



Project WAVE

Evaluation Report

22 September 2021



1. Executive summary

Project WAVE was established to trial a separated two-way cycleway along Market Place, Customs Street West, and Lower Hobson Street, connecting the Nelson Street and Quay Street cycleways and completing the city centre cycle loop. The trial period ran from its installation in May 2021 to its assessment in September 2021.

The monitoring and evaluation summarised in this report reflect the key transport components tested through this project, being:

- A bi-directional cycleway connecting Nelson Street and Quay Street.
- Additional loading spaces that switch to taxi space at night.
- One-way traffic operation on Market Place and Customs Street West.

Subject to safety, useability, and aesthetic adaptations, these components should be retained.

The report identifies adaptations; some which can be made immediately and some which require investigation and additional funding. These adaptations will address issues identified during the course of the trial and should be considered in the context of infrastructure that is expected to be in place in the medium-term, until budget is available to undertake a full streetscape enhancement within the Viaduct.

The working group was established as a key stakeholder group to keep informed and seek feedback on changes in the Viaduct area. Retaining this group is important to the progression of the project, as the group collectively has knowledge of the process and history, as well as relationships with the Viaduct community.

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2. Background

Project WAVE (Wynyard and Viaduct Enhancements) is funded through Waka Kotahi NZ Transport Agency’s Innovating Streets for People (ISFP) pilot fund, which aims to create more people-friendly spaces in our towns and cities.

Project WAVE was established to trial a separated two-way cycleway along Market Place, Customs Street West, and Lower Hobson Street, connecting the Nelson Street and Quay Street cycleways and completing the city centre cycle loop.

Other changes in the street to be trialled are listed below and shown in Figure 1:

- One-way system on Customs Street West and Market Place to make space for the separated two-way cycleway and create a calmer, safer and consistent street environment.
 - Safety enhanced through additional speed calming devices.
1. Additional loading zones and the extension of some existing loading zones. Loading zones operate as taxi stands after hours to support commercial activities.
 - Reduced parking on Market Place and Customs Street West to the east of Market Place.
 - Reverse-in angle parking on Customs Street West, to the west of Market Place. This allows retention of existing parking, compared with converting to fewer parallel car parks.
 - Low cost, low-risk, low-commitment approach using interchangeable materials (e.g. concrete separators, flexible bollards, planters) to ensure affordability, robustness, and minimising impacts from installation and maintenance.
 - Lower Hobson Street operates as follows:
 - The traffic lane adjacent to the footpath and separated two-way cycleway:
 - Loading within the marked zone, from 9am-4pm.
 - Taxi/rideshare drop-off/pick-up within the marked zone, from 7pm-6am.
 - Clearway (no parking) within the marked zone, from 6am-9am and 4pm-7pm.
 - The traffic lane adjacent to the centre line:
 - Bus lane from 6am-9am and 4pm-7pm.

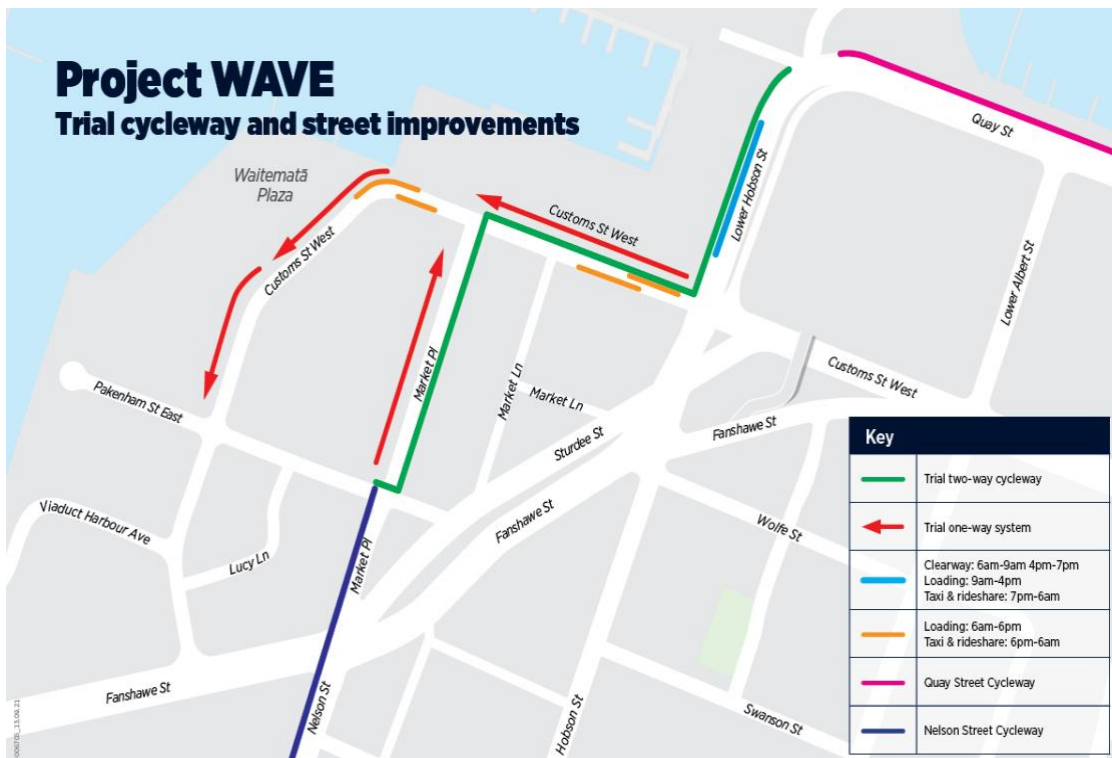


Figure 1: Project WAVE summary of changes

2.1. Completing the city centre cycle loop

Nelson Street Cycleway and Quay Street Cycleway are two of Auckland's busiest cycleways, used by around 800 and 1,500 people respectively. Connecting the Nelson Street and Quay Street cycleways represents a key link within the cycle network (see Figure 2 below).

Figure 3 below provides historical context. Route options to make the connection were considered by Auckland Transport (AT) in 2015, when delivering Phase 1 of the Nelson Street Cycleway and again in 2017, when delivering phase two. Market Place, Customs Street West, and Lower Hobson Street were confirmed as the preferred route.

Community engagement on the link received positive feedback, along with concerns around provision for local deliveries and safe pickup/drop-off areas for taxis and rideshare.

Following community engagement in early 2020 for a cycleway along the Market Place section of the route, the link was deprioritised due to Covid-19-related budget cuts and is not currently on the three-year programme for cycling investment.

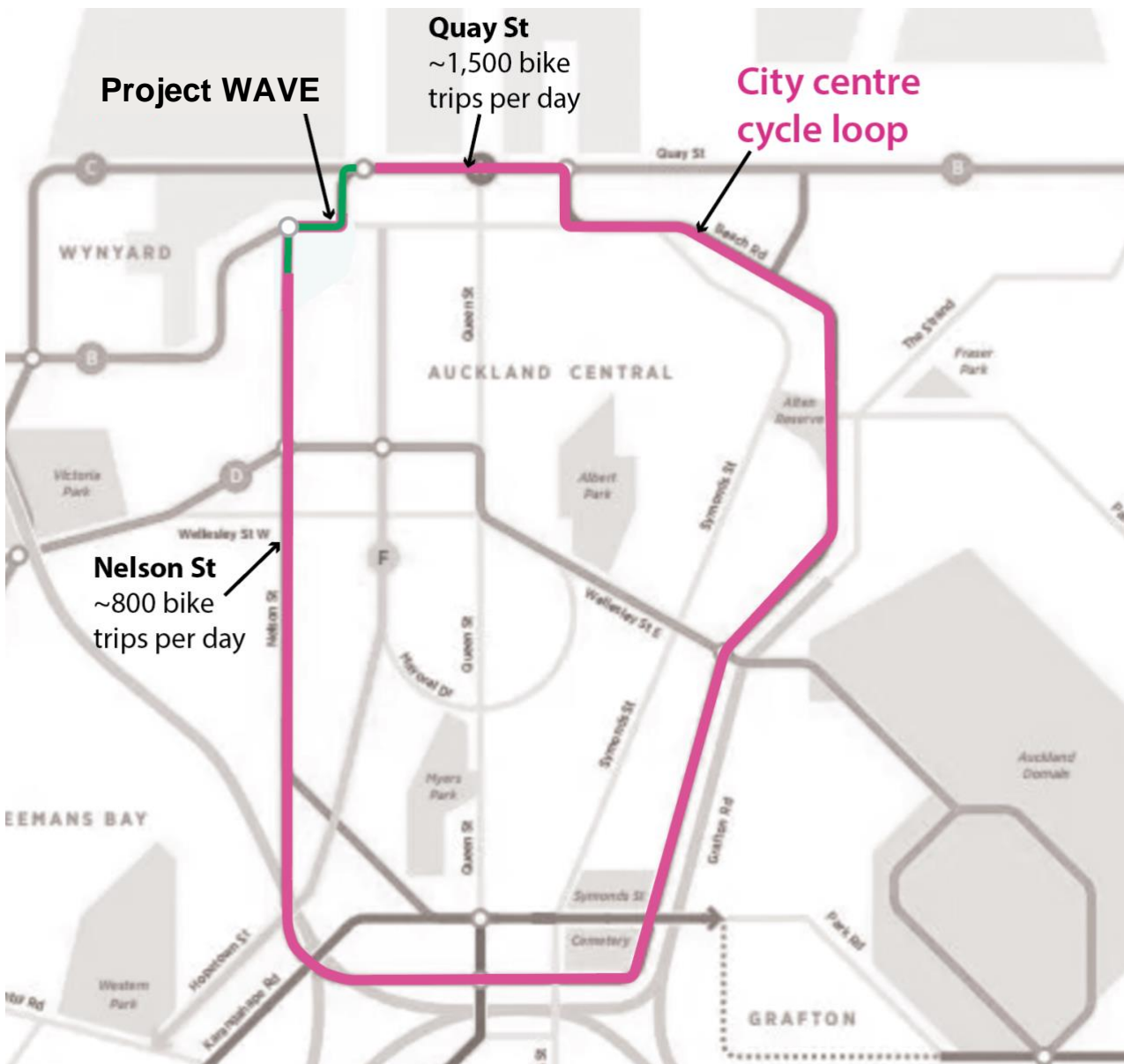


Figure 2 – Project WAVE completes the city centre cycle loop

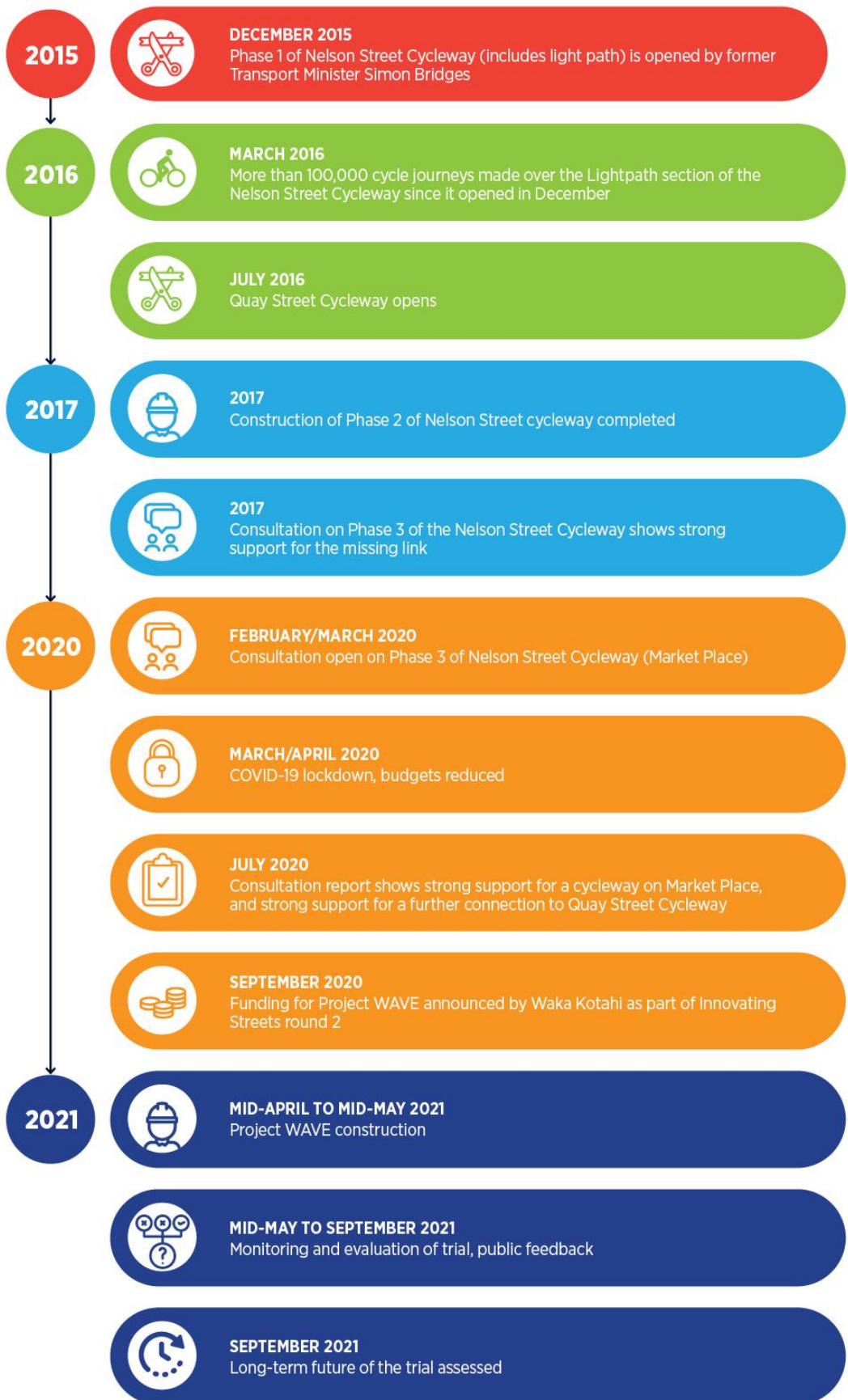


Figure 3: Project WAVE timeline

2.2. Innovating Streets for People

Given the importance of the connection but lack of funding, the creation of the ISFP fund provided an opportunity for AT to refresh its approach to how this link was delivered and trial an option which could be made permanent, if successful.

Initially planned for delivery ahead of the Americas Cup and supporting races, the cycleway and supporting infrastructure was installed during April and May 2021, for a trial period until mid-2021. It was important for businesses in the area, as well as AT, to avoid construction disruption during the events.

2.3. Report purpose & exclusions

This report summarises the foundations of Project WAVE, monitoring and evaluation during the trial, and provides a recommendation to the AT Project Control Group (PCG) who will decide on its retention, retention with modifications, or decommission.

3. Monitoring and engagement

This section outlines how information about the cycleway has been collected, whether through interpersonal or technical means. This information has been used to evaluate the project, covered in Section 4.

3.1. Mana Whenua

In February 2021, Project WAVE engaged with Mana Whenua through hui under the ISFP programme. Feedback from this hui and subsequent engagements is outlined as follows:

- The longevity of material installation impacts:
 - a. Mana Whenua had no objection to the design, aesthetics and materials proposed.
 - b. Mana Whenua have expressed interest in any aspects of material installation intended to remain in place for five to ten years.
- AT is delivering the project in partnership with Panuku Development Auckland. Mana Whenua expect collaboration through a mutually agreeable approach and plan.
 - c. AT has included Panuku Development Auckland as part of the working group. The working group's roles and responsibilities is outlined in Section 3.2.1.
- Environmental concerns were raised when painted roadway artwork was proposed.
 - d. The project no longer has painted roadway artwork.

As part of the retention decision-making process, the next steps for Mana Whenua engagement are:

- At a hui on 8 September 2021, Project WAVE will present project outcomes against objectives to Mana Whenua.
- Mana Whenua feedback will be captured for incorporation into phase two of the project.

3.2. Community engagement

Community engagement provided Project WAVE with qualitative data, used to support project decision-making.

3.2.1. The Project WAVE working group

The Project WAVE working group was formed in late 2020 to enable better two-way communication between AT and the local community. The working group has representatives from:

- Viaduct Harbour Holdings Limited (VHHL)
- Bike Auckland
- Heart of the City
- Waitematā Local Board
- Eke Panuku Development Auckland
- AT (and supporting consultant team)
- Viaduct residents (representative joined the working group in May 2021)

It was established to meet fortnightly or as often as needed and contribute to the project's planning, communication, design, and evaluation phases by:

- Ensuring local organisations or groups with an interest in the project were involved in its development.
- Ensuring the project accurately reflected community aspirations and delivered on established objectives and design principles.
- Identifying and communicating community and stakeholder concerns about the project.
- Considering the range of community views, interests and issues related to the detailed design and construction of the project.
- Enabling inter-organisation conversations.

The working group's role is consultative. It has influence over outcomes, but decision-making remains with AT. In July 2021, independent facilitator Gerard Krishnan of TSA Management Limited, was engaged to chair working group meetings, providing improved structure and meeting management.

Working group meetings are scheduled fortnightly, but held as needed. Where meetings have been cancelled, AT has provided a project update to the working group. Dates of Working group meetings since December 2020 are provided below:

- 16 December 2020
- 18 January 2021
- 3 February 2021
- 10 March 2021
- 24 March 2021
- 21 April 2021
- 05 May 2021
- 19 May 2021
- 02 June 2021
- 21 July 2021
- 18 August 2021 (online)
- 1 September 2021 (online)
- 15 September 2021 (online)

3.2.2. How we engaged

In addition to the working group, the following are ways we engaged with people on Project WAVE:

- **Letter drops** have been used for significant project announcements, including but not limited to:
 - 21 December 2020 trial announcement letter.
 - 12 April 2021 construction start letter.
- A **project mailbox** was created providing a direct way for people to contact the project team via wave@AT.govt.nz. Project updates were also sent from this address.

- In early February a **project newsletter** containing an area map and information about the trial was hand delivered to the area and shared with the project email database. The newsletter had received minor updates subsequently (e.g. to reflect a change to the trial timeline). It was re-shared, and hand delivered.
- A **project web page** and short URL www.AT.govt.nz/projectWAVE provided up-to-date information about the trial.
- From mid-May to mid-June 2021, an **online and paper copy survey** provided people a way to give formal feedback on the project.
- General contact through **AT Customer Relationship Management (CRM) system**.
- **Business door-knocks** occurred at key points during the trial to support letter or newsletter delivery, e.g. before the start of construction. Door-knocks included leaving a phone number for businesses to contact the project's community engagement personnel directly. All businesses within the project area were door-knocked.
- A project **drop-in session** was held on Tuesday 8 June at Sierra Café.
- **Meetings** with individuals and groups were held throughout the trial to discuss concerns and feedback.
- **Corflute signage** installed around the project site provided both general information about the trial, e.g. where to go online to find out more, and specific information, e.g. a marked area's dual usage for loading and taxis.
- **Project team and AT SME experience** on site using the facilities and watching others.
- **Social media** was used to provide project updates, highlight items of interest, and drive survey participation.

3.3. Data collection

Three forms of quantitative data were captured to support used to support project decision-making.

3.3.1. Cycle counters

Two cycle tube loop counters one on Market Place and the second on Customs Street West near Market Lane, were set up to record number of people using the cycleway, either on bike or scooter. Monitoring services were undertaken between 18 May to 12 August. The counters differentiate between bikes and scooters and provide direction of travel, and speed.

3.3.2. Video analysis

AT has collected and analysed data from video cameras on Lower Hobson Street and Customs Street West. Video cameras were set up to record pre-installation and post-installation data on all modes and movements. Pre-project data was captured in mid-February 2021, with post-data captured in mid-May 2021.

Short-term camera data is a snapshot and does not factor in changes in season, weather, events or similar which can impact counts. As such, the specific numbers of users before and after are not the focus, rather the general use of space.

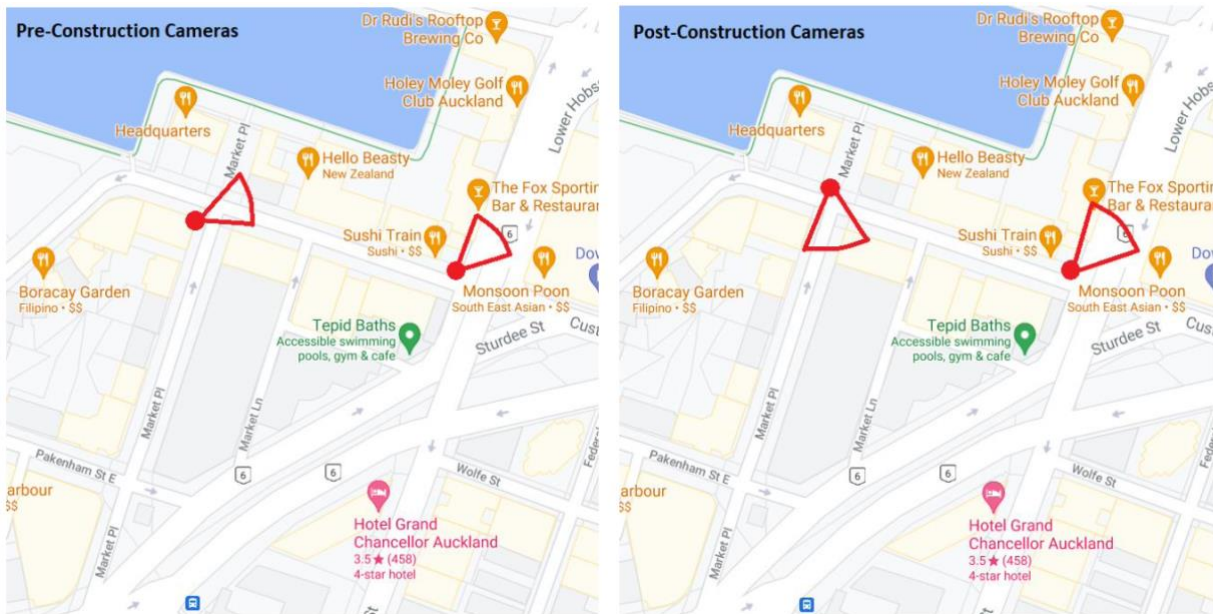


Figure 4: Video camera locations for analysis

The video analysis was used to look at before and after data related to:

- Use (number, duration of stay, turnover) of loading and parking on Lower Hobson Street only.
- Volume and “place in street” analysis for:
 - People on bikes
 - Scooters (e.g. Beam, Lime etc.)
 - Pedestrians
 - Buses
 - Motorbikes
 - General traffic

3.3.3. Parking surveys

Following cycleway installation, paid and mobility average parking occupancy was monitored, and observations recorded. This was undertaken between 17 June 2021 to 1 July 2021, during morning (6am-7am), lunch (12pm-1pm), and evening (5pm-6pm).

We assessed mobility and paid parking on Customs Street West and Market Place. An existing shared vehicle spot on Customs Street was also included.

No parking survey was completed on loading and taxi stands on Market Place and Customs Street West. Further monitoring and assessment of this activity will enhance support to commercial activities in the area.

Because of the narrow assessment timeframe, further investigation is needed to more accurately determine parking occupancy. No pre-installation parking survey was undertaken for Project WAVE, however there are historical occupancy surveys available for comparison.

4. Evaluation

This section is a summary of the monitoring and community engagement outcomes, applied to the trial evaluation criteria. These are the elements that AT will consider when deciding next steps for the project. The criteria were shared with the working group and guide assessment of where the project has been successful, where it has not, and the areas for focus going forward. The criteria are:

- Working group feedback.
 - At trial evaluation, the working group will seek a consensus statement on the trial’s outcomes.
- Community feedback.
 - At trial evaluation, the project will produce a feedback report on the outcomes of community survey feedback, local community engagement, and email correspondence.
- On-street monitoring.
 - The project will report on the outcomes of video monitoring and show how/whether identified issues have been addressed.
- Demonstrate connectivity between Nelson Street Cycleway and downtown Auckland.
 - The project will use cycle counters to monitor journeys.
- Support commercial activity in the project area by enhancing access for business deliveries.
 - The project team will engage with and seek feedback from local businesses. Feedback from businesses will form part of the project feedback report.
- Support the Viaduct’s night-time economy by enhancing access for taxi and rideshare.
 - The project team will engage with and seek feedback from local bars and restaurants. Feedback from bars and restaurants will form part of the project feedback report.

4.1. Working group feedback

Working group feedback on the Evaluation Report and the trial outcomes was requested by AT, to be provided either as a group or individually. Feedback will help the project team identify which elements of the trial are working well and which require change or adaptation.

4.1.1. The Reduced Project Wave Working Group (RPWWG)

A subset of the working group has provided feedback as the RPWWG, comprising:

- Tania Loveridge – Heart of the City
- Barb Cuthbert – Bike Auckland
- Michelle Boag – Viaduct Residents
- Paul Buckle – Eke Panuku Development
- Alexandra Bonham – Waitemata Local Board

RPWWG feedback is summarised here, with the full submission provided within Appendix D.

Table 1: RPWWG feedback and AT response

RPWWG feedback	AT response
General Project WAVE working group process	
<p>Poor process followed by AT in regard to working group setup, project management, decision making, and information flow. Proposed actions:</p> <ul style="list-style-type: none"> • Joint site walkover. • Working group continue to be engaged by AT. 	<ul style="list-style-type: none"> • AT will organise a site walkover once alert levels allow, to review current operation and proposed adaptations. • AT commits to work with the group to continue improving processes in phase two.

<ul style="list-style-type: none"> • Representative from the local business community should be part of the working group in phase two. 	<ul style="list-style-type: none"> • AT will evaluate working group membership and engage with the group as a whole on new members.
Trial methodology	
<ul style="list-style-type: none"> • Issues with execution of the trial, in particular around communications and engagement, e.g. late representation of residents within the working group. • Inconsistent information provided to the working group regarding trial retention. • Innovating Streets principles not followed of fast trial and adaptation and decisions not made in an inclusive way. 	<ul style="list-style-type: none"> • AT will evaluate working group membership and engage with the group as a whole on new members. • Public communications have consistently stated that if the trial was successful, infrastructure would remain in place until funding becomes available, however AT acknowledges the need to be clearer and more consistent in communications across all channels. • AT commits to work with the group to continue improving processes in phase two.
Evaluation reporting	
<p>Evaluation criteria is unclear and non-negotiable elements of the trial are not clarified. Proposed actions:</p> <ul style="list-style-type: none"> • Create a two-page graphical summary for general communication. • Qualitative analysis should include an analysis of the impact to various road user groups, e.g. pedestrians, private vehicle. 	<ul style="list-style-type: none"> • The criteria for trial evaluation are outlined at the start of Section 4. • Working group has been asked to assess trial outcomes. There are no non-negotiables in terms of what feedback can cover. • AT will create a simplified feedback and trial evaluation summary for public distribution. • Analysis within the report should address most user groups, including the now expanded Section 4.2.1 on public feedback.
Short-term adaptations	
<p>Proposed actions relating to cars in cycleway:</p> <ul style="list-style-type: none"> • PWWG require clarification on cause of this issue as traffic channelisation from Market Place to Customs St West could be contributing to the problem. • PWWG require clarification if bollards are an appropriate semi-permanent solution. • Provide details of carpark loss and mitigation opportunities, • Provide clarity on carpark removals including additional communications and engagement. 	<ul style="list-style-type: none"> • AT will shift this short-term adaptation into the longer-term adaptation category. Before making changes on site, AT will: <ul style="list-style-type: none"> ○ Draft a communications and engagement plan for working group review. ○ Provide the working group with plans/drawings showing what is proposed. ○ Undertake a site walkover with the working group.

<ul style="list-style-type: none"> Plan utilisation of redundant parking spaces on Market Place as an immediate adaptation to avoid parking conflict. <p>Further actions:</p> <ul style="list-style-type: none"> Investigate provision of new parking for micro-mobility and amenity improvements. 	<ul style="list-style-type: none"> AT will review opportunities with the working group in phase two.
<p>Long-term adaptations</p>	
<p>Proposed actions:</p> <ul style="list-style-type: none"> Loading issues on Lower Hobson Street must be resolved. The working group should be a part of investigations and option development. Extension of loading time on Lower Hobson Street should be tested as part of the trial. Bike vs vehicle conflict at the intersection of Pakenham Street and Market Place is a significant safety issue that should be prioritised as part of immediate adaptations. Investigate parking requirements for hire scooter providers and other micro-mobility options. Pedestrian crossing provision is a significant safety issue that should be prioritised as part of immediate adaptations. 	<ul style="list-style-type: none"> In phase two, AT will investigate options with the working group and seek their feedback on an improved outcome for this space. As part of phase two investigations, AT will consider trialling a longer loading time. Requires investigation and cost assessment. In phase two, AT will investigate options with the working group and seek their feedback on an improved outcome for this space. AT will review opportunities with the working group in phase two. Requires investigation and cost assessment. Requires investigation and cost assessment. AT will review opportunities with the working group in phase two.
<p>Safety</p>	
<p>Areas around the project site have potential for conflict between different user groups, e.g. delivery vehicles and buses. Additionally the working group considers there is insufficient signage. Proposed actions:</p> <ul style="list-style-type: none"> Prioritise safety issues as part of immediate adaptations. Identify signage requirements as part of immediate adaptations. 	<ul style="list-style-type: none"> Requires investigation and cost assessment. In phase two, AT will investigate options with the working group and seek their feedback on options to reduce conflict and improve signage.
<p>Quality expectation</p>	
<p>There is a need for a quality outcome for the area consistent with the urban form in the Viaduct area and fit for a semi-permanent lifespan.</p>	<ul style="list-style-type: none"> AT will consult with the working group to seek high quality design outcomes within available budget.
<p>Parking provision</p>	
<p>Consider opening the Downtown car park 24/7 to cater for businesses and reducing demand for on-street parking.</p>	<ul style="list-style-type: none"> AT will investigate this option.

4.1.2. Bike Auckland

As well as submitting as part of the RPWWG, Bike Auckland submitted individual feedback on the Evaluation Report. Key points include:

- Criticism of working group setup and makeup.
- Working group meetings benefitted from having an independent chair.
- On-site discussions would have benefitted understanding of scope and impact.
- AT approvals processes are slow.
- Bike Auckland supports the working group's position that AT should undertake further investigation before making redundant car parks inaccessible.
- Monitoring through video and cycle counts was effective.
- The online consultation and events provided important feedback.
- Bike Auckland supports the low cost, efficient Project WAVE approach to deliver cycling improvements.
- Bike Auckland welcome the proposal to extend the working group into phase two.
- Bike Auckland supports further roll-out of the innovating streets programme.

4.1.3. VHHL

VHHL provided individual feedback on the Evaluation Report, rather than as part of the RPWWG. Key points include:

- VHHL oppose a dedicated cycleway on Market Place and have suggested that a shared path with traffic calming elements would be preferable.
- VHHL are concerned about the quality of infrastructure AT will deliver, which could be in place for 10 years.
- Messaging from AT around the nature of the trial was confusing and inconsistent.
- AT should assess on-street parking demand.
- Greater clarity needed on the role of the working group going forward, particularly around the opportunity to influence the final design of the cycleway.
- Greater analysis needed regarding who provided positive feedback vs those providing negative feedback. In response, section **Error! Reference source not found.** of the report has been amended.

4.2. Community feedback

4.2.1. Project WAVE survey

AT has produced a Project WAVE feedback report on the outcomes of community survey feedback, local community engagement, and email correspondence. Reporting identifies key themes and is summarised below with the full report provided within Appendix A.

From Monday 17 May to Sunday 13 June 2021, the public was invited to provide feedback on Project WAVE via an online survey and using paper copies at the drop-in session held on Tuesday 8 June 2021. The survey comprised a mix of 'tick-box' and open-ended questions.

In total, 583 submissions were received, with 334 (57%) indicating "Love it" in response to the question "What do you think of the two-way cycleway?"

91 submitters (15%) indicated "Like it with some changes" and 166 (28%) indicated "Dislike it" (some submitters' dual selection of options means they total 591). When responses to the question "What do you think of the two-way cycleway?" are broken down by reason for visiting the Viaduct, a split in sentiment emerges.

People visiting the viaduct, working locally, or travelling through the area, responded positively to the cycleway. Of 327 submitters who said they visit the viaduct for leisure or entertainment, 66% indicated

“Love it”, as did 67% of the 332 submitters who travel through the viaduct. Of 192 submitters who work within the viaduct, 42% indicated “Love it”, with another 19% indicating “Like it with some changes”.

This compares with the lower submission numbers and overall negative response from 70 local residents who provided feedback, with 61% indicating “Dislike it”. 30 property owners also provided feedback, with 77% indicating “Dislike it”, as did 87% of the 23 business owners providing a submission. Loss of on-street parking was a key issue raised by those responding negatively. Further engagement with this segment of the community should be undertaken if the trial is made permanent.

The survey asked for a response to other questions regarding the one-way system, loading zones, and changes to parking. Responses follow a similar pattern to the question regarding the cycleway and can be viewed in full within Appendix A.

The themed feedback coalesced around 14 topics (including some catch-all “other comments” categories), with cycleway safety and parking receiving the highest number of mentions. A top 10 of feedback themes provides insight into feedback content and sentiment.

Table 2: Feedback themes

Feedback theme	No. of mentions
Happy with AT and/or with WAVE project	170
Cycleway makes cycling safer (and other active modes of transport)	145
Glad WAVE links and improves access to cycleways	100
Safety issues with cycleway - vehicles obstructing cycleway	99
Like parking removal benefits other users and discourages car use	98
Other safety issues associated with cycleway/people cycling	95
Unhappy with AT and/or with WAVE project	89
Need more parking and/or reinstate parking	87
General and safety concerns with taxi/delivery driver behaviour	67
Other concerns with cycleway/cycle improvements	66

4.2.2. AT Customer Relationship Management feedback

145 Customer Relationship Management (CRM) cases were logged during the trial period, with most contact (128 CRM cases) made by email. Cases were responded to by AT, whether to acknowledge feedback or respond to a question or request for information.

Key themes in within CRM cases were similar to those in the survey and are as following:

- Project communications and consultations.
- Expressions of general support/opposition to the trial.
- Safety for people walking or cycling.
- Congestion.

- Parking availability.
- Impact on business and residents.

4.2.3. Key meetings

Thursday 29 April 2021 – residents meeting at Sierra Café

- Attendees voiced concerns regarding the implementation of the trial, particularly the delay on Market Place.
- Attendees voiced opposition to all aspects of the trial, particularly the one-way system and removal of car parking.
- Agreement for AT to engage with a resident’s representative of the group.

Friday 14 May 2021 – meeting with Soul Bar manager

- Meeting on site with Soul Bar manager to discuss loading issues.
- Agreement to monitor and stay in touch.

Thursday 27 May 2021 – meeting with Rubbish Direct

- On-site meeting with Rubbish Direct and The Sebel manager to discuss issues with emptying rubbish bins.
- Agreement to investigate design changes to reduce conflict points.

Tuesday 8 June 2021 – drop-in session at Sierra Café

- Wide mix of attendees, with variety of views on the trial.
- Attendees encouraged to provide formal feedback through the online or paper survey.
- Discussion held with representatives from the hospitality industry regarding loading and taxi issues. Agreement to continue discussion as the project gathered more data.

Tuesday 15 June 2021 – meeting with Uber

- Discussion of issues relating to Uber pickup/drop-off within the Viaduct.
- Agreement to work together and share information/issues.

Tuesday 6 July 2021 – meeting with Nourish Group

1. Discussed loading and operational functionality issues.
2. Agreement to consider options to revise design in the next project phase, if trial otherwise successful.

4.2.4. Key findings from community feedback

Of all survey submitters, 72% were positive about the cycleway, but sentiment and support differentiated by group:

- Those **visiting** (leisure, retail, hospitality), and travelling through the Viaduct around **75% were positive** (loved it or liked it with changes).
- Those **working** in the Viaduct around **60%** were positive (loved it or liked it with changes).
- Those **living** in the Viaduct around **35%** were positive (loved it or liked it with changes).
- Those owning a property or business in the Viaduct around **20%** were positive (loved it or liked it with changes).

Themes for improvement, from the survey, CRM cases, and general feedback:

- **Safety** issue for riders – vehicles in cycleway.
- Improving **access** to and operation of loading.
- More **parking** requested.
- Better **communication** relating to changes.

- **Behaviour** of taxi and/or loading.

Overall, there is support for the cycleway, as expressed through the survey. Should the project remain, the following areas should be a focus, in response to community feedback:

- Working more with businesses and residents to address their concerns.
- Improving the infrastructure to prevent cars and delivery vehicles entering the cycleway.
- Providing more parking and/or better informing people where available parking is.

4.3. On-street monitoring

The following summarises on-street analysis undertaken, using video camera data and parking surveys.

4.3.1. Summary of camera data

Camera analysis was undertaken before and after cycleway installation. On Lower Hobson Street, parking, traffic, and pedestrian data was captured. Traffic and pedestrian data was captured on Customs Street West and Market Place, but not parking.

Cycleway

- Cyclist volumes have increased since the installation of a separated cycleway connection between the Nelson Street and Quay Street cycleways.
- Demand is highest on weekdays during the morning (6am to 9am) and evening peak (4pm to 7pm).
- Weekend volumes are lower. Demand is highest during the morning peak through to midday. Cyclist volumes drop significantly after the midday peak.
- The separated cycleway has defined the path taken by people on bikes, with most users using the cycleway as opposed to the footpaths and road. This is both safer for people riding and people walking.
- There is demand for a continuation of the cycleway along Customs Street West, between Market Place and Pakenham Street East. Options should be explored to provide more safe, attractive routes for people on bikes to connect with the waterfront.

Data from the camera survey shows most riders are using the cycleway. This is safer for riders as well as for pedestrians who have fewer cyclists to contend with on the footpath.

Lower Hobson Street

- Pre-WAVE– Cyclists are using the road and mainly using lanes closest to the existing kerb-line separating footpath to road. A significant number of cyclists are using the existing footpath.
- Post-WAVE – The new separated cycleway is mainly used and an increase in cycleway users is shown. Cyclist use of the road and footpath has significantly reduced.

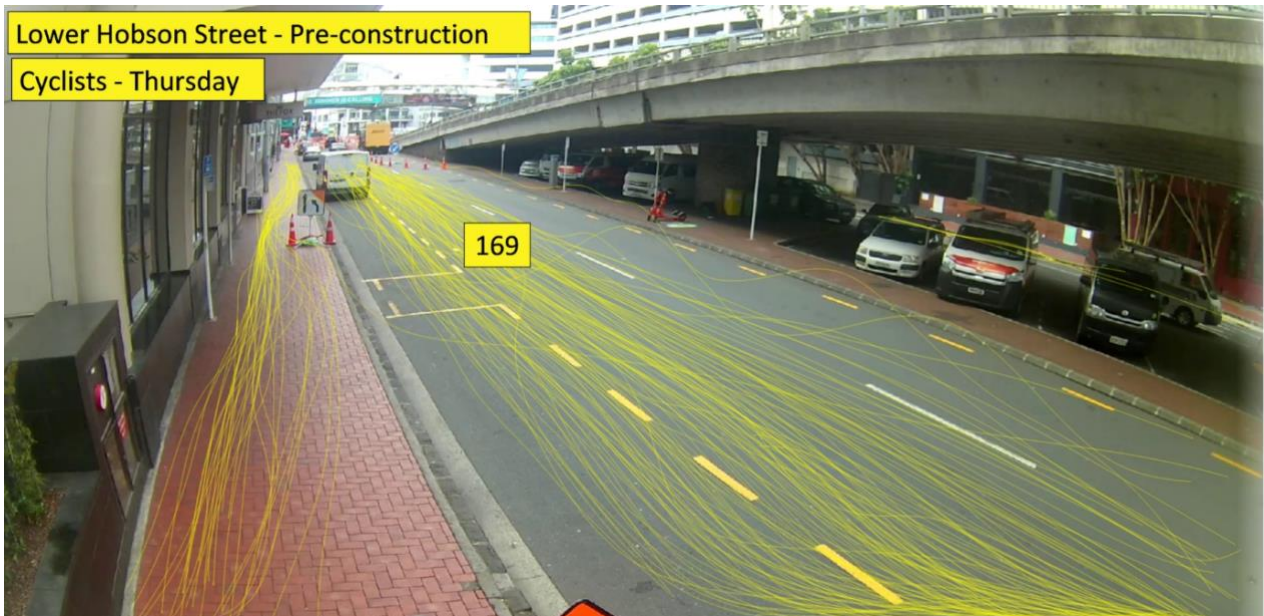


Figure 5: Lower Hobson Street - pre-construction

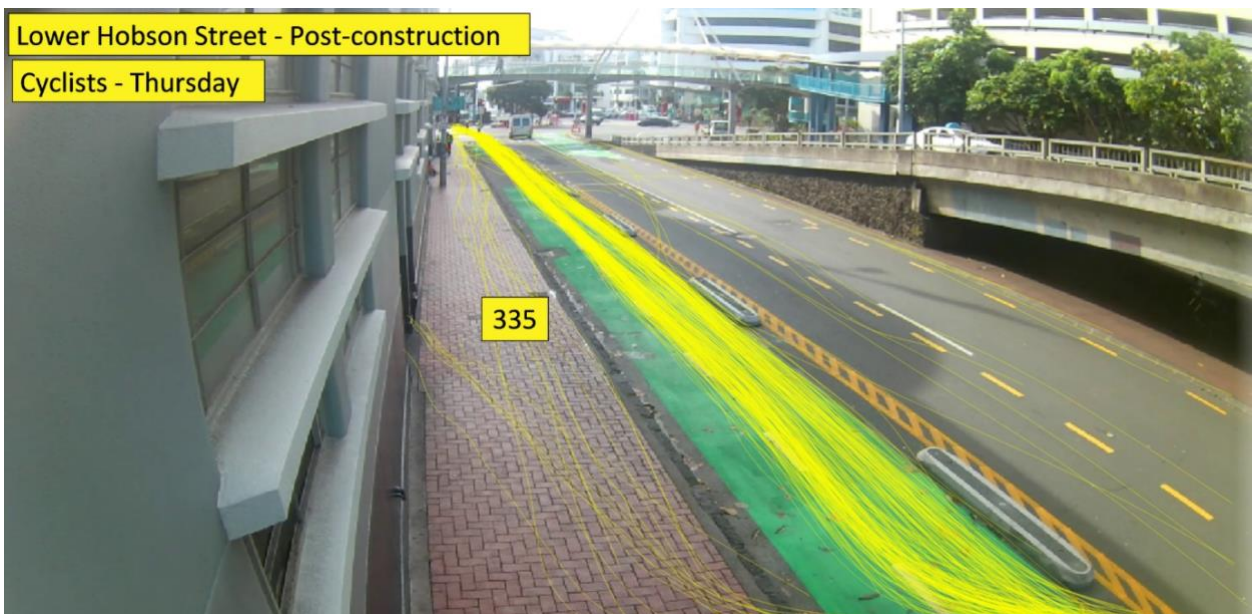


Figure 6: Lower Hobson Street - post-construction

Customs Street West

NB. The camera angle changed pre and post, so the images below are from different corners.

- Pre-WAVE– Cyclists are using the road across a much wider area with many trips heading into the Viaduct area
- Post-WAVE – The new separated cycleway attracts most users with much fewer heading into the Viaduct. Noted that there is still a significant demand for riding along Customs Street West to the west of Market Place.



Figure 7: Market Place / Customs Street West - pre-construction

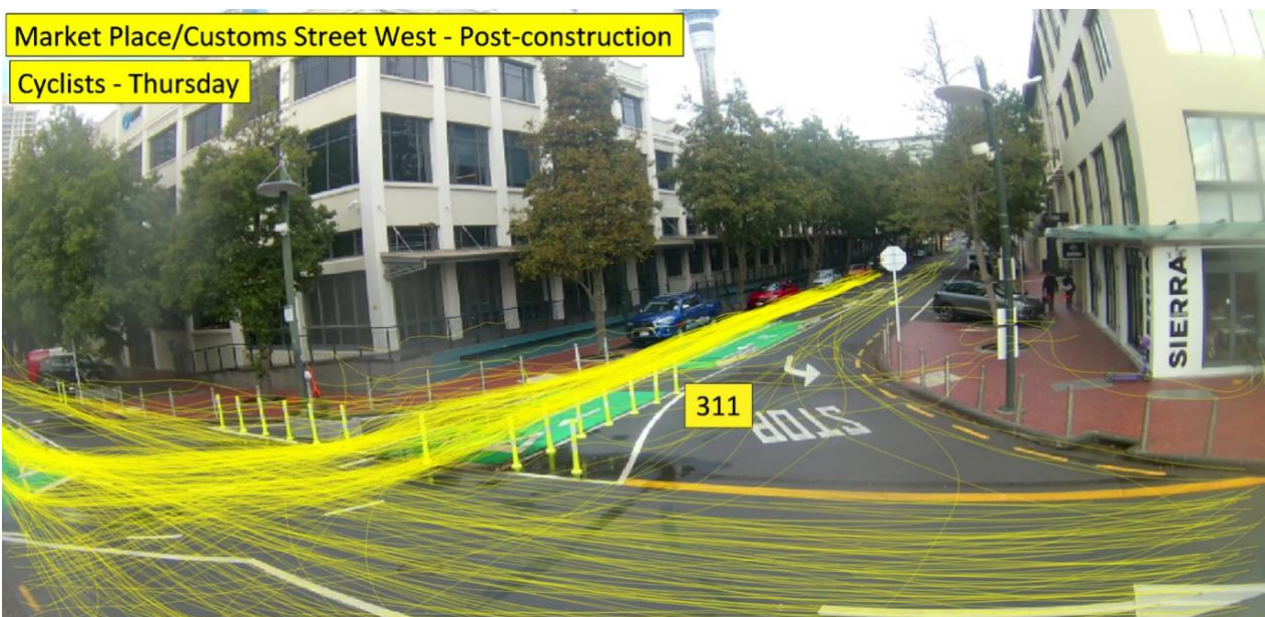


Figure 8: Market Place / Customs Street West - post-construction

Parking (Lower Hobson Street)

- Parking occupancy has reduced but is highest on weekends from the start of the evening peak (4pm), until early morning the following day.
- Parking is mainly used by a mix of ride-shares, public cars, and taxis. Delivery vehicles with hand trollies are the main users during the morning peak (6am) till noon.

Vehicles

- Vehicle volumes have increased on Lower Hobson Street, due to the new bus interchange on Lower Albert Street.
- Vehicle volumes have decreased on Market Place and Customs Street West. The one-way system combined with speed calming devices and the narrowing of the road to accommodate the separated cycleway has contributed to a calmer, consistent street environment, with increased safety for people.

Pedestrians

- Jaywalking has reduced, resulting from a calmer, consistent street environment with lower traffic volumes, and defined space for different modes. Providing more safe, accessible crossing points will reduce jaywalking further and encourage more pedestrian usage.

4.3.2. Parking use survey

During the evaluation period a number of stakeholders raised concerns about parking availability in the area. AT undertook a parking survey in June to assess the use of the existing spaces.

The following observations were made:

- Paid parking is near full capacity during lunch and evening hours. During morning, around half of paid parking spaces are available for occupancy.
- There is high demand for paid parking during lunch and evening hours. Extending the timeframe of assessment would provide more detailed analysis.
- During the lunch hour, mobility parking is at near 50% capacity, with more availability outside of this time.
- Several vehicles occupying mobility parking spaces appeared not permitted to do so. Availability of these spaces could be increased through enforcement.
- Accessibility could be enhanced through provision of ramps or other means of access from mobility car parks to the footpath.
- The shared vehicle space on Customs Street West is at full capacity. Several vehicles occupying this parking space appeared not permitted to do so.

On-street parking demand is high, but within the immediate area are three off-street car parking buildings. While this information has formed part of project communications, additional focus should be given on educating visitors to the area about their parking options on and off-street. Further surveys could also help determine whether the allocation of parking on-street is appropriate, e.g. whether there is sufficient mobility parking where it's needed.

4.4. Demonstrate connectivity between Nelson Street Cycleway and downtown Auckland

Project WAVE provides a key link within the cycle network, connecting the Nelson Street and Quay Street cycleways. For context, Nelson Street Cycleway and Quay Street Cycleway are two of Auckland's busiest cycleways, used by around 800 and 1,500 people respectively.

4.4.1. Cycle volume data

Cycle / e-scooter tube counts were taken over 13 weeks between 18 May 2021 and 12 August 2021. The cycle tube counts account for the cycleway and exclude riders on other parts of the street.

Counts were taken at two locations, one on Market Place and one on Customs Street West.

Market Place counter

- Five-day average – 328
- Seven-day average – 303

Customs Street West counter

- Five-day average – 502
- Seven-day average – 435

Highest usage is during weekdays in the morning and evening peak. Usage drops completely in late evening till early morning.

The data indicates the cycleway is providing a connection within the network and riders are choosing to use it.

4.5. Support commercial activity in the project area by enhancing access for business deliveries.

The project team has engaged with and received feedback from local businesses (via the community survey, meetings, and door-knocks) on improvements to business deliveries within the project area, primarily through an increased number of loading zones.

A summary of the key points are provided below, however it's clear from feedback that the project can improve this aspect with better and more communications as well as physical changes to the project.

- Additional loading spaces on Customs Street West are well used.
- Some issues for larger bin access at The Sebel.
- Businesses don't like reduced hours of loading on Lower Hobson Street, difficult to get AM deliveries for lunch session prep.
- Loading of heavy items (kegs) is difficult across the cycleway due to level change and nowhere to leave goods (e.g. Get items out of truck first, then shift from pile to customer).

4.6. Support the Viaduct's night-time economy by enhancing access for taxi and rideshare

The project team engaged with and received feedback from local bars and restaurants (via the community survey, meetings, and door-knocks) as well as rideshare providers on improvements to taxi and rideshare within the project area (primarily through an increased number of taxi/rideshare stands).

A summary of feedback from bars and restaurants is provided below. Additional work is required going forward on clarifying the use of spaces allocated to taxi and rideshare.

- Initial confusion with the change from two-way to one-way operation. This was not resolved as quickly as wanted.
- Meeting held with Uber to discuss options to inform drivers.
- After time the issue of taxis using the one-way system the wrong way was resolved.
- The combination of these changes and those on Quay Street has created issues for taxi pick-up and drop-off within the viaduct.
- Confusion around whether or not taxis can use the space on Lower Hobson Street.

4.7. Mana whenua feedback

As part of the retention decision-making process and Mana Whenua engagement:

- At a hui on 8 September 2021, Project WAVE presented project outcomes against objectives, the trial, monitoring results and evaluation and next steps to Mana Whenua.
- Mana whenua feedback was captured and will be incorporated into phase two of the project, the feedback is as follows:
 - 1) The area is growing. Was a percentage of users who are residents and expected growth factored? Was it tracked and what measure of attraction including further supporting change behaviours or measures have been identified?
Action: Subject to funding look into uptake form residents and determine whether further education/behaviour change activities required.
 - 2) Safety data for those cyclists / e-scooters?
Action: Safety concerns have been highlighted based on monitoring / evaluation. These will be investigated in phase two.
 - 3) Signage is insufficient and unclear.
Action: Safety concerns have been highlighted based on monitoring / evaluation. These will be investigated in phase two.

4.8. Other feedback, analysis, and evaluation

Feedback, analysis, and evaluation has come from a wide range of sources. The below captures items and areas that will need consideration by the project.

General

- Fluorescent yellow safe hit posts are unattractive and can become dislodged or removed from their mounting.
- Planter boxes:
 - Low visibility due to low profile and located in blind spot in larger vehicles.
 - Low visibility outside daylight hours and colour scheme reduces visibility in comparison to surrounding environment.
 - Not secured to ground.
 - Break on vehicle impact.
- Existing utility service cover lids are slippery for cyclists when wet.
- On Market Place and Customs Street West, motorists cross the cycleway through concrete separators to access redundant parking. Concern around signage, traffic control and enforcement.

Pakenham Street East

- Traffic queue on Pakenham Street East making it difficult for people on bikes to get from Viaduct Harbour Ave to Market Place cycleway, or onto Nelson Street cycleway.

Pakenham Street East and Market Place intersection

- Northbound cyclists take the path of least resistance by diagonally traversing from the western side to the eastern side of the cycleway at the entry to Market Place. Cyclists find the give-way awkward and note some near misses with vehicles.
- Southbound cyclists note some near misses with vehicles, including buses turning right into Pakenham Street East.

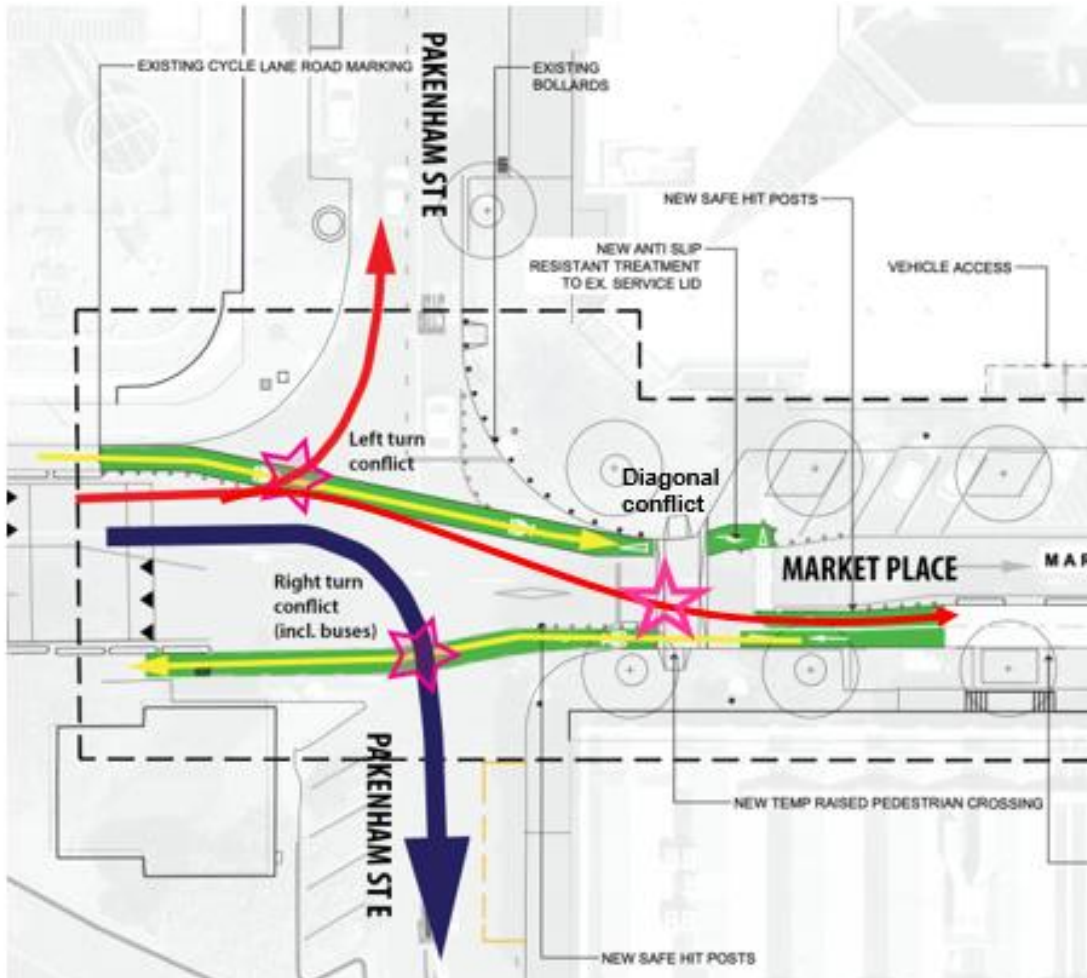


Figure 9: Pakenham Street East and Market Place intersection

Market Place

- No loading zone and/or taxi stand available on Market Place. AT has identified an opportunity to add a new loading zone and/or taxi stand on Market Place near the intersection with Pakenham Street East.
- The asphalt speed hump at Market Place entry is ineffective at slowing larger 4x4 off road cars or those with enhanced suspension systems.
- The road surface asphalt on Market Place is showing signs of deterioration. AT has Market Place on a forward work programme for renewal. Renewal work is intended to tie in with implementation of a permanent design, should that proceed.
- Lack of public rubbish bins on Market Place. AT has referred this to Auckland Council.

Market Place and Customs Street West intersection

- Cyclists not giving way to motorists and motorists not aware of the cycle lane crossover.
- Motorists not aware of the no right turn from Market Place into Customs Street West.

Customs Street West

- Reverse in parking signage small – too high and not visible.
- Concern around existing mobility parking and accessibility to the footpath.
- Concern around the speed hump across The Sebel loading bay and its compatibility with loading.
- Requests for a cycleway extension along Customs Street West to Pakenham Street East for people cycling around the viaduct basin.
- Some user confusion regarding the loading zones on Customs Street West, nearest Lower Hobson Street.

Market Lane

- Concerns around stop limit line and left-turn-only tracking clash with concrete separators.

Lower Hobson Street

- Some confusion regarding vehicle lane use.
- Taxi/rideshare drivers unaware or choosing not to use the taxi stand area.
- Taxis/rideshare queuing to procure fares on no stopping at all time lined areas and in the live traffic lane.
- Confusion regarding signage.
- People making deliveries having difficulty navigating the cycleway and accessing the footpath without a ramp.
- Cycleway users find the ramp at the end of Lower Hobson Street steep.
- Lack of concrete separator between the road and the cycleway around the intersection with Sturdee Street and Customs Street West.

5. Project adaptations

A key principle of Innovating Streets projects is the ability to respond quickly to things that aren't working with the trial. There were some successes with this – particularly early issues related to safety, but overall AT, through the project team, failed in responding quickly to make changes based on feedback. While internal AT processes have been streamlined to facilitate adaptation on Innovating Streets projects, consideration should be given to how these processes can be further enhanced to match the tactical and agile response that Innovating Streets projects require.

5.1. Completed adaptations

The following are a list of the adaptations completed shortly after construction was completed.

Table 3: Completed adaptations

ID	Issue Description	Type	Location	Action taken	Notes
A1	Cars driving the wrong way on Customs Street West, west of Market Place	Safety	Customs Street West (west of Market Place)	Reduce the “driveable” lane and increase visibility of planter boxes by installing yellow flexible bollards between the edge line and planter	Issue resolved
A2	Hazards in traffic lane	Safety	Customs Street West	Damaged planter boxes and flexible bollards were removed. Where they were vital to show street layout, flexible bollards were replaced and secured with bolts	Replacement planter boxes the same as installed unavailable. Available options (bright plastic or wooden options) not supported by working group.

A3	Cars driving along cycleway	Safety	Market Place Customs Street West	Single yellow flexible bollard added at start and end of cycleway at each intersection	Did not address issue. Bollards hit or removed.
A4	Cars driving across cycleway	Safety	Market Place Customs Street West	Cones and cycle parking used to block parking spaces	Did not address issue. Cones and bike racks moved each day by drivers
A5	Rideshare / taxi behaviour at night	Safety	Customs Street West (west of Market Place)	Discussion with ride share operators and increased enforcement	Issue resolved
A6	Reversing in and vehicle tracking clash with planter boxes	Useability	Customs Street West (west of Market Place)	Realigned planter boxes and added yellow flexible bollards to increase visibility	Issue resolved
A7	Reverse in signs not very visible, small	Useability	Customs Street West (west of Market Place)	Added additional informational signage	Issue resolved
A8	Too many flexible bollards that were bright and ugly	Aesthetic	Project area	Some yellow flexible bollards removed (or not replaced when damaged)	Did not address issue. To be addressed in phase two

5.2. Adaptations – implementation as soon as practicable

The following issues have recommended adaptations. These will be shared with the working group for feedback and recommended for implementation as soon as possible.

In particular, we will look to address the usage of redundant car parking. Driving along a cycleway is illegal and creates potential conflict between cars and people on bikes, reducing the safety and effectiveness of the facility.

At the start of the trial it was believed that concrete barriers and clear cycleway markings would stop drivers from accessing redundant parking spaces, but in practice cars were able to straddle the separators and cross the cycleway to access parking.

As an initial response, AT used cones and two available cycle parking racks to try and remove the impression that the parking was legal and available. The cones and racks were continually moved, and it was impractical to replace them multiple times a day.

Cars accessing parking across the cycleway was never intended as part of the design. As the current layout has been in use for a number of months, communication is needed to inform residents, businesses and people parking there currently, of the changes and where they can park legally.

The adaptations proposed will physically block cars from entering the cycleway and add additional 'No Parking' signage. AT will also seek an amendment to the traffic resolution to allow cars parked in redundant car parks to be ticketed and removed.

Table 4: Immediate adaptations

ID	Issue Description	Type	Location	Recommended Action	Notes
B3	Additional loading spaces	Safety	Market Place	Space identified during trial and supported by courier company and NIWA who raised the issue. Use redundant space, west side of Market Place, just north of Pakenham Street East	
B4	Speed cushion and separator blocking drop kerb crossing	Useability	Customs Street West, east of Market Place	Remove separator and mark speed cushion. Include in investigation of improved pedestrian priority (i.e. could be part of a full raised table here).	Immediate action required. Permanent fix to be investigated.
B5	Change yellow bollards	aesthetic	Various	Swap yellow flexible bollards for black city-flex product and reduce numbers where possible	
B6	Additional secure bike racks	Useability	Customs Street West	Fix the multi-bike parking racks to the ground in one of the car park spaces near businesses on Customs Street West	Noted that one of the bike racks was shifted to the Tepid baths as there was a lack of bike parking.
B7	Improve planter visibility at night	Useability	Various	Add reflectors to planter boxes	
B8	Repair cycleway surface	Useability	Market Place	AC patch surface of cycleway Market Place near NIWA	

5.3. Adaptations – investigation within the next project phase

Many of the issues identified have linked (e.g. fixing one thing affects another) effects, are complex (e.g. involve larger design changes that require specialist input), or have solution that may involve adaptation or complete change. Addressing these issues needs to be undertaken with stakeholders and the AT SMEs.

All adaptations need to be considered in the context of the longer, semi-permanent, expected lifespan of the infrastructure. It is expected that following adaptations the project will be in place for up to 10 years, or until budget is available to make full streetscape enhancement changes to Viaduct.

Investigation, including scoping, programme and costing of the following areas for change should be a priority for the next phase of the project. The issues that will need further investigation before a recommendation are listed in Table 5 below.

Table 5: Adaptations requiring investigation

ID	Issue Description	Type	Location	Area for investigation	Notes
B1	Cars driving along cycleway	Safety	Market Place Customs Street West	Consider addition of x2 black 'city-flex' bollards at each end of the cycleway at each intersection.	Moved from immediate adaptations table following working group feedback.

					Further consultation with the working group required before action.
B2	Cars driving across cycleway	Safety	Market Place Customs Street West	Consider: 1) Add black 'city-flex' bollards between each of the concrete separators 2) Add no parking signage to spaces 3) Resolve as no parking to allow enforcement 4) Comms strategy for communicating change	Moved from immediate adaptations table following working group feedback. Further consultation with the working group required before action.
C1	Loading difficult across cycleway on Lower Hobson. Separators, cycle traffic, and kerb make larger loads slow to process	Useability	Lower Hobson	Investigate creating more space for set down of goods and at the same level as footpath for easier carrying.	Issue identified through restaurant. Direct information from delivery companies could be gathered to inform investigation Number of linked issues on Lower Hobson St require a full design exercise
C2	The multi-use (traffic, loading, taxi) time-separated space next to the cycleway on Lower Hobson is not being used by taxi drivers to pick up or drop off passengers.	Useability	Lower Hobson	Investigate change of space or improved signage.	

C3	Length of time available for loading on Lower Hobson is constraining restaurant operation.	Useability	Lower Hobson	Discuss potential to extend time of loading subject to retaining reliability of bus movements allowing an extension of loading times.	
C4	For bike trips west to east from Viaduct Harbour Ave, straight through on Customs Street West is a more logical route to take than Pakenham -> Market -> Customs Street West.	Useability	Customs Street West	Contraflow cycleway Customs Street West between Pakenham Street East and Market Place. Space is likely available to create a contraflow cycleway on Customs Street West between Pakenham Street East and Market Place. Investigation needed to ensure this can be safely formalised.	Many cyclists using this link already. Space available. Reverse in parking reduces chance of conflict. Addresses issue with cyclists unable to get through congestion at times on Pakenham St East
C5	Improve wayfinding for people on bikes through area	Useability	Various	Investigate clearer direction to people on bikes about the cycleway route.	Engage AT Wayfinding Team.
C6	Congestion blocking westbound cycle access between Viaduct Harbour Ave and Market Place	Useability	Pakenham Street East	Contraflow cycleway on Customs Street West between Pakenham Street East and Market Place would help to address this for trips towards Quay, but not for trips to Nelson Street	
C7	Bike vs. vehicle conflict at the intersection of Pakenham and Market	Safety		Investigate options to reduce chance of conflict between modes	Range of options from low cost and quick (e.g. road marking, signage) to more major and costly (re-design of the intersection).

C8	Better use of former car parking spaces	Useability	Market Place, Customs Street West	Once parking is effectively blocked off there is an opportunity to use the space for a range of activities to enhance the public space, e.g. use by adjacent businesses, cycle racks, planting.	Drivers have continued to use car parking spaces by driving through the cycleway. Discontinuing this use will be undertaken with care and clear communication.
C9	Formalise motorbike parking in redundant spaces (linked to C8)	Useability	Various		
C10	Additional priority for pedestrians	Useability	Various	Investigate priority crossings for pedestrians, including across Market Place near Pakenham Street East, and Customs Street West near Market Place	Project originally had zebra crossing for pedestrian priority across Market Place (north of Pakenham) and Customs Street West (west of Market). It was not possible to deliver in the time frame to AT's safety satisfaction.

5.4. Recommended adaptations and areas for investigation

Map labels correspond to the adaptations listed within the tables above.



Figure 10: Recommended adaptations and areas for investigation

6. Summary

The monitoring and evaluation summarised in this report reflect the key transport components tested through this project, being:

- A bi-directional cycleway connecting Nelson Street and Quay Street.
- Additional loading spaces that switch to taxi space at night.
- One-way traffic operation on Market Place and Customs Street West.

Subject to safety, useability, and aesthetic adaptations, these components should be retained.

All adaptations need to be considered in the context of the longer, semi-permanent life-span of the infrastructure. It is expected that following adaptations, the project will be in place for up to 10 years, or until budget is available to undertake a full streetscape enhancement within the Viaduct.

The adaptations identified through evaluation of the project are outlined above in Table 4 and Table 5 and shown in Figure 10. These adaptations are split into two groups:

- **Immediate adaptations:** simple changes identified through the trial to address specific issues. *It is noted that the short-term solution to addressing the issue of cars crossing the cycleway to access the previously legal car parking spaces is relatively simple. However, specific and targeted communications will be required to engage stakeholders and users.*
- **Adaptations that require investigation:** More complex changes that have interdependencies or may result in more significant changes in the street. To help with decision-making these changes may require additional targeted data collection

The working group was established as a key stakeholder group to keep informed and seek feedback on changes in the Viaduct area. Retaining this group is important to the progression of the project, as the group collectively has knowledge of the process and history, as well as relationships with the Viaduct community. This will be invaluable in moving into a semi-permanent 5+ year scheme.

It is anticipated that the working group will be retained with the current terms of reference. They will play a key role in ensuring future adaptations meet the needs of all users and collectively have networks back to key parts of the community that help with communicating change.

6.1. Indicative Budget

AT has committed an indicative budget of \$1m over this financial year for investigation and delivery of changes to project WAVE.

Many of the longer-term adaptations have a range of potential solutions that will vary in scope and cost. These need to be investigated by AT and discussed with the working group. Any budget identified at this point is considered indicative and will need to be revisited once initial investigations are complete and preferred options for adaptations are identified. If the combined preferred solutions cost greater than the indicative budget, the options are to seek additional funding or to maintain the budget and prioritise adaptations for delivery.

6.2. Next steps

This report will be presented to the PCG, and the project team will seek endorsement to proceed with phase two of the project. Phase two of the work involves undertaking the adaptations identified in in Table 4 and Table 5, and shown in Figure 10.

Any scope of works, including programme and budget, needs to be developed with the working group and approved by AT, however an indicative high-level programme is shown below to illustrate what phase two might look like.

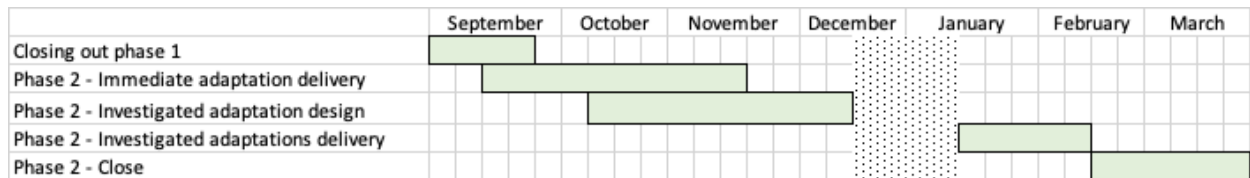


Figure 11: indicative programme

7. Recommendation to the PCG

That the PCG accept this report and endorse the following recommendations:

1. That, subject to adaptations, the key transport components tested through this project are retained:
 - a. A bi-directional cycleway connecting Nelson Street and Quay Street.
 - b. Additional loading spaces that switch to taxi space at night.
 - c. One-way traffic operation on Market Place and Customs Street West.
2. That the working group is retained as a key consultative body to the project.
3. That the project team proceed with delivering the immediate adaptations identified in Table 4.
4. That the project team, in consultation with the working group, proceed to investigate solutions to the longer-term adaptations identified in Table 5.
5. That a \$1m indicative budget is confirmed for investigation and delivery of adaptations, with a final budget confirmed following identification of preferred adaptations.