# **Wellington City Council**

# The Parade – Island Bay Design Option Refinement

September 2017



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# 1. Introduction

Wellington City Council (the Council) have engaged Tonkin & Taylor Ltd (T+T) to consider the community feedback, (including suggested solutions) and apply engineering design best practice standards and guidelines, community desires and project objectives to develop a final consultant design proposal. This proposal will be put forward to Council for consideration of the final solution for The Parade.

There remains a wide range of public views on an outcome for The Parade, with a number of themes developed through the analysis of the feedback arising from the consultation including, (but not limited to):

- The type of cycleway facility;
- Footpaths;
- Traffic lane widths;
- Bus stops;
- Car parking provisions; and
- Intersections.

The terms of reference for this assessment specify that the primary objective is to develop a final proposal to put forward to the Council for consideration. The proposal will:

- Consider the consultation feedback with a focus on the qualitative data provided through the analysis of that feedback;
- Acknowledge the feedback from key stakeholders, including but not limited to:
  - Living Streets Aotearoa
    - Island Bay Residents Association (IBRA)
    - o Interest Groups
    - The Tramways Union
- The proposal will reflect the relevant and current policy settings and objectives, and best
  practice design guidance including but not limited to that of Wellington City Council and NZTA
- Encourage sustainable and active transport through safe, convenient, connected and comfortable approaches as an investment outcome.

This design report is supplementary to, and is to be read with the previous report – The Parade – Island Bay Design report produced for WCC in July 2017.

# 2. Consultation Feedback

## 2.1 Research Analysis

The feedback arising from the consultation and subsequent analysis by the Council's Research and Evaluation Team has been reviewed for support of the two types of cycleway facility. The Love the Bay – Delivering on the Cycleway, 2017 Analysis of Submissions report by the WCC Research and Evaluation Team described the following:

"Cycleway Options A to D, Revert, and Retain can be divided into kerbside or roadside options which represent two fundamentally different design options: kerbside sees the cycleway situated between pedestrians and parked cars (passenger side); roadside sees the cycleway between parked cars (driver side) and moving traffic. Options A and Revert (including Option *E*) are roadside options and Options *B*, *C*, *D* and Retain (including Option *F* – no change to existing) are kerbside options."

"To look at this overall general preference, Borda Counts were computed based on the total number of times combined each roadside and kerbside option was ranked as any rank. The results are shown below by area of residence, and connection to Island Bay."



## 2.2 Qualitative Feedback

This section summarises the submitter feedback about design related aspects of the options. The qualitative feedback is separated into generic themes as follows:

#### **Table 1: Qualitative Submission Feedback Themes**

#### Carriageway

- More traffic lane width
- Removal of ghost markings
- Car door buffer zones (both adjacent to cycle lanes and traffic lanes)
- Desired slower travel speeds
- Flush median space for flexibility to pass/manoeuvre
- Speed humps in the village
- Visibility at driveways, intersections and pedestrian crossings
- Pedestrian crossing width

#### Parking

- Car door buffer zones (both adjacent to cycle lanes and traffic lanes)
- Raised kerb buffer to prevent vehicles parking across buffer or cycle lane
- Retention of parking
- · Replacement of on-street parking lost from The Parade on adjacent streets
- Commuter parking/park and ride in the residential area
- Illegal parking behaviour across driveways and exceedance of time limits within the business
- Visibility at driveways
- Parking and access to the medical centre
- Enforcement

#### Cycleway

- Separation/protection/safety
- Encouraging uptake for "Interested but Concerned" user group
- Continuity along cycle route
- Separation from pedestrians
- Best practice design
- Tripping hazards
- Height of facility
- Car door zones
- Vehicles blocking cycleway when exiting/entering driveways
- Continuing the route north into the CBD, and south to the coast
- Kerb design
- Intersection treatment and visibility
- Cyclist speeds
- Priority at pedestrian crossings

#### Footpath

- Accessibility for children, elderly, mobility impaired and for loading/unloading
- Delineation/separation from cycleway
- Safety of pedestrians
- Tripping hazards
- Widths
- Business area outdoor dining

#### Bus stops

- Option for cyclists to not bypass bus shelter if bus not present
- Return of bus stops previously removed
- Pedestrian conflict at bus bypass
- Design of bus stops to allow buses to pull fully into stop without encroaching into adjacent traffic lane
- Location of bus stops to prevent blocking traffic lanes
- Clearance adjacent to bus stops to allow vehicles to pass without crossing centreline

#### General Feedback

- Cost of options, including urban design and landscape
- Alternative routes
- Cycle safety programmes in schools
- Safety statistics and reason for change
- Education of users
- Demarcation "colour" and extent of marking of cycleway
- Lack of uptake of cycling
- Visual pollution

#### 2.3 Submissions

Submissions and feedback were also provided from the following organisations:

- Greater Wellington Regional Council
- Ascape Design Ltd
- Red Design Architects Ltd
- Living Streets Aotearoa
- Cycle Aware Wellington
- Island Bay Residents Association
- The New Zealand Tramways and Public Passenger Transport Employees Union Wellington

The Island Bay Residents Association and business representatives also provided a requirements document, attached in Appendix A of this report. This IBRA submission was in support of the Option E proposal put forward by IBRA during the public consultation. Of the submissions received, this option was well supported.

Option E is a roadside cycleway configuration, the typical cross section of which has been interpreted from the IBRA submission and shown in Appendix A. Option E bears many similarities to Option A which was presented for public consultation, with the exception of the business area treatment. The Option E submission also contains a number of themes common to the wider consultation feedback.

Public feedback on Option E suggested a benefit of this option was its low cost, this opinion based on a cost estimate provided by IBRA. A rough order cost for construction of Option E has been estimated using the independent estimator cost information contained within the previous Design Report – The Parade Island Bay (July 2017). We note this is a relatively indicative basis of costing based on broad ratios of the original cost estimates for Option A. We would recommend an independent estimator price the alternative option specifically for a more refined estimate.

The estimated cost of Option E is \$3.8M. This cost estimate includes for landscaping items assumed in all other consultation options.

All the feedback received has been considered, and where considered appropriate incorporated in to the revised consultant design.

# 3. Policy Objectives

## 3.1 Cycling Policy

#### 3.1.1 WCC Cycling Facility Guidance

The Island Bay Cycleway is one section of a cycle route within a wider future cycleway corridor between Island Bay and the CBD. This future cycleway corridor is part of a larger comprehensive cycle network outlined in various WCC strategy documents, including:

- Wellington City Council, Cycleways Programme Master Plan, September 2015
- Wellington City Council, Cycling Framework 2015

In late July 2017, WCC commenced work with the Berhampore, Newtown and Mt Cook communities to develop options for safer biking routes. These routes will be part of the Southern Connections corridor between Island Bay (at Dee Street) and Pukeahu National War Memorial Park/the Basin Reserve. This project is being funded as part of the Government's Urban Cycleways Programme. It is considered imperative that this project is progressed to provide the wider network connection to and from the Island Bay cycleway.

These two planning documents guide WCC's decisions around the implementation of a cycling network. The documents outline the four main types of cycleway facilities that will be created to make up the cycling network to better suit the diverse needs of current and potential cyclists and to motivate different groups to cycle more often. These facilities are:

- Quiet routes
- Shared vehicle/bike zones
- Protected bike lanes
- Alternative bike paths

The WCC strategy documents state that protected bike lanes will be used along main routes with high volumes of vehicles. The cycleway standard design guidelines and design principles for protected bike lanes are outlined in the documents as follows:

- 1. Level of Service A-B depending on design.
- 2. We will provide a minimum of 1.5m wide for one direction, 2.2m wide is normally ideal.
- 3. For a two-directional lane, we will provide a minimum width of 2.5m.
- 4. We will most likely locate protected bike lanes by the kerbside, but separate from the footpath.
- 5. We will separate the bike lanes from moving traffic with some physical element (whether parking, planting, low kerb, hatched flush median with safe hit posts). This buffer space will be at least 0.6m wide and ideally 1.0-1.2m wide next to parking.
- 6. The operating speed for adjacent road may vary.
- 7. We are likely to use signals at intersections.
- 8. We will not use roundabouts on busy routes.
- 9. We will design side roads carefully to make sure people on bikes are safe from vehicle turning movements across protected lanes.
- 10. We will make sure good visibility is available for busy driveways.
- 11. We will provide bus stop bypasses where there are more than 4-6 buses per hour.
- 12. For two-way protected bike lanes on hills, we will provide greater separation between the directional lanes.

#### 3.1.2 Austroads & NZ Transport Agency Cycling Facility Guidance

When planning a cycle route, it is essential to select the most appropriate facility for any given situation. Guidance on the various facilities that may 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 define the level of separation of cyclists and motor vehicles in terms of volumes and speed of motor vehicles along the road corridor. As traffic volumes and speeds vary along The Parade, the route has been divided into the following three sections:

- North: Dee Street to Avon Street
- Mid: Avon Street to Medway Street
- South: Medway Street to Reef Street

Recent traffic volume and motor vehicle speed statistics along each of these three sections of The Parade are plotted on the following figures from the above documents to indicate the facility recommendation for each section. Physical segregation or separate paths are recommended in all sections of The Parade.



#### Figure 1: Cycling Aspects of Austroads guidance

Source: The Cycling Aspects of Austroads Guides



#### **Figure 2: Austroads Guide to Traffic Management**

Source: NZ Transport Agency National Cycle best Practice Review report

This guidance is important in the context of the concept design options consulted on. Option A, Option E and revert options with roadside cycle lanes on The Parade, would not adhere to the most recent recommended guidance above.

## 3.2 Parking Policy

Wellington City Council Parking Policy provides guidance on how the city will approach parking management. The document provides guidance for location-specific parking policy; The Parade would fall under suburban centre and residential on-street parking. For these types of locations, the Parking Policy defines a vacancy rate of 15% to be used as an indicator to measure the effectiveness of parking management in the area in order to support the retail and commercial sectors. This value is intended to be the average vacancy rate for an area and conforms to international best practice.

A parking survey was conducted in July 2017 to collect parking data for a section along The Parade that stretched from just north of Avon Street to south of Mersey Street. The study area also included side streets leading onto The Parade, including: Avon Street and Mersey Street between the Parade and Clyde Street; Medway Street and Mersey Street between The Parade and Derwent Street; and Derwent Street between Medway Street and Mersey Street. The data was separated into residential area parking demand and business area parking demand (including the shops at the intersection of Mersey Street and The Parade).

For the survey, parking data was collected between 7:00 am and 6:00 pm and included both weekday and weekend information. Table 2 outlines the parking vacancy rates for the study area. Table 3 provides an estimate of the parking vacancy rates of the recommended design (with a reduction in the on-street parking provision) using the survey parking demand results.

	Weekday			Weekend		
	Business Areas	Residential Areas	Total	Business Areas	Residential Areas	Total
Average Vacancy Rate	48%	37%	41%	45%	47%	46%
Peak Vacancy Rate	22%	15%	25%	11%	34%	31%

#### Table 2: Vacancy rate results from parking survey, July 2017

#### Table 3: Estimated parking vacancy rates of recommended design

	Weekday		Weekend			
	Business Areas	Residential Areas	Total	Business Areas	Residential Areas	Total
Average Vacancy Rate	49%	34%	39%	46%	44%	44%
Peak Vacancy Rate	24%	10%	23%	13%	30%	29%

The average vacancy rate of the recommended design falls well within the indicator average vacancy rate defined by WCC in the Parking Policy. The lowest vacancy rate, 34% for weekday residential, is more than twice that of the indicator rate of 15%.

## **3.3 Urban Cycleways Programme – Critical Components**

Morrison Low issued a Review of Wellington City Council's Urban Cycleways Programme (UCP) in May 2016. During this review process, Morrison Low identified a number of key components that are crucial to the successful delivery of cycleway projects. It was recommended that each component be properly addressed to maintain public and political support and to achieve successful project outcomes. The critical components are outlined in Figure 3.



#### Figure 3: Components of the UCP Critical for Success

Of these components, the following were essential in T+T's design process to achieve the optimal outcome to meet the many needs of the public:

- Strategic alignment with planning and policy documents
- Community engagement and consultation, particularly the qualitative feedback received
- Design and planning based on best practice engineering and urban design guidance

# 4. Recommended Facility Type

#### 4.1.1 Kerbside and Roadside Facilities Pros/Cons

Table 2 below gives a comparative pro and con analysis of the two cycle facility options.

	Separated Kerbside Cycleway	Roadside Cycleway
	High degree of separation between cyclists and motor vehicles between intersections	<ul> <li>Potential to be installed with limited parking removal and increases drivers' ease of entering and leaving parked vehicles</li> </ul>
Pros	Gives interested but concerned cyclists a high level of perceived safety	Cyclists able to overtake if no vehicles are in adjacent traffic lane
	• Attracts a higher volume of cyclists	Reduced pedestrian conflict
	• Potential to attract a large proportion of enthused and confident cyclists	Priority at intersections
	Effectively reduce the road-crossing distance for pedestrians, with demonstrated crash reduction for pedestrians	
	Can result in a higher crash rate at intersections	<ul> <li>May not provide enough comfort for most interested but concerned cyclists at higher traffic speeds and volumes.</li> </ul>
Cons	Pedestrians encroaching or crossing cycleway	• Bus stops may be regularly located at the kerb side, which interrupts the cycle lane and requires cyclists to go around buses and into the traffic lane, or buses to cross over the cycle lane to stop
	<ul> <li>People placing rubbish bins on cycleway for collection</li> </ul>	• People on bikes may still be hit by an opening car door when cycling in a cycle lane next to parking, particularly if a narrow lane is provided
	Current legal ambiguity relating to the give way requirements for separated cycleways at intersections	Angle parking is not suitable next to a cycle lane unless there is extra clearance for parking manoeuvres

#### **Table 4: Comparative Analysis of Facility Type**

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<ul> <li>Providing a cycle lane next to on- street parking increases the risk of a cyclist encountering (and therefore being hit by) a vehicle manoeuvring into or out of a parking space</li> </ul>
Lack of separation from moving traffic, increasing the likelihood and consequence or a cyclist crash

## 4.1.2 Love the Bay Community Design Objectives

Over the course of the first four Love the Bay workshops, a set of Design Objectives were developed by the community. These Design Objectives attached in Appendix D, were used by the community, and consultants to assess design options for their consistency with the community led objectives. The two types of cycleway facility, kerbside and roadside, have been assessed in terms of their contribution to achieving the community objectives in Table 3 below. A colour was given to the facility which was considered to better achieve each of the community design objectives. No colour is given where the two options are considered neutral in relation to the objective.

	Separated Kerbside Cycleway	Roadside Cycleway
The Parade is safe for all users	<ul> <li>Clear physical separation of cyclists from traffic is well demonstrated internationally to improve midblock safety.</li> <li>Kerbside facility improves safety and perception of safety for cyclists of all ages (interested but concerned)</li> <li>Removes car door conflict with cyclists</li> <li>Can safely accommodate driveway access with improved visibility and traffic lane width</li> </ul>	<ul> <li>No clear separation between cyclists and moving traffic, and vehicles crossing the cycle facility to manoeuvre into parking and bus stops increases crash risk and consequence/severity of cyclist injury</li> <li>Roadside cycle lanes behind angle parking is not suitable</li> <li>Less confident cyclists (interested but concerned) perceive roadside facility to be less safe</li> <li>Potential for car door conflict remains with cyclists between parked cars and moving traffic</li> <li>Reduces potential pedestrian/cyclist conflict on footpath side</li> </ul>

#### **Table 5: Community Design Objectives**

	Separated Kerbside Cycleway	Roadside Cycleway			
The layout is intuitive and easy to understand	<ul> <li>Traditional roadside type facility may be more intuitive for users based on historic city-wide facility implementation</li> <li>Cycling masterplan outlines the objective to provide more separated facilities on main routes; in future a kerbside option is likely to be consistently applied across other main routes within the city</li> <li>The current kerbside facility has been in place for some time now</li> <li>Both options will have consistent road marking throughout the length of The Parade, and consistent intersection treatments and crossings clearly indicated and unambiguous for users to read and understand how to use</li> </ul>				
The Parade accommodates all current and future users	<ul> <li>Clear separation of elements encourage greater use of The Parade by all users</li> <li>Footpaths able to remain adequate width to accommodate expected use</li> <li>Traffic lanes able to accommodate larger vehicle movements</li> <li>Faster cyclists can remain on- road if they choose</li> <li>Kerbside option can be implemented and retain the majority of business parking</li> <li>Rubbish collection, vehicles can position without blocking cycle lane</li> </ul>	<ul> <li>Roadside cycleway less effective at attracting interested but concerned cyclists, those users likely to use pedestrian space</li> <li>Roadside option has same footpath width as kerbside option</li> <li>Bus stops likely to inhibit the flow of cyclists when bus pulling in to stop</li> <li>Roadside option unlikely to be as effective in contributing to uptake of cycling as attractive option for minimising impact of population growth (increased traffic) on transport network</li> <li>Roadside option is likely to require loss of angle parking within the business zone</li> </ul>			
The visual environment is cohesive and clean	<ul> <li>The Parade will remain open and and the cycle facility occupy the reversed in their specific location narrowing of the traffic lane space space on the kerbside of parked</li> <li>Both options will incorporate sime do not need additional markings</li> <li>Business and other amenities results and marking design traffic control rules</li> <li>Urban and landscape treatments natural elements and provide options</li> </ul>	The Parade will remain open and spacious in both options. Parked vehicles and the cycle facility occupy the same space within the carriageway (just reversed in their specific location), the only difference being a visual narrowing of the traffic lane space, with consequential increase in open space on the kerbside of parked vehicles and vice versa between options Both options will incorporate simple and clean, self-explaining layouts that do not need additional markings and signs to inform users of how to use Business and other amenities remain as visible in both options Intersections and marking designs in both options will conform to normal traffic control rules Urban and landscape treatments in both options can protect and enhance natural elements and provide opportunity to celebrate history and identity			

	Separated Kerbside Cycleway	Roadside Cycleway
destination	<ul> <li>Both options propose urban and landscape improvements aimed to improve the public space, including parking for bikes and scooters</li> </ul>	<ul> <li>Both options propose urban and landscape improvements aimed to improve the public space, including parking for bikes and scooters</li> </ul>
Central Island Bay is a pleasant, welcoming d	<ul> <li>The intention with the kerbside option is to maintain the existing kerbside parking provision within the business area</li> <li>Kerbside option is more likely to encourage uptake of cycling to the village to shop locally</li> <li>Kerbside option provides easier transition from cycleway to village for cycles</li> <li>Kerbside option reduces effective road width for pedestrians to cross at crossing points</li> </ul>	<ul> <li>The roadside option is likely to result in the loss of angle parking within the business zone to meet best practice design</li> <li>Roadside option is less likely to encourage uptake of interested but concerned cyclists to travel by bike to the village</li> </ul>

#### 4.1.3 Recommended Facility

It is clear from the quantitative feedback that there is a general preference split between Island Bay and non-Island Bay residents: roadside options as a whole are preferred by residents and kerbside options as a whole are preferred by people living in other communities.

The WCC cycling policy and framework set out objectives for cycling uptake, providing safe and well connected cycling networks to better suit the diverse needs of current and potential cyclists and to motivate different groups to cycle more often. The WCC strategy documents state that protected bike lanes will be used along main routes with high volumes of vehicles.

The NZ Transport Agency Cycle Network Guidance, which also refers to the Austroads guidelines, recommends protected kerbside bike lanes along the entire length of The Parade. A consistent, continuous, convenient network of best practice cycling infrastructure would improve both actual and perceived safety.

Our assessment of the two different facility types shows how we consider each of the two facilities contributes to achieving the community design objectives. This assessment concludes that on balance, the kerbside option best achieves the outcomes sought by the community design objectives.

Our recommendation for a separated kerbside cycleway therefore reflects the aim to best achieve policy objectives of the WCC cycling framework and masterplan, the community objectives, safe system practices, and best practice design guidance for cycling facilities in this road environment. The design complies with WCC's design principle to most likely locate protected bike lanes by the kerbside

and to provide a physical element between the bike lanes and moving traffic (i.e. 2.0 m wide parallel parking).

The Parade is used by many different people, with many needs and using all different modes of transport. Aspects of feedback raised by residents who supported a roadside option, which are not directly cycleway related, remain valid and where appropriate have been adopted in the recommended separated kerbside cycleway design presented in this report.

# 5. Key Design Themes

## 5.1 Design Considerations

The key design themes outlined in the terms of reference, and other relevant design advice and feedback from public consultation are summarised below:

#### • Widen the road lanes

Traffic lane widths typically fall within the range of 3.0m to 3.5m. Lane widths of 3.0m are typically the narrowest acceptable on central city roads. The current cycleway layout has 3.0m wide traffic lanes.

Traffic data obtained from WCC shows the current cycleway layout, with its narrowing of the traffic lane widths has reduced the 85<sup>th</sup> percentile speeds **to the posted speed limits**. Slower speed environments have a positive effect on pedestrian and cyclist safety. Wider traffic lane widths are known to contribute to general increases in traffic speeds. The risk with increasing traffic lane widths is that traffic speeds along The Parade will increase above the posted limit once more. This would have an impact on cyclist safety and comfort in all options, but in particular the roadside cycle lane options such as Option A or Option E which place the rider adjacent to moving traffic with no physical separation or protection. With a protected kerbside cycleway, the separation from vehicles along the mid-block increases user safety, however the intersections remain the key locations for speed management for these options.

The separated kerbside cycleway option recommends widening the road lanes back to 3.5m within the residential area, for a practical comparison, returning to the useable through lane width previously enjoyed in the section between Humber and Medway Street, albeit without the central flush median.

The increase in traffic lane widths will ease other potential safety and operational concerns noted from the public feedback including:

- Large commercial vehicle and bus manoeuvring (particularly at the bend south of Medway Street);
- Manoeuvring out of driveways; and
- Drivers opening doors into the path of moving traffic to enter/exit vehicles.

Appendix C shows a design passenger vehicle exiting left out of a residential driveway with 3.5m traffic lanes adjacent to a parking space. This shows that the increase in traffic lane width will mitigate the issue of vehicles crossing the centreline to leave the driveway.

With any increase in traffic lane width, it is recommended that traffic speeds are monitored, enforced, managed and driver awareness of speed is increased in order to create a forgiving road system, particularly for the more vulnerable road users. Raised pedestrian crossings are proposed to be retained in the village, raised tables are effective in slowing vehicle speeds on approach to the side road intersections, and the effectiveness of the speed cushions reviewed before a decision is made on the wider speed environment controls in the final design.

#### • Removal of ghost markings

Re-sealing of the length of The Parade is proposed. This will remove the existing ghost markings as well as any further redundant markings. This item contributes a large proportion of the project costs, estimated to be in the order of \$800,000 to \$1M.

#### • Flush median

Flush medians are used to segregate traffic while still allowing vehicles the ability to turn right into side streets and properties without slowing the flow of vehicles. The drawback of flush medians is that they can often lead to higher speeds as the effect of side friction is no longer present and as such careful consideration of the net benefit is required. The width of a flush median is dependent on the environment in which it is to be used. The minimum effective width of a flush median to remove turning traffic from through traffic lanes is **2.0 m**. This will accommodate a 99 percentile car, (width 1.94 m) but not a truck (width **2.5 m**, the legal maximum vehicle width).

For its intended purpose, installation of a flush median of less than 2.0m width is not recommended. A width less than this is likely to contribute to undertaking manoeuvres which within the space available could result in side swipe crashes and vehicle damage. Installation of a 2.0m flush median will have a significant impact on reducing the footpath to a less than desirable width along The Parade, particularly adjacent to bus stops. Concerns with large reductions in footpath width were noted from the public feedback. Additional width has been added to the traffic lanes (to 3.5m) in our recommended option. We do not recommend inclusion of a flush median due to the potential impact on safety, increasing vehicle speeds and reducing footpath widths.

#### • Pedestrian crossing width

The recommended kerbside cycleway option, with kerb separation adjacent to parked cars, reduces the total width a pedestrian has to cross the vehicle lanes.

#### • Develop flexible parking controls

Any proposal to encroach on the minimum 3m driveway setback departs from the local New Zealand design guidance for visibility to the cycleway at driveways and a key recommendation in the Road Safety Audit undertaken for the Island Bay Cycleway. The likelihood (or frequency) of vehicles and pedestrians not seeing cyclists will increase with a reduction in this 3m setback. Visibility of cyclists at driveways is a key safety concern within the public feedback on the kerbside cycleway design.

We understand that the WCC has previously worked with individual residents to resolve issues over driveway access. In Christchurch, a similar approach has been taken. Where this 3m setback 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. 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.

Removal of delineated car parking can in some instances lead to an increase in the number of cars able to physically park within an area. Issues can arise however, drivers parking with large gaps between vehicles can prevent the space being used to its full potential, reducing the number of vehicles able to park. Issues with vehicles parking over driveways can also result from this approach.

We do not have a fixed opinion on which delineation option is best. We do however recommend that the driveway setbacks are maintained at a minimum of 3m, and the intersection setback maintained at 30m for parking. This may require the end of the length of parking space between driveways to be delineated and enforced. We note that the presence of driveways and not the 30m intersection setback is the governing factor preventing parking close to intersections on a number of occasions along The Parade.

Should WCC consider any potential relaxation of parking setbacks, this we consider should be supported by a safety review agreeing the changes are acceptable and do not compromise the cycleway from a safety or service perspective, nor impact on the safety and ability of vehicles to exit driveways without crossing the centreline. The review should also consider the estimated parking vacancy rate of the recommended design from Table 3 above, which does not indicate an issue with the parking availability in these areas should a reduction occur to achieve the recommended setbacks.

The recommended option also intends to maintain the number of existing kerbside parking spaces between Medway Street and Avon Street within the business area. This objective would need to be confirmed through further detailed design.

#### • Parking and access to the medical centre

There was significant public feedback regarding the current layout of parking outside the medical centre. Angle parking is proposed to be reinstated outside the medical centre.

#### • Increase on-street parking on surrounding streets

We have considered increasing parking on side streets and have identified three streets that could potentially accommodate an increase in on-street 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. Derwent Street could accommodate additional angle parking on the eastern side.

These options could be developed further during detailed design, with monitoring of the future parking demand on The Parade used to inform WCC whether to pursue these options.

#### Business zone parking and footpath dining opportunities

There is the potential for the loss of 1-2 car park spaces within the business area. The intention is to maintain the existing kerbside parking provision between Medway Street and Avon within the business area. This objective would need to be confirmed through further detailed design.

A change in the angle of the nose-in parking spaces will potentially add some 1.2m to the proposed west side footpath width in this option, enabling business to retain outdoor dining space.

#### • Separated cycleway design

The WCC strategy documents state that protected bike lanes will be used along main routes with high volumes of vehicles. A separated cycleway will provide a high degree of separation between motor vehicles and cyclists in locations between intersections, which gives interested but concerned cyclists a high level of perceived safety and thus attracts higher volumes of cyclists. This fulfils the key objectives of the WCC cycling policy framework and masterplan.

The height of the cycleway and the cycle lane buffer zone were strongly supported aspects of safety for cyclists and pedestrians from the public feedback. The raised cycleway was seen to provide better visibility of cyclists and be the most effective option to increase cycling uptake with the "Interested but concerned" user group.

We support a raised kerbside cycleway option with the following design detail recommendations:

- Vertical separation between the cycleway and road, and the cycleway and pedestrian footpath is recommended to clearly define the separation of user facilities, and to discourage inadvertent pedestrian encroachment into the cycleway;
- The kerb between the cycleway and pedestrian footpath is well delineated with appropriate height, colour and material contrast to assist the visually and mobility impaired and reduce or remove any tripping hazard to pedestrians;
- The design of the kerb face is also forgiving to ensure the safety of cyclists in the event a cyclist has to mount the kerb to avoid a hazard

Of the kerbside options, the raised kerbside cycleway has been referenced in the public feedback as preferable in terms of comfort and ease of loading/unloading goods and children from vehicles.

Colour is important to differentiate between the pedestrian footpath and cycleway, and to also define the presence and location of cyclists to approaching drivers within the road at intersections. We recommend the cycleway has a consistent application of coloured surface along its full length. This is supported by public feedback.

In addition, feedback received has enquired about the use of a different colour cycleway surface. Green cycleway surfacing is universally applied to on-road cycling facilities within New Zealand, and is consistent with all applications within the Wellington region. However there is no legal restriction on the use of a different colour. We understand there has been some interest in themed cycleway routes within the city represented by different coloured cycleway surfaces. The consistency issue is one WCC must consider when assessing different coloured surface options, also bearing in mind the visual amenity and longevity of different colours. We see no barrier to WCC considering a different coloured surface to the standard green, but consideration of education and marketing of the route and colour as part of a wider network theme rather than a one-off treatment for The Parade is recommended.

#### • Widths of footpath and cycle lane buffer zone

The typical cross section in Appendix B shows the recommended footpath and cycleway buffer zone widths. We recommend the following dimensions:

- Footpath Minimum of 2.0m. The NZ Transport Agency Pedestrian Planning Guide recommends a minimum footpath width of 1.8m. The WCC Code of Practice for Land Development requires a minimum footpath width of 2.0m for a Principal Road such as The Parade. Wider footpath widths of up to 3.5m are recommended in suburban shopping centres. The footpath widths proposed achieve the minimums recommended for the typical pedestrian and vehicle flow conditions on The Parade.
- Cycleway buffer zone 0.9m. The WCC Cycling Framework states a minimum requirement of 0.6m, with a desirable width of 1.0-1.2m adjacent to parking. The 0.9m width is only a minor departure from the desired 1.0m width from the Cycling Framework, and would provide adequate width for a fully open car door based on measurements of a range of vehicles, as well as provision for rubbish/recycling collection.

#### • Location of pedestrian crossings

The pedestrian crossing by The Empire Theatre has been retained in its current location. The safe walk to school crossing has been moved south, with a relocation of the bus stop and kerbside parking resulting. The pedestrian crossing at Humber Street will be reviewed during detailed design.

#### • Intersection configuration

Two potential intersection configurations have been produced. These are an interim solution, and a long-term option treatment. These are attached in Appendix B.

The long-term intersection option treatment would not be possible with cyclist's priority across the intersection under current traffic rules and legislation; cyclists must give way to vehicles. This type of

<image><image>

treatment has been implemented in Nelson, requiring cyclists to give-way to vehicles at intersections, which has drawn criticism for the lower Level of Service for cyclists.

#### **Figure 4: Long Term Intersection Treatment Option**

This treatment would be more attractive and consistent for cyclists with a change in the legislation. The NZTA National Cycling Team have commenced a submission for this change, with an indicative timeframe of 18 months until enabling legislation is available to WCC.

The raised tables are effective in slowing vehicle speeds on approach to the side road intersections where pedestrian and cyclist safety can be improved and the incidence and severity of crashes are reduced. The raised tables will also reduce the actual and perceived risk, and improve comfort for active road users to encourage the uptake of these modes of travel.

In the interim, the options to treat the intersection are:

- In anticipation of the legislation change, design and construct the intersection kerb lines and raised table as above, but transition the cyclists to a roadside cycle lane, at road level through the intersection as shown in Figure 1 in Appendix B. This would require minor road marking changes after the legislation was available to transition to the long-term option. Depending on design and construction timeframes, and the progress of the legislation, the marking may be able to proceed straight to the long-term option before the completion of construction, without the need for an interim solution.
- Continuation of the route north to the CBD to provide a connected network

It is recommended WCC progress the Southern Connections project to provide a connected cycleway route from Island Bay to Pukeahu – National War Memorial Park.

#### • Bus stop bypass and shelter location

Public feedback indicates some people are concerned with pedestrian safety on the bus bypass system currently installed on The Parade.

Factors contributing to the current issues at some select locations relate to the difficulty differentiating between footpath and cycle bypass, with a lack of cycleway colouring, surface treatment and a narrow footpath width.

Greater Wellington Regional Council have provided the following comments relating to bus shelter layout and location, which we concur with:

"As to layout, we've always supported the intent of the layout that has cyclists to the rear of the bus stop and shelter. This follows best practice though we'd always remind any designers of the need to manage the interaction and safety of passengers disembarking or getting on a bus as well as the general pedestrian / cyclist interaction in this space constrained area. This is likely to be more of an issue if the shelter is sited at the rear of the footway whereby the cycle path runs through the stop area. This is the less ideal option and seems to offer greater opportunity for potential conflict but with less opportunity to manage the shared environment."

We recommend that bus stops with identified issues of a lack of footpath width and delineation are remedied in the final design solution.

#### • Review bus stop location

Relocation of the following bus stops are proposed:

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

The relocation of bus stops has also been in order to mitigate the issue of a stopped bus blocking the movement of traffic within the traffic lane.

## **5.2 Summary of Design Refinements from Public Feedback**

#### **Table 6: Design Refinement**

Feedback Item Included in Recommended Design

Traffic lanes increase to 3.5m wide in the residential areas

A minimum footpath width of 2.0m is recommended

A full reseal of The Parade is proposed to remove ghost markings

Individual parallel parking spaces along the residential section of The Parade will not be marked/delineated in this option

Angle parking is proposed to be reinstated outside the medical centre

Three streets that could potentially accommodate an increase in on-street parking have been identified for further investigation

The option also aims to maintain the existing kerbside parking provision between Medway Street and Avon within the business area. This objective would need to be confirmed through further detailed design

Within the business area, the west side pedestrian footpath is proposed to be 4.6m in width, in order to maintain as far as practicable the outdoor dining space for local businesses

Relocation of the following bus stops are proposed:

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

The pedestrian crossing by The Empire Theatre has been retained in its current location. The safe walk to school crossing has been moved south, with a relocation of the bus stop and kerbside parking resulting. The pedestrian crossing at Humber Street will be reviewed during detailed design

The recommended option provides a 1.5m wide separated kerbside cycleway, with the cycleway above road level. Colour options are to be investigated for marking the cycleway surface. A vertical kerb is proposed to separate parked vehicles from the cycleway, with a car door buffer zone of 900mm width adjacent to parallel parked vehicles.

Driveway setbacks for parking are maintained at 3m, and the intersection setback for parking maintained at 30m. Any potential relaxation of the recommended parking setbacks must be supported by a safety review at the design stage.

Vertical separation between the cycleway and road, and the cycleway and pedestrian footpath is recommended to clearly define the separation of user facilities, and to discourage inadvertent pedestrian encroachment into the cycleway.

The kerb between the cycleway and pedestrian footpath is recommended to be well delineated with appropriate height, colour and material contrast to assist the visually and mobility impaired and reduce or remove any tripping hazard to pedestrians.

The design of the kerb face is also recommended to be forgiving to ensure the safety of cyclists in the event a cyclist has to mount the kerb to avoid a hazard

The landscape and urban design treatment options are recommended to remain in the project design, with the aim to improve the amenity and quality of public space along the length of the Parade.

# 6. Summary of Recommended Design Proposal

From the information received from WCC, the recommended design proposal option presented largely reflects a hybrid or combination of Options C (residential section) and Option D (business section) with some amended design elements and cross section dimensions.

The recommended option provides a 1.5m wide separated kerbside cycleway, with the cycleway above road level. A kerb will separate the cycleway vertically from the roadway, and a horizontal buffer space separating the cycleway from the adjacent parking door zone is provided by a kerbside safety strip of 0.9m in width (0.6m on the western side in the business zone).

Individual parallel parking spaces along the residential section of The Parade will not be marked/delineated in this option. Instead, clear space for vehicles to park kerbside will be provided with minimal yellow no-stopping lines and end space markings. We do however recommend that the driveway setbacks are maintained at 3m, the intersection setback for parking maintained at 30m. We consider any potential relaxation of the recommended parking setbacks should be supported by a safety review at the design stage, agreeing the changes are acceptable and do not compromise the cycleway from a safety or service perspective, nor impact on the safety and ability of vehicles to exit driveways without crossing the centreline.

The option also aims to maintain the existing kerbside parking provision between Medway Street and Avon within the business area. This objective would need to be confirmed through further detailed design. Traffic lanes within the business area would be 3.0m in width, wider 3.5m traffic lanes are provided in the residential area. No flush median is proposed.

The footpath width is proposed to be a minimum of 2.0m in the residential area. Within the business area, the west side pedestrian footpath is proposed to be 4.6m in width, in order to maintain as far as practicable the outdoor dining space for local businesses.

Other generic design elements that are proposed are listed in the Section above.

The typical cross section, plan views and intersection treatment options are shown in Appendix B.



**Residential Zone** 



TYPICAL SECTION - CONSULTANT'S RECOMMENDED DESIGN

Island Bay : The Parade Figure 5: Consultants Recommended Typical Cross Section



Figure 6: Artists Impression – Residential Zone



Figure 7: Artists Impression – Business Zone

# 7. Landscape and Urban Design

Following feedback from the Love the Bay engagement around community ownership of the project, the proposals for reconfiguration of The Parade encompassed 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. This broader urban design approach has largely been lost in the detail of the public engagement, which is potentially a function of the largely cycleway focused debate. There was limited feedback on the urban and landscape design assumptions, a lack of understanding how these elements contributed to the cost of options, and conversely little desire to spend public funds on non-cycleway related items.

It is recommended that wider urban and landscape treatments remain part of the project. These elements will contribute significantly to final amenity of the street and improve community ownership, place making and safety outcomes for not only the cycleway, but also the community of Island Bay.

# 8. Rough Order Cost Estimate

A rough order cost for construction of the alternative concept design option has been estimated. This cost has been estimated using the cost information contained within the previous Design Report – The Parade Island Bay (July 2017). Note this is an indicative basis of costing based on broad ratios of the original cost estimates. We would recommend an independent estimator price the alternative option specifically for a more refined estimate.

	Roading & Civil	Landscaping	Total
Recommended Option			
Residential Zone	\$3.2M	\$0.5M	\$3.7M
Business Zone	\$0.7M	\$0.5M	\$1.2M
Subtotal	\$3.9M	\$1.0M	\$4.9M
Contingency (25%)			\$1.2M
Total Estimate (excl. GST)			\$6.1M

#### **Table 7: Rough Order Cost Estimate**

The rough order cost estimate of the alternative option is in the order of \$6.1M (excl GST). This estimate includes urban and landscape treatments and a 25% contingency.

Value engineering is recommended to identify potential cost savings. These items could include, but are not limited to:

- Removal of the proposed rain gardens (water sensitive urban design);
- Removal of the proposed upgrades to the Reef Street and Dee Street intersections. We do however note the advice in our initial design report related to the roundabout intersection treatment for Dee Street. Review of this intersection and connections north to the proposed Southern cycle study are still recommended;
- Replace the asphalt road re-surfacing material with a lower cost option of chip seal or slurry seal. WCC should consider the trade off with amenity, road noise and whole of life cost implications for these alternatives.

There are other potential opportunities to refine the design budget though detailed design, however we have not included any additional value items at this time in order to avoid a noticeable effect on quality and finish of outcome (and perceived value).

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

# **Appendix A** – Option E Concept Design & Description

# Option E

- 1. Reseal the parade approx. cost \$280,000 based on Council figures for 2016 where they spent \$9.5 million resealing 68 km of road.
- 2. Move the bus stops back to where they were, this involve breaking up the kerb extensions the Council put on and re-kerbing approximately 0.5 km of the parade.
- 3. Put unmarked car parking back against the kerb, no markings equate to more carparks.
- 4. Clearly paint using green or another colour a cycleway on the roadside of parked cars, increasing the width by 0.5 m from the original cycleway design.
- 5. In the shopping centre, retain the current shared space and carparks.
- 6. Look at reducing the speed limit along the parade.
- 7. Remove the speed humps around the shopping centre and lower the height of the pedestrian crossings.
- 8. Retain pedestrian crossings on the parade.
- 9. To be confirmed but an indicative costing would be no more than \$750,000.

# **Option E: IBRA and Business Representatives Requirements**

## The Carriageway:

- 1. The minimum width of the carriageway for vehicles must be 3.5 meters each side. This excludes the cycleway.
- 2. The centre median strip shall be painted only not raised and no plants or planter boxes of any sort'.
- 3. The Carriageway will be resealed from kerb to kerb. Footpaths only need to be resealed where specific changes are required e.g. the removal of the bus bypasses as noted below.
- 4. All speed humps will be removed.
- 5. Dee Street roundabout to be retained.
- 6. Optional Visibility for traffic emerging from Reef Street onto The Parade needs to be improved. Suggested options to be considered for this are:
  - a. A roundabout similar to the Dee Street roundabout i.e. a "flat" roundabout that will still allow bus turnaround;
  - b. Removing a small portion of the corner of Shorland Park and some of the trees on that corner

## Look and Feel of The Parade:

- 1. Visual clutter is to be kept to a bare minimum, this includes
  - a. No Bollards
  - b. No Ghost markings
  - c. Road markings and signage kept to a minimum
- 2. No Rain Gardens or any other Landscape Planting to be added in along The Parade.
- 3. No Raised Platforms to be included in the design.
- 4. Any plantings on Roundabouts be kept to low plants to avoid visibility issues.

## Car parks:

- 1. Car parks are not to be marked on the carriageway along The Parade- other than in the shopping centre.
- 2. All carparks are to be kerbside.
- 3. All carparks that have previously been removed from anywhere along The Parade, including outside Dairy's and Businesses are to be reinstated.
- 4. Angle parking to be reinstated outside the Island Bay Medical Centre and Brew'd.

## **Bus stops:**

- 1. All bypasses around the back of bus stops to be removed.
- 2. Bus stops to be moved back from the carriage way i.e as they were prior to the current cycleway construction.

All bus stops removed or moved during the construction of the current cycleway to be reinstated – including Tamar and Avon Street bus stops.

## Cycleway:

- 1. The cycle lane will be on the carriageway side of the parked cars, not kerbside.
- 2. The cycle lane will be .5 of a metre wider than the original (not the current) cycleway.

- 3. Can be painted, preferably not green.
- 4. Within the shopping area the current shared space is to be retained.

### Shopping centre:

- 1. To be left as it currently is other than:
  - a. The removal of speed humps.
  - b. The lowering of pedestrian crossings.

### **Pedestrian crossings:**

- 1. All crossings other than two in the shopping centre to have a refuge in the middle of the road, otherwise continuous, i.e. not two stage for cars and cyclists.
- 2. Crossing at Dee Street to be moved approx. 50 metres south.
- 3. Crossing at Humber Street to be moved approx. 20 metres south.
- 4. Crossing by the Empire to remain in current position.
- 5. Safe walk to school crossing to be moved south, taking into account
  - a. Reinstatement of parking outside of Dairy's
  - b. Bus stops
  - c. Churches and Clubs.

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# **Appendix B** – Final Recommended Concept Design Option Plans



**Residential Zone** 



**Business Zone** 

**TYPICAL SECTION - CONSULTANT'S RECOMMENDED DESIGN** 

# Island Bay : The Parade







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# Appendix C – Vehicle Tracking



**Appendix D** – Love The Bay Community Design Objectives

# **Design Objectives**



### The Parade is safe for all users.

- It is safe for pedestrians, safe for cyclists, safe for motorists, safe for children, safe for the elderly, safe for people with disabilities, safe when exiting/accessing vehicles while parked, safe for exiting driveways, safe for parking, safe at intersections.
- There is clear separation between fast moving things, slow moving things, and parked things (motorists and fast cyclists / slow cyclists and pedestrians / parked cars).
- Drivers, pedestrians, and cyclists have clear sight lines, particularly at intersections, pedestrian crossings, and bus stops.
- Drivers, pedestrians, and cyclists know where to expect one another.
- Traffic calming measures (not annoying or noisy) are used to highlight shared spaces.

## The layout is intuitive and easy to understand.

- The Parade is intuitive for all users.
- Consistent road markings are used through the length of The Parade.
- Road markings and layout are consistent with the rest of the city and region.
- Pedestrian crossings are clearly indicated and are not ambiguous.

## The Parade accommodates all current and future users.

- Design elements encourage all users to share The Parade.
- Carriageway accommodates emergency/ rubbish services, buses, & other large vehicles.
- Shops have service access for deliveries so vehicles don't block traffic.
- Bus stops do not inhibit the flow of pedestrians, vehicles, or cyclists.
- Footpaths are wide enough for two adults and a dog to walk side by side.
- Pedestrian crossings align with usual pedestrian routes (particularly school routes), and are a safe distance from bus stops and other hazards.
- It is acknowledged that children may cycle on the footpath and they are accommodated.
- Faster cyclists who prefer to ride on the road are accommodated.
- The design takes into account anticipated population growth.
- Bus stops and bus shelters are positioned based on user numbers.

## The visual environment is cohesive and clean.

- The Parade looks and feels open and spacious.
- It is simple and clean, free of visual and physical clutter.
- Businesses and other amenities are clearly visible.
- The look and feel reinforces and highlights road rules and protocols.
- The design celebrates Island Bay's unique history and identity.
- Natural elements along The Parade are protected and enhanced.

## Central Island Bay is a pleasant, welcoming destination.

- The shopping centre encourages community cohesion people linger, meet, and eat.
- The shopping centre has pleasant seating, art, plantings, access to sun, protection from weather, child-friendly spaces, and accessible public toilets.
- There is adequate car parking around amenities.
- The shopping centre has plenty of parking for bikes and scooters.
- The look and feel encourages people to shop locally.
- The library and community centre are linked with the shopping centre.
- Walkways around the shopping centre and shops have adequate protection from weather.