

# Wellington City Council

## Design Report: The Parade – Island Bay

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July 2017

**Absolutely Positively**  
**Wellington City Council**

Me Heke Ki Pōneke



# Table of contents

1.	Introduction.....	5
1.1	Purpose.....	5
1.2	Project Objectives.....	5
1.3	Summary of Design Proposals.....	6
1.4	Next Steps.....	7
2.	The Parade – Process and Timeline .....	8
2.1	Current Cycleway Project Approval and Construction .....	8
2.2	Morrison Low Review of WCC Urban Cycleways Programme .....	8
2.3	Aroha i te Kokoru – Love the Bay.....	9
3.	The Parade - Context.....	10
3.1	The Parade’s Place in the WCC Cycleway Network Planning.....	10
3.2	Island Bay to the City .....	11
3.3	Traffic Volumes .....	12
3.4	Guidance for Cycling Facilities.....	12
3.5	Cyclist Volumes .....	14
3.6	Road Safety Record .....	15
3.7	Landscape and Urban Design Context.....	15
4.	Current Layout.....	18
4.1	Public Feedback.....	18
4.2	Road Safety Audits .....	20
5.	Design Statements & Love the Bay Drop in Options.....	22
5.1	Empathy Design Community Insights.....	22
5.2	Drop In Sessions .....	22
6.	Drop in Feedback .....	23
6.1	Design Options .....	23
6.2	Bus Stops .....	24
6.3	Pedestrian Crossings .....	25
6.4	General Items.....	25
7.	Design Proposals.....	26
7.1	Option A – Roadside Cycle Lane Next to Parking – Original Layout with Enhancements .....	26
7.2	Option B – One-Way Separated Kerbside Cycleway – Current Layout with Enhancements .....	28
7.3	Option C – One-Way Separated Kerbside Cycleway – Above Road Level.....	30
7.4	Option D – One-Way Separated Kerbside Cycleway – Above Road Level.....	33
7.5	Landscape and Urban Design Approach .....	36
8.	Summary of Design Options.....	39

8.1	Intersections.....	41
9.	Rough Order Cost Estimates .....	42
10.	Options Considered But Not Pursued.....	43
11.	Opportunities.....	45
11.1	Shorland Park .....	45
11.1	Urban Design .....	46
11.2	Dee Street Intersection .....	46
11.3	On-Street Parking .....	47
11.4	Speed Limits.....	48
12.	Next Steps .....	49

## Table index

Table 1 - The Parade Traffic Data, May 2016 .....	12
Table 2 – Dimensions of Facilities Adopted in Concept Design .....	39
Table 3 - Rough Order Cost Estimate Summary .....	42

## Figure index

Figure 1 – Previous Island Bay Cycleway Process and Timeline.....	9
Figure 2 – Previous Island Bay to CBD Cycleway Feasibility Planning.....	10
Figure 3 – Potential Southern Connections.....	11
Figure 4 – Guidance on the Separation of Cyclists and Motor Vehicles.....	13
Figure 5 – Urban Design Context .....	16
Figure 6 - Option A – Roadside Cycle Lane Next to Parking .....	26
Figure 7 - Option A - Artist Impressions .....	27
Figure 8 - Option B - One-Way Separated Kerbside Cycleway – Road Level .....	28
Figure 9 - Option B - Artist Impressions .....	29
Figure 10 - Option C - One-Way Separated Kerbside Cycleway – Above Road Level .....	30
Figure 11 - Option C - Artist Impressions .....	32
Figure 12 - Option D - One-Way Separated Kerbside Cycleway – Above Road Level .....	33
Figure 13 - Option D - Artist Impressions .....	35
Figure 14 - Threshold Concept.....	37
Figure 15 - Intersection Concept .....	38
Figure 16 - Option A Intersection Treatment .....	41
Figure 17 - Options B to D Intersection Treatment .....	41
Figure 18 - Shorland Park Opportunities.....	46
Figure 19 - Dee Street Roundabout.....	47
Figure 20 - The Parade Upgrade Delivery Programme .....	49

## Appendices

- Appendix A – Love the Bay Design Objectives
- Appendix B – Concept Design Option Plans
- Appendix C – Concept Urban Design Studies and Specification



# 1. Introduction

Wellington City Council (the Council) have engaged Tonkin + Taylor (T+T) and Studio Pacific Architecture (SPA) to consider the community feedback, (including suggested solutions) and apply engineering and urban design best practice, New Zealand & (applicable) Australian Standards and Guidelines to independently assess the full range of options. From this independent assessment, T+T and SPA have identified and developed four shortlisted design options that we consider best meets these standards, community desires and project objectives. This design report details this process, outlines why the four shortlisted options are preferred (pros and cons) and provides a description of these options to allow further consultation.

Terms of reference for this assessment specify that the shortlisted options should include:

- Retain the current layout with enhancements,
- Return to the original layout with enhancements.

## 1.1 Purpose

The Council has committed a significant amount of capital funding for cycleway development through its Long Term Plan and Annual Plan processes. The investments aim to contribute towards cycling becoming “safer and more convenient” (Cycling Master Plan & Framework 2015) by increasing the level of service for people who want to use bikes.

Public reaction to some cycling developments, including the Island Bay cycleway prompted the NZ Transport Agency to undertake a review of the Council’s Urban Cycleways Programme. Key findings included the need for greater community input and an “integrated transport solution” that encompasses “a broader urban design/renewal approach”.<sup>1</sup> The Parade, including the existing cycleway, is the subject of a reconfiguration that will include the results and feedback from the recent public engagement process.

The purpose of this design report is to set out the concept design proposals for the reconfiguration of The Parade, including:

- The scope and features of the four concept design options
- The process used to reach the concept design options
- The design guidance and assumptions which support the options
- The parking impacts of each design option
- The urban design outcomes of each design option
- The rough order estimated costs of the options and improvements
- How public feedback has been accounted for in each option
- Other options that were considered but not pursued, and
- The next steps for the project.

## 1.2 Project Objectives

The primary objective is to define options for reconfiguration of The Parade, identifying improvements that maximises benefits for all users including addressing the level of service for people who travel by bike, or otherwise choose an active transport mode.

The proposals will:

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<sup>1</sup> <https://www.nzta.govt.nz/resources/review-of-wellington-city-councils-urban-cycleways-programme/> (page 3)

- Take the form of an integrated transport solution and encompass a broader urban design approach
- Reflect the need to consider the NZ Transport Agency guidelines for infrastructure design and also the Council's urban-design and transport related strategies, plans and guidelines
- Encourage sustainable and active transport through safe, convenient, connected (in terms of the wider Cycleways Programme Master Plan), and comfortable approaches as an investment outcome

The proposals have been developed taking into account the input from the Love the Bay community engagement process. Generally, it is expected that the proposed improvements will:

- Improve the level of service for people on bikes along identified routes via a sensible and pragmatic approach
- Maintain or improve the level of service for pedestrians
- Improve or maintain the level of service for people using buses along identified routes
- Maintain an acceptable level of service for general traffic movements
- Maintain an acceptable level of on-street parking, accommodating changes to parking where necessary, to avoid substantial impacts on businesses, and to cater for other essential needs (e.g. parking at the medical centre, park & ride facilities)
- Improve the level of landscape and public realm amenity

### 1.3 Summary of Design Proposals

Four concept design options have been developed for further public consultation. These options retain the current layout with enhancements, returns to the original layout with enhancements, and two others. The options take account of implementation cost and impact. The costs reflect community feedback to address safety concerns, environmental considerations, landscaping, and broader urban design opportunities along the length of The Parade. Enhancements have been made to reflect recommendations of the 2016 post-construction safety audit and peer review, current NZTA and engineering safety guidelines and broader urban design approaches.

#### 1.3.1 Option A – Roadside Cycle Lane Next to Parking – Original Layout with Enhancements

Prior to the construction of the Island Bay Cycleway, The Parade south of Medway Street had kerbside parking, a roadside cycle lane, and traffic lanes separated by a central flush median. Option A proposes a layout that, as close as safely possible, reflects the original design. Changes have been made to reflect the recommendations of the 2016 post-construction safety audit and peer review, and current NZTA and engineering safety guidelines that the original design did not include. It is these requirements that preclude a return to the exact original layout.

#### 1.3.2 Option B – One-Way Separated Kerbside Cycleway – Current Layout with Enhancements

Option B retains the current layout of a separated kerbside cycleway at road level. Design refinements include a raised concrete kerb separator between the cycleway and parked vehicles, and a consistent layout and design of the cycleway between the residential and business zones to achieve route continuity.

This option requires the conversion of the current angle parking to parallel parking on the western side of The Parade, within the business area between Medway Street and Avon Street, and removal of the flush median.

#### 1.3.3 Option C – One-Way Separated Kerbside Cycleway – Above Road Level

Option C also provides a separated kerbside cycleway, with the cycleway above road level, either at mid-height between the roadway and footpath or at footpath level. A kerb will separate the cycleway vertically from the roadway (and footpath if at half-kerb height), and a horizontal buffer space



separating the cycleway from the adjacent parking door zone is provided by a 1.0m kerbside safety strip.

The design provides a consistent layout of the cycleway between the residential and business zones to achieve route continuity.

This option requires the conversion of the current angle parking to parallel parking on the western side of The Parade, within the business area between Medway Street and Avon Street, and removal of the flush median.

This option results in a reduction in the existing pedestrian footpath width to 2.4m on the west side of the residential area. Within the business area, the west side pedestrian footpath reduces to 5.2m width, the east side increases to 3.5m width.

#### 1.3.4 Option D – One-Way Separated Kerbside Cycleway – Above Road Level

Option D is similar to similar to Option C, providing a separated kerbside cycleway, with the cycleway above road level, (either at mid-height between the roadway and footpath, or at footpath level). A kerb will separate the cycleway vertically from the roadway (and footpath if at half-kerb height), and a horizontal buffer space separating the cycleway from the adjacent parking door zone is provided by a 900mm kerbside safety strip (600mm at the angle parking area).

The design provides a consistent layout of the cycleway between the residential and business zones to achieve route continuity.

The footpath width is significantly reduced to 1.6m on the western side in the residential areas. Within the business area, the west side pedestrian footpath is also significantly reduced to 3.4m, resulting in a loss of space for footpath tables and seating.

A central flush median and wider traffic lanes are provided in the residential area. The majority of the existing western kerbside angle parking remains between Medway Street and Avon Street.

Full option descriptions are provided in later sections of this design report. The high-level concept designs are intended to convey the general layout of the road. Detailed design of a preferred final outcome for The Parade will develop in more detail the approved concept design and incorporate improvements identified through the public feedback and safety audit recommendations where appropriate.

### 1.4 Next Steps

The four design options incorporate extensive community engagement, the outcomes of the Love the Bay project to date, transport engineering and landscape and urban design practice, NZTA guidelines, and council strategies, including the Urban Growth Plan, Cycling Master Plan and Framework, and Long Term Plan.

The four design options for the Island Bay Parade and cycleway will be open for public consultation from 31 July 2017 to 13 August 2017. The consultation feedback will inform the final recommendations and report on the Island Bay Parade and Cycleway to be deliberated by Council on 14 September 2017. It is expected that Council will determine a final outcome for the design of The Parade at this meeting.

## 2. The Parade – Process and Timeline

### 2.1 Current Cycleway Project Approval and Construction

In July 2013, Wellington City Council commenced work on design options for cycle lanes on The Parade, between Shorland Park and Wakefield Park, which provides a spine route in Island Bay along The Parade and connects the parks, the coast with local shops and the village centre. In February 2014, Council wrote to 51 neighbours around the intersections of Humber, Mersey and Tamar Streets seeking initial views on very early design options. Feedback was used to refine the design.

In April 2014, Council undertook a wider consultation with the community. This was reported to Council's Transport and Urban Development Committee on 20 May 2014. The Committee also heard from a number of interested parties at the meeting including those presenting a '400 signature' petition against the project. The Committee decided to proceed with developing designs for kerbside lanes and undertake more consultation with the community. Between May and August 2014 Council engaged in further consultation with the community and particularly affected parties who live along The Parade.

Council approved the project for implementation on 24 June 2015 following some 16 months of engagement, consultations and deliberations. The project was implemented between September 2015 and March 2016.

### 2.2 Morrison Low Review of WCC Urban Cycleways Programme

Public reaction to some cycling developments, including the Island Bay cycleway prompted the NZ Transport Agency to undertake a review of the Council's Urban Cycleways Programme (UCP). The NZ Transport Agency commissioned consultants Morrison Low to undertake the review in May 2016, which advised on whether the programme and implementation timetable was appropriate and realistic, and whether any barriers to progress the overall programme were identified and were being managed.

A summary of the key findings and recommendations relevant to Island Bay were:

- There is a community perception that the cycleway in Island Bay is a poor solution and that it was delivered without proper community engagement and consultation. This perception has "spilled over" to other planned projects - these include perceptions of inadequate community engagement/ consultation, design and safety issues.
- In particular, the loss of parking and impacts on other users (drivers, pedestrians, businesses, homeowners) has been hard to explain.
- Some people commented that the UCP has driven a more aspirational approach to cycleway design and that this goes further than the community can understand or agree with. This is consistent with international experience.
- The adaptation of European cycle lane designs to New Zealand conditions is challenging and there are currently no agreed guidelines that can be uniformly applied.
- The three other projects of the Southern Route that would have delivered a cycleway connection between Island Bay and the Basin Reserve are now not currently part of WCC's programme and the roads that were in the frame have a greater safety risk profile than Island Bay.
- A review is necessary to "circuit break" Island Bay and re-engage the community on what an "integrated transport solution" could look like. Changes to what has been delivered will need to be made and these should reflect a broader urban design and regeneration approach.

- Establish an approach and process for a review of Island Bay’s cycleway. This needs to be done with the community.
- WCC Officials need to be given the opportunity to identify and advise on robust options for the design and delivery of a revised programme and opportunities to modify Island Bay. Elected members should provide political support for a recommissioned programme and a review of Island Bay, but should be careful to make decisions based on sound evidence and advice.

On 30 June 2016, Council’s Transport and Urban Development (TUD) Committee considered the Wellington City – Urban Cycleways Programme paper<sup>2</sup>, and resolved that:

*“Agree that any consultation regarding changes to the cycle way in Island Bay take as long as necessary to get a suitable outcome and include a full range of options, including the status quo and original designs.”*

### 2.3 Aroha i te Kokoru – Love the Bay

A partnership approach between the Island Bay Residents’ Association and Cycle Aware Wellington and Council officers, co-designed to respond to the Island Bay re-engagement resolution of the 30 June 2016 TUD committee meeting was established, branded “Love the Bay”. The project has been established to act as a vehicle for constructive conversations and participation to develop a 10-year plan for Island Bay with a focus on The Parade

Love the Bay worked together with the Island Bay community to shape a design brief for The Parade and the cycleway.

The process and timeline from inception of the Island Bay cycleway to the beginning of the Love the Bay engagement is outlined below.



Figure 1 – Previous Island Bay Cycleway Process and Timeline

<sup>2</sup> <http://wellington.govt.nz/your-council/meetings/committees/disestablished-committees/transport-and-urban-development/2016/06/30>

## 3. The Parade - Context

### 3.1 The Parade's Place in the WCC Cycleway Network Planning

As early as May 2013, Wellington City Council commissioned a feasibility study from Opus International Consultants<sup>3</sup> for a corridor linking the suburb of Island Bay and the central business district (CBD). The study investigated a wide range of alternatives. The study:

- Concluded that this cycling corridor has a high strategic fit with the Government's policy objectives
- Recommended a scheme that would cater to the needs of both new and existing cyclists, and achieve the policy outcomes effectively, giving value for money.

A design report prepared for the Island Bay Cycleway in August 2014<sup>4</sup> showed a diagram containing four sections.



Figure 2 – Previous Island Bay to CBD Cycleway Feasibility Planning

The Island Bay Cycleway is one section within a wider future cycleway connection between Island Bay and the CBD. This future cycleway connection is outlined in the various Wellington City Council strategy documents, including:

- The Wellington City Council Cycling Framework 2015<sup>5</sup>
- The Wellington City Council Cycleways Programme Master Plan, September 2015<sup>6</sup>

Section 1 – containing The Parade was identified for quick implementation of a cycleway. With advanced design progress, it was adopted as a project for early implementation in the Cycleways Programme Master Plan, and the preferred programme in the Wellington Cycle Network Programme Business Case, February 2016<sup>7</sup>, earlier than adjacent sections that would provide the future connection north to the CBD.

In 2014, the Prime Minister announced \$100 million additional funding for the Urban Cycleways Programme (UCP). This programme was designed to take full advantage of all funding sources,

<sup>3</sup> Wellington Cycleway Feasibility Study, Island Bay to CBD, Preliminary Funding report

<http://wellington.govt.nz/~media/services/parking-and-roads/cycling/files/shorland2wakefield/island-to-cbd-feasibility-study-report-reduced.pdf?la=en>

<sup>4</sup> Island Bay Cycleway – Final Design Report, August 2014 <http://transportprojects.org.nz/assets/Uploads/design-report-august-2014.pdf>

<sup>5</sup> <http://wellington.govt.nz/~media/services/parking-and-roads/cycling/files/wellington-cycling-framework-2015.pdf>

<sup>6</sup> <http://wellington.govt.nz/~media/services/parking-and-roads/cycling/files/cycleways-master-plan-103052.pdf>

<sup>7</sup> <http://wellington.govt.nz/~media/services/parking-and-roads/cycling/files/network-programme/wellington-cycle-network-bc.pdf>

including local government and the National Land Transport Fund (NLTF), to enable high-quality projects to get underway much sooner than may otherwise have been possible.

Planning and construction of the Island Bay cycleway fell outside both the UCP and NLTF funding criteria and was therefore fully funded by Council, and undertaken as a demonstration project. The Morrison Low review of the Council's Urban Cycleways Programme identified the three other projects of the Southern Route that would have delivered a cycleway connection between Island Bay and the Basin Reserve. These were not currently part of WCC's programme and the roads that were in the frame have a greater safety risk profile than Island Bay.

Negative public perception of the Island Bay cycleway being a "cycleway to nowhere" has resulted.

### 3.2 Island Bay to the City

In late July 2017, Wellington City Council will start work with the Berhampore, Newtown and Mt Cook communities to develop options for safer biking routes. These will be part of the Southern Connections<sup>8</sup> between Island Bay (at Dee Street) and Pukeahu National War Memorial Park or the Basin Reserve. This project is being funded as part of the Government's Urban Cycleways Programme.

There are many potential options from Dee Street through Berhampore, Newtown and Mt Cook to Pukeahu National War Memorial Park or the Basin Reserve - shown as sections 2 and 3 on Figure 2 above. The upcoming Southern Connections project will look at developing potential route options for sections 2 and 3. The section through Te Aro to Waitangi Park (section 4) is now linked with Let's Get Wellington Moving and larger transport changes expected to come out of that project.

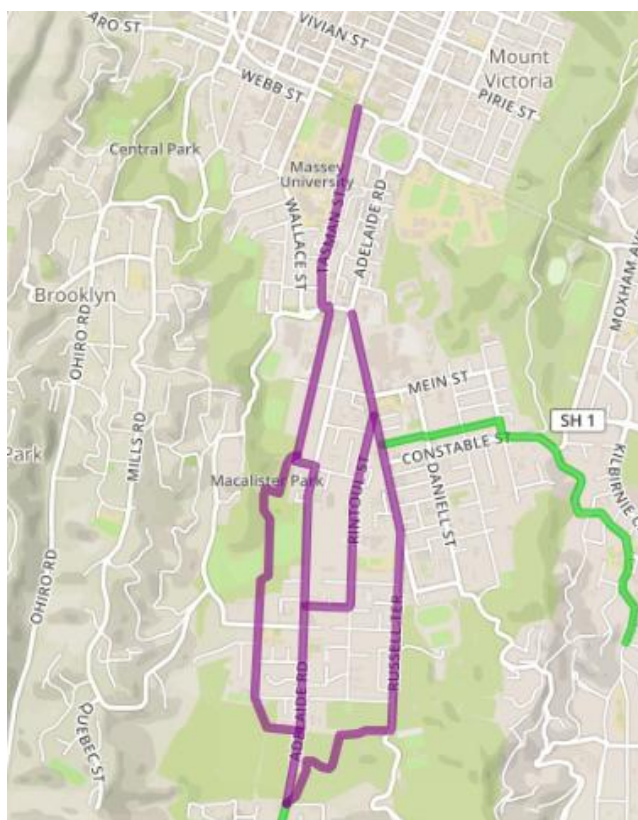


Figure 3 – Potential Southern Connections

<sup>8</sup> <http://transportprojects.org.nz/upcoming/southern-connections/>

### 3.3 Traffic Volumes

Traffic volume and speed statistics were recorded by WCC in May 2016, after the current cycleway construction was completed. Results are shown in Table 1:

Table 1 - The Parade Traffic Data, May 2016

Location	Average Daily Traffic	85 <sup>th</sup> ile Speed (km/h)
The Parade, between Dee St & Tamar St <b>NORTH</b>	10,811	48
The Parade, between Medway St & Avon St <b>MID</b>	9,876	30
The Parade, between Humber St & Mersey St <b>SOUTH</b>	5,136	47

The map shows Island Bay with The Parade highlighted. Three callout boxes indicate traffic volume data: 10,811 vpd (North), 9,876 vpd (Mid), and 5,136 vpd (South). The map also shows other streets like Dee St, Tamar St, Medway St, Avon St, Humber St, Mersey St, and Liffey St.

### 3.4 Guidance for Cycling Facilities

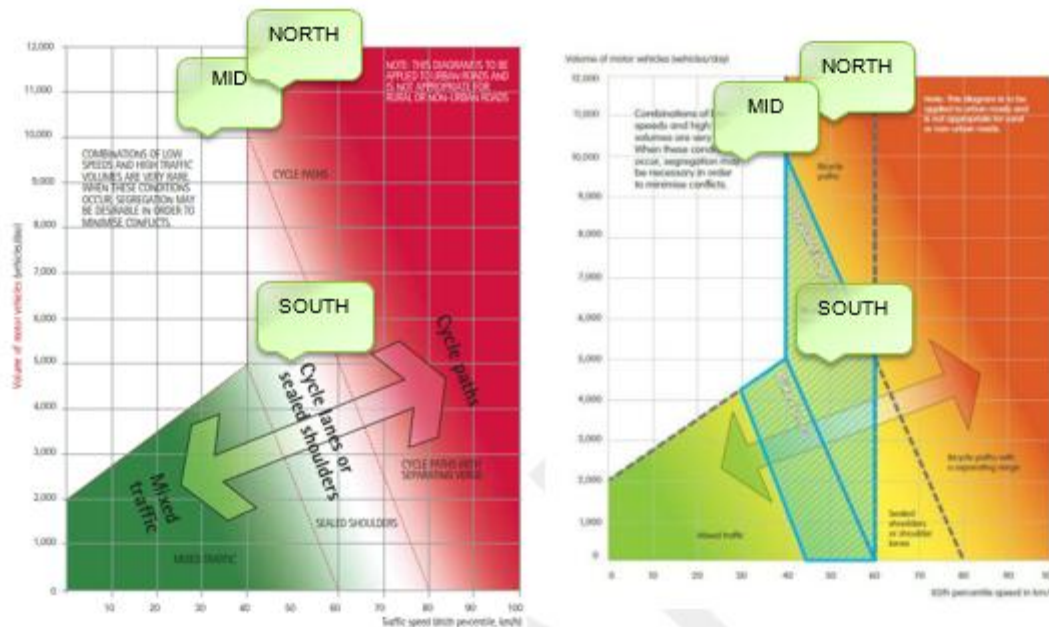
Planning cycle routes involves considering the most appropriate facility for any particular situation. Guidance for various facilities that could be considered when designing for bicycles is given in:

- The NZ Transport Agency Cycle Network Guidance (CNG);
- The Austroads Guide to Traffic Management, Part 4: Network Management; and
- The Cycling Aspects of Austroads Guides document.

The following diagrams from the above guidance documents are similar, and define the level of separation of cyclists and motor vehicles in terms of volumes and speed of motor vehicles. Note that the NZ Transport Agency CNG, and the NZ Transport Agency National Cycle Network Design Guidance report<sup>9</sup> identifies bias in earlier versions of these diagrams towards providing for more confident or adult commuter cyclists, and does not include all the forms of cycleway facility. The figure from the Austroads Part 4 guide shown below is that with the proposed adjustments from the NZ

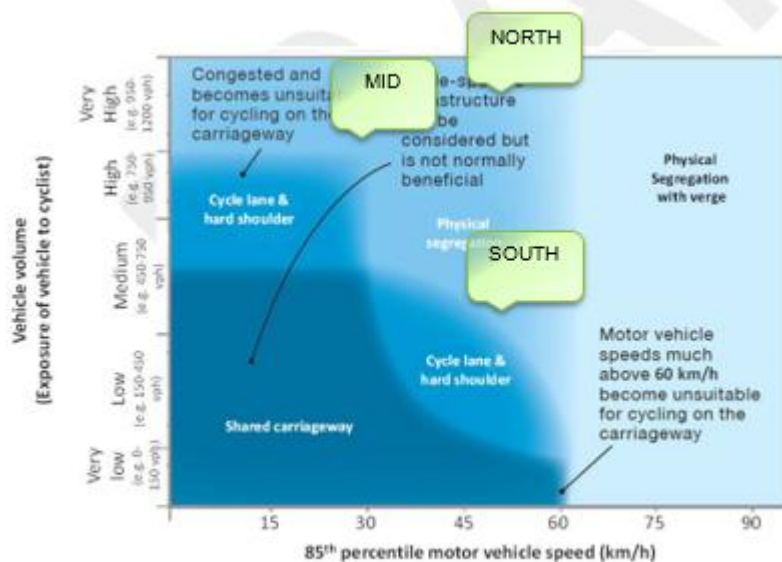
<sup>9</sup> NZ Transport Agency National Cycle Network Design Guidance Stage 1 Report – Best Practice Review, Abley Transportation Consultants, ViaStrada, July 2015

Transport Agency National Cycle best Practice Review report. The diagram from the Cycling Aspects of Austroads Guides is the most recent version from June 2017.



Source: The NZ Transport Agency Cycle Network Guidance

Source: The Austroads Guide to Traffic Management, Part 4



Source: The Cycling Aspects of Austroads Guides

Figure 4 – Guidance on the Separation of Cyclists and Motor Vehicles

The traffic volume and speed statistics from Table 1, at each of three locations along The Parade are plotted on these diagrams. In the latter two diagrams, physical segregation or separate paths are potential applications in all sections of The Parade. In the earlier version of the diagram from the NZ Transport Agency Cycle Network Guidance, cycle lanes are a potential application south of Mersey Street. This diagram is however due to be updated.

This guidance is important in the context of the concept design options contained in this report. Option A, the original layout option with roadside cycle lanes on The Parade, would not adhere to the most recent recommended guidance above. However, the guidance would suggest Option A could potentially be appropriate if operating speeds and traffic volumes were reduced to around 30km/h and less than 9,500 vehicles per day along the whole route.

The Wellington City Council Cycling Framework 2015 states the aim to change the culture of cycling and encourage more people to cycle. The NZTA CPG describes “people who cycle” with the following Geller (2009) method of classifying cyclist types.

*“Where cycling strategies aim to maximise the number of people who cycle, they focus on attracting a higher proportion of these interested but concerned cyclists. This group can include beginner adults and younger children. They may currently ride to school and shops and for recreation near their homes in local environments that feel safe for them. Some of them already ride for transport on occasions but are uncomfortable in their current riding environment.”*

*“This category also includes people who do not currently chose to cycle at all because even their local environment does not feel safe enough for them. These people are, in principle at least, willing to cycle but wary of doing so in certain circumstances.”*

Two different types of facility are presented in the design options. Cyclists using these facilities may vary in age and cycling skills. People choose to cycle for a range of reasons and these people have a wide range of abilities and needs. Satisfying the needs of people who cycle (or may wish to cycle) and providing a high level of service (LOS) for cycling are vital to maximising cycling. One type of cycle provision may not suit all people wanting to use a particular part of the cycle network.

The selection of a design option must also take into account the cost, practicalities and spatial constraints to design the cycle facilities to the extent required by all interested but concerned cyclists.

### 3.5 Cyclist Volumes

The primary purpose of the cycleway improvement is to increase the attractiveness of cycling facilities and encourage greater cycling uptake. There is a public perception that the cycleway has not led to an increase in cycling numbers, and the investment in the cycling facility has not yielded the anticipated benefits.

No cycling monitoring surveys were undertaken to inform these design options.

Wellington City Council undertake annual cycle monitoring surveys on The Parade. Wellington City Council anticipated that uptake would increase but acknowledged that it would most likely be modest until more high quality facilities connected to The Parade, completing the route to Newtown and the CBD. This was flagged in the conclusions of the Cycling Demand Analysis research report<sup>10</sup> which investigated how different types of cycling infrastructure is likely to affect the numbers of people choosing to cycle.

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<sup>10</sup> Wellington City Council Cycling Demand Analysis Research Report, Pettit, Dodge – June 2014



### 3.6 Road Safety Record

Since implementation of the current cycleway layout there has been one reported serious harm crash involving a cyclist. A number of near miss cycling incidents have also been reported related to vehicles failing to observe cyclists when crossing/turning, and vehicle doors opening in the path of cyclists on the cycleway where cars have parked within the buffer zone.

In addition, a number of parked cars have been side swiped by other vehicles, and a number of near miss incidents have been reported where the narrower traffic lane width has been reported as the contributing factor, particularly for larger vehicles and buses. Incidents involving cars reversing out of driveways have also been reported.

There is a public perception that the cycleway has led to an increase in cycling crashes compared with the previous layout. There are actual and perceived safety benefits of both options (roadside and separated kerbside options). The NZ Transport Agency CPG describes separated cycleways as improving cyclist safety between intersections and can attract people with less cycling experience; however, the implications of their application at driveways and intersections require particular consideration.

The design options respond to these safety issues in different ways, through

- Parking removal adjacent to driveways to improve visibility and vehicle manoeuvring in accordance with cycling design guidance,
- Intersection treatments for the separated cycleway options,
- Cycleway kerb separators to prevent undesirable vehicle parking across the cycleway and buffer zone,
- Traffic lane width increases and flush median in some options,
- Bus stop relocations,
- Consistency and clarity of the cycleway treatment along the length of The Parade,
- Cycle safety buffer door zones in all options,
- Side road intersection treatments and other traffic calming measures

### 3.7 Landscape and Urban Design Context

Island Bay is a cohesive community with a distinct character, valley topography (flat in the middle), and a vibrant township. The Parade is a key transport route connecting the Island Bay Coastline to Wellington CBD. The town centre is an important hub for the local community as well as a destination for people outside of the suburb. The Island Bay coastline is a popular recreational attraction in the Wellington region. This project is an opportunity to implement a continuous and connected cycling facility and an opportunity to help more journeys in to and out of the area by bike.

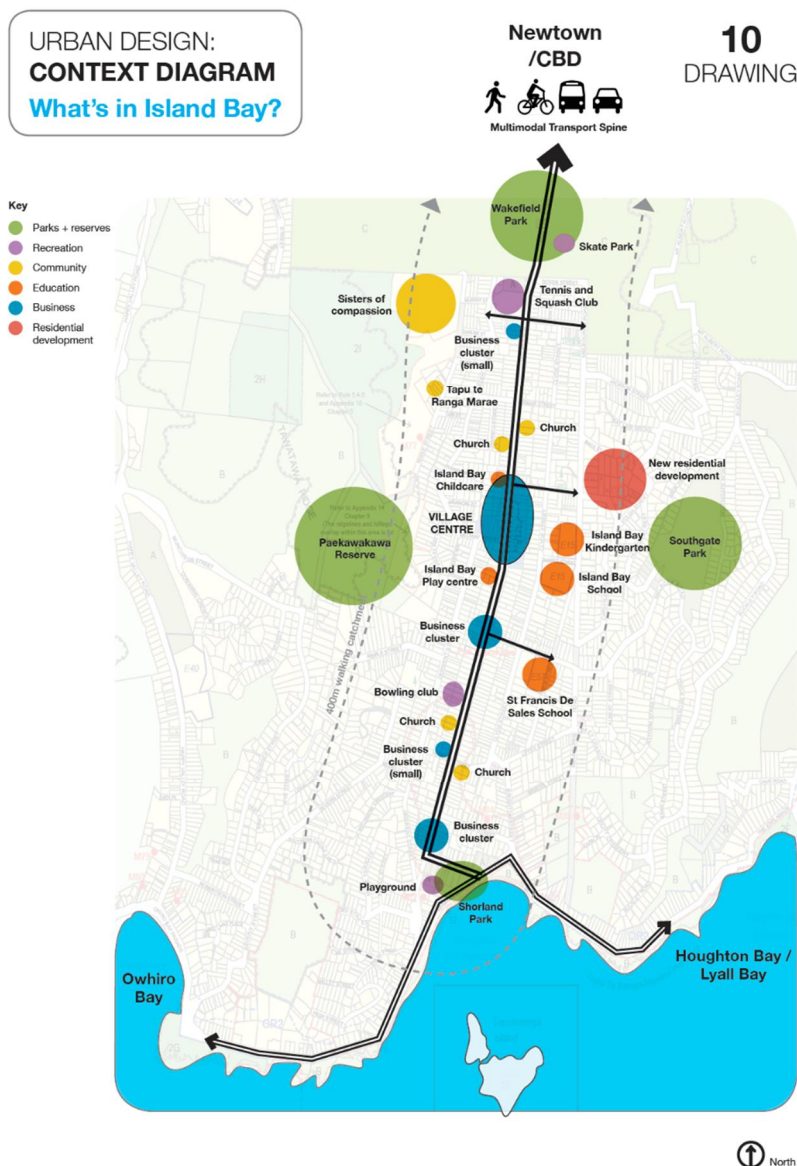


Figure 5 – Urban Design Context

The continuous line of established pohutukawa trees located on the Western footpath within a wide grass berm is a defining landscape characteristic of the residential areas. In particular, the tree canopy overreaching the footpath. There is no vegetation along the entire eastern side of the road. In the township there are several small to medium sized trees

The current design of the township presents both opportunities and constraints. In the absence of a public square/ space, the footpath is the main public space. Footpath extensions around crossing points and intersections where some street furniture is located also provide additional public space. The defining characteristics of the township are:

- The wider western footpath – enables space for seating and tables outside shopfronts (see image below). Note, this activity is not apparent on the narrower eastern footpath.
- The mixture of heritage and non-heritage buildings, and their veranda canopies many of which have colonnades.

- Asphalt footpath with brick inlay detail (see image below)
- The entrance thresholds to the business zone defined by pedestrian crossing points



Image showing table and chairs outside shop fronts, and brick inlay on footpath (possibly referencing a historic stream)

There are a number of urban design opportunities in the business zone which include, but are not limited to, the following:

- Improvements to the material finishes from the current low-cost predominantly asphalt footpath and slip-form concrete kerbing
- Enhancements to the limited extent of tree and low level planting. Increasing biodiversity, habitat creation, and providing Water Sensitive Urban Design features such as rain gardens.
- Provide new areas for outdoor seating and tables to support businesses on the eastern side
- Provide more public amenity e.g. new seating spaces, and street furniture
- Public art to be integrated into the public space
- Wayfinding and interpretive signage/ maps

## 4. Current Layout

### 4.1 Public Feedback

A lot of community feedback was taken on board through the Love the Bay community engagement process. The following is a high-level summary of what the community had to say about the current layout, and how it informed the concept design responses:

- The provision of an appropriate level of on-street parking is considered very important, particularly in the business area to ensure business access and viability is maintained – **Design Response** – the concept options all propose additional parking removal to mitigate safety concerns at driveways, and to provide a consistent cycleway treatment along the length of The Parade, including through the business zone. Parking surveys indicate there is spare capacity to offset some of this loss, but to accommodate the changes proposed further parking enforcement and residents parking permit areas may have to be considered. Opportunities to undertake safety reviews of the driveway setback may allow additional parking spaces to be added to the design, as well as increased angle parking on side roads. Option D shows a concept that retains the majority of the existing parking within the business area, which may be able to be implemented with other residential concept options.
- The current parking layout is confusing and leads to safety issues including side swipe vehicle crashes and encroachment into the car door safety buffer zone in the cycleway – **Design Response** - Option A reverts vehicles back against the kerb and reduces likelihood of vehicles parking in the roadside cycle lane. For Options B to D, the separated kerbside cycleway has kerb separators between parked vehicles and the cycleway, which eliminates the parking encroachment experienced with the current layout. The safety strip car door zone buffer in all options is a best practice minimum width of 900mm, (reduced to 600mm where the cycleway travels in front of nose in angle parking the business area Option D)
- The narrow traffic lanes make exiting driveways harder and require vehicles to cross the centreline. The narrow traffic lanes also mean car passengers are required to exit the vehicle into the path of oncoming vehicles in the traffic lane, and make it harder for heavy vehicles and buses to safely move around - **Design Response** – The narrower traffic lanes have had a positive effect in slowing vehicle speed along The Parade. The removal of some 40 spaces within the residential areas along the length of The Parade is required to introduce a 3m parking setback to improve safety at driveways, which will also assist with easing the vehicle manoeuvre out of driveways to mitigate this concern. Options C and D increase the traffic lane width, and Option D also includes a flush median to provide additional space for vehicles.
- It is now harder to see cyclists on the cycleway when entering driveways from The Parade – **Design Response** – see above
- The cycleway is a “cycleway to nowhere” and there is little understanding of the wider Wellington City Council Cycling Masterplan and planned connections further north to the CBD through Newtown, Berhampore and Mt Cook – **Design Response** – The WCC Urban Cycleway Programme investigation into the Southern Connections commences late July, which investigates options to extend the current cycleway north to the Pukeahu National War Memorial Park.
- The current cycle facilities, which vary in style and treatment along The Parade is confusing and affects how safe people feel using the space – **Design Response** - The community

feedback was clear that a consistent, simple and legible design for The Parade was desired. The concept options provide a consistent road and cycleway treatment along the full length of The Parade, removing the often confusing elements of the existing cycle facility and replacing with a simple and easy to understand layout

- The ghost markings from removal of the old road markings remain and are confusing and unsafe in poor light conditions - **Design Response** – Allowance has been made in the rough order cost estimates to include a full reseal of The Parade with asphalt, permanently removing the ghost markings and installing new line marking for each option
- Visibility and the cycleway treatment at intersections is important to ensure intersections are safe and intuitive, users know where to expect each other and can see each other – **Design Response** - At intersections, a 30m parking setback has also been applied so that drivers and cyclists have clear intervisibility to observe and react to their respective movements. It is noted that this 30m setback is often achieved by the presence of driveways but will likely require some parking removal at intersections. In conjunction with this visibility setback, raised tables are included in all concept options at side roads to assist with traffic calming of vehicle speeds. The concept options provide a consistent road and cycleway treatment along the full length of The Parade, removing the often confusing elements of the existing cycle facility and replacing with a simple and easy to understand layout that exhibits clear priority for users
- The kerbside cycle lane makes it harder for vehicle passengers to unload and cross i.e. elderly and the very young – parents with strollers – **Design Response** – Option A reverts parking back to the kerbside and places the cycle lane adjacent to the roadside. Option B introduces a raised kerb cycleway separator which can be used for vehicle passengers to unload clear of cyclists, however it may present a trip hazard or inconvenience to some pedestrian users. Options C and D raise the cycleway up to enable cyclists to mount the footpath safely if required to avoid pedestrian conflict from vehicles
- The location of some bus stops and pedestrian islands block through traffic on The Parade causing delay and frustration – **Design Response** – Problematic bus stops have been relocated to the departure side of intersection in line with best practice, and separated from through traffic lanes to prevent causing delays to through traffic. This has enabled pedestrian refuges and crossings to be retained close to intersections and bus stops
- There are perceived safety risks caused by cyclists ignoring the kerbside cycleway and continuing to use the main roadway – **Design Response** – Cyclists may ride within the main roadway for reasons not associated with the design of the facility. A well design cycleway would cater for all cyclist types but some may still choose to ride within the traffic lanes and can do so safely by taking the lane
- There is criticism of the type of treatment being aspirational or new for Wellington and out of context with other cycle facilities within Wellington City – **Design Response** – This may be a new facility for Wellington, its style is flagged in the Wellington Cycleways Programme Master Plan and Wellington City Council Cycling Framework for consistent application on main routes where appropriate. It is expected that application of this type of facility will become more common on Wellington Streets.

## 4.2 Road Safety Audits

A Post – Construction Road Safety Audit, commissioned by Wellington City Council was undertaken by MWH (Stantec) in May 2016. Following that, Wilkie Consultants undertook a peer review safety audit in June 2016.

The key findings of those audits that have not been resolved with the current layout, and which have informed the concept design responses are as follows:

- Ghost markings remain in areas along The Parade, which causes confusion to approaching motorists – **Design Response** – Allowance has been made in the rough order cost estimates to include a full reseal of The Parade with asphalt, permanently removing the ghost markings and installing new line marking for each option
- The extent of application of green cycleway markings and cycle symbols are inconsistent – **Design Response** – Allowance has been made for consistent application of green cycle surface marking along the whole length of the cycleway treatment in all options
- Bus shelter intervisibility blocking view of approaching cyclists and pedestrians at bus bypasses – **Design Response** – Review annual safety review recommendations and implement in detailed design of preferred option
- Definition of the door buffer zone and parking bay bollards, to prevent vehicles parking in the cycleway safety door space/buffer zone – **Design Response** – Option A reverts vehicles back against the kerb and reduces likelihood of vehicles parking in the roadside cycle lane. For Options B to D, the separated kerbside cycleway has kerb separators between parked vehicles and the cycleway, which eliminates the parking encroachment experienced with the current layout. The safety strip car door zone buffer in all options is a best practice minimum width of 900mm, (reduced to 600mm where the cycleway travels in front of nose in angle parking the business area Option D)
- Intervisibility sightlines at residential driveways and intersections – **Design Response** – The recommendations of the auditors is carried through into all concept options to address these safety concerns. This has led to the removal of some 40 spaces within the residential areas along the length of The Parade. A 3m driveway parking setback has been applied to improve visibility between cyclists and approaching drivers on The Parade at driveways. The public have also commented on the inability to exit driveways without crossing the centreline on The Parade. The 3m setback will also assist with easing the vehicle manoeuvre out of driveways to mitigate this concern. At intersections, a 30m parking setback has also been applied so that drivers and cyclists have clear intervisibility to observe and react to their respective movements. It is noted that this 30m setback is often achieved by the presence of driveways but will likely require some parking removal at intersections. In conjunction with this visibility setback, raised tables are included in all concept options at side roads to assist with traffic calming of vehicle speeds.
- Termination of cycleway and cyclists merging with traffic in traffic lane – **Design Response** – The community feedback was clear that a consistent, simple and legible design for The Parade was desired. The concept options provide a consistent road and cycleway treatment along the full length of The Parade, removing the often confusing elements of the existing cycle facility and replacing with a simple and easy to understand layout
- The constrained road width on the bend south of Medway, particularly for heavy vehicles and buses – **Design Response** – Options C and D increase the traffic lane width, and Option D

also includes a flush median to provide additional space for vehicles. Options A and B have minimum traffic lane widths of 3.0m, however detailed design refinement of the layout would take the issue into account and review of the geometry will accommodate the swept path, with clearances for a heavy design vehicle.

- Road layout and speed limit – **Design Response** – The peer review audit recommended Council consider extending the 30km/h speed limit, to address safety audit findings including This is included as an opportunity in later section of this report. Extension of the 30km/h speed zone may (subject to further safety review and vehicle tracking analysis) allow a relaxation of the 3m driveway parking setback and reduce the amount of parking removal. It also may mean Option A could potentially be appropriate if operating speeds and traffic volumes were reduced to around 30km/h and less than 9,500 vehicles per day along the whole route. More on the opportunities and effects of this is included in the later opportunities section of this report.

## 5. Design Statements & Love the Bay Drop in Options

### 5.1 Empathy Design Community Insights

Distilled from the Love the Bay workshops, and research insights from Empathy Design<sup>11</sup>, the following community driven principles were established:

- Reduce cognitive load
- Provide clear visibility
- Foster shared space
- Focus on people not vehicles
- Ensure relative safety
- Highlight what people love
- Promote economic vitality
- Have research inform decisions
- Be transparent and inclusive

From these principals, a range of design objectives were produced which are attached in Appendix A.

These design statements can be distilled down to the following five key objectives:

- The Parade is safe for all users
- The layout is intuitive and easy to understand
- The Parade accommodates all current and future users
- The visual environment is cohesive and clean
- Central Island Bay is a pleasant and welcoming environment

### 5.2 Drop In Sessions

Inputs from all Love the Bay workshops and the drop-in shop were used to inform the draft designs for The Parade presented at the drop-in sessions in May 2017. Draft design options for The Parade were on display at drop-in sessions on 3 May and 7 May 2017 at the Island Bay Baptist Church. These options were based on the Design Objectives and Design Statements that were developed over the course of the previous Love the Bay workshops.

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<sup>11</sup> Love the Bay Community insights and design brief for The Parade, Empathy Design – 8 March 2017



## 6. Drop in Feedback

### 6.1 Design Options

Draft design options for The Parade were on display at drop-in sessions on 3 May and 7 May 2017. The design options were split into the following categories and option numbers<sup>12</sup>:

- Shopping Centre – Business Zone Options 1A to 1E (five options including the current layout)
- Carriageway – Residential Zone Options 2A to 2F (six options including the original and current layouts)
- Intersections – Options 3A to 3G (seven options)
- Pedestrian Crossings – Options 4A to 4D (four options)
- Bus Stops – Options 5A to 5D (four options)

The community feedback on the shopping centre and carriageway options reflected a range of views, which tended towards favouring the following options:

- Shopping Centre Options 1A, 1B and 1E
  - Option 1A is concept design proposal Option D
  - Option 1B is concept design proposal Options B and C
  - Option 1E was not carried forward as it did not meet the stated safety design objectives
  - Option 1C and Option 1D were not favoured; shared paths were seen to reduce the level of service and attractiveness of facilities for pedestrians and cyclists, and a road side cycleway behind angle parking was also seen to be unsafe and undesirable.
- Residential Zone Options 2B, 2D to 2F
  - Option 2B is concept design proposal Option C and D
  - Option 2D is concept design Option A
  - Option 2E is the current layout and is carried forward as Option B with enhancements
  - Option 2F is the previous layout. This was not carried forward as it did not meet the best practice guidance for a roadside cycle lane adjacent to parking. Therefore the revert back option is not a return to the original layout as expected by some in the community.
  - Options 2A and 2C were not favoured as 2A removed too much parking (one whole side of parking removed) and 2C was a shared path option which was seen to reduce the level of service and attractiveness of facilities for pedestrians and cyclists.

The community feedback on the cycleway options within the residential zone indicated a preference for two options – the revert to the original and retain the current with enhancements.

In order to maintain a consistent treatment through the business zone, business zone Option A was created and paired with residential Option A.

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<sup>12</sup> <http://www.lovethebay.nz/news/#/design-options/>

## 6.2 Bus Stops

The current bus bypass option was the preferred option for cycleway treatment at bus stops. The treatment was identified as the safest for cyclists, however issues were noted in relation to visibility between cyclists being restricted, and pinch points in the footpath to accommodate the bypass, and a lack of clarity on priority in the absence of any green cycle markings. It was also noted that adequate footpath width adjacent to the bus waiting area, and also wider footpaths behind the cycleway bypass were desired. There are pinch points such as in the below image where the footpath dimension is narrower than the recommended minimums set out in the NZTA Pedestrian Planning and Design Guide.



Image showing pinch point in footpath width at bus stop along the Parade

The location of bus stops and pedestrian crossing were also consulted on with the public placing spots where they felt bus stops and crossing should be placed along The Parade.



Image showing community preferred bus stop and pedestrian crossing locations along the Parade

The community preference for bus stop locations, as well as the community feedback on the issues with current bus stops located at intersections that block the traffic lanes at stops has led the concept options to include relocation of the following bus stops:

- Relocating the current stop from 88 The Parade to 64 The Parade
- Relocating the current stop from 101 The Parade to 73 Parade
- Relocating the current stop on the west side of The Parade at Humber Street across to the departure side (north side) of the intersection

### 6.3 Pedestrian Crossings

Pedestrian zebra crossings were the preferred pedestrian crossing treatment. At intersections these were desired to be located close to bus stops, and where appropriate on raised tables across The Parade.

### 6.4 General Items

Other general items of community feedback on all options were captured and summarised below:

- Consistency of the corridor along The Parade and clarity on the route (i.e. making it clear who had right of way)
- Consideration of the diversity of people living in Island Bay, especially children, families and the elderly
- Safety for all users, not just cyclists – both cyclists and drivers don't like cycle lanes behind angle parking, protection for vulnerable cyclists, consideration for elderly/disabled people moving from their cars to the footpath
- Visibility, mainly of cyclists in general and when pulling into and out of driveways
- Retention of on-street parking
- Ensuring the route for cyclists at intersections was convenient and afforded clear priority to attract as many cyclists to the facility as possible, or not to bother investing in improvements
- Bus stop locations and design to ensure vehicles can progress past a stopped bus
- Visibility at driveways and vehicles having to cross the centreline to manoeuvre onto The Parade when leaving properties.

## 7. Design Proposals

Four concept design options have been developed for further public consultation. These options retain the current layout with enhancements, returns to the original layout with enhancements, and two others. The options take account of implementation cost and impact. The costs reflect community feedback to address safety concerns, environmental considerations, landscaping, and broader urban design opportunities along the length of The Parade. Enhancements have been made to reflect recommendations of the 2016 post-construction safety audit and peer review, current NZTA and engineering safety guidelines and broader urban design approaches.

### 7.1 Option A – Roadside Cycle Lane Next to Parking – Original Layout with Enhancements

Prior to the construction of the Island Bay Cycleway, The Parade south of Medway Street had kerbside parking, a roadside cycle lane, and traffic lanes separated by a central flush median. Option A proposes a layout that, as close as safely possible, reflects the original design. Changes have been made to reflect the recommendations of the 2016 post-construction safety audit and peer review, and current NZTA and engineering safety guidelines that the original design did not include. It is these requirements that preclude a return to the exact original layout. Option A is shown in Figure 6 and 7.

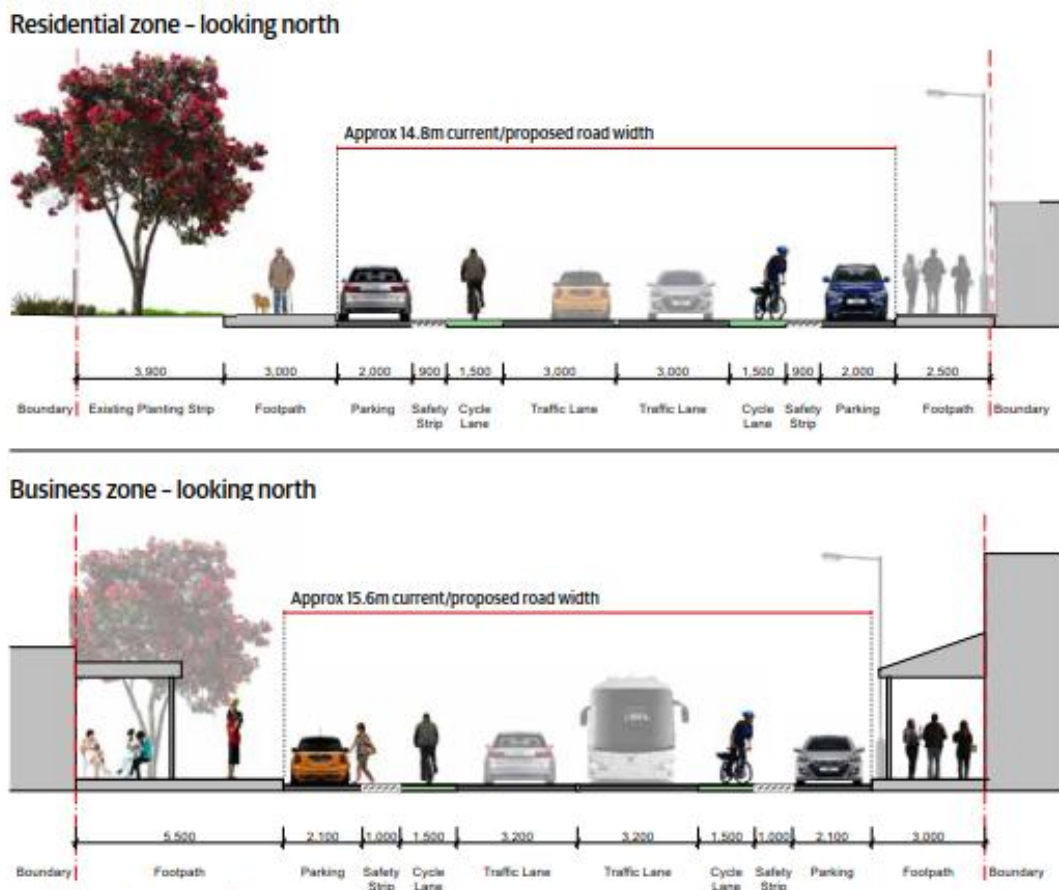


Figure 6 - Option A – Roadside Cycle Lane Next to Parking

Changes to the original layout also extend the cycle treatment along the length north of Medway Street to the Dee Street roundabout, which the original layout did not include. This option proposes a consistent layout and design of the cycleway between the residential and business zones to achieve route continuity.

No reduction in the current pedestrian footpath width is expected.

This option requires the conversion of the angle parking to parallel parking within the business area between Medway Street and Avon Street, and removal of the flush median. Removal of some 40 parking spaces in the residential area is designed to address the safety issues identified with visibility and vehicle manoeuvring to and from The Parade at driveways. Within the business area, the conversion to parallel parking will remove some 17 spaces in order to support a consistent cycleway design along The Parade.



RESIDENTIAL ZONE - OPTION (A)  
(Western footpath)



BUSINESS ZONE - OPTION (A)  
(Eastern footpath)

Figure 7 - Option A - Artist Impressions

The indicative rough order cost for Option A is \$4.1 million.

The key design elements for Option A are:

- Road-side cycle lane adjacent to parking
- Painted buffer space separating the cycle lane from the adjacent parking door zone
- Cycle lane is not protected from moving vehicles
- Footpath widths and kerb positions are generally unchanged
- Traffic lane and parking widths remain unchanged in the residential zone
- Traffic lane widths remain unchanged in the business zone
- Parallel parking on western side of business zone
- No central flush median strip in the residential and business zones
- Approx. 40 parking spaces (25%) removed from the residential zone
- Approx. 17 parking spaces (29%) removed from the business zone

## 7.2 Option B – One-Way Separated Kerbside Cycleway – Current Layout with Enhancements

Option B retains the current layout of a separated kerbside cycleway at road level. Design refinements include a raised concrete kerb separator between the cycleway and parked vehicles, and a consistent layout and design of the cycleway between the residential and business zones to achieve route continuity. Option B is shown in Figure 8 and 9.

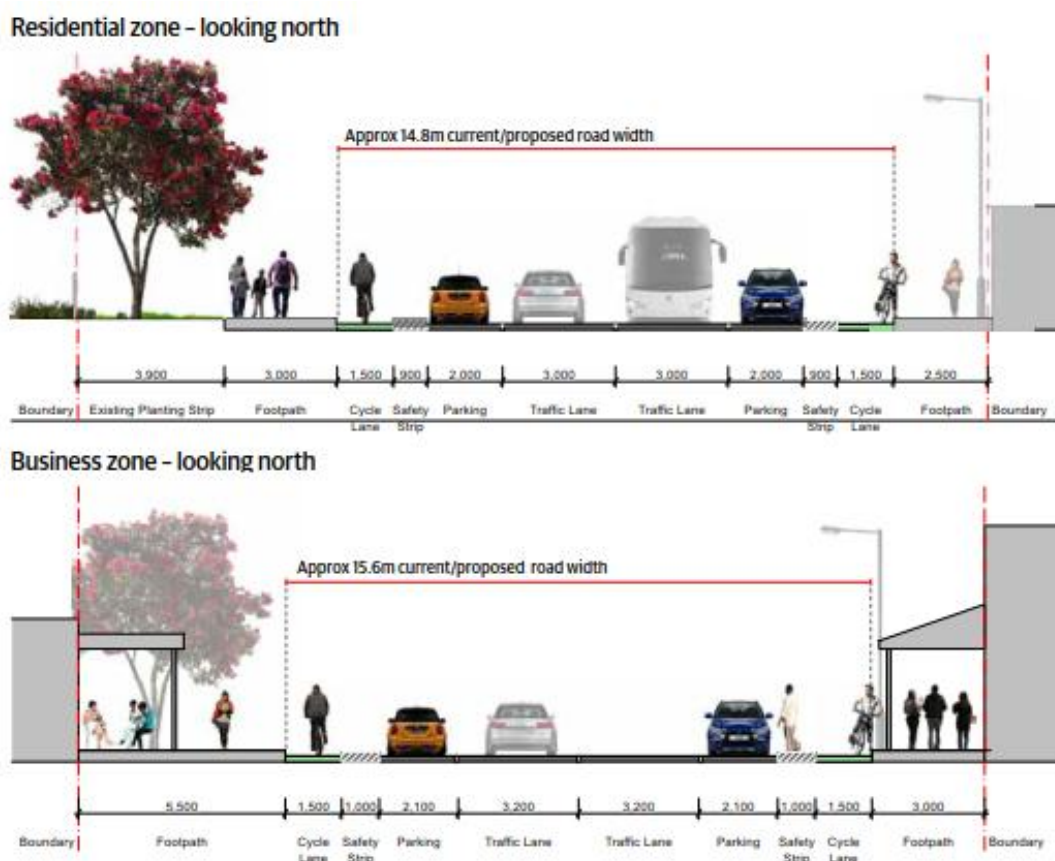


Figure 8 - Option B - One-Way Separated Kerbside Cycleway – Road Level

No reduction in the current pedestrian footpath width is expected. Removal of some 40 parking spaces in the residential area is designed to address the safety issues identified with visibility and vehicle manoeuvring to and from The Parade at driveways.

This option requires the conversion of the angle parking to parallel parking within the business area between Medway Street and Avon Street, and removal of the flush median. Within the business area, the conversion to parallel parking will remove some 17 spaces in order to support a consistent cycleway design along The Parade.



RESIDENTIAL ZONE - OPTION (B)  
(Western footpath)



BUSINESS ZONE - OPTION (B)  
(Eastern footpath)

Figure 9 - Option B - Artist Impressions

The indicative cost for Option B is \$5.2 million.

The key design elements for Option B are:

- Separated kerb-side cycle way at road level
- Raised kerb separators provides a physical buffer space separating the cycleway from the adjacent parking door zone
- Cycle lane is separated from moving vehicles
- Footpath widths and kerb positions are generally unchanged
- Traffic lane and parking widths remain unchanged in the residential zone
- Traffic lane widths remain unchanged in the business zone
- Parallel parking on western side of business zone
- No central flush median strip in the residential and business zones
- Approx. 40 parking spaces (25%) removed from the residential zone
- Approx. 17 parking spaces (29%) removed from the business zone

### 7.3 Option C – One-Way Separated Kerbside Cycleway – Above Road Level

Option C also provides a separated kerbside cycleway, with the cycleway above road level, either at mid-height between the roadway and footpath or at footpath level. A kerb will separate the cycleway vertically from the roadway (and footpath if at half-kerb height), and a horizontal buffer space separating the cycleway from the adjacent parking door zone is provided by a 1.0m kerbside safety strip.

The design provides a consistent layout of the cycleway between the residential and business zones to achieve route continuity. Option C is shown in Figure 10 and 11.

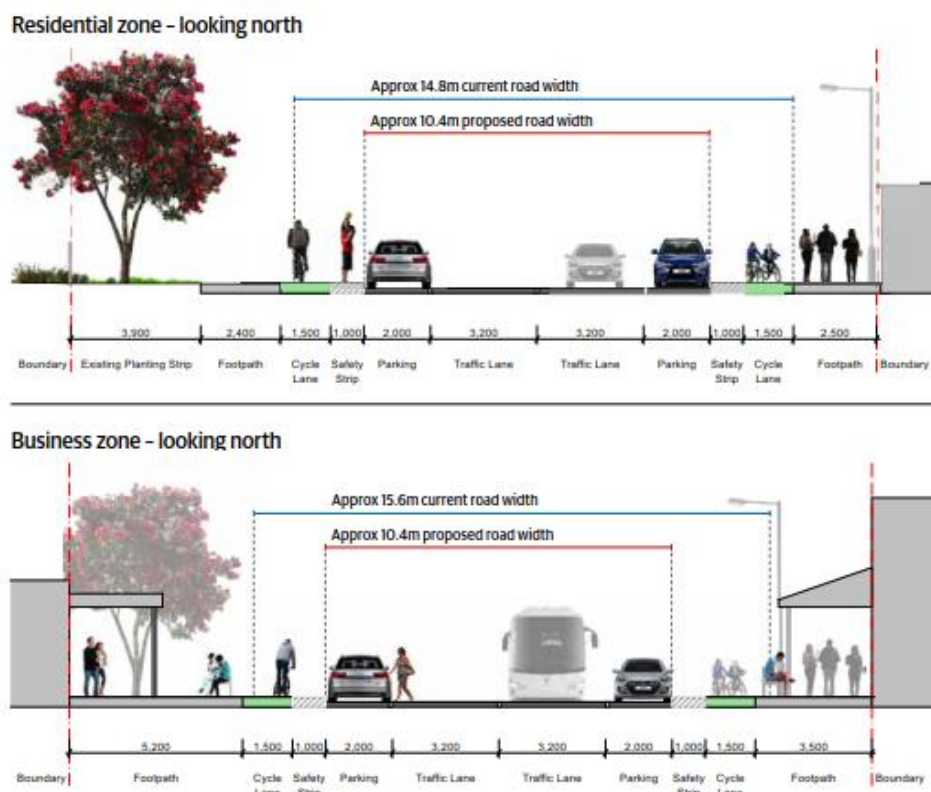


Figure 10 - Option C - One-Way Separated Kerbside Cycleway – Above Road Level

Removal of some 40 parking spaces in the residential area is designed to address the safety issues identified with visibility and vehicle manoeuvring to and from The Parade at driveways. This option requires the conversion of the current angle parking to parallel parking on the western side of The



Parade, within the business area between Medway Street and Avon Street, and removal of the flush median. Within the business area, the conversion to parallel parking will remove some 17 spaces in order to support a consistent cycleway design along The Parade.

This option results in a reduction in the existing pedestrian footpath width to 2.4m on the west side of the residential area. Within the business area, the west side pedestrian footpath reduces to 5.2m width, the east side increases to 3.5m width.



RESIDENTIAL ZONE - OPTION (C)  
(Western footpath)



BUSINESS ZONE - OPTION (C)  
(Western footpath)



BUSINESS ZONE - OPTION (C)  
(Eastern footpath)

### Figure 11 - Option C - Artist Impressions

The indicative cost for Option C is \$6.0 million.

The key design elements for Option C are:

- Separated kerb-side cycle way raised above road level
- Kerb-side 'Safety Strip' provides a buffer space separating the cycleway from the adjacent parking door zone
- Cycle lane is separated from moving vehicles

- Footpath width is reduced on the western side in the residential zone by approximately 0.6m (eastern side width remains unchanged)
- Footpath width in the business zone is wider than current on the eastern side by approximately 0.5m (additional street furniture zone), and is 0.3m narrower on the western side (although space is retained for tables and seating)
- Traffic lane widths are 0.2m wider than current in the residential zone, parking widths remain unchanged
- Traffic lane widths remain unchanged in the business zone
- Parallel parking on western side of business zone
- No central flush median strip in the residential and business zones
- Approx. 40 parking spaces (25%) removed from the residential zone
- Approx. 17 parking spaces (29%) removed from the business zone

#### 7.4 Option D – One-Way Separated Kerbside Cycleway – Above Road Level

Option D is similar to similar to Option C, providing a separated kerbside cycleway, with the cycleway above road level, (either at mid-height between the roadway and footpath, or at footpath level). A kerb will separate the cycleway vertically from the roadway (and footpath if at half-kerb height), and a horizontal buffer space separating the cycleway from the adjacent parking door zone is provided by a 900mm kerbside safety strip (600mm at the angle parking area).

The design provides a consistent layout of the cycleway between the residential and business zones to achieve route continuity. Option D is shown in Figure 12 and 13.

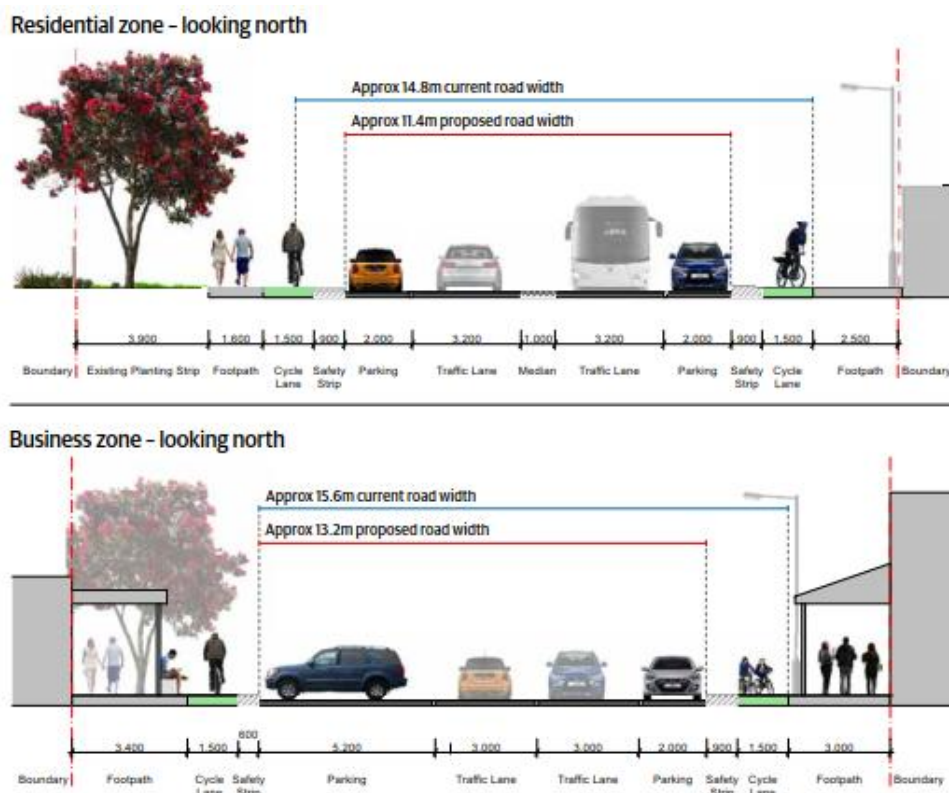


Figure 12 - Option D - One-Way Separated Kerbside Cycleway – Above Road Level

Removal of some 40 parking spaces in the residential area is designed to address the safety issues identified with visibility and vehicle manoeuvring to and from The Parade at driveways. The majority of the existing western kerbside angle parking remains between Medway Street and Avon within the business area; two parking spaces will be removed. A central flush median and wider traffic lanes are provided in the residential area.

This option retains the existing eastern footpath widths. The footpath width is significantly reduced to 1.6m on the western side in the residential areas. Within the business area, the west side pedestrian footpath is also reduced to 3.4m, resulting in a loss of footpath space for tables and seating.



RESIDENTIAL ZONE - OPTION (D)  
(Western footpath)



BUSINESS ZONE - OPTION (D)  
(Western footpath)



BUSINESS ZONE - OPTION (D)  
(Eastern footpath)

### Figure 13 - Option D - Artist Impressions

The indicative cost for Option D is \$6.2 million.

The key design elements for Option D are:

- Separated kerb-side cycle way raised above road level
- Kerb-side 'Safety Strip' provides a buffer space separating the cycleway from the adjacent parking door zone Cycle lane is separated from moving vehicles
- Footpath width is significantly reduced on the western side in the residential zone by approximately 1.4m (eastern side width remains unchanged)

- Footpath width in the business zone is unchanged on the eastern side, and is significantly reduced on the western side by approximately 2.1m (space for tables and seating is lost)
- Traffic lane widths are 0.2m wider than current in the residential zone, parking widths remain unchanged
- Traffic lane widths are reduced in the business zone
- Angled-parking retained on western side of business zone
- Central flush median strip in the residential zone only
- Approx. 40 parking spaces removed (25%) from the residential zone
- Approx. two parking spaces removed (3%) in the business zone

## 7.5 Landscape and Urban Design Approach

The proposals for reconfiguration of The Parade are to encompass a broader urban design approach, and reflect the need to consider Council's urban design strategies, plans and guidelines.

From a Landscape and Urban Design perspective, the treatment options aim to improve the amenity and quality of public space along the length of the Parade. In the business zone, where possible, this would be achieved through a range of the following measures:

- Enhanced pedestrian spaces - for social interaction and associated retail uses, e.g. café seating
- Additional street furniture including seating, cycle stands, drinking fountains
- Enhanced entry thresholds to the business area – signalling to drivers the slower-speed environment and increase in number of pedestrians. To include traffic calming devices such as raised tables, kerb extensions, and planting (refer to Figure 14)
- Integration of public art
- Improved wayfinding and interpretive signage
- Implement a consistent intersection treatment along The Parade, to reinforce the delineation between the local side streets and the arterial Parade route (refer Figure 15)
- Upgrades to the existing pavements (associated with the new cycleways)
- Integration of new street trees and low level planting – to provide a greener suburban centre

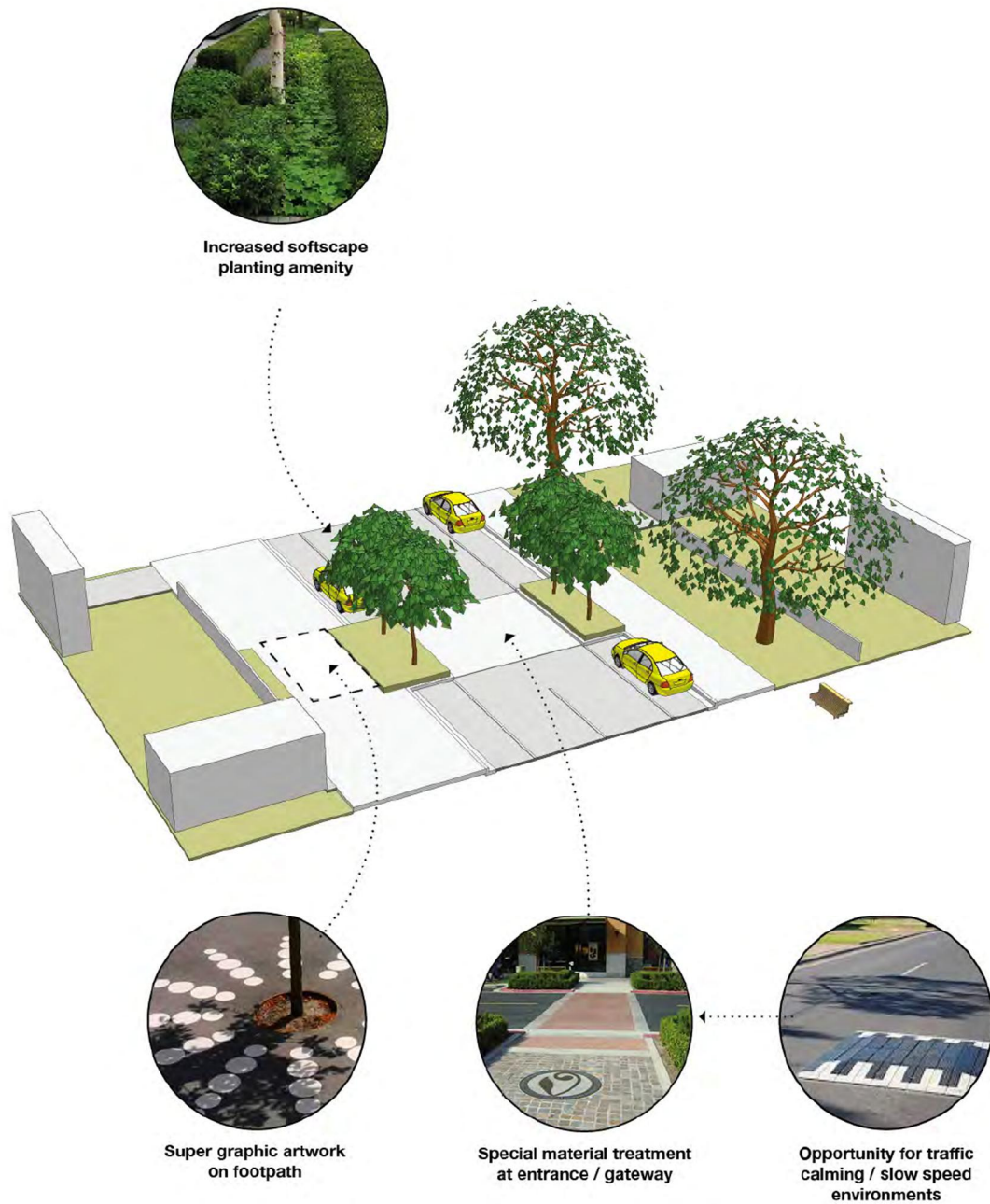


Figure 14 - Threshold Concept

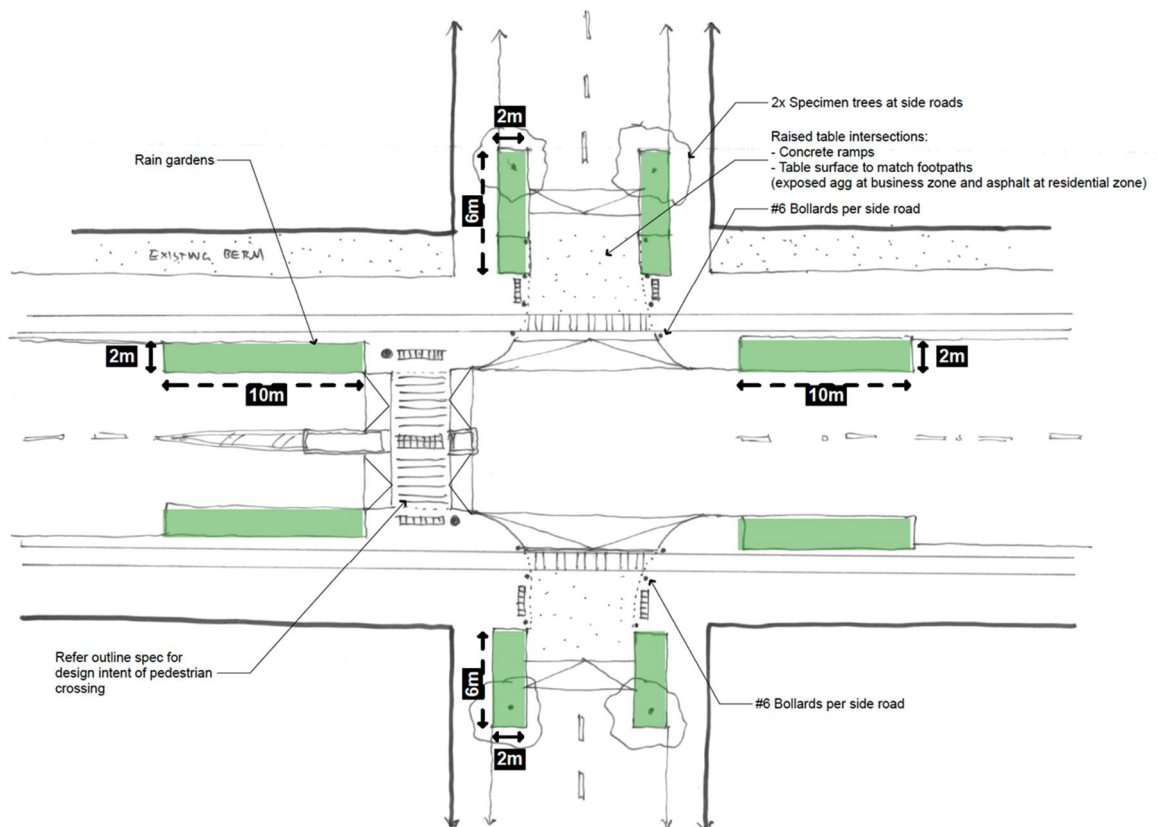


Figure 15 - Intersection Concept

For all concept options considered, the above measures aim to provide a coherent and legible treatment to the business area of the Parade tying into their respective residential zone treatments. The design of side streets aims to provide stronger delineation of the cycleway through the incorporation of raised tables, kerb extensions, tree and low-level planting including rain gardens – water sensitive design treatments to reduce storm water contaminants entering Island Bay.

By implementing a consistent intersection treatment along The Parade, it will reinforce the delineation between the local side streets and the arterial Parade route.

Appendix C outlines the proposed specification for urban design enhancements. The specification is indicative for costing meaning the detailing and selection will be refined when the final option is chosen. In addition, there will be a design development phase where further refinement of the urban design enhancements and outline specification (discussed above) is undertaken with community engagement.



## 8. Summary of Design Options

A range of facility types has been considered. Due to the wide-ranging costs and implications for WCC, and the options identified from the community engagement, the following facilities have been investigated for The Parade reconfiguration:

- Road side cycle lanes adjacent to parking (revert to the previous layout, with enhancements)
- One-way separated kerbside cycleway at road level (retain the current layout with enhancements)
- One way separated kerbside cycleway above road level (two options)

The design dimensions have been extracted from the following industry guidelines:

- Cycling Aspects of Austroads Guides, 2017
- WCC Cycling Framework 2015
- WCC Code of Practice for Land Development
- AS/NZS2890.5 On-Street Parking Guide
- Christchurch Cycle Design Guidelines – Design Principles Best Practice Guide
- NZTA Guidelines for Public Transport Infrastructure and Facilities

The dimension detailed in Table 2 have been adopted in the concept design options where possible.

Table 2 – Dimensions of Facilities Adopted in Concept Design

Facility	Width	Source
Parallel parking with roadside or kerbside cycle lane	Total width (parking, safety strip and cycle lane): Acceptable Range: 3.7m-4.5m Desirable Minimum: 4m	Cycling Aspects of Austroads Guides 2017, WCC Cycling Framework 2015
	Parking lane width: Acceptable Range 2.1m – 2.5m	
	Cycle Lane Width: Acceptable Range: 1.2m – 1.5m	
	Safety Strip Width, beside parking lane Acceptable Range: 0.4m – 1.0m	

Angle parking with roadside cycle lane	Total Width at 45 deg (parking, safety strip, cycle lane) Acceptable Range: 7.1m-7.8m Desirable Minimum: 7.3m	Cycling Aspects of Austroads Guides 2017
	Cycle Lane Width: Acceptable Range: 1.5m	
	Safety Strip Width: Acceptable Range: 0.8m-1.5m	
	Overhang Kerb: Acceptable Range: 0.6m	
Kerbside separated cycleway	Cycle Lane Width Acceptable range: 1.5m-2m	Cycling Aspects of Austroads Guides 2017, WCC Cycling Framework 2015
	Safety Strip width, with parallel parking Acceptable Range: 0.6m	
Traffic lanes	Preferred Width Principal Road: 3.5m Painted Median Width: 2m	WCC Code of Practice for Land Development
Parking	Parallel Parking Width: Acceptable range 2.0-2.5m	WCC Code of Practice for Land Development
	Clearance from Driveways Minimum: 1m Desirable Min:3m Range: 3-8m	NZTA TCD Manual Christchurch Cycle Design Guidelines – Design Principles Best Practice Guide
	Clearance from Intersections Minimum: 6m Desirable: 30m	NZTA TCD Manual Christchurch Cycle Design Guidelines – Design Principles Best Practice Guide
Footpaths	Footpath Width on Principal Road: 2m	WCC Code of Practice for Land Development

The following intersection treatments have been produced for each of the four concept designs.

## 8.1 Intersections



Figure 16 - Option A Intersection Treatment



Figure 17 - Options B to D Intersection Treatment

Cyclists on The Parade have priority over motor vehicles on the side road intersection with clear and consistent marking across the intersection. In Options B to D, the side street limit line is located prior to the cycleway, this requires side street traffic to give way to cycleway users, and is possible because

here is good visibility of cycleway users on approach. The transition between the cycleway and the crossing shown in Options B to D would likely have some measure for reducing cycling speeds on approach to the crossing.

Intersection turn bays have been retained on The Parade in their existing locations, and SIDRA modelling of intersection flows confirms the length of turn bays are appropriate for the turning flows.

## 9. Rough Order Cost Estimates

Rough order cost estimates for construction of the four concept design options have been prepared. These rough order costs are estimates provided to assist the public with assessment and selection of preferred options.

The costs reflect the design objectives, for a reconfiguration that not only addresses the current cycleway layout, but also take the form of an integrated transport solution. These solutions are to encompass community feedback and design objectives from the Love the Bay partnership, address safety concerns, environmental considerations, and include broader urban design and landscape opportunities along the length of The Parade for all options.

A number of assumptions have been made in the cost estimates:

- The extent of works for each option is from the Dee Street roundabout to the Reef Street roundabout (including those intersections), a distance of approximately 1.6km;
- Provisional sums have been allowed for each of the aforementioned intersections to include upgraded intersection treatments;
- Preliminary and General time-related costs have been based on assessed durations of construction for each option;
- The site is assumed to be a Level 1 classified site for temporary traffic management;
- A full mill out of the existing chip seal surface and reseal of the length of The Parade in asphalt surfacing;
- Relocation of bus stops;
- Landscaping and Urban Design upgrades are included at residential side road intersections and within the length of the business area;
- Allowance for a 25% contingency for each option.

The estimate summary for each option is below in Table 3.

Table 3 - Rough Order Cost Estimate Summary

	<b>Option A</b>	<b>Option B</b>	<b>Option C</b>	<b>Option D</b>
Construction Duration	160 days	200 days	250 days	260 days
Total Estimate (excl. GST)	<b>\$4.1M</b>	<b>\$5.2M</b>	<b>\$6.0M</b>	<b>\$6.2M</b>

Construction costs need to be recalculated once detailed design is completed on the preferred option.

## 10. Options Considered But Not Pursued

The following options were considered but not pursued

- Do Nothing – It is apparent from the Love the Bay engagement process, and the community feedback that a do-nothing option that retained the existing cycleway and made no improvements was not an option for the community.
- Remove cycle facility – removal of the cycle facility completely would not provide a safe environment for all users nor would The Parade accommodate current and future cycling users. Requires all cyclists to share the road space with vehicles, which is a departure from cycling best practice for this road environment. The removal of a cycle facility further reduces the Level of Service on this route for cyclists from the previous layout. This option also does not encourage cycling uptake, a key cycling objective, and has challenges achieving a safe, pleasant and welcoming environment for cycle travel.
- Relocate cycle facility to alternative routes - The option of providing cycle facilities on adjacent routes introduces the challenge of the need to cross the main road to access the cycle facility, and reduced integration with the shopping centre, key destinations and public transport linkages. It is feasible to provide suitable cycle facilities on The Parade, which is the main, flattest, shortest, most direct route, which is the most desirable for people's travel.
- Change to angle parking one side of The Parade, remove parallel parking on one side, and provide a mix of shared path and/or cycle facilities - Frequent driveways along The Parade means that reverting to angle parking would likely result in a loss of parking, and a loss of residential parking amenity for areas. Angle parking requires additional road space for manoeuvring, which would affect the available space for other users. This poses safety issues where cyclists are required to travel behind vehicles exiting parking within this manoeuvring space
- Shared path one side of The Parade, wider traffic lanes, no sharrows – The community shared their thoughts on the provision of shared paths, and the community view was that shared paths were a facility that reduced the level of service and attractiveness for both pedestrians and cyclists, and was an inferior outcome for those users. This option does not provide a dedicated cyclist space, and requires other road users (pedestrians and drivers) to share space with cyclists, increasing conflict between different transport modes. Shared paths also do not cater for all cyclist types.
- Separated two-way cycle facility one side of The Parade only– This option was considered closely. The Red Design's Slow Safe Cycleway for Island Bay to Te Papa - Berhampore Newtown Segment design was reviewed and considered. On the positive side, all cycleway users benefit, and the option would likely attract new users. The wider width means faster cyclists can easily pass slower riders.

In most cases, one-way facilities will have better safety outcomes due to drivers often not expecting cyclists coming the 'wrong way'. The greatest challenges arise from conflicts with vehicles (in places such as driveways and intersections), and to a lesser extent pedestrians. This happens because this facility puts people on bikes approaching a conflict point from the 'wrong' direction – i.e. where the other road users do not normally expect them to come from, and therefore don't look carefully before making a manoeuvre. In a New Zealand context, this design may be less intuitive and easy to understand for drivers and pedestrians than other

cycle facility options. Relevant New Zealand guidance is to avoid bi-directional facilities with access from driveways and side roads.

At intersections, this facility presents a user priority challenge, in this circumstance New Zealand law requires people on bikes crossing the side road to give way to through traffic, unless that vehicle traffic has a control that prioritises the cycle crossing. Without cyclist priority, this option would likely increase the cyclists delay at intersections and reduce the attractiveness of this facility for cyclists. New Zealand give-way rules would not permit the contra-flow travel on the carriageway and at intersections with cyclists travelling in both directions there would be even more conflict between cyclists and pedestrians.

A Via Strada memo on two-way protected cycle lanes was produced for Wellington City Council when reviewing this option. That memo concluded that protected bi-directional cycle lanes are much more complex to design at intersections than uni-directional cycle lanes. With few exceptions, the level of service is reduced for bi-directional cycle lanes at intersections, and this could result in existing cyclists rejecting the facility, riding in the adjacent parallel traffic lane, which can be irritating to drivers and less safe than before for cyclists. Due to these complications, relevant New Zealand guidance in the Cycle Network and Route Planning Guide is to avoid bi-directional facilities alongside roads with access from driveways and side roads (LTSA, 2004). There is, of course, reason to sometimes use bi-directional facilities, and whether or not their use is appropriate may depend on a variety of factors. The following environment factors, which align well with New Zealand guidance, make bi-directional facilities more appropriate (Alta and Burchfield, 2009): Few or no side streets, and where side streets exist, traffic volumes should be low, or the intersection should be signalised; and few or no driveways, or where driveways exist, a generous offset of the cycle lane from the legal or fenced boundary.

There is scientific consensus that cycling in the same direction as the adjacent traffic is significantly safer than cycling in the opposite direction. An old study that quantified this increased risk had a factor of 3.6, whilst a recent and much more extensive study put this risk at a factor of 7.8, i.e. for each crash happening going in the same direction as adjacent traffic, there are nearly 8 crashes for cyclists going the opposite way. A Wellington example of this problem is the bi-directional path on Hutt Road, (Thorndon Quay to Ngauranga)

Other possible impacts include the impact on established trees. Land take requirements are possible depending on design decisions at pinch points and intersections. Vehicle access/egress to neighbouring properties is more difficult on bike lane side, but would conversely remain unaffected on the other side.

While The Parade has adequate width to accommodate this type of facility, other connecting cycle routes in Wellington, such as through Newtown and Berhampore, may not have existing width to continue the same facility. This introduces a challenge with cycle route treatment consistency.

- Revert back to the old layout – whilst this was an option with some community support, reverting back to the old layout would not conform to cycling best practice, as the on-road carside cycle lane in the previous layout did not have the appropriate carside door zone safety buffer between the parked cars and the cycle lane. Table 2 outlines the applicable standards, which require a desirable 1.0m safety strip adjacent to parking for cycle safety. This in effect means that the Option A concept reverts to the previous layout with these enhancements, and the space allocated to the cycle lane buffer zone replaces that previously afforded to the central flush median. The traffic lane width remains unchanged.
- Retain the existing layout within the business zone – Concept Option D shows a cycle lane treatment that could be applied to the business area which gave a dedicated cycle space

whilst maintaining the majority of the existing angle parking. This was considered a pragmatic solution to provide better level of service and safety for cyclists, with minimal impact on parking and traffic operation. It is noted that Option D could be implemented with any of the residential options A-D.

- Angle parking with roadside cycle lane in the Business Area – this option was heavily discounted by the community in the Love the Bay feedback. The implications of providing this facility are safety and spatially related. A significant roadway width is required (generally these cycle lanes must be wider than kerbside cycle lanes to allow for extra clearance for parking manoeuvres. Note that the angle of the parking influences the clearance required, Table 2 outlines the dimensions required to meet the best practice guidance which would place the existing kerblines and canopies of the western side business in jeopardy. The safety performance of roadside cycle lanes behind angle parking is poor.

## 11. Opportunities

A number of design opportunities exist which were considered out of the immediate scope of this engagement, already planned by other projects, or could be considered complementary to all four of the concept designs and may be carried forward as part of the preferred option. These are outlined below.

### 11.1 Shorland Park

The wider Island Bay Cycling Masterplan presents opportunities to extend the The Parade cycleway to The Esplanade, through Shorland Park. This would connect the cycling network north of Island Bay to the existing valuable recreational spaces – the playground and the Island Bay waterfront. The configuration of Reef Street and The Parade surrounding Shorland Park could be explored as part of the Greater Wellington Regional Council bus lay-by upgrade (refer appendix SPA IB concept studies). For example:

- Increasing park and ride facilities and redesigning the southernmost section of The Parade as a lower-speed shared-space environment.
- Improve planting amenity on the streets surrounding Shorland Park
- Adjacent Island Bay on the Esplanade, create a slow speed environment and larger public promenade with coastal vegetation, shade, and seating by adjusting the road layout outside Shorland Park.



Figure 18 - Shorland Park Opportunities

### 11.1 Urban Design

In addition to the urban design consideration discussed there are a number of opportunities that fell outside the scope of the brief yet would improve the quality of the design proposal. These include:

- Increase parking provisions surrounding the business zone to free up parking adjacent to shops for other uses such as public space enhancements. Parking numbers could be increased by extending angle parking down adjacent side streets, and enabling parking in the median strip down Derwent St.
- Due to cost constraints there is likely to be surplus road area along the Parade i.e. where parking has been removed. These areas could be better utilised through adding footpath extensions that create space for public amenity; or more planting and vegetation.
- Full redesign of the business zone public space including enhancements such as a new public square, commissioned artwork and play elements, and higher quality material finishes than currently proposed in the specification

### 11.2 Dee Street Intersection

The Dee Street roundabout has been one of the most controversial parts of the current scheme. The recommendation from the Transport and Urban Development Committee in February 2015 was to remove the roundabout and replace it with the following layout.



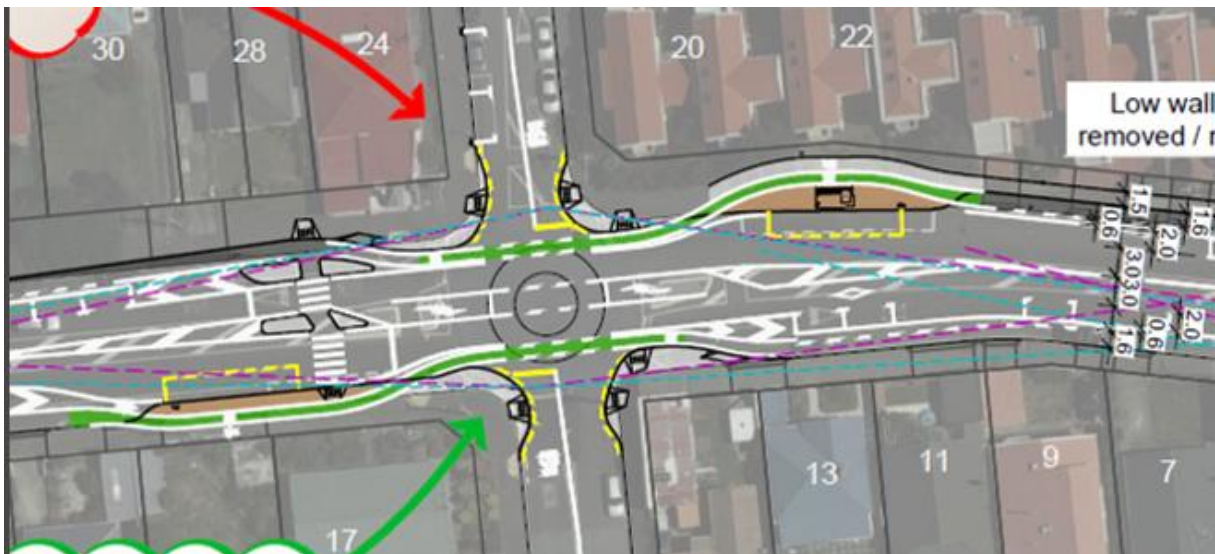


Figure 19 - Dee Street Roundabout

Discussion notes from the Island Bay Cycleway Working Group meetings June 2015 summarised:

*“Retaining the roundabout will provide an inconsistent level of service for people on bikes and a possible increase in safety risk primarily due to the need for cyclists to merge with traffic in order to negotiate the intersection. This gap in level of service is likely to hamper uptake by the interested and concerned people who we are designing for.”*

*“Removing the roundabout provided an opportunity to construct a Zebra crossing immediately south of the intersection, retaining the roundabout as recommended by the working party will not improve pedestrian connections.”*

The working group resolved to retain the Dee Street roundabout, and that a combination of lanes and sharrows will be used to be consistent with the markings in the town centre.

The roundabout was originally installed in 2005 due to concern about southbound vehicle speeds. In the nine years prior to the roundabout, there were no relevant injury crashes recorded. Since 2005, there has been three injury crashes, including a car versus cyclist crash. Injury crash rates for cyclists at roundabouts are typically higher than at other intersection types.

There is an opportunity to revisit the Dee Street roundabout and investigate a design option similar to that recommended by the Transport and Urban Development Committee in February 2015. A provisional sum for intersection improvements at Dee Street has been included in the rough order cost estimates for all concept options,

### 11.3 On-Street Parking

The effects of the design options reducing on-street parking are likely to be controversial, particularly in the business area. Survey results show that a large number of vehicles observed using unrestricted parking spaces belong to commuters. Overall around 65% of long stay vehicles during the week are commuters while compared to the 58% in the weekend. If all of these commuters are parked at the same time, non-residents will occupy around half of the unrestricted parks provided for both the weekday and weekend.

Provision of residents only parking in places along The Parade, to address issues with people parking all day after catching the bus to the CBD could be considered by Council.

To offset the loss of on-street parking near business, two side roads have been identified for potential increase in side road parking. Additional parking in Mersey Street could be provided with removal of the flush median and conversion of the remaining parallel parking spaces to angle spaces. In Medway Street angle parking on the north side could also be provided with a 30 deg angle design.

The parking survey results showed an average duration of stay within the business time restricted parking of some 36 minutes. These results are however skewed by the large number that comply with the time restrictions. Some 45 drivers parked longer than the time restriction allows, some up to 12 hours. It would be beneficial to have enforcement of time restricted spaces in the business area to assist with freeing up parking spaces for those short term parking trips.

In the residential areas, the removal of some 40 spaces is the result of implementation of New Zealand Local Guidance for visibility at intersections, and was a key recommendation in the Road Safety Audit undertaken for the Island Bay Cycleway. It is noted that the Client Decision in the Road Safety Audit recommended working with individual residents to resolve individual issues over driveway access.

In Christchurch, a similar approach has been taken. Where this New Zealand Local Guidance has not been fully implemented on some driveways on the Colombo Street separated cycleway project, staff had a safety review undertaken by two external experts and exceptions to the guide were proposed if the review agreed that the changes are acceptable and do not compromise the cycleway from a safety or service perspective.

A safety review of individual intersections may result in the reduction of the loss of some parking spaces within the residential area. Although it is noted that the surveyed residential parking demand only once exceeded the supply of parking in Options A to D. At all other times there would still be sufficient parking supplied to accommodate the number of vehicles parked in the residential area surveyed, even without the introduction of resident's permits that would potentially free up half of the unrestricted parks occupied by commuters for residents.

#### 11.4 Speed Limits

Option A, the original layout option with roadside cycle lanes on The Parade, would not adhere to the most recent recommended guidance for provision of cycle facilities. This guidance defines the potential level of separation of cyclists and motor vehicles in terms of volumes and speed of motor vehicles.

The guidance would suggest Option A could potentially be appropriate if operating speeds and traffic volumes were reduced to around 30km/h and less than 9,500 vehicles per day along the whole route.

The Parade is a Principal Road in the road hierarchy. The reduction in carriageway width for vehicles in the current layout has seen a slight reduction in the traffic speeds along The Parade. Council could consider an extension of the existing 30km/h speed zone within the business area over a wider length of The Parade, or alternatively, traffic calming measures that reduce the operating speed along the length of The Parade in conjunction with Option A to meet the guidance.

This may however lead to the related transfer of traffic to side road routes and would need to be considered in regards to the road function of The Parade as a high volume Principal Road. The facility also may not appeal to the target market of "interested but concerned" cyclists and may not have the same effect on increasing cycling uptake as alternative options.

## 12. Next Steps

The four design options incorporate feedback from extensive community engagement, the outcomes of the Love the Bay project to date, transport engineering and landscape and urban design practice, NZTA guidelines, and council strategies, including the Urban Growth Plan, Cycling Master Plan and Framework, and Long Term Plan.

When making changes to road layouts like this, the detailed plans must first be approved by the Council and accompanied by public consultation. The four design options for the Island Bay Parade and cycleway will be open for public consultation from 31 July 2017 to 13 August 2017.

The consultation feedback will inform the final recommendations and report on the Island Bay Parade and Cycleway to be deliberated by Council on 14 September 2017. The Council (Mayor and Councillors) will consider the consultation feedback along with the outcomes of the Love the Bay process, NZTA guidelines, budgetary implications, and council strategy when making their decision.

It is expected that Council will determine a final outcome for the design of The Parade at this meeting. The Council will agree on the preferred option with the intention for implementation to begin in spring 2017. Implementation will require detailed design and construction plans for the entire length of The Parade.

The indicative timeline to undertake design and construction of the Island Bay Parade upgrade is outlined below.

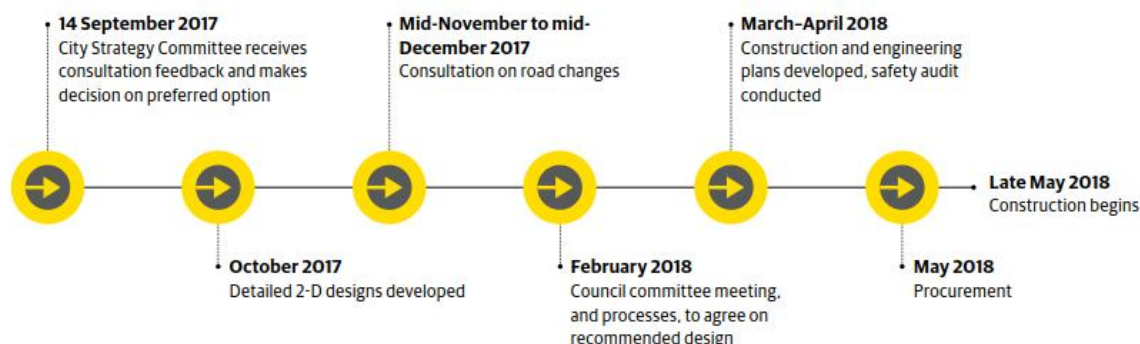


Figure 20 - The Parade Upgrade Delivery Programme



## Appendix A – Love the Bay Design Objectives

## Appendix B – Concept Design Option Plans

# Appendix C – Concept Urban Design Studies and Specification