

**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.

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

17 December 2013

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**STATEMENT OF 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 evidence is given on behalf of Mt Victoria Residents Association (MVRA) and Richard Reid & Associates Ltd.

Qualifications and experience

1.3 I am the Director of Richard Reid & Associates Ltd, Citymakers, a multi-disciplinary design practice based in Auckland which specialises in integrating large projects with local environments.

1.4 I am a registered architect and registered landscape architect with 25 years of professional experience, working in Sydney and London for five years with two architects of national and international reputation (Neville Gruzman and Sir Colin St. John Wilson respectively), and in my own practice in Auckland for the last sixteen years.

1.5 I also work as an urban designer and have led the urban design group at Manukau City Council in their re-planning of the Manukau City Centre and the production of a Public Domain Manual (2010-2011). I prepared a planning report on Auckland's CBD for Auckland City Council which won the New Zealand Institute of Landscape Architects National Supreme Award for Planning in 2006.

1.6 I have taught at the School of Architecture & Planning, University of Auckland, for the past ten years, teaching design at Masters level. I also lecture at the school on the design of transport infrastructure to Bachelor and Masters Students of Planning Practice and Urban Design respectively. I have published articles and given many public talks on the design of transport infrastructure to national and international audiences.

1.7 For the past ten years my practice has concentrated on the design of infrastructure projects. These have been predominantly transport projects but not exclusively. We have developed alternative solutions for three nationally important transport projects, and one transport solution for a nationally/internationally important heritage site, all of which have been adopted or implemented almost in their entirety by NZTA and/or Auckland City

Council.

- 1.8 The projects include the SH1 Victoria Park Tunnel Project; SH20 Manukau Harbour Motorway Crossing Project; SH20 Mt Roskill Motorway Extension Project; and Waikaraka Cycleway Mt Roskill Cone Section. For these projects we were engaged by either Transit NZ, Auckland City Council, a community group or we represented ourselves.
- 1.9 Our work on these projects varied according to the extent to which we sought design changes. This has ranged from a small scale intervention in one project to a fundamental challenge of another. The focus of our work is to demonstrate how projects can achieve their stated objectives in a more appropriate way for the community and environment they pass through.
- 1.10 One example will demonstrate how we work. In 2007 Transit NZ sought a Notice of Requirement and resource consents for the upgrade of the SH20 Manukau Harbour Motorway. A key part of their application was a proposal to build a large overbridge joining the two sides of the Gloucester Park Interchange sited immediately south of Onehunga. Our practice worked on behalf of the Auckland Volcanic Cones Society and designed an alternative configuration for the interchange which had never been considered by Transit NZ in six years of analysis.
- 1.11 The Auckland City Council commissioners' hearing the application preferred our alternative solution to Transit NZ's and recommended the interchange be re-designed in a manner consistent with our proposal, including the removal of the proposed overbridge. Our design also reduced the footprint of the motorway upgrade, produced better traffic movement, protected a little-known volcano from substantial damage and retained the open space of the coastline.
- 1.12 The commissioners' also supported our design of a walking and cycling network, including our proposal for a new pedestrian bridge which has since been built by NZTA.
- 1.13 The commissioners stated in their decision that they had "witnessed the significant positive involvement of submitters from the local community, who together with Maori, have put forward a well-considered package of alternative options. The community response overall reflects a more balanced approach to promoting the sustainable management of this community and its

environment.” (Report, Recommendations & Decisions, 2007, p.11)

- 1.14 The design delivers the kind of multi-dimensional outcome required of integrated planning. It not only improved the motorway’s social, urban and environmental outcomes but will significantly enhance the future locality.

Code of Compliance

- 1.15 I have read and am familiar with the Code of Conduct for Expert Witnesses in the current Environment Court Practice Note (2011), have complied with it, and will follow the Code when presenting evidence to the Board. I also confirm that the matters addressed in this Statement of Evidence are within my area of expertise, except where relying on the opinion or evidence of other witnesses. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

- 1.16 I further acknowledge that in the provision of expert evidence and, in appearing as an expert witness, I am not advocating for the Mt Victoria Residents Association (the submitter for whom I am appearing).

2 Executive Summary

- 2.1 My work on the Basin Reserve Roundabout Enhancement Option has been consistent in its intention since I developed a conceptual approach to the Project in March 2012. That is, I have seen that an upgrade of the existing Roundabout at grade level can meet the Project’s objectives. During the course of our extensive investigations, we have not found evidence for the need to create an entirely new context to accommodate an increase in traffic capacity at the significant expense of the receiving environment.

- 2.3 We have also not found evidence that transport improvements to the existing Roundabout were adequately considered.

- 2.4 The Basin Reserve Roundabout Enhancement Option that is being submitted to the Board of Inquiry differs in important respects from the conceptual drawings Richard Reid & Associates supplied to Wellington City Council in January 2013 (the “RR Option”).

- 2.5 The traffic plan has benefited from six months of detailed design development and collaboration with John Foster and David Young, two highly experienced traffic experts with long standing knowledge of and insight into traffic problems in the vicinity of the Roundabout as well as across the regional network.
- 2.6 The Basin Reserve Roundabout Enhancement Option is a feasible traffic solution and provides a strategic fit with WCC's growth strategy and with WCC's overall transport plans; GWRC's and WCC's transport strategies, NZTA's overall strategy for the Ngauranga to Airport Corridor Plan, and NZTA's plans for upgrading SH1 between the Terrace and Mt. Victoria Tunnels.
- 2.7 The Basin Reserve Roundabout Enhancement Option can also readily accommodate WCC's plans for pedestrian and cycling facilities and public transport.
- 2.8 The Basin Reserve Roundabout Enhancement Option has also benefited from incorporating my practice's urban and landscape thinking for the project. This information was left out of the documentation provided to WCC due to the terms and conditions of our contract.
- 2.9 The name "Basin Reserve Roundabout Enhancement Option" reflects this double agenda – we are seeking both a functional enhancement of traffic movement and an enhancement of the environment of the Roundabout. Towards this, we have sensitively shaped the differing transport requirements together with the need to clarify the urban structure and enhance the amenity of this historic area of the city.
- 2.10 A key concern has been to protect the critical function and symbolic role of the Roundabout as the key pivot point and traffic distributor for the city. I believe the Roundabout's high order place within the urban structure and landscape context of the city is as important to retain and enhance as the rotary system at grade level.
- 2.12 With this in mind, we have aimed to bring simplicity, legibility and cohesion to the design of the road space of the Roundabout, as well as the approaches to it. I have strengthened the axial alignment of key roads and better defined their edges and the framing of open space. In particular, Kent/Cambridge Terrace, Paterson Street and Adelaide Road have benefited from this treatment and are now envisaged to be civic streets with high public amenity.

- 2.13 It follows that I do not support the infill of open space with planting in the vicinity of the Roundabout or a new building in whatever form or envelope to terminate the southern axis of Kent/Cambridge Terrace. Both these mitigation measures do not respect, and in fact serve to dismantle and destroy the underlying structure of the City, the Basin Reserve Roundabout, and the Basin Reserve Cricket Ground at every scale of order.
- 2.14 Instead, my focus on developing an integrated solution for a vitally important city project has meant we have avoided the need to mitigate any harmful impacts from the transport objectives. In fact, our solution enables a significant amount of building development to occur at the Roundabout. Over the long term, this development will reinforce the Roundabout as one of the major urban spaces of the city. Retention of the existing street pattern will sustain established businesses and stimulate new opportunities for the economic wellbeing of the city. The additional development will also help secure and activate the Roundabout's edges at ground level, serving to improve pedestrian safety.
- 2.15 The Basin Reserve Roundabout Enhancement Option has benefited from extensive consultation with many stakeholders, affected parties, political representatives, community interest groups and concerned citizens.
- 2.16 The Basin Reserve Roundabout Enhancement Option that is submitted as evidence to the BOI is the culmination of all the above work. It is a holistic solution that achieves the Project's objectives whilst integrating these with the historic receiving environment.
- 2.17 Essentially, we have approached the Project with the view that transport improvements can and should build upon, extend and enhance the historic structure and unique character of the receiving environment instead of changing it fundamentally and adversely. Our practice's experience successfully re-designing similar projects has demonstrated that it is possible to achieve this without isolating the state highway from the receiving environment it passes through.
- 2.18 A key Project objective, namely the provision of opportunities for public transport improvements by not constraining opportunities for future transport

developments, is not able to be confirmed or tested until after the Board of Inquiry process is likely completed.

- 2.19 Independent plans and separate decisions will leave uncertain the overall outcome from these different developments. On this basis alone, NZTA's application for the Project is premature and piecemeal and should be declined.

3 The Need and Objectives for the Project

- 3.1 The Project Objectives have been stated as:

“To improve the resilience, efficiency and reliability of the State highway network:

- by providing relief from congestion on SH1 between Paterson Street and Tory Street;
- by improving the safety for traffic and persons using this part of the SH1 corridor; and,
- by increasing the capacity of the State highway corridor between Paterson Street and Tory Street;

To support regional economic growth and productivity:

- by contributing to the enhanced movement of people and freight through Wellington City; and,
- by in particular improving access to Wellington's CBD, employment centres, airport and hospital;

To support mobility and modal choices within Wellington City:

- by providing opportunities for improved public transport, cycling and walking; and
- by not constraining opportunities for future transport developments; and

To improve the efficiency of the local road transport network in Wellington City in the vicinity of the Basin Reserve.”

- 3.2 I accept these objectives as a given.

- 3.3 In my view the Project is not required to meet the objectives. The existing roundabout with some traffic management changes will have sufficient capacity to handle traffic volumes before the Mt. Victoria Tunnel is duplicated. Then with enhancements to the Roundabout, particularly at the Paterson St/ Dufferin St intersection, the Roundabout will have sufficient capacity to handle current and future traffic volumes after the Mt Victoria Tunnel is duplicated.
- 3.4 Whilst it was stated within the transport planning expert witness conference that the Basin Bridge Proposal is likely to be an appropriate solution, I do not consider it an appropriate solution taking into account all parameters.
- 3.4 Although no social and environmental objectives have been set for the project, I believe the Project creates a multitude of significant adverse effects which have not been properly taken into account. On this basis, **the application should be declined.**
- 3.5 An alternative option submitted, the Basin Reserve Roundabout Enhancement Option, meets all of the objectives of the Project, has minimal impact and low cost, and has no significant adverse environmental effects

4 Adequate Consideration of Alternatives

- 4.1 In my opinion the adverse effects from the design of the Project are severe and the Project should be declined on this basis. The effects on the city will be traumatic, long-lasting, out of character and unable to be absorbed by the receiving environment and incompatible with the future vision of the city as expressed in Wellington 2040
- 4.2 I believe that NZTA's perception of the issues and the attempted resolution of these in relation to the receiving environment are misplaced in location and poor in conception. I consider that the Project in its current alignment and form is unnecessary and inappropriate and does not adequately address the underlying problems associated with the Basin Reserve Roundabout and surrounding road network.
- 4.3 In my opinion, NZTA has not adequately considered the means by which to achieve the objectives of the Project. Whilst the Agency has investigated and assessed numerous options, locations and structures, there is a trend in the methodology employed which has neglected the requirement and potential to

maximise the use of the existing infrastructure, as the Ngauranga to Airport Corridor Plan directs. Here, I specifically refer to the lack of options which investigate maintaining the current southern alignment of the Roundabout in combination with or separate from potential or planned transport improvements.

- 4.4 A major omission is the apparent failure to consider integrating the southern alignment of the Roundabout at the same time as developing options which investigated the potential transport benefits from the Buckle Street Underpass; nor see the cumulative benefits of this grade separation extended westwards with the addition of a third lane from Buckle St to Karo Drive. These significant increases in efficiency and capacity will sustain the performance of the western half of the Roundabout into the long term.
- 4.5 I believe at each successive stage of the option investigation process, including when important changes have been made to to the brief, NZTA has not appeared to return to the existing roundabout as a base case to examine whether it can be retained and improved. It is my understanding that this is required standard practice for transport planning internationally and I do not understand why it has not been consistently applied by NZTA when investigating options for this Project given the known adverse effects of grade separation.
- 4.6 In my view, NZTA's investigations have concentrated almost exclusively on bridging the perceived conflict of east-west flows with north-south traffic at the Basin Reserve rather than resolving the causal issues which contribute to the performance of the roundabout at grade level. The major causal issues reside, I believe, on either side of the Roundabout and not within the configuration itself.
- 4.7 I have consistently observed over the period of two years that the key bottlenecks in this section of the road network are directly east and west of the Roundabout and create significant downstream effects influencing the performance of the Roundabout. Yet NZTA's design options' time and again ignore the significance of these bottlenecks in an attempt to build a grade-separated structure to the north of the Basin Reserve (either raised or sunken). From my analysis, the key bottlenecks are sited either side of NZTA's bridge options, meaning NZTA's preferred option bridges between the key problems rather than resolves them.

4.8 The Basin Reserve Roundabout Enhancement Option correctly identifies and contextualises the key bottlenecks affecting this section of the state highway route. These are:

- i) The limitation of only one Mt Victoria Tunnel, which without duplication will continue to cause significant congestion and constraints in use of the route.
- ii) The signalled Buckle St/Tory intersection which is currently being removed through construction of the Buckle Street Underpass.
- iii) The more distant Taranaki St and Terrace Tunnel also create downstream effects for the Roundabout.

4.9 I also direct attention to the inefficient planning of the existing Roundabout. There is a perception from NZTA that there is insufficient space on the Roundabout to accommodate the predicted increase in traffic from duplication of the Mt Victoria Tunnel, remove the perceived conflict at the Paterson /Dufferin St intersection and improve public transport investments. Yet there is significant underutilisation of Roundabout lanes due to their non-alignment with the most commonly traversed routes by traffic. Conversely, there is over-utilisation of other lanes due to the constraints from provision of only two lanes on the main westbound route. The reasons for the Roundabout's less than efficient and effective performance are many and will be explained in this brief.

4.10 NZTA's investigation and presentation of options for the Basin Reserve dating back to 2001 do not appear to have adequately considered the resolution of the existing layout problems as an option either separately, or together, with other transport improvements:

- i) Out of the total of 73 options that have been investigated since 2001, only a handful explore the improvement of the existing roundabout.
- ii) In the "Meritec Report" (2001), 3 options examined the management of roundabout traffic by adding traffic signals at key intersections. Although the third option added lanes to the Roundabout, it was not conceived in the same way as the Basin Reserve Roundabout Enhancement Option, or with the same outcome.
- iii) In the "NZA Strategy Study" (2008), 1 option (B1) examined retaining the use of the existing roundabout for westbound traffic while re-routing eastbound traffic through a new Mt Vic Tunnel from Pirie Street.
- iv) In the "Basin Reserve Inquiry by Design Workshop" (2009), I

understand no options examined retaining and improving the existing roundabout. Instead, 4 options explored the at-grade potential of re-routing westbound traffic from Paterson St north of the Basin Reserve.

- v) In the “War Memorial Tunnel Option Scoping Report” (2010), no options examined retaining and improving the performance of the existing roundabout.
- vi) In the “Feasible Options Report” (2011), no options examined retaining and improving the performance of the existing roundabout.

4.11 I make the point here that I believe NZTA's consideration of alternatives, as well as the poor management of its asset, have failed to avoid, remedy or adequately mitigate effects on the receiving environment. By implication, the consideration of these issues has been inadequate in vision, scope and practice.

4.12 In contrast, I believe the objectives of the Project can be achieved by other means that are more accurate and appropriate. These are derived from a different understanding of the receiving environment and a different design approach to resolving the stated issues. Both recognise the real and many obstacles which contribute to the inefficient and unreliable performance of the state highway network. Both also identify the right techniques and places for resolving the issues that are simple and attuned to the lay of the land.

4.12 I believe that an at-grade solution retaining the southern alignment of the Roundabout can achieve the objectives of the Project without the significant adverse effects of the Basin Bridge Proposal. The Basin Reserve Roundabout Enhancement Option that John Foster, David Young and I propose will provide the necessary transport improvements and enhance the amenity and quality of the Basin Reserve Historic Area. Overall, this alternative solution has very low impact, is extremely cost-effective and maximises the use of the existing transport network as required by the Ngauranga to Airport Corridor Plan.

5 Transport Issues within the Existing Context

5.1 The following transport issues are covered in this section:

- i) Methodology
- ii) Existing Traffic Issues
- iii) Other Traffic Issues
- iv) Future Traffic Issues

- v) Major Limitations to Removing Key Traffic Issues
- vi) Major Recommendations
- vii) Comparison with NZTA's Recommendations for the Basin Reserve
- viii) The Project's Relationship with the Wellington Public Transport Spine Study

5.2 Methodology

- 5.2.1. My practice has worked on the Basin Reserve Roundabout Enhancement Option since November 2011. During this time I have made 31 visits to Wellington specifically for this project; I have spent over one hundred hours personally walking, observing, analysing and recording the site and traffic movement at different times of the day; undertaken hundreds of hours reviewing NZTA's documentation; and my practice has spent well over one thousand hours preparing an alternative design option.
- 5.2.2. Like all our work to date, I have placed major emphasis on site observation at the preliminary stage of understanding the transport project. I have found from past transport infrastructure projects we have successfully prepared alternative designs for that reliance on desk-top research has usually encouraged an abstract and detached appreciation of a system which led to assumptions, oversights and inaccuracies about the context, as well as performance of the context.
- 5.2.3 My understanding of and recommendations for the Basin Bridge Project are founded upon detailed observation of the layout and performance of the whole SH1 Cobham Drive to Buckle Street road network. This includes streets leading to/from the airport and the Wellington Urban Motorway (such as Karo Drive, Vivian Street and Kent/Cambridge Terrace).
- 5.2.4 I have walked the whole of the SH1 Cobham Drive to Buckle Street Transport Improvement Project on multiple occasions at all times of the day, focusing in particular on morning and evening peak hour traffic movement. All routes and modes of transport have been examined (vehicles, passenger transport, walking and cycling).
- 5.2.5 At the same time I have reviewed information contained in NZTA's evidence, its public engagement documents published in July/August 2011, and other relevant transport planning documents dating as far back as 2001.

5.2.6 My ideas for the project have come out of this site and traffic performance analysis. I have continued to develop my understanding of the context and the design in collaboration with John Foster and David Young up until submission of this evidence in December 2013.

5.3 Existing Traffic Issues

My extensive review of the context has found that:

5.3.1 The SH1 highway route heading east-west through the city provides two lanes in each direction at the beginning and end of the route. Hence, the inputs and outputs for highway traffic moving through the city are currently limited to two lanes each:

- i) The roads from the airport (Calabar Rd and Cobham Drive)
- ii) the road entering the Northern Motorway from Karo Drive
- iii) on Vivian St, from the motorway exit to Kent Tce

5.3.2 I have noted that congestion and conflict are created on the SH1 highway route where merging is required. This is caused by the number of lanes being reduced in one or both directions:

- i) from Cobham Drive to Wellington Road heading west, where two lanes has to merge into one lane to travel through the Mt Vic Tunnel
- ii) from Kent Tce/Ellice St to Paterson St heading east, where two lanes has to merge into one lane to travel through the Mt Vic Tunnel
- iii) There are significant downstream effects from this reduction in capacity, including on weekend mornings

5.3.3 Congestion is created on the SH1 highway route where capacity is insufficient for the number of vehicles and the importance of the route:

- i) One lane for Wellington Road, Ruahine Street and the Mount Victoria Tunnel does not provide sufficient capacity for daily and peak hour traffic, particularly for traffic heading west. This seems to be an historical anomaly, as Moxham Ave, a residential street parallel to Ruahine St, is wider than the highway. The reason for this is perhaps due to past restrictions placed on use of Town Belt land for roading purposes, and Moxham Ave historically being used as the access route

to the Haitaitai tram/bus tunnel.

- ii) There are/were significant downstream effects from this constriction, including on weekend mornings

5.3.4 Congestion is/was created on the SH1 highway route due to the significant interruption caused by the at-grade signalled intersection of Buckle St with Tory St:

- i) Traffic on the SH1 highway route heading west from Rugby St to Sussex and Buckle Streets experienced significant interruption in its flow where it met the local road intersection and traffic lights at Tory St.
- ii) This created a significant congestion point and caused traffic back-up on Sussex St, Rugby St and Adelaide Rd especially at but not confined to peak hours (particularly evening), compromising the shared movement of local traffic heading to Cambridge Tce and weakening the performance of the Roundabout as a whole.
- iii) There were significant downstream effects from this constriction, although we believe these will be resolved by the Buckle Street grade-separation, its provision of three lanes, and NZTA's plans to eventually widen Karo Drive to Willis Street to 3 lanes

5.3.5 Congestion and conflict are created on the SH1 highway route and Basin Reserve Roundabout through the inefficient use of the existing road capacity:

- i) On Rugby and Sussex Streets, a lane is provided for traffic heading north from Paterson Street, when this is the least used route of the Roundabout
- ii) On Ellice and Dufferin Streets, a lane is provided for traffic mainly heading north from Kent Terrace, when this is the least used route of the Roundabout. This traffic uses the same exclusive lane on Rugby and Sussex Streets as i) to continue northwards to Cambridge Terrace
- iii) There are significant downstream effects from these constrictions

5.3.6 Congestion and conflict are created on the local roads joining the Basin Reserve Roundabout where one lane by itself is insufficient for the number of vehicles and the importance of the route:

- i) one lane is provided on Dufferin Street for traffic heading south and

west which is not sufficient for the volume of traffic, especially \approx 8.30am to 9.15am week mornings, when the back-up can stretch as far back as Courtney Place

- ii) on Adelaide Rd heading north, the afternoon peak hour traffic, including buses, can only use one lane until the two lanes provided after the McDonald's bus stop
- iii) There are significant downstream effects from these constrictions

5.3.7 Congestion and conflict are created on the SH1 highway route due to the route sharing road space with local traffic heading in other directions:

- i) On Rugby St (east), the left hand lane of the highway route heading west is shared by the second lane of traffic turning into Adelaide Rd. Traffic back-up on Rugby Street often blocks this local traffic turning into Adelaide Road
- ii) On Sussex St, the highway traffic heading west shares the second (middle) lane with local traffic heading north to Cambridge Tce
- iii) There are downstream effects from these constrictions

5.3.8 Conflict is created within the Basin Reserve Roundabout due to the inconsistent and inefficient layout of lanes interrupting all flows of traffic:

- i) On Kent Tce, the 3rd lane bifurcates into two lanes only on Ellice St but only one of these lanes travels south
- ii) On Kent Tce, vehicles wanting to go south or west often use the 2nd lane on Kent Tce and Ellice St going east to lane jump the traffic back-up in the 3rd lane on Kent Tce, causing conflict for both flows of traffic
- iii) On Rugby St (east), the 2nd lane turning into Adelaide Rd is blocked by the 1st traffic lane on Rugby St heading west
- iv) the highway traffic heading west on Sussex St is blocked by local traffic using the same lane to head north (and vice-versa) before the divide at the Buckle St junction
- v) buses heading north are often stuck in traffic on Sussex St for the same reason
- vi) There are significant downstream effects from these constrictions, including on weekend mornings

5.3.9 Congestion and conflict is created before, within and after the Basin Reserve Roundabout due to the location of bus stops and movement of buses:

- i) the inside bus stop/car parking lane on Kent Tce does not continue into the Roundabout. In order for buses to travel south to Adelaide Road, they must cross 2 lanes into the outside 3rd lane on Kent Tce after the Basin Reserve traffic lights. The short distance between the traffic lights and the 3rd lane's turn into Ellice St leads to an awkward merge with other traffic
- ii) buses often use the 2nd lane heading east on Ellice Street to transition this manoeuvre and to avoid traffic back-up on the 3rd lane on Kent Tce due to only one lane at Dufferin St heading south
- iii) school buses departing from Wellington East Girls College in the afternoon find it difficult to access Dufferin Street from Ellice Street due to the line of traffic in only one lane heading south on Dufferin St at peak school hours
- iv) On the corner of Adelaide Road/Alfred St, the bus stop blocks the inside lane of traffic heading south off the Basin Reserve Roundabout
- v) buses heading north on Adelaide Rd must share the one lane provided with traffic heading west and north, except between 7am-9am weekday mornings
- vi) There are downstream effects from these restrictions

5.3.10 The provision of car parking on the roads along the SH1 regional route, especially on roads around the Basin Reserve Roundabout and those joining it, take up important usable transport space and interferes with the efficient flow of traffic:

- i) car parking at the junction of Kent Tce/Ellice St
- ii) on Ellice St
- iii) on Rugby St (east and west)
- iv) both sides of Adelaide Rd
- v) along Sussex St until the junction with Buckle St

5.4 Other Traffic Issues

5.4.1 Vivian Street

- i) The SH1 highway route entering the inner city at Vivian Street is currently restricted to two lanes. NZTA has examined the future requirements of Vivian St up until 2031 and has established that these can be met by removing car parking during peak hours between Tory St and Kent Tce to allow 3 lanes of traffic flow.
- ii) This form of future-proofing is low impact, low cost, small scale in intervention and if sustainable in light of predicted traffic growth, has an impressive degree of longevity.
- iii) NZTA's recent commitment to maintain SH1 on Vivian St differs remarkably from its proposal commented upon by WCC earlier in the year which sought consolidation of SH1 in a single east-west corridor away from Vivian St. The location would have likely been along the Buckle St alignment and would undoubtedly have led to a proposal for a second flyover going west-east to the duplicated Mt Vic Tunnel (WCC "Basin Reserve - Assessment of Alternative Options for Transport Improvements", February 2013, p101).
- iv) NZTA's reconsideration of Vivian St is an appropriate precedent for transport improvements to be undertaken at the Basin Reserve Roundabout. Vivian St suffers from an inefficient utilisation of space and a second flyover is an overinvestment in infrastructure as a response to simple on-the-ground problems.
- iii) As the future-proofing of Vivian St can be implemented without the need for a flyover, we have incorporated NZTA's long term plans for Vivian St into our Basin Reserve Roundabout Enhancement Option.

5.5 Future Traffic Issues

5.5.1 Traffic consequences after duplication of the Mt Vic Tunnel

- i) There will be a significant increase in volume of traffic at the Basin Reserve Roundabout after duplication of the Mt Vic Tunnel (2021 -). The increase in both directions to two lanes will intensify traffic volumes heading west to the Paterson and Dufferin Street intersection.
- ii) John Foster's traffic modelling indicates that the predicted increase will require the intersection to be widened to three lanes on Paterson St for

up to 100metres before the intersection and three lanes provided at the Dufferin St lights.

- iii) The layout of the Basin Reserve Roundabout Enhancement Option 2021 > accommodates this widening.

5.6 Comparison with NZTA documentation of the Basin Reserve Roundabout Traffic Issues

5.6.1 I have not found documentation placed on public record by NZTA which demonstrates specific recognition of the problems I have identified with the layout of the Basin Reserve Roundabout.

5.6.2 I was very concerned to note that the plan of the existing roundabout produced by NZTA in its public engagement documents published in July/August 2011 did not record the layout of lanes correctly.

5.6.3 NZTA only publicly acknowledged these misrepresentations of the existing layout in Document #24: *"The existing situation – SH1 around the Basin Reserve"* after Richard Reid & Associates brought them to the attention of Wellington City Council and NZTA in a meeting with both parties on 11 April 2012.

5.6.4 Document #24: *"The existing situation – SH1 around the Basin Reserve"* bore no resemblance to the layout of the existing roundabout. By virtue of the plan's numerous errors (at least 9 on our count), it suggested:

- i) NZTA did not examine the existing situation in sufficient detail
- ii) NZTA did not identify the layout problems which contribute to the dysfunctional performance of the roundabout
- iii) most if not all of NZTA's errors recording the existing layout are located exactly where these design problems create congestion and conflict
- iv) most of NZTA's errors recording the existing layout are located where crash sites have been recorded (see WCC Basin Reserve – Assessment of Alternative Options for Transport Improvements, 2013, p16)
- v) NZTA's errors, and lack of documentation recognising the roundabout's specific problems, could have led NZTA as well as the public to assume the roundabout is not able to cope with present or future traffic volumes, and is not safe

- vi) NZTA may have incorporated this incorrect data into its traffic modelling of the existing situation and therefore skewed the measurement and assessment of the roundabout's performance.

5.6.5 NZTA's investigation and presentation of options for the Basin Reserve dating back to 2001 do not appear to have adequately considered the resolution of the existing layout problems as an option either separately, or together, with other transport improvements:

- i) Out of the total of 73 options that have been investigated since 2001, only a handful explore the improvement of the existing roundabout.
- ii) In the "Meritec Report" (2001), 3 options examined the management of roundabout traffic by adding traffic signals at key intersections.
- iii) In the "NZA Strategy Study" (2008), 1 option (B1) examined retaining the use of the existing roundabout for westbound traffic while re-routing eastbound traffic through a new Mt Vic Tunnel from Pirie Street.
- iv) In the "Basin Reserve Inquiry by Design Workshop" (2009), I understand no options examined retaining and improving the existing roundabout. Instead, 4 options explored the at-grade potential of re-routing westbound traffic from Paterson St north of the Basin Reserve.
- v) In the "War Memorial Tunnel Option Scoping Report" (2010), no options examined retaining and improving the performance of the existing roundabout.
- vi) In the "Feasible Options Report" (2011), no options examined retaining and improving the performance of the existing roundabout.

5.6.6 I think it is worth repeating that at each successive stage of the investigation process, including when important changes were made to the brief, NZTA has not returned to the existing roundabout as a base case to examine whether it can be retained and improved.

5.6.7 The weight of this evidence suggests that NZTA has invested almost all of its time in the analysis of solutions in other locations, and has therefore neglected the real problems associated with the roundabout layout.

5.6.8 This is perhaps not surprising considering a flyover proposal has been on the table for the past fifty years.

- 5.6.9 NZTA appears to have assumed that providing additional capacity outside the existing network is the best solution for traffic congestion, instead of providing for the most efficient and effective flow of traffic within the network by fixing the existing traffic problems.
- 5.6.10 As far as I can establish from the public record, almost all of NZTA's proposed transport solutions for the Basin Reserve since 2001 involve providing additional capacity outside the existing network by re-routing Paterson St traffic to the north of the Basin Reserve and grade-separating east-west from north-south traffic via a flyover and/or tunnel structure.
- 5.6.11 Yet the long term vision for the Ngauranga to Airport Corridor, as described in the RLTS 2007-2016, directs: "Maximum use of the existing network will be achieved by removal of key bottlenecks on the road and rail networks." (p.2)
- 5.6.12 I contend that the means in which NZTA seeks to resolve these problems at the Basin Reserve Roundabout - by grade-separation - is an unnecessary, inappropriate and narrow interpretation of what is required for transport improvements to the roundabout; and that these 'means' create significant adverse effects for the receiving environment.
- 5.6.13 Grade-separation is a term which is often incorrectly applied to or quoted from the Ngauranga to Airport Corridor Plan (2008). Yet the Plan clearly states: "Design and construct improvements at the Basin Reserve to improve passenger transport, walking and cycling by separating north-south flows from east-west traffic" (p.10).
- 5.6.14 Whilst NZTA has chosen to interpret "separation" as grade-separation, and successive studies follow this as a rule, the Plan's wording is open to achieving separation by other means.
- 5.6.15 I contend that the alternatives NZTA has investigated have not adequately considered the means by which use of the existing network can be maximised and the north-south and east-west flows accommodated.
- 5.6.16 I believe the separation of Buckle St from Tory St traffic, together with duplication of the Mt Vic Tunnel and enhancements to the planning of the roundabout, is the best means to improve the performance of the roundabout.

5.7 Major Limitations to Removing Key Traffic Issues

I perceive the major limitations to removing the identified traffic issues related to the Project are:

- i) The key bottleneck at Mt Victoria Tunnel: construction of another tunnel is the essential game-changer. Most of the congestion problems stem from the bottleneck of the tunnel and its capacity of only one lane in each direction. Until a second tunnel is built, congestion on Ruahine St heading west and Paterson St heading east will remain regardless of whether a flyover is built. I contend that enhancements to the Basin Reserve Roundabout can manage this.

5.7.2 The key bottleneck at the Buckle St intersection with Tory St:

- i) The at-grade intersection with traffic lights allowed local traffic to join or cross Buckle St preventing westbound traffic from exiting the Roundabout effectively. As noted, this created another key congestion point, causing traffic back-up on Sussex St, Rugby St and Adelaide Rd (particularly evening peak hours), compromising the movement of traffic heading west to Taranaki Street and north to Cambridge Tce, and weakening the performance of the Roundabout as a whole.
- ii) The Government's decision to separate Buckle St from Tory St and widen Buckle St to 3 lanes has removed this bottleneck from within the network and will allow Sussex St (the most heavily used road around the Basin Reserve) to function properly.

5.7.3 The inconsistencies and inefficiencies in the layout of the Basin Reserve Roundabout which inhibit maximum use of the existing network:

- i) Correcting these may be minor in change and cost, yet will remove unnecessary conflict disturbing the smooth functioning and flow of the Roundabout and surrounding roads travelling to/from them.

5.8 Major Recommendations

Hence, my recommendations for achieving the objectives of this Project are:

- i) duplication of the Mount Victoria Tunnel which is part of a future project;

- ii) separation of Buckle St before the Tory St intersection (the project is already under construction): the Government's decision in August 2012 to separate Buckle St from Tory St and widen Buckle St to 3 lanes has removed this bottleneck from within the network and allows Sussex St (the most heavily used road around the Basin Reserve) to function properly.
- i) enhancing the Basin Reserve Roundabout layout and surrounding roads/bus stops/bus lanes/car parking/walking and cycling routes (part of this project): by three laning Paterson St and Dufferin St. This will remedy a poorly planned existing context and allow the project's multi-modal transport objectives to be accommodated and remain integrated with the city. This work can be undertaken immediately or as part of a future tunnel duplication project

5.9 Comparison with NZTA's recommendations for the Basin Reserve

5.9.1 My conclusions and recommendations for the Project differ significantly from NZTA's. I have searched through NZTA's documentation for the project dating back to 2001 and as far as we are aware have found that our site observations and conceptual thinking have not been signalled within NZTA's analysis and presentation of design options.

5.9.2 My review of Technical Report 19 with its summary of 73 options has highlighted some key trends:

- i) NZTA's work has concentrated on bridging the perceived conflict of highway with local traffic at the Basin Reserve rather than resolving the issues which contribute to the performance of the roundabout at grade level
- ii) NZTA's work has not recognised or understood how much the Buckle St/Tory St intersection contributed to the poor performance of the roundabout.
- iii) The conclusion reached and continued to be publicly maintained up until August 2012 by NZTA was that the undergrounding of Buckle St before the Tory St intersection would provide no, or few, transport benefits in addition to the flyover.
- iv) Hence, NZTA's Option A and B flyover proposals published in July/August 2011 retained the Buckle St/Tory St signalled intersection. At the same time, these options reduced the capacity of local traffic

accessing SH1 from the Central City to one lane all around the roundabout. Together, I believe these decisions would have created gridlock for the Central City. Only the Government's intervention for the purposes of a War Memorial Park avoided this potential traffic planning disaster.

- v) It is not evident that NZTA considered whether the Buckle St underpass could be combined with improvement of the roundabout instead of with a flyover.
- vi) The significance of this omission is revealed with the Government's decision to separate Buckle St from Tory St in 2012. This provided NZTA with the opportunity to review the traffic implications from creating an underpass with an extra 3rd lane between Sussex Street and Taranaki St. Yet there is no option we can find in any NZTA report which analyses or illustrates the potential implications of this for the existing roundabout.
- vii) We believe our Basin Reserve Roundabout Enhancement Option is the first to do so.
- viii) Whilst the "RR Option" also missed the implications from a 3rd lane being added to the Buckle St underpass, it nevertheless grasped the topographical idea of the key bottlenecks being located on the east and west side of the roundabout. The undergrounding of Buckle St was a key part of the option and was also the most urgent transport improvement I recommended for the project when meeting with Hon Chris Finlayson, Minister Arts, Culture and Heritage, and two Ministry officials on 30 May 2012 (when an at-grade Buckle St was still preferred by NZTA and before the decision was made to separate the roads).
- ix) Yet the "RR Option" in TR19 is only discussed in terms of removing car parking and adding traffic lanes, wholly missing the root idea of the proposal.
- x) Even when NZTA developed alternative options which sought to avoid the moderate to significant negative effects of the Project on the social, built, urban and heritage environments immediately north of the Basin Reserve, these options were sited further north again. Yet retaining the use of the southern alignment of the existing roundabout would have avoided all these conflicts.

5.9.3 In summary, at each successive stage of the option investigation process, including when important changes were made to the brief, NZTA has not returned to the existing roundabout as a base case to examine whether it can be retained and improved.

5.10 The Project's Relationship with the Wellington Public Transport Spine Study

Generally

- 5.10.1 NZTA's application states that the layout of the Roundabout will be "complimented" by the Wellington Public Transport Spine Study (henceforth to be identified as the PT Spine Study). NZTA notes that the PT Spine Study "will determine the form of the passenger transport service" (Footnote 14: Introduction to the Project, Vol. 2 AEE, p.16).
- 5.10.2 The PT Spine Study is currently in public consultation and will be determined through a separate decision-making process.
- 5.10.4 NZTA's layout for the Roundabout is therefore provisional until future decisions are made on the PT Spine Study.
- 5.10.5 The PT Spine Study does not provide a layout for the Basin Reserve Roundabout for any of its short-listed options.
- 5.10.6 NZTA's Project has accommodated only one of the three short-listed options from the PT Spine Study in its layout for the Roundabout, bus priority (BP), (essentially the status quo with priority signalling and dedicated bus lanes at peak hours) which is not Greater Wellington Regional Council's preferred option of Bus Rapid Transit (BRT).
- 5.10.7 Hence, NZTA and the PT Spine Study are reliant on each other for their promise of traffic performance despite both not being able to demonstrate improved PT performance at the Roundabout.
- 5.10.8 A key NZTA Project Objective, namely the provision of opportunities for public transport improvements by not constraining opportunities for future transport developments, is not able to be confirmed or tested until after the Board of Inquiry process is likely completed.
- 5.10.9 These independent plans and separate decisions leave uncertain the overall outcome from the different projects. On this basis alone, NZTA's application for the Project is premature and piecemeal and should be declined.
- 5.10.10 Like the Basin Bridge Project, the PT Spine Study seeks to profoundly

transform the existing transport infrastructure of the city rather than maximise the efficiency and productivity of the existing network, as the Ngauranga to Airport Corridor Plan (2008) requires.

- 5.10.11 Like the Basin Bridge Project, I believe the PT Spine Study findings are out of accord with the long term vision for the city, as well as best practice for cities internationally. Both do not manage traffic congestion “at levels that balance the need for access against the ability to provide for peak demands due to community impacts and cost constraints” (N2ACP, 2008, p2).
- 5.10.12 When I analysed the on-the-ground implications from this study, my investigations indicated that these would lead to impractical and undesirable outcomes.
- 5.10.13 I also note that the PT Spine Study did not evaluate the merits of each option from an urban design or spatial accessibility perspective. There is no real physical context provided for the evaluation of each option and there seems no awareness that urban design and spatial accessibility may influence or help direct the choice of option.

Southern Spine (issues relevant to the Basin Bridge Project)

- 5.10.14 The proposed southern spine route runs from Courtney Place to Newtown Town Centre.
- 5.10.15 The PT Spine Study does not provide certainty around implementation of a southern spine and any option for the route (other than the status quo, BP) due to the timing and the amount of land required to be purchased by Wellington City Council along Adelaide Road to accommodate BRT/LRT.
- 5.10.16 The PT Spine Study illustrates generic cross-sections for the three PT options along each road of the southern spine. It is unclear whether the land required to accommodate these cross-sections is more than the PT Spine Study indicates is needed. The PT Spine Study does not dimension the existing road reserve width vs the planned road width on Adelaide Road, and a number of cross-sections exceed the planned reserve road width. The study is vague as to whether the land will be secured by 2022 or much later, even beyond 2031, as suggested by an earlier report.

- 5.10.17 It is also unclear whether implementation of any of the three PT option cross-sections will be sufficient to reduce the existing congestion on Adelaide Rd, especially for other vehicular traffic heading north in the peak afternoon hours between 4-6pm. Our team of traffic experts questions the lack of provision for growth in other vehicular use and the imbalance weighted in favour of PT when the existing vehicle congestion is likely to worsen. The benefits from the provision of an exclusive lane for PT, whilst prioritising the PT Spine' Study's objectives, may be negligible or irrelevant if the overall system is unbalanced and dysfunctional.
- 5.10.18 On both these counts, any delay or failure to future-proof Adelaide Road will affect the planning and performance of the Basin Reserve Roundabout, and by consequence, the SH1 corridor. This constraint in providing for future transport improvements restricts some of the objectives of the Basin Bridge Project. It also reinforces our team's concern that the Project's objectives are dependent upon the performance of other organisations whose intentions at the time of NZTA's application are unknown, unclear or questionable.

Eastern Spine Route (issues relevant to the Basin Bridge Project)

- 5.10.19 The proposed eastern spine route for bus rapid transit (BRT) and light rail transit (LRT) runs to and from Kilburnie Town Centre, along Wellington Rd and Ruahine St, through both existing and new Mt Victoria Tunnels, to connect with the Basin Reserve Roundabout and Courtney Place.
- 5.10.20 The infrastructure required to implement the proposed BRT/LRT route along Ruahine Street will fundamentally re-organise the city's transport network rather than maximise the use of the existing network and residential catchment areas.
- 5.10.21 The proven scientific infrastructure analysis by Space Syntax of 'City Centre Movement' in Wellington (commissioned by Wellington City Council in 2011) indicates that the proposed PT infrastructure for the eastern spine is in the wrong place. This has significant implications for the Basin Bridge Project. I refer to two key diagrams from Space Syntax's report to substantiate this claim.
- 5.10.22 The first diagram shows that the strongest and most direct route for all vehicular traffic from the eastern suburbs to the central city is via the existing HAITAITAI bus tunnel (pg35). The second diagram shows that the proposed PT

route along Ruahine Street has poor accessibility and connectivity compared to the Haitaitai suburban centre (pg15).

- 5.10.23 These Space Syntax diagrams, and the report, demonstrate that the existing bus tunnel and not the SH1 highway must be a core part of any future PT network.
- 5.10.24 In addition, NZTA's planned increase in roading capacity and predicted growth in vehicle use for the whole Wellington Region SH1 network may also mean that the likely outcome from a PT eastern spine on Ruahine Street will be sustained traffic congestion and the compromise of PT objectives, rather than the improvement of all traffic modes.
- 5.10.25 Why does the PT Spine Study adopt this approach when Moxham Ave and the Haitaitai bus tunnel are already separate from and more directly connected to Courtney Place than the motorway route? And why does the PT Spine Study accept shared road space with highway traffic on a congested route when it is seeking exclusive lanes for PT on the Roundabout?
- 5.10.26 It is likely that there will be more subtle problems planned into the proposed eastern spine route that will affect the performance and amenity of the Basin Reserve Roundabout.
- 5.10.27 The selection of a central or kerbside median for BRT/LRT on Paterson St is critical to traffic performance on and approaching the roundabout, as it will be on Ruahine St.
- 5.10.28 The constraints of space imposed by a flyover at the Paterson St/Dufferin St intersection may mean even the route for BRT will require the loss of land from Wellington College and St Marks Church School on Paterson St (as the plan for LRT envisages).
- 5.10.29 The recently published visual simulation of the embankment supporting the flyover at the intersection of Paterson and Dufferin St confirms there is no land left to the north for any future, or additional, PT requirements. Any further space needed will have to be taken from the southern side. This suggests, or implies, that a BRT alignment will likely require the removal of planting NZTA currently proposes on Dufferin St outside St Marks Church School as mitigation for the flyover.

5.10.30 Overall, the significant adverse effects from the Eastern Spine will impose a high risk profile for achieving the PT Spine Study's objectives. The scale and extent of the physical infrastructure will likely cause unacceptable social and environmental change and permanent damage to the Town Belt, as well as to the Haitaitai suburb.

5.10.31 This risk profile will likely be transferred to the Basin Bridge Project, endangering the feasibility of its own objectives, as well as any conditions attached to a consent as part of the BOI process.

My practice's recommendations for the PT Spine Study (issues relevant to the Basin Bridge Project)

5.10.32 Overall, I concluded in our submission that it was not possible to support the findings and any preference from the PT Spine Study until a real world investigation is undertaken which is fully cognisant of the implications of the Study's effects on the ground.

5.10.33 I recommended:

- i) no preferred option should be advanced until their risks and effects are more properly understood and illustrated. I believe this applies equally to the Basin Bridge Project;
- ii) Space Syntax should be commissioned to substantiate the PT Spine Study's analysis, findings and redirect its failings;
- ii) the proposed eastern spine route along Ruahine Street should be removed from the study. It fails to convince on any number of fronts, including socially, environmentally and economically. The existing Haitaitai bus tunnel should remain as a core part of the PT infrastructure.

5.10.34 I believe that if one or all of these recommendations are adopted, then they will directly affect the Basin Bridge Project. The risk profile of the PT Spine Study is such that the Basin Bridge Project should be withdrawn or delayed until both projects are soundly aligned.

5.10.35 I concluded by stating that the objectives and outcomes from the PT Spine Study are achievable without a grade-separated structure at the Basin Reserve by adopting the Basin Reserve Roundabout Enhancement Option.

6 **Key urban issues within the city context**

6.1 Scope of my evidence on urban design and landscape issues

6.1.1 The Mt Victoria Residents Association is calling urban design evidence from Jan McCredie and I have read her brief and entirely agree with her assessment and conclusions.

6.1.2 In my brief the key urban design and landscape issues are:

- i) The Order of the City and the Basin Reserve Roundabout's place within it;
- ii) The Order of the Immediate Setting and the Basin Reserve Roundabout's place within it;
- iii) The Order of the Basin Reserve and the Basin Bridge Proposal's relationship with it.

The issues reflect the consistent symmetrical structure of the Basin Reserve and Roundabout at different scales: the scale of the city, the immediate setting and within the cricket ground.

6.2 The Order of the City and the Basin Reserve Roundabout's place within it:

6.2.1 The Basin Reserve Roundabout occupies a high order place within the urban structure and landscape context of Wellington. It is the key pivot point and major traffic distributor for the city. The city turns on the Roundabout.

6.2.2 The singular focus of the City at the Basin Reserve Roundabout may be unique internationally. Other cities have roundabouts; other cities have famous roundabouts; and there are cities famous for their roundabouts. However, typically all these roundabouts are one nodal point within a complex network of movement corridors. Paris and Washington DC are the most well-known examples.

6.2.3 In Wellington, the Roundabout structures the city in a primary, deep and symbolic way:

- i) The major north-south axis and arterial road of the city meets the major east-west axis and state highway of the city at the Basin

Reserve Roundabout;

- ii) The meeting of these roads is ordered in a symmetrical arrangement around a generous landscape space provided by the Basin Reserve Cricket Ground;
- iii) The north-south axis/arterial road and Basin Reserve Cricket Ground have been built upon the underlying structure of the 1840 City Plan; and one of the original boundaries to the Town Belt was aligned with the centre-line of the Basin Reserve (approximately where Paterson St is now);
- iv) The Basin Reserve Ground was enclosed by Sussex Square in 1860 which conforms to the built perimeter of the Roundabout today;
- v) The major landform of the Town Belt cradles the Basin Reserve Cricket Ground within a horseshoe shape, making the Roundabout and Basin Reserve Cricket Ground a stage within an impressive amphitheatre setting;

6.2.4 The organisation of traffic movement at the Roundabout has evolved over time.

- i) The construction of the Mt Victoria Tunnel in 1930 was formative in structuring a major east-west axis through the city. The tunnel incorporated the Basin Reserve Cricket Ground (and the former Sussex Square) within a more complex and layered system of movement which reflected an urban comprehension of the city rather than a localised one.
- ii) Subsequent modifications to the street pattern and arrangement of lanes at the Roundabout have served to clarify, and I would argue, strengthen the organisational role of the Roundabout within the city rather than dilute or dismantle it.
- iii) In this respect, the volume of traffic now using the Roundabout can be interpreted as a positive expression of the Roundabout's importance which can and should be managed, not treated as an adverse effect to be avoided or removed. Certainly, this is the accepted way for cities with famous roundabouts.

6.2.5 The philosophical approach to traffic movement required for the Roundabout has changed over time.

- i) The Roundabout has sustained fifty years of the Transport Agency and its previous incarnations' proposals to transform it. The significance of this persistence in the face of profound global change in thinking about

- cities and traffic movement should not be underestimated.
- ii) Since the 1963 Foothill Motorway Plan, all of the Transport Agency's proposals have followed the same governing formula – they have sought to divert east-west traffic on Paterson St northwards over or around the Basin Reserve, either grade-separated on a bridge or in a tunnel structure.
 - iii) All these schemes have envisaged and required the almost wholesale destruction of the Basin Reserve Cricket Ground to justify their feasibility. The current NZTA application is no different in conception or outcome, even if NZTA argues, to an unacceptable degree in my opinion, that the alignment of the flyover on the Te Aro Grid is an advance in thinking.
 - iv) If the Project requires the incorporation of the “Northern Gateway Building” within the Basin Reserve Ground purely and simply to mitigate the effects of a grade-separated structure outside the Ground, then NZTA's thinking about cities and traffic movement has not changed in fifty years
 - v) The Transport Agency's entrenched approach conforms with the now-widely criticised philosophy and objectives of the Modernist Movement (1920's-1980's) which still shapes some cities and organisations today. That is, transport planning and traffic movement need be separated from other functions of a city rather than be integrated
 - vi) The inner city of Wellington has largely escaped the scale of intervention and change in character that comes with motorway development, notwithstanding issues with the Inner City Bypass. The inner city remains compact and well connected, especially in comparison to Auckland's CBD
 - vii) The Board of Inquiry decision on NZTA's application therefore signals a profound moment in time. The potential of this project is either to impose an outmoded model of planning on the city and with its construction destroy the intrinsic order, scale and fabric of the city, dividing the city permanently north and south of the Basin Reserve; or alternatively, the project can consolidate and build upon the historic urban structure of the city with an integrated transport proposal.

6.3 The Order of the Immediate Setting and the Basin Reserve Roundabout's place within it

6.3.1 Spatial definition

- i) Whilst the spatial structure of the Roundabout is strong and simple as a high order diagram, its spatial definition is not strong or clear on the ground. The Roundabout is generally experienced as a poor roading environment with an inconsistent, uneven and degraded streetscape around all sides; a diverse arrangement of lanes and lines from side to side; an infill of carparking on either or both its inside and outside edges; remote corners filled with neglected planting; awkwardly shaped traffic islands for pedestrians; all of which detract and distract from the Roundabout as an important movement corridor and urban space
- ii) There is a reasonably consistent treatment of planting on the eastern side of the Roundabout along the Basin Reserve boundary, and there are still residues of a past history of consistent built edges on the city sides of the Roundabout. However, neither planting or built edge have established a consistent and coherent road space for the Roundabout. The focus is instead on a complex arrangement of disparate features within a predominantly 'vehicle open space' landscape
- iii) Nevertheless, the potential still remains for some order to accrue in time. A coherent road space can be created by strengthening the underlying spatial structure to make it legible in form and character. The more consistent the treatment of the edges, the greater the clarity of the space in-between. The Roundabout already has a strong orthogonal perimeter delineated by traces of the historic Sussex Square. Set within this is an inner ring of pohutukawa trees circumnavigating one half of the Basin Reserve Ground. The consistency and contrast in each edge relative to the other clearly defines a potential in-between space which has the possibility of enhancing the Roundabout's key function, pivotal place and civic role within the city.

6.3.2 Spatial invasion

However, NZTA's Project does not recognise or respect the Roundabout's underlying spatial structure or its potential to be enhanced. The flyover has a multitude of adverse effects, each of which in their own right I consider significant. The flyover structure:

- i) is imposed upon and passes through the Roundabout but does not contribute any enhancement to the Historic Area which is exclusive to the Project ;
- ii) its direction is against the flow and grain of the city;
- iii) it divides the city north and south of the Basin Reserve;
- iv) it undermines the 'high ground' of the Mt Cook 'knoll' that the Dominion Museum and War National War Memorial stands upon, the major landform and commemorative precinct of the city, by neutralising the landform's prominence in the round when seen from Kent Tce and Basin surrounds and severing visual links to the monuments from the same locations;
- v) its curvatures eats out the north-eastern corner of the Square;
- vi) its inside curvature does not marry with the north-eastern corner of the Basin;
- vii) the finer horizontal line of the Kent Tce crossing is completely undermined by the overwhelming curvature of the structure as it turns from Kent Tce to Paterson St;
- viii) the length of the double curvature, approximately 2/3 of the overall length of the flyover, outweighs any gain from the 1/3 which is straight;
- ix) the flyover dismantles the urban structure of the Roundabout at ground level
- x) it disengages the Basin Reserve Roundabout from the historic urban structure of the city
- xi) its shape and length has much more in common with the landscape typology of the Hāitaitai street pattern than the Te Aro City Grid;
- xii) the Paterson St embankment destroys any notion of a "hill to hill" span;
- xiii) it visually blocks the north-south city axis viewshaft, the most important north-south axis in the city
- xiv) It adversely affects the relationship between the major national civic functions of state located adjacent to and surrounding the Roundabout (Government House, National War Memorial Museum and Carillon, Memorial Park).

On the basis of these significant adverse effects, the Project **should be declined**.

6.3.3 Proposed Mitigation

- i) NZTA's Project includes mitigation of the flyover structure. I consider this mitigation mostly reacts arbitrarily to the adverse effects of the flyover rather than responds to and builds upon the character, quality and place of the Basin Reserve Historic Area;
- ii) The only part of the Project whose genesis appears not purely related to the Project's adverse effects, the extension to Memorial Park, is not exclusive to the Project and can be included as part of other projects;
- iii) NZTA's Project fills in the open space of the Basin Reserve Roundabout and the major north-south axis of the city rather than strengthening and enhancing the open space.

6.3.4 Proposed Mitigation with the Northern Gateway Building

The building blocks the major north-south urban axis of the city. This is an unacceptable outcome from mitigation.

6.3.5 Proposed Mitigation with Infill Planting

The proposed planting is in the wrong place:

- i) The proposed planting infills the open space of the Roundabout rather than defines its edges e.g. on Dufferin St (north and south) and Kent Tce
- ii) The successive layers of planting merge together to join the opposite sides of the Roundabout together rather than keeping them distinctly separate
- iii) The planting closes down the road space at ground level, losing legibility and increasing shadow
- iv) The proposed planting will require many years of growth before it obscures views of the flyover
- v) The flyover will still be seen and heard from inside and around the cricket ground in other places than NZTA has provided mitigation for – the overall amenity of the Ground will be seriously compromised. The flyover will be in full view of the TV cameras for test match cricket and I believe its appearance will register internationally as a disgrace
- vi) The planting mitigation may need to be removed in the future to make way for further transport infrastructure (a Public Transport Spine or a

second flyover) so there is no promise of longevity or amenity.

6.3.7 Edge definition

- i) The Basin Bridge Proposal will erode the Roundabout's edges at ground level, serving to decrease pedestrian activity and destabilise pedestrian safety. This is particularly important for Dufferin St where the edges are still poorly defined with public space bleeding into the NZTA owned/unmaintained land adjacent. From Jane Jacobs' point of view, this dissolution of a public space/private space boundary always leads to an unused, unsafe and unattractive street (Jacobs, "The Death and Life of American Cities", 1961, p35)
- ii) If the same conditions are extended elsewhere (e.g. NZTA's proposals for Dufferin St, Ellice St, Paterson St and the Memorial Park extension), the dereliction of public space will expand until the precinct or neighbourhood is perceived as unsafe.
- iii) In NZTA's proposal, Ellice and Dufferin St's poor definition and unattractive appearance will become significantly worse than at present and I expect the outcome will confirm Jacobs' thesis. I believe Ellice and Dufferin St (and the Memorial Park extension) will become unsafe areas, especially at night.
- iv) The overall quality of legibility for the Project is low and walking routes in particular are circuitous, undefined and filled with obstacles along the route and in the distance, placed there for mitigation purposes (e.g. planting).

6.3.8 Potential for edge development and activity

- i) A compact urban vision is not achievable with the Basin Bridge Proposal due to the very large, poorly defined areas of vehicle open space that the flyover will create and cover for its operation. The flyover will be fundamentally out of scale with the fine grained fabric and texture of the Mt Victoria residential suburb and the flyover's double curvature will fully disengage this corner of the Basin Reserve Roundabout from the Te Aro Grid
- ii) By virtue of its footprint alone, NZTA's proposed flyover will prevent or displace any substantial development on the north and north-eastern side of the Roundabout. Potential building sites on Ellice Street from Kent Tce to Regional Wines will be compromised by the flyover and

foot/cycle bridge's scale and proximity; and the NZTA-owned land on Dufferin St will likely be exclusively used for highway purposes, including the re-routing of Paterson St.

- iii) As is typical to land adjacent to motorway development, property values may decline relative to other areas over the long term which will encourage underinvestment in property rather than appropriate development. Hence, the urban blight that is now apparent due to lack of certainty regarding NZTA's long standing highway designation and historic attempts at motorway development will become permanently entrenched
- iv) The proximity of the flyover to St Josephs Catholic Church will also likely compromise any potential future plans to develop and consolidate its property portfolio and may even persuade the church to relocate because of the severe adverse visual and environmental effects of the Project (our investigations show that a second flyover would require nearly the whole of the church land anyway)
- v) I find it difficult to understand NZTA's statement that the flyover will stimulate urban growth and economic development in the surrounding area, particularly along the WCC Growth Spine. Local, national and international examples of flyovers do not support this. On the contrary, there are a multitude of precedents for significant negative conditions to occur. The area of the flyover will likely become a no-mans land, in-between future substantial urban development along Kent Tce and Adelaide Rd yet too far away to profit from it
- vi) The possibility of a second flyover heading west-east into a future duplicated Mt Victoria Tunnel will cement the transformation in character of this historic area into a vast vehicle wasteland space dividing the city north and south of the Basin Reserve

6.4 The Order of the Basin Reserve and the Basin Bridge Proposal's relationship with this

6.4.1 The spatial structure of the Basin Reserve Cricket Ground is symmetrical in its arrangement of features and reference to the surrounding context

6.4.2 I would characterise the Basin Reserve as being constituted by three essential elements:

- i) Buildings, sited on the western half of the Ground

- ii) Grass embankment, traversing the eastern half of the Ground
 - iii) Open space of the cricket pitch between buildings and landscape
- 6.4.3 The Museum and Vance Stands occupy two-thirds of the western half of the Ground, with the Museum Stand holding the centre-ground and aligned with the centre-point of the cricket pitch. The Vance Stand turns on the circular geometry of the pitch and covers the north-western segment. A largely unbuilt area is left on the remaining south-western segment and consists of two small lightweight buildings, a pre-fab administration building and a maintenance shed.
- 6.4.4 The spatial structure of the Ground is supported and reflected by the immediate setting:
- i) The buildings sited on the western half are grounded on the slope of the Mt. Cook knoll and by the weight of the Dominion Museum and Carillon behind
 - ii) The landscape traversing the eastern half is reflected by the Town Belt behind
 - iii) The in-between open space of the cricket pitch is a tranquil open space which 'pools' the flows of open space moving along the north-south corridor of Kent/Cambridge Tce and Adelaide Rd. This flow will become more evident over time with bigger scaled urban development defining the edges of the WCC Growth Spine and its limits at the Basin Reserve.
- 6.4.5 There is also a smaller scale of symmetrical relationships at work with the siting of smaller scaled monuments within the Ground on the four points of the compass reflecting the order of the city:
- i) Dempster Gate, sited on the perimeter of the ground on the northern axis (slightly off-axis)
 - ii) Reid Gate, sited on the perimeter of the ground on the southern axis (slightly off-axis)
 - iii) The Edward Dixon clock on the Museum Stand, a relic from the Caledonian Stand, the previous occupier of the site, on the centre-line of the western axis
 - iv) Wakefield Memorial on the centre-line of the eastern axis
- 6.5 The Basin Bridge Proposal, and in particular the Northern Gateway Building, will destroy the intrinsic structure of the Basin Reserve and all these carefully ordered and layered internal and external relationships.

- 6.6 By virtue of its impact on these important historic relationships, the Basin Bridge Proposal will create significant adverse effects for the Basin Reserve and should be declined on this basis.
- 6.7 The Northern Gateway Building is proposed as a substantial form of mitigation for the significant adverse effects of the grade-separated flyover. However, the Northern Gateway Building creates its own significant adverse effects and should therefore be removed as part of the project or declined together with the rest of the application.
- 6.8 Regardless of whether this building is 45metres, 55m or 65m long, it is in the wrong place and does not fit within the careful organising structure of the Basin Reserve.
- 6.9 The Northern Gateway Building (NGB) is not a gateway building. A gateway by definition has a predominantly vertical emphasis which upholds the proportions of the human body. A gateway is predominantly a vertical stand-alone structure punctuating other elements which are usually horizontal (walls and fences). Its proportions are almost always higher and more vertical in disposition than its adjacent context in order to frame the passage of the human body. A relevant example would be the Brandenburg Gate in Berlin. The Dempster and Reid Gates are miniatures of this model - vertical intrusions in a horizontal boundary fence which mark the passage from the domain of the city to the sanctuary of the reserve.
- 6.10 The NGB is an overwhelmingly horizontal building whose proportions reflect instead the white perimeter fence encircling the cricket pitch. It is a long low structure which encloses space rather than punctuates it.
- 6.11 The NGB encloses the Ground in the wrong place, throwing out of balance the symmetrical structure and weighting of the building/landscape/open space tripartite relationship - moving architecture round into the domain of landscape and creating a wall which blocks the flow of north-south open space passing outside/ inside the Ground
- 6.12 The proportions of the NGB do not relate positively to the Vance and Museum Stands. The visual simulations produced by NZTA never show (and are not able to show) the contextual relationships of the building in the round. Only a physical model can do this and NZTA has refused to provide one.

- 6.13 The NGB is not intrinsically needed for the Basin Reserve. Its function is subordinate to its role as mitigation. Its length has been determined only by the degrees of effect it has on screening the flyover. Any length, whether it is 45m, 55m or 65m, is demonstrative proof of the significant adverse effects of the flyover. Any length, whether it is 45m, 55m or 65m, will create significant adverse effects on the Basin Reserve.
- 6.14 The flyover cannot be mitigated by the NGB because of these adverse effects. The NGB should not be built, regardless of the decision to approve a flyover. A flyover can be removed in time. Indeed, the Roundabout could quickly revert to its proper function. However, it is unlikely a NGB would be removed, and its wrongful place would unlikely be righted. Both the city and the cricket ground would suffer immeasurably from this.
- 6.15 Instead, a future cricket facility should be located in the correct position occupying the south-western corner of the Ground. This area provides ample room for facilities and will complement the symmetrical composure of the two grandstand buildings.

7 Outline of an Integrated Transport Proposal – Basin Reserve Roundabout Enhancement Option

7.1 Generally

- 7.1.1 The Basin Reserve Roundabout Enhancement Option that is submitted as evidence is the culmination of all the above work. This includes many hours of observation, analysis, design and design collaboration. It is a holistic solution that achieves the Project's objectives whilst integrating these with the Basin Reserve Historic Area.
- 7.1.2 Essentially, we have approached the Project with the view that transport improvements can and should build upon, extend and enhance the historic structure and unique character of the receiving environment instead of changing it fundamentally and adversely. My practice's experience successfully re-designing similar projects has demonstrated that it is possible to achieve this without isolating the state highway from the receiving environment it passes through.

7.1.3 The Basin Reserve Roundabout Enhancement Option has benefited from six months of detailed design development, and collaboration with John Foster and David Young, two highly experienced traffic experts with long standing knowledge of and insight into traffic problems in the vicinity of the Roundabout as well as across the regional network. John Foster and David Young will also be giving evidence.

7.1.4 The Basin Reserve Roundabout Enhancement Option has also benefited from incorporating my practice's urban and landscape thinking for the project. This information was left out of the documentation provided to WCC due to the terms and conditions of our contract.

7.1.5 The name "Basin Reserve Roundabout Enhancement Option" reflects this double agenda – we are seeking both a functional enhancement of traffic movement and an enhancement of the environment of the Roundabout. Towards this, we have sensitively shaped the differing transport requirements with the need to clarify the urban structure and enhance the amenity of the Basin Reserve Historic Area

7.2 Description of the Basin Reserve Roundabout Enhancement Option – Traffic Enhancements

7.2.1 The enhancements we propose to the Basin Reserve Roundabout include (I cite David Young's description of these in his evidence):

- i) Widening the short two-lane section of Dufferin Street to three lanes and to also widen Paterson Street to three lanes down to the stop line at the Paterson Street/Dufferin Street intersection. This will enable three traffic lanes from Paterson Street to circulate around the roundabout to Buckle Street/Karo Drive.
- ii) Three traffic lanes southbound at the Dufferin Street stop line at the intersection with Paterson Street with two lanes connecting to the two traffic lanes turning left off Rugby Street into Adelaide Road.
- iii) Three lanes in Sussex Street and Buckle Street, with all three lanes in Buckle Street turning left into the three lanes in Buckle Street Underpass (currently under construction) and with the right-hand lane in Sussex Street serving as a shared lane to also allow traffic to turn right

into Buckle Street before turning left into Cambridge Terrace.

- iv) Traffic management around the Basin Roundabout between Paterson Street and Adelaide Road to ensure that the coordinated traffic control system keeps traffic flowing freely in this section of the roundabout and there are no blockages that affect other traffic movements.
- v) Bus-priority lanes in Kent Terrace and Cambridge Terrace, and each side of Adelaide Road, with provision for a bus priority measures in the Basin Roundabout, if required.
- vi) Some rearrangement of the existing bus stops and car parking layout outside St Marks School for buses and cars to drop off and pick up school children.

We also accept the inclusion of the following proposed roadworks as part of our Proposal:

- i) An additional lane on Pirie St to allow left and right turns into Kent and Cambridge Terraces
- ii) Peak hour (7am – 9am and 4pm – 6pm) 'clear ways' on Vivian St between Tory St and Cambridge Tce

7.3 Description of the Proposed Enhancements to the Basin Reserve Roundabout Environment:

7.3.1 Kent and Cambridge Terraces

- i) The design envisages the creation of a new walking promenade from Courtney Place to the Basin Reserve along the central median of Kent/Cambridge Tce. This can be implemented in sections over time. The openings in the central median for vehicle turnings will be filled in to create a single uninterrupted median from Vivian St to the Basin Reserve.

The design envisages the removal of the existing planting along the centre-line of the median to be replaced with new tree plantings either side of a central walking promenade for the more efficient and effective

utilisation of space. Barcelona is used as a best practice international model for this kind of arrangement. This proposal is dependent upon gaining resource consents for the removal of established planting, and accommodation of any future Public Transport Spine requirements (although any claim on the central median by the PT Spine should be avoided).

The idea of the walking promenade is to activate and generate pedestrian movement in the most generous space of the street, the central median. The proportions of Kent/Cambridge Tce lend themselves beautifully to the creation of a fine boulevard and this planted walking avenue will complement its effect. The walking promenade will incorporate and formalise the existing civic/commemorative monuments sited along the central median and suggest the location of new ones. Overall, the walking promenade can become the new processional route from Parliament or the sea to Memorial Park.

- ii) We also envisage the creation of cycle lanes along both sides of the central median replacing the car parking bay, initially from Vivian St to the Basin Reserve and eventually from Courtney Place and beyond. The car parking bay against the central median on Cambridge Terrace is optional because there is much less traffic for cyclists.

7.3.2

Ellice Street

- i) The current 'park' on the corner of Kent Tce/Ellice St should be sold by NZTA for new building development. This corner is important to define with a building instead of left as open space.
- ii) Modification of the Ellice St/Hania St corner. The access provided to the Roundabout from Hania St and Ellice St is reduced to one entry point to remove potential conflict, increase the area of landscaping and provide stronger definition of the 'Sussex Square' perimeter. The traffic island is planted with low, diverse planting in keeping with the fine tradition of traffic islands in Wellington. The larger and more cohesive area of planting will soften the road space and streetscape of the Roundabout. Full access to/from Regional Wines is maintained by this proposal.
- iii) The potential re-shaping of the north-west corner of the Basin Reserve embankment and boundary fence in order to increase the area of grass

verge from Ellice around to Dufferin St. This will enable a consistent treatment of the Reserve/road interface, allow new pohutukawa planting to continue around the Basin which will also soften the streetscape and road space.

7.3.3 Dufferin Street

- i) Changes to the layout of the St Marks School drop-off zone on Dufferin St, including a reconfigured bus and car drop-off zone and new landscaping. A small area of land will need to be taken from the St Marks School property (including two small trees) to accommodate the re-located car drop-off zone. The idea of using this land was offered to the author by the St Marks School Board Chairman Roger Wigglesworth and Principal Kent Favel in a meeting with them in January 2013
- ii) The entrance to Government House is retained and remains clear of any parking or drop-off zone as per the existing situation. Detailed design is needed for this south-eastern area of the Roundabout in order to improve the definition of the Sussex Square perimeter, the entrance to Government House and ensure clarity of pedestrian and vehicle movement.

7.3.4 Rugby St/Adelaide Road

- i) Modification of the Adelaide Rd/Rugby St intersection to improve the south turning tracking curve for longer vehicles, especially to future-proof the turn for BRT and/or LRT.
- ii) Purchase of the property at the corner of Adelaide Road and Rugby Street (the Duckworth-Lewis Accommodation Hotel) to enable the modification of the corner's tracking curve. Costs for this purchase (≈\$3M) can be shared between NZTA, GWRC and WCC as a better tracking curve will help achieve the objectives of the Public Transport Spine Study. The land can be resold and developed afterwards. Early purchase of this land is considered important as it will future-proof the widening of Adelaide Road in the future
- iii) Modification of the traffic island at Adelaide Road/Rugby Street to increase the size of area for pedestrians and cyclists for safety, easier access and to remove conflict between north-south and east-west movement

7.3.5 Adelaide Rd

- i) Relocation of the public bus stop from the corner of Adelaide Rd and Alfred Street to the next street block south utilising the existing car parking bay outside the Accident & Emergency Clinic. Utilising this car parking bay will mean removing the bus conflict at the corner of Adelaide Rd and Rugby St.
- ii) The first lane of Adelaide Rd is now kept free from on-road bus stops, thereby improving traffic flow. Adequate notice of the change in use of the off-road space would be signalled if the clinic needed to relocate premises in order to retain its off-road parking.

7.3.6 Rugby and Sussex Streets

- i) Re-shaping the south-west corner of the Basin Reserve Cricket Ground property in order to re-align the Rugby St/Sussex St kerb. The design removes the car-parking bay along the northern side of Rugby St to free space for an extra lane of traffic. The new traffic lane runs in a straight line into the bend rather than veers into the space of the Roundabout to accommodate the maintenance building's tractor shed.
- ii) Relocation of the Basin Reserve maintenance building's tractor shed (a lean-to on the side of the maintenance building). I am unsure whether the re-alignment of the Roundabout will require the maintenance building itself to be moved however my current thinking is that it is able to remain in its current position. This will need detailed design to establish
- iii) Re-alignment of the Sussex Street kerb. The design proposes to remove the carparking on Sussex Street and use the extra space to widen the footpaths on both sides of the street. Sussex St is presently an unforgiving environment for pedestrians; the greater width, especially on the western side, will encourage more pedestrian activity. Reducing the road width of Sussex St to 3 full traffic lanes will create a beautifully proportioned street
- iv) Re-alignment of the Basin Reserve boundary fence on Rugby St (west) and Sussex St. The design proposes to extend the lines of the kerb, footpath, grass verge, boundary fence and pohutukawa tree planting from Rugby St (east) westwards around the perimeter of the Roundabout to Buckle St (north). A small area of land from the south-west corner of the Basin Reserve will need to be taken to achieve this.

The continuity in kerb line, footpath, grass verge, planting and boundary fence will create a consistent, cohesive and softer road space. It will likewise improve the consistency and cohesion of the inside perimeter of the cricket ground. The amenity of the outside road space and inside cricket ground will be significantly improved as a result. The subsequent small loss of land to improve the Basin Reserve is considered a minor effect

- v) An additional lane (third lane) through the Buckle St underpass (between Sussex and Taranaki St)

7.3.7 Sussex and Buckle Streets

- i) The design recommends the removal of the slip lane between Sussex St and Tory St which is part of the Memorial Park Tunnel Contract
- ii) I see this slip lane being better utilised as a green space planted and grassed for pedestrian comfort and community amenity. There is a suitable access route for vehicles from Rugby and Tasman St which we also think is more fitting as a processional route from Government House.
- iii) Removing this slip lane will take out a vehicle conflict point at the lower and upper end of the lane.
- iv) I note Space Syntax's mapping of connectivity and accessibility for the movement in the area and understand that Rugby and Tasman Streets offer much better routes according to their measurements.

7.3.8 Summary

- i) All these modifications to the Basin Reserve Historic Area can be implemented before or in preparation for a duplicated Mt Victoria Tunnel. The new traffic plan for the Roundabout is not required to be modified again from these initial changes and can sustain increases in traffic and active modes over the long term
- ii) The only road that will need to be modified for a second tunnel is Paterson Street.

7.3.9 Paterson Street and the proposed duplication of Mt Victoria Tunnel 2021 >

- i) I have incorporated NZTA's publicly stated intention to duplicate the Mt. Victoria Tunnel into the design so that we can demonstrate it can

accommodate the predicted increase in traffic and the required realignment of two eastbound lanes with the new tunnel.

- ii) In our Enhancement Option, and in contrast to NZTA's provisional plans, I have realigned the whole of Paterson St on the symmetrical line of the Basin Reserve Cricket Ground and Roundabout. The two routes' alignment are derived from the approximate centre line of Dufferin St (with the Museum Stand sitting directly behind).
- iii) This alignment embeds the road into the historic Te Aro grid of the surrounding streets and aligns itself with possibly the most important civic monument in the city, the Carillon, in the mid-distance.
- iv) The effect of this is firstly to integrate Paterson St with the formal planning structure of the city, something which it is presently out of character with.
- v) Secondly, the increase in number of lanes and road widths will up-scale the presence of the road within the city plan and better reflect its importance as the major urban gateway to the city.
- vi) The new Paterson St can be planted in a simple and consistent way to create a boulevard. This planting will join with the planting around the Roundabout, creating cohesion and continuity between these two major spaces of the city. The two roads become part of a unified spatial structure of the city.
- vii) Hence, the duplication of the tunnel has major significance for the urban design of the city, not just accommodating traffic movement and a strategic state highway route..
- viii) Paterson Street is proposed to be three lanes at the Dufferin St intersection for the predicted increase in westbound traffic after duplication of the Mt Vic Tunnel post-2021. This third lane extends 100metres up Paterson St beyond St Marks School where it narrows to two lanes from the tunnel entrance.
- ix) Traffic modelling by John Foster and David Young suggests the present two-lane arrangement may possibly suffice in terms of future capacity, however this will require more modelling to confirm. My design has allowed for three lanes.
- x) Three laning and re-aligning Paterson Street will require the purchase of the residential building on the south-eastern corner of Paterson\Dufferin St.
- xi) The positive effect of this is that the Zena Body Corporate Apartment Building would become the 'keystone' building on the southern side of the intersection. Its dimensions and proportions lend itself to 'holding'

the corner appropriately.

- xii) Land from St Josephs Church, St Marks School and Wellington Boys College property is not required to be taken to accommodate the re-alignment of Paterson St.
- xiii) However construction of a second tunnel will require the removal of a significant number of residential houses of historical and social value on the Mt Victoria suburb side of Paterson St.
- xiv) Effectively, the whole of the residential side of Paterson St will need to be removed to find room for the second tunnel and road realignment. In this proposal, we would likely need to remove two more houses than NZTA's current provisional plan proposes.
- xv) I would like to emphasise that I have prepared this Basin Reserve Roundabout Enhancement Option in order to demonstrate how a major transport infrastructure upgrade can be integrated with the city. This proposal for the realignment of Paterson St fits with this vision but is dependent upon the City itself agreeing to the duplication of the Mt Victoria Tunnel. The serious consequences for the integrity of the social and heritage fabric of the city will need to be debated.
- xvi) The way my practice approaches these difficult situations is to find an appropriate response that is constructive and visionary rather than compromised and needing mitigation. We look for the potential of the city to be strengthened in unforeseen or unimagined ways in these situations. I believe this design for Paterson St is an appropriate response.

7.3.10 Potential Urban Development

- i) Our solution enables a considerable amount of building development to occur at the Roundabout. Over the long term, this development will reinforce the Roundabout as one of the major urban spaces of the city.
- ii) I believe the Basin Reserve Roundabout Enhancement Option provides an alternative development pattern with positive economic returns. It retains the existing Roundabout footprint and street pattern, thereby enabling the re-imposition of the historic perimeter block definition of Sussex Square. Over time, this can be strongly defined with new buildings with mixed uses at an appropriate scale. Evidence of this is already apparent with the construction of the Nuovo Apartment Complex on Rugby/Alfred St.
- iii) Retention of the existing street pattern will also sustain established

businesses and stimulate new opportunities for the economic wellbeing of the city.

- iv) The additional development will help activate and secure the Roundabout's edges at ground level, serving to increase pedestrian activity and improve safety. I predict that new buildings, aligned with and built up to public footpaths, will guide pedestrians along their edges rather than push them out into the road space of the Roundabout. The effects from pedestrian proximity to the high traffic numbers on the Roundabout at peak hours will be reduced.
- v) Development of the Growth Spine will encourage walking as a core activity ahead of PT and cycling.

7.3.11 Features and properties unaffected by the Basin Reserve Roundabout Enhancement Option

- i) Government House and entrance
- ii) C S Dempster Gateway
- iii) J Reid Gateway
- iv) Museum Stand
- v) Vance Stand
- vi) Home of Compassion Crèche (I recommend this be relocated back to its historic position to restore its relationship to the historic area and allow the opening up again of the sightlines from Cambridge Tce to Memorial Park, making this route safer and more accessible)
- vii) Access to properties along Kent/Cambridge Tce, Ellice St, Dufferin St, Rugby St, Sussex St and Adelaide Rd.
- viii) St Josephs Catholic Church
- ix) Extension of Memorial Park to Cambridge Tce (I recommend our proposal for a re-aligned pathway from Cambridge Tce to Memorial Park be adopted. This provides a simpler, safer, more accessible and ceremonial route connecting Cambridge Tce to Memorial Park. It is an extension of the walking promenade along the central median of Kent/Cambridge Tce. The proposed pathway's straight alignment replicates the street alignment of the Te Aro Grid and replaces the old Buckle St alignment which has been removed for the Buckle St Underpass

7.3.12 Features not needed in the Basin Reserve Roundabout Enhancement Option to achieve the objectives of the Basin Bridge Project:

- i) Basin Bridge
- ii) Pedestrian and cycle bridge attached to the Basin Bridge
- iii) Northern Gateway Building
- iv) Relocation of C.S Dempster Gate
- v) New single storey commercial building on the corner of Kent Terrace and Ellice Street located partially under the Basin Bridge and a roof top planted trellis (green screen)
- vi) A new low speed link road and shared pedestrian and cycleway path from Ellice Street to the Dufferin St/Paterson St intersection
- vii) Additional carparking space on the land adjacent to St Josephs Church unless agreed with St Josephs Church and St Marks School
- viii) 'Free flow' traffic movement around the Roundabout
- ix) Relocation of the St Marks School drop-off zone according to the NZTA plan
- x) Relocated bus stop on the corner of Rugby St/Adelaide Rd
- xi) Landscaping and planting from the Basin Bridge Project

8 Consultation

8.1 Our practice has undertaken extensive consultation with stakeholders, affected parties, political representatives, community interest groups and concerned citizens in Wellington. We have employed the same methodology for consultation we devised for other transport infrastructure projects of national importance for which we created an alternative design, all of which have been preferred/adopted/implemented

8.2 The purpose of consultation has been to:

- i) understand people's concerns with NZTA's project;
- ii) discuss/address/resolve the specific issues raised;
- iii) create awareness of and receive feedback on our alternative proposal;
- iv) influence the decision-making process with respect to specific outcomes (e.g. the Government's decision to underground Buckle Street);
- v) and lay the groundwork for the adoption of our alternative design if it is preferred/supported as a result of consultation and regulatory processes

8.3 My meeting with the Hon Chris Finlayson, Minister Arts, Culture and Heritage and two Ministry officials, 30 May 2012, is worth highlighting. Undergrounding Buckle Street before Tory Street has always been a key part of our proposal and was the most urgent transport improvement I recommended for the project when meeting with the Minister (this also creates the possibility of a Memorial Park above). It is on record at that time that both NZTA and the Architecture Centre's proposals for Buckle Street differed significantly from this outcome so we have concluded the Government's decision was wholly or partly based upon our recommendation. As a result, a key part of our proposal is now being implemented by NZTA.

Meetings

2011

Mayor Celia Wade-Brown, Cr Foster Wellington City Council

2012

Celia Wade-Brown, Andy Foster	Wellington City Council
Strategy and Policy Committee	Wellington City Council
Teena Pennington	Manager Urban Design WCC
with Stavros Michael	Manager Infrastructure WCC
with Selwyn Blackmore	NZTA
Representative on behalf of	St. Josephs Catholic Church
Peter Clinton, Don Neely	Basin Reserve Trust Board
Peter Riley, Timothy Hurd	National War Memorial, Ministry for Culture & Heritage
Sandra McCallum	Principal, Mt Cook School
David Ledson	National War Memorial Advisory Board
Grant Robertson	MP for Wellington Central
Hon. Chris Finlayson	Minister Arts, Culture and Heritage
with Ronald Milne, Brodie Stubbs	Ministry for Culture & Heritage
Alan Smith	Wellington Civic Trust
John Bishop	Friends of the Wellington Town Belt
Kent Duston, Paula Warren	
Guy Marriage	The Architecture Centre
Various	Save the Basin Reserve Trust
Sir John Anderson	Council representative, Basin Reserve Trust

	Board
Julie Anne Genter	Transport spokesperson, Green Party
Full Council	Greater Wellington Regional Council
Full Council	Wellington City Council
Andy Foster, Michael Forbes	Interview, Dominion Post
2013	
Kent Favel & Roger Wigglesworth	St Marks Church School, Principal and Chairman
St Marks Church School Board	St Marks Church School
Transport/Urban Design officers	Wellington City Council
Crs' Foster, Pannett, Eagle	Councillors, Wellington City Council
Professional Deputation	Strategy & Policy Committee, WCC
Grant Robertson	MP for Wellington Central
Julie Anne Genter	Transport spokesperson, Green Party
Kevin Lavery	Chief executive, Wellington City Council
Paul Bruce	Greater Wellington Regional Council
Daran Ponter	Greater Wellington Regional Council
Dr. Arthur Grimes	Motu Research
Mary Varnham	
John Parlane	Independent transport planner (Auckland)
John Foster, David Young	Independent transport planners
Generation Zero	
Mike Mellor	
Mt Victoria Residents Association Committee	
Lindsay Shelton	Wellington Scoop
Regional Wines	
Mons. Gerard Burns	St Josephs Catholic Church
Russell Tregonning	
Dennis Foot	Lawyer
Brent Efford	
Professor Peter Newman	Infrastructure Australia
Jack Yan	Mayoral candidate

9 Conclusion

- 9.1 I began my work on this project in 2011 by walking and observing the site on numerous occasions at different times of the day. The question we asked ourselves during this period was “What is the problem that the project is trying to solve?”
- 9.2 In essence, my approach has been to address and solve the real problems I have observed and encountered within the existing road network. I have not seen the need to create an entirely new context for the project by providing additional capacity outside the network at the expense of the receiving environment
- 9.3 The existing road network has sustained NZTA's many attempts to engineer a motorway ‘solution’ over the past fifty years. These ‘solutions’ have always diverted regional traffic northwards from its current route around the Basin Reserve Roundabout and involved a flyover or tunnel structure which invariably destroys the amenity of the Basin Reserve and the urban structure of the city.
- 9.4 I believe the existing network has sufficient flexibility, tolerance and resilience to continue to serve the city well into the future
- 9.5 Therefore, in my view the Project is not required to meet the objectives.
- 9.6 I believe the Project creates a multitude of significant adverse effects which have not been properly taken into account. On this basis, **the application should be declined.**
- 3.5 An alternative option submitted, the Basin Reserve Roundabout Enhancement Option, meets all of the objectives of the Project, has minimal impact and low cost, and has no significant adverse environmental effects

Richard Reid

Director