
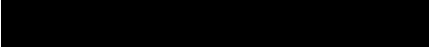


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# Wheels to Wings Cycleway

## Independent design option review – Final

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Prepared for	Christchurch City Council
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Prepared by	 Transport Engineering  Road Safety

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## Summary

Major cycleway routes are developed to cater for the ‘interested but concerned’ group of cyclists, including both adults and children aged 10 years and over. However, major cycleways do more than just improve the quality of the street from cycling perspective. They also improve the walking environment through the provision of more and higher quality crossing facilities, including better public transport access in many instances where existing bus stops have poor crossing facilities. When providing shorter crossing distances for cyclists across side roads this can also improve overall safety conditions at the intersection for all road users. These are just examples of improvements that come about when implementing cycleway projects in the urban context. What is important is that cycleway projects do not introduce unintended outcomes that manifest as major safety issues or lower the quality of life of residents.

We believe that the Submitters proposal (Community concept – developed by Bill Greenwood and Brian Neill) to provide a cycle facility on the south side of Harewood Road is well-intended in terms of continuity and safety for cycleway users. To achieve this in the central part of the route between Nunweek Boulevard and Greers Road a two-way cycle path is proposed on the south side of the central median within a one-way (westbound) access road. This means all through traffic is moved to the north side of the existing central median with opposing directions of travel separated by a 1.8m flush median. Parking on north side is located in indented parking bays (such that in some locations the footpath is reduced to 1.6m wide). We consider this design results in safety concerns that cannot be ignored.

These safety concerns include the safety of the right turn movements for drivers into the access lane being undertaken quickly as drivers will feel vulnerable waiting to make that turn, particularly close to the intersections where they can be mistaken for right turners at the intersection. In their haste to enter the access road they may not see cyclists in the process of crossing the access road entry and if they waited for a cyclist already making the crossing the vehicle would be protruding into the through traffic lane. Whilst the design removes the cycleway/driveway conflict in the Nunweek Boulevard to Greers Road section, the design (perhaps inadvertently) actually increases the number of vehicles crossing the cycleway. We also consider that transferring all traffic to the north side of the median now poses a higher risk to northern residents reversing out of their driveways and making right turns exiting and entering their driveways.

**On balance, acknowledging that both options have pros and cons, we support the CCC design over and above the Submitters design which we believe has negative impacts on safety that mean the design is not feasible from a safety perspective.**

**We also consider that the residents on the north side of the street in the central section are also negatively impacted by the road space reallocation from both a safety and amenity perspective.**

## 1. Introduction

Christchurch City Council (CCC) commissioned the authors to undertake an independent review of two design options for the Wheels to Wings cycleway on Harewood Road and establish an opinion on the relative merits of each option. The options are the CCC Preferred Option and a Submitters proposal (Community concept – developed by Bill Greenwood and Brian Neill).

Our review has been based on an examination the plans for the two options, holding a workshop with both parties and a site visit on bicycle. The workshop gave us the opportunity to have the designs explained and for us to ask questions, it also identified the points-of-difference between the designs which the parties cannot reach agreement on. Our review focuses on those points-of-difference.

We are both Chartered civil engineers with over 20 years' experience in the transport industry. We both regularly undertake reviews and audits drawing on our expertise. Over the last 5 years we have both been heavily involved in the preparation of industry best practice guidance in relation to walking, cycling, public transport, street design, speed management and safety engineering. This best practice work has also involved training the industry on these topics.

It is important to note that best practice is not something that can always be applied in a cut and paste manner. Typically, there is more than one way of applying best practice guidance to respond to site-specific conditions. It is all about applying professional judgement whilst referring to any such guidance and considering the broader impacts of any decisions. For example, the choice of cycle facilities on a particular route requires an assessment of a range of possible options that might be appropriate for the context. Best practice for selecting a design option is the use of multi-criteria analysis, which is a process that has been used by the CCC for the assessment of all the major cycleway routes to inform their decision-making on the preferred option. This process was tailored for the route to reflect the community concerns or contextual aspects of the route, this is not uncommon practice.

The best practice guidance documents applicable to cycleway route planning, facility choice and design are listed below, noting that a wider suite of best practice guidance is also used when considering other road design and safety aspects, such as speed management etc:

- [CCC Christchurch Cycle Design Guidelines](#)
- [Cycle Network Guidance](#) (CNG) – Waka Kotahi NZ Transport Agency
- Austroads guides (when referred to by the CNG)

It is noted from our observation of major cycleways developed to date, that the streets where they are located are generally also improved from more than just a cycling perspective. They also improve the walking environment through the provision of more and higher quality crossing facilities. This also offers better public transport access in many instances where existing bus stops have poor crossing facilities. When providing shorter crossing distances for cyclists across side roads this can also improve overall safety conditions at the intersection for all road users. These are just examples of improvements that come about when implementing cycleway projects in the urban context. What is important is that cycleway projects do not introduce major safety issues or lower the quality of life of residents.

A key observation from our site visit is that although Harewood Road has a 50km/h speed limit it still feels like a higher speed environment. This cycleway project offers the opportunity to create a street design that supports a lower speed that save lives and avoid serious injuries, whilst contributing to wider societal benefits such as improved accessibility, physical activity rates and environmental outcomes.

## 2. Design Options

The two design options considered in this review are:

- The **CCC design** is based on the following objective - *Major Cycleways are to cater for the 'Interested but Concerned' group including both adults and children aged 10 years and over. Cycle routes should be safe and be perceived as safe, provide personal security and limit conflict between cyclists and other route users.*
- The **Submitters design** is based on the following objective - *This alternative incorporating a Regional cycleway fully on the south side the length of Harewood Road can provide the safest, best connected, lower financial cost and environmentally sustainable transport network improvement for our community.*

The key features of the two options are outlined in Table 2.1 below along with points of agreement and disagreement. Based on our understanding from the workshop discussion we have identified these points of agreement and disagreement between the CCC design team and the submitters design team. We then provide a commentary of the key points of difference (those in red text in the table).

It is important to note that our review does not comment on matters of traffic efficiency (such as intersection changes that can impact vehicle capacity) or construction cost differences between the two designs, rather we are focused on the design differences and in particular the safety aspects. Verifying the points of difference on these matters would have required delving into traffic models and cost estimate breakdowns, which is not achievable in the available timeframe for this review. Although, it is noted that from a design perspective that the major signalised intersection designs proposed in the Submitters design are compromised due to the emphasis on capacity, for example there no central islands on Harewood Road for the signal poles and do not provide adequate cycling facilities.

We note that tree removal/replacement and on-street parking are also design related issues and these can be easily quantified from a 'numbers' perspective. However, from what we have reviewed these aspects are similar with both designs, for example accommodating on-street parking where feasible. This includes both designs aiming to retain business related parking in response to initial concerns from businesses. By way of comparison, in the vicinity of the Copenhagen Bakery the CCC design has 27 on-street car parks between Trafford Street and Breens Road (10 north side and 17 south side), and the Submitters design has 24 on-street car parks between Trafford Street and Breens Road (11 north side and 13 south side).

**Table 2.1 Outline of design options**

Corridor section	CCC Design	Submitter design	Points of agreement and disagreement
Waimakariri Road to Nunweek Boulevard	<ul style="list-style-type: none"> <li>• Shared path on the south side of the road, 3m wide</li> <li>• Traffic signal crossing at Harewood school (with a raised safety platform)</li> <li>• Traffic signal intersection at Woolridge Road</li> <li>• Traffic signal crossing just west of Nunweek Boulevard (with a raised safety platform) to transition to a one-way</li> </ul>	<ul style="list-style-type: none"> <li>• Shared path on the south side of the road, 2.5m wide</li> </ul>	<p><b>In agreement:</b></p> <ul style="list-style-type: none"> <li>• Shared path on south side</li> <li>• Traffic signals at Woolridge (if the traffic volumes are in the range that CCC informed the Submitter at the workshop)</li> </ul> <p><b>In disagreement:</b></p> <ul style="list-style-type: none"> <li>• Width of shared path</li> <li>• Traffic signal crossings at Harewood school</li> <li>• Traffic signal crossing just west of Nunweek</li> </ul>

Corridor section	CCC Design	Submitter design	Points of agreement and disagreement
	separated cycleway on each side of the road		Boulevard in CCC design – submitter concerned about isolated traffic signals
Nunweek Boulevard to Farrington Ave	<ul style="list-style-type: none"> <li>One-way separated cycleway on each side of the road through the removal of one traffic lane on each side</li> <li>Traffic signal intersection at Breens Road</li> <li>Traffic signal crossings at the Bishopdale roundabout</li> </ul>	<ul style="list-style-type: none"> <li>Two-way cycle path on the south side of the road within a one-way (westbound) access road for property access</li> <li>All through traffic is moved to the north side of the central median with opposing directions of travel separated by a 1.8m flush median. Parking on north side located in indented parking bays</li> <li>Traffic signal intersection at Breens Road</li> <li>Traffic Signals at Bishopdale Mall entrance</li> <li>Off-set T traffic signal intersections to replace the roundabout</li> </ul>	<p><b>In agreement:</b></p> <ul style="list-style-type: none"> <li>Removal of one traffic lane in each direction will not impact capacity</li> <li>Traffic signal intersection at Breens Road</li> </ul> <p><b>In disagreement:</b></p> <ul style="list-style-type: none"> <li>Location and type of the cycle facility</li> <li>Safety of the cyclists at driveways in the CCC design</li> <li>Safety for general traffic</li> <li>Convenience for residents</li> <li>Traffic Signals at Bishopdale Mall entrance</li> <li>Off-set tee traffic signal intersections to replace the roundabout</li> </ul>
Farrington Ave to Matsons Ave	<ul style="list-style-type: none"> <li>Two-way cycleway on the north side of the road</li> <li>Traffic signal changes at Greers Road</li> <li>Traffic signal crossing just south of Matsons Ave</li> </ul>	<ul style="list-style-type: none"> <li>Two-way cycleway on the south side of the road</li> <li>Traffic signal changes at Greers Road aimed at improving intersection efficiency</li> <li>Traffic signal intersection at Matsons Ave</li> </ul>	<p><b>In agreement:</b></p> <ul style="list-style-type: none"> <li>Nil</li> </ul> <p><b>In disagreement:</b></p> <ul style="list-style-type: none"> <li>Location and type of the cycle facility</li> <li>Nature of the traffic signal changes at Greers Road</li> <li>Having the cycleway interact with the Mitre 10 driveways on the CCC design</li> </ul>
Matsons Ave to Railway line	<ul style="list-style-type: none"> <li>One-way separated cycleway on each side of the road</li> </ul>	<ul style="list-style-type: none"> <li>Two-way cycleway on the south side of the road</li> </ul>	<p><b>In agreement:</b></p> <ul style="list-style-type: none"> <li>Nil</li> </ul> <p><b>In disagreement:</b></p> <ul style="list-style-type: none"> <li>Location and type of the cycle facility</li> </ul>

## 2.1 Point of difference – Driveway conflicts

Any cycle facility located adjacent to a residential or commercial property boundary with a vehicle access point introduces potential conflict between cyclists and those accessing the adjacent property in a vehicle. The submitter promotes their design for the central section on the basis of continuity but also safety as the two-way cycle path is away from driveways. This commentary covers the safety implications of cycleways past driveways and how this has been managed in the CCC design.

- Residential exiting drivers – the distance from boundary to the cycleway is generous ensuring reversing vehicle have good visibility of cycleway users, coloured surfacing
- Parking intervisibility for entering drivers– no stopping lines are set back from driveway extents to allow better visibility
- High use driveways – coloured surfacing and a low mountable kerb line has been used between the footpath and the cycleway to reduce speeds in and out of the high use driveway such as the Caltex petrol station, we also understand there is potential use of speed reduction devices at the boundary in consultation with the businesses during the detailed design stage.

Although the Submitters design removes the cycleway/driveway conflict in the Nunweek Boulevard to Greers Road section, the design (perhaps inadvertently) actually increases the number of vehicles crossing the cycleway. This occurs because all vehicle movements to/from driveways have to cross the cycleway when they enter and exit the westbound access road, as do all vehicle movements associated with adjacent activities that park on-street. The CCC design does not result in any vehicle movements that intend to park on the south side of the street crossing the cycleway. Furthermore, concentrating all potential vehicle crossings of the cycleway at the access road entry and exit points increases the likelihood of a cyclist encountering a vehicle crossing the cycleway than the CCC design.

**Overall, the Submitters design results in more vehicles crossing the cycleway and a higher likelihood of conflict away from intersections than the CCC design.**

## 2.2 Point of difference – Traffic signal crossings

The Submitter's design differs from the CCC design in that it specifically avoids installing midblock traffic signals at Harewood School and does not propose signalised crossings just west of both Nunweek Boulevard and Matsons Ave. The submitters rationale for not installing a signalised crossing at Harewood School is that *low use isolated traffic signals have a recognised poor safety record*. This position is consistent with Waka Kotahi Pedestrian Network Guidance (PNG), which states *Pedestrian signals are usually installed where there are enough pedestrians to ensure the signals are activated regularly. If the signals are not activated regularly, drivers can develop the expectation that pedestrians will not be crossing, leading to safety issues. The alternative may be to signalise a nearby intersection.*<sup>1</sup>

The PNG goes on to note that *There may be locations where, due to a desire to encourage pedestrian priority, a signalised crossing may be appropriate with lower than normal pedestrian flows*.

Both the CCC design and Submitter's design see the cycleway cross from the south side of Harewood Road to Waimakariri Road. Providing a safe and convenient crossing of Harewood Road near the Waimakariri Road intersection is clearly a critical component of both proposals. Based on other signalised crossings installed in the city that have low use outside of school times, such as Sparks Road outside Hoon Hay School and Colombo Street outside Thornington School, we do not believe that these signals will be called so infrequently that they will create safety issues, especially given this is a major cycleway route. We also note that most schools still provide supervision at traffic signals at the

<sup>1</sup> <https://nzta.govt.nz/walking-cycling-and-public-transport/walking/walking-standards-and-guidelines/pedestrian-network-guidance/design/crossings/priority-crossings/signalised-crossings/>



start and end of school days. The Austroads Pedestrian Facility Selection Tool confirms that a signalised crossing is an appropriate design response in this environment.

**On balance, we believe that the raised signalised crossing option is the safer and more convenient option than the Submitter's design, especially for cyclists and the Harewood School children.**

Under the Submitters design, the crossings at Nunweek Boulevard and at Matsons Ave are not required as the cycle facility remains on the south side of the road. However, the CCC design uses this form of crossing to aid cycleway users and pedestrians across Harewood Road, as per the discussion above we support the use of signalised crossings along the route to aid crossing. These features will also help with reflecting the 50km/h speed environment compared to the current road design where there are long stretches with uninterrupted for traffic which leads to higher than desirable speeds. A key benefit of the crossing west of Nunweek Boulevard is the improvement for bus users as the current bus stop is isolated from any footpath or crossing.

### 2.3 Point of disagreement - Safety for general traffic

The most fundamental difference between the design options for general traffic occurs in the section between Nunweek Boulevard and Greers Road. The CCC design option effectively mirrors the current situation except for removing one lane of traffic in either direction. It retains the central median to separate opposing directions of traffic, including on the approaches to the signalised intersections with Breens Road and Greers Roads. Whereas the Submitter's design places all traffic on the north side of the existing raised island apart from traffic that is associated with properties fronting the south side of Harewood Road that use a new westbound access road on the south side of the road, as shown in Figure 1.

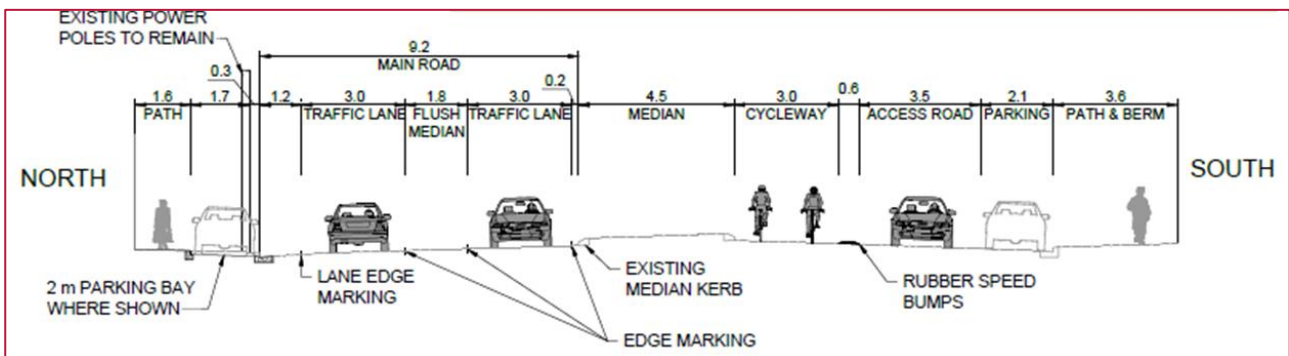


Figure 2 Cross section in the central section (Submitters design)

The Submitter's design includes two narrow 3m wide traffic lanes, a narrow 1.8m wide flush median to separate opposing directions of traffic, a 1.2m wide buffer to the kerb on the north side of the carriageway and a 0.2m wide buffer from the central median. On-street parking is provided in indented bays. This design results in the existing power poles being located very close to the live traffic lane, despite a 1.2m buffer shown in the Submitters design. The current situation has the parking lane (approximately 2m wide) providing a buffer to the power poles and the CCC design will move the traffic lane even further away from the power poles.

The layout means that any bus stops (2.7m wide) need to straddle the indented bays and the buffer. The 1.6m footpath adjacent to the bus stop is not sufficient to accommodate people waiting with prams or wheelchairs. Overall, we consider that the walking experience will be less pleasant on north side but obviously improved on the south side with far less traffic adjacent to the footpath.

We are also concerned that the 1.2m buffer could be used/mistaken as an eastbound cycle lane and this unsafe due to the parked cars (risk of dooring). The CCC design provides a better buffer between the footpaths and the traffic lane with the presence of the cycleway and parking spaces.

We also note that any vehicle waiting in the flush median to turn right will effectively block the westbound traffic lane due to the below standard width of both features. Whilst a car could 'sneak' past a vehicle using the flush median, it would need to do so at very slow speed. We do not consider this is an acceptable arrangement for an arterial road.

The proposed cross section on the north side is not considered appropriate for an arterial road (or even a collector road) and we believe it would be flagged in a Road Safety Audit as a 'significant' safety issue.

The physical separation of opposing traffic provided by the CCC design is superior from a safety perspective (removes head-on collision risk). The Submitter's design also includes other features that are expected to result in poor safety outcomes, including:

- Right turn movements can be made into and out of residential properties on the north side of Harewood Road. The current layout and the CCC design do not permit right turn movements into or out of these properties and encourage routes to/from properties that only involve left turn movements. Enabling right turn movements on the north side will lead to more crashes than the CCC design.
- Reversing out of driveways on the north side will become much more difficult as the parking lane that currently exists can no longer be used as a manoeuvring area.
- Proximity of the access road entry locations to major signalised intersections. Poor safety outcomes are expected from right turn movements into the access road, misinterpretation of the intentions of vehicles indicating to turn right (resulting in the risk of rear end crashes), as shown in Figure 2. There is also the potential for queuing back into the main traffic lane as larger vehicles (such as waste collection and delivery vehicles) wait for cyclists using the two-way cycle path.

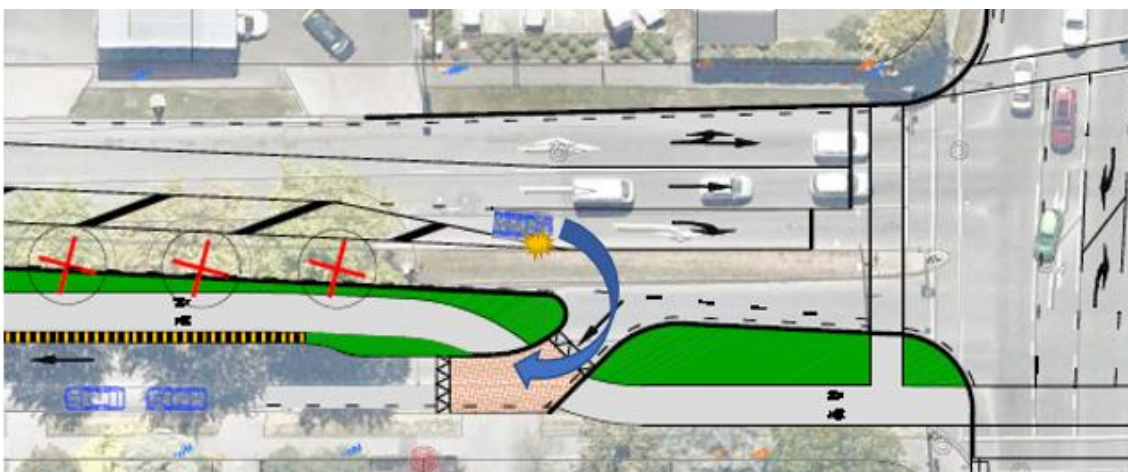


Figure 2 Right turns into the access lane (Submitters design)

**We consider that moving all through traffic to the north side of the central median, as proposed in the Submitter's design, is fundamentally unsafe for all road users and will make living on the north side less pleasant.**

## 2.4 Point of disagreement – Location and type of cycle facility

The submitter states that “Connectivity is very important for intended cyclists that don’t feel comfortable riding on the road. This is achieved by continuing a dual cycleway on the south side of Harewood Road well clear of minor arterial traffic flow for the majority of its length”. Also “Our concept removes the need for two and ideally a third set of isolated cyclist activated traffic signals. These increase delays and potential crashes for both cyclists and road traffic.”

For cyclists travelling the full length of Harewood Road, the CCC design requires westbound users to cross the road twice (once at Matsons Ave and once just west of the Bishopdale roundabout) and eastbound users to cross once (at Nunweek Boulevard). Continuity is one of the five key cycleway route criteria (CNG) and is often used as an assessment criterion. Whilst the use of one-way and two-way facility types along the route is not ideal, they apply to relatively long sections of the route, which means many users do not need to cross from side to side that often.

**Our view is that the CCC design, given the length of the route and the crossing facilities provided, delivers an acceptable level of continuity for cyclists.**

The submitters design to achieve a facility on the south side of the road in the central section of the route, is to locate a two-way cycle path on the south side of the central median. Whilst this type of arrangement is well-intended and provides a good level of continuity, it introduces safety issues for cyclists and traffic at the one-way access road entry and exit points. These safety issues are discussed in more detail in Section 3. The submitters design also limits the ability for residents on the north side of the street to access the two-way cycle path and the footpath on the south side of the access lane as they need to use the footpath to cycle to the closest refuge crossings across the two-way road and also the raised central median. This happens at all two-way cycleways in the city, however the difference is that the crossings on the north side are very narrow for bicycles and will feel very uncomfortable at peak times when traffic volumes are high. Access for residents to the CCC design in the central section is provided via the one-way cycle facility to crossings within the wide central median.

The section between Farrington Ave and Matsons Ave is similar between options, with the CCC design having a two-way cycling facility on the north side of Harewood Road and the Submitter’s Design a two-way facility on the south side. Aside from being on different sides of the road, the designs have similar safety and functionality features so no facility is considered better than the other.

**Our conclusion with regard to the submitters design is that it provides good continuity but at the expense of safety, and also the convenience for those wishing to access the two-way cycle path from the north side of Harewood Road.**

## 2.5 Point of disagreement - Convenience for Residents

This matter relates to convenience for residents travelling in vehicles.

The Submitter believes their design provides superior convenience for residents in the Nunweek Boulevard to Farrington Ave section of the route compared to the CCC design. The CCC Design effectively retains the existing level of convenience for residents, as right turn movements into and out of properties remains banned by the retention of the raised central median. The introduction of a one-way cycleway on each side does not change the level of convenience for residents, as this infrastructure only formalises the space currently used by cyclists and still requires residents entering and exiting driveways to give way to cyclists.

The Submitter’s design could be considered to improve convenience for residents on the north side of Harewood Road by enabling right turn movements to and from properties. However, the extent to which right turn movements from the narrow flush median will be possible, especially during peak traffic periods, is debateable. Furthermore, removing the ability for residents to reverse into the parking lane when exiting their driveway will make it more difficult to enter Harewood Road. Convenience for



residents on the south side of Harewood Road is assessed to be similar to the current state, as despite the ease of entering and exiting properties via the access road, entering the main traffic flow from the access road will be more difficult.

**Overall, we consider the Submitter’s design will provide a similar level of convenience for residents travelling in vehicles as the CCC design, as any improvement in convenience associated with the ability to turn right into and out of driveways will be balanced by a reduction in convenience associated with the removal of the parking lane as manoeuvring space.**

### 3. Summary of the options

Table 3.1 below outlines the summary of the points of difference discussed above.

**Table 3.1 Summary of points of difference**

Point of difference	CCC design	Submitter design
Driveway conflicts	<ul style="list-style-type: none"> <li>• Good separation distance at residential driveways and coloured surfacing.</li> <li>• High use driveways have good separation distance and coloured surfacing, may need further design treatments at the boundary to raise awareness but that is matter of detailed design.</li> </ul>	<ul style="list-style-type: none"> <li>• No driveway conflicts in the central section where the two-way cycle path is away from driveways, but conflict is now concentrated at the entry and exit to the access lane and with higher volumes (also includes on-street users).</li> </ul>
Traffic signal crossings	<ul style="list-style-type: none"> <li>• We consider that the signalised crossings do not pose a major safety issue and will help support the 50km/hour speed limit compared to the current situation.</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of priority crossing at Harewood School for cycleway users is considered a safety issue.</li> </ul>
Safety for general traffic	<ul style="list-style-type: none"> <li>• Considered acceptable.</li> </ul>	<ul style="list-style-type: none"> <li>• The right turn movements for drivers and conflicts with cyclists at the access lane entries are considered a major safety issue.</li> <li>• Transferring all traffic to the north side of the median now poses a much higher risk to residents making right turns exiting and entering their driveways.</li> <li>• Insufficient space at bus stops.</li> <li>• Cross section on the north side of median is too narrow for an arterial road and will give rise to multiple safety issues.</li> </ul>
Location and type of cycle facility	<ul style="list-style-type: none"> <li>• Considered acceptable that facility changes from two-way to one-way given the length of the route and good crossings provided.</li> </ul>	<ul style="list-style-type: none"> <li>• Considered good from a continuity perspective but at the expense of safety and convenience for residents.</li> </ul>
Convenience for residents	<ul style="list-style-type: none"> <li>• Retains existing level of provision.</li> </ul>	<ul style="list-style-type: none"> <li>• Pros and cons result in net neutral outcome. Any improvement in convenience associated with the ability to turn right into and out of driveways will be balanced by a reduction in convenience associated with the removal of the parking lane as manoeuvring space.</li> </ul>

## 4. Conclusion

We believe that the Submitters proposal (named the “Community preferred concept” in the submission) to provide a cycle facility on the south side of Harewood Road is well-intended in terms of continuity and safety for cycleway users. To achieve this in the central part of the route (between Nunweek Boulevard and Greers Road) a two-way cycle path is proposed on the south side of the central median within a one-way (westbound) access road. This means all through traffic is moved to the north side of the existing central median with opposing directions of travel separated by a 1.8m flush median. Parking on north side is located in indented parking bays (such that in some locations the footpath is reduced to 1.6m wide). We consider this design results in safety concerns that cannot be ignored.

These safety concerns include the safety of the right turn movements for drivers into the access lane being undertaken quickly as drivers will feel vulnerable waiting to make that turn, particularly close to the intersections where they can be mistaken for right turners at the intersection. In their haste to enter the access road they may not see cyclists in the process of crossing the access road entry and if they waited for a cyclist the vehicle would be protruding into the through traffic lane. Whilst the design removes the cycleway/driveway conflict in the Nunweek Boulevard to Greers Road section, the design (perhaps inadvertently) actually increases the number of vehicles crossing the cycleway. We also believe that transferring all traffic to the north side of the median now poses a higher risk to northern residents reversing out of driveways and making right turns exiting and entering their driveways.

**On balance, acknowledging that both options have pros and cons, we support the CCC design over and above the Submitters design which we believe has negative impacts on safety that mean the design is not feasible from a safety perspective.**

**We also consider that the residents on the north side of the street in the central section are also negatively impacted by the road space reallocation from both a safety and amenity perspective.**