

# **Transitional Programme - Newtown to city accessibility audit**

Final

**Prepared for:** Wellington City Council

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## Executive Summary

This report presents the findings of an accessibility audit that was carried out on bike and bus improvements designed for Wellington City Council's transitional programme. The audit was conducted by staff at MRCagney in partnership with staff from Blind Low Vision New Zealand and CCS Disability Action. The proposed route provides improved bike and bus access from Newtown to the city centre.

The purpose of the audit is to assess the accessibility of the plans and outline opportunities the designers have to make the route welcoming and usable to everyone. Three principles were used to measure accessibility; whether the design was Safe for everyone, Obvious to everyone and Step-free (SOS)<sup>1</sup> so that as many people as possible can use the route, as easily as possible. Specifically, the footpaths, road crossings, bus stop infrastructure and cycleways were assessed using the SOS lens.

Overall, the plans do a lot to improve the accessibility of the route for more people. By providing an improved facility for cyclists, the footpath is preserved for pedestrians. The cycleway is also likely to attract a wide range of people riding bicycles as it is largely separated and will feel much safer than an on-road, unseparated facility.

The route is a major bus corridor, and cycleway bypasses of bus stops are almost always challenging for many pedestrians (in particular, disabled people) to navigate. It is important that the design of bus stop bypasses are audited again prior to construction, and that Wellington's local disability community is part of ongoing engagement in the project.

The route is complex and long, and there are a wide range of specific comments throughout this report. A recurring issue in the report related to shared paths. Sections of shared path are challenging for pedestrians. With growth in cyclists expected, it is strongly recommended that street design be reconsidered to provide separate footpaths and cycleways throughout the route.

The 30% design drawings do not provide enough information to know how accessible the streets will be post-construction. It is therefore recommended that another accessibility audit is scheduled before construction. It is also recommended that local disabled people are recruited to be involved in design iterations of the cycleway after it has been constructed so that their lived experience can inform the best possible outcomes for the project.

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<sup>1</sup> SOS Principles of Inclusive Access, Waka Kotahi Pedestrian Network Guide 2021 <https://www.nzta.govt.nz/walking-cycling-and-public-transport/walking/walking-standards-and-guidelines/pedestrian-network-guidance/planning/pedestrian-planning-principles/principles-of-safe-obvious-and-step-free-sos/>

# 1 Introduction and Context

Wellington City Council has developed a bike network programme that plans to build over 150 kilometres of cycling infrastructure over the next ten years. The purpose of the programme is to develop a network of cycle routes that are safe and easy for people to use no matter their age or ability. As the first step in that programme, transitional cycleways are intended to improve safety and accessibility for people on bicycles along these routes in a quick build, interim fashion. Opportunities to improve the bus network are also included within scope of the transitional programme, and the Newtown to City route includes new bus priority lanes.

The fast-paced nature of the projects is intended to allow improvements to be implemented quickly, with on-site refinements rather than lengthy design iterations. As part of the design process, this report specifically focuses on auditing the bike and bus improvements and their street environment through an accessibility lens to consider the mobility and ability of every citizen and visitor, whether they travel by foot (including with a mobility aid), bicycle or public transport. This accessibility audit focuses on the Newtown to the city centre route.

## 1.1 The Audit Team

The audit team consisted of:

- Bridget Burdett, Principal Researcher, MRCagney (lead auditor/reviewer)
- Jo Gascoigne, Senior Transport Planner, MRCagney (auditor/reporting)
- Allie Knight, Researcher, MRCagney, (reporting)
- Amber Carran-Fletcher, Operations Manager / Senior Consultant, MRCagney (review)
- Carina Duke, Blind Low Vision (auditor)
- Raewyn Hailes, CCS Disability Action (auditor)

## 1.2 Definition & Purpose

The purpose of this accessibility audit is to review the 30% design drawings for the proposed transitional improvements from Newtown to Oriental Parade. Our recommendations promote access for all, with a focus on pedestrians and cyclists. Accessibility opportunities are listed according to which principle they relate to (safe, obvious, and/or step-free) and whether they present a major or a minor opportunity to improve the proposed design. We have also included comments for broader consideration of the design team.

Access principle(s)	Safe / Obvious / Step-free
Risk	Suggested Action
<b>Major</b>	Major concern that should be addressed and requires changes to avoid serious access constraints.
<b>Minor</b>	Minor concern that should be addressed where practical to improve access, or to mitigate an issue that will only occur rarely.
<b>Comment</b>	General comments regarding access issues which should be taken into consideration during the detail design phase



## **Table 1 Accessibility Audit Concern Categories**

### 1.3 The auditing framework

This audit was carried out by staff at MRCagney using the guidance of the Safe, Obvious and Step-free framework (SOS)<sup>2</sup>. The designs were also reviewed by specialist advisors from the disability sector, including advisors from Blind Low Vision NZ and CCS Disability Action.

The SOS framework was designed to inform streets that are universally accessible for all humans with various capabilities. The first principle, 'safe', makes sure pedestrians are both free from harm and feel safe in a given environment. Various aspects are looked at under this principle, such as whether appropriate separation and space is given to different road users, an area is free of hazards or has good lighting.

Secondly, whether routes and wayfinding are obvious and accessible to everyone is assessed. Assessed aspects under this principle include clear, consistent information is provided and that there is clear separation between different transport modes. Under the "obvious" principle for assessment, the audit considers whether priority crossings such as zebra crossings or traffic signals are emphasised as the most obvious road crossings.

Thirdly, the "step-free" principle checks that step-free route choices are available for anyone who needs them. This last aspect is to ensure routes can be navigated by everyone, including those using wheelchairs or other devices with small wheels, such as scooters or prams. Step-free routes must be free of obstacles, not too steep, and smooth (that is, sealed or paved without defects that could create trip hazards). For this assessment we focused on footpaths, road crossings, bus stop infrastructure, and cycleways.

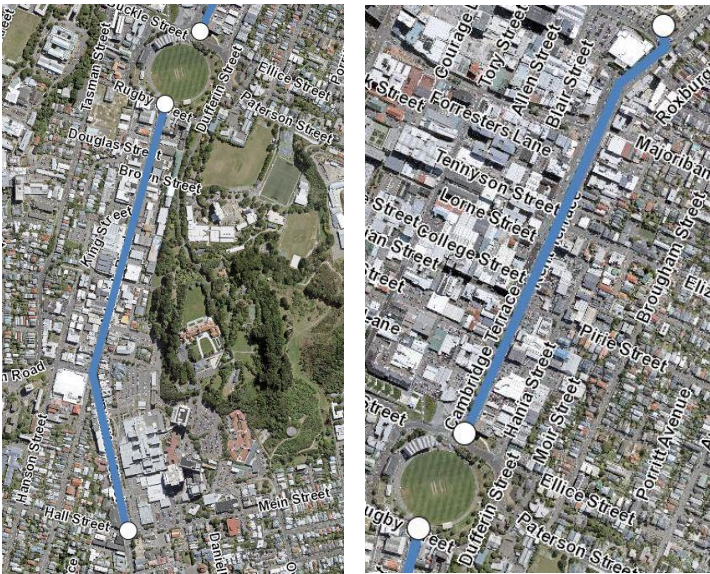
### 1.4 Proposed Cycle Route

The proposed cycleway route shown in Figure 1 is approximately 2.3km long and connects the northern end of Riddiford Street, in Newtown, to the western end of Oriental Parade in the city centre. It starts at the intersection of Mein and Riddiford Streets, travelling past Wellington Hospital leading onto Adelaide Road and towards the Basin Reserve. The route then continues along Cambridge Terrace / Kent Terrace and ends at the intersection of Oriental Parade and Cable Street.

The connection to Oriental Parade means the proposed cycleway provides a link to the Great Harbour Way (an extensive walking and cycling route around Wellington Harbour), as well as connecting with the city centre. Each road along the route is either a regional or arterial road with heavy traffic, except for the Basin Reserve path which is within the sports ground and entirely off-road. The route includes several bus stops serving public and school bus services.

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<sup>2</sup> ([Principles of Safe, Obvious and Step-free \(SOS\) | Waka Kotahi NZ Transport Agency \(nzta.govt.nz\)](#))



**Figure 1 Newtown to City - proposed transitional cycleway<sup>3</sup>**

The route includes the following roads as outlined on these plans:

- Riddiford Street - Proposed Wellington City Council Newtown to Waterfront Cycleway - Sheet 1 of 2 – C101A
- Riddiford Street, Adelaide Road - Proposed Wellington City Council Newtown to Waterfront Cycleway - Sheet 2 of 2 – C102A
- Adelaide Road - Proposed Wellington City Council Newtown to Waterfront Cycleway - Sheet 1 of 2 – C201A
- Adelaide Road, Basin Reserve - Proposed Wellington City Council Newtown to Waterfront Cycleway - Sheet 2 of 2 – C202A
- Basin Reserve, Cambridge Terrace - Proposed Wellington City Council Newtown to Waterfront Cycleway - Sheet 1 of 3 – C301A
- Cambridge Terrace - Proposed Wellington City Council Newtown to Waterfront Cycleway - Sheet 2 of 3 – C302A
- Cambridge Terrace, Oriental Parade - Proposed Wellington City Council Newtown to Waterfront Cycleway - Sheet 3 of 3 – C303A
- Oriental Parade - Proposed Wellington City Council Newtown to Waterfront Cycleway - Sheet 1 of 2 – C401A
- Oriental Parade - Proposed Wellington City Council Newtown to Waterfront Cycleway - Sheet 2 of 2 – C402A

## 1.5 Proposed bus priority lanes

Along the route identified above there are new bus lanes with varying configurations proposed as follows:

- Northbound on Riddiford Street, with a southbound bus lane marked as “may not be required” at least in part
- Northbound and southbound on Adelaide Road, with some portions shared bus/bike lanes.
- Potential changes to bus lanes on Cambridge Terrace (e.g. design note “Clearway to change to full time bus lane?” on plan C301)

<sup>3</sup> WCC GIS Viewer

## 1.6 Disclaimer

The findings and recommendations in this report are based on an examination of the 30% design drawings supplied while taking into consideration observations of the street environment using Google Street View where necessary to provide context. As the designs are still in an early stage of development, we note that several aspects of the design are yet to be confirmed or configured and therefore a subsequent accessibility audit is recommended to review the designs prior to construction.

## 2 Design Commentary

The following provides an overview of the accessibility audit and the findings that were noted on these 30% design drawings. The general comments relate to issues or concerns identified where further investigation and review may be required to confirm any actions to promote access for everyone along the route. The specific comments relate to concerns at specific locations along the route.

### 2.1 General comments

The following comments relate to multiple sections of the proposed route and should be taken into consideration for the review and submission of the detailed design phase.

#### 2.1.1 Footpaths

- **Footpath gradient and crossfall** – the gradient and crossfall of footpaths are key design feature that enables persons with disabilities to be able comfortably use the footpath. Crossfall in particular is important to people using mobility aids or who have limited balance. Footpath crossfall should be less than 2% throughout the route, and zero percent where the gradient exceeds 3% (that is, where crossfall is not necessary for drainage, it should be zero).
- **Detectable kerbs** – all kerbs along the entire route need to be detectable to provide visually impaired persons information on their location in relation to the vehicle lanes and cycle lanes. This enables those who are blind, deafblind or have low vision to detect the edge of the continuous accessible path of travel with confidence.
- **Footpath surface** – the use of paving stones, bricks or tiles can cause trip and/ or slip hazards under certain weather conditions or because of movement (i.e. tree roots or seismic movement). It is recommended all footpath surfaces are inspected to mitigate risks of trips, slips, or falls.
- **Footpath clearway and width** – it is preferable that all footpaths are kept clear of obstructions and a 2-metre clear width is maintained where possible. The clear width should not include any utility boxes, power/lighting poles, signposts, rubbish bins, and private street furniture such as shop sandwich boards and items for sale on-street. It is recommended that the route is reviewed in full to identify potential pinch points and obstructions likely to effect access of the route
- **Wayfinding** is a valuable tool in assisting people of all age and ability to navigate the streets. Signposting all streets, off road paths and identifying their destination if applicable provides users with necessary information to make informed choices about their journey.

#### 2.1.2 Road crossings

There are key elements that make road crossings for pedestrians are safe, obvious and step free.

- **Low vehicle speeds** - speeds of less than 30km/hr. near pedestrian crossings will significantly reduce the risk of serious injury or death to pedestrians in the event of crash. Low traffic speeds help to improve both objective and subjective crash risk, because crash risk is low, and people are likely to feel that the environment is safe.
- **Smooth kerb cuts** - Pedestrian crossings with dropped kerb cuts should not have any deviation or channel lips greater than 6mm, so that people using devices with small wheels can move across them easily. It is recommended that dropped kerbs along the entire route are audited to confirm step-free accessibility for everyone.
- **Tactile ground surface indicators (TGSI)** - It is recommended that all crossing locations and bus boarding locations are installed with TGSI to enable people with vision impairments to navigate the road environment safely.
- **Pedestrian crossings** should be located in obvious locations where there is a demand to cross the road. Non-priority crossings with pedestrian refuges are recommended every 150m along this busy route to help pedestrians to navigate across the road safely. Design consideration should be given regarding safe passage for pedestrians across the proposed cycle lanes at non-priority pedestrian crossings.
- **Step-free access** – a review of the route to identify locations where roads users are required to navigate steps and where there is no alternative option (ramp or dropped kerb) is available. It was not obvious if there were any off-street stairs or paths along the route. It is recommended wayfinding signage is available to direct pedestrians to the nearest step-free locations and provide step free alternatives where necessary.

### 2.1.3 Bus stops

Cycleway bypasses of bus stops are almost always difficult for blind people and people with vision impairment to navigate, so careful design is required. It is recommended that detailed design of bus stop bypasses is reviewed for accessibility before they proceed to construction. We note the following:

- Bus stops should be easily located with signage and road markings with Real Time information supplied in physical and electronic (web/app) format to enable users to plan journeys in advance.
- Provision of bicycle and micro-mobility parking is recommended at or near bus stops to enable people to use multiple modes along this route. Provision of cycle and scooter parking can encourage users to plan their journey with knowledge that there are facilities available. Any micro-mobility parking should be located where it is safe from obstruction other road users (pedestrians) and obvious to potential users.
- It is recommended that in addition to a specific audit of bus stops along the cycleway, further consultation with the disability sector undertaken to provide guidance towards accessible inclusive bus stops, particularly where they include cycleway bypasses.

### 2.1.4 Lighting

Lighting levels along the route are unclear from the plans. Sufficient lighting of all paths should be provided so that people feel safe using them at any time of the day.

### 2.1.5 Driveways

The proposed cycle route shows there are a significant number of driveways across the cycleway and footpaths especially along Adelaide Road. Consideration on mitigating potential risks of conflict between

vehicles, cyclists, micro-mobility and pedestrians is recommended. For example, small speed bumps on the driveway to slow and alert drivers to the presence of the footpath and/or cycleway may be considered.

### 2.1.6 Wayfinding

It is unclear from the plans how people might find their way along the route and to their destinations. Consideration should be given to clearly sign post all off-street paths and steps to inform road users of their direction and destination. Where steps are located, information should be provided as to the nearest accessible path to accommodate people who use wheelchairs, mobility scooters, prams and those people who would prefer a step-free route for comfort or convenience.

### 2.1.7 Basin Reserve

No plans have been provided detailing accessibility in and around the Basin Reserve. It is recommended that an accessibility audit is undertaken on this section of the route at detailed design phase as this section severs the route if an inclusive accessible design is not considered.

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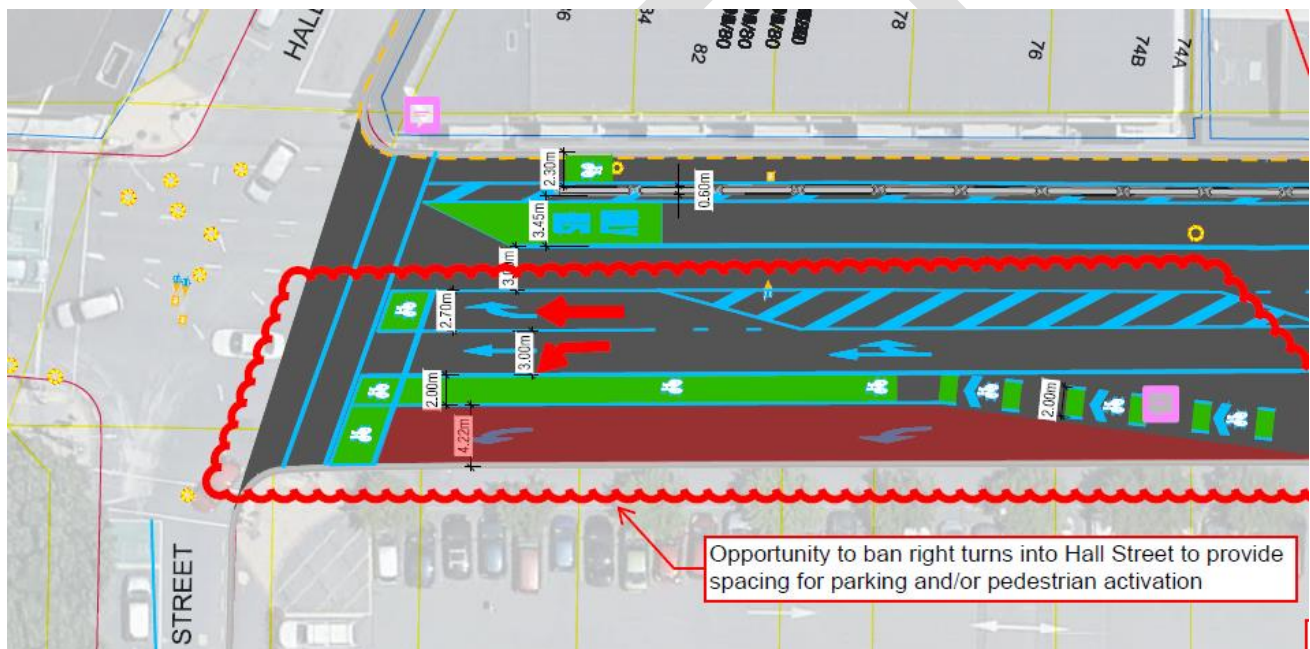
## 2.2 Specific Comments

The following show specific locations identified that require further investigation, design, or review.

### 2.2.1 Riddiford Street / Mein Street / Hall Street intersection (C101A)

Figure 2 shows the cycle lane crossing over into the middle of the traffic lanes allowing a left turn vehicle lane servicing Mein Street. Consideration should be given regarding the potential conflict between cyclists and vehicles crossing paths because this design may render the route inaccessible to less confident cyclists.

Figure 2 shows the crossing width of Riddiford Street at Hall and Mein Street intersection which requires pedestrians to cross seven lanes of traffic (including cycle lanes). The crossing time and width may be intimidating to people who walk slower than an average pace. Consideration should be given to pedestrian timing phases at signalised intersections.



**Figure 2 Excerpt from plan - Riddiford Street / Mein Street / Hall Street intersection (C101A)**

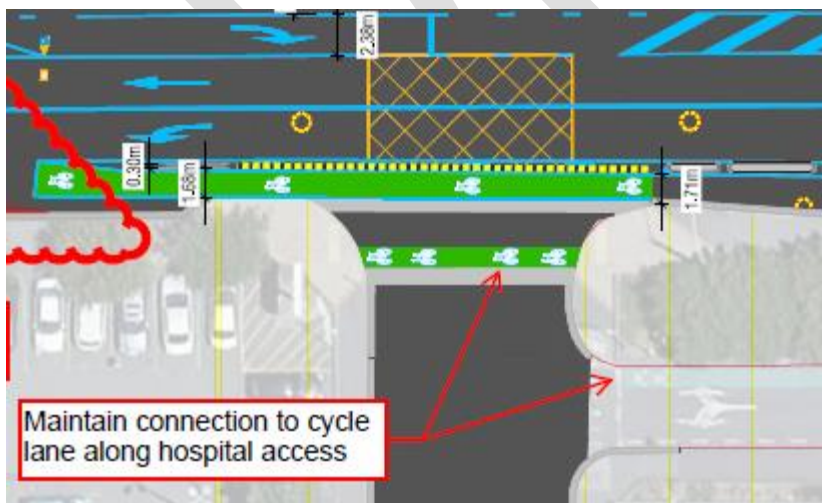
Cycle lane / Left turn lane conflict	
Access principle(s):	Safe
Overall Rating	Major
Designer response	Board decision was to keep the Riddiford St/ Mein St intersection in its current layout and to not ban the right turn into Mein St
Safety Engineer response	Agree with the Designer. The reference being not to ban the left turn into Mein Street.

Cycle lane / Left turn lane conflict	
<b>Client decision</b>	We have amended the designs to continue the separated cycle facility all the way to the intersection with dedicated cycle phasing to remove any cycle vehicle conflict
<b>Action taken</b>	Amended proposed designs

Pedestrian phase crossing width and time	
<b>Access principle(s):</b>	<b>Safe</b>
<b>Overall Rating</b>	<b>Minor</b>
<b>Designer response</b>	Board decision was to keep the Riddiford St/ Mein St intersection in its current layout and to not ban the right turn into Mein St
<b>Safety Engineer response</b>	Agree with Designer.
<b>Client decision</b>	Agree with above, no action required but monitor the pedestrian phase and give additional time if required
<b>Action taken</b>	Monitor pedestrian phase

## 2.2.2 Riddiford Street – shared path cycle lane at crossing (C101A)

Figure 3 shows plans to retain an existing shared cycle path across an accessway to Wellington Hospital which runs parallel to the proposed new cycle lane. Consideration should be given as to whether this cycle lane is necessary and what its purpose is, as this may confuse pedestrians and cyclists alike. It is recommended to link existing on-site cycle infrastructure to the proposed new cycle lane to reduce confusion.



**Figure 3 Riddiford Street - shared path cycle lane (C101A)**

<b>Bus bypass stops</b>	
<b>Access principle(s):</b>	<b>Safe / Obvious</b>
<b>Overall Rating</b>	<b>Minor</b>
<b>Designer response</b>	To be removed in 60% designs
<b>Safety Engineer response</b>	Agree with Auditors and Designer.
<b>Action taken</b>	Removed in 60% designs

### 2.2.3 Riddiford Street – bus bypass stops (C101A)

The proposed bus bypass layout proposed outside Wellington Hospital should be considered carefully as to whether the layout is safe and obvious for everyone using it. A separate audit of bus stop designs on the cycleway and further consultation with the disability sector is recommended prior to the design being finalised.

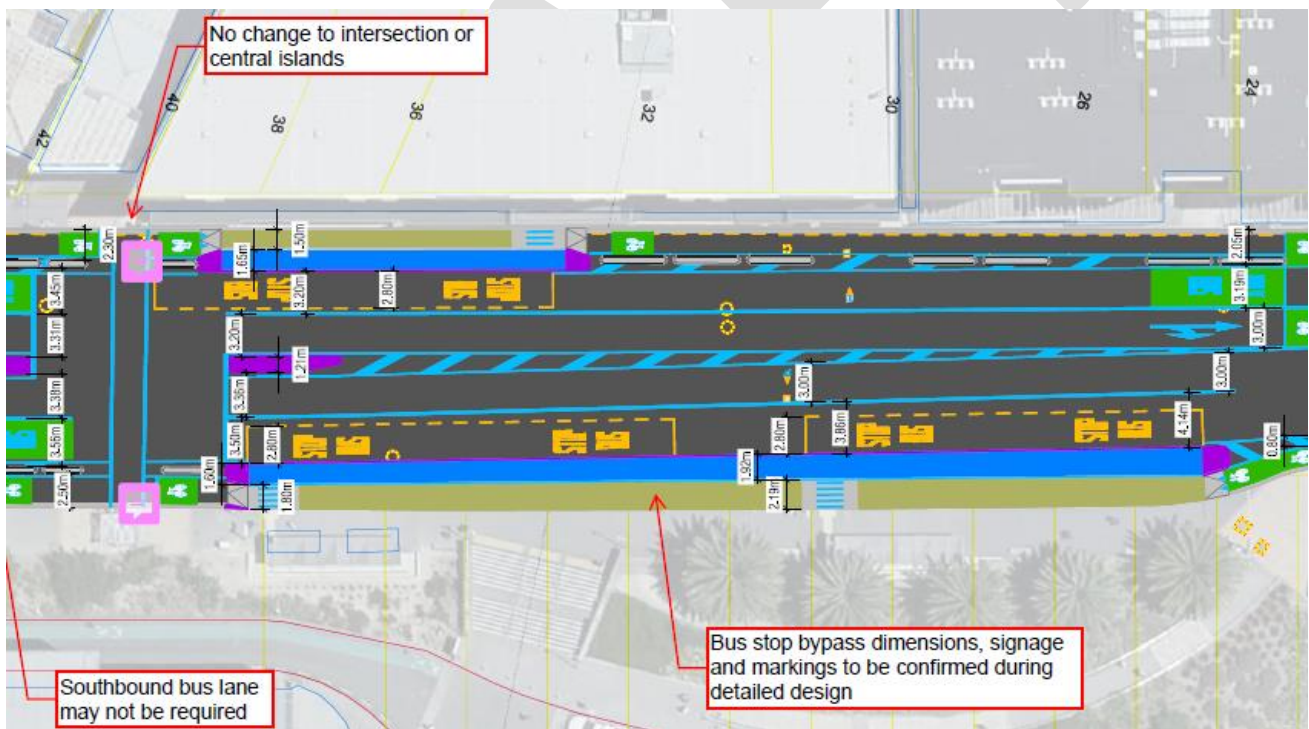


Figure 4 Excerpt from plan - Riddiford Street - bus bypass stops (C101A)

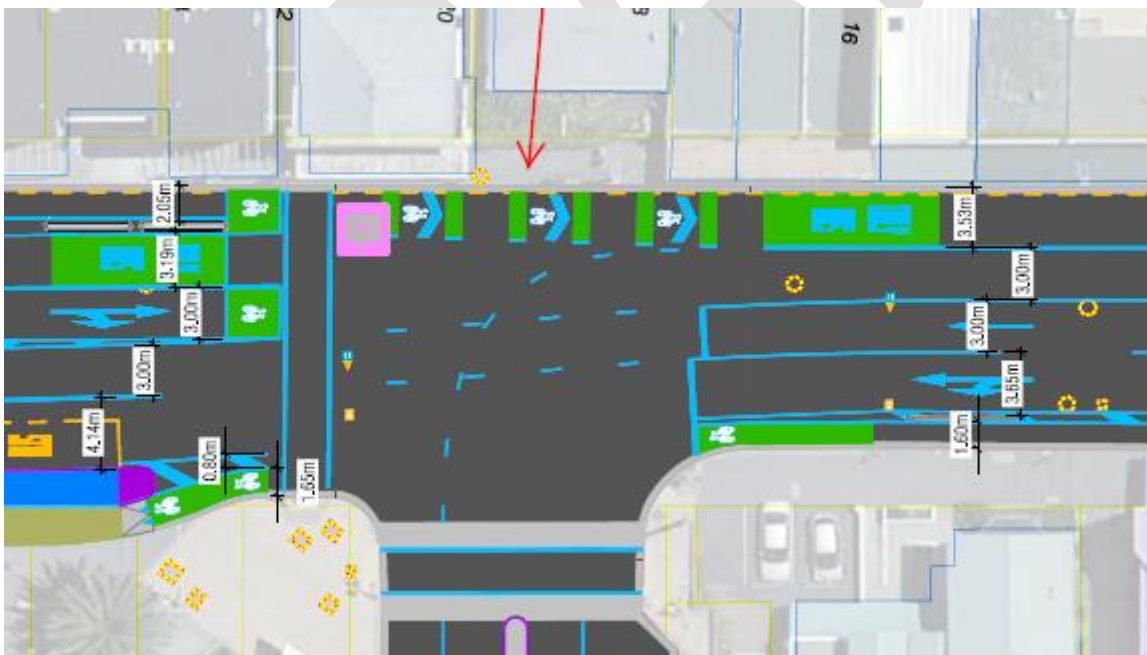
<b>Bus bypass stops</b>	
<b>Access principle(s):</b>	<b>Safe / Obvious</b>
<b>Overall Rating</b>	<b>Major</b>



<b>Bus bypass stops</b>	
<b>Designer response</b>	Unclear what the recommendation is. Bus stop bypasses are a transport industry recognised design solution to the conflict between stationary bus and cyclist
<b>Safety Engineer response</b>	Agree with Designer. However, given that the use of bus bypasses is relatively novel in Wellington and that this is a transitional cycleway, behaviour should be monitored, with any issues being resolved in further design and use.
<b>Action taken</b>	Independent accessibility audit on the bus platform undertaken.  Education and behaviour change campaign developed to complement installation of new platforms

## 2.2.4 Riddiford Street / Hospital access intersection - cycle lane / bus lane merge (C101A)

Figure 5 shows plans to merge cyclists with buses where Riddiford Street intersects with the main entrance to Wellington Hospital. Cyclists may perceive this proposed direction as unsafe, which may influence their decision to use the cycle lane altogether. The design plans specify the intention to provide an advance green signal for cyclists to allow them to move out through the intersection in front of waiting buses. This proposal does not account for cyclists who are travelling up to the intersection and miss the advance signal resulting in them merging in between buses. Consideration should be given to the design and layout of the cycling infrastructure through this intersection.



**Figure 5 Excerpt from plan - Riddiford Street - hospital access intersection (C101A)**

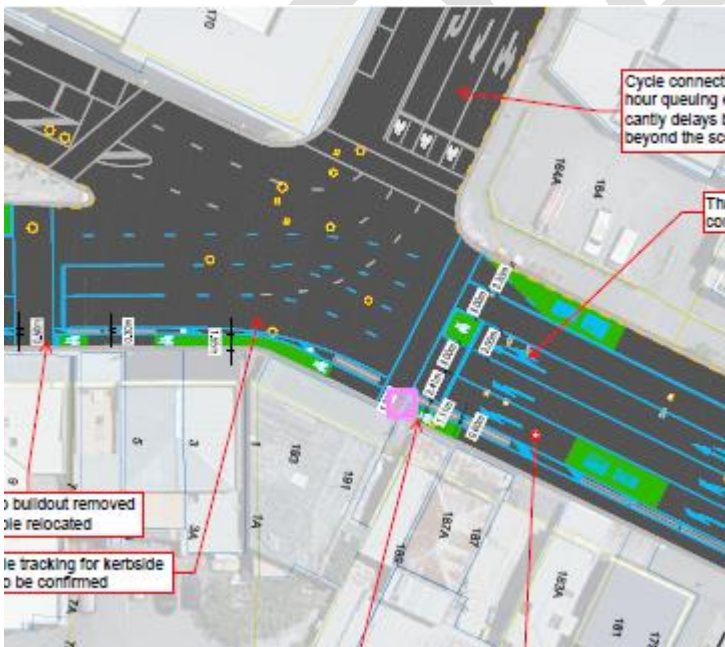
<b>Cycle lane / Bus lane merge</b>	
<b>Access principle(s):</b>	<b>Safe</b>

Cycle lane / Bus lane merge	
<b>Overall Rating</b>	<b>Major</b>
<b>Designer response</b>	Decision from intersection modelling results workshop was a shared bus/cycle lane in the northbound direction due to a lack of space at the John St intersection.
<b>Safety Engineer response</b>	Agree with Designer. Monitor cyclist behaviour and revisit if there is a safety problem
<b>Action taken</b>	Additional signage and road markings with buffer included to ensure safer merge area of cyclists and buses.

### 2.2.5 Riddiford Street / Adelaide Road / John Street intersection (C102A)

Figure 6 shows a southbound separated cycleway on Adelaide Road. The cycle lane continues through the signalised intersection and down Riddiford Street. Design consideration should be given to ensure cyclists are aware they are still under signal control on approach to the intersection to prevent conflict between cyclists and pedestrians when crossing under signal.

Access to the Adelaide Road southbound right-turn advanced cycle box should be considered, for example with markings so that everyone using the street is aware that cyclists may cross traffic lanes to turn right at this intersection.



**Figure 6 Excerpt from plan - Riddiford Street / Adelaide Road / John Street intersection (C102A)**

<b>Separated cycle lane under signal</b>	
<b>Access principle(s):</b>	<b>Safe / Obvious</b>
<b>Overall Rating</b>	<b>Major</b>
<b>Designer response</b>	Traffic signals apply to cyclists as per the road code. The pedestrian crossing lines will take priority over cycleway markings at crossing points
<b>Safety Engineer response</b>	Agree with Designer.
<b>Action taken</b>	No action required.

<b>Access to advanced cycle box</b>	
<b>Access principle(s):</b>	<b>Safe / Obvious</b>
<b>Overall Rating</b>	<b>Minor</b>
<b>Designer response</b>	Will extend the bus box in the northbound direction to 6m. Is no available space to widen the shared bus/cycle lane any further
<b>Safety Engineer response</b>	I don't think the Designer's response addresses the issue for access to the SB ASB. It may be that additional pavement markings are necessary.
<b>Action taken</b>	Monitor the situation add additional road markings if required.

## 2.2.6 Adelaide Road (C201A)

### Shared path

Figure 7 shows the proposed shared path between 138 and 160 Adelaide Road. Shared paths are neither safe nor obvious for pedestrians, particularly on busy streets where an increase in cycling is expected. It is recommended that the allocation of space on the street is reconsidered to provide separate facilities. In the shared path context:

- The northbound cycle lane entry onto the shared path appears to create a pinch point between pedestrians and cyclists. A minimum footpath width of 2.0 metres and cycle lane width of 1.6 metres are recommended. Consideration should be given to the design and location of the cycle lane entry point to confirm sufficient width is provided for everyone.
- The adjoining businesses along this section of the shared path have off-street parking with several that can only reverse out of parking spaces. This creates an additional risk to both pedestrians and cyclists. Consideration should be given as to how this risk of conflict will be mitigated, for example through removal of reverse-only off-street parking spaces.
- Consideration of installing tactile guidance surface indicators (TGSi) on cycle lane entry and exit to shared path will provide guidance to blind people and those with vision impairment that they are entering a different environment from an exclusive footpath.
- The shared path should be clear of obstructions including power / lighting poles, utility boxes and street furniture.

### Pedestrianised areas

Figure 7 shows the side road between 175 and 179 Adelaide Road closed off with a short pedestrianised area. It is recommended that wayfinding signage is installed.

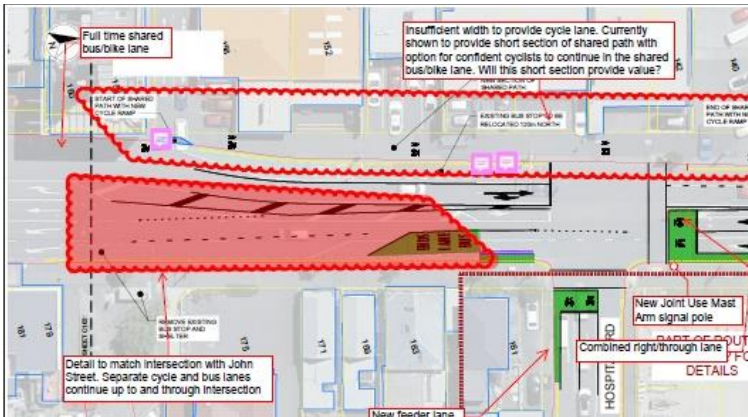


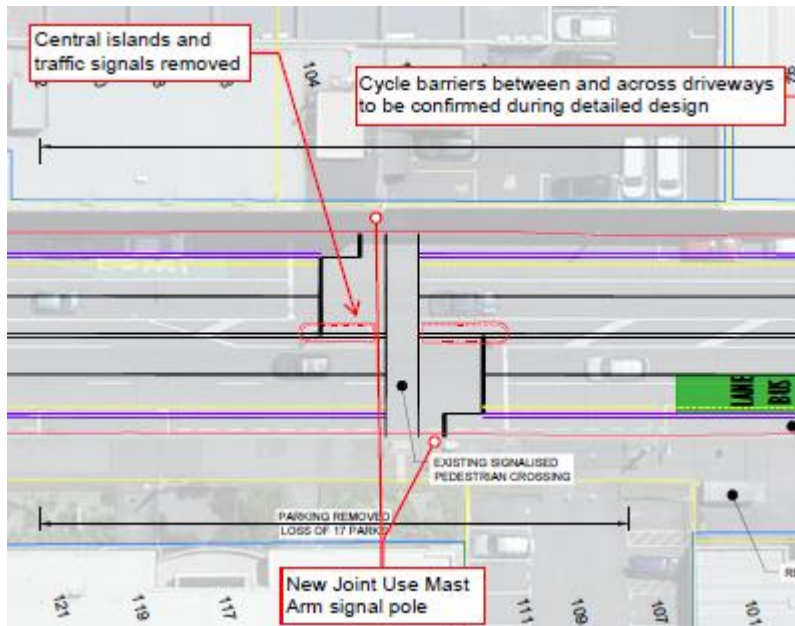
Figure 7 Excerpt from plan – proposed shared path on Adelaide Road (C201A)

<b>Shared path</b>	
<b>Access principle(s):</b>	<b>Safe / Obvious / Step Free</b>
<b>Overall Rating</b>	<b>Major</b>
<b>Designer response</b>	To remove shared path in 60% designs with cyclists to use shared bus/cycle lane
<b>Safety Engineer response</b>	Agree with Auditor’s and Designer.
<b>Action taken</b>	Removed shared path from plans.

<b>Wayfinding - Pedestrianised area</b>	
<b>Access principle(s):</b>	<b>Obvious</b>
<b>Overall Rating</b>	<b>Comment</b>
<b>Designer response</b>	Pedestrian wayfinding is outside of transitional cycleways scope because the wayfinding signage is intended for cyclists using the new cycleways. The closure of the side street is existing and will not change as part of transitional cycleways
<b>Safety Engineer response</b>	Comment to be noted and addressed outside of this project.
<b>Action taken</b>	Wayfinding out of scope. No action required.

## 2.2.7 Drummond Street signalised pedestrian crossing (C201A)

Figure 8 shows the existing Drummond Street signalised pedestrian crossing which provides detail that the central pedestrian refuge is to be removed. Consideration of retaining this refuge is recommended to improve pedestrians' confidence crossing a wide carriageway with six lanes (including cycle lanes) of relatively high-speed traffic.



**Figure 8 Drummond Street signalised pedestrian crossing (C201A)**

Wayfinding - Pedestrianised area	
<b>Access principle(s):</b>	<b>Safe</b>
<b>Overall Rating</b>	<b>Minor</b>
<b>Designer response</b>	Space currently used for central island is required to fit cycleway within existing carriageway
<b>Client decision</b>	Agree with Designer. Crossing timings should be checked to ensure that slower pedestrians will not be caught short in their crossing.
<b>Action taken</b>	Agree with above, monitor signal phasing.

## 2.2.8 Adelaide Road – accessible crossing locations (201A & 202A)

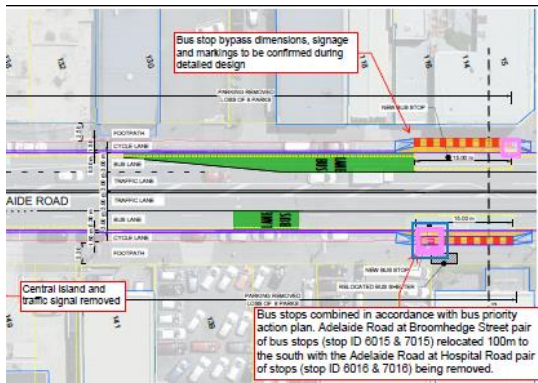
There is a signalised pedestrian crossing on Adelaide Road between Drummond Street and Broomhedge Street. North of this crossing, there are currently no non-priority crossings on Adelaide Road for approximately

400 metres until Rugby Street intersection. Consideration should be given to install non-priority crossings such as refuge islands every 150 metres to improve access for people who want to cross the road.

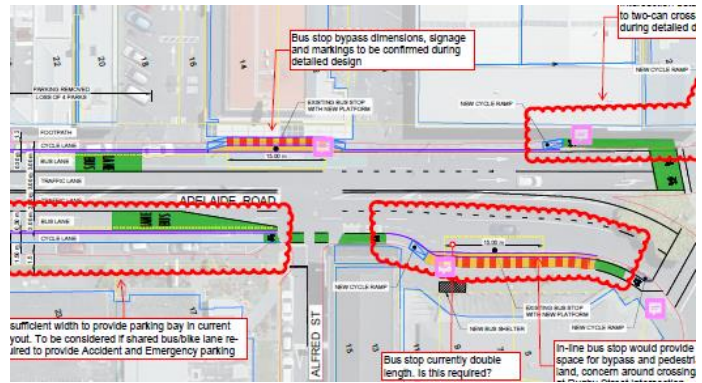
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## 2.2.9 Adelaide Road - cycle lane bus stop bypasses (C201A and C202A)

Figure 9 and Figure 10 show proposed bus stop bypasses with further detail to be included at detailed design phase. As discussed above, further consideration should be given to ensure these bus stops are safe, obvious and step free for everyone. A further accessibility audit and consultation with the disability sector is recommended.



**Figure 9 Excerpt from plan - Adelaide Road (C201A)**



**Figure 10 Excerpt from plan - Adelaide Road (C202A)**

Cycle lane - Bus stop bypasses	
Access principle(s):	Safe / Obvious
Overall Rating	Major
Designer response	Unsure what the recommendation is
Safety Engineer response	I think this is the same as 2.2.3. As with that, given that the use of bus bypasses is relatively novel in Wellington and that this is a transitional cycleway, behaviour should be monitored, with any issues being resolved in further design and use.
Action taken	Independent accessibility audit on the bus platform undertaken.

## 2.2.10 Adelaide Road / Rugby Street intersection – shared path (C202A)

Figure 11 shows the proposed cycle lane merging with the footpath on both sides of Adelaide Road at Rugby Street intersection, creating short sections of shared path. Shared paths are neither safe nor obvious, particularly for the most vulnerable pedestrians in locations where the numbers of cyclists is expected to increase. Consideration should be given to retain a continuous 2-metre wide footpath for pedestrians and 1.6 metre wide cycle lane to avoid conflict between cyclists and pedestrians. Physical detectable separation of cyclists and pedestrians is recommended.

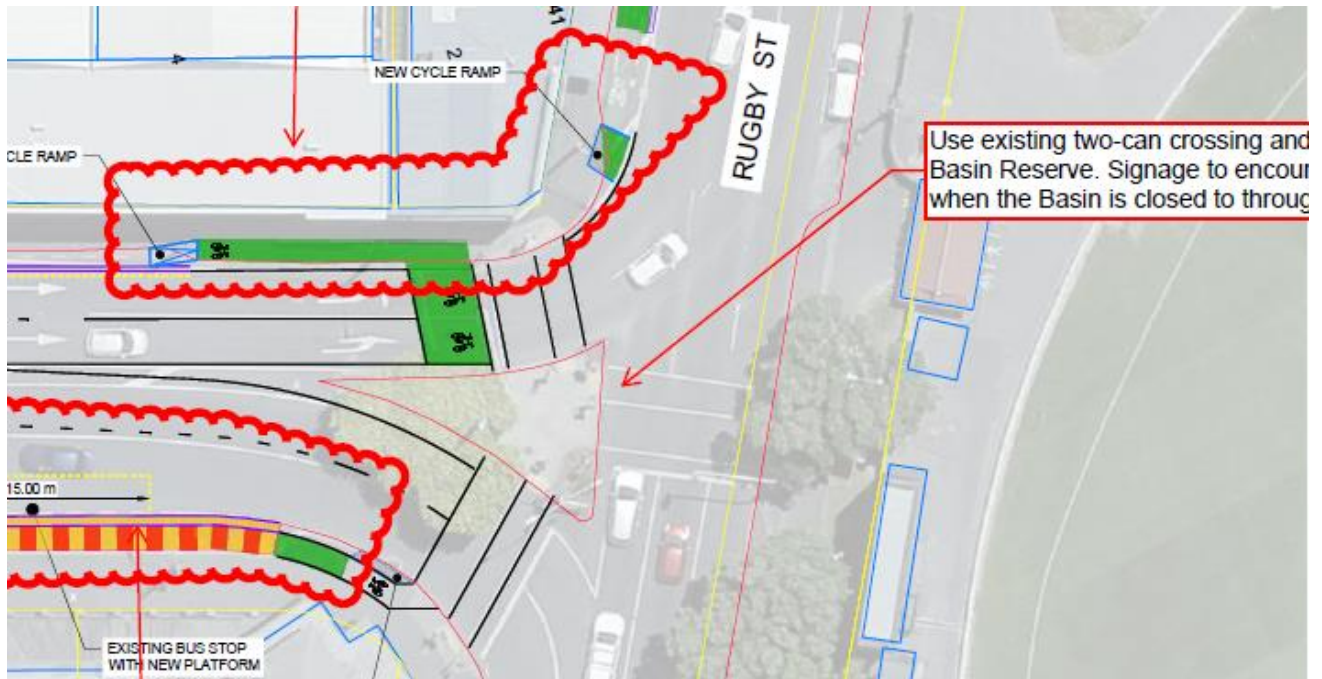


Figure 11 Excerpt from plan - Adelaide Road / Rugby Street intersection – shared path (C202A)

<b>Shared path merge</b>	
<b>Access principle(s):</b>	<b>Safe / Obvious</b>
<b>Overall Rating</b>	<b>Major</b>
<b>Designer response</b>	Is not enough space for a separate cycleway up to the limit line of the traffic signals because the traffic lanes are already at a minimum width of 3m and moving kerblines are out of scope. A cycle ramp, green paint and cycle symbol will make it clear to cyclists that the shared path is an option
<b>Safety Engineer response</b>	Agree with Designer. The detailed design shared path markings should be further reviewed to ensure that expected behaviour is clear to all users.
<b>Action taken</b>	LGWM to include this section in targeted improvement. Shared path signage and road markings clear.



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## 2.2.11 Cambridge Terrace - signalised pedestrian crossing (C301A)

Figure 12 shows the existing signalised pedestrian crossing and proposed shared path in the central median. Shared paths are not safe or obvious for many pedestrians. Consideration should be given to separating cyclists and pedestrians at this location.

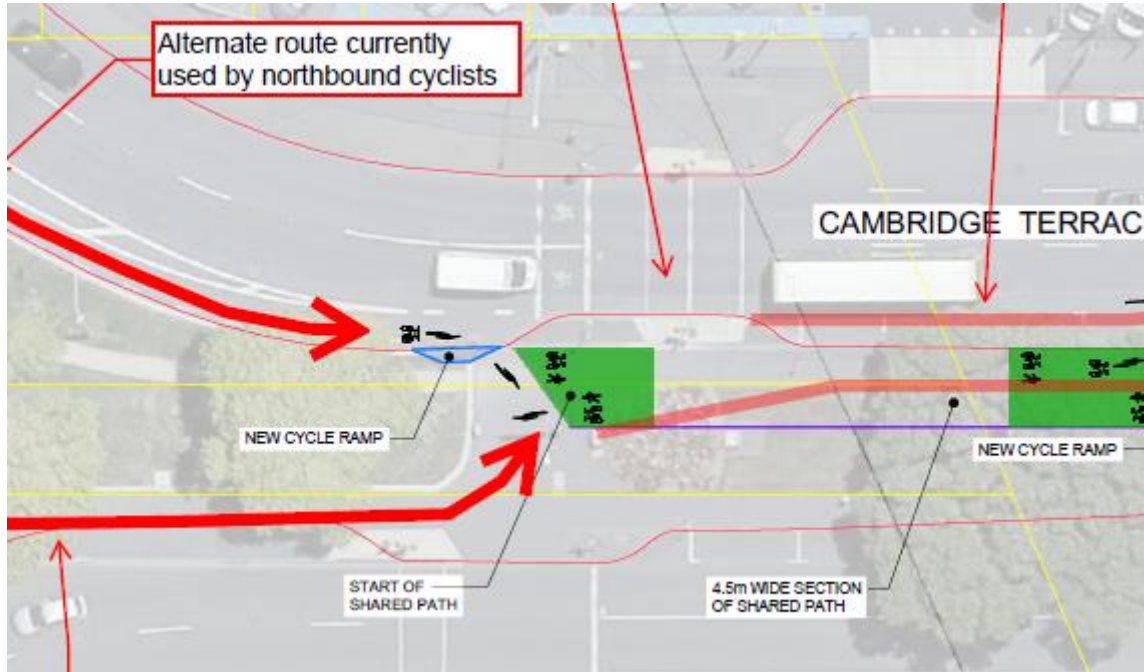


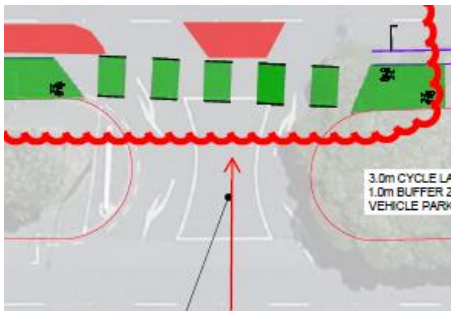
Figure 12 Excerpt from plan - Cambridge Terrace / Kent Terrace signalised pedestrian crossing (C301A)

Signalised pedestrian crossing	
Access principle(s):	Safe / obvious
Overall Rating	Minor
Designer response	Is not enough space for separate cycleway and footpath. Furthermore cyclists and pedestrians will share space through the basin reserve so this section of shared path is in context
Safety Engineer response	Agree with Designer. Although the Auditor's earlier point 2.1.7 is noted as being part of this context. The wayfinding and signage through the Basin Reserve needs to be completed and reviewed in context with this.
Action taken	Wayfinding signage through Basin to be investigated.

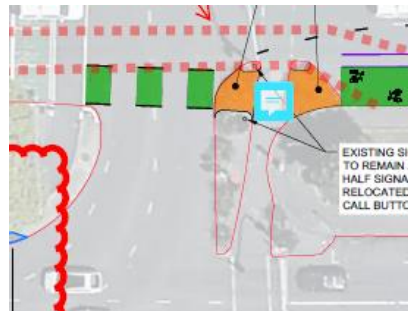
## 2.2.12 Cambridge Terrace / Kent Terrace - Shared path / turning locations (C301A-C302A)

Figure 13 to Figure 17 show five turning locations along Cambridge Terrace and Kent Terrace that intersect the central median and the proposed shared path. Design consideration needs to be given as to how priority at signalised intersections will be managed for southbound cyclists travelling in a contraflow direction to northbound-facing signals. At non-signalised crossings, the design must be clear as to who has priority. This priority at intersections should be consistent throughout the route to avoid confusion.

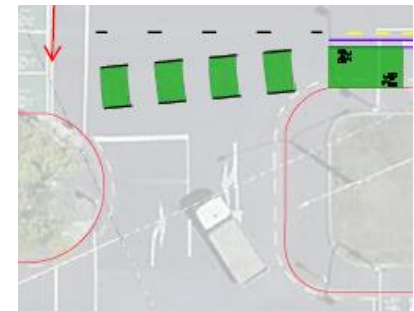
**Table 2 Excerpt from plans - Cambridge Terrace / Kent Terrace – turning locations (C301A-C302A)**



**Figure 13 Turning bay near Fifeshire Avenue**



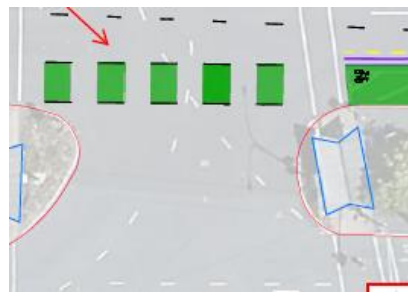
**Figure 14 Vivian Street intersection**



**Figure 15 Elizabeth Street intersection**



**Figure 16 U-Turn bay west of Courtenay Place intersection**



**Figure 17 Intersection with Courtenay Place**

Priority at turning locations	
Access principle(s):	Safe / Obvious
Overall Rating	Major
Designer response	Agree with accessibility audit, to investigate north facing cycle symbols as part of intersection details
Safety Engineer response	Agree with Auditors and Designer.
Action taken	Intersection safety in design workshops undertaken.

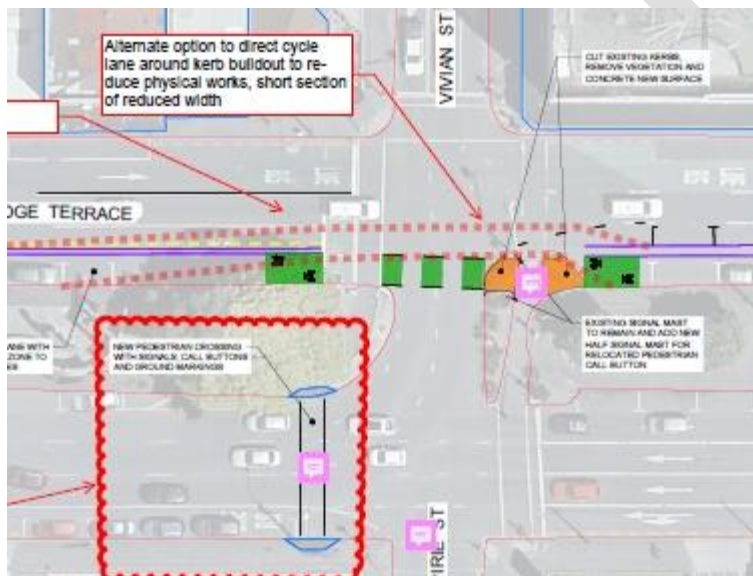
### 2.2.13 Intersection between Cambridge Terrace / Kent Terrace and Vivian Street (C301A)

Figure 18 shows the intersection of Cambridge Terrace and Kent Terrace with Vivian Street and Pirie Street.

Cycle lane across pedestrian crosswalk: The design shows the cycle lane passing through the signalised pedestrian crossing creating a potential conflict between cyclists and pedestrians.

Signalised cycle phase: Provision of a signalised cycle phase across Cambridge and Kent Terrace to provide access on and off the shared path is recommended.

New pedestrian crossing phase: Installation of a pedestrian phase across Kent Terrace is also recommended, to reduce crossing distances for those dependent on priority-controlled crossings and reduce crossing phases from four to two. This would also assist cyclists accessing the shared path cycle lane from Kent Terrace and Pirie Street.



**Figure 18 Excerpt from plan - Cambridge Terrace / Vivian Street / Kent Terrace / Pirie Street intersection (C301A)**

<b>Cycle lane across pedestrian crosswalk</b>	
<b>Access principle(s):</b>	<b>Safe / Obvious</b>
<b>Overall Rating</b>	<b>Major</b>
<b>Designer response</b>	Will move ped call button back to pedestrian waiting area and phasing will separate out peds and cyclists which removes conflict.
<b>Safety Engineer response</b>	Agree with Auditors and Designer

<b>Cycle lane across pedestrian crosswalk</b>	
<b>Action taken</b>	Designs updated.

<b>Signalised cycle phase</b>	
<b>Access principle(s):</b>	<b>Safe</b>
<b>Overall Rating</b>	<b>Minor</b>
<b>Designer response</b>	Will provide cyclists turning areas for movements into main side streets in 60% designs
<b>Safety Engineer response</b>	Agree with Auditors and Designer.
<b>Action taken</b>	Designs updated.

<b>New pedestrian crossing phase</b>	
<b>Access principle(s):</b>	<b>Safe / Obvious</b>
<b>Overall Rating</b>	<b>Comment</b>
<b>Designer response</b>	Will provide new north/south ped crossing in 60% designs but additional east/west crossing is outside of scope as per earlier client decision
<b>Safety Engineer response</b>	Agree with Designer.
<b>Action taken</b>	No action required, crossing out of scope designs allow for it to be installed in future.

### 2.2.14 Cambridge Terrace - taxi layover (C302A)

Figure 19 shows the location of an existing taxi layover. It is unclear whether this taxi stand is intended to be accessed by passengers. Safe, obvious and step free access to the taxi stand should be considered as part of the design.

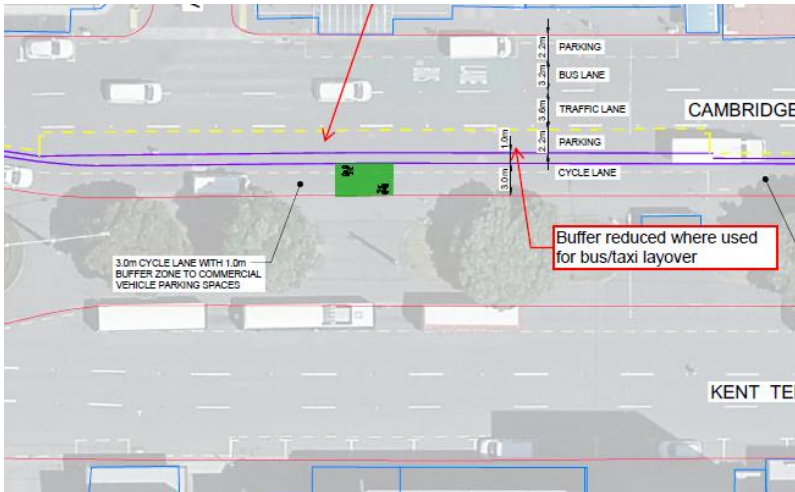


Figure 19 Excerpt from plan - Cambridge Terrace - taxi layover (C302A)

<b>Taxi layover</b>	
<b>Access principle(s):</b>	<b>Safe / Obvious</b>
<b>Overall Rating</b>	<b>Comment</b>
<b>Designer response</b>	Taxi stand to be moved to kerbside
<b>Safety Engineer response</b>	Agree with Auditors and Designer.
<b>Action taken</b>	Taxi stands relocated.

## 2.2.15 Cambridge Terrace / Wakefield Street / Oriental Parade intersection (C303A)

### Non-priority pedestrian crossings

Figure 20 shows the existing layout of non-priority pedestrian crossings across Cambridge Terrace, Kent Terrace and Wakefield Street. Consideration should be given to whether these crossings should be priority controlled. The existing slip lanes do not encourage slower vehicle speeds so there is collision risk between pedestrians and motor vehicle traffic.

### Northbound cycle lane wayfinding

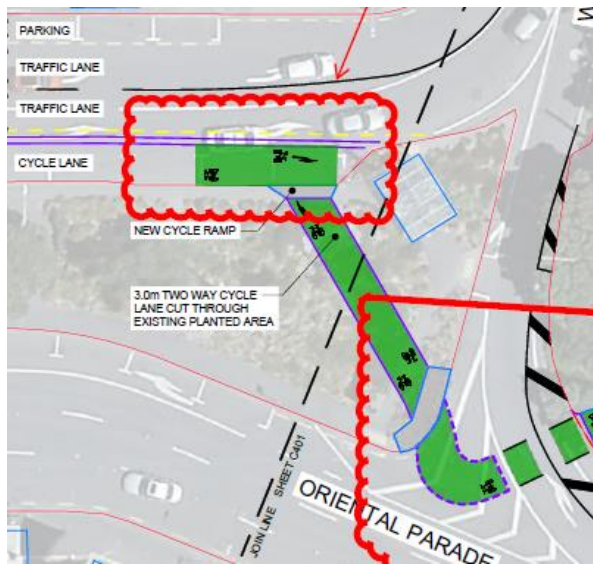
Figure 20 shows the end of Cambridge Terrace leading onto Wakefield Street, and Oriental Parade leading into Kent Terrace. With the split in roads, it is not obvious where the cycle lane goes without provision of advanced wayfinding signage.

### Pedestrian / cycle lane conflict

Figure 20 shows the end of the cycle lane diverting to the right to line up with crossing the Wakefield Street slip lane. It is understood that there is an existing footpath that intersects this proposed cycle lane. Priority across the footpath is unclear from the design.

Wakefield Street slip lane design

Further consideration into the design of the proposed cycle lane crossing across the Oriental Parade / Wakefield Street slip lane is recommended to provide a safe and obvious route.



**Figure 20 Excerpt from plan - Cambridge Terrace / Wakefield Street / Oriental Parade intersection (C303A)**

Non-priority pedestrian crossings	
Access principle(s):	Safe / Obvious
Overall Rating	Major
Designer response	Outside of transitional cycleways scope to create new traffic signals due to cost and time involved. Cycle and pedestrian crossing of Wakefield St is subject to further design work
Safety Engineer response	Agree with Designer.
Action taken	Designs update since audit, no longer part of route.

Northbound cycle lane - wayfinding	
Access principle(s):	Safe / Obvious
Overall Rating	Comment
Designer response	Will incorporate this feedback into the signage and wayfinding plan
Safety Engineer response	Agree with Auditors and Designer.

Northbound cycle lane - wayfinding	
<b>Action taken</b>	Designs update since audit, no longer part of route.

Pedestrian / cycle lane conflict	
<b>Access principle(s):</b>	<b>Safe / Obvious</b>
<b>Overall Rating</b>	<b>Major</b>
<b>Designer response</b>	Layout of cycleway in this location has changed in the 60% designs to be on east side of the central island which removes the ped/cycle conflict
<b>Safety Engineer response</b>	Agree with Designer.
<b>Action taken</b>	Designs update since audit, no longer part of route.

Wakefield Street slip lane crossing	
<b>Access principle(s):</b>	<b>Safe / Step Free</b>
<b>Overall Rating</b>	<b>Major</b>
<b>Designer response</b>	Cycle and pedestrian crossing of Wakefield St is subject to further design work with a focus on road safety
<b>Safety Engineer response</b>	Agree with Designer.
<b>Action taken</b>	Designs update since audit, no longer part of route.

## 2.2.16 Oriental Parade shared path (C401A)

### Shared path

Figure 21 shows the proposed shared path along Oriental Parade merging cyclists and pedestrians. Detectable guidance for visually impaired and vulnerable users is recommended to identify when the path is shared and when it is separated. There is potential for conflict when pedestrians are required to cross the cycle path to return to the footpath. Signage is recommended to inform everyone of potential risks at this location.

### Existing footpath / loading bay conflict

Figure 21 shows the existing footpath and proposed cycle path crossing a loading bay for a supermarket. Consideration should be given to improve the loading bay crossing so that everyone is aware of the adjacent



activity. If delivery vehicles are reversing from the loading area more detail is recommended to minimise risk of collision.

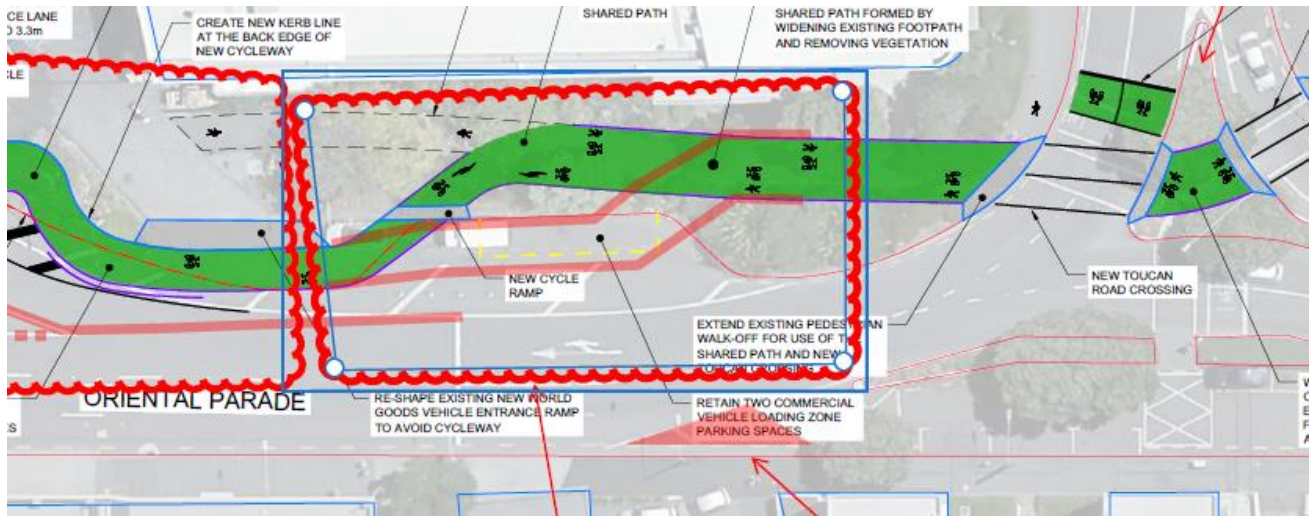


Figure 21 Excerpt from plan - Oriental Parade (C401A)

Oriental Parade shared path	
Access principle (s):	Safe / Obvious / Step Free
Overall Rating	Major
Designer response	Agree with the accessibility audit to provide guidance to pedestrians
Safety Engineer response	Agree with Auditors and Designer.
Action taken	Designs update since audit, no longer part of route.

Existing footpath / loading bay conflict	
Access principle(s):	Safe / Step Free
Overall Rating	Major
Designer response	Agree that supermarket deliveries operation is an issue, back of New World area is subject to further design work
Safety Engineer response	Agree with Auditors and Designer.
Action taken	Designs update since audit, no longer part of route.

### 3 Conclusions

By providing clear routes for cyclists between Newtown and Wellington central city, the proposed design improves safety for everyone. However, there are several design details that could be clarified or improved. In doing so, the route is likely to be attractive to a wider range of cyclists. Importantly, conflicts with pedestrians can be minimised with careful design. In some locations it is recommended that the street cross-section be reviewed to avoid the need for sections of shared path.

Changes to bus priority along the route will improve journey time reliability and reduce travel time for all bus passengers. Concerns related to bus priority are limited to bus stops and the interaction of bus passengers with pedestrians, cyclists, and people using micro-mobility.

It is recommended that the design of bus stops along the route is audited again prior to construction, and that the designs are reviewed by local representatives of the disability community.

By incorporating the safe, obvious and step free principles into the detailed design of all infrastructure, this will assist towards creating an inclusive and equitable street environment for all.

#### Safety Engineer's Comment

I have studied and considered the auditors' safety concerns and recommendations for safety improvements set out in this accessibility audit report together with the designer's responses. Where appropriate, I have added comments to be taken into consideration by the project manager when deciding on the action to be taken.

Signed



Date

23/06/22

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Dennis Davis, Principal Transport Engineer WCC