

**Before a Board of Inquiry
Basin Bridge Proposal**

Under the Resource Management Act 1991 (the Act)

In the matter of a Board of Inquiry appointed under section 149J of the Act to consider the New Zealand Transport Agency's notice of requirement and five resource consent applications for the Basin Bridge Proposal.

**Rebuttal Evidence of Richard Leonard Cheyne Reid for the
Mt Victoria Residents Association and Richard Reid &
Associates Ltd**

10 February 2014

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**REBUTTAL EVIDENCE OF RICHARD LEONARD CHEYNE REID FOR THE
MT VICTORIA RESIDENTS ASSOCIATION AND RICHARD REID &
ASSOCIATES LTD**

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1 Introduction

- 1.1 My full name is Richard Leonard Cheyne Reid.
- 1.2 My rebuttal evidence is given on behalf of Mt Victoria Residents Association (MVRA) and Richard Reid & Associates Ltd.
- 1.3 My qualifications are set out in my Evidence-in-chief of 17 December 2013.
- 1.4 I repeat the confirmation given in my Evidence-in-chief that I have read the 'Code of Conduct' for expert witnesses contained in the Environment Court Practice Note 2011 and that my evidence has been prepared in compliance with that Code.
- 1.5 I attended expert witness conferencing held on 4 and 16 December 2013 and 5 February 2014 in relation to transportation planning. I am a party to the outcomes of those conferences recorded in the corresponding joint witness statements dated 16 December and 5 February 2014 respectively.
- 1.6 In this statement of rebuttal evidence I review the rebuttal evidence of David James Dunlop Annexure B: Basin Reserve Roundabout Enhanced Option (BRREO) Assessment
- 1.7 This rebuttal evidence follows the ordering of Mr Dunlop's rebuttal evidence Annexure B.

2 Walking

2.1 I disagree with Mr Dunlop's conclusion noted in Paragraph 6.20 and repeated elsewhere in his rebuttal evidence.

2.2 Most of the comments Mr Dunlop makes have been covered already in the following evidence:

- i) My evidence-in-chief (all of 6.3 and 7.3)
- ii) My rebuttal evidence of Mr Robert Steven Spence (Paragraph 3.1.2, 3.1.4 and 3.1.5)
- iii) Jan McCredie's rebuttal evidence of Graeme McIndoe
- iv) Drawing No.16 – Walking Journeys – BRR_463

I respond to MR Dunlop's comments below.

2.3 In the BRREO walking is a planned activity and is integrated with the traffic light phasing of the Roundabout so that traffic flow accommodates walking in a consistent, regular and predictable way.

2.4 The BRREO provides walking routes which are direct and reinforce long established and common sense desire lines at-grade level.

2.5 In most journeys walking is separated from traffic movement in order to provide a safer and more comfortable pedestrian experience. Typically, walking is directed along the outside edges of the roundabout rather than close to traffic lanes. These edges are clearly defined and will become more activated with ongoing urban development. The positive separation achieved by BRREO is contrary to Mr Dunlop's contention, which he repeats throughout his rebuttal evidence, that the BRREO "disadvantages" pedestrians and "accentuates severance".

2.6 The BRREO retains existing controlled pedestrian crossings where they are located because they are logical and practical and reinforce the underlying structure and organisation of the roundabout.

2.7 The BRREO has added one controlled crossing to the roundabout between Ellice St and Dufferin St in order to increase pedestrian safety, driver visibility, spatial efficiency and landscape amenity.

- 2.8 The BRREO creates only one additional lane for pedestrians to cross, the third lane on Paterson St heading west at the Paterson St/Dufferin St intersection. This is contrary to Mr Dunlop's contention which he repeats throughout his rebuttal evidence that the BRREO creates an "increased number of lanes" which "disadvantages" pedestrians and "accentuates severance".
- 2.9 Mr Dunlop fails to recognise the existing north-south walking journey has been strengthened with BRREO's creation of a walking spine along the central median of Kent/Cambridge Tce from the Basin Reserve to Vivian Street. This supports WCC's Growth Spine which expects most pedestrian growth to occur along this axis (the 2013 census population numbers confirm this). The proposal also aligns with the WCC Wellington 2040: Smart Capital report which envisaged a walking promenade along the median.
- 2.10 Mr Dunlop's quantitative assessment of the Project and BRREO conceals other issues including qualitative differences.
- 2.11 The Project creates a very complex and confusing walking environment, particularly in the north-eastern and south-eastern quadrants of the roundabout. Shared walking and cycling lanes are located in narrow corridors alongside and/or between traffic lanes; there is poor access to and alignment of walking routes; poor legibility and surveillance of these routes because of the infill of space with mitigation planting, the random protrusion of flyover and walking/cycle overbridge piers, swerving geometries and low undercrofts of these overhead structures which pedestrians are required to negotiate three times between Paterson St and Kent Tce, the spectrum of shading produced by the flyover and cycle overbridge and the confrontational aspect of the Paterson St embankment. Overall this is a hostile and alienating environment for walking.
- 2.12 The Project also creates unsafe environments:
- i) along the Ellice St to Dufferin St/Paterson St slow link road. The independent transport peer reviewers, the WCC Chief Transport Planner Mr Spence, traffic expert witness John Foster and I have separately raised concerns regarding NZTA's planning of this link road. Both Mr Foster and I are on record at the transport expert witness conference on 5 February that this is a defective design. Issues include the safety, legibility and efficiency of the walking/cycle and traffic routes, safety of

pedestrian crossings and proximity to the link road traffic including school buses.

- ii) the Project significantly extends the walking/cycle route from the Tunnel to the Schools (this has not been mapped by NZTA) and adversely changes its desire line. The existing crossing from Paterson St to Dufferin St (south) is located at the Paterson St/Dufferin St intersection. NZTA's Project relocates the crossing to the Ellice St/Dufferin St (north) intersection. This extends the route by approximately 150 metres and requires pedestrians and cyclists to back-track on their journey. The extra distance will likely result in jay-walking across SH1 on Paterson St in order to cut the extra length out of the route. This will be both unsafe and inefficient. In contrast, the BRREO retains the existing crossing location.
- iii) a shared space is proposed instead of the Buckle St to Ellice St zebra crossing directly outside the Basin Reserve. This will be confusing for vehicles and unsafe for pedestrians as the reduction in speed required for vehicles travelling from Sussex St down Buckle St onto the shared space will be too abrupt. This may be particularly problematic with sporting events when large numbers of people discharge from the Basin Reserve. Typically, shared spaces are located in clearly visible, navigable and predictable areas of a city and are traffic calmed well beforehand. This proposal is not. The BRREO retains a clear distinction between road and footpath to avoid this safety issue.
- iv) NZTA proposes to shift the pedestrian crossing on Cambridge Terrace further south "closer to desire lines". This will make it more difficult for traffic and pedestrians to see each other. Traffic will still be traversing the curvature and slope of Buckle St when approaching and passing through the crossing and even when stopped is not face-on to pedestrians. The BRREO recognises the effectiveness of aligning crossings with desire lines but deliberately avoids this unsafe situation by locating the crossing at the point where the road has straightened and flattened (slightly further south than the existing crossing).

2.13 The Project brings pedestrians directly into conflict with discharging bus passengers:

- i) On the Dufferin St footpath outside St Marks School and Wellington College. NZTA's relocation of the school bus stop against the footpath brings discharging passengers from school buses directly into conflict with pedestrians on the footpath at peak times. The BRREO keeps them separate as per the existing arrangement.
 - ii) On the Rugby St footpath at the Rugby St/Adelaide Rd corner. NZTA's relocation of the public bus stop from Adelaide Rd to within the roundabout brings discharging bus passengers into conflict with pedestrians travelling from/to the west side of Adelaide Rd at peak times. In comparison, the BRREO relocates the existing bus stop further south on Adelaide Road so conflict within the roundabout is avoided.
- 2.14 The Project does not provide clarity or certainty on the operation of the pedestrian crossing at the Rugby St/Adelaide Rd intersection due to the emphasis on a free-flow traffic arrangement. Please refer to 3.1.2 of my rebuttal evidence.
- 2.15 I note Mr Spence from WCC has recommended the addition of two further crossings than those provided in the Project which if adopted will alter the differences between the Project and BRREO. These crossings are specific to the Project and not BRREO.
- 2.16 The Project's lower number of lanes crossed in comparison to the BRREO is chiefly due to the proposed cycle/footpath overbridge between the Tunnel and Memorial Park. If the same route is taken at-grade by pedestrians who want to head down Cambridge/Kent Tce instead of across to Tory St or who do not want to walk alongside highway traffic on the bridge or do not want to be totally exposed to weather elements on the bridge, then the total number of lanes crossed are essentially the same between the Project and the BRREO.
- 2.17 I note the approach to the overbridge landing on its eastern side may possibly change as a result of planning for the Mt Vic Tunnel Duplication Project (NZTA Mt Victoria Tunnel Duplication newsletter, Issue 01 June 2013). If the overbridge does not align directly with the route to a second tunnel then it will affect the accessibility and desirability of the overbridge. The possibility of this as an outcome from a future project increases my concern that the application is premature.

2.18 The Project is similar to other NZTA projects I have been involved with in Auckland where walking and cycling routes have been located directly and uncomfortably alongside traffic movement and vehicle open space (SH20 Manukau Harbour Crossing Project; SH20 Mt Roskill Motorway Extension; Waikaraka Cycleway Mt Roskill Cone Section; and the SH1 Victoria Park Tunnel Project). The same alignment occurs at:

- i) The walking/cycling bridge attached to the flyover
- ii) The walking/cycling lane on the Ellice St to Dufferin St/Paterson St link road
- iii) the slip-lane from Sussex St to Tory St. Although this is part of the Memorial Park Tunnel Project the BRREO recommends the removal of this slip-lane before it is built precisely to separate pedestrians from traffic here.

In each of the Auckland projects I designed alternative locations and/or routes in order to keep walking and cycling separate. In all cases my suggestions were adopted and have been implemented.

3 Cycling

3.1 I disagree with Mr Dunlop's conclusions noted in Paragraph 6.20 and repeated elsewhere in his rebuttal evidence.

3.2 Most of the comments Mr Dunlop makes have been covered already in the preceding section on walking and the following evidence:

- i) My evidence-in-chief (7.3.1 and 7.3.11 ix)
- ii) My rebuttal evidence of Mr Robert Steven Spence (Pararaph 3.1.7)
- iii) Jan McCredie's rebuttal evidence of Graeme McIndoe
- iv) Drawing No.17 – Cycle Routes – BRR_509
- v) Drawing No.18 – Design of a Walking and Cycling Spine – BRR_493

I note the following about the BRREO.

3.3 The BRREO provides cycling routes which are direct and reinforce established and common sense desire lines at grade level.

- 3.4 In almost all journeys cycling is separated from traffic movement at the roundabout in order to provide a safer and more comfortable experience. Typically, cycling is directed to surrounding streets outside the periphery of the roundabout (Brougham, Ellice, Tory/Tasman) or on a dedicated north-south cycle spine on Kent/Cambridge Tce which carries through the Basin Reserve Cricket Ground and is free from traffic.
- 3.5 Mr Dunlop fails to recognise the importance of BRREO's two dedicated cycle lanes adjacent to the central median of Cambridge/Kent Tce. These cycle lanes:
- i) replace the car parking bays on both sides of the central median
 - ii) provide continuous dedicated cycle lanes from the Basin Reserve to Vivian St (and potentially further northwards in the long term)
 - iii) connect directly to the walking and cycling route through the Basin Reserve Cricket Ground to Adelaide Road, thereby enabling cyclists to avoid the need to use the roundabout
 - iv) will accommodate the intended growth in cycle use of the north-south axis of Kent/Cambridge Tce to Adelaide Rd (and now awaits the WCC's plans for Adelaide Rd for its extension along Adelaide Rd)
 - v) accord with international best practice, providing a safe walking and cycling spine along a key thoroughfare of the city (using Barcelona as a model).
- 3.6 In contrast, the Project does not provide any dedicated cycle lanes on or approaching the roundabout, especially along the north-south axis, even though Mr Dunlop contends the provision for cycling meets the objectives of the Project and WCC's Growth Spine.
- 3.7 Further, and contrary to Mr Dunlop's statement, the Project does not provide a safe and continuous environment for cycling on the roundabout as set out in 3.1.7 of my rebuttal evidence.

4 Bus Lanes

- 4.1 Mr Dunlop does not provide a balanced comparative assessment between the BRREO and Project.
- 4.2 Mr Dunlop has modified the BRREO in a way that does not represent the design and functionality intended by me. His actions are self-serving and indicate that his assessments, forecasts and conclusions are incorrect because they are based upon a false model.
- 4.3 I will demonstrate in my cross-examination that the BRREO performs as well as the Project for Bus Priority.

5 Parking

- 5.1 I have already noted in paragraph 5.3.10 of my Evidence-in-chief the main reasons for removing parking at various locations around the roundabout.
- 5.2 Whilst Mr Dunlop correctly notes that some of this could be retained (e.g. 19 car parks on Sussex St), I stand by my reasons for removing the parking identified.
- 5.3 I note the simplicity, consistency, clarity and efficiency that has been achieved for the roundabout by the removal of this parking and see it as a positive 'step-change'.

6 Accessibility

- 6.1 Mr Dunlop has summarised the comparison in changes to accessibility in Table 5. Of the ten movements identified, the existing situation enables 10/10 movements, the BRREO's changes to the existing situation retain 7/10 movements and the Project 9/10. I disagree with Mr Dunlop's assessment.
- 6.2 I have already noted in paragraph 7.3.2 of my Evidence-in-chief the main reasons for removing accessibility between Hania St and Dufferin St and between Hania St and SH1 (two of the movements Mr Dunlop identifies).
- 6.3 Whilst I am able to retain accessibility between Hania St, Dufferin St and SH1 for convenience sake, I stand by my reasons for removing it. I note the simplicity, clarity and amenity that is created for the roundabout by the removal

of this access and see it as a positive 'step-change'. There is a clear hierarchy which prioritises movement around and off the roundabout which has benefited from the re-ordering of the Ellice St access to it.

6.4 However, I note the Expert Conferencing on Traffic and Transportation Matters dated 5 February 2014, which I attended, agreed that the Project's redesigned Pirie St intersection with Kent Tce will improve accessibility for Hania St traffic. This is one of the reasons I support the Project's upgrade of the Pirie St intersection. The accessibility lost between Hania St and the roundabout is replaced by improved accessibility at Pirie St.

6.5 In terms of Mr Dunlop's assessment of the Project's accessibility I disagree with his positive assessment of access between Hania St and Dufferin St; and Regional Wines & Spirits to Dufferin St:

i) It appears to me almost impossible and/or dangerous for traffic on Hania St to access Dufferin St. This requires a right hand turn immediately after the traffic lights at Ellice St with vehicles having to cross over the shared pedestrian/cycle path for access to the 'slow road link' to Dufferin St. Not only is this turn difficult and unlikely, there is no allowance for the turn in the road geometry and it would negatively impact upon any pedestrians/cyclists waiting to cross (or crossing) Ellice St.

ii) For the same reason, I disagree with Mr Dunlop's positive assessment of Regional Wines' continued accessibility to Dufferin St. It would require the same dangerous manoeuvring as above. I understand this may be one of the reasons Regional Wines is partially opposing the application.

6.6 I also question Mr Dunlop's positive assessment of the Project relating to the accessibility between Ellice St and Dufferin St in Table 5. I note in the Expert Conferencing Witness Statement on Traffic and Transportation Matters produced on 5 February that there is disagreement between the peer reviewers and the design team regarding the signalling of Ellice St. There has also been concern expressed by some submitters about the viability and feasibility of the Dufferin St/Paterson St exit from the slow link. Access at both ends of the slow link road appear flawed. In my opinion, the design of the whole north-eastern quadrant is defective which I stated in the most recent transport conference.

- 6.7 Based upon this assessment I believe the Project is more restrictive than BRREO.
- 6.8 A key change to accessibility not recorded by Mr Dunlop is the Project's negative impact on the Government House entrance at the south-eastern quadrant of the roundabout, especially at school peak hours. I note:
- i) Currently, at least 3 and as many as 5 school buses park at the school bus stand at peak hours. I do not see sufficient room for this capacity in the Project, nor any ordered way of accommodating and managing it at peak times. NZTA's plans do not provide any detail how bus parking will be achieved and are also not clear about what space, if any, is given to car drop-offs at the same time which the schools' presumably wish to retain.
 - ii) I expect that access to/from Government House at school peak hours will be negative with the Project.
 - iii) In contrast the BRREO, by relocating the existing bus stand arrangement, will achieve positive accessibility during school peak hours.

7 Cross-sections

- 7.1 Mr Dunlop assesses the BRREO's provision of lane widths based upon measurements of the roundabout derived from AutoCAD which he states are indicative only.
- 7.2 I have based my design upon real world measurements of lane widths at the roundabout.
- 7.3 The measurements I have recorded for every lane on and approaching the roundabout show that they are all different in width and that many lanes are not more than 3.2m wide. In fact, there is no consistency of lane width on any street or consistency in lane width in relation to other streets.
- 7.4 In other words, the existing streets do not meet the standards Mr Dunlop requires of the BRREO.

- 7.5 This includes Vivian Street which in NZTA's application is to be upgraded as part of the Project. Car parking is to be removed at peak times on Vivian Street between Tory St and Cambridge Tce yet this is not for the purpose of widening the lanes to meet the standard width required for a Principal/Arterial Road. Instead the work is required to fit another lane into the already narrow carriageway. Both existing and proposed lanes in this section of Vivian St are less than 3.5m wide and probably closer to 3.0m wide. NZTA has stated this is acceptable until 2031.
- 7.6 Kent Tce and Adelaide Rd are also Principal/Arterial Roads with lane widths less than 3.5m wide. In Adelaide Rd's case, the lane widths are no more than 3.0m wide. The middle lane of Sussex St (cited by Mr Dunlop as another Principal/Arterial Rd) is 3.10m wide yet accommodates the northbound public bus route on it.
- 7.7 In this section of his evidence, Mr Dunlop shows he has made many assumptions about BRREO without understanding how the roundabout operates in real life. He has created a set of dimensions which do not accord with or reflect the existing situation. I find this typical of NZTA's overall approach to the Project including its historical investigations of alternatives and incorrect documentation of the existing situation.
- 7.8 In contrast, the BRREO regularises the lane widths of every street on the roundabout to 3.2m wide which will create a more consistent and efficient layout of lanes. In many cases, the existing lane widths will be increased (e.g. Rugby St East, Sussex St). Only Rugby St West retains its wider width.
- 7.9 The BRREO also improves the tracking curve for the corner of Rugby St and Adelaide Rd in order to increase the radii for existing buses and freight as well as to future proof this corner for BRT/LRT.
- 7.10 All my work and colleagues' work on the BRREO is reflective of our real world understanding of the roundabout and our aim to maximise the efficient use of the existing network.
- 7.11 It is a given that more detailed work will be required in order to account for all factors and situations, including the confirmation of my lane dimensions outside St Marks School and Regional Council's specificaton for BRT. Nevertheless, I

have yet to find evidence for the need to create an entirely new context for meeting the Project's objectives.

8 PT Spine BRT / LRT

8.1 Our design team is not yet able to incorporate and finalise the planning of BRT in the BRREO until we can be assured of the exact nature of the PT Spine Proposal including critical details regarding BRT:

- i) Routes and stops
- ii) Vehicle design details
- iii) Essential criteria as to the limit of disturbance to general traffic
- iv) Specification of the BRT route service standards targets for the whole route not just for around the roundabout

8.2 Until this design exercise is undertaken for both the Project and BRREO it is pure speculation to conclude, as Mr Dunlop has, that a rational and fair comparison results in the conclusion the flyover is necessary and the Project will perform better.

8.3 Mr Dunlop's analysis and assessment does not provide a balanced or accurate comparative assessment between BRREO and Project.

8.4 Mr Dunlop has made an analysis of BRREO based upon criteria and conditions he has not applied to the Project.

8.5 I refer the Board to the detailed examinations of the capacity of the Patterson/Dufferin intersection and the comparison of the Project with that of the Do Minimum (basically the BRREO until 2021) in Mr Foster's Evidence, particularly his Attachment B.

Signed

A handwritten signature in black ink, appearing to read 'Richard L C Reid', written in a cursive style.

Richard L C Reid

10 February 2014