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# Harris St/ Cowper St Redevelopment Proposal

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## BikeWest Submission

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Prepared by  
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## About the Authors

Dr John Symons is a researcher at Victoria University. He specialises in applied economics with a focus on environmental, transport, health and education economics. Dr Symons has published road safety intervention economic modelling research in *The Lancet* and *Journal of Adolescent Health* with the United Nations Population Fund (UNFPA), UNICEF and the Gates Foundation on the investment case to achieve Sustainable Development Goals.

Dr Symons works with the Centre of Research Excellence (CRE in Adolescent Health at the Murdoch Children's Research Institute. At the CRE Dr Symons is working with leading international researchers in injury prevention, Professor Rebecca Ivers (UNSW) and Dr Margie Peden (Oxford). He has also worked with the Australian Health Policy Collaboration on determining the economic benefits of active transport infrastructure for the ACT government and on the Growing Brimbank project.

In 2018 Dr Symons undertook a 6 month sabbatical based at the International Institute of Industrial Ecological Economics (IIIEE) at Lund University, Sweden. While based there, Dr Symons visited and consulted with cycling researchers and practitioners in London, Bristol, Edinburgh, Amsterdam, Lund, Gothenburg, Stockholm, Reykjavik, Copenhagen and Seville. He is currently developing a research project with the National Association of City Transport Officials (NACTO) assessing the economic benefits of safer infrastructure for vulnerable road users in Addis Ababa, Ethiopia.

Elena Pereyra is a registered architect on sabbatical while she undertakes a PhD at Deakin University. She specialises in sustainable urban systems, regenerative development, participatory planning, co-design, and collaborative housing. With experience across public buildings including international aquariums and local education projects, apartments and private residential, her focus has moved to environmentally and socially sustainable design.

Elena has served on the board of Cohousing Australia since 2013 and as Chair (2016) and now Co-Chair (2019-). Elena is passionate about the environmental, social, and economic potential of cohousing and seeks to support its feasibility in the Australian multi-residential housing context. Elena's research is into participatory processes and community capacity building to achieve broader regenerative outcomes particularly in reducing environmental impact, building community resilience, and fostering greater agency in civic governance.

As a regenerative development practitioner with a focus on urban systems and placemaking she contributes to numerous forums and advisory committees. These include commons governance, climate emergency response and active transport infrastructure. Elena has also worked as a post-graduate tutor at the University of Melbourne and Deakin University in Regenerating Sustainability, Urban Sustainability and Climate Change, Building Sustainability, and Integral Design Theory; Sustainable Futures.

## Introduction

Maribyrnong Council is proposing to close Harris St to motor vehicle traffic between Cowper St and Hyde St and this area will be redeveloped for pedestrian and cyclist traffic, and landscaped to create an open space for community use.

The proposed closure is planned to facilitate a new cycling and pedestrian bridge to be built over Whitehall Street as part of the West Gate Tunnel Project. The new bridge which will link Yarraville Gardens and the Maribyrnong River, with cycling facilities along Hyde Street from Somerville Road.

Our understanding is the current design has a shared use path along the western side of Yarraville Gardens along Hyde St and then the northern side of Yarraville Gardens along Harris St to an overpass across Whitehall St.

## Community Feedback

The new proposed route along Hyde St has not been described in any detail and it is unclear if the proposed route will involve a shared path along Hyde St from Somerville Rd which continues down Harris St or if a separate protected bidirectional bike path as per the BikeWest Submission 2018 is unclear.

The proposed route down Harris St is not without controversy as strong objections have been lodged by the Seddon Cricket Club, Yarraville Tennis Club and Kindred Studios to the shared path along Harris St on the northern side of Yarraville Gardens with some community members proposing to informally block the proposed shared bike path.

BikeWest is firmly in favour of high quality bicycle infrastructure and is also cognisant of other community groups' concerns and as a consequence is keen to promote a solution which is satisfactory to all parties. This submission is informed by these considerations as well as technical aspects of bicycle infrastructure design and philosophy.

## Bicycle Infrastructure and the Safe System Approach

The Safe System approach to road safety (also known as Vision Zero or Towards Zero) was pioneered in Sweden and acknowledges the physiological and psychological limitations of humans and puts ultimate responsibility on the designers and operators of the system to accommodate these human limitations as opposed to placing all of the responsibility on the individual. This approach is derived from an understanding that people make mistakes, and from an ethical standpoint no-one should be killed or seriously injured on roads for making a mistake<sup>1</sup>. The focus should be on adapting the road system to humans, rather than human behaviour to roads<sup>2</sup>.

In Australia and New Zealand, the Safe System approach has been adopted as a guiding principle of both the Australian National Road Safety Strategy 2011-2020<sup>3</sup> New Zealand's Safer Journeys Strategy 2010-2020<sup>4</sup>. The Safe System approach in these strategies is based on the following pillars of intervention:

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<sup>1</sup> Johansson, R. (2009). Vision Zero - Implementing a policy for traffic safety. *Safety Science*, 47, 826-831

<sup>2</sup> Belin, M.-Å., Tillgren, P., & Vedung, E. (2012). Vision Zero - a road safety policy innovation. *International Journal of Injury Control and Safety Promotion*, 19, 171-179.

<sup>3</sup> Australian Transport Council (2011), *National road safety strategy 2011–2020*, ATC, Canberra, ACT.  
<http://roadsafety.gov.au/nrss/>

<sup>4</sup> Ministry of Transport (2010). *Safer Journeys Strategy 2010-2020*.

<http://www.saferjourneys.govt.nz/assets/Safer-journeys-files/SaferJourneyStrategy.pdf>

- *safe roads* – roads and roadsides are designed and maintained to reduce the risk of crashes occurring, and to lessen the severity of injury if a crash does occur;
- *safe speeds* – speeds are managed to complement the road environment and ensure crash impact forces are within human tolerances;
- *safe vehicles* – vehicles lessen the likelihood of a crash and protect occupants and other road users; and
- *safe people* – road users are skilled, competent, alert and unimpaired

As road users should not be made to pay for mistakes with permanent injuries or death, the focus is on preventing serious injury rather than preventing all crashes. To describe a transport system as safe, the mechanical forces that road users face during crashes must remain below the threshold for serious injury<sup>5</sup>.

Under a Safe System approach, general principles which guide infrastructure work are derived from human tolerance to injury in the event of a crash including:<sup>6</sup>

- Pedestrians and cyclists should not be exposed to vehicle travel speeds of over 30km/h - managed by physical separation or speed limit changes<sup>7</sup>

### Safe System Infrastructure Treatments

Infrastructure that support the Safe System approach includes treatments that reduce vehicle speeds, removes hazards and obstacles, and physically separation different types of road users. For example, this may include grade separation or roundabouts at intersections to reduce potential conflict points and traffic speeds and installing median barrier and creating clear zones or barriers along roadsides. In a Safe System, these types of treatments are regarded as *primary treatments*, in that they provide a direct Safe System outcome. Where primary treatments are unsuitable or infeasible, *supporting treatments* can be applied in the interim to deliver a safety benefit in terms of reducing the likelihood and/or severity of crashes in an indirect manner. These types of treatments include audio-tactile edgeline, improving delineation, wide medians and vehicle activated speed limits<sup>8</sup>.

In a Safe System, the combination of primary treatments and secondary treatments contribute to a Safe System approach, however Turner et al 2016<sup>9</sup> argue more effort should be focused on primary treatments to deliver longer-term road safety benefits. Focusing solely on secondary treatments is extremely unlikely to achieve the longer-term “Safe System” outcomes delivered in settings such as Sweden and the Netherlands.

### Bicycle Route Design

For an effective, safe and comfortable cycle network for daily transport, the bicycle facility types selected must be appropriate for the road type and be seamlessly linked. The cycle network must be designed to meet the needs of bicycle riders for directness and safety rather than for recreation.

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<sup>5</sup> Tingvall, C., & Haworth, N. (1999). An Ethical Approach to Safety and Mobility. *Paper presented at the 6th ITE International Conference Road Safety and Traffic Enforcement*. 6-7 September 1999, Melbourne, Australia

<sup>6</sup> Kim, E., Muenning, P., & Rosen, Z. (2017). Vision Zero: A toolkit for safety in the modern era. *Injury Epidemiology*, 1-9.

<sup>7</sup> Austroads 2018 Research Report Best Practice in Road Safety Programs, Sydney p4

<sup>8</sup> Turner, B., & Jurewicz, C. (2016). Development and use of the Austroads Safe System Assessment Framework. *Proceedings of the 2016 Australasian Road Safety Conference, 14-16 October 2016*. Canberra, ACT, Australia

<sup>9</sup> ibid

Current Austroads guidance for bicycle facility selection highlights the need to separate bicycle riders from vehicles and provide priority for bicycle riders at conflict points.<sup>10</sup>

Where larger differences in speeds exist, such as motorised vehicle speeds above 30 km/h, physical separation from motorised vehicles reduces risks for bicycle riders, creating a safer and more comfortable environment for all road users. While some experienced bicycle riders are comfortable mixing with motorised vehicles at high speeds, the vast majority of people, especially less experienced and traffic-intolerant bicycle riders and children are only comfortable when physically separated from high volume, high speed motorised vehicles. Separation between cyclists and pedestrians is also key when large differences in speed exist

According to Qld Department of Main Roads<sup>11</sup> to successfully provide for all ages and abilities of bicycle riders, all bicycle routes ranging from local streets to along arterial roads must meet the needs of bicycle riders to be direct, safe, coherent, comfortable and attractive.

According to *Austroads Guide to Road Design Part 3 (2016)*, *VicRoads Guidance on Treating Bicycle Car Dooring Collisions on strategically important cycling corridors*, a separated path (exclusive bicycle path) is the desired treatment as:

- Where there is an adjacent pedestrian path, it virtually eliminates the conflict between pedestrians and cyclists as they are physically separated.
- Allows cyclists to have uninterrupted and safe travel at a relatively high constant speed (30 km/h or above)

### Directness

Directness can be measured in time of travel (average speed) and in distance (trip length). Stops or loss of priority at crossings, delays at traffic signals, hills, detours, sharp corners, poor sight lines, shared paths (delayed by giving way to pedestrians) and rough surfaces, all impact on directness. As bicycles are human powered, a direct route from A to B with optimal speed maintenance is essential in high quality design. Compared to motorised vehicles, once slowed or stopped it takes a bicycle rider considerable time and effort to regain the required speed. Where bicycle riders are stopped or detoured they will often take high safety risks in order to save travel time. Any factor that slows down bicycle riders also influences directness in time and may reduce safety.<sup>12</sup>

### Safety and Perceived Safety

Safety of bicycle riders primarily depends on the amount of exposure to different masses and speeds of motorised vehicles. Perceived safety is equally important for less confident, traffic-intolerant bicycle riders who feel especially threatened when mixing in the same space as fast moving motorised vehicles. Where bicycle riders are provided exclusive space, cycling is perceived safer and more people choose to ride. To safely provide for all types of bicycle riders, conflicts with motorised vehicles should be avoided with separation or clear priority highlighted with give way lines and green surface treatment to remove confusion<sup>13</sup>.

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<sup>10</sup> Austroads 2017 Guide to Road Design Part 6A Paths for Walking and Cycling, Sydney

<sup>11</sup> State of Queensland (Department of Transport and Main Roads) 2015 Technical Note 128 Selection and Design of Cycle Tracks May

<sup>12</sup> ibid

<sup>13</sup> ibid

## Comfort

### Maintain reasonable speed

A good design ensures bicycle riders can comfortably maintain the required design speed. Design speed depends on road function. The design speed sets the requirements for curve radii and width<sup>14</sup>.

### Avoid bends

The Principal Cycle Network should be direct from A to B and bends should be avoided as much as possible<sup>15</sup>.

### Minimise steep grades

This can be measured as gradient per kilometre. Multiple steep sections too close together reduce cycling comfort and should be avoided (even if they meet gradient requirements)<sup>16</sup>.

## Attractiveness

Attractiveness of a bicycle facility relates to both perceived safety and quality of infrastructure. The surroundings encountered when cycling range from attractive to intimidating and can encourage or discourage cycling along a route. Landscaping and surroundings can make a cycling route very attractive through an area that might have otherwise been avoided, while high fences, lack of casual surveillance and no lighting at night can result in actual and perceived loss of personal security<sup>17</sup>.

## Coherence

Coherence is most relevant at the broader cycle network level. The cycle network should include an appropriate density of well-connected cycle routes linking all origins to all destinations, including public transport stations, without interruption.

Cycle routes that suddenly stop are a major disincentive for cycling and may force bicycle riders into a dangerous situation. Bicycle riders should always be confident that there will be a quality cycling route to all destinations. Low density development and poorly connected streets reduce the coherence on the cycle network

## Analysis

The proposed route does not satisfy all of the required elements for a high quality bicycle route, particularly as a strategically important bicycle route, however, some are satisfied. For the most part the proposed route satisfies the requirement of maintaining speed and the attractiveness element is also satisfied with the proposed design. While there is an almost complete lack of a joined up bicycle network in the Maribyrnong LGA, the proposed design could potentially act as a spine to other network links.

The elements not satisfied include the addition of a significant hill (Harris St and Hyde St) compared with the alternative route along Somerville Rd, a sharp corner with poor sight lines (Harris St and Hyde St) and is also a shared path with potential conflict with pedestrians and consequent speed reduction and decreased safety.

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<sup>14</sup> ibid

<sup>15</sup> ibid

<sup>16</sup> ibid

<sup>17</sup> State of Queensland (Department of Transport and Main Roads) 2015 Technical Note 128 Selection and Design of Cycle Tracks May

The proposed arrangements for the closure of Harris St between Cowper St and Hyde St to become a shared space for cyclists and pedestrians is fundamentally unsafe. Shared pedestrian and bicycle paths are compromised solutions at best with a design speed of a maximum of 30kmh, with a usual operating speed of 20kmh. As stated in the Victoria Walks advice on shared pedestrian/bicycle paths,

“They [cyclists] go ‘whoosh’ as they go past, and often the paths aren’t very wide, so this notion that you have to share has to come with more thought. If there’s not enough room it’s not a good match. If it’s got to be shared it’s got to be wider. Or separation between them.”<sup>18</sup>

These 3 significant factors impact the quality of the infrastructure. In addition, the potential for conflict with pedestrians crossing Harris St to and from Seddon Cricket Club and Yarraville Tennis Club is a significant concern.

### Hyde St Somerville Rd Intersection

The proposed design also appears to keep the current intersection design at the corner of Hyde St and Somerville Rd. This is a significant concern as most collisions between bicycle riders and motor vehicles occur at intersections. Tragically this was the case with Arzu Baglar in 2017 who was struck and killed by a truck at the intersection of Whitehall St and Somerville Rd, Yarraville. While the WGTA promotional material promotes the overpass over Whitehall St as a positive as bicycle riders will no longer have to travel along busy Whitehall St, this misrepresents the situation. Currently there is a safe, protected shared path on Whitehall St for bicyclists to use. Ms Baglar was perfectly safe on this protected shared path. It is the intersection that was, and remains dangerous. This is also the case at the corner of Hyde St and Somerville Rd.

While these elements are a concern, BikeWest feels alterations to the design could address these issues and satisfy all stakeholders.

## BikeWest Recommended Alternative

### Somerville Rd

BikeWest’s preference is a widening of the bike path on Somerville Rd between Hyde St and Whitehall St with a protected intersection at Whitehall St and Somerville Rd similar to the one recently installed at the intersection of Albert St and Landsdowne St East Melbourne (Figure 1).

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<sup>18</sup> Victoria Walks 2015 Shared Paths the issues



Figure 1: Albert St Lansdowne Rd Intersection East Melbourne

The Albert St intersection is based on the Protected Intersection Design shown here:

<http://protectedintersection.com/>

With the four key principles listed below:

- A Corner Refuge Island
- A Forward Stop Bar for Bicyclists
- A Setback bike and pedestrian crossing
- And Bicycle Friendly Signal phasing

This is the easier path for cyclists as they do not have to ride up another hill and is likely to continue to be the preferred route even with the addition of the bridge which extends from Harris St across Whitehall St.

### Protected Intersection

Intersections present the greatest risk of conflict on most routes and should be the first improvement in a retrofit situation<sup>19</sup>. Where motorised vehicles cross the path of pedestrians or bicyclists, high severity conflicts can result, even if the relative speed is low. For example, as shown in Figure 2, the fatality risk of a collision at 50 km/h is 85%, 25% at 40 km/h and 5-10% at 30km/h. This means the risk of death at 50km/h is over three times as high as the risk at 40 km/h and more than eight times higher than the risk at 30 km/h. To reduce the severity if a crash occurs involving a vulnerable road user, intersection design should reduce the possible impact speed to as low as possible (i.e. < 30 km/h).

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<sup>19</sup> State of Queensland (Department of Transport and Main Roads) 2015 Technical Note 128 Selection and Design of Cycle Tracks May p24



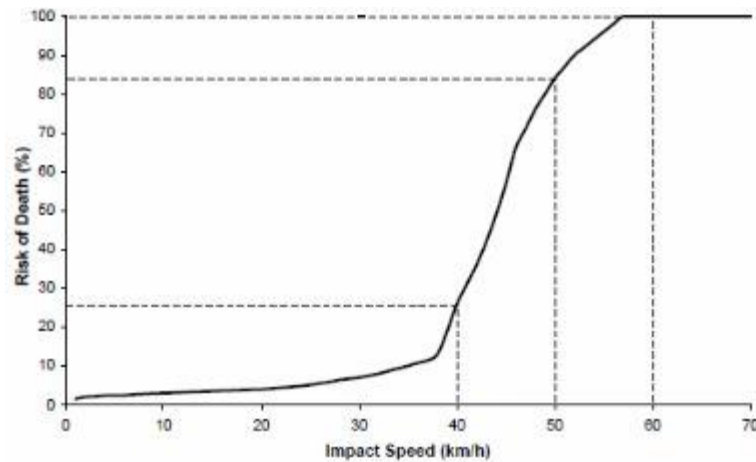


Figure 2: Speed and risk of death<sup>20</sup>

Safe intersection design for bicyclist focuses on the removal or reduction in the severity of such conflicts between vulnerable road users and motorised vehicles, such as at left turns. This is achieved by designing for safe turning speeds and highlighting conflicts with green surface treatment and continuity lines to show clear priority for bicyclists (eg Figure 3).



Figure 3: Bidirectional cycle track with priority marking through the intersection, Fitzroy St

The preferred design is shown in Figure 4 and Figure 5. Figure 4 highlights the corner islands which are a vital element of a protected intersection design. They ensure safe turning speeds and increase safety for bicycle riders without losing space for other road users. A corner island can vary in size depending on road geometry. Corner islands are primarily to ensure appropriate safe turning speed and secondly to protect storing bicycle riders and pedestrians.<sup>21</sup>

<sup>20</sup> Curtin Monash Accident Research Centre 2010 Fact Sheet 6 Improving Pedestrian Safety

<sup>21</sup> State of Queensland (Department of Transport and Main Roads) 2015 Technical Note 128 Selection and Design of Cycle Tracks May p52

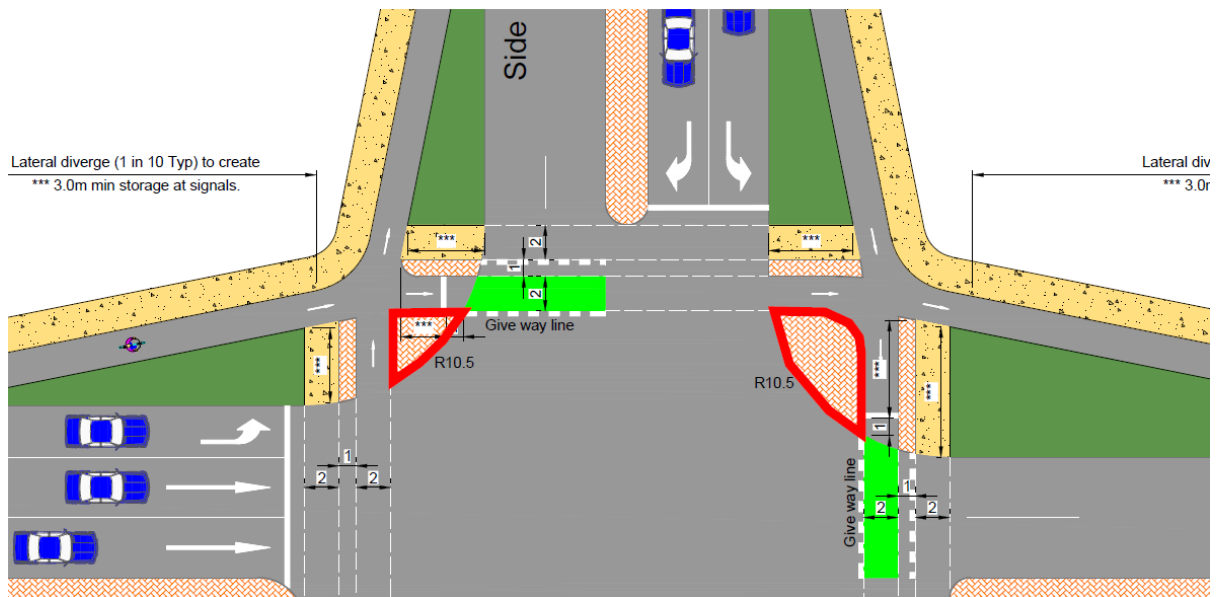


Figure 4: Preferred Intersection Design, protective islands Highlighted

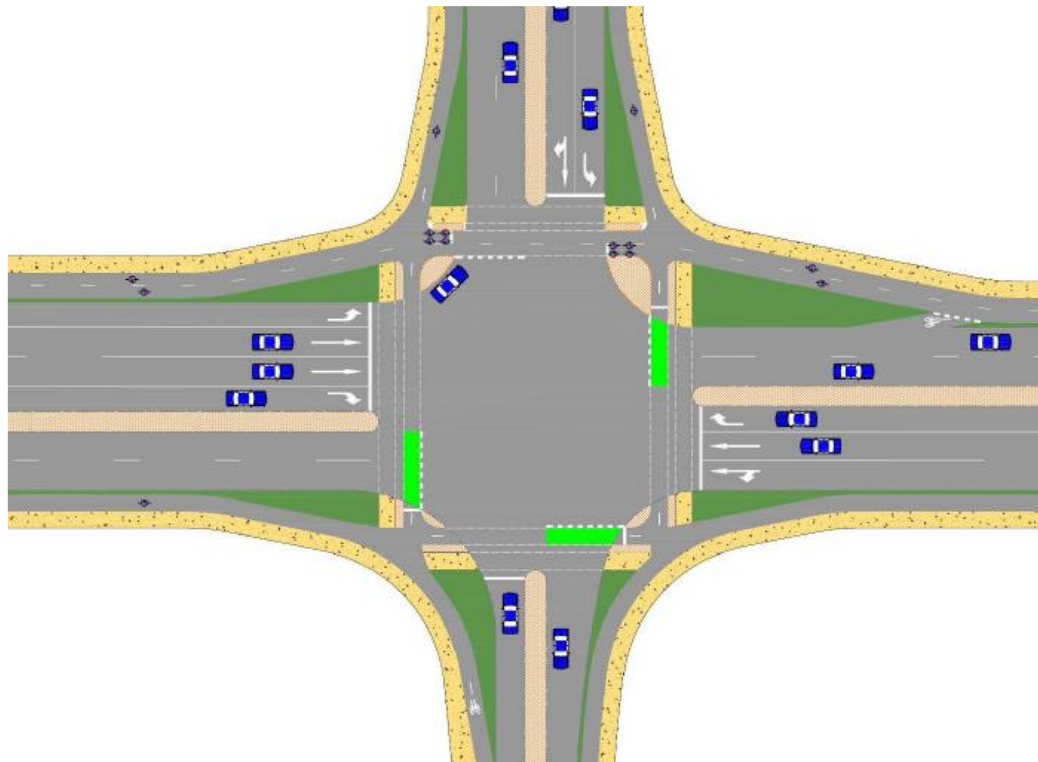


Figure 5: Preferred Intersection Design overall<sup>22</sup>

The protected intersection approach is part of the Safe System approach and endorsed in the Victorian Cycling Strategy 2018-2028 (Figure 6).

<sup>22</sup> State of Queensland (Department of Transport and Main Roads) 2015 Technical Note 128 Selection and Design of Cycle Tracks May p92

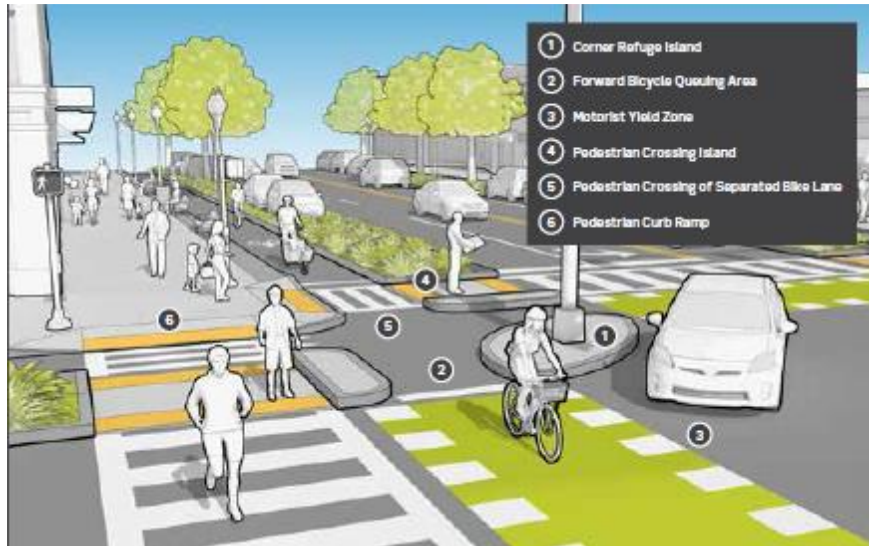


Figure 6: Protected Intersection Victorian Cycling Strategy<sup>23</sup>

#### Bicycle head start (advanced stop line)

A bicycle head start at a signalised intersection can be an advanced stop line, an earlier signal or a combination of the two. This promotes visibility of the bicycle rider from the motorised vehicle's point of view. From an advanced stop bar, bicycle riders arrive at the conflict before left turning motor vehicles. When moving off from stopped, the bicycle rider will usually clear the intersection before the left turning vehicle arrives<sup>24</sup>.

#### Hyde St

However, it would appear the WGTA is committed to the Harris St bridge, and if this alternate route is to proceed it must be dramatically altered to improve increase safety, perceived safety and utility for cyclists.

As the Hyde St/Harris St path is the main route from the west and south west of Melbourne to the city, it is clearly a strategically important cycling corridor and therefore a separated path is the desired treatment consistent with VicRoads guidelines for strategically important cycling corridors.

The shared path should be abandoned and be replaced by a bicycle only bi-directional path immediately to the west of the current kerb and replace the current car parking (Figure 7).

<sup>23</sup> Victorian Cycling Strategy 2018-2028 p24

<sup>24</sup> State of Queensland (Department of Transport and Main Roads) 2015 Technical Note 128 Selection and Design of Cycle Tracks May



*Figure 7: Hyde St Existing Parking and Bike Lane*

The car parking should be moved to the west and replace the existing bicycle lane where ample space exists. This removes the duplication of bicycle lanes while providing a safe, protected bicycle lane and keeps the existing footpath which is separated from the protected bicycle lane by a grass verge, thus protecting pedestrians from conflict with bicyclists. This alternative would mean existing trees and power and telephone poles could remain in their current positions thereby realising considerable financial savings estimated to be approximately \$420,000 (6 poles, approx \$70,000 per pole)<sup>25</sup>. This would also be safer for pedestrians entering and exiting Yarraville Gardens as much larger sight lines would exist. However, it is vital the bi-directional path is painted in a bright colour with frequent bicycle markings in order to avoid any possible confusion for pedestrians. Ideally a buffer would be installed between the bi-directional bicycle lane and the parking. A similar arrangement to the one proposed is shown from a Sydney bicycle path in Figure 8, however, the bicycle path should be painted in a bright colour and have frequent bicycle markings similar to those used in Seville (Figure 9).



*Figure 8: Bidirectional bicycle path protected by car parking in Sydney*<sup>26</sup>

<sup>25</sup> VicRoads pers comm

<sup>26</sup> State of Queensland (Department of Transport and Main Roads) 2015 Technical Note 128 Selection and Design of Cycle Tracks May p24





Figure 9: Bidirectional bicycle path marked with bright paint and bicycle markings (Seville)

The plan view of the proposed alternative bicycle path is shown in Figure 10.

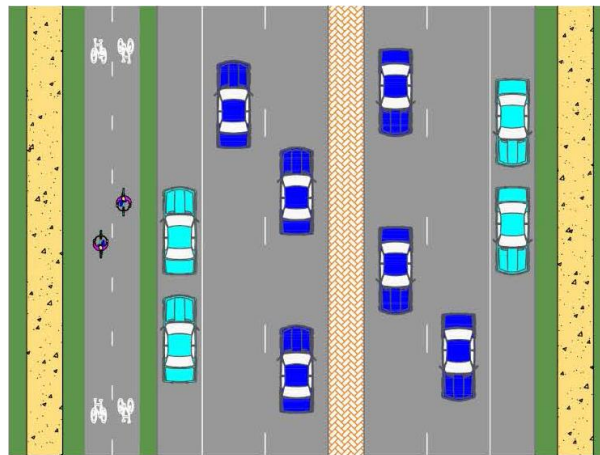


Figure 10: Plan View of bidirectional cycle track with 4 lanes of traffic and parking<sup>27</sup>

This arrangement would also enable the radius of the corner from Hyde St and Harris St to be increased also increasing sight lines and reduce the need to remove vegetation in order to provide a safe corner. Good sight lines are important for the safety and perceived safety of a bicycle route.<sup>28</sup>

### Harris St

The bidirectional bicycle path should continue along Harris St with separate pedestrian facilities. If Harris St is to be closed to motor vehicle traffic, this will provide ample space for pedestrians and remove any need for a shared path. This will be a safer outcome for both pedestrians and cyclists. Pedestrians should be prevented from crossing at any other points due to relatively high bicycle speeds (Figure 11) with the approximate location of the crossing point shown in Figure 12. Bicycles travelling at 40km/h and pedestrians travelling at 5km/h are a dangerous source of conflict for both pedestrians and bicyclists.

<sup>27</sup> State of Queensland (Department of Transport and Main Roads) 2015 Technical Note 128 Selection and Design of Cycle Tracks May p81

<sup>28</sup> Austroads 2017 Guide to Road Design Part 6A Paths for Walking and Cycling, Sydney

There is a 10 metre vertical fall on Harris St between Hyde St and Cowper St. BikeWest undertook an experiment where a cyclist rolled around the corner from Hyde St into Harris St at 10km/h (jogging pace) and stopped pedalling. By the time the cyclist reached Cowper St they were travelling at 40km/h without pedalling. With pedalling this speed easily increases to 45-50km/h. This highlights the need for separation between pedestrians and cyclists. Alternatively speed restriction barriers may be put in place which would effectively render the bike path useless as no one will wish to ride up a hill and then have to brake strongly to travel down the hill in order to then have to ride up another hill over the bridge. Alternatively, cyclists may simply ride around the barriers in the pedestrian area thus leading to conflict rendering the whole exercise futile.

As stated in Victoria Walks Shared paths document

“Shared paths should be designed, managed and promoted with 20 km/h or less envisaged as the desired cycling speed.”<sup>29</sup>

The transition to the bridge will should be widened to allow for separate bicycle and pedestrian use with a similar arrangement to Shepherd’s Bridge.

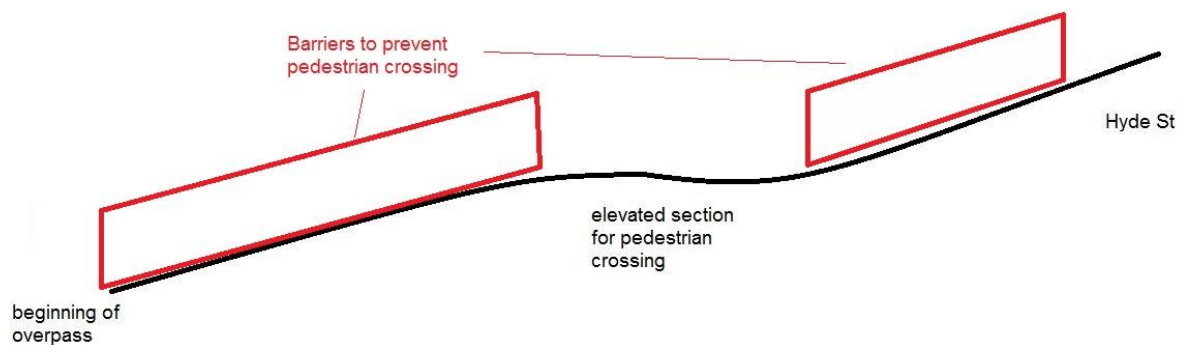


Figure 11: Protected Pedestrian Crossing of Bicycle Track

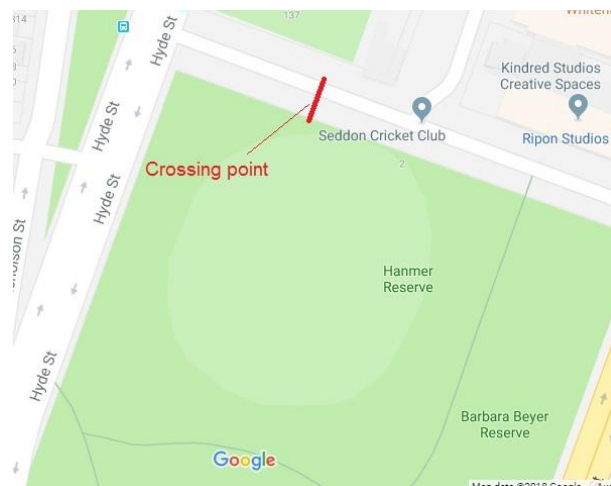


Figure 12: Protected Pedestrian Crossing location

## Cowper St Proposal

The proposed development of Cowper St is striking in its absence of pedestrian space and cycling provision. What is unambiguous is the primary focus of these plans is on private motor vehicle

<sup>29</sup> Victoria Walks 2015 Shared Paths the issues p3

parking. Figure 13 shows the Transport System Hierarchy that is official Maribyrnong City Council policy from the Integrated Transport Strategy. It is very difficult to reconcile the proposed Cowper St plans with this hierarchy.



Figure 13: Maribyrnong City Council Transport System Hierarchy (Maribyrnong City Council Integrated Transport Strategy p25)

For example, Maribyrnong City Council in its advertising has decided the main benefit of this proposed plan is 100 additional car parks. It is unclear how that is supported by the Transport System Hierarchy. In addition, there is no provision for any bicycle parking. This is particularly galling given Cowper St is located next to a major recreational and sport area of Yarraville Gardens (home to Auskick Seddon, the Seddon Cricket Club), the Yarraville Tennis Club and Kindred studios. BikeWest is confused as to why Maribyrnong City Council are choosing to encourage people to drive to a recreational area when it would seem the most appropriate approach would be to encourage people to use active transport thus increasing their recreation and reducing local traffic. There is not one single bicycle park identified on the plan. In 2020 and the age of the climate emergency this is a shocking omission. Each car park space is easily able to accommodate 5 bicycle hoops which can be used by 2 bicycles. BikeWest therefore proposes 10 car parking places be replaced with 50 bicycle hoops to allow for 100 bike parks. This will still leave 90 car parking places (Figure 14).

Cowper St is also an ideal link to the north of Yarraville Gardens as it is a low traffic volume street which connects with the soon to be constructed protected bidirectional bike path along Parker St. The extreme width of Cowper St should be utilised to install protected unidirectional bike paths along Cowper St to Parker St. The proposed footpath on the eastern side of Cowper St should be widened to 2.5m and become a shared pedestrian, bicycle path as well installing speed humps to ensure low speed (Figure 14). Without such a path there is no way for cyclists to access Yarraville Gardens from Cowper St. This is a significant oversight given cyclists are currently able to access Yarraville Gardens, consequently the proposed plans will reduce the current level of access.

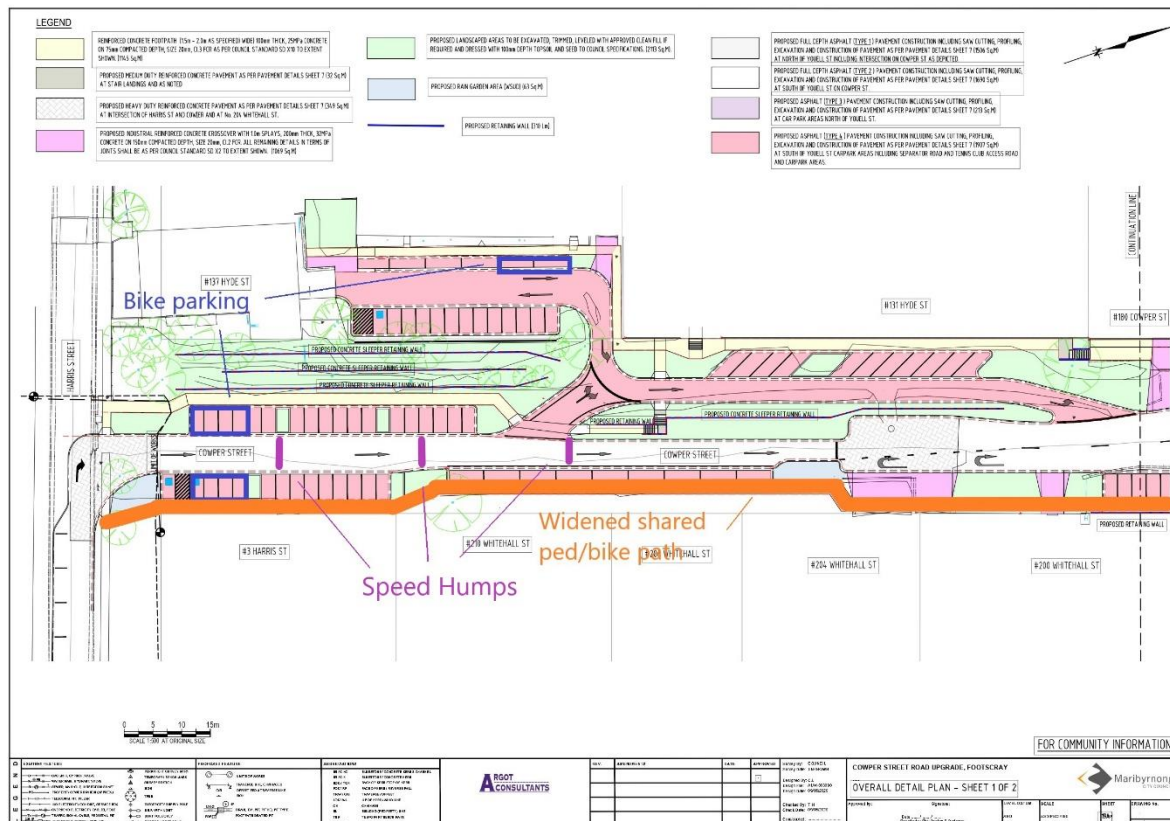


Figure 14: Proposed Alterations to Proposed Cowper St Plan

The proposed shared path can connect to the unidirectional paths as per the following VicRoads specification. Instead of a signalised crossing, this could occur at a so called raised wombat crossing at the corner of Cowper and Lyons St (Figure 15).

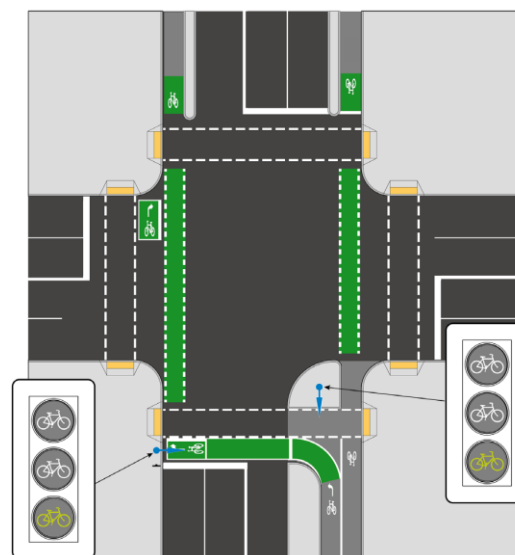


Figure 15: Transition from bidirectional to unidirectional protected bike lanes<sup>30</sup>

<sup>30</sup> VicRoads 2016 Traffic Engineering Manual Volume 3 – Additional Network Standards & Guidelines Design Guidance for strategically important cycling corridors p35



While it is not part of the BikeWest's remit, we also not the tokenistic nod to water sensitive urban design with the small rainwater gardens. These should be dramatically increased in size as well as much greater tree and shrub planting to be consistent with the Climate Emergency response soon to be published by Maribyrnong City Council.

## Summary

The proposed cycle track around Yarraville Gardens has the potential to be a high quality bicycle infrastructure that is an asset to the community and encourage more people to cycle. However, BikeWest feels strongly several important alterations must be made to improve the comfort and safety of pedestrians and bicyclists to ensure its success in accordance with the Safe System approach which is common internationally and has been adopted in principle in Australia but not in practice.

The installation of a separate cycle track between the current footpath and parking on Hyde St will improve comfort and safety for both pedestrians and bicyclists while keeping existing traffic lanes. This alternative also keeps the existing power and communications poles along Hyde St as well as the mature trees thereby saving approximately \$420,000. This will help the other proposed alternation of a corner with a larger radius at the intersection of Hyde St and Harris St which will improve sight lines and safety. The cycle track along Harris St should have barriers to prevent pedestrians crossing at other points, will improve safety for pedestrians and cyclists. The Whitehall St Overpass should then be widened to accommodate pedestrians and bicyclists as per Shepherds Bridge.

Using Maribyrnong Council's endorsed Transport System Hierarchy as a guide, Cowper St should also be redesigned to remove 10 car parks and install 50 bicycle hoops to encourage people to access Yarraville Gardens by bicycle. The footpath on the eastern side of Cowper St should be widened and be designated a shared pedestrian bicycle path which can continue to protected paths all the way to Parker St.

The combination of this proposed alternations will dramatically improve comfort and safety for pedestrians and bicyclists lowering stress for motorised vehicles as there is less potential conflict with vulnerable road users.