access and recognise place role	<ul style="list-style-type: none"> local residential and mixed-use streets away from retail frontages Include the Neighbourhood Residential Zone and Heritage Overlay Areas Generally provide a road reserve of around 12 metres wide that incorporates on-street parking with narrow footpaths on both sides and in some cases including tree planting and narrow nature strips. Include the laneway networks – often providing an alternate rear access 	<ul style="list-style-type: none"> Application of Streets for People principles to areas of lower change to encourage local streets that provide more than just an access or car-storage role. Incorporate 8-80 design principles that make streets accessible for all. Retaining existing cross sections and on-street parking with improved/upgraded entry point treatments to slow traffic, discourage through movement and create an awareness of a changed priority environment at intersections with the movement network. Providing for safer cycle access through addressing other road user behaviour. 	<ul style="list-style-type: none"> NRZ and Heritage Overlay areas Huckerby Street – Wellington Street – Rout Street – Blanche Street – Gough Street – Melrose Street Green Street – Chestnut Street – Dunn Street – White Street – Railway Crescent Cubitt Street – Gwynne Street – Bent Street – Munro Street
Walking and Cycling	Provide a network of safe access routes for all pedestrians and cyclists to/from and through Cremorne.	<ul style="list-style-type: none"> Provides a range of pathways for safe, direct pedestrian and cycle access, including routes of lower traffic volumes and speeds to act as alternates to movement priority streets. Recognises pathways that provide regional connectivity and cycle catchment access to/from Cremorne Does not prioritise cyclists without an origin or destination in the precinct (through traffic) but focuses on access within Cremorne and providing route choice and permeability for walking and cycling. Forms the basis of a recreational walking network for employees and residents for use at any time of the day or night. 	<ul style="list-style-type: none"> Sufficient footpath width to avoid overcrowding Safe street crossings and avoiding conflict with other travel modes Direct paths located on pedestrian desire lines Pedestrian paths free of obstacles (such as advertising signage, street furniture, rubbish bins) Pathways which meet DDA (1992) standards incorporating 8-80 design principles Measures to address perceptions of safety, including clear sightlines, lighting, active surveillance and active frontages Incorporating wayfinding and placemaking initiatives and areas of interest on the network. developments to provide public realm benefits along building edge (e.g. setback, integrated seating, landscaping), to take pressure off the streets to perform this role. Consolidation of street furniture and poles to allow for more capacity on existing footpaths and strategic conversion of carparking/road space at key pinch points and nodes. 	<p>N/S and E/W linkages including the Capital City Trail and Main Yarra Trail, the proposed Strategic Cycle Corridor network and open space areas (such as Gosch's Paddock) to the east and west</p> <ul style="list-style-type: none"> Church Street Dover Street-Cubitt Street-Gwynne Street Gough St Kelso St Balmain St Green Street-Chestnut Street-Electric Street-Oddys Lane Expansion of shared spaces and initiatives such as Walnut St
People Place	Areas where streets can be utilised for public open space and play a higher place role	<ul style="list-style-type: none"> located at key pedestrian movement junctions experiencing a high pedestrian demand across all times of the day/evening may be considered as meeting points, areas of higher value interface with private development, that have higher perception of safety through encouraging activity and DDA compliant access for all often overlap with internal gateways – have a role to play in creating sense of place and entry points adjacent to land uses that attract high pedestrian movement at all times of day and into the evening – such as public transport facilities, entertainment areas 	<ul style="list-style-type: none"> Improve streetscapes and public space by providing street seating, shade, meeting points, lighting and tree planting around high change areas and redevelopment sites. Promote and encourage ground level links through new development sites and opportunities for seamless integration of the public and private realms Design spaces to be inclusive, accessible and provide a range of experiences and attractors for all members of the community. These sites may function in different ways across the day/evening to provide a high level of public amenity while still allowing access for servicing. 	<ul style="list-style-type: none"> Church St/Balmain St Church St/ Dale St Balmain/Gwynne to Stephenson East Richmond Station Cremorne St/Gough St/Balmain St Gwynne St/Stephenson St Stephenson St/Carpark



Cremorne Streets and Movement Strategy

Issues and Opportunities Analysis

Martyn Group and Hansen Partnership

Contents

1. Study Context.....	1
2. Existing Studies and Policy Guidance.....	3
3. Issues and Opportunities.....	6
3.1. Integrated Transport and Land Use Planning	6
3.2. Access and Movement.....	6
3.3. Walking and Cycling.....	13
3.4. Public transport.....	15
3.5. Parking.....	17
3.6. Streets and Public Realm	19
4. Summary.....	21
5. Next Steps.....	23

1. Study Context

What is the Cremorne Streets and Movement Strategy?

This paper summarises issues and opportunities with the aim of informing and guiding a joint State Government and Council strategy of integrated actions that will ensure the Cremorne Precinct continues to be an employment location of choice into the future.

Following a snapshot of the Cremorne Precinct, the paper outlines the issues and opportunities for Cremorne covering Access and Movement.

What is the Cremorne Precinct?

The Cremorne Precinct is principally an employment precinct with pockets of residential development. After being touted for urban renewal and redevelopment for major housing development less than 5 years ago, it is now of location of choice for highly creative and innovative businesses and edgy start-ups, particularly in tech, finance and creative sectors.

The Cremorne Precinct is generally considered to be bounded by Swan Street, Brighton Street, Punt Road and the Yarra River.

It comprises land zoned for commercial uses and occupied predominantly by a range of tech, finance and advanced manufacturing businesses. On the southern side of Swan Street and along Church Street the business mix is focussed on entertainment and retail with a strong furniture and homewares flavour along Church Street.

There are pockets of residential zoned land comprising largely heritage terraced housing immediately east of Punt Road, east of the train line and around Dover Street. In the south west and south east corners, adjoining the Yarra River, there are recently constructed and planned mixed use developments which are adding to the mix of employment, housing and entertainment offer in the precinct.

The precinct is close, though currently poorly connected, to major infrastructure and community assets that provide businesses and employees with ready access to a high-quality transport, retail and entertainment offer. To the north is Richmond train station, and an array of entertainment options and local services for employees in the Swan Street Activity Centre. To the west is the open space and the sporting precinct of Melbourne Park. To the south is the Yarra River and capital city trail with South Yarra Station, the Botanical Gardens and the entertainment and retail offering of Chapel Street beyond.

Within the precinct, there is a small but growing offer of cafes, bars and restaurants, and new businesses are bringing shared workspaces and communal spaces that are accessible to the broader business community.

The designation of Cremorne as an Enterprise Precinct acknowledges the areas emergence as Australia's premier destination for creative design, particularly in the tech and digital space. The Victorian State Government recognise that Cremorne is going through a profound period of

growth, reinforcing its industry specialisation and strategic potential, and supporting Melbourne’s economic development.

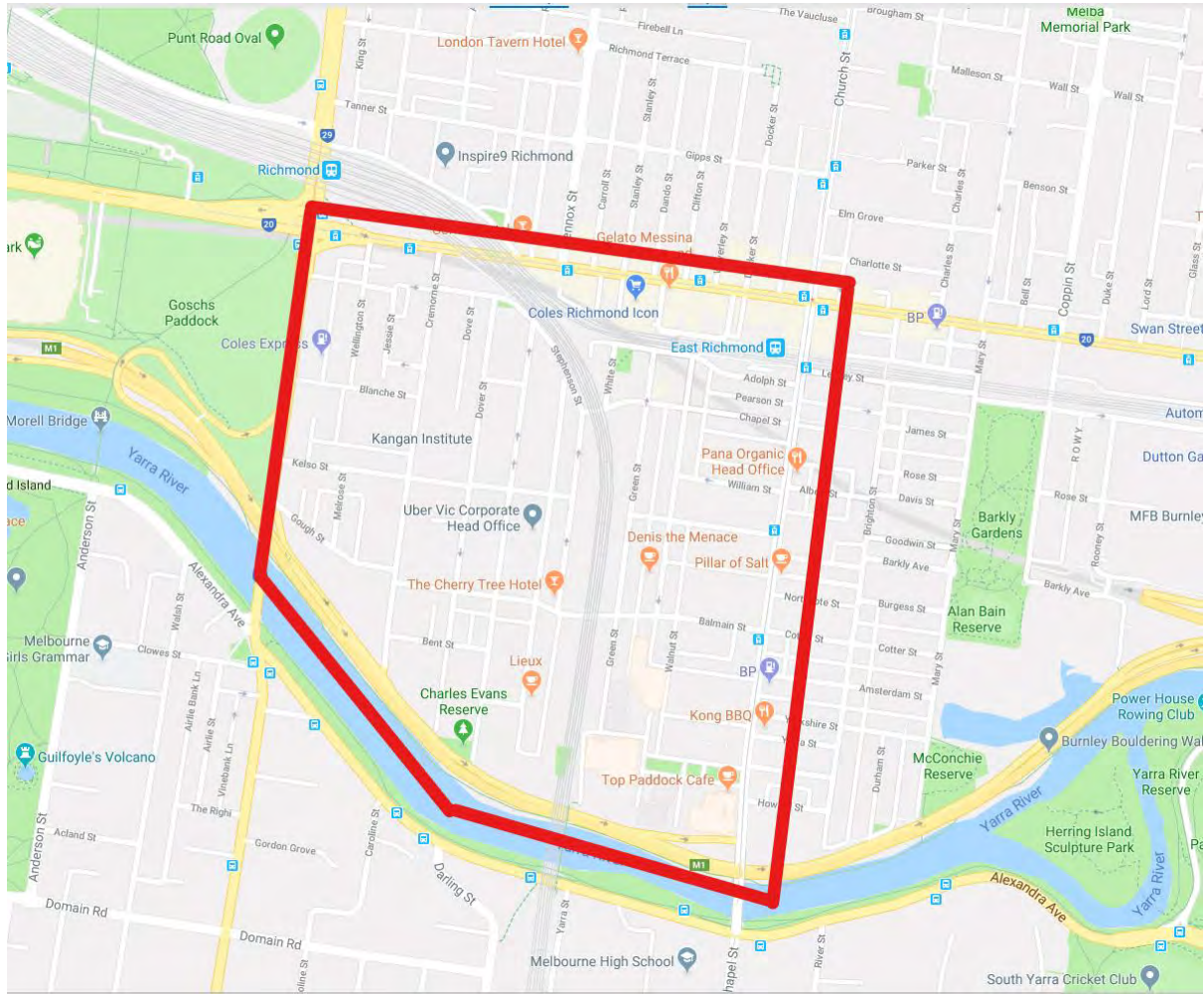


Figure 1 - Cremorne Precinct study area

2. Existing Studies and Policy Guidance

A range of investigations and planning documents have been prepared in recent years by Council and by others for differing purposes. These provide a sound and robust understanding of the issues and opportunities for the Cremorne Precinct. VCAT decisions and community consultation also provide vital insights to the issues and opportunities for the Cremorne Precinct.

Council Adopted Strategies

1. *Cremorne and Church Street Precinct Urban Design Framework, City of Yarra, 2007;*

This planning document adopted by Council was prepared to guide the future design and form of new buildings and public realm in the precinct.

2. *Spatial Economic and Employment Strategy, SGS Economics and Planning, 2018;*

This strategy outlines Council's strategic directions for delivering the employment projections for the City of Yarra over the next 15 years, focussing predominantly on future land and zoning requirements.

3. *Swan Street Structure Plan, David Lock Associates, 2014;*

This planning document provides a vision and a set of land use and built form directions for the Swan Street Activity Centre, the Cremorne Precinct and the Burnley Employment Precinct.

Council Commissioned Investigations

4. *Church Street Corridor Economic and Land Use Analysis, Urban Enterprise, 2015*

This investigation was commissioned by Council and examines the land use and business sector mix for a discreet pocket of Cremorne.

5. *Cremorne: Design Opportunities Workshop, Office of the Victorian Government Architect, 2015;*

This workshop summary draws together the conclusions from mini site investigations for three strategic sites in the Cremorne Precinct.

6. *Cremorne Integrated Transport Strategy, Martyn Group, 2015;*

This investigation commissioned by Council identifies the challenges and opportunities for access and movement in the precinct

7. *Office Demand Study, Urban Enterprise, 2017*

This investigation commissioned by Council identifies the scale of recent and projected demand for office floorspace in the municipality and the key drivers for the recent sharp increase in floorspace demand and supply.

8. *Spatial Economic and Employment Strategy workshop reports, Social Fabric, 2018;*

This workshop summary draws together the conclusions from consultation with businesses in Cremorne on the strategic directions in the

9. *Yarra Planning Scheme parking rates review – Traffix, June 2017*

The justification for office parking rates will need to recognise that the rates are “aspirational”, and primarily relate to Council’s policy of supporting mode-shift and use of sustainable travel modes over private car, as well as the policy to minimise traffic congestion associated with accessing offices and utilising the abundant sustainable modes of travel available in this inner city locality.

Parking Overlay(s) are likely to be applied to activity areas which have a higher public transport accessibility than other parts of the municipality (where default Clause 52.06 Column A rates will continue to apply) and are therefore well suited to accommodate lower parking rates.

The Traffix report concluded that a Parking Overlay (Schedule 2) would be appropriate for the Cremorne Precinct, and that such an Overlay could specify a reduced parking rate for office uses having regard to the locality and desire to reduce peak hour travel in particular and could revert to Column A rates for all other uses, noting that it is not a concentrated “Activity Centre” environment.

Other Sources

10. *GTA report for Streamlining Hoddle St project (MRPV)*

GTA Consultants were commissioned by Major Road Projects Victoria to determine the implications of the State’s *Streamlining Hoddle Street* project to the function of the internal road network in the study area. The report found the project will ultimately change the way motorists’ access and egress the precinct at certain location, and subsequently impact other modes of transport. The report addresses local issues for Cremorne traffic access and movement including:

- Access and egress to Wellington Street via Swan Street
- Intersection of Cremorne Street and Swan Street
- Congestion issues on Cremorne Street
- Dealing with non-local through trips (either originating within or outside the study area)
- Adequacy of walking and cycling infrastructure

For each issue, the cause and a range of potential mitigating measures were identified having regard to the existing conditions and road characteristics of the area.

11. VCAT decisions

There are several relevant VCAT decisions that provide insight into the issues and opportunities for the Cremorne Precinct. The most notable is the VCAT decision for the Maltings Development where access and movement, heritage, public realm, and built form were all considered.

12. Cremorne Remix Strategic Vision, MGS Architects, 2017;

This document was commissioned by a landowner in the precinct that identifies some strategic opportunities for government and private sector intervention and investment to support the continued success of the precinct.

3. Issues and Opportunities

Presented below is a summary of the key issues and opportunities identified from background documentation review, investigations and analysis.

3.1. Integrated Transport and Land Use Planning

The ongoing intensification of land use and transition from lower density residential to mixed use commercial, office and higher density apartment living has a very strong impact on movement demand and travel behaviour. This transition and growth in demand on the transport and street network has implications on the level of accessibility for existing residents and those visiting for work or leisure, as well as standards of living for the future Cremorne community.

There are several large sites within Cremorne that are likely to be developed in the future. These sites could bring about significant change within their immediate vicinity and within the Cremorne Precinct more broadly, including provision of public open space, shared parking facilities and potentially other community infrastructure.

Cremorne has attributes and qualities that are proving to be highly appealing to a range of businesses of varying sizes with over 100,000sqm of development recently approved or under assessment (Office Study, 2018). This demand is anticipated to continue. The SEES (2018) identifies that there is potential for approximately 300,000 sqm of additional floorspace in Cremorne to 2031.

The Kangan Institute have a presence in Cremorne but there are no other public sector institutions present or contributing to the economic performance or diversity of the precinct.

It is anticipated that congestion will increase as development in and around Cremorne intensifies and traffic volumes on local roads increases. Investigations into the cumulative traffic impacts of development in Cremorne have found that traffic queuing and delays are likely at key intersections.

For Cremorne to develop in a sustainable way and successfully provide a transport network and public realm quality that can meet future travel demands and preferences, a greater emphasis must be placed on sustainable modes. As land uses intensify, the management of the movement network, including allocation of road space, must respond to keep pace with growing demand.

3.2. Access and Movement

Cremorne is well served by a range of transport options, including three train stations, two tram routes, pedestrian and cycling links, car share facilities and an extensive road network. Access to public transport is considered 'very good', and a high proportion of residents and workers in the study area use sustainable modes to travel to work. However, compared to other parts of

Yarra, there is marginally less walking and cycling, and more car use in the Cremorne suburb¹. Specific components of the road network experience congestion at peak times, and on-street car parking is generally fully occupied.

The most common mode of transport to work for people living in Cremorne is by private vehicle, as a driver. However, it is noted that the proportion of residents driving to work is significantly lower than for both Metropolitan Melbourne and City of Yarra (both 60%).

Mode of Transport	Trips from Cremorne	%
Car, as driver	452	46%
Train	214	22%
Walked only	173	17%
Bicycle	62	6%
Tram	10	1%
Other	82	8%

Figure 2 - ABS Journey to Work 2016 data - trips from Cremorne

The table below shows the statistics for employees travelling to Cremorne for work. Journey to work trips do not account for all trips but the measure is recognised as a reliable source for estimating trips during times of AM and PM peak demand.

Travel to work	Trips to Cremorne	%
Car, as driver	5,248	50%
Train	2,644	25%
Walked only	599	6%
Bicycle	400	4%
Tram	333	3%
Other	1369	13%

Figure 3 - ABS Journey to Work data 2016 - trips to Cremorne

The data indicates that while driving is the most popular mode of transport, alternate modes of transport make a substantial proportion of the travel to work trips (50%, employees coming into Cremorne and 54% of residents of Cremorne).

¹ ABS Travel to Work data identifies 39% of residents drive and 16% walk of residents in Cremorne compared to 34% drive and 18% walk

Walking is a component of all public transport journeys, and when these trips are combined with those in Walked only, 40% of all resident and 34% of all employee journeys to work involve walking within Cremorne.

The high percentage of non-car-based travel means that improvements to public and active transport connections within the precinct would benefit a high proportion of workers and residents and could support a greater mode shift away from cars.

Journey to Work Analysis

The ABS provide Journey to Work destination data at an SA2 level. For Cremorne, it is included in the Richmond SA2 area which also incorporates the suburbs of Richmond and Burnley. While there may be differences in travel behaviour between the areas that encompass Richmond SA2 (Burnley is likely to be more car oriented and Cremorne less so), it provides a high-level view of commuting patterns to the area. The Richmond SA2 area is shown in black, with Cremorne highlighted within it.

Figure 4 shows the location of car commuters to the Richmond SA2 area. The largest concentrations are found within the adjoining municipalities and within the City of Yarra itself. Boroondara had the highest number of car commuters with almost 2,000 vehicle trips into Richmond SA2 every day. This was followed by the City of Yarra with 1,429 car commutes.

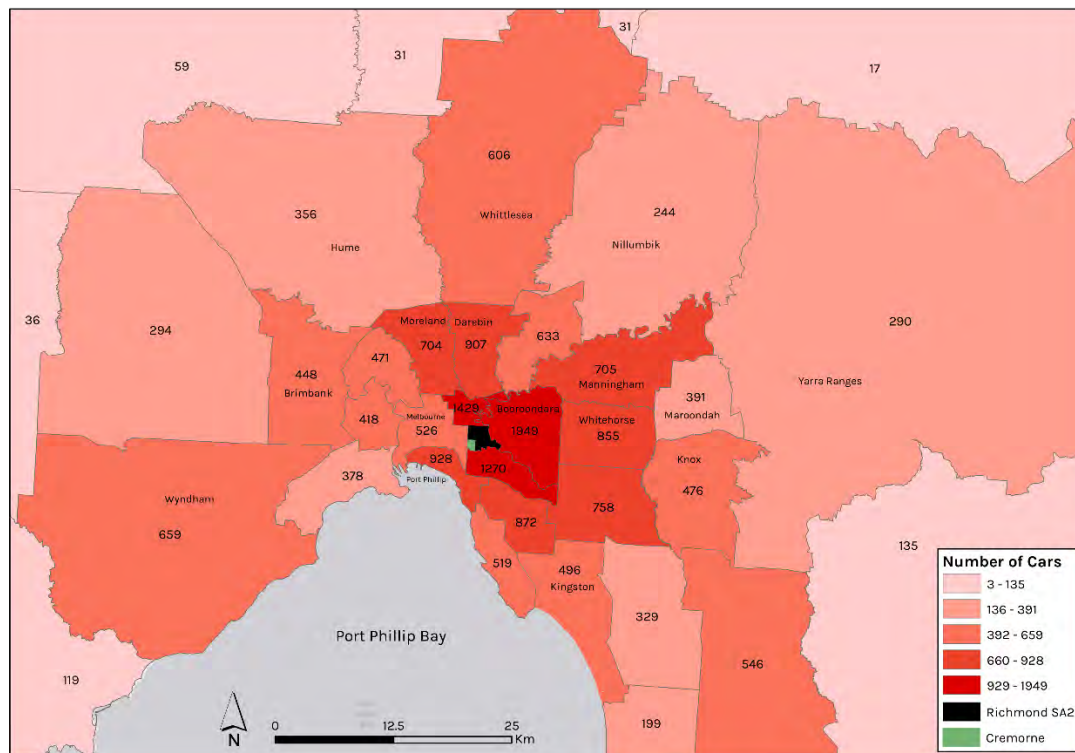


Figure 4 Richmond SA2 car commuters by LGA

Figure 5 shows the train commuting patterns for those who work in Richmond SA2. It shows that those who live along the Cranbourne, Pakenham, and Frankston corridors had high train commuting numbers, as does those coming from the City of Melbourne. Interestingly, Darebin

and Moreland had the first and second highest numbers of train commuters by LGA, despite not having direct train connections to Richmond SA2. Both municipalities require transfers at Flinders Street Station to reach the area.

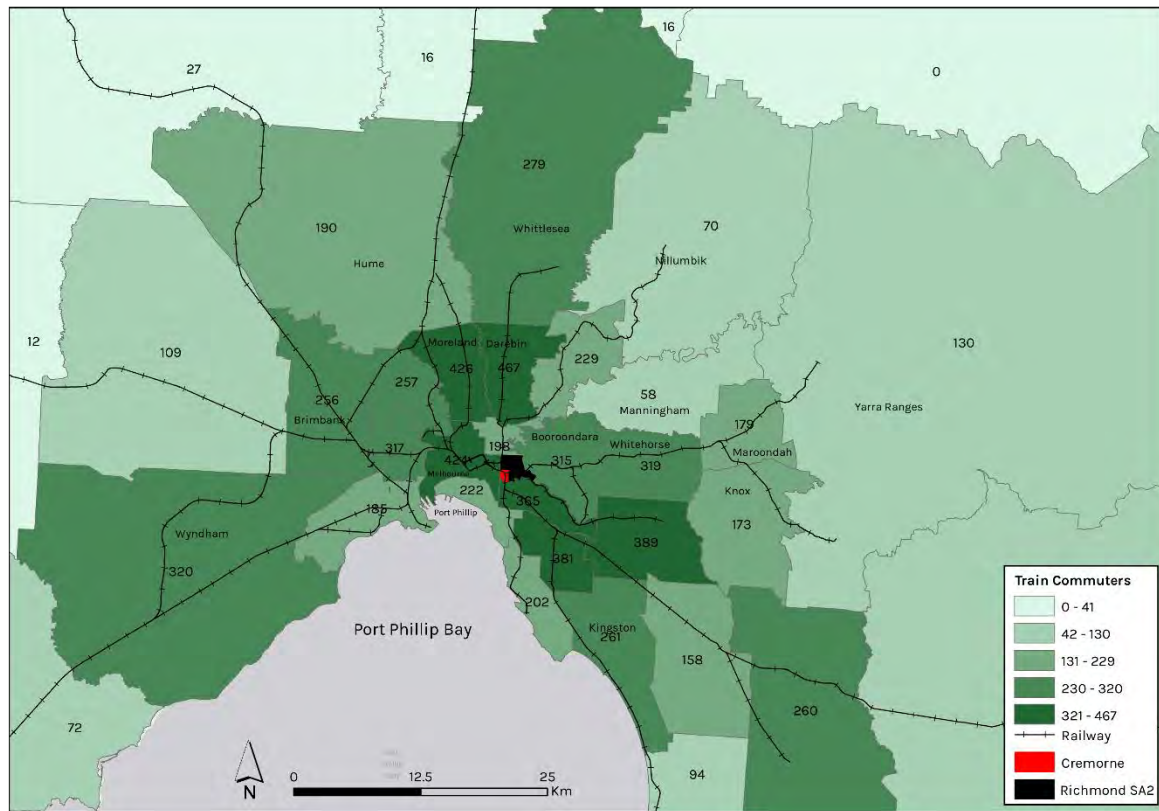


Figure 5 Richmond SA2 train commuters by LGA

Access constraints

Access to/from and within Cremorne is constrained by a range of factors including:

- Arterial roads to the north (Swan Street), east (Church Street) and west (Punt Road), the Yarra River and Citylink to the south. While the arterial road linkages provide direct regional connections to/from the Precinct, they are also highly utilised and carry a significant volume of through traffic without an origin or destination in the area for the wider metropolitan region. This through traffic can also generate increased traffic volumes on Cremorne’s local road networks and create traffic congestion.
- Raised rail corridors which traverse both north-south through the precinct and provide two crossings (at Dunn Street and Balmain Street) through the Sandringham-Pakenham group lines and east-west (servicing East Richmond Station) providing three crossings through the Lilydale-Glen Waverley group lines. As a result, these areas are conflict points and create safety risks for pedestrians, in particular the high volumes of workers accessing Balmain St during AM/PM and lunchtime peaks.
- Vehicle access to the precinct is concentrated at two intersections (Cremorne/Swan St and Balmain/Church St), which could be considered the key gateways to the precinct.

- All access to/from Punt Road is restricted to left-in / left-out only and there is only one exit on to the CityLink. There are multiple exits and entries to Church Street however access to Swan Street is limited to Cremorne Street because of the rail corridor. Access to Swan St from the north-western part of Cremorne has become further constrained with the addition of the tram super stop on Swan Street restricting access to left-in left-out only at Wellington Street.
- Congested and compromised pedestrian environments and high demand across all modes at constrained access points, including the intersection of Cremorne and Swan Streets, and the intersection of Balmain and Church Streets
- A relatively constrained street network that generally prioritises car traffic and parking, with limited space for pedestrians and dedicated cycle infrastructure;
- Low quality, limited public realm that affects the desirability of walking through perceptions of safety for pedestrians, particularly at night;

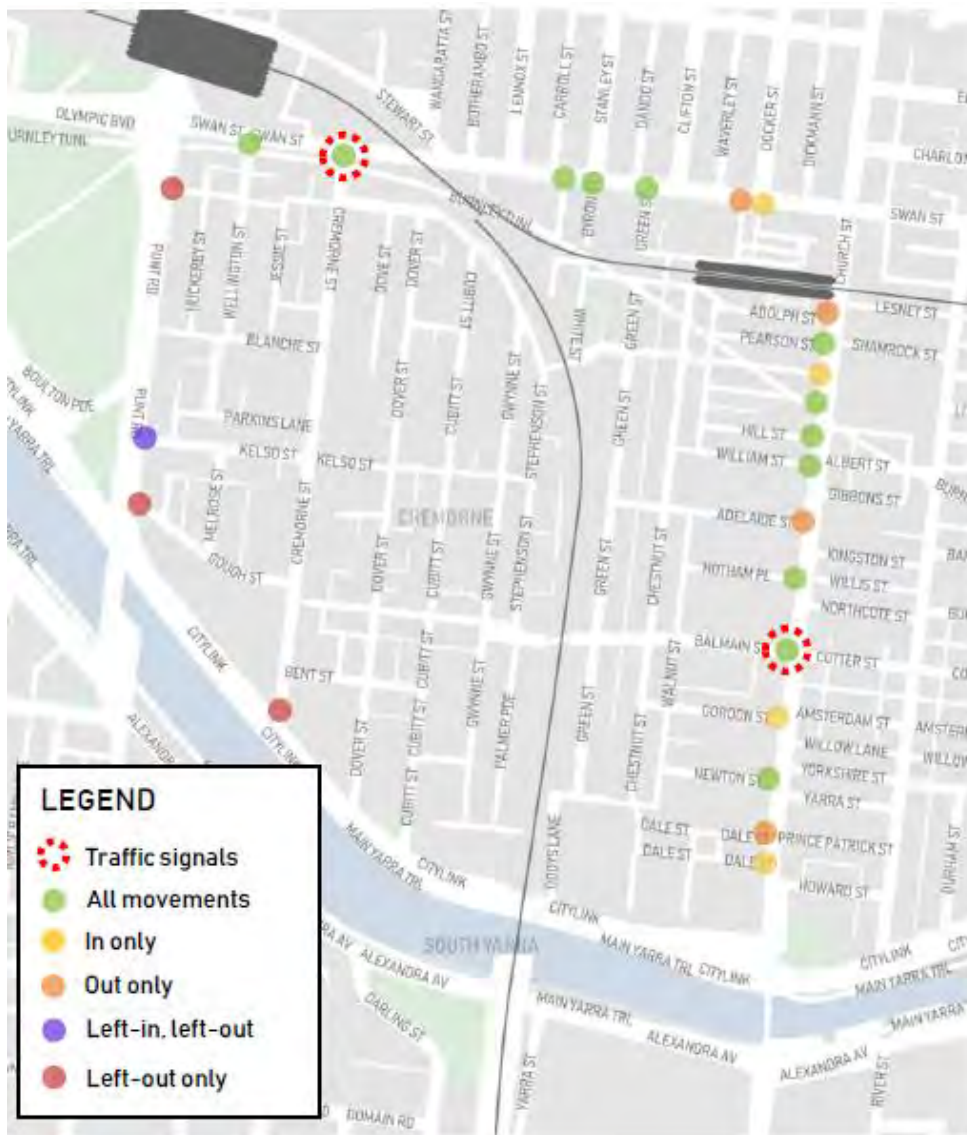


Figure 6 - Access to the arterial road network from Cremorne - GTA Consultants 2019

Internal traffic movement

The precinct is served by a relatively narrow and constrained street network. This street network must accommodate multiple, interacting functions including vehicle movements and servicing (including rubbish collection), cycle corridors, key pedestrian links and contribute to the public realm. Competition for space causes conflict between users, particularly at the intersections with major roads which form the gateways for precinct access.

Yarra City Council prepared a *Local Area Traffic Management (LATM) for Cremorne in 2013* and much of the works have now been completed, with the projects including traffic calming, one-way treatments, and changes to on-street car parking.

The current internal collector road route is Balmain Street and Cremorne Street. Daily traffic volumes on Cremorne Street and Balmain Street are in the order of 5,300 vehicles per day (vpd) and 4,500 vehicles per day respectively. These volumes are well below the typical two-way daily capacity of these roads which are in the order of 12,000 vehicles per day (based on Austroads Guide to Traffic management).

It is understood that delays exist to vehicles attempting to exit the precinct along Cremorne Street (to Swan Street), most specifically during the afternoon weekday peak hour. Travel time surveys have indicated a mix of results across the surveyed days with no delay being experienced at times and up to a maximum delay of 11 minutes at others. These delays could be the result of several factors:

- Capacity of the signalised intersection at Cremorne and Swan Streets
- Pedestrian volumes crossing Swan Street (walking to the Richmond Station) limiting the ability for vehicles to turn left out of Cremorne Street
- Queuing of traffic along Swan Street back from Punt Road, limiting ability for vehicles to turn left out of Cremorne Street.

Other streets, which exceed a traffic volume of 1,000 vpd are Gough Street (1700vpd) and Kelso Street (1,900vpd) to the west of Cremorne Street. These local streets provide access to Punt Road. The remainder of the streets were less than 1,000vpd. Due to the constrained nature of access from within the precinct, and lower demand driven by established residential land use, the streets north of Kelso St were found to have typically low volumes of traffic (<300vpd) in comparison to the remainder of the precinct.



Figure 7 - Average Vehicles Per Weekday - GTA Consultants 2019

Through traffic

There is a perception that rat running (where drivers use side streets or short cuts to avoid congestion on main roads) occurs through Cremorne. Origin-Destination analysis of traffic data suggests that the key access routes, such as Cremorne, Balmain, Kelso and Gough Streets, accommodate a level of through traffic which may affect the capacity and function of the network for local traffic. This has implications for the level of amenity for those living and working in Cremorne, particularly as it is an area where development is occurring and desired. The table below sets out surveyed data recorded by GTA Consultants on 23, 27, 28 March 2019.

Through Route	Survey period	Number of vehicles per hour	% of vehicles	Comment
Church St to Punt Road (via	Weekday AM	14	34	A majority of vehicles undertaking this movement did so using Balmain Street and Gough Street. Kelso Street was also used to
	Weekday PM	6	18	

Balmain St and Gough St)	Saturday	15	41	a minor extent to access Punt Road (from Church Street) in preference to Gough Street.
Church St to Swan St (via Balmain St and Cremorne St north)	Weekday AM	29	17	A majority of vehicles undertaking this movement (80%) did so using solely the collector roads Balmain Street and Cremorne Street. The main alternate route used is Stephenson Street (11%).
	Weekday PM	32	9	
	Saturday	66	25	
Church St to CityLink (via Balmain St and Cremorne St south)	Weekday AM	45	34	
	Weekday PM	10	6	
	Saturday	24	28	
Swan St to CityLink (via Cremorne St)	Weekday AM	26	18	
	Weekday PM	16	9	
	Saturday	22	25	

Vehicle Speed

Traffic speed data suggested that 85% of vehicles surveyed travel at or below the posted speed limit of 40km/hr. On this basis, vehicle speeds may not usually be considered an issue within the study area. However, the narrow street network and proximity of pedestrians and cyclists to moving traffic can create a perception that vehicle speed creates safety risks within the precinct and extensive work has been undertaken in the past to limit vehicle speed.

This perception of safety is an important consideration in encouraging more walking and cycling within Cremorne and may indicate an opportunity to identify key walking and cycling corridors where greater separation from through traffic is possible.

3.3. Walking and Cycling

Over 35% of workers in the precinct walk (as part of a public transport trip or by walking only) or cycle to work. Cremorne's compact urban form and proximity to regional attractors such as the CBD, Richmond, Collingwood and South Yarra enables shorter travel distances and is conducive to active modes of transport. Much of Cremorne's population can access day to-day goods and services, within a short walk or cycle. However, the increasing resident and worker population is putting pressure on the narrow, established road network in Cremorne and implementing physical measures to improve walking and cycling is difficult given the fine grain subdivision pattern and narrow road reserves.

The existing street space management approach prioritises the provision of on-street parking over wider footpaths and opportunities for public open space.

There are bike sharrows (pavement markings used to indicate a shared environment for bicycles and motor vehicles) along Cremorne Street and Balmain Street, however the existing on-road informal bicycle routes have little protection for cyclists. This is further compounded by volume of vehicles (light and heavy) and narrow street widths.

Pedestrian footpaths exist in all streets within the precinct however often in many cases they are provided for on one side of the street only, are non-DDA compliant, narrow and often obstructed by utilities infrastructure, landscaping or rubbish bins.

Opportunities

There is an opportunity to work to identify and implement a pedestrian priority network within Cremorne which incorporates an enhanced level of service for walking measures such as:

- updated street cross section providing more pedestrian space (potentially through development setbacks)
- high quality, DDA compliant footpaths with safe, dedicated crossing points on desire lines
- increasing perceptions of safety through lighting, opportunities for active and passive surveillance and minimising conflict between pedestrians and other transport users
- incorporation of '8-80 design' principles which ensure the pedestrian network is accessible to all
- improved public realm, including pause points incorporating facilities such as seating and shade
- Implement wayfinding strategies including directional signage to stations and 'real-time' travel information

A pedestrian priority network could potentially include Balmain Street and Cremorne Street, with Blanche Street, Church Street, Green Street, Gwynne Street, Hardcourt Parade, Kelso Street and Palmer Street included to supplement these north-south and east-west spines.

The designation of a pedestrian priority network provides further opportunity to:

- improve pedestrian and cycle connections to regional community infrastructure and open space such as the Yarra River corridor and Gosch's Paddock.
- enhanced pedestrian safety and access between Richmond station/Swan Street and the Melbourne Sports and Entertainment Precinct, Melbourne Cricket Ground, the CBD and elsewhere
- Identify opportunities to work with developers to establish publicly accessible links through sites, particularly larger strategic redevelopment sites

There is an opportunity to better connect Cremorne with the surrounding on and off-street cycle corridors as well as providing more effective links through the precinct. A similar approach to identifying and prioritising pedestrian pathways can be taken with cycle access planning, to provide safe, dedicated routes that, where possible minimise conflict between cyclists and other modes of transport (including pedestrian). Such a cycling network would be designed to:

- Improve access to the Capital City Trail and strategic cycle corridors including the Main Yarra Trail to both the east and west
- Recognise Church Street as an important North – South regional and local connector, consistent with the State Strategic Cycle Corridor planning
- Provide dedicated cycle facilities or infrastructure on key links, but provide safe cycle environments across the street network, particularly on low speed, one-way traffic streets which may provide a local access function
- Recognise that cycle uptake and growth in modeshare is driver by perceptions of safety, comfort and consistent facilities for cyclists. Cycle networks are only as good as the weakest link and are often let down by lack of priority or provision for cyclists at conflict points, such as intersections, around public transport hubs and on arterial road corridors.

3.4. Public transport

Like much of the inner urban area of Melbourne, Cremorne is well serviced by public transport. The entire study area meets generally accepted pedestrian catchment standards for good access to public transport, which are: 800m (or approximately 10mins) walk to a train station, 600m to a tram or light rail stop, and 400m (or 5 mins walk) to a bus stop. This is reflected in a SNAMUTS accessibility rating of average to very good for the precinct.

Train

The entire Cremorne precinct is within an 800m pedestrian catchment of four stations- Richmond, East Richmond, Burnley and South Yarra (via the pedestrian link across the existing Yarra rail bridge). The Richmond Station comprises the main gateway to the city from the east and south east, and is serviced by eight train lines:

- Lilydale Line
- Alamein Line
- Belgrave Line
- Glen Waverley Line
- Sandringham Line
- Frankston Line
- Cranbourne Line
- Pakenham Line

The East Richmond and Burnley Stations are serviced by the Lilydale – Glen Waverly group of services, and South Yarra Station by the Sandringham- Pakenham group.

These services provide excellent access to the Cremorne precinct for population catchments in Melbourne's east and south-east and into the CBD. It is noted that the proposed Melbourne Metro project will alter the number of train lines servicing Richmond Station from the south-east, with the Cranbourne and Pakenham lines being diverted through the new tunnel to run directly to the city via Domain. However, it is not expected that access into the city for Cremorne residents will be affected by the project.

VLine regional trains on the Traralgon Line stop at Richmond Station, providing a link to catchments beyond the Metropolitan Rail network.

Tram

The area is serviced by two tram lines:

- Route 70 – Waterfront City Docklands to Wattle Park which operates along Swan St at a 15min frequency in peak hour. Route 70 has 5.4m passenger boardings per annum which ranks it 18th busiest out of 23 Melbourne tram routes.
- Route 78 – North Richmond – Balaclava via Prahran which operates along Church Street at a 10min frequency in peak hour. Route 78 has 2.4m boardings pa which ranks it 21st busiest out of 23 Melbourne tram routes².

Bus

Two bus services operate in the area:

- Route 605 - Gardenville to City via Kooyong Road which travels along Alexandra Avenue and Punt Road
- Route 246 – Elsternwick to Clifton Hill via St Kilda which travels along Punt Road

Richmond Station, East Richmond Station and route 78 tram stops are not currently DDA (1992) compliant and hold potential for accessibility, amenity, urban design and reliability improvements. Richmond Station is of regional significance as a major transport interchange, and while the station has connecting bus and tram services, and basic customer facilities, it does not have lift to access to the platforms nor secure bicycle parking.

East Richmond station, located in the north eastern corner of the precinct, is not staffed and does not have secure bicycle parking. Alamein, Belgrave and Lilydale services generally do not stop at East Richmond Station, even for services that 'stop all stations'. Adding East Richmond to limited express Alamein, Belgrave and Lilydale services would improve public transport access to the eastern half of Cremorne for those who live in the eastern suburbs of Melbourne.

While the existing public transport infrastructure requires improvement to meet DDA standards and to ensure it is fit for purpose, the proximity to Richmond Station is a major drawback for employers and driver of commercial land use development within Cremorne. Accessibility to the area from large residential populations to the South-East, East and from the CBD is very strong.

Linkages to the north by public transport are not as effective, although the existing 246 bus services along Punt Rd linking to Clifton Hill and St Kilda provide access options for residents and visitors to the area. Linking the public transport services that surround Cremorne more effectively with key land uses and activity areas is an important consideration for access planning.

² Add tram reference

Pedestrian connection to South Yarra Station across the Yarra River is poor. It is via a bridge crossing at Oddy's Lane which is hidden, not Disability Discrimination Act 1992 compliant and does not provide easy access for cyclists.

Public transport options in and around Cremorne are strong drivers of pedestrian activity and need to be connected to high quality, safe pedestrian pathways that provide access throughout the precinct. It is important to note that all public transport trips have a walking component, so improvements to pedestrian facilities can make both these modes of sustainable transport more attractive.

Opportunities

There are a range of opportunities to improve public transport infrastructure and services to/from and within the study area. However, it is also recognised that the focus of this study is on identifying actions or investment that can be led by Council and ensure the most efficient use of existing facilities to provide for current and future transport demand. The opportunities relating to Public Transport are therefore focussed on providing safe, high quality access routes to and from services and stations, and public realm improvements around these hubs to improve the travel experience and attractiveness of this key transport mode. As such the opportunities closely relate to, and are reliant on pedestrian network and public realm opportunities also recognised in this document, including:

- Improvements to the existing pedestrian underpass connections through rail corridors at Balmain Street, Dunn Street and Green Street
- Improvements to connectivity to Richmond and East Richmond station from the local street network, including opportunities to create more pedestrian space, increased user safety and public realm around these high pedestrian demand facilities
- Improvements to tram and bus services by introducing on-road priority measures and public realm improvements around stops
- Improve access routes to the pedestrian bridge attached to the rail structure across the Yarra River and investigate opportunities to better provide for cycle access

3.5. Parking

Off-street

The *Yarra Planning Scheme parking rates review* (Traffix 2017) found that the off-street car parking requirements in Clause 52.06 in the Yarra Planning Scheme for new developments do not reflect Cremorne's inner-city location well served by public transport or the market demand for parking in this location. The parking rates were considered to not reflect constraints and characteristics of Cremorne leading to a congested street environment, poor built form outcomes and lengthy planning approval processes as waivers are sought for parking rates. Many of the lots zoned C2Z within the precinct are not able to accommodate current parking demand or rates prescribed under the planning scheme, and imposition of these rates would result in poor outcomes for local amenity and the walking and cycling environment

There is significant policy support for moving away from a “predict and provide” approach to car parking and accordingly the rates set for residential parking provision can be “aspirational”, and therefore lower than the existing ownership rates. It is noted that several applications that have been the subject of appeal at VCAT have included a reduction in car parking rates. In their decisions VCAT were supportive of reduced parking requirements.

While residential car ownership does not necessarily correlate directly to peak hour vehicle trips (as residents may choose to own a vehicle but only use it off-peak/on weekends), Yarra is well placed to cater to a high proportion of resident commuter trips via sustainable modes, and cater for the occasional off-peak trip via car sharing.

A reduced car parking provision rate for new dwellings within Cremorne would allow for reduced space to be taken up by parked vehicles, which may potentially have a positive impact on housing affordability and encourage greater sustainable transport use in the area.

On-Street

On-street short-term parking is in relatively short supply with competing demands between residents, businesses and other visitors to Cremorne. Site observations and surveys indicate that most on-street parking spaces are subject to high levels of occupancy during the day.

Most streets are adequately protected from all-day (resident) parking on-street, and new developments are not eligible for resident permits to park on-street. Accordingly, a reduced car parking provision on-site would directly correlate to reduced car ownership, in line with Council policy.

Opportunities

There is a need to ensure car parking is supplied and managed whilst also continuing to promote more sustainable transport modes in a highly constrained area.

However, there is a general lack of consensus regarding the best approach to accommodating and managing car parking in Cremorne which makes any proposal to change the existing status quo contentious and challenging to implement. From consultation on other projects there appears to be a growing disparity between expectations regarding parking availability and traffic conditions amongst some members of the community and what is realistic given its a confined urban precinct that is subject to development intensification.

There are a range of measures that have the potential to achieve objectives in relation to car parking in Cremorne that have been identified in past studies and analysis. These measures need to be investigated and tested with the community further to determine their feasibility, with a view to implementing in the short-medium term, and include:

- Restricted on-street parking on key streets, at intersections, on the pedestrian priority network or in areas of high movement demand

- Development of a consolidated off-street car parking facility – or better utilisation of existing built off-street capacity. Such a facility could be operated by a commercial partner.
- Utilisation of new off-street parking capacity for more than one land use – for example potential for office spaces to be used as precinct visitor parking after hours/on wknds.
- Redevelopment of existing open-air car parks with replacement parking spaces in multi-level structures below or contained within buildings for other activities
- Prioritisation of short-term bays for servicing, drop off etc on-street in high change areas
- Where sites are yet to develop, incorporate mandatory set-back (through negotiation with developers), to provide short term on-street parking, and retain or enhance pedestrian capacity.
- Application of technology and industry developments to identify methods of utilising space currently used for car parking more efficiently across a 24hr period. For example, for pedestrian or traffic movement at times of AM/PM peak demand, public realm or open space at off-peak during the day (including weekend), and visitor car parking in the evening or overnight.
- Greater utilisation and provision for car-share for both on and off-street spaces to encourage take up from new business, employees, residents and visitors to Cremorne.

3.6. Streets and Public Realm

There is a deficit in the provision of public open space in the Cremorne Precinct for both residents and workers. It is particularly not meeting the demands of workers and is detracting from the profile of the precinct. Streetscapes in Cremorne have low amenity, and feature poor lighting, obstacles on footpaths and negligible landscaping. On-street and off-street car parking dominates streetscapes at ground level. The public realm provides a particularly low amenity environment for pedestrians and cyclists.

It is recognised that there are limited opportunities to provide new public open space due to a lack of publicly owned land, limited number of large sites and the high land values. There are also physical barriers to accessing existing open spaces in Melbourne Park (Punt Road), the Yarra River (CityLink) and the Botanical Gardens (Yarra River). The amenity, appearance and usability of laneways varies limiting their functionality and detracting from the profile of the precinct.

There is also limited public or civic space and the amenity and appearance of the public realm around transport interchanges (including Richmond station) and under the train line is particularly low and detracts from the profile of the precinct.

Opportunities

There are opportunities to provide improved access to existing areas of public open space bordering the precinct, as well as contribute to creation of new or improved public realm through reallocation of space or priorities, through:

- Designing and improving public space to include lighting, seating and the removal of signage, cabling, power lines, poles and other obstacles. Whilst this has been suggested for Cremorne as a whole, Cremorne and Balmain Streets are identified as priorities.
- Improvements to the public realm and environment of Richmond Station
- Improvements to the design and environment of laneways and amenity and safety of pedestrian areas underneath railways
- Identifying preferred interface treatments to residential development, streets and laneways, and public open space.
- Identifying opportunities to convert on-street car parking more appropriate uses in high demand and high change areas – potentially in tandem with site planning permit processes.

4. Summary

The range of issues and opportunities identified in relation to Access and Movement in Cremorne have been well documented through extensive background reporting and analysis. The existing conditions and issues are illustrated in Figure 8, and can essentially be summarised in the following set of statements:

1. Cremorne is experiencing rapid land use change and intensification both within the precinct and in the surrounding inner urban area. This intensification is driven primarily by investment in commercial (office) and residential development.
2. Cremorne is in close proximity to Melbourne CBD and forms part of a busy inner-metropolitan urban environment, but in many ways effectively operates as an island due to the range of existing precinct access constraints and barriers to permeability
3. The precinct is well located in relation to public transport but is experiencing increasing and competing demands for space on a restricted and often congested street network. This demand is not spread evenly across all streets but focussed on 2-3 key links and gateways to the precinct, which constitute areas of very high activity, demand and conflict.
4. The barriers to movement and constrained street network make orientation and wayfinding through the precinct difficult for all transport users and visitors to the area.
5. Due to forecast growth in trip demand and minimal capacity for the network to accommodate more car movements, there is a need to improve and promote sustainable transport modes, focussing on pedestrian safety and level of service on the network.
6. While planning for sustainable transport priority on key corridors, provision also needs to be made to retain vehicle access throughout the precinct to support the needs and requirements of existing residents and businesses operating in the precinct.
7. There is limited access to open space and the existing public realm offers much potential for improvement. Due to a lack of large sites in public sector ownership, when considering planning permits for large privately held sites, built form controls that contribute to increased pedestrian or public space or precinct permeability through linkages through large sites can play an important role in realising access and movement objectives.
8. There are a range of possible measures to address car parking supply and demand within the precinct. Although changes to car parking are often contentious, there exists an opportunity within Cremorne to trial different approaches to off-street parking provision and management, and on-street use of space that can be more fully developed in the next stage of the study.
9. Careful consideration needs to be given to ensuring the liveability of Cremorne is protected for the existing community, while understanding how to influence the travel behaviour and provide a high quality and functional urban environment for future workers, residents and visitors to the precinct.

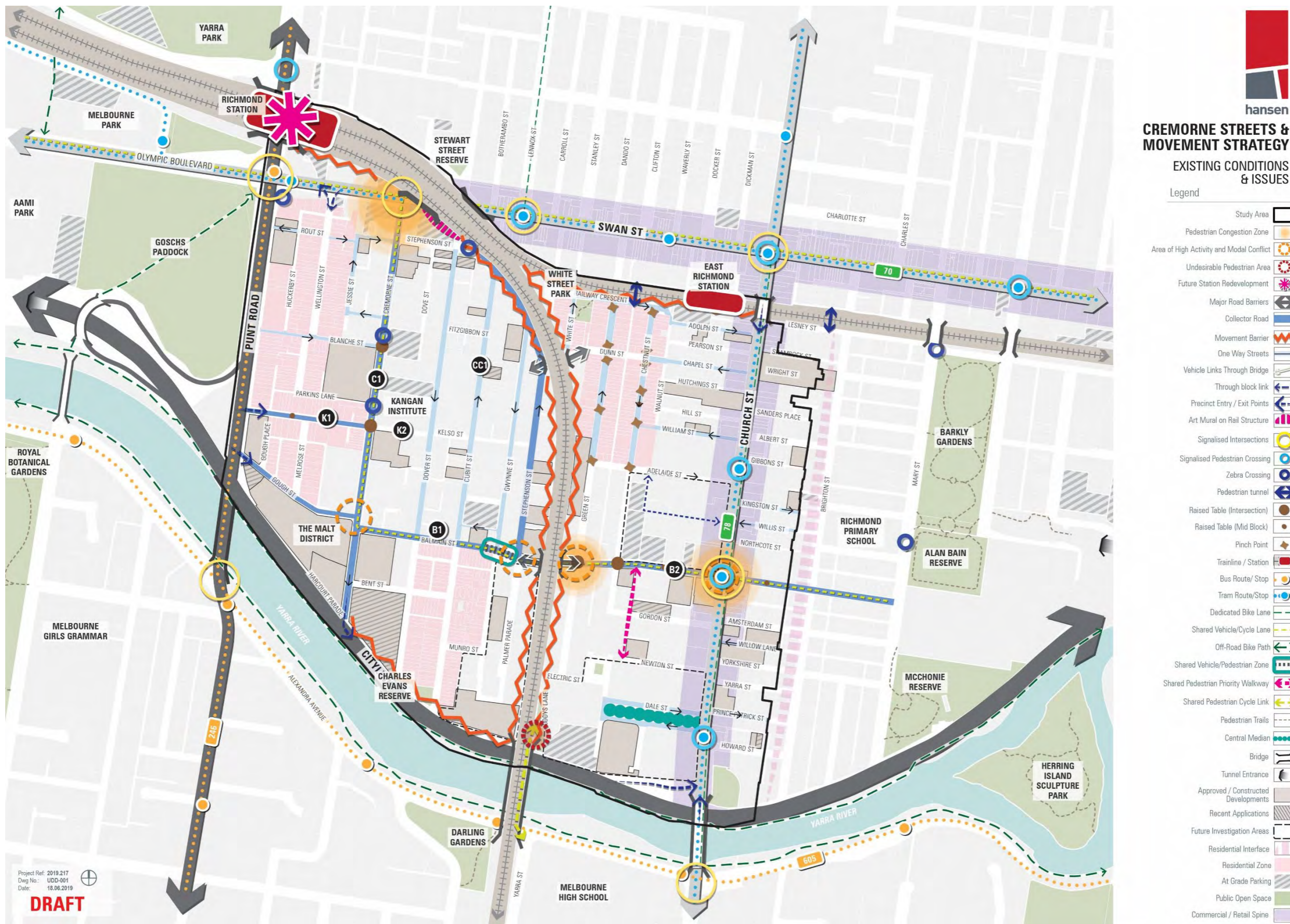


Figure 8 - Existing Condition and Issues Summary Map

5. Next Steps

Knowledge Gaps

A key challenge for transport planning any complex and changing precinct is in fully understanding and planning for future demand. What are the implications of different land use mixes, rates of development, on and off-street parking management and infrastructure priorities within, and beyond, the precinct? There is an understanding that the business mix of the Cremorne Precinct is evolving with a strong focus on tech and creative industries but there is limited accurate data on the business mix.

The design of a strong evidenced-based response to the issues and opportunities identified, which ensures all analysis and guidance provided to decision makers is well informed, would benefit from further investigations, data and analysis in the following areas:

- pedestrian analysis – volumes across the day/week on key routes, origin/destination data, observations on pedestrian safety, delay, conflict, and audits of network levels of service
- bicycle analysis – volumes across the day/week on key routes, propensity to cycle analysis
- land use change trip generation – post-occupancy travel demand and behaviour for large sites to gain an understanding of travel behaviour and actual trip patterns for new workers, residents and visitor travel behaviour
- relationship between car ownership and use for land use change within the precinct – and implications for off-street parking supply
- understanding PT usage, access and demand beyond just journey to work data set – origin to destination data, user profile and implications for Cremorne.
- Evidence or analysis of the most effective means of engaging with and balancing the needs of existing and future communities. Decisions made will affect and shape the experience of Cremorne for both existing and future residents and visitors.

Responding to Opportunities

The next steps in the Cremorne Streets and Movement Strategy will be identifying, justifying and testing the most appropriate response to the opportunities identified. This will include application of industry best practice and examples of approaches in similar urban environments to propose a set of principles to guide the response, and the approach that best suits the specific requirements of Cremorne.

This response will then be tested with the community and stakeholders through a consultation process to be led by the Victorian Planning Authority (VPA) in partnership with the City of Yarra.