

ORDINARY MEETING

OF

STRATEGY AND POLICY COMMITTEE

AGENDA

Time: 9:30am
Date: Thursday, 21 May 2020
Venue: Virtual meeting

MEMBERSHIP

Mayor Foster
Councillor Calvert (Deputy Chair)
Councillor Condie
Councillor Day (Chair)
Councillor Fitzsimons
Councillor Foon
Councillor Free
Councillor Matthews
Councillor O'Neill
Councillor Pannett
Councillor Paul
Councillor Rush
Councillor Sparrow
Councillor Woolf
Councillor Young

NON-VOTING MEMBERS

Te Rūnanga o Toa Rangatira Incorporated
Port Nicholson Block Settlement Trust

Have your say!

You can make a short presentation to the Councillors at this meeting. Please let us know by noon the working day before the meeting. You can do this either by phoning 04-803-8334, emailing public.participation@wcc.govt.nz or writing to Democracy Services, Wellington City Council, PO Box 2199, Wellington, giving your name, phone number, and the issue you would like to talk about. All Council and committee meetings are livestreamed on our YouTube page. This includes any public participation at the meeting.

AREA OF FOCUS

The role of the Strategy and Policy Committee is to set the broad vision and direction of the city, determine specific outcomes that need to be met to deliver on that vision, and set in place the strategies and policies, bylaws and regulations, and work programmes to achieve those goals.

In determining and shaping the strategies, policies, regulations, and work programme of the Council, the Committee takes a holistic approach to ensure there is strong alignment between the objectives and work programmes of the seven strategic areas covered in the Long-Term Plan (Governance, Environment, Economic Development, Cultural Wellbeing, Social and Recreation, Urban Development and Transport) with particular focus on the priority areas of Council.

The Strategy and Policy Committee works closely with the Annual Plan/Long-Term Plan Committee to achieve its objective.

To read the full delegations of this Committee, please visit wellington.govt.nz/meetings.

Quorum: 8 members

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1. Meeting Conduct

1.1 Karakia

The Chairperson will open the meeting with a karakia.

Whakataka te hau ki te uru,	Cease oh winds of the west
Whakataka te hau ki te tonga.	and of the south
Kia mākinakina ki uta,	Let the bracing breezes flow,
Kia mātaratara ki tai.	over the land and the sea.
E hī ake ana te atākura.	Let the red-tipped dawn come
He tio, he huka, he hauhū.	with a sharpened edge, a touch of frost,
Tihei Mauri Ora!	a promise of a glorious day

At the appropriate time, the following karakia will be read to close the meeting.

Unuhia, unuhia, unuhia ki te uru tapu nui	Draw on, draw on
Kia wātea, kia māmā, te ngākau, te tinana,	Draw on the supreme sacredness
te wairua	To clear, to free the heart, the body
I te ara takatū	and the spirit of mankind
Koia rā e Rongo, whakairia ake ki runga	Oh Rongo, above (symbol of peace)
Kia wātea, kia wātea	Let this all be done in unity
Āe rā, kua wātea!	

1.2 Apologies

The Chairperson invites notice from members of apologies, including apologies for lateness and early departure from the meeting, where leave of absence has not previously been granted.

1.3 Conflict of Interest Declarations

Members are reminded of the need to be vigilant to stand aside from decision making when a conflict arises between their role as a member and any private or other external interest they might have.

1.4 Confirmation of Minutes

The minutes of the meeting held on 12 March 2020 will be put to the Strategy and Policy Committee for confirmation.

1.5 Items not on the Agenda

The Chairperson will give notice of items not on the agenda as follows.

Matters Requiring Urgent Attention as Determined by Resolution of the Strategy and Policy Committee.

The Chairperson shall state to the meeting:

1. The reason why the item is not on the agenda; and
2. The reason why discussion of the item cannot be delayed until a subsequent meeting.

The item may be allowed onto the agenda by resolution of the Strategy and Policy Committee.

Minor Matters relating to the General Business of the Strategy and Policy Committee.

The Chairperson shall state to the meeting that the item will be discussed, but no resolution, decision, or recommendation may be made in respect of the item except to refer it to a subsequent meeting of the Strategy and Policy Committee for further discussion.

1.6 Public Participation

A maximum of 60 minutes is set aside for public participation at the commencement of any meeting of the Council or committee that is open to the public. Under Standing Order 3.23.3 a written, oral or electronic application to address the meeting setting forth the subject, is required to be lodged with the Chief Executive by 12.00 noon of the working day prior to the meeting concerned, and subsequently approved by the Chairperson.

Requests for public participation can be sent by email to public.participation@wcc.govt.nz, by post to Democracy Services, Wellington City Council, PO Box 2199, Wellington, or by phone at 04 803 8334, giving the requester's name, phone number and the issue to be raised.

2. General Business

PUBLIC HIRE ELECTRIC SCOOTER EVALUATION

Purpose

1. This report seeks the Strategy and Policy Committee's approval in principle for the continuation of public share electric scooter operations in Wellington and approval to allow the existing public share electric scooter schemes to continue to operate, subject to minor amendments to the code of practice, while officers progress the required work to enable this to happen.

Summary

2. In June 2018 following approval by the City Strategy Committee two licences were issued, to Flamingo and JUMP, to operate public hire electric scooter schemes in Wellington.
3. The evaluation period for the purpose of this report was 18 June 2019 to 18 December 2019.
4. The current licences to operate expire on 31 December 2020.
5. There were two rounds of engagement held with a total of 7,410 people giving us their thoughts.
6. Along with the public surveys officers have analysed contact centre queries, ACC data, ridership data and independent onsite observational reports to reach the recommendations below.
7. The safety of all users of the transport network remains the priority when developing the recommendations below – while recognising that pedestrians remain at the top of our transport hierarchy.
8. If officer recommendations are accepted an update of the Councils Trading in Public Places Policy and an update to the code of practice for public e-scooter share will be undertaken to enable public share micro mobility to continue to play a role in Wellingtons transport offerings.

Recommendation/s

That the Strategy and Policy Committee:

1. Receive the information.
2. Agree in principle to the continuation of public share electric scooter operations in Wellington and requests officers to progress work to implement this.
3. Agree to allow the existing public share electric scooters to continue operations in

Wellington until the end of the current licence period (31 December 2020) unless the Council is ready to call for expressions of interest to operate a longer term scheme sooner, with the following minor amendments to the code of practice:

- Working with operators to implement low-cost parking solutions until more permanent parking options become available through Innovating Streets or Trading in Public Places Policy work;
 - Improving customer focus when listing contact details as outlined below; and
 - Developing equipment and operations that meets the 24-month life cycle criteria outlined in the body of the report. A full schedule will be developed as part of the next tender round.
4. Agree that officers will undertake a review of the Trading in Public Places Policy, including updating provisions to include public share micro mobility, and that they will undertake the necessary consultation before seeking approval to adopt recommended changes.
 5. Agree that officers will update the code of practice for public share micro mobility which would be used as the basis for selecting and monitoring operators beyond the current licence period.
 6. Agree that subject to adoption of the amended Trading in Public Places Policy the Council will call for expressions of interest to operate public share e-scooter schemes from 2021 and beyond.
 7. Agree that officers will develop a micro mobility parking plan to be managed through the Innovating Streets and traffic resolution process before November 2020 and will immediately work with operators in the meantime to investigate low-cost parking solutions.
 8. Note that the Trading in Public Places Policy only governs how public share schemes are operated and that the use of micro mobility in the public realm is governed centrally and is subject to the Government's proposed Accessible Streets Regulatory Package and any rule changes that may come from that.

Background

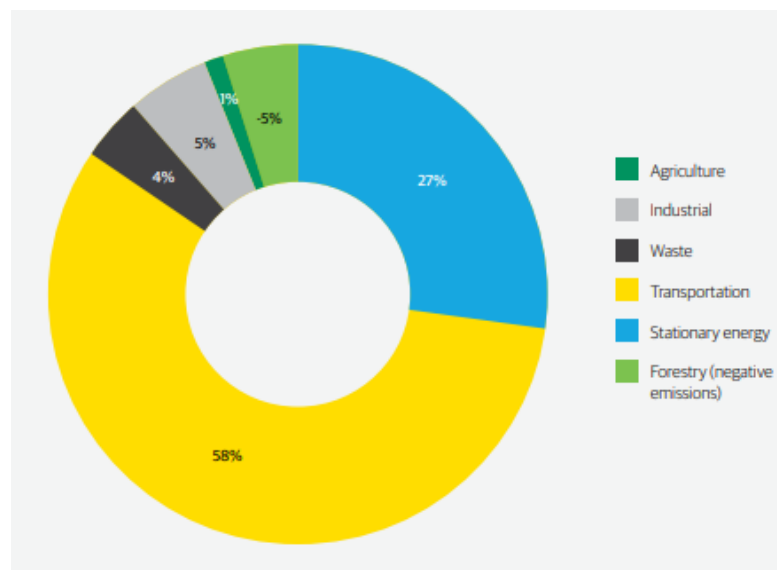
9. Recently technology has been transforming how people travel. The two biggest ways technology has impacted transport are:
 - increase in shared services
 - increase in the popularity of micro mobility
10. The term "micro mobility" refers to a range of small, lightweight devices operating at speeds typically below 25 km/h and is ideal for trips up to 10km. Micromobility devices include bicycles, Ebikes, electric scooters, electric skateboards etc.
11. The Council was approached in late 2018 by multiple companies seeking permission to launch a public electric scooter share scheme.

12. Given the lack of evidence relating to a public scheme in Wellington officers recommended that the Council undertake a trial and in February 2019 the City Strategy Committee approved the trial of publically available electric scooter hire.
13. Permission to operate is required from the Council under the Council's Trading in Public Places Policy, which governs the use of public spaces for commercial activities.
14. The trial of two operators, Flamingo and JUMP, began on the 18th June 2019 and finished on 18 December 2019. Under current agreements companies are allowed to continue operations while the Council evaluates the trial and determines next steps.
15. Officers developed a code of practice as the standard the companies need to meet in order to operate in Wellington. The code of practice is available in **Attachment 1**.

Discussion

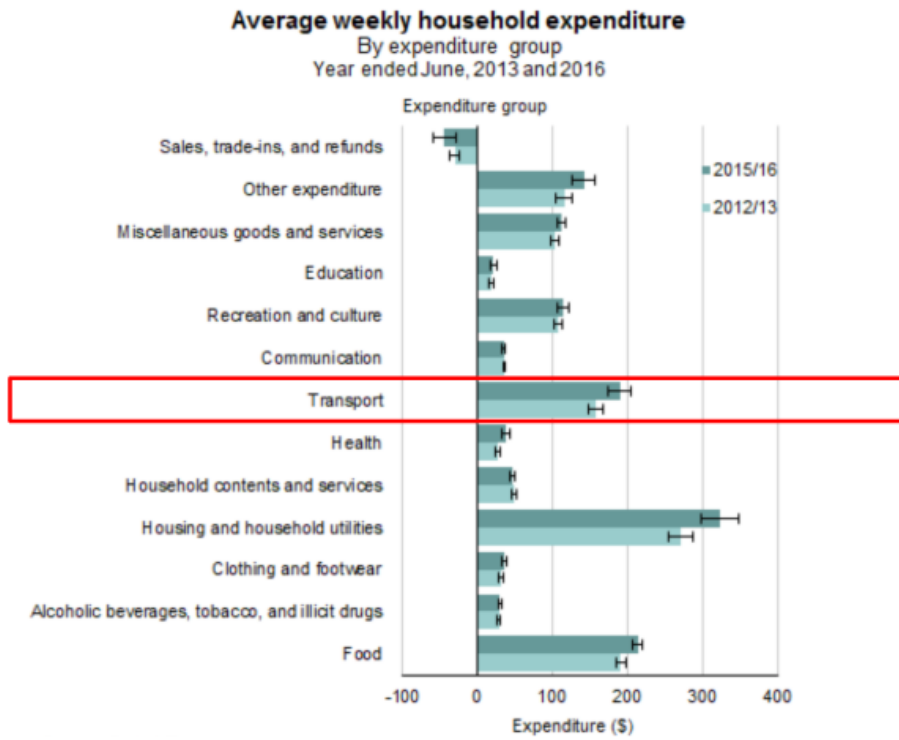
Why micro mobility matters

16. The addition of micro mobility to the transport system has the potential to have a positive effect on various aspects of Wellington.
17. Currently transport makes up 58% of Wellington's greenhouse gas emissions.



Source: Zero Carbon Plan

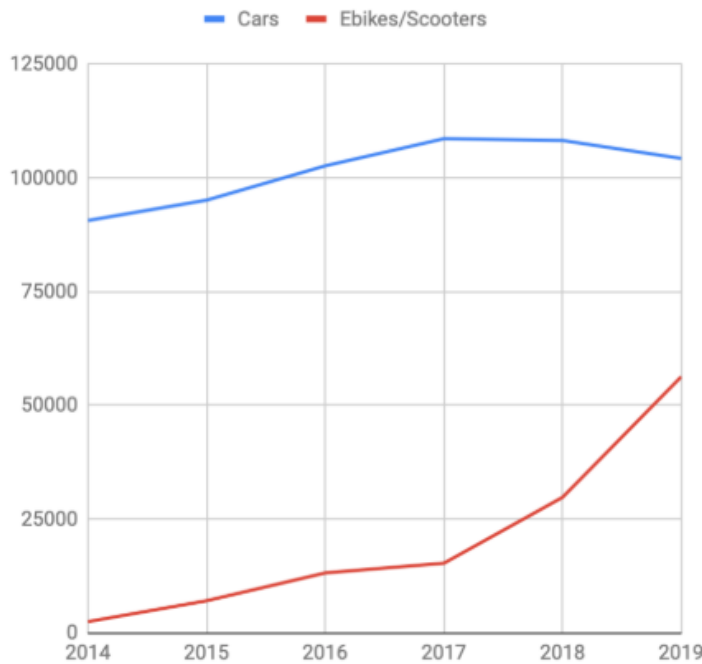
18. During peak times Wellingtonians spend, on average, an extra 18.5 minutes in their cars per 30-minute trip.
19. Transport is also currently the third highest weekly expense for households.



Source: NZ Stats

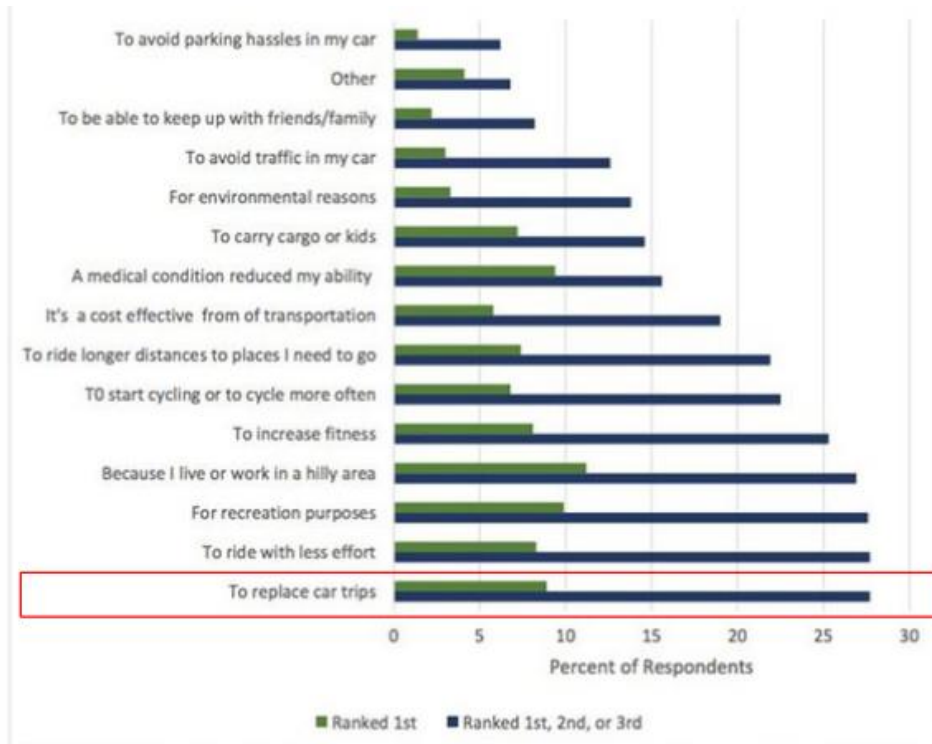
- 20. According to the National Household Survey 56% of Wellington commutes are less than 5km.
- 21. At the current rate of sales growth e-bike/e-scooter sales will overtake new car sales nationally in 2020.

Car Vs. Ebike/Scooter Imports for New Zealand



Source: Oliver Bruce

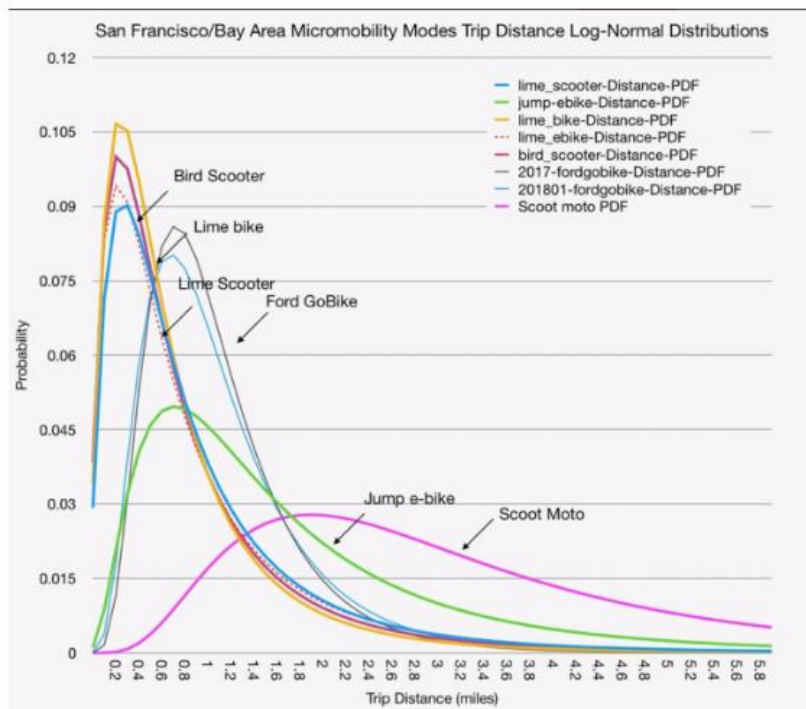
22. People are buying micro mobility to replace their private car trips. The graph below shows what people ranked as important reasons for converting to an e-bike.



Source: Oliver Bruce

Where micro mobility fits in Wellington

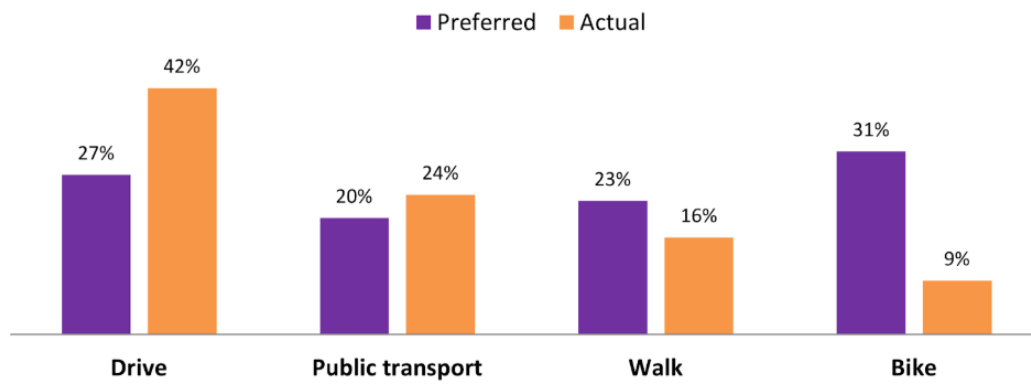
23. San Francisco is a good example of how micro mobility fits in a city's transport system.



Source: Oliver Bruce

24. Shorter trips are much more likely to be taken by electric scooter (Bird Scooter, Lime Scooter), followed by non e-bike trips (Lime Bike, Ford GoBike) then e-bike trips (Jump e-bike).
25. In Wellington there is also a significant difference between preferred travel mode and actual travel mode – for a variety of reasons. The accessibility and choice offered by micro mobility and shared micro mobility has the potential to address some of these concerns.

Preferred and actual travel mode



Licencing fees and conditions

26. The licence to operate for the trial period included a \$12.50 fee per licenced electric scooter (\$10,000 total) that was to pay for a public education campaign administered by the Council.
27. The results of the advertising campaigns can be found in **Attachments 2 and 3**.
28. The licence to operate for the trial period also included a \$45 fee per licenced electric scooter (\$36,000 total) that was to pay for a programme of monitoring of the trial at street level.
29. The results of the monitoring report can be found in **Attachment 4**.
30. Through the code of practice operators were required to display a unique number on every scooter to assist in identifying riders. The Council hasn't received any complaints where the unique number was stated. There were two occasions where the Council needed to retroactively trace a rider and we were able to do this in conjunction with the operators.

Public survey – officer analysis

31. The survey field work was broken into two parts; the first wave of research was undertaken a month after the scheme launched to understand initial perceptions, and the second wave was launched following six months of the trail. In total we heard from 7,410 people.

	Sample size (n=)	Used an e-scooter	Not used an e-scooter
Wave one: WCC research panel	647	17% n=97	83% n=550
Wave two: WCC research panel	713	21% N=138	79% N=575
Wave two: general public	6,050	63% N=3,592	37% N=2,458

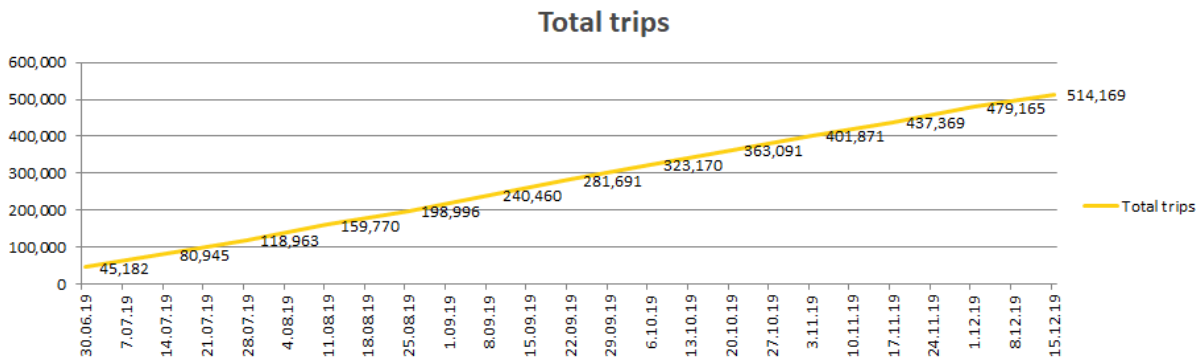
32. Support for the e-scooter share scheme was relatively high. For the wave one panel 60 percent of respondents thought the scheme should 'maybe' or 'definitely' continue. This remained relatively steady in wave two with 58 percent of respondents saying the scheme should 'maybe' or 'definitely' continue.
33. Of the self-selected respondents 72 percent thought the scheme should 'maybe' or 'definitely' continue. There were a higher number of people that had used an e-scooter in the self-selected respondents.
34. Wellington's level of support is on-par with Christchurch (60%) and above Auckland (49%).
35. The general opinion was the scheme had a positive effect on Wellington. Of the wave one panel respondents 43 percent thought the scheme had a 'positive' or 'very positive' effect on Wellington. This remained steady in wave two with 42 percent of respondents saying the scheme had a 'positive' or 'very positive' effect on Wellington.
36. The self-selected respondents were more positive about the impact of the e-scooter share scheme with 64 percent reporting it had a 'positive' or 'very positive' effect on Wellington.
37. There were concerns around perceived safety and the use of e-scooters, particularly for people walking. Of the wave one panel 47 percent reported they felt 'unsafe' or 'very unsafe' sharing footpaths and other pedestrian areas with e-scooters. This increased slightly in wave two with 54 percent of respondents saying they felt 'unsafe' or 'very unsafe'.
38. The self-selected respondents felt safer with 38 percent reporting they felt 'unsafe' or 'very unsafe' sharing footpaths and other pedestrian areas with e-scooters.
39. However, across all three sample groups the majority believed that most people are riding e-scooters safely and responsibly with 60 percent of wave one and 56 percent of wave two respondents believing that 'all' or 'most' are riding e-scooters safely and responsibly.
40. Of the self-selected respondents 65 percent believed that 'all' or 'most' are riding e-scooters safely and responsibly.
41. Walking was the most affected transport mode when it comes to issues experienced and increased difficulty. Over half of wave one (56 percent) and wave two (62 percent)

- panel respondents found it 'more difficult' or somewhat 'more difficult' when travelling by foot.
42. Just under half (45 percent) of self-selected respondents found it 'more difficult' or somewhat 'more difficult' when walking.
 43. As a pedestrian, just under half (45 percent) of respondents in wave one of the panel sample reported they had experienced no safety related issues with people using e-scooters. This dropped to around a third (34 percent) in wave two. In wave two, the panel sample were more likely to report they had experienced safety issues as a pedestrian with 51 percent reporting they had been startled or frightened and 31 percent saying they had experienced a near miss. The most commonly reported safety related issue was being startled or frightened.
 44. Of the panel sample 4 percent (28 people) and 9 percent (542 people) of the self-selected respondents avoided making a trip they would normally take due to the presence of electric scooters.
 45. The main themes for avoiding a trip were reckless/inconsiderate riding, negative impacts on vulnerable groups and scooters being dangerous to pedestrians or users.
 46. Of the people that have avoided taking a trip 72 percent believe that the scheme definitely or maybe shouldn't continue and 73 percent think that the scheme has had a negative effect on Wellington.
 47. Of respondents that had used an e-scooter about 9 percent (282 people) have self-identified as living with a disability, having trouble getting around or regularly caring for a person with mobility issues.
 48. Of the users who self-identified as living with a disability 91 percent believe that the scheme should definitely or maybe continue and 86 percent think that the scheme has a positive effect on Wellington. 82 percent of these users will definitely use publically available e-scooters if they are allowed to stay in Wellington.
 49. Support for the scheme to continue was relatively strong across all age brackets in the panel responses, with the exception of those who prefer not to report their age. There was stronger support from younger respondents in the panel surveys, however there was still more support for the scheme to continue across most demographics than not.
 50. Support for the scheme to continue by age in the self-selected responses was more divided by age bracket. There was strong support for the scheme to continue from respondents under 65 years of age with the majority of people aged 65 and older not supporting the scheme to continue.
 51. There were 186 ACC claims for injuries relating to electric scooters (public share and privately owned) during the trial period. Through the public survey there were 539 crashes reported which would indicate a rough ratio of one ACC claim per 3 incidents observed on street.
 52. Officers analysed 10,329 comments from the public surveys, from which six major themes emerged:

- The e-scooters were largely seen as fun, vibrant, convenient and positive for the environment.
 - There was concern that e-scooters were unsafe, both for the people riding them and for pedestrians.
 - People identified the issues e-scooters caused for pedestrians and footpath users, especially vulnerable groups like the elderly, those with disabilities and young children.
 - There was a preference for e-scooters to be separated from pedestrians, and people talked about infrastructure to allow this.
 - People identified a current lack of clarity and enforcement on rules and regulations, and a lack of guidance/education on e-scooter use.
 - People still had questions about exactly what the e-scooter's role in the transport system is, or should be, and some also questioned the environmental impact.
53. Throughout the trial period the contact centre kept records of all enquires that related to public share electric scooters. The Council received 155 enquiries from 110 people during the trial.
54. The restrictions that the Council implemented through the code of practice have, for the most part, worked well as seen in the ACC results comparing Wellington's trip and claim results with Auckland and Christchurch. This suggests that conditions such as the Courtenay Precinct operating constraints where e-scooters are removed from the streets on evenings where increased hospitality patronage is expected, are improving the safety of all people travelling around Wellington.
55. The Council could compel public share e-scooter users to ride in cycle lanes where they are provided. However, given the current lack of ability to set technologically enforced geographical boundaries to that level of accuracy and the lack of dedicated cycling facilities, officers recommend this would be better investigated as part of the Trading in Public Places policy amendment.
56. The full public survey report can be found in **Attachment 5**.
57. The full analysis of the open field comments can be found in **Attachment 6**.
58. Supplemental informational to the public survey report can be found in **Attachment 7**.
59. The full analysis of the confirm enquiries can be found in **Attachment 8**.
60. The full ACC data can be found in **Attachments 9 and 10**.

Use of publically available electric scooters

61. Over the duration of the trial there were 514,169 trips taken on publically available electric scooters.
62. This averages out to 2,866 trips per day over the course of the trial.
63. More detail on the use of e-scooters through the evaluation is available in **Attachment 11**.



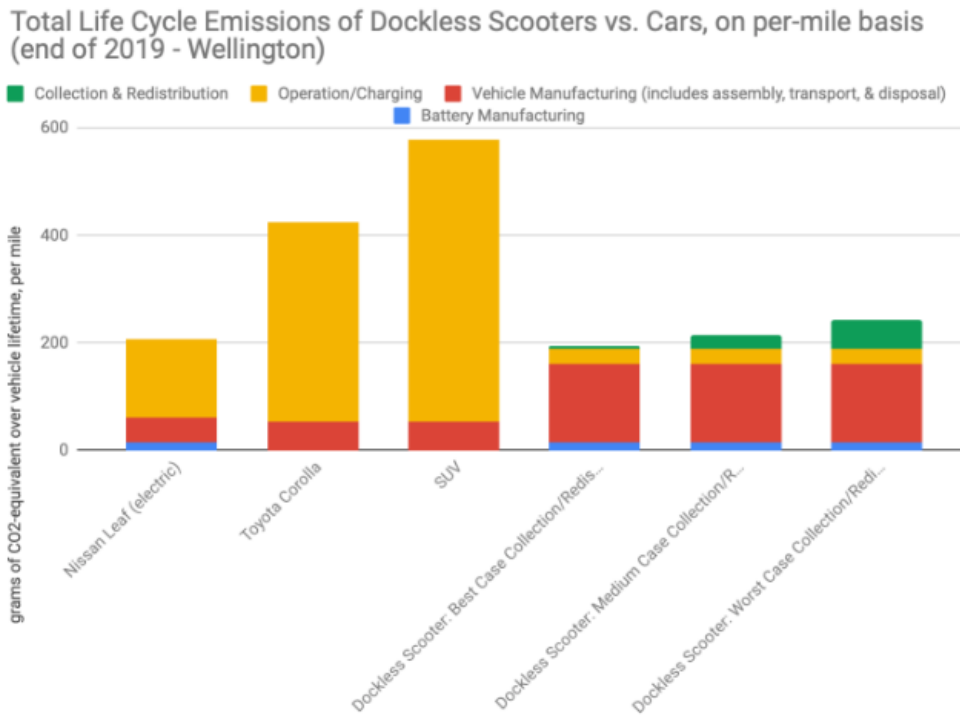
Speed limits

64. Waka Kotahi NZ Transport Agency is currently consulting on the Accessible Streets Regulatory Package.
65. There are three main proposals in the Accessible Streets Package that will affect electric scooters.
- Transport devices category (proposal one)
 - o Would classify electric scooters as powered transport devices
 - Framework for footpath use (proposal two)
 - o Would allow powered transport devices to use the footpath on the condition that users:
 - behave in a courteous and considerate manner
 - travel in a way that is not dangerous for other people
 - give right of way to pedestrians
 - travel no faster than 15km/h
 - ride a device less than 750mm wide
 - Transport devices using cycle infrastructure
 - o Would allow powered transport devices to use cycle lanes and cycle paths
66. Applying low speed limits (10-15km/h) on public share e-scooters would be better for pedestrians but could also have the unintended consequence of encouraging more people to ride on the footpath due to the increased speed differential with other users of the road.
67. Until the technology in the GPS units on the e-scooters improves (likely 18 months at the earliest) the Council will need to choose between implementing a speed limit that might encourage more footpath riding versus allowing higher speeds that would facilitate more use of the road, bearing in mind that this speed limit would also apply on footpaths.
68. Officers are able to use observational methods undertaken during the trial to monitor the use of footpaths and roads by electric scooters with the introduction of 30km/h speed limits (if approved by the Council) to understand if this results in a greater willingness to ride in the road with general traffic. It is expected that the setting of speed limits will be the main tool at Council's disposal to improve the perception of safety identified above.

69. In the process of amending the trading in public places policy officers will ensure that the code of practice reflects the direction set by central government.

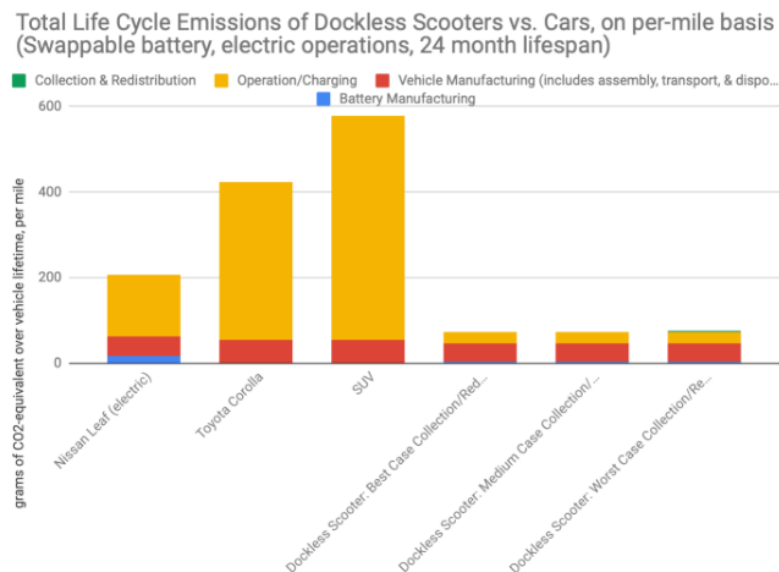
Environmental impact

70. Currently, electric scooter share is comparative with a small electric vehicle on a per mile lifetime emissions analysis.



Source: Oliver Bruce & Joseph Hollingsworth *et al* 2019 Environ. Res. Lett. **14** 084031

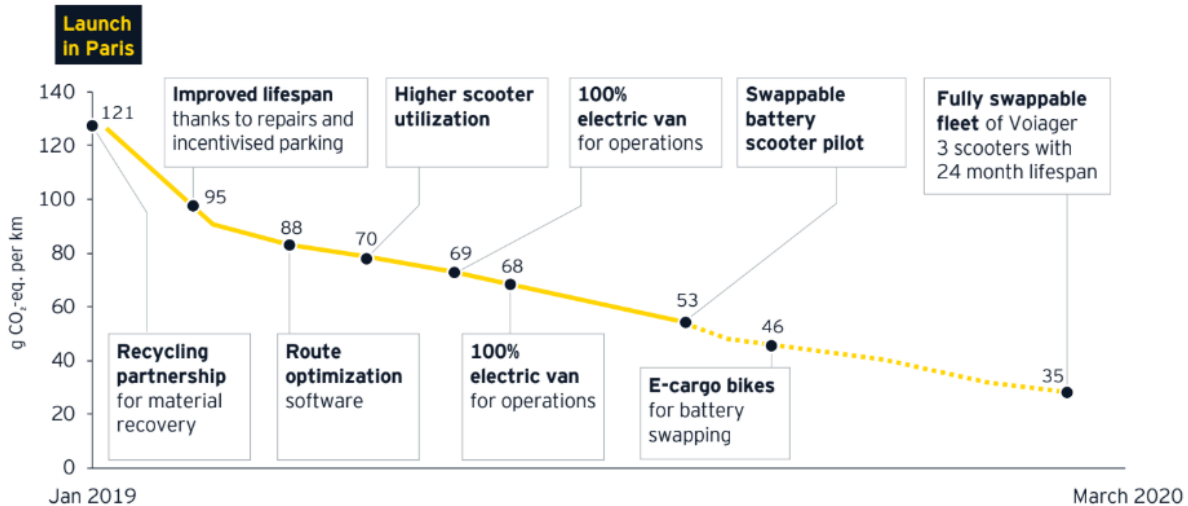
71. However, by implementing improved operational models and using more robust scooters the greenhouse gas emissions from public electric scooters could significantly reduce.



Source: Oliver Bruce & Joseph Hollingsworth *et al* 2019 Environ. Res. Lett. **14** 084031

72. For example, evidence from Paris suggests that significant reduction in emissions from electric scooter share can be achieved with these measures.

The impact of Voi's improvement initiatives in Paris



Source: Oliver Bruce

73. It is recommended the Council request operators begin work on how they will implement operational plans that will:
- ensure electric scooters are designed to last a minimum of 24 months on Wellington's streets
 - ensure all operational vehicles are electric
 - ensure the deployment of swappable batteries occurs as soon as possible
74. Whilst not a current requirement of the operating licence it is proposed that a criteria for awarding a longer term licence will be operator's plans, ability and desire to meet these environmental standards.

Contact procedures

75. Analysis of feedback from the Council's contact centre identified confusion from people about how to contact the operators.
76. Operators' public contact procedures work well when people can get through. Over the course of the trial period operators were contact 13,515 times and only 43 enquiries (0.3%) remained open when results were reported.
77. Both operators have reasonable channels for public contact, however, officers have identified this is an area for improvement.
78. Officers are proposing to work with operators to ensure phone numbers, email addresses and web forms are in practical locations on apps, websites and scooters.

Parking

79. Parking of public share electric scooters on footpaths emerged as the main concern out of the trial.

80. Given the pace of technological advancements and the desire to move to swappable batteries in the operating models it is important that flexibility is maintained when managing parking of public share electric scooters.
81. Currently enforcement of parking through the GPS is not accurate (7-10m variance) and we don't expect this technology to be accurate enough until the end of 2021 at the earliest.
82. The trial corral at the central train station has been successful in managing the busy forecourt area. Through the Innovating Streets programme officers are recommending a roll out of moveable public micro mobility parks.
83. The indicative timeline for the implementation of the moveable public micro mobility parks is the end of January 2021 pending funding decisions.
84. As mentioned in the recommendations officers will work with operators in the interim to implement low-cost parking solutions until the more permanent parking options are developed.
85. Through our partnership with Ride Report the Council is able to set service areas where we can monitor parking and riding. As the technology and our experience improve the Council will be able to stagger the introduction of parking enforcement (i.e. warnings for six months, small fine for six months then a larger fine if necessary).

Trading in Public Places

86. The awarding of licences to operate e-scooter share schemes in Wellington is managed through the Trading in Public Places policy.
87. Officers recommend a review of this policy to better incorporate the management of micro mobility.
88. Exact details to be included will be reported back to Council but initial work has indicated that it will encompass:
 - fee structures to operate
 - parking targets/requirements
 - enforcement penalties
 - vehicle caps
 - direction set out in the Governments Accessible Streets Package
89. The code of practice will remain the working operational guide that allows officers to ensure operators are meeting the standards set through the Trading in Public Places policy.

Ride Report

90. The Council has entered in to a trial agreement with Ride Report; a third party that provides a specialised platform to monitor and independently report to the Council on micro mobility.

91. The partnership with Ride Report allows the Council to independently monitor the operations of public share electric scooters.
92. Used by Auckland and Christchurch as well as major North American cities like New York, Oakland, Austin, Atlanta and Portland it is seen in the industry as a leader in helping local authorities manage micro mobility and user data.
93. The contract with Ride Report costs US\$4500 annually which we expect to incorporate in the operating fees charged through the Trading in Public Places licence.

Options

94. There are a number of options currently available to Council. Some of these options are outlined below and then followed up with more information for each, the options are:
 - A. Continue with public share electric scooter operations in Wellington and in the meantime continue with current operators until their licence expires on 31 December 2020, including modifying existing licence conditions based on experience to date. This is officers preferred recommendation. As noted above officers have recommend some minor changes to the existing operator conditions, however it should be noted that if wholesale changes are made to the existing licences and the cost of making these changes is to be borne by the operators, then the operators may choose to remove their scooters from the street until they have more certainty about a longer duration licence.
 - B. Continue with current operators until their licence expires on 31 December 2020 but then not pursue public share schemes in Wellington.
 - C. Cancel current licences right away and not pursue public share schemes in Wellington.
 - D. Continue with public share electric scooter operations in Wellington but cancel the current licences pending amendment of the Trading in Public Places Policy including undertaking the necessary consultation before issuing new licences.
95. Option A is officers preferred response. It allows public share electric scooter schemes to continue in Wellington which reflects the results of the trial. It also allows officers time to implement the new scheme whilst also immediately changing the code of practice to reflect lessons learnt so far.
96. Option B is not recommended. Current operators would potentially wind down their investment and responsiveness leading to a degradation of the offering to our community. If this option was agreed then officers would work with operators to remove electric scooters from the street at the end of the licence period and work with operators to maintain the standards in the interim.
97. Option C is not recommended. Evidence from the trial suggests that there is public support to continue with public share electric scooter schemes. However, if this option

was agreed then officers would work with operators to remove scooters from the street.

98. Option D is not recommended. It would require officers to work with the operators to remove all scooters from the streets before commencing work on amending the Trading in Public Places Policy. Officers believe that there is sufficient evidence gained through both the public and panel surveys to suggest that there is no need to cancel existing licences, but rather officers should work with the existing operators on ways to improve scooter operations.

Next Actions

99. If officer recommendations are accepted then public share electric scooter operations will continue while officers undertake the necessary work to amend the Trading in Public Places Policy including bringing it to the Strategy and Policy Committee for approval.
100. A public tender process would then take place to appoint two operators for a longer term licence (exact length to be confirmed through policy amendment).

Attachments

Attachment 1.	Code of practice ↓	Page 23
Attachment 2.	Phase 1 advertising campaign ↓	Page 36
Attachment 3.	Phase 2 advertising campaign ↓	Page 42
Attachment 4.	Monitoring report ↓	Page 48
Attachment 5.	Public survey report ↓	Page 86
Attachment 6.	Survey comments report ↓	Page 150
Attachment 7.	Supplemental survey report information ↓	Page 166
Attachment 8.	Contact centre report ↓	Page 183
Attachment 9.	ACC data part 1 ↓	Page 191
Attachment 10.	ACC data part 2 ↓	Page 192
Attachment 11.	Use of public share e-scooters ↓	Page 193

Author	Hugh Wilson, Transport Project Engineer
Authoriser	Paul Barker, Transport Planning Manager Moana Mackey, Acting Chief City Planner

SUPPORTING INFORMATION

Engagement and Consultation

The engagement process has been outlined in the body of the report.

Treaty of Waitangi considerations

There are no Treaty of Waitangi considerations for this report.

Financial implications

There are no explicit financial implications to this report. Any further financial implications will be fully explored in the ensuing papers recommended.

Policy and legislative implications

All policy and legislative implications have been explained in the report.

Risks / legal

The Council legal representatives have been consulted extensively in the development of operational documents to this point and will continue to be.

Climate Change impact and considerations

Climate change impacts have been discussed in the report.

Communications Plan

N/A

Health and Safety Impact considered

The health and safety of all Wellingtonians have been forefront of mind in development of this report as outlined above.

Code of Practice

Electric Powered Scooter

This code applies to the trading in public places of dockless electric powered scooters in Wellington City.

31 January 2020

Version Control

Version	Date	Notes
Draft 1.0	18/02/2019	First draft based on WCC dock less bike share document
Draft 1.1	20/02/2019	Revised on feedback from Council officers
Draft 1.2	21/02/2019	Revised on feedback from Council legal team
Draft 2.0	21/02/2019	First version sent to operators
Draft 2.1	22/03/2019	Revised to reflect Councillor resolutions
Draft 2.2	02/04/2019	Included table of contents
Draft 3.0	17/06/2019	Released for launch of operations
Draft 4.0	31/01/2020	Updated data requirements

This document is administered by Wellington City Council's Transport Network Improvements team.
For further information please contact transport@wcc.govt.nz

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1. Introduction

- 1.1. There are a number of public electric scooter share schemes now operating in centres around New Zealand. There is demand from Wellingtonians as well as from electric scooter share companies for Wellington City Council to grant licenses to allow electric scooter share to operate in Wellington.
- 1.2. There is potential for an electric scooter share to reduce car trips within Wellington City. Electric scooters would also complement cycle paths and the public transport network.
- 1.3. Safety remains our primary objective and it is the Council's duty to protect the rights of the public to use and enjoy the city's public spaces, including roads and walkways. Alongside this, streets must be made more accessible for people on foot, especially vulnerable users including children, older people and people who are less mobile and/or have a disability. Shared Electric scooter share schemes must work for everyone without affecting, or causing a danger or nuisance to other people.
- 1.4. This Code of Practice outlines the requirements that electric scooter share operators must adhere to, and the requirements and recommendations that electric scooter share operators are expected to follow as part of providing safe and effective share schemes.
- 1.5. This Code of Practice will be reviewed and updated as required so that it continues to reflect best practice and the interests of the community. Operators should check the Council's website for the most up to date version.
- 1.6. It is important to note that Wellington City Council needs to be flexible and able to respond to changes in consumer demand and the use of electric scooters and how these may vary with things like seasonal weather.
- 1.7. For the purpose of this Code of Practice Wellington City Council refers to the Council and its Council Controlled Organisations, and any person or organisation delegated by the Council to act on its behalf.

2. Aim and scope

- 2.1. A key aim of this Code of Practice is to ensure that electric scooter share schemes are well-designed and work in harmony within the city with other transport modes.
- 2.2. This Code of Practice applies to all operators. It sets out the operational and safety standards that operators must comply with in order to be issued, and maintain an approval to operate in Wellington City under the Wellington Consolidated Bylaw 2008, Part 5: Public Places.

3. Engagement

- 3.1. Prior to launching a scheme, operators must provide the Council with a plan demonstrating how their proposed scheme will adhere to this Code of Practice, including how the operation will be terminated if it no longer meets the code and the licence to operate is revoked.
- 3.2. Operators must maintain an open line of communication with the Council.
- 3.3. Operators must provide the Council with references and contact details of referees who can provide information regarding the operator's previous performance.

- 3.4. As part of the engagement process, operators must work with the Council to determine an appropriate scheme size that is fit for purpose for the city.
- 3.5. Operators must seek the Council's approval of any promotion/media mentioning Wellington City Council, its Council Controlled Organisations and Council activities.
- 3.6. Operators must work with the Council on media related to events and promotions that the Council is involved with.

4. Safety and maintenance

- 4.1. Operators must comply with relevant New Zealand health and safety regulations and hold public liability insurance of at least NZ\$1,000,000, valid throughout the full period of the licence. A copy of the insurance certificate is to be provided to the Council as part of the application process.
- 4.2. All electric scooters must have front and rear lights. Light systems must continue to run while waiting at intersections.
- 4.3. Operators need to have steps in place to ensure riders comply with all relevant provisions of the Land Transport (Road User) Rule 2004.
- 4.4. Electric scooters must comply with the New Zealand Transport Agency's definition of a [low-powered vehicle](#).
- 4.5. Electric scooter equipment must be of sufficiently high quality to withstand constant public use and exposure to the elements, while meeting rider safety and comfort standards. The electric scooters should include smart technology with active Global Positioning System (GPS) and wireless connectivity to enable maintenance and proactive re-balancing. Operators must demonstrate how they proactively work to ensure each electric scooter maintains these standards.
- 4.6. Operators must have a system in place to ensure electric scooter equipment continues to comply with legal standards and requirements. At a minimum, electric scooters should be given a full service every six months, and given regular checks and repairs throughout the year. The operator must ensure that all repairs are carried out as soon as possible following notification of any issue. All mechanical services and repairs must be logged and available for review by the Council whenever requested or to an agreed reporting schedule.
- 4.7. The Council retains the right to require operators to inspect their entire fleet and provide assurances to the Council's complete satisfaction that they operator's fleet is in a safe operating condition. Council may require that they fleet is removed from circulation immediately in order to protect users. At all times failure to remedy any issue to Council's complete satisfaction may result in suspension or cancellation of the licence.
- 4.8. Operators must be able to integrate on-scooter location technologies and future on-board wireless diagnostics, to more easily identify mechanical failure, and proactively intervene through preventive maintenance. The Council reserves the right to make these technologies a requirement in the future.

5. Operations

- 5.1. In order to operate a dock-less electric scooter share scheme within Wellington City, operators must apply for and be granted a licence, under the Wellington Consolidated Bylaw 2008, Part 5: Public Places prior to any operation being launched.
- 5.2. The Council reserves the right to limit the number of operators and the number of electric scooters.
- 5.3. The Council reserves the right to enforce a minimum number of electric scooters per operator.
- 5.4. The operation of electric scooter share schemes in Wellington City must not cause disruption or nuisance. Operators must ensure electric scooter share schemes do not compromise the maintenance of orderly streets or have a negative impact on other street users, including people with impaired vision and/or other disabilities. Operators should include, on their website, instructions for users to give priority at all times to pedestrians when they are using the public footpath or shared space.
- 5.5. Operators would preferably be able to monitor electric scooters at all times, including whether they have fallen over, to ensure electric scooters are not abandoned around the city, or causing a nuisance.
- 5.6. Operators must come to an agreement with the Council on where electric scooters can and cannot be parked. Electric scooters must be parked where they do not impede people on foot or vehicle access. This information must be conveyed clearly to the customers.
- 5.7. Damaged electric scooters or electric scooters parked in a non-compliant manner or location must be removed by the operator within the schedule outlined in item 6.3. If not, operators will pay any removal costs incurred by the Council. The cost to get the electric scooter back from the Council after removal is \$371 per electric scooter at the time of writing. This cost may alter over time at the Council's discretion.
- 5.8. Any electric scooter that is parked outside an area where electric scooters are licensed to operate, for more than three consecutive days must be moved by the operator to a licensed to operate location or it may be removed by the Council at the expense of the operator.
- 5.9. Operators will preferably have systems in place that incentivise good parking behaviour and penalise non-compliance by users.
- 5.10. Any specific infrastructure improvements required for successful operations would need to be considered and approved by the Council.
- 5.11. Operators must have capability to manage the redistribution of electric scooters due to bunching, in advance of major events or at the request of the Council.
- 5.12. In order to manage the increase in the numbers of electric scooters on the city's streets, parking requirements will be subject to change as the Council adapts to the numbers of electric scooters in the city.
- 5.13. Operators must provide the Council with up to date and relevant contact details for the operational point of contact who can resolve any issues that arise.
- 5.14. Operators must, in agreement with the Council, utilise geo-fencing technology to control access to certain areas in the city.
- 5.15. Public areas where riding and parking electric scooters is not permitted are scheduled below.

Location	Riding ban	Parking ban	Restriction
Wellington Botanic Gardens including Rose Garden and Anderson Park.	✓	✓	No parking or riding in any area with the exception of riding in existing vehicle and/or bike only areas.
Bolton Street Cemetery.	✓	✓	No parking or riding in any area.
Otari-Wilton's Bush.	✓	✓	No parking or riding in any area.
Truby King Park (excluding main roadways).	✓	✓	No parking or riding in any area with the exception of riding on main roadways.
Cuba Street Mall.	✓	✓	No parking or riding in any area.
Waterfront side of Oriental Parade from Herd Street to Freyberg Pool	✓	✓	No parking or riding in any area with the exception of riding in the Oriental Parade cycle path.
Lambton Quay footpath between Whitmore Street and Willis Street.	✓	✓	No parking or riding on the footpath. Riding on the carriageway allowed.
Willis Street footpath between Lambton Quay and Manners Street.	✓	✓	No parking or riding on the footpath. Riding on the carriageway allowed.
Manners Street footpath.	✓	✓	No parking or riding on the footpath. Riding on the carriageway allowed.
Courtenay Place footpath.	✓	✓	No parking or riding on the footpath. Riding on the carriageway allowed.

6. Customer experience and education

- 6.1. Operators must provide 24-hour communication channels for users, including a clearly displayed telephone number on their website, apps and electric scooters.
- 6.2. Operators must have a complaints handling process. Operators must be able to provide the Council with a record of their complaints and response times logs when requested.
- 6.3. When an incident has been referred to the operator by the Council’s call centre, the operator must promptly advise the Council how the matter was resolved within the following timeframes:

Matter	Incident response and feedback to the Council
Urgent safety issue	2 hours
Routine incident/complaint	12 hours

- 6.4. Terms and conditions of use must be agreed by users when they use the electric scooters and these terms must promote safe and legal riding, and good parking behaviour.

7. Data requirements

- 7.1. All personal information must be collected, processed and stored in accordance with the requirements of the New Zealand Privacy Act 1993.
- 7.2. It is a requirement that anonymised data collected by the operator is shared with the Council, on request, to assist with ongoing network planning, facility improvements and the development of an electric scooter policy. The following table sets out what minimum data is required.

	Format	Description
Company Name	[company name]	n/a
Trip record number	xxx0001, xxx0002, xxx0003, ...	3-letter company acronym + consecutive trip #
Trip duration	MM:SS	n/a
Trip distance	KM	n/a
Start date	MM, DD, YYYY	n/a
Start time	HH:MM:SS (00:00:00 – 23:59:59)	n/a
End date	MM, DD, YYYY	n/a
End time	HH:MM:SS (00:00:00 – 23:59:59)	n/a
Start location	GPS location	n/a
End location	GPS location	n/a
Electric scooter ID number	xxxx1, xxxx2, ...	Unique identifier for every electric scooter, determined by company

- 7.3. This is to be sent to the Council on a fortnightly basis, by 12 noon on a Tuesday for the previous fortnight ending on the preceding Sunday.

Number as of	(Date)
Accumulated registered users	xx
Accumulated pre-paid users	xx
Accumulated electric scooters	xx
Accumulated trips	xx
Accumulated trips duration (hour)	(Time period)
Operation data between	xx
Registered users	xx
Pre-paid users	xx
Electric scooters	xx
Trips	xx
Average	(Time period)
New registered / day	xx
New prepaid users / day	xx
Number of trips /day	xx
Time (minimum) / trip	xx
Trip durations (hour) /day	xx
Trip duration (hour)	xx
Trip time of day	(Time period)
0.00am – 5:59:59am	xx
6:00am – 11:59:59am	xx
12pm – 5:59:59pm	xx
6pm-11:59:59pm	xx

The report should include the following information added to the above:

- Trip time of day – an hourly breakdown rather than the 6 hour period totals
- Heat map of use across Wellington City.
- Deployment locations overlaid with heat maps.
- Number of issues and complaints from users opened, closed, outstanding.

- Number of issues and complaints from the Council opened, closed, outstanding and the average response time
 - Number of urgent matters dealt with under clause 6.3, and the number dealt with within 2 hours
 - Number of routine matters dealt with under clause 6.3, and the number dealt with within 12 hours
 - Number of reported crashes, and the circumstances if known
- 7.4. It is desirable for the Council to understand the routes taken by hired electric scooters. Operators will provide this information upon request.
- 7.5. If requested, operators shall provide the Council with real-time information on the entire fleet through a documented application program interface (API). The data to be published to the API may include (but not be limited to) the following information in real time for every electric scooter:
1. Electric scooter identification number
 2. GPS co-ordinate
 3. Availability start date
 4. Availability start time
 5. Battery level
- 7.6. Council will contract a third party software company to provide data management services and will be required to share data collected by the operator with the third party software company. The Council will share this data using the Mobility Data Specification (MDS) Provider Application Program Interface (API).
- 7.6.1. The operator will be required to:
- 7.6.1.1. Populate all fields in the Provider API
 - 7.6.1.2. Populate the parking_verification_url field if the operator develops the capability to report on this field
 - 7.6.1.3. Update the MDS status endpoint provided to the third party software company with real-time information at least every 10 minutes
 - 7.6.1.4. Implement any changes to the required field as formalised through the MDS Github Repository within 45 business days of receiving a formal notice from the Council
- 7.6.2. Council will:
- 7.6.2.1. Use a third party vendor to conduct an audit on the MDS API of operators to ensure compliance with the specification as a condition of launch of service
 - 7.6.2.2. Provide formal notice to the operator from time to time to implement changes to the required field through the MDS Github Repository
- 7.7. Customer data integration and transfer may be required in the future, both with Wellington Region's journey planning platforms and the NZ Transport Agency's Mobility as a Service project (as digital capabilities are extended). The Council may update this condition if or when required.
- 7.8. The Council reserves the right to display information about electric scooter share operators on the Council's websites and apps.

8. Specific conditions

- 8.1. Operators will utilise geo-fencing technology to ensure that no scooters are hired in the Courtenay Precinct outlined in Appendix 2 during the following times:
- 8.1.1. 9pm Friday – 6am Saturday.
 - 8.1.2. 9pm Saturday – 6am Sunday.
 - 8.1.3. 9pm Sunday – 6am Monday.
 - 8.1.4. 9pm on the eve of public holidays observed in Wellington until 6am on the day of that public holiday.
- 8.2. Operators will ensure that all electric scooters have a unique and visible registration number that would enable public reporting of unsafe behaviour.
- 8.3. Operators must proactively contact and work with public service providers who operate on private land. The minimum requirement is below. Operators are required to complete the table and report back to the Council.

Location	Riding ban	Parking ban	Deployment ban	Outcome of discussion
NZ Parliament Buildings	x	✓	✓	
Wellington Railway Station	✓	✓	✓	No scooters inside the station building.
Te Papa	x	✓	x	No parking near front door and red gates to left of entrance.
Central Library	✓	✓	✓	Paths around the library are now closed off.
Victoria University (all campuses)	✓	✓	✓	
Massey University	x	x	x	Discussions remain ongoing.
Wellington International Airport	x	✓	✓	List any restrictions
Westpac Stadium	x	x	x	No scooters past the ticket gates.
Basin Reserve	x	✓	✓	Ground closes at 9pm. No riding during events.
Wellington Regional Hospital	x	✓	✓	Low speed zone across hospital grounds. No parking across emergency services access ways.

- 8.4. Operators will work with the Council to proactively manage the redistribution plan for the city.
- 8.5. Per item 8.1 of the Council's Footpath Management Policy, operators must ensure the minimum footpath widths are adhered to.
- 8.6. Users on the waterfront must be encouraged to keep left and not exceed the posted speed limit.

9. Integration with the NZ Transport Agency's Mobility Marketplace

- 9.1. The NZ Transport Agency is piloting a Mobility as a Service (MaaS) project, which brings together any legal transport operators into a Mobility Marketplace. The Mobility Marketplace is powered by a real-time data processing platform, and operates on open data principles.
- 9.2. Operators of new transport services, including electric scooter share, should ensure the technological capability to integrate their services into this Mobility Marketplace, allowing customers to view all transport choices, in one place.
- 9.3. An open data contract will need to be established with the Transport Agency to enable data to pass through the MaaS platform in an open license agreement. The information outlined in Appendix 1 will then be pushed to a central MaaS Platform using an API (note: this feed could be pulled directly from the company's existing app).

10. Cost to operate

- 10.1. There is no cost to operators to apply to be one of the evaluation period operators.
- 10.2. Successful operators will be required to pay the following for the evaluation period:
 - 10.2.1. \$615 licence fee for a licence up to 18 months in duration.
 - 10.2.2. \$12.50 per licenced scooter towards a public education campaign.
 - 10.2.3. \$45 per licenced scooter towards monitoring of compliance.
 - 10.2.4. \$25 bond per licenced scooter. To be returned to operators at the conclusion of the licence.

Appendix 1: Information requirements for MaaS integration

1. Real-time electric scooter locations. Update frequency <10s.
 - a. Must contain:
 - i. Electric scooter identifier
 - ii. Lat/Long location
 - iii. Accurate speed
 - b. Would ideally contain:
 - i. Compass / directional information

2. On demand Availability information.
 - a. Request
 - i. Current location for all available
 - b. Reply
 - i. Booking is possible: Yes/No
 - ii. Current location of all 'available' electric scooters
 - iii. Estimated cost of the journey

3. On demand Booking request.
 - a. Request
 - i. Lat/Long of the origin
 - b. Reply
 - i. Booking identifier (if successful)
 - ii. Electric scooter identifier - matching the one in the real-time electric scooter position

4. On demand Status.
 - a. Request
 - i. Booking identifier returned by the Booking request
 - b. Reply
 - Statuses as:
 - i. BOOKED
 - ii. INVALID
 - iii. CANCELLED

5. On demand Cancel.
 - a. Request
 - i. Booking identifier returned by the Booking request

Appendix 2: Courtenay Precinct





Absolutely Positively
Wellington City Council
Me Heke Ki Pōneke

Scooter Safety Campaign
June-July 2019

Scooter Safety Media Schedule



Absolutely Positively
Wellington City Council
Me Heke Ki Pōneke



CHANNEL	SPECIFICATION	AUDIENCE	COST PER FLIGHT	NO.	PLANNED COST	JUNE				JULY
						10/06/19	17/06/19	24/06/19	1/07/19	8/07/19
BROAD AWARENESS										
DOMINION POST	2 x 8	Horizontal 1/4 page Monday	\$1,037	1	\$1,037		17th June			
FACEBOOK & INSTAGRAM	BROAD AWARENESS MESSAGE (OPTIMISED FOR REACH)	16+ in Wellington Central & Kelburn (210,000)			\$2,240	*Coming next week* 15th -16th June	18th June - 6th July			
LIKELY USERS										
FLYERS	FLYER HANDOUTS AT 6 KEY SCOOTER HUBS	Wellington Station, Bus terminal, Vic Uni, Cuba, Taranaki Wharf, Courtenay Place	\$500	2	\$1,000		x	x		
FACEBOOK & INSTAGRAM	SAFETY TIPS (OPTIMISED FOR REACH)	People in Central Wellington and Kelburn aged 16-45 with commuting behaviours (6,100)			\$366		18th June - 6th July			
FACEBOOK	ORGANIC OUTREACH	Transport safety groups/other relevant community groups	\$250	2	\$500		x		x	
MEDIA COST					\$5,143					
DEVELOPMENT & SET UP FEE					\$850					
TOTAL COST OF MEDIA EXC. GST					\$5,993					



Campaign Summary

The objective of the campaign was to raise awareness about the recommended safety precautions for the new e-scooters amongst both a Wellington-wide audience, and the likely users of the e-scooters.

Digital ads were delivered via Facebook and Instagram.

Other media included:

- 1x print ad in the Dominion Post
- Flyer handouts at the 6 key scooter hubs

Over the course of the campaign, we delivered a total of **320,375 impressions** and reached **129,567 Wellingtonians** via Facebook/Instagram.



Facebook Campaign Overview

- The Facebook campaign was seen by **129,567 people** on average **2.47 times**.

Facebook

Ad Set Name	Impressions	Reach	Frequency
WLG Commuters – Safety Tips	15,475	6,606	2.34
WLG Wide – Coming Soon	70,978	67,312	1.05
WLG Wide – They're Here	233,922	117,855	1.98
TOTAL	320,375	129,567	2.47



Facebook Organic Outreach

Pages contacted via email:

- Wellington Live
- NZTA Wellington
- Wellington District Police
- Victoria University of Wellington
- Massey University
- Wellington Girls' College
- Wellington College
- Wellington East Girls' College
- Queen Margaret College
- Wellington High School
- Greater Wellington Regional Council
- Wellington Free Ambulance

Post shared by Greater Wellington Regional Council





Appendix – Facebook/Instagram Ads





Absolutely Positively
Wellington City Council
Me Heke Ki Pōneke

Scooter Safety Campaign
November 2019



Scooter Safety Media Schedule

						NOVEMBER			
CHANNEL	SPECIFICATION	AUDIENCE	COST PER WEEK	NO. WEEKS	PLANNED COST	4-Nov	11-Nov	18-Nov	25-Nov
BROAD AWARENESS									
STREET POSTERS	4 CONSECUTIVE FRAMES AT 5 SITES (20 x posters total)	Cuba st (lower & upper), Arthur St, Vivian St, Willis St		1	\$1,500			5 X SITES	
FACEBOOK & INSTAGRAM	SAFETY TIPS (OPTIMISED FOR REACH)	16+ in Wellington Central & Kelburn (210,000)	\$590	2	\$1,180				
LIKELY USERS									
FLYERS	FLYER HANDOUTS AT 6 KEY SCOOTER HUBS	Wellington Station, Bus terminal, Vic Uni, Cuba St, Taranaki Wharf, Courtenay Place	\$300	2	\$600				
FACEBOOK & INSTAGRAM	SAFETY TIPS (OPTIMISED FOR REACH)	People in Central Wellington and Kelburn aged 16-45 with commuting behaviours (6,100)	\$60	2	\$120				
MEDIA COST					\$3,400				
DEVELOPMENT & SET UP FEE					\$600				
TOTAL COST OF MEDIA EXC. GST					\$4,000				



Campaign Summary

The objective of the campaign was to raise awareness about the recommended safety precautions for the new e-scooters amongst both a Wellington-wide audience, and the likely users of the e-scooters.

Digital ads were delivered via Facebook / Instagram.

Other media included:

- Street posters – 4 x posters at 5 sites around the city.
- Flyer handouts at the 4 key scooter hubs.

Over the course of the campaign, we delivered a total of **228,731 digital impressions** and reached **137,057 Wellingtonians** online.



Facebook Campaign Overview

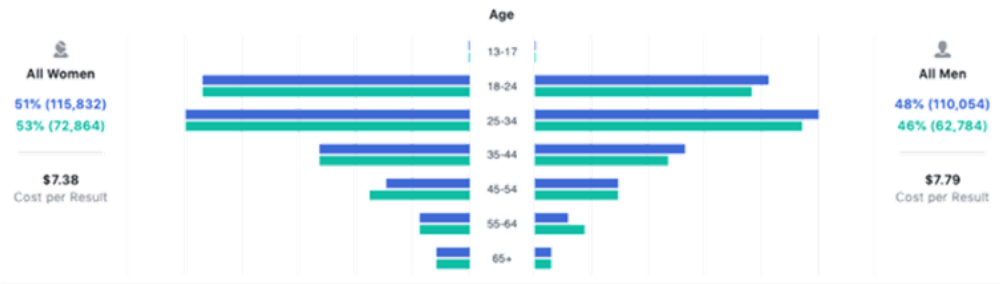
The Facebook campaign was seen by **137,057 people** on average **1.67 times**.

Facebook

Ad set name	Impressions	Reach	Frequency
Wellington Wide - Safety Tips	220,181	135,361	1.63
WLG Commuters - Safety Tips	8,550	4,652	1.84
TOTAL	228,731	137,057	1.67

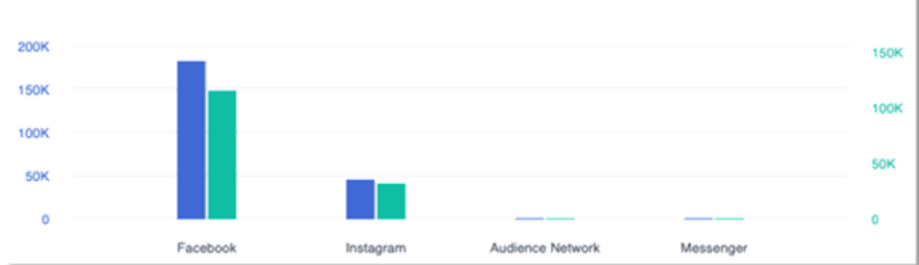
Campaign demographic

228,731 Impressions | 137,057 Reach



Ad Placement

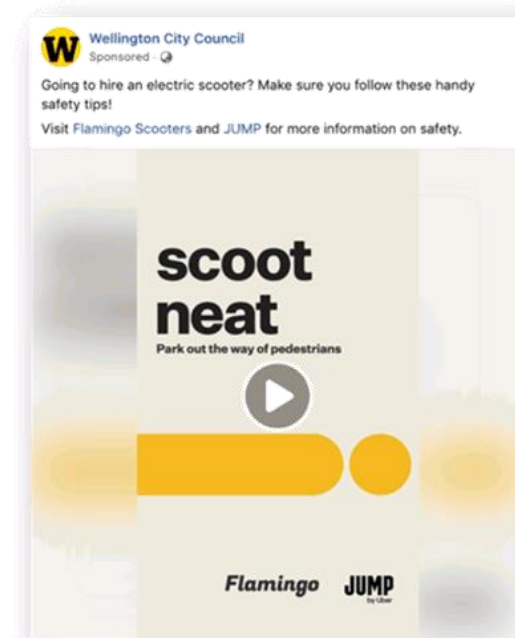
228,731 Impressions | 137,057 Results: Reach



Appendix – Facebook/Instagram Ads



Appendix – Facebook/Instagram Ads





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This disclaimer shall apply notwithstanding that the report may be made available to other persons for an application for permission or approval to fulfil a legal requirement.

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Executive Summary

The E-Scooter surveys carried out by Stantec, in regards to the recent trialling of E-Scooters in Wellington, are outlined in this report. Wellington City Council ('the Council') commissioned Stantec to conduct these surveys during the first six-month period of the 18 month trial in which E-Scooter companies Jump and Flamingo are allowed to operate in Wellington under policies set out by the Council. The surveys were carried out at different locations around Wellington between June 18 2019 and December 13 2019.

By way of summary, the surveys show there was an overall decline in E-Scooter usage over the six-month survey period, with the greatest level of E-Scooter use observed along the waterfront and Oriental Parade sites. Most riders were between the ages of 18 and 30 years old. Footpath use was the highest compared with roads and bus/cycle lanes, with facility use and speed restrictions set out by the Council not being followed.

In terms of safety variables, a low percentage of Jump and Flamingo riders wore helmets, and the overall safety of rider behaviour was rated subjectively as 'acceptable'.

This report outlines the methodology of data collection for the E-Scooter surveys and results in further detail.

Wellington City Council

E Scooter Surveys

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1. Introduction

E-Scooter companies Jump and Flamingo have been given a licence to operate in Wellington during an 18 month trial period by Wellington City Council, which began on June 18 2019. Rules and policies in which the E-Scooter companies must follow during the trial period were also issued by the Council for this trial period.

The Council has commissioned Stantec to undertake data collection for the behaviour of E-Scooter riders over the first six month period of the 18 month trial to inform how safety variables, volumes, and overall trends of E-Scooters have changed over time.

This report summarises the methodology and observations recorded by Stantec between 18th June and 13th December 2019.

1.1 Scooter Policies

A code of practice for electric powered scooters was issued by the Council on 17 June 2019, outlining the policies in which Jump and Flamingo must abide by over the 18 month trial period. Riding and parking bans exist in areas around the city, shown in Table 1-1.

Table 1-1: Riding and Parking ban outline

Location	Riding ban	Parking ban	Restriction
Wellington Botanic Gardens including Rose Garden and Anderson Park.	✓	✓	No parking or riding in any area with the exception of riding in existing vehicle and/or bike only areas.
Bolton Street Cemetery.	✓	✓	No parking or riding in any area.
Otari-Wilton's Bush.	✓	✓	No parking or riding in any area.
Truby King Park (excluding main roadways).	✓	✓	No parking or riding in any area with the exception of riding on main roadways.
Cuba Street Mall.	✓	✓	No parking or riding in any area.
Waterfront side of Oriental Parade from Herd Street to Freyberg Pool	✓	✓	No parking or riding in any area with the exception of riding in the Oriental Parade cycle path.
Lambton Quay footpath between Whitmore Street and Willis Street.	✓	✓	No parking or riding on the footpath. Riding on the carriageway allowed.
Willis Street footpath between Lambton Quay and Manners Street.	✓	✓	No parking or riding on the footpath. Riding on the carriageway allowed.
Manners Street footpath.	✓	✓	No parking or riding on the footpath. Riding on the carriageway allowed.
Courtenay Place footpath.	✓	✓	No parking or riding on the footpath. Riding on the carriageway allowed.

The code of practice defines scooters as a low powered vehicle under NZTA's Vehicle types classification. The classification outlines the behaviour expected by riders on the footpath with respect to pedestrians. The classification also specifies that riders are not legally required to wear a helmet (while it is recommended) and are not allowed to utilise designated cycle lanes that are part of the road, as these were designed for the sole use of cyclists.

E-Scooter riders are not to exceed the posted speed limit of 10km/hr along the waterfront.

Riders are encouraged to wear helmets and to not have more than one rider per vehicle by the E-Scooter company's apps upon sign-up, however this is not enforced.

1.2 Survey Area

The study area for the E-Scooter surveys incorporates a wide area of Wellington city. The six survey sites are shown in context with the wider city area in Figure 1-1.

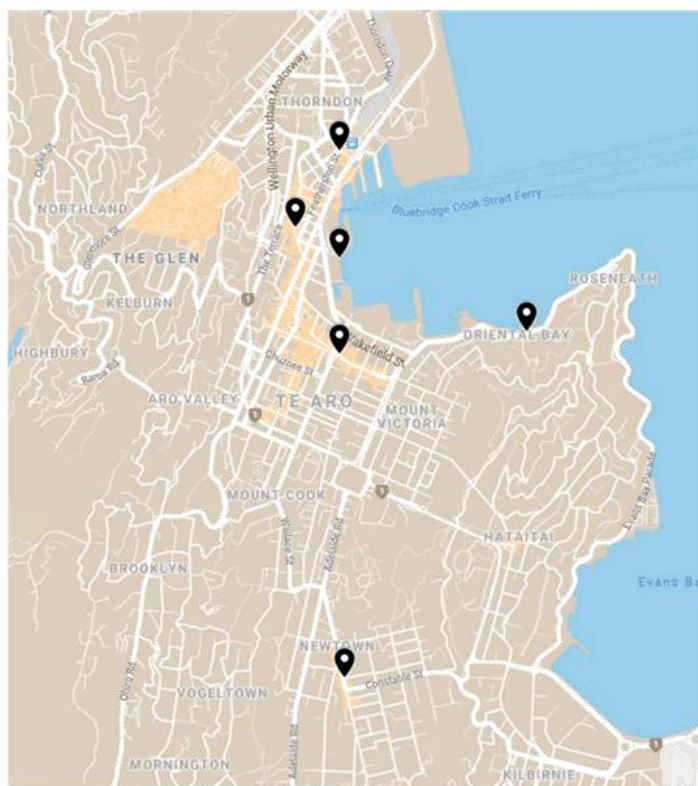


Figure 1-1: Aerial of survey sites

The survey sites provide a well-rounded representation for E-Scooter usage areas, as specified by the Council. More information for each survey site is outlined in Section 2.3.

1.3 Scooter Deployment

For the 18-month E-Scooter trial, the Council has approved 400 E-Scooters each to be deployed by Jump and Flamingo. Due to the nature of overnight charging and deployment, it was expected that the number and locations of scooters in each area would change over time.

The volume of E-Scooters deployed daily fluctuated slightly over the study period, with a monthly average of 345 in September, 322 in October, and 337 in November¹ for Flamingo scooters, and a deployment of between 30% - 60% of Jump’s fleet during rainy periods². This slight change in scooter deployment over time, attributed to maintenance and weather conditions, did not significantly impact the surveys.

Figure 1-2 is an example heatmap showing locations of weekly Flamingo E-scooter deployment for the last week of November 2019³. The main Jump deployment locations were largely similar to deployment locations for Flamingo.

¹ Confirmed by Nick Hyland (Flamingo Scooters)

² Confirmed by Junia Ooi (Jump Scooters)

³ Flamingo tracks scooter deployment heatmaps by week



Figure 1-2: Flamingo deployment heat map November 2019

As shown, areas with significant amounts of scooters deployed include Aro Valley, Te Aro, Oriental Bay, Pipitea, Courtenay Place, Lambton Quay, and along the waterfront. As such, E-Scooter deployment is relatively spread out over the city with areas of expected high demand serviced. The main centres for high deployment remained the same over the survey period.

The distribution of E-Scooters would change throughout the day due to riders redistributing the E-Scooters closer to the centre of the city, then riding them back in the evening.

It was noted by Jump⁴ that while the exact deployment location of E-Scooters change daily and were refined over the study period, the main areas in which charged E-Scooters were deployed overnight remained the same.

⁴ Confirmed by Junia Ooi (Jump Scooters)

2. Survey Methodology

Two casual staff members were employed to carry out the observations involved in this study collecting data for E-Scooter riders and pedestrians in parallel. The surveyors recorded information with a tablet application. The same surveyors were used across the six-month period to ensure consistency in data collection. Videos were also collected for the start, middle, and end of the survey for validation of the data, to ensure consistency.

The following section outlines the details of the survey data collection.

2.1 Surveyor Briefing

Survey staff were provided with an initial briefing prior to the start of the surveys to confirm survey requirements, instructions, and to undertake a site health and safety briefing.

A site-specific job safety analysis, explaining potential hazards and controls in place to reduce risk, was signed by each surveyor. Each employee was provided with a high-visibility vest.

Surveyors were instructed to halt surveying should weather affect the operations of the survey and health and safety of surveyors.

2.2 Survey Dates and Times

The surveys were undertaken in six 'two-week' blocks between June 2019 and December 2019, capturing a range of school holiday and non-holiday periods. Table 2-1 outlines the dates in which the surveys took place.

Table 2-1: Survey dates

Date	School Holiday period
18 th June to 1 st July	No
22 nd July to 3 rd August	No
2 nd September to 14 th September	No
30 th September to 12 th October	Yes
4 th November to 16 th November	No
30 th November to 13 th December	No

Each site was surveyed twice over a two-week period between Monday and Saturday, with no surveys occurring on Sunday. Surveying over the six months allows for trends to be analysed over time, with the effect of the school holidays also able to be assessed.

The survey times were carried out from 7:00am to 9:00am and 12:00pm to 2:00pm for Monday to Friday. The survey times were chosen to gain a representative sample for morning and lunchtime periods. The Saturday survey situated at Oriental Parade only occurred between 12:00 and 2:00pm, as this was expected to be the busiest time period along this recreational route, and a representative sample for the whole day. In comparison, the surveys occurring between Monday and Friday incorporated both time periods to capture the fluctuation of scooter volumes over the day. Each survey location was surveyed on the same day for each 'two-week' block; thus each site was surveyed twelve times.

The average weekly rainfall and temperature over the survey period is shown below in Table 2-2.

Table 2-2: Historical weather statistics

Week Start	18/06	25/06	22/07	29/07	2/09	9/09	30/09	7/10	4/11	11/11	30/11	7/12
Average Rainfall (mm)	3	0	1	1	4	5	5	3	1	13	1	7
Average Temperature (°C)	10	10	11	11	11	10	10	13	16	14	18	16

The average weekly rainfall was the highest during the week of November 11th. The temperature was the highest during the week of November 30th.

2.3 Locations

The following section outlines the six locations where the surveys were undertaken. Each location was surveyed on a different day of the week.

Locations were chosen based on the policies outlined in Section 1.1. Areas such as the waterfront and Lambton Quay have restrictions as to where E-scooters are allowed to be ridden, therefore data collection on whether these policies are being upheld at these sites was undertaken. High traffic pedestrian routes with existing shared path components and popular commuter routes were also considered when choosing survey locations. Relevant restrictions from the code of practice for electric powered scooters for four of the survey sites are outlined below in Table 2-3.

Table 2-3: Site restrictions

Site	Speed limit	Footpath restriction	Bus/cycle restriction	lane
Oriental Parade	-	Must ride on shared path/footpath	-	
Waterfront	10km/hr	-	-	
Lambton Quay	-	Footpath-use not allowed	Not allowed	
Courtenay Place	-	Footpath-use not allowed	Not allowed	

The locations are also in line with some of the high E-Scooter deployment areas, outlined in Figure 1-2.

2.3.1 Site 1: Waterfront along Frank Kitts promenade

Site 1, shown in Figure 2-1, was surveyed alongside Frank Kitts Park on Mondays. E-Scooter and pedestrian movements were recorded as North towards TSB Arena and South towards Te Papa.

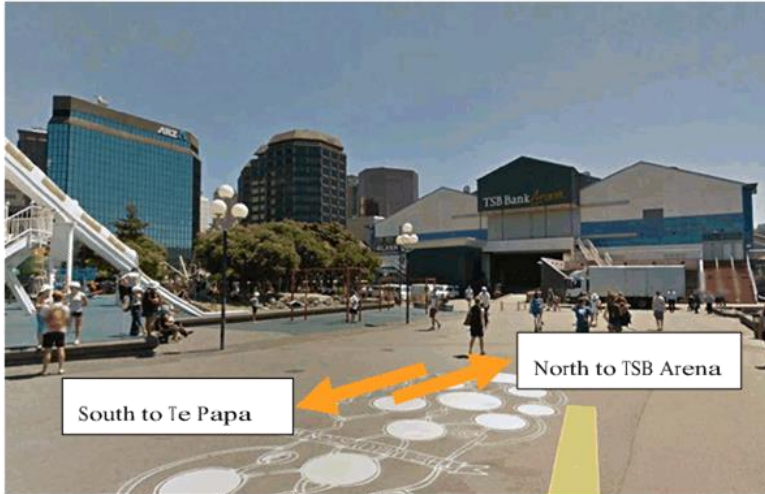


Figure 2-1: Site 1 - Waterfront at Frank Kitts Park

Site 1 includes a wide promenade for pedestrians, cyclists, and E-Scooter users to share. There is no road or bus lane nearby. A posted speed limit of 10km/hr exists along the waterfront in which E-Scooters must not exceed.

2.3.2 Site 2: Lambton Quay at Grey Street

Site 2, shown in Figure 2-2, was surveyed just south of the Lambton Quay / Grey Street intersection on Tuesdays. E-Scooter and pedestrian movements were recorded as North towards Grey Street and South towards Willis Street.

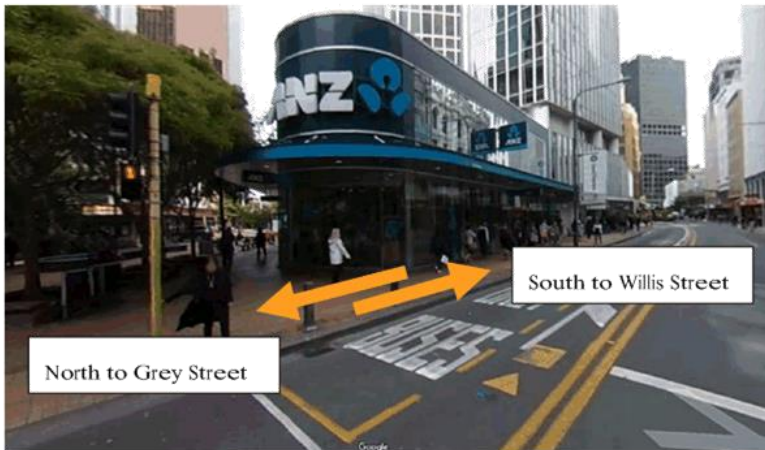


Figure 2-2: Site 2 - Lambton Quay, Wellington CBD

Site 2 includes a footpath alongside the ANZ building, with a bus lane and road adjacent. E-Scooters are not allowed to be ridden on the footpath along Lambton Quay.

2.3.3 Site 3: Featherston Street at Bunny Street

Site 3, shown in Figure 2-3, was surveyed near the Featherston Street / Bunny Street intersection on Thursdays. E-Scooter and pedestrian movements were recorded as North towards the train station, and South away from the train station.

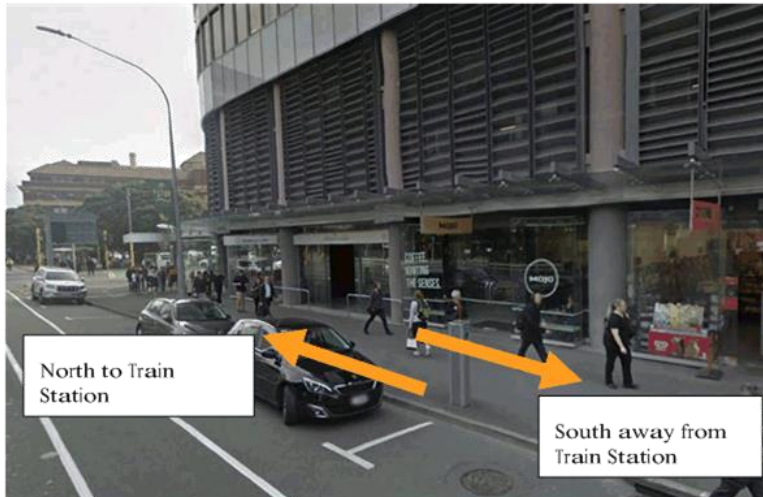


Figure 2-3: Site 3 – Featherston Street, Wellington CBD

Site 3 is adjacent to a dedicated cycle-lane, parking, and multi-lane road facilities.

2.3.4 Site 4: Courtenay Place at Taranaki Street

Site 4, shown in Figure 2-4, was surveyed near the Courtenay Place / Taranaki Street intersection on Fridays. E-Scooter and pedestrian movements were recorded as West towards Taranaki Street and East away from Taranaki Street.



Figure 2-4: Site 4 – Courtney Place

Site 4 is adjacent to a bus lane which doubles as parking facilities (bus lane hours are 4:00pm to 6:00pm), and a single-lane road. E-Scooters are not allowed to be ridden along the footpath at this site.

2.3.5 Site 5: Oriental Parade at the Band Rotunda

Site 5, shown in Figure 2-5, was surveyed near the Band Rotunda on Oriental Parade on Saturdays. E-Scooter and pedestrian movements were recorded in the westbound (towards the city) and eastbound (away from the city) directions.



Figure 2-5: Site 5 - Oriental Parade

Site 5 is a popular shared footpath recreational route along the waterfront. E-Scooters must be ridden on the shared cycle and walking path.

2.3.6 Site 6: Riddiford Street at Wilson Street

Site 6, shown in Figure 2-6, was surveyed near the Riddiford Street / Wilson Street intersection on Wednesdays. E-Scooter and pedestrian movements were recorded as North away from Wilson Street and South towards Wilson Street.



Figure 2-6: Site 6 - Riddiford Street, Newtown

Site 6 is located near a bus stop, with a road adjacent to the footpath. There is no bus lane adjacent to this site.

2.4 Data Collection

This section outlines the method of data collection through means of tablet application input. One surveyor recorded E-Scooter information, and one surveyor recorded pedestrian volumes.

2.4.1 E-Scooter Application

Figure 2-7 shows an example of the E-Scooter app screen. Each form takes approximately 30 seconds to fill out. It was expected that the volumes of E-Scooters would be low enough to record information for every scooter that went past, which proved to be the case in practice.

The screenshot shows a survey form with the following sections and options:

- Rider Age Range:**
 - Youth (0-18)
 - Young Adult (18-30)
 - Older Adult (30-65)
 - Senior (65+)
- Direction:**
 - East away from City
 - West to City
- Rider Safety:**
 - Helmet
 - More than 1 rider
- Rider Position:**
 - Footpath
 - Cycle Lane / Bus Lane
 - Road
- Scooter Ownership:**
 - Flamingo
 - JUMP
 - Privately Owned
- Rider Max Speed:**
 - Walking Speed
 - Jogging Speed
 - Running Speed
- Smallest Gap Acceptance:**
 - Small(0 - 0.5m)
 - Medium(0.5m - 1m)
 - Large(1m +)
- Overall Rider Safety:** A slider ranging from 'Very Safe' to 'Very Unsafe', with the marker positioned towards the 'Very Safe' end.
- SUBMIT** button.

Figure 2-7: E-Scooter survey screen example

The information collected with the E-Scooter survey app includes:

- Rider age (estimation);
- Direction of travel;
- Helmet usage;
- Number of riders per scooter;
- Rider position (footpath, cycle lane, bus lane, or road);
- Scooter ownership/company;
- Rider speed (estimation);
- Gap acceptance/proximity to obstructions (estimation); and
- Overall rider safety.

Rider speed, gap acceptance, and overall safety are qualitative observations, therefore it was a priority to employ the same surveyors over the six months to carry out the E-Scooter surveys to avoid bias. A demonstration of what is considered 'safe' and 'unsafe' was provided at the beginning of the survey for them to base their observations on. Speed and gap acceptance were also evaluated on an approximation and was not measured directly. Upon analysing video files obtained over the survey period, it can be concluded that the surveyor's bias did not change, and observations made were consistent over the six-month survey period.

The application provided functionality in which rider age, direction, and position returns to the last inputted value to allow for groups of multiple E-Scooter riders to be recorded in a relatively fast manner.

2.4.2 Pedestrian Application

Figure 2-8 shows an example of the pedestrian count app screen. Pedestrian counts were recorded walking through the site bi-directionally, with no age or gender information recorded.

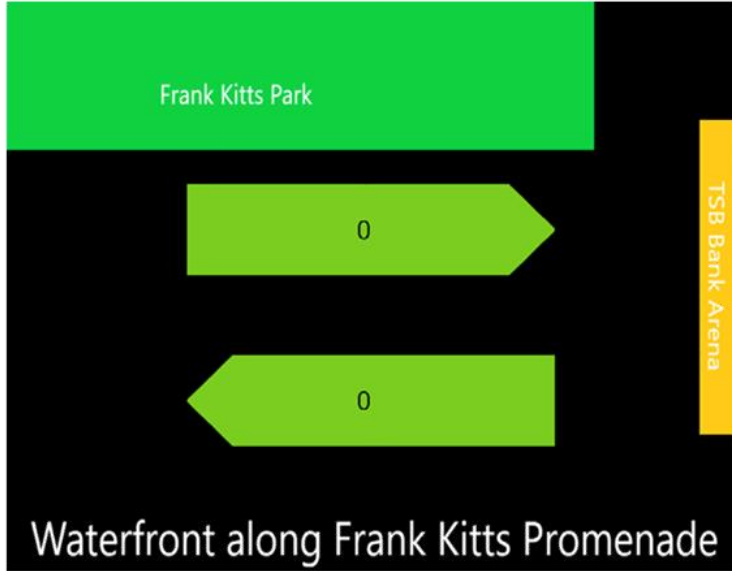


Figure 2-8: Pedestrian survey screen example

The volumes of pedestrians inform the analysis of E-Scooter rider behaviour with relationships between pedestrian volume and rider position (footpath, cycle lane, bus lane, or road) or rider speed.

3. Results

The following section outlines the results obtained from the E-Scooter and pedestrian surveys. A full breakdown of data is outlined in **Appendix A** for E-Scooters and pedestrians.

3.1 Overall Trends

This section outlines how the volumes of E-Scooters and pedestrians changed over the survey period.

Over the six-month survey period, there was fluctuations in rainfall. Outlined further in Section 3.1.1, E-Scooter volumes were affected by heavy rainfall, especially at the waterfront and Oriental Parade sites. **Appendix B** outlines the rainfall over the six-month period obtained from The National Climate Database⁵.

3.1.1 Volumes

Figure 3-1 below shows how the E-Scooter volumes changed over the survey period, along with weekly average rainfall.

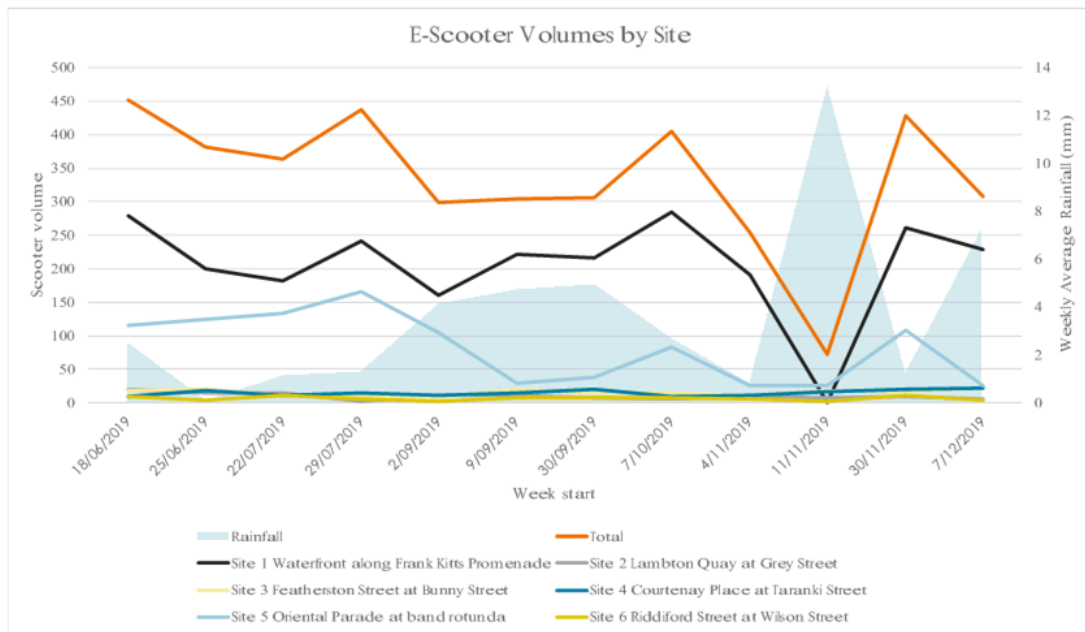


Figure 3-1: E-Scooter volumes by site over the survey period, with weekly average rainfall

The amount of E-Scooter riders was the highest at Site 1 along the waterfront, with the least amount at Site 6 along Riddiford Street. A slight decrease in total E-Scooter usage over time has occurred, with a consistently lower volume of E-Scooters recorded in September. Heavier rainfall periods were recorded in September, November, and December. It is noted that the significant decrease in E-Scooter volumes at the waterfront on November 11th can be attributed to the survey being called off, due to severe weather.

Appendix C shows the overall volume trends for the AM and PM peaks, as well as the volumes set out on a logarithmic scale. An increase in total E-Scooter usage over the study period occurred for the AM peak, with a decrease in the PM lunchtime period. The logarithmic scale graph shows Sites 2, 3, 4, and 6 with relatively consistent volumes over the survey period.

⁵ Rainfall data obtained for Kelburn and Rongotai from <https://cliflo.niwa.co.nz>

3.1.2 Scooter Company

Shown in Figure 3-2, the amount of Flamingo versus Jump users was relatively consistent over the survey period, with a slight users' preference towards Jump. Overall, 43% of riders used Jump, 41% used Flamingo, and 16% used privately owned E-Scooters.

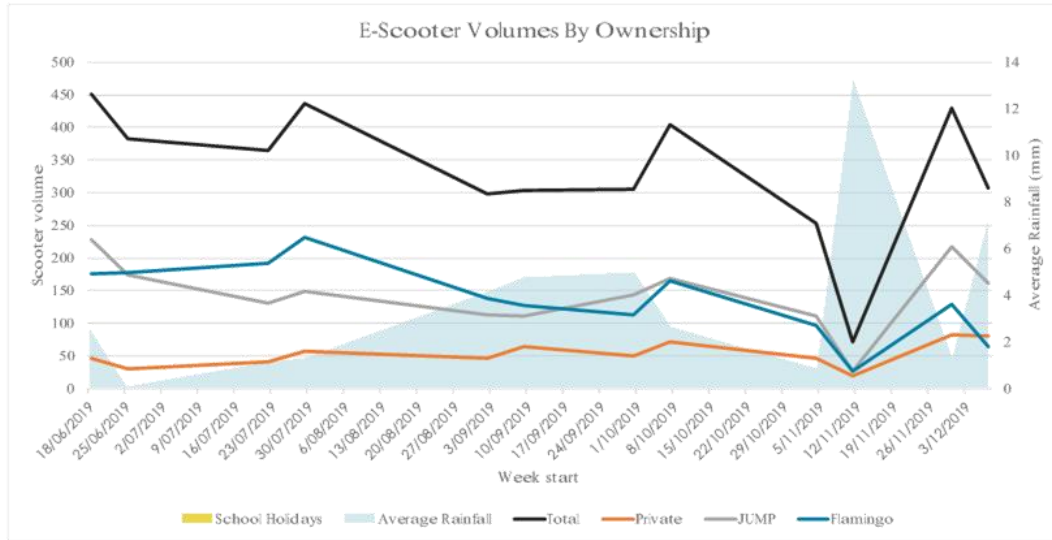


Figure 3-2: E-Scooter volumes by company vs private, with the September school holiday period outlined

There was no significant effect on E-Scooter usage during the September school holidays, with a drop in usage during the peak rainfall period in November. An overall drop in total E-Scooter usage occurred over the survey period.

3.1.3 E-Scooter usage by age

Figure 3-3 below shows the breakdown of age groups using E-Scooters over the survey period. Outlined in Section 2, the methodology used for assessing rider age was by estimation.

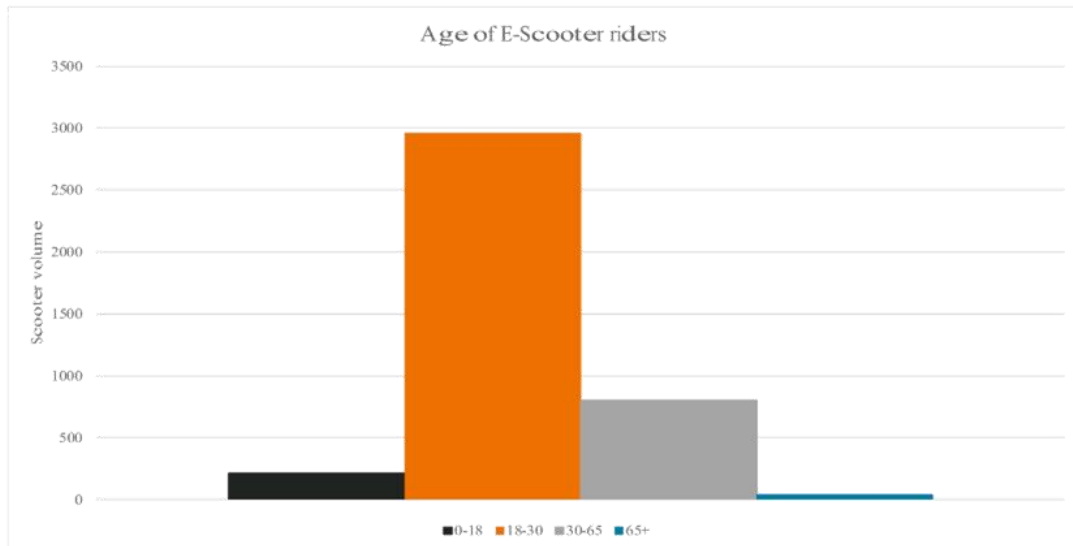


Figure 3-3: Amount of E-Scooter riders by age

As shown, the majority of E-Scooter users were aged between 18 and 30 years old. The least amount of E-Scooter users were aged over 65 years old.

The trend in E-Scooter rider ages over time is shown in Figure 3-4.

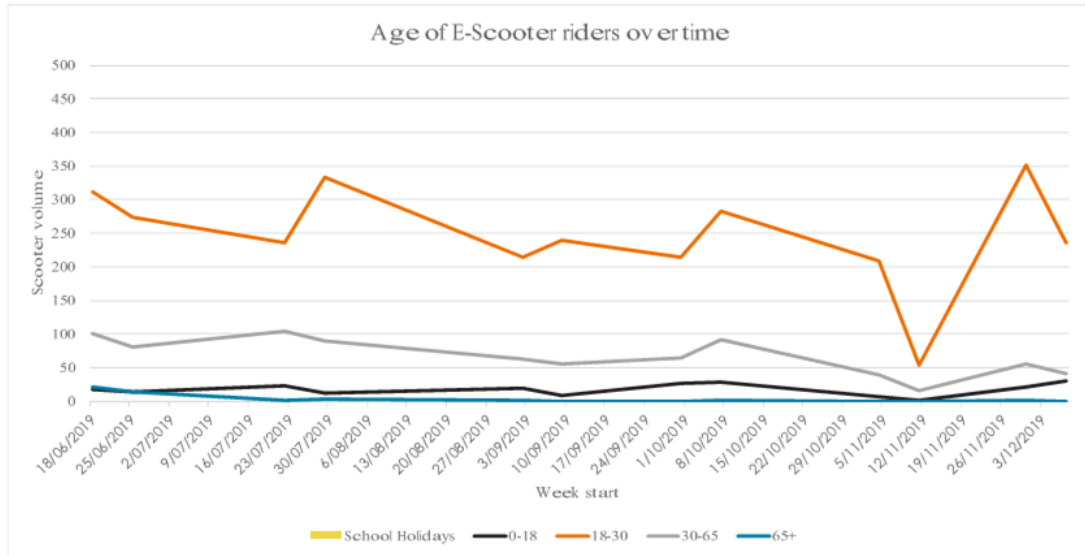


Figure 3-4: Age of E-Scooter riders over the six month survey period

The trend for each age group stayed consistent over the course of the survey, with no evidence to suggest that the school holiday period influenced a significant influx of younger E-Scooter riders.

3.1.4 Facility Utilisation

Facility utilisation over time is shown below in Figure 3-5, for all sites. It is noted that not all sites incorporate bus and cycle lanes, or roads.

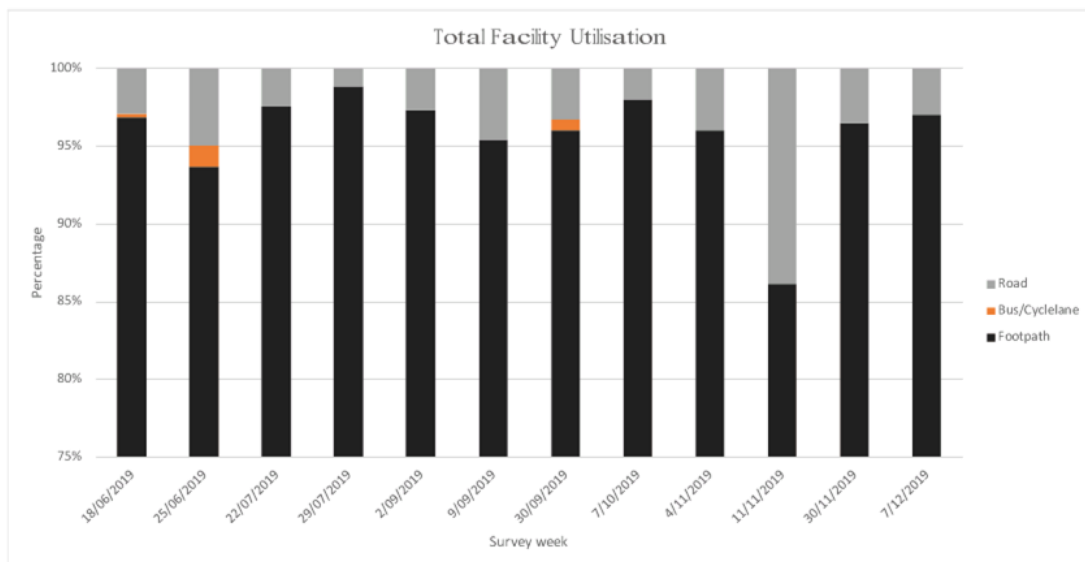


Figure 3-5: Overall facility utilisation breakdown by percentage

The vast majority of scooter riders used the footpath at a rate of above 90% of rides until the week of November 11th, with little to no usage of cycle or bus lanes over the course of the survey. As discussed previously, a significant portion of E-Scooter volumes were observed at the waterfront site, therefore the rained out survey day on November 11th brought footpath usage down, with an increase in overall road usage.

Appendix D shows the facility utilisation by site. In general, most riders used the footpath.

Although users are not permitted by the Council’s policy to ride E-Scooters on the footpath at the Lambton Quay and Courtenay Place sites, the facility utilisation data shows a consistent majority of E-Scooter riders using the footpath. This is shown below in Figure 3-6 and Figure 3-7.

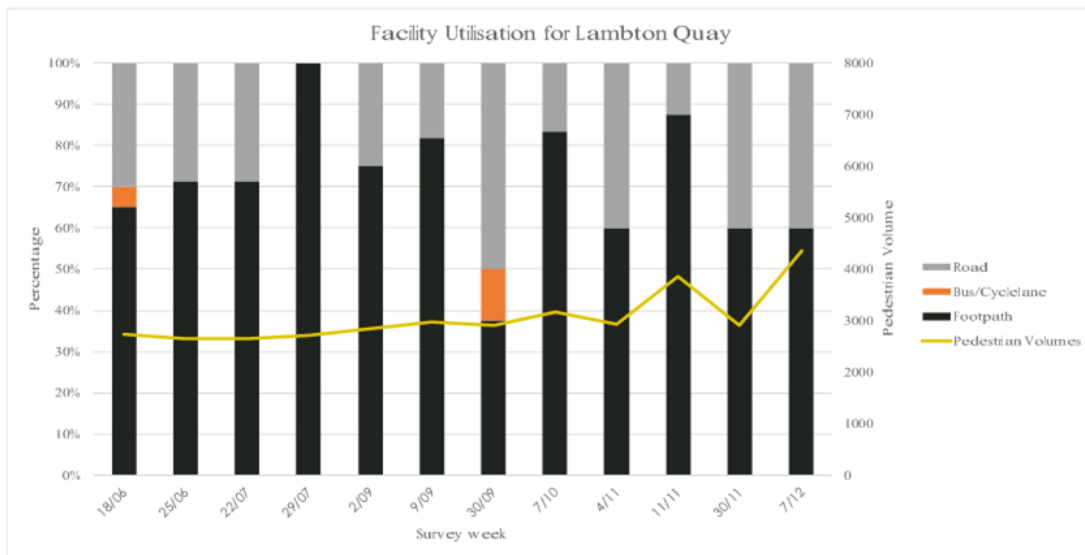


Figure 3-6: Facility utilisation at Site 2

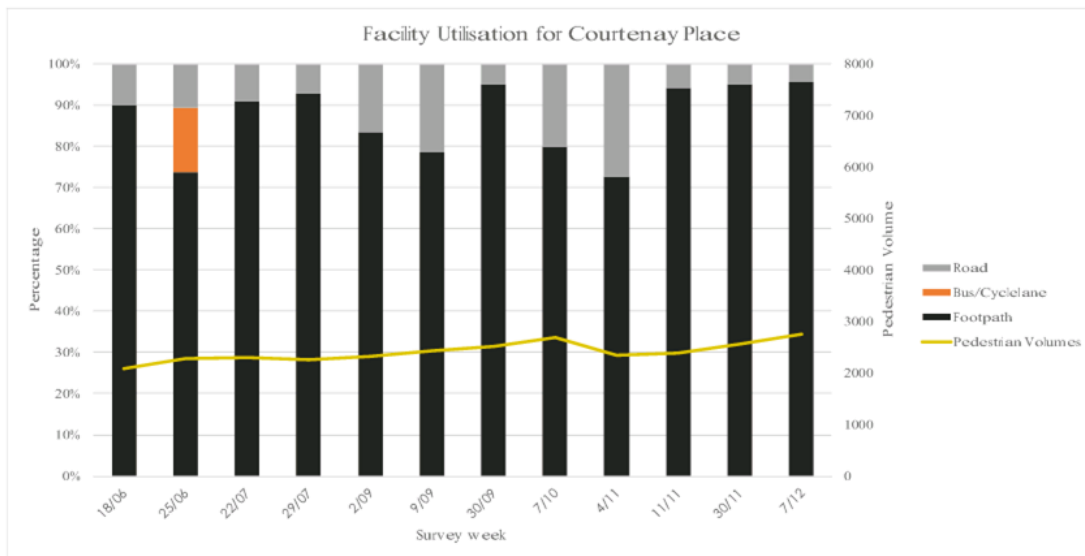


Figure 3-7: Facility utilisation at Site 4

The bus lanes at the two sites were used sporadically over the survey period, as shown above.

The facility utilisation at the Oriental Parade Site (Site 5) is shown in Figure 3-8. Similar to Lambton Quay and Courtenay Place, E-Scooter riders did not follow rules set out by the Council for allowed facility use. For the Oriental Parade site specifically, road usage is not allowed, however E-Scooters were observed travelling on the road at numerous times throughout the survey.

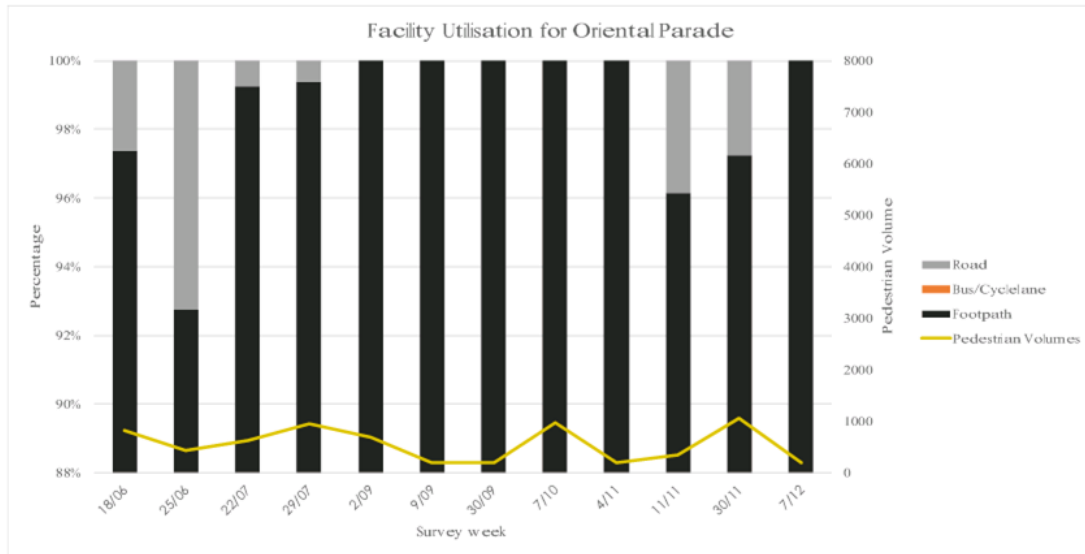


Figure 3-8: Facility utilisation at Site 5

The facility utilisation at Lambton Quay, Courtenay Place, and Oriental Parade are not in line with the policies set by the Council.

3.2 Safety Variables

3.2.1 Helmet Usage

The usage of helmets by E-Scooter riders is outlined in Table 3-1 below, with percentage of the total volume of E-Scooters, and the percentage by E-Scooter ownership.

Table 3-1: Percentage of E-Scooter helmet usage

Scooter Ownership	Percentage of Total Volume	Percentage by Ownership
Private	4.4%	22.6%
Flamingo	0.4%	1.2%
Jump	0.9%	2.1%

The amount of Jump riders using a helmet was around double that of Flamingo riders. 22.6% of users with privately owned E-Scooters wore helmets.

3.2.2 Shared Scooter Usage

Outlined in Section 2.1, single ridership is encouraged. The instances of shared rides (i.e. more than one rider per E-Scooter) over time by E-Scooter company is shown below in Figure 3-9.

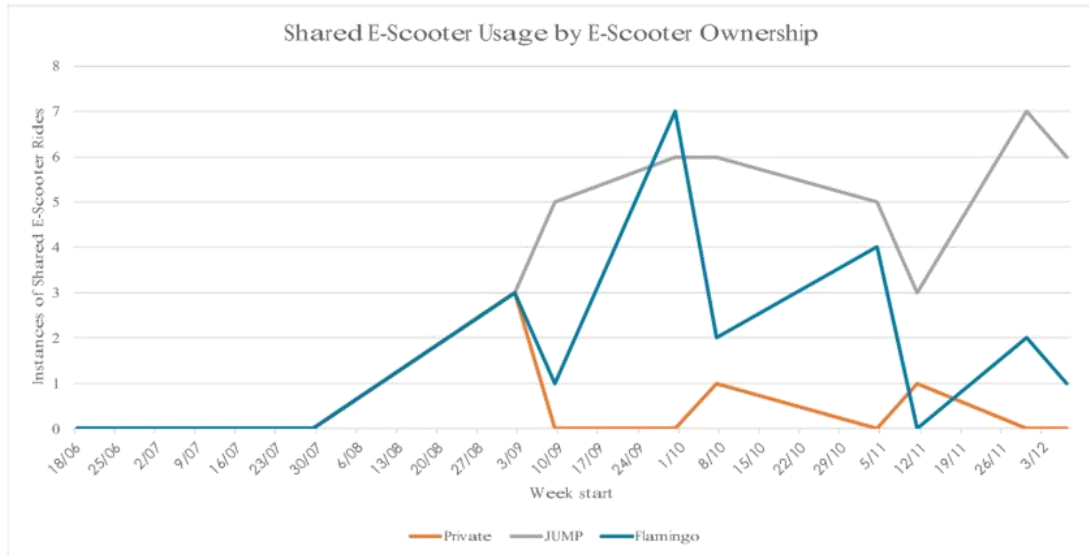


Figure 3-9: Percentage of E-Scooter users with more than one rider

Jump E-Scooters were subject to the highest volume of shared usage, with the lowest shared usage recorded for privately owned E-Scooters. A total of 66 rides were recorded with more than one rider over the six month period.

3.3 Qualitative Analysis

The subjective variables collected by the surveyor collecting E-Scooter data, such as perceived speed and overall safety, are outlined in this section. Consistency was a priority in the collection of this data to avoid a change in bias. Videos were collected to monitor bias fluctuation at the start, middle, and end of the survey period.

3.3.1 Percieved Speed

The perceived speed of E-Scooter riders was considered at walking, jogging, and running speeds.

Figure 3-10 shows the percentage breakdown of speeds travelled along the waterfront site over the study period, with supplementary pedestrian volumes across the site.

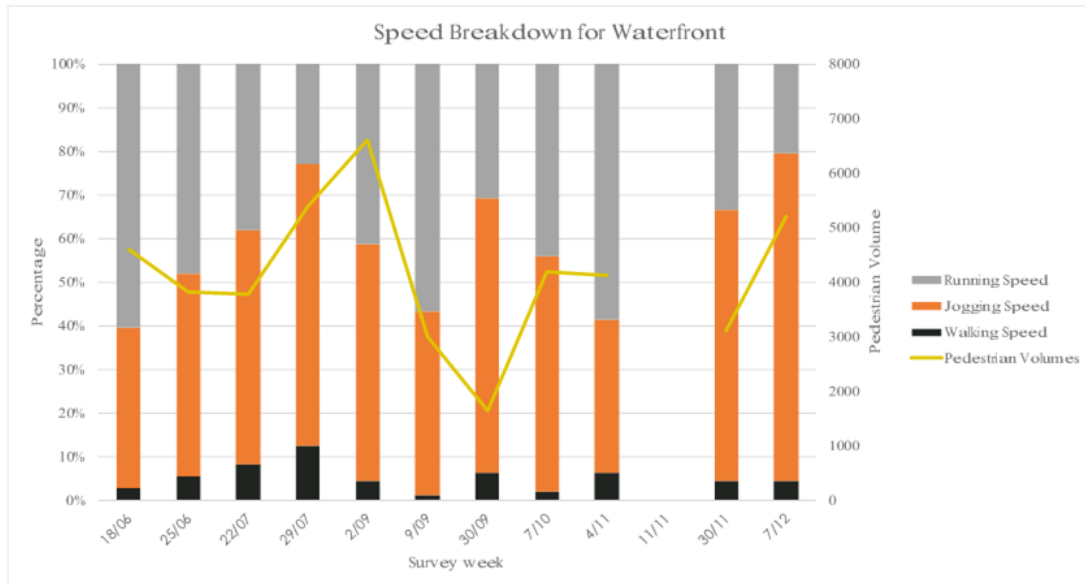


Figure 3-10: Speeds of E-Scooters by percentage at Site 1, with pedestrian volumes

Fluctuating speeds of E-Scooters travelling along the waterfront (Site 1) were recorded, with fluctuating pedestrian volumes over the survey period. It is noted that the survey was called off on November 11th due to heavy rainfall.

A large majority of E-Scooters were estimated to be travelling at ‘running speed’, indicating users were travelling at higher speeds than the 10km/hr posted speed limit imposed along the waterfront.

Figure 3-11 shows the percentage breakdown of perceived speeds travelled along Lambton Quay (Site 2) over the study period, with supplementary pedestrian volumes across the site.

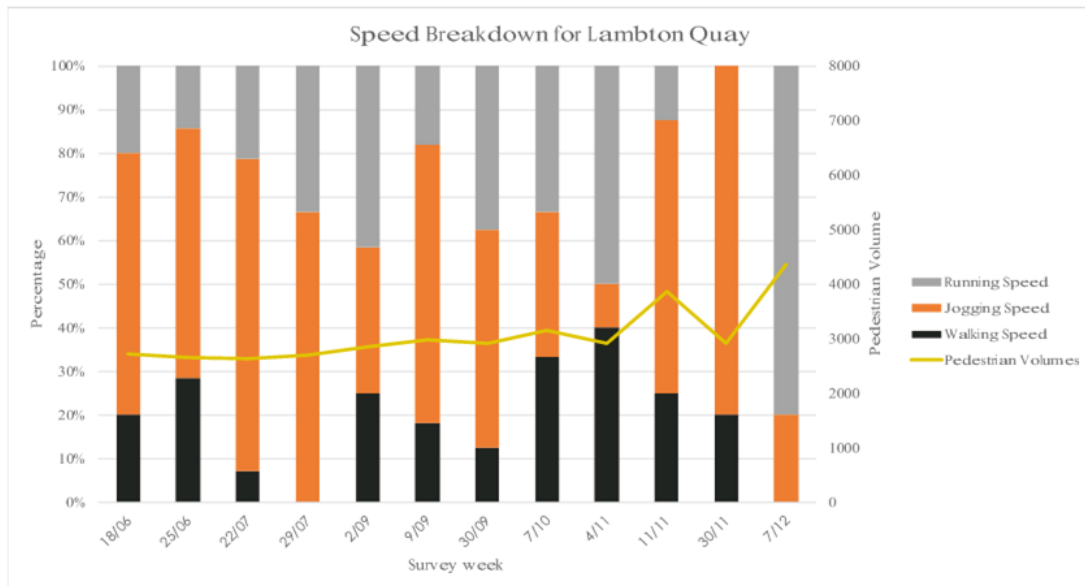


Figure 3-11: Speeds of E-Scooters by percentage at Site 2, with pedestrian volumes

Pedestrian volumes along the Lambton Quay site generally increased over time. There were more E-Scooters perceived to be travelling at walking speed at this site compared to at the waterfront.

Figure 3-12 shows the percentage breakdown of speeds travelled along Featherston Street (Site 3) over the study period, with supplementary pedestrian volumes across the site.

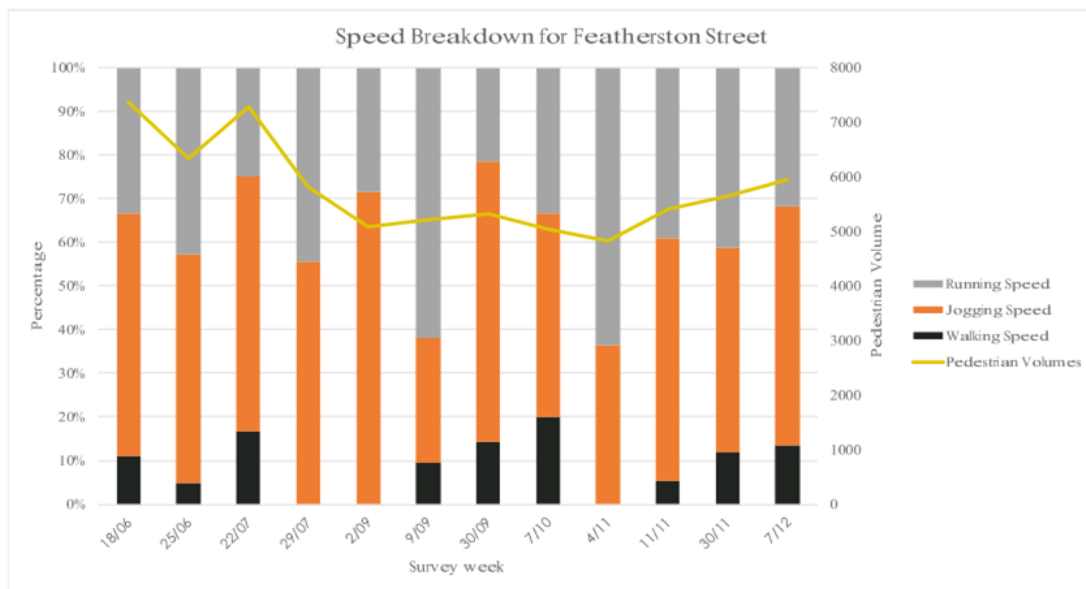


Figure 3-12: Speeds of E-Scooters by percentage at Site 3, with pedestrian volumes

The Featherston Street site saw the most pedestrians over the survey period compared to the other sites. Perceived speeds travelled by E-Scooters fluctuated over time.

Figure 3-13 shows the percentage breakdown of speeds travelled along Courtenay Place (Site 4) over the study period, with supplementary pedestrian volumes across the site.

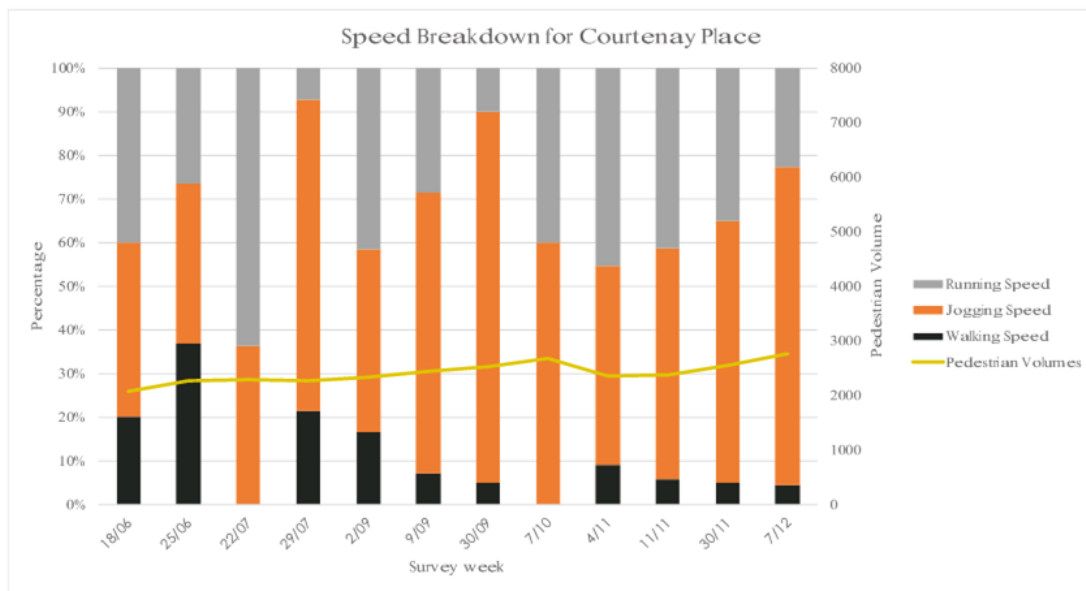


Figure 3-13: Speeds of E-Scooters by percentage at Site 4, with pedestrian volumes

Courtenay Place had relatively consistent pedestrian volumes, with fluctuations in E-Scooter travel speed.

Figure 3-14 shows the percentage breakdown of perceived speeds travelled along Oriental Parade (Site 5) over the study period, with supplementary pedestrian volumes across the site.

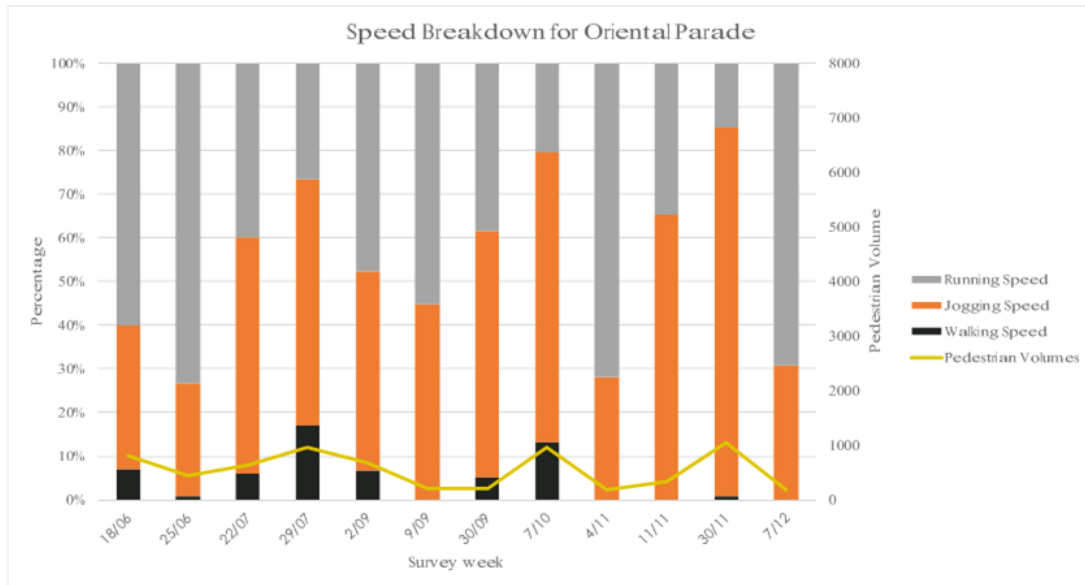


Figure 3-14: Speeds of E-Scooters by percentage at Site 5, with pedestrian volumes

Oriental Parade saw low volumes of pedestrians overall as the AM peak period was not recorded. A generally higher proportion of E-Scooters were perceived to be travelling at ‘running speed’ compared to other sites.

Figure 3-15 shows the percentage breakdown of speeds travelled along Riddiford Street (Site 6) over the study period, with supplementary pedestrian volumes across the site.

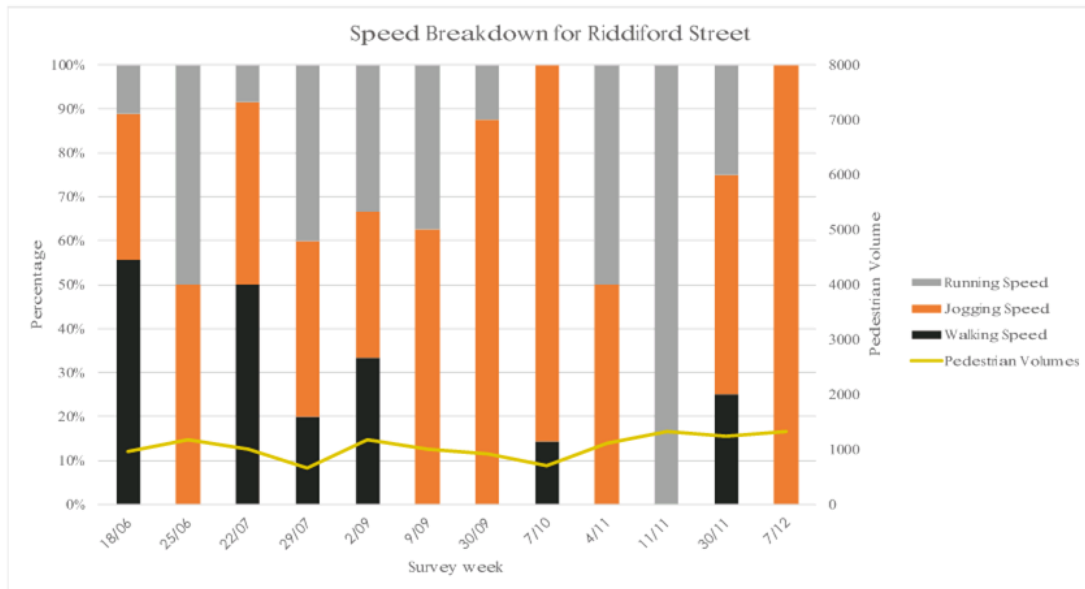


Figure 3-15: Speeds of E-Scooters by percentage at Site 6, with pedestrian volumes

A higher proportion of E-Scooters were perceived to be travelling at ‘walking speed’ at the Riddiford Street site. A consistent pedestrian volume was observed over the study period.

3.3.2 Safety Analysis

The safety rating by site is shown in Figure 3-16. The rating is based on a scale of 'very safe to 'very unsafe'.

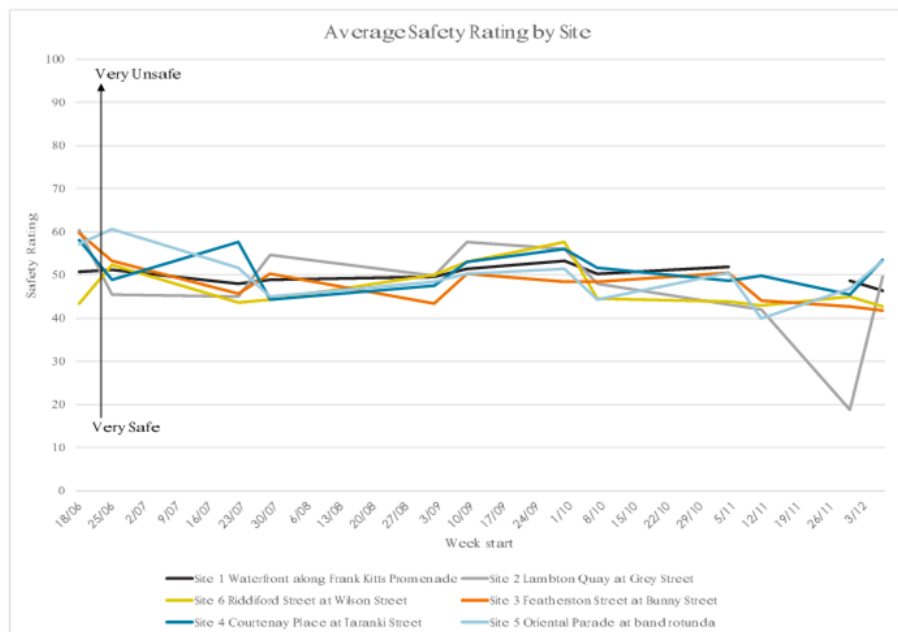


Figure 3-16: Average perceived safety per site

Over the study period, E-Scooter riders were considered to be acceptably safe, consistently in the middle of 'very safe' and 'very unsafe'.

Figure 3-17 shows the safety rating by E-Scooter ownership. Again, the rating is based on a scale of 'very safe' to 'very unsafe'.

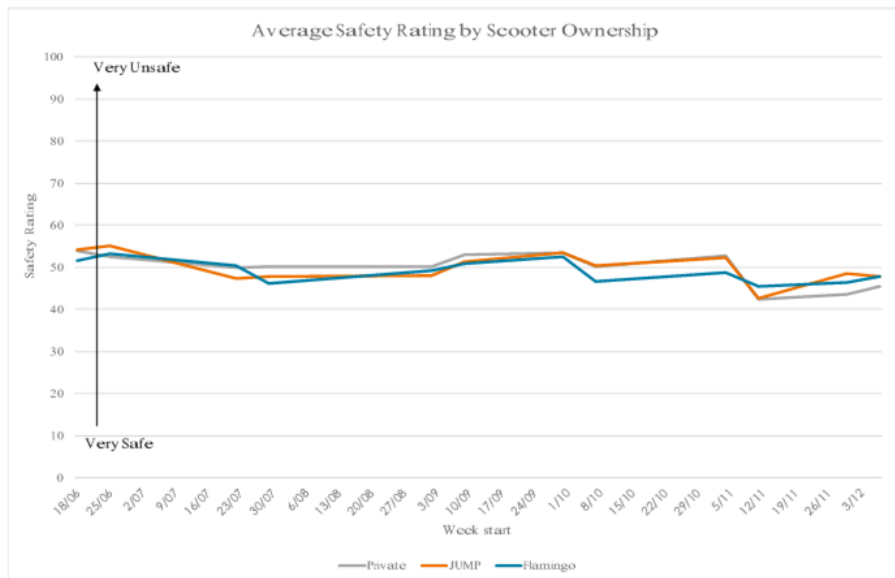


Figure 3-17: Average perceived safety for scooter ownership

There is no variation between perceived safety and which scooter company is being used.

3.3.3 Data Validation

The validity of perceived speed and overall safety rating data was assessed by reviewing the video footage to determine whether the surveyor had a bias and how it changed over time.

Figure 3-18 shows the surveyor’s speed estimations on Friday 13 December versus the validation. This date was chosen for validation as it was the final day of surveying.

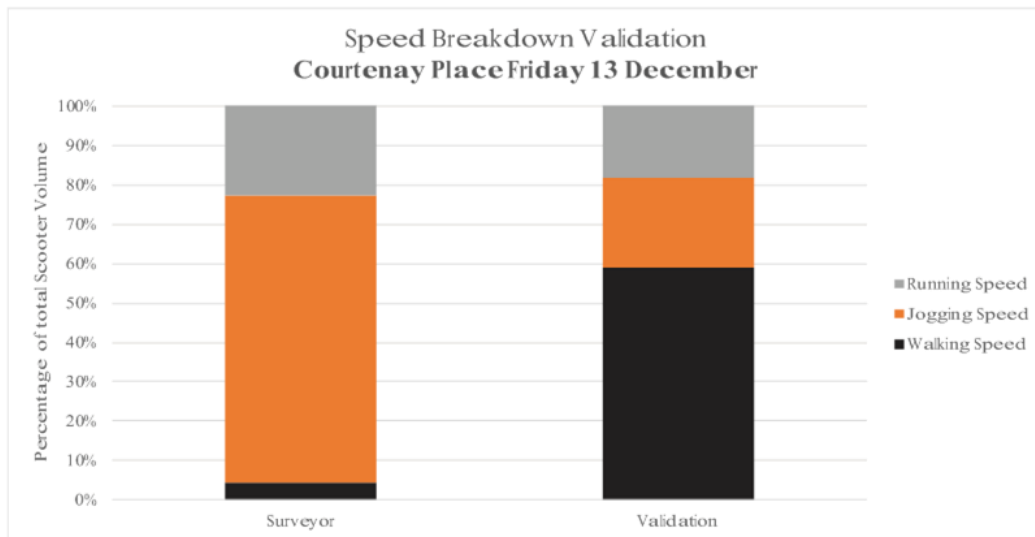


Figure 3-18: Perceived speed of E-Scooters – validation

The surveyor recorded similar amounts of E-Scooters at running speed as the validation, with a significant percentage more at jogging speeds, and a low percentage at walking speeds. According to the validation, it is difficult for two different people to differentiate ‘jogging speed’ from ‘walking speed’. The surveyor would be able to determine which E-Scooters were ‘fast’ and ‘slow’ if the three speed categories were simplified to two, as the ‘running speed’ percentages are similar when compared to the validation.

Figure 3-19 shows the safety rating validation for the dates at the start, middle, and end of the survey period.

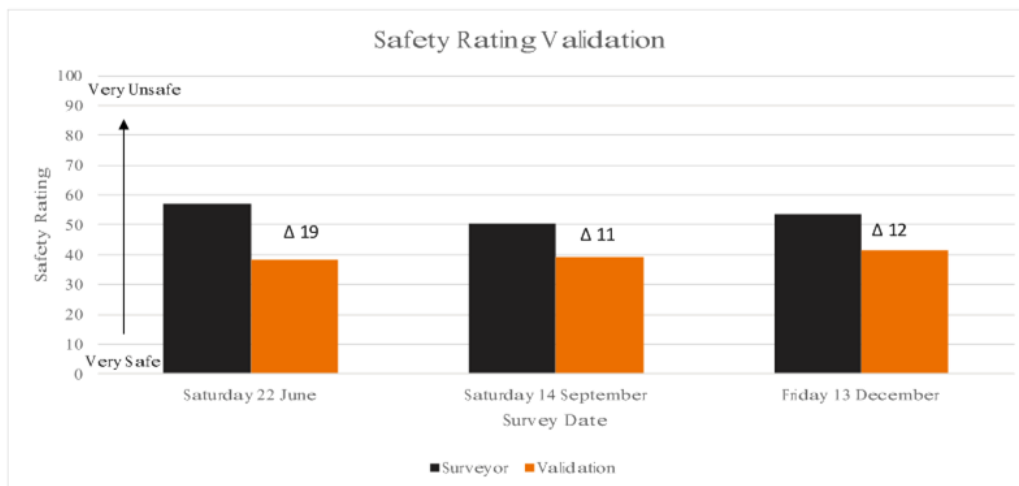


Figure 3-19: Safety rating – validation

It is shown that the surveyor recorded riders to be less safe consistently than the validation. The average safety rating recorded did not significantly change over time. Therefore the surveyor’s estimation did not change over the survey period.

4. Summary

The purpose of the survey outlined in this report was to collect data on the safety and overall trends of E-Scooter trial usage in Wellington over a six-month period. The data collected will help inform Wellington City Council on how people have been using E-Scooters during the first six months of the 18 month trial.

The key findings from the survey are outlined below:

- There was an overall decline in E-Scooter usage over the survey period;
- The highest E-Scooter volumes were observed along the waterfront and Oriental Parade;
- A preference was not apparent between Jump and Flamingo;
- Most riders were aged between 18 and 30 years old;
- E-Scooter users tended to use the footpath;
- Footpath and road use restrictions and speed limits are generally not being abided by at Lambton Quay, Courtenay Place, Oriental Parade, and along the waterfront;
- A low percentage of E-Scooter riders wore helmets, with privately owned E-Scooters being a notable exception;
- Shared E-Scooter usage was observed with more than one rider per vehicle;
- Speeds of E-Scooters fluctuated depending on location of the survey site; and
- Overall safety of E-Scooters was at an 'acceptable' level over the course of the survey.



Appendix A: Survey Results Summary

Weekly	Date	18/06	25/06	22/07	29/07	2/09	9/09	30/09	7/10	4/11	11/11	30/11	7/12		
Volumes	AM	Total	127	124	121	142	125	165	169	206	145	32	199	159	
		Private	28	23	29	33	30	53	42	52	36	11	54	63	
		JUMP	66	42	46	51	42	52	73	76	62	10	100	78	
	PM	Total	324	258	243	295	174	139	137	199	109	40	230	148	
		Private	19	7	12	24	17	12	8	20	10	8	28	17	
		JUMP	162	132	85	98	71	60	70	92	49	17	118	84	
	Percentage	AM	Private	22%	19%	24%	23%	24%	32%	25%	25%	25%	34%	27%	40%
			JUMP	52%	34%	38%	36%	34%	32%	43%	37%	43%	31%	50%	49%
			Flamingo	26%	48%	38%	41%	42%	36%	32%	38%	32%	34%	23%	11%
PM		Private	6%	3%	5%	8%	10%	9%	6%	10%	9%	20%	12%	11%	
		JUMP	50%	51%	35%	33%	41%	43%	51%	46%	45%	43%	51%	57%	
		Flamingo	44%	46%	60%	59%	49%	48%	43%	44%	46%	38%	37%	32%	
Volumes		Total	451	382	364	437	299	304	306	405	254	72	429	307	
		Private	47	30	41	57	47	65	50	72	46	19	82	80	
		JUMP	228	174	131	149	113	112	143	168	111	27	218	162	
	Flamingo	176	178	192	231	139	127	113	165	97	26	129	65		
Percentage	Private	10%	8%	11%	13%	16%	21%	16%	18%	18%	26%	19%	26%		
	JUMP	51%	46%	36%	34%	38%	37%	47%	41%	44%	38%	51%	53%		
	Flamingo	39%	47%	53%	53%	46%	42%	37%	41%	38%	36%	30%	21%		
Count of Shared Rides	Private	0	0	0	0	3	0	0	1	0	1	0	0		
	JUMP	0	0	0	0	3	5	6	6	5	3	7	6		
	Flamingo	0	0	0	0	3	1	7	2	4	0	2	1		
% of Shared Rides	Private	0%	0%	0%	0%	6%	0%	0%	1%	0%	5%	0%	0%		
	JUMP	0%	0%	0%	0%	3%	4%	4%	4%	5%	11%	3%	4%		
	Flamingo	0%	0%	0%	0%	2%	1%	6%	1%	4%	0%	2%	2%		
Count of Helmets (2 fortnights of no data)	Private	0	0	0	0	10	12	8	20	10	4	17	23		
	JUMP	0	0	0	0	1	3	0	9	2	1	5	1		
	Flamingo	0	0	0	0	2	0	0	5	0	0	3	0		
% of Helmets (2 fortnights of no data)	Private	0%	0%	0%	0%	21%	18%	16%	28%	22%	21%	21%	29%		
	JUMP	0%	0%	0%	0%	1%	3%	0%	5%	2%	4%	2%	1%		
	Flamingo	0%	0%	0%	0%	1%	0%	0%	3%	0%	0%	2%	0%		
Speed Break down	<1.5 m/s	Private	2	1	1	3	1	1	2	3	3	1	5	7	
		JUMP	14	10	10	17	10	3	7	7	8	1	10	6	
		Flamingo	13	13	21	42	9	4	11	13	6	2	6	1	
	1.5 - 10 m/s	Private	22	15	18	33	28	19	27	26	14	12	48	58	
		JUMP	77	70	79	103	60	52	83	94	34	15	150	121	
		Flamingo	70	68	99	132	62	62	85	109	39	14	90	33	
	> 10 m/s	Private	23	14	22	21	18	45	21	43	29	6	29	15	
		JUMP	137	94	42	29	43	57	53	67	69	11	58	35	
		Flamingo	93	97	72	57	68	61	17	43	52	10	33	31	
Speed Break down	<1.5 m/s	Private	4%	3%	2%	5%	2%	2%	4%	7%	5%	6%	9%		
		JUMP	6%	6%	8%	11%	9%	3%	5%	4%	7%	4%	5%	4%	
		Flamingo	7%	7%	11%	18%	6%	3%	10%	8%	6%	8%	5%	2%	
	1.5 - 10 m/s	Private	47%	50%	44%	58%	60%	29%	54%	36%	30%	63%	59%	73%	
		JUMP	34%	40%	60%	69%	53%	46%	58%	56%	31%	56%	69%	75%	
		Flamingo	40%	38%	52%	57%	45%	49%	75%	66%	40%	54%	70%	51%	
	> 10 m/s	Private	49%	47%	54%	37%	38%	69%	42%	60%	63%	32%	35%	19%	
		JUMP	60%	54%	32%	19%	38%	51%	37%	40%	62%	41%	27%	22%	
		Flamingo	53%	54%	38%	25%	49%	48%	15%	26%	54%	38%	26%	48%	
Average Safety Rating	Private	53.98	52.43	49.88	50.21	50.21	52.92	53.56	50.26	52.72	42.32	43.7195122	45.4875		
	JUMP	54.15	55.11	47.32	47.93	47.98	51.44	53.45	50.52	52.21	42.74	48.559633	47.734568		
	Flamingo	51.51	53.25	50.37	46.18	49.23	50.92	52.44	46.55	48.84	45.58	46.4341085	47.753846		
Age	0-18	18	14	23	12	20	9	27	29	6	2	21	30		
	18-30	311	274	236	333	215	240	214	282	209	54	351	236		
	30-65	101	80	104	89	63	55	65	92	39	16	55	41		
	65+	21	14	1	3	1	0	0	2	0	0	2	0		

Appendix A: Survey Results Summary

Weekly	Date	18/06	25/06	22/07	29/07	2/09	9/09	30/09	7/10	4/11	11/11	30/11	7/12	
Spend Break down	Site 1 Waterfront along Frank KETTS Promenade	<1.5 m/s	8	11	15	30	7	3	14	6	12	12	10	
		1.5 - 10 m/s	102	93	98	156	87	93	136	153	67	162	171	
		> 10 m/s	169	96	69	55	66	125	67	125	112	87	47	
	Site 2 Lambton Quay at Grey Street	<1.5 m/s	4	4	1	0	3	2	1	2	4	2	2	0
		1.5 - 10 m/s	12	8	10	2	4	7	4	2	1	5	8	1
		> 10 m/s	4	2	3	1	5	2	3	2	5	1	0	4
	Site 6 Biddiford Street at Wilson Street	<1.5 m/s	5	0	6	1	1	0	0	1	0	0	3	0
		1.5 - 10 m/s	3	2	5	2	1	5	7	6	3	0	6	4
		> 10 m/s	1	2	1	2	1	3	1	0	3	3	3	0
	Site 3 Featherston Street at Bunny Street	<1.5 m/s	2	1	2	0	0	2	2	3	0	1	2	3
		1.5 - 10 m/s	10	11	7	5	5	6	9	7	4	10	8	12
		> 10 m/s	6	9	3	4	2	13	3	5	7	7	7	7
	Site 4 Courtenay Place at Taranaki Street	<1.5 m/s	2	7	0	3	2	1	1	0	1	1	1	1
		1.5 - 10 m/s	4	7	4	10	5	9	17	6	5	9	12	16
		> 10 m/s	4	5	7	1	5	4	2	4	5	7	7	5
	Site 5 Oriental Parade at hand rounda	<1.5 m/s	8	1	8	28	7	0	2	11	0	0	1	0
		1.5 - 10 m/s	38	32	72	93	48	13	22	55	7	17	92	8
		> 10 m/s	69	91	53	44	50	16	15	17	18	9	16	18
Spend % Break down	Site 1 Waterfront along Frank KETTS Promenade	<1.5 m/s	3%	6%	8%	12%	4%	1%	6%	2%	6%	5%	4%	
		1.5 - 10 m/s	37%	47%	54%	65%	54%	42%	63%	54%	35%	62%	75%	
		> 10 m/s	61%	48%	38%	23%	41%	57%	31%	44%	59%	33%	21%	
	Site 2 Lambton Quay at Grey Street	<1.5 m/s	20%	29%	7%	0%	25%	18%	13%	33%	40%	25%	20%	0%
		1.5 - 10 m/s	60%	57%	71%	67%	33%	64%	50%	33%	10%	63%	80%	20%
		> 10 m/s	20%	14%	21%	33%	42%	18%	38%	33%	50%	13%	0%	80%
	Site 6 Biddiford Street at Wilson Street	<1.5 m/s	56%	0%	50%	20%	33%	0%	0%	14%	0%	0%	25%	0%
		1.5 - 10 m/s	33%	50%	42%	40%	33%	63%	88%	86%	50%	0%	50%	100%
		> 10 m/s	11%	50%	8%	40%	33%	38%	13%	0%	50%	100%	25%	0%
	Site 3 Featherston Street at Bunny Street	<1.5 m/s	11%	5%	17%	0%	0%	10%	14%	20%	0%	6%	12%	14%
		1.5 - 10 m/s	56%	52%	58%	56%	71%	29%	64%	47%	36%	56%	47%	55%
		> 10 m/s	33%	43%	25%	44%	29%	62%	21%	33%	64%	39%	41%	32%
	Site 4 Courtenay Place at Taranaki Street	<1.5 m/s	20%	37%	0%	21%	17%	7%	5%	0%	9%	6%	5%	5%
		1.5 - 10 m/s	40%	37%	36%	71%	42%	64%	85%	60%	45%	53%	60%	73%
		> 10 m/s	40%	26%	64%	7%	42%	29%	10%	40%	45%	41%	35%	23%
	Site 5 Oriental Parade at hand rounda	<1.5 m/s	7%	1%	6%	17%	7%	0%	5%	13%	0%	0%	1%	0%
		1.5 - 10 m/s	33%	26%	54%	56%	46%	45%	56%	66%	28%	65%	84%	31%
		> 10 m/s	60%	73%	40%	27%	48%	55%	38%	20%	72%	35%	15%	69%

Appendix A: Survey Results Summary

Weekly	Date	18/06	25/06	22/07	29/07	2/09	9/09	30/09	7/10	4/11	11/11	30/11	7/12	
Position band Breakdown	Site 1 Waterfront along Frank Kitts Promenade	Footpath	279	200	182	241	160	221	217	284	191		261	228
		Bus/Cyclelel	0	0	0	0	0	0	0	0	0		0	0
		Road	0	0	0	0	0	0	0	0	0		0	0
	Site 2 Lambton Quay at Grey Street	Footpath	13	10	10	3	9	9	3	5	6	7	6	3
		Bus/Cyclelel	1	0	0	0	0	0	1	0	0	0	0	0
		Road	6	4	4	0	3	2	4	1	4	1	4	2
	Site 6 Riddiford Street at Wilson Street	Footpath	7	3	11	4	3	8	7	7	5	2	10	4
		Bus/Cyclelel	0	0	0	0	0	0	0	0	0	0	0	0
		Road	2	1	1	1	0	0	1	0	1	1	2	0
	Site 3 Featherston Street at Bunney Street	Footpath	17	16	10	7	4	12	9	10	9	12	12	16
		Bus/Cyclelel	0	2	0	0	0	0	1	0	0	0	0	0
		Road	1	3	2	2	3	9	4	5	2	6	5	6
	Site 4 Courtenay Place at Tarariki Street	Footpath	9	14	10	13	10	11	19	8	8	16	19	21
		Bus/Cyclelel	0	3	0	0	0	0	0	0	0	0	0	0
		Road	1	2	1	1	2	3	1	2	3	1	1	1
	Site 5 Oriental Parade at band rounda	Footpath	112	115	132	164	105	29	39	83	25	25	106	26
		Bus/Cyclelel	0	0	0	0	0	0	0	0	0	0	0	0
		Road	3	9	1	1	0	0	0	0	0	1	3	0
	Total	Footpath	437	358	355	432	291	290	294	397	244	62	414	298
		Bus/Cyclelel	1	5	0	0	0	0	2	0	0	0	0	0
		Road	13	19	9	5	8	14	10	8	10	10	15	9
Position % Breakdown	Site 1 Waterfront along Frank Kitts Promenade	Footpath	100%	100%	100%	100%	100%	100%	100%	100%	100%		100%	100%
		Bus/Cyclelel	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	0%
		Road	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	0%
	Site 2 Lambton Quay at Grey Street	Footpath	65%	71%	71%	100%	75%	82%	38%	83%	60%	88%	60%	60%
		Bus/Cyclelel	5%	0%	0%	0%	0%	0%	13%	0%	0%	0%	0%	0%
		Road	30%	29%	29%	0%	25%	18%	50%	17%	40%	13%	40%	40%
	Site 6 Riddiford Street at Wilson Street	Footpath	78%	75%	92%	80%	100%	100%	88%	100%	83%	67%	83%	100%
		Bus/Cyclelel	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		Road	22%	25%	8%	20%	0%	0%	13%	0%	17%	33%	17%	0%
	Site 3 Featherston Street at Bunney Street	Footpath	94%	76%	83%	78%	57%	57%	64%	67%	82%	67%	71%	73%
		Bus/Cyclelel	0%	10%	0%	0%	0%	0%	7%	0%	0%	0%	0%	0%
		Road	6%	14%	17%	22%	43%	43%	29%	33%	18%	33%	29%	27%
	Site 4 Courtenay Place at Tarariki Street	Footpath	90%	74%	91%	93%	83%	79%	95%	80%	73%	94%	95%	95%
		Bus/Cyclelel	0%	16%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		Road	10%	11%	9%	7%	17%	21%	5%	20%	27%	6%	5%	5%
	Site 5 Oriental Parade at band rounda	Footpath	97%	93%	99%	99%	100%	100%	100%	100%	100%	96%	97%	100%
		Bus/Cyclelel	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		Road	3%	7%	1%	1%	0%	0%	0%	0%	0%	4%	3%	0%

Appendix A: Survey Results Summary

Weekly	Date	18/06	25/06	22/07	29/07	2/09	9/09	30/09	7/10	4/11	11/11	30/11	7/12
Scooter Volumes Total	Site 1 Waterfront along Frank Kitts Promenade	279	200	182	241	160	221	217	284	191		261	228
	Site 2 Lambton Quay at Grey Street	20	14	14	3	12	11	8	6	10	8	10	5
	Site 6 Riddiford Street at Wilson Street	9	4	12	5	3	8	8	7	6	3	12	4
	Site 3 Featherston Street at Bunny Street	18	21	12	9	7	21	14	15	11	18	17	22
	Site 4 Courtenay Place at Taranki Street	10	19	11	14	12	14	20	10	11	17	20	22
	Site 5 Oriental Parade at band rotunda	115	124	133	165	105	29	39	83	25	26	109	26
	Scooter Volumes AM												
Site 1 Waterfront along Frank Kitts Promenade	109	107	101	130	107	139	141	180	127			167	143
Site 2 Lambton Quay at Grey Street	12	0	2	1	4	4	4	1	4	5	2	4	
Site 6 Riddiford Street at Wilson Street	0	0	6	4	2	7	8	5	2	3	6	0	
Site 3 Featherston Street at Bunny Street	1	0	4	3	6	8	7	11	6	11	10	8	
Site 4 Courtenay Place at Taranki Street	5	0	8	4	6	7	9	9	6	13	14	4	
Site 5 Oriental Parade at band rotunda	0	0	0	0	0	0	0	0	0	0	0	0	
Scooter Volumes PM													
Site 1 Waterfront along Frank Kitts Promenade	170	93	81	111	53	82	76	104	64			94	85
Site 2 Lambton Quay at Grey Street	8	9	12	2	8	7	4	5	6	3	8	1	
Site 6 Riddiford Street at Wilson Street	9	3	6	1	1	1	0	2	4	0	6	4	
Site 3 Featherston Street at Bunny Street	17	16	8	6	1	13	7	4	5	7	7	14	
Site 4 Courtenay Place at Taranki Street	5	13	3	10	6	7	11	1	5	4	6	18	
Site 5 Oriental Parade at band rotunda	115	124	133	165	105	29	39	83	25	26	109	26	
Pedestrian Volumes													
Site 1 Waterfront along Frank Kitts Promenade	4592	3818	3774	5395	6609	3011	1643	4201	4119			3113	5210
Site 2 Lambton Quay at Grey Street	2730	2655	2644	2704	2853	2975	2914	3164	2920	3858	2914	4358	
Site 6 Riddiford Street at Wilson Street	966	1184	1006	668	1180	1017	919	712	1124	1330	1249	1331	
Site 3 Featherston Street at Bunny Street	7377	6331	7295	5812	5092	5221	5323	5052	4825	5413	5640	5954	
Site 4 Courtenay Place at Taranki Street	2085	2270	2299	2265	2329	2440	2525	2681	2354	2386	2552	2761	
Site 5 Oriental Parade at band rotunda	820	441	629	960	691	203	197	965	195	337	1059	190	
Average Safety Rating													
Site 1 Waterfront along Frank Kitts Promenade	50.6451613	51.11	47.9120879	48.8672199	49.55	51.334842	53.1797235	50.221831	51.874346			48.6858238	46.385965
Site 2 Lambton Quay at Grey Street	60.5	45.3571429	45	54.6666667	49.75	57.727273	56	48	43.2	42	18.8	49.6	
Site 6 Riddiford Street at Wilson Street	43.4444444	52.25	43.5	44.2	50	53.125	57.625	44.571429	43.833333	43	44.9166667	42.75	
Site 3 Featherston Street at Bunny Street	59.6666667	53.2857143	45.75	50.2222222	43.285714	50.380952	48.4285714	48.5333333	50.454545	44	42.6470588	41.772727	
Site 4 Courtenay Place at Taranki Street	58	48.9473684	57.6363636	44.3571429	47.416667	53.142857	55.95	51.7	48.636364	49.8823529	45.5	53.590909	
Site 5 Oriental Parade at band rotunda	57.0695652	60.7016129	51.5789474	45.0606061	48.361905	50.37931	51.3333333	44.337349	50.56	39.9230769	46.715963	53.192308	
School Holidays	-10	-10	-10	-10	-10	-10	1000000	1000000	-10	-10	-10	-10	-10
Average Rainfall	3	0	1	1	4	5	5	3	1	13	1	7	
Average Temperature	10	10	11	11	11	10	10	13	16	14	18	16	

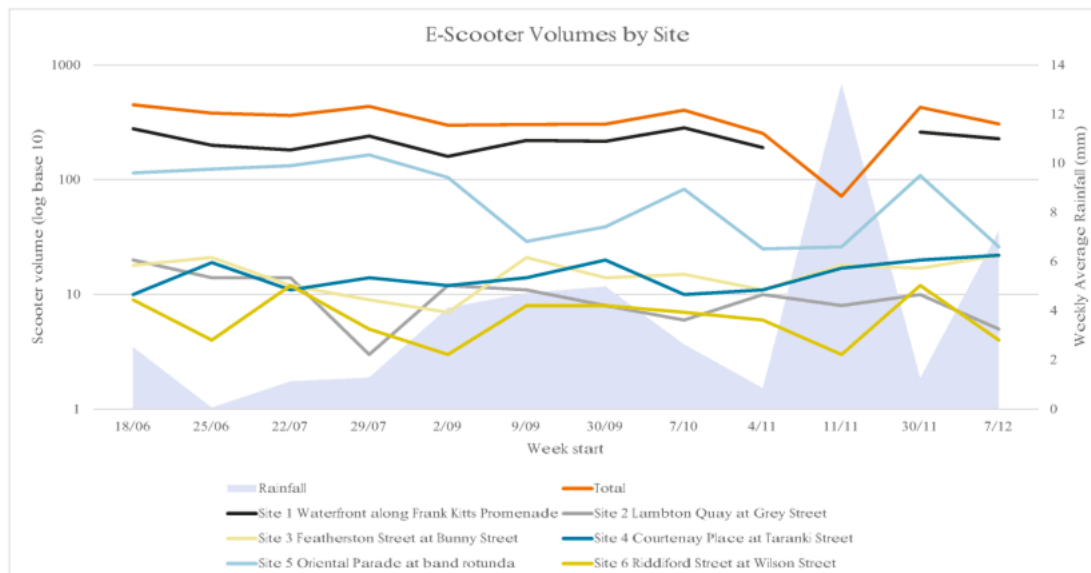
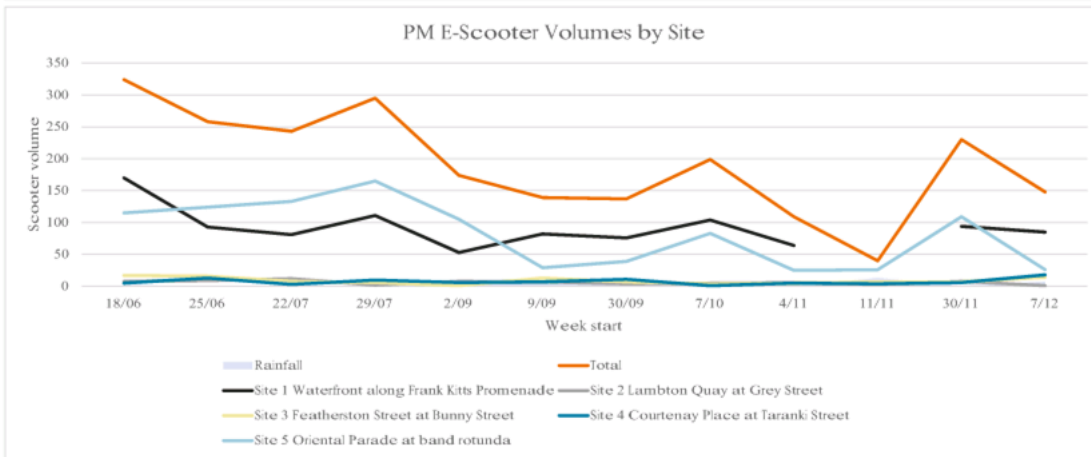
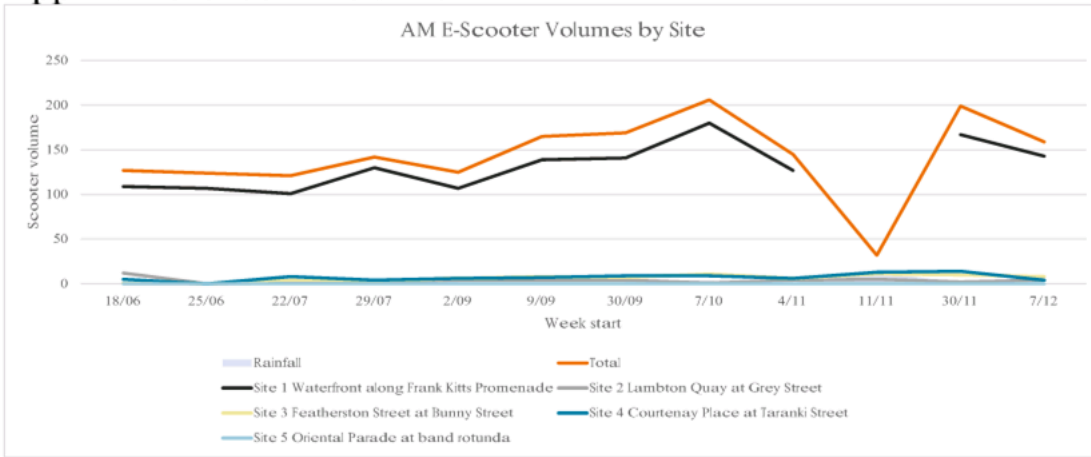
APPENDIX B: Rainfall

Kelburn	Date	Rainfall (mm)	Date	T max	T min	Rongotai	Rainfall (mm)	T max	T min	Average rainfall (mm)	Average Temp (C)	
26154	18/05/2019	0.8	18/05/2019	13	4.6	3445	0.4	13.4	6.8	1	0.6	9
26154	19/05/2019	0	19/05/2019	10.8	6.6	3445	0	11.3	8.2	2	0.0	9
26154	20/05/2019	0	20/05/2019	12.6	5	3445	0	11.7	8	3	0.0	9
26154	21/05/2019	6.2	21/05/2019	13.7	7.7	3445	3.9	13.8	7.9	4	5.1	11
26154	22/05/2019	0	22/05/2019	14.3	8.3	3445	0	15.4	9.3	5	0.0	12
26154	23/05/2019	0	23/05/2019	14.1	8.1	3445	0	14.6	7.4	6	0.0	11
26154	24/05/2019	15.6	24/05/2019	11.3	8.1	3445	8.6	12.6	9	7	12.1	10
26154	25/05/2019	0	25/05/2019	11.1	9	3445	0	11.9	10	8	0.0	11
26154	26/05/2019	0.2	26/05/2019	12.1	5	3445	0	12.4	4.8	9	0.1	9
26154	27/05/2019	0.2	27/05/2019	12.4	5.4	3445	0	12.6	5	10	0.1	9
26154	28/05/2019	0.2	28/05/2019	12	4.7	3445	0	11.9	4.7	11	0.1	8
26154	29/05/2019	0	29/05/2019	12.3	6.9	3445	0	12.8	7.4	12	0.0	10
26154	30/05/2019	0	30/05/2019	13	9.2	3445	0	13.7	9.5	13	0.0	11
26154	1/07/2019	0.2	1/07/2019	14.8	8.9	3445	0.1	14.7	8.3	14	0.2	11
26154	2/07/2019	0	2/07/2019	13.5	10.3	3445	0	14.2	9.8	15	0.0	12
26154	3/07/2019	0	3/07/2019	15	12	3445	0	15.3	11.8	16	0.0	14
26154	4/07/2019	30.2	4/07/2019	15.4	11.7	3445	22.2	16.3	12.5	17	26.2	14
26154	5/07/2019	5.8	5/07/2019	12.3	6.9	3445	3.2	14.1	7.5	18	4.5	10
26154	6/07/2019	3.4	6/07/2019	8.3	6.5	3445	3.3	10.8	7.4	19	3.4	9
26154	7/07/2019	2.2	7/07/2019	10.7	4.9	3445	1.6	11.7	5	20	1.9	8
26154	8/07/2019	0	8/07/2019	11.9	5.9	3445	0	13.1	5.4	21	0.0	9
26154	9/07/2019	0	9/07/2019	12	5.2	3445	0	12.8	4.9	22	0.0	9
26154	10/07/2019	0	10/07/2019	12.5	8.7	3445	0	13.2	10.2	23	0.0	11
26154	11/07/2019	1.8	11/07/2019	12.8	10.9	3445	0.9	13.8	11.2	24	1.2	12
26154	12/07/2019	1.8	12/07/2019	13.5	10.9	3445	1.2	14.7	10.6	25	1.5	12
26154	13/07/2019	2.2	13/07/2019	14.1	11	3445	1.4	15.1	11.3	26	1.8	13
26154	14/07/2019	18.8	14/07/2019	14.5	10.8	3445	14	15.4	11.6	27	16.8	13
26154	15/07/2019	11.2	15/07/2019	12	8.8	3445	12.2	13.5	7.8	28	14.7	11
26154	16/07/2019	30.7	16/07/2019	13	8.7	3445	27	13.8	9.7	29	28.6	11
26154	17/07/2019	6.6	17/07/2019	13	6.3	3445	4.8	14.2	9.2	30	6.8	11
26154	18/07/2019	2	18/07/2019	13.6	5.4	3445	1	14.8	5.7	31	1.5	10
26154	19/07/2019	1.8	19/07/2019	12.2	9.9	3445	0.1	13.6	10.1	32	1.0	11
26154	20/07/2019	12.8	20/07/2019	14.9	9.3	3445	10.6	15.8	10.2	33	11.7	13
26154	21/07/2019	6.6	21/07/2019	8.5	8.5	3445	8	11.1	9.2	34	7.3	10
26154	22/07/2019	4.2	22/07/2019	12	7.4	3445	1.6	12.8	8.6	35	2.9	10
26154	23/07/2019	0	23/07/2019	13.3	6	3445	0	12.7	4.4	36	0.2	9
26154	24/07/2019	4.2	24/07/2019	12.7	7.4	3445	5.1	12.7	7.2	37	4.7	10
26154	25/07/2019	0	25/07/2019	14.7	7.1	3445	0	13.5	6.6	38	0.0	11
26154	26/07/2019	0.4	26/07/2019	15.1	6.5	3445	0.1	-	4.7	39	0.3	9
26154	27/07/2019	0	27/07/2019	16.2	8.4	3445	0	14.4	7.8	40	0.0	12
26154	28/07/2019	0	28/07/2019	14.1	11.9	3445	0	14.8	12.1	41	0.0	13
26154	29/07/2019	0	29/07/2019	13.9	8.8	3445	0	14.4	8.8	42	0.0	11
26154	30/07/2019	0	30/07/2019	15.4	8.8	3445	0	15.7	8.6	43	0.0	12
26154	31/07/2019	1.6	31/07/2019	12.9	8.6	3445	0.8	14.1	10.1	44	1.2	11
26154	1/08/2019	8.6	1/08/2019	11.4	4.1	3445	8.9	11.6	5.4	45	7.8	8
26154	2/08/2019	0	2/08/2019	10.7	4.7	3445	0	11.8	4.5	46	0.0	8
26154	3/08/2019	0.2	3/08/2019	14.5	7.5	3445	0	14.7	9.8	47	0.1	12
26154	4/08/2019	0	4/08/2019	13	8.7	3445	0	13.3	10.4	48	0.0	11
26154	5/08/2019	0	5/08/2019	12.8	3.4	3445	0	13	4.9	49	0.0	9
26154	6/08/2019	0	6/08/2019	10.4	4.9	3445	0	11.7	4.8	50	0.0	8
26154	7/08/2019	0	7/08/2019	13.2	5.4	3445	0	13.6	5.3	51	0.0	9
26154	8/08/2019	0	8/08/2019	12.6	9.2	3445	0	14.2	10.1	52	0.0	12
26154	9/08/2019	0	9/08/2019	12.7	10.5	3445	0	14	11.3	53	0.0	12
26154	10/08/2019	0	10/08/2019	14.3	8.5	3445	0	14.3	9.4	54	0.0	12
26154	11/08/2019	9.8	11/08/2019	12.8	8.3	3445	22.9	14.2	8.7	55	16.4	11
26154	12/08/2019	12.6	12/08/2019	12.6	7.3	3445	13.9	13.8	8.2	56	13.4	10
26154	13/08/2019	19	13/08/2019	10.3	5	3445	17.5	11.8	4.5	57	18.3	8
26154	14/08/2019	3.8	14/08/2019	12.3	6	3445	0.1	13.8	7.1	58	2.0	10
26154	15/08/2019	1.4	15/08/2019	9.7	4	3445	0.3	11.4	4.9	59	0.9	8
26154	16/08/2019	0	16/08/2019	11.3	6.8	3445	0	12.2	7.3	60	0.0	9
26154	17/08/2019	0	17/08/2019	12.4	10.6	3445	0	13.8	11.3	61	0.0	12
26154	18/08/2019	30.2	18/08/2019	12.8	4.3	3445	21.2	13.8	6.4	62	25.7	9
26154	19/08/2019	0.2	19/08/2019	8.2	0.9	3445	0.2	10.3	0.7	63	0.2	5
26154	20/08/2019	0	20/08/2019	10.6	6.3	3445	0	11.1	5.7	64	0.0	8
26154	21/08/2019	2.8	21/08/2019	11.9	8.4	3445	1.4	13.1	9.6	65	2.1	11
26154	22/08/2019	11.4	22/08/2019	13	9.3	3445	10.2	13.1	10.1	66	10.8	11
26154	23/08/2019	0.8	23/08/2019	12.9	8.5	3445	0.4	13.9	9.7	67	0.6	11
26154	24/08/2019	3	24/08/2019	12.8	7.5	3445	0.6	13.7	7.8	68	1.8	10
26154	25/08/2019	11.4	-	-	-	3445	0	12.4	5	69	0.0	10
26154	27/08/2019	3.4	27/08/2019	15.3	7	3445	1.6	17.2	11.3	70	1.5	14
26154	28/08/2019	0.2	28/08/2019	12	6.2	3445	7.3	16.8	8.8	71	5.4	12
26154	29/08/2019	0	29/08/2019	14.4	9.9	3445	0	12.5	6.7	72	0.1	9
26154	30/08/2019	0	30/08/2019	13.7	7.3	3445	0	15.1	7.5	74	0.0	11
26154	31/08/2019	0	31/08/2019	16.4	6.2	3445	0	14.1	5.8	75	0.0	11
26154	1/09/2019	0	1/09/2019	15.7	7.4	3445	0	14.5	7.7	76	0.0	11
26154	2/09/2019	0	2/09/2019	13.6	9.5	3445	0	14.6	10.7	77	0.0	12
26154	3/09/2019	0.2	3/09/2019	14.2	6	3445	0	13.2	5.4	78	0.1	10

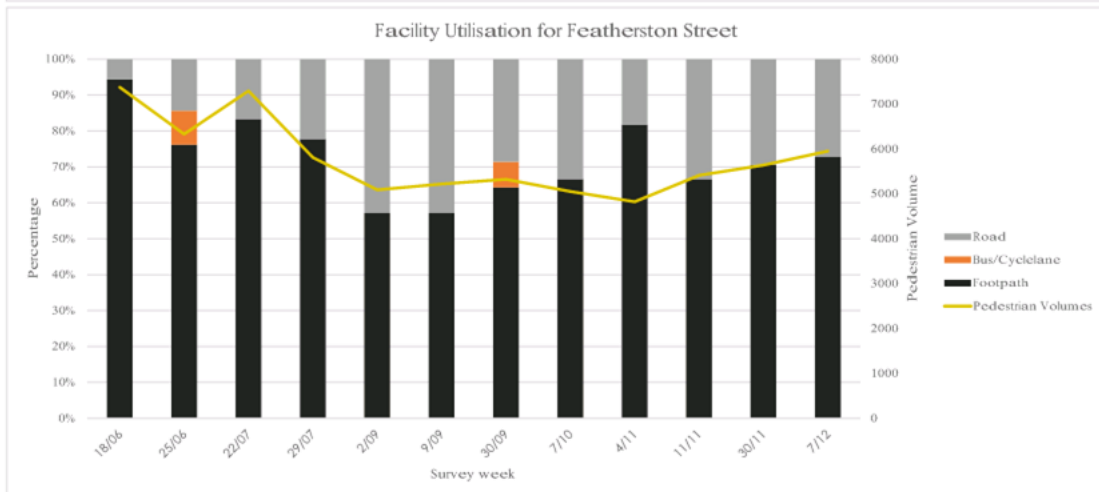
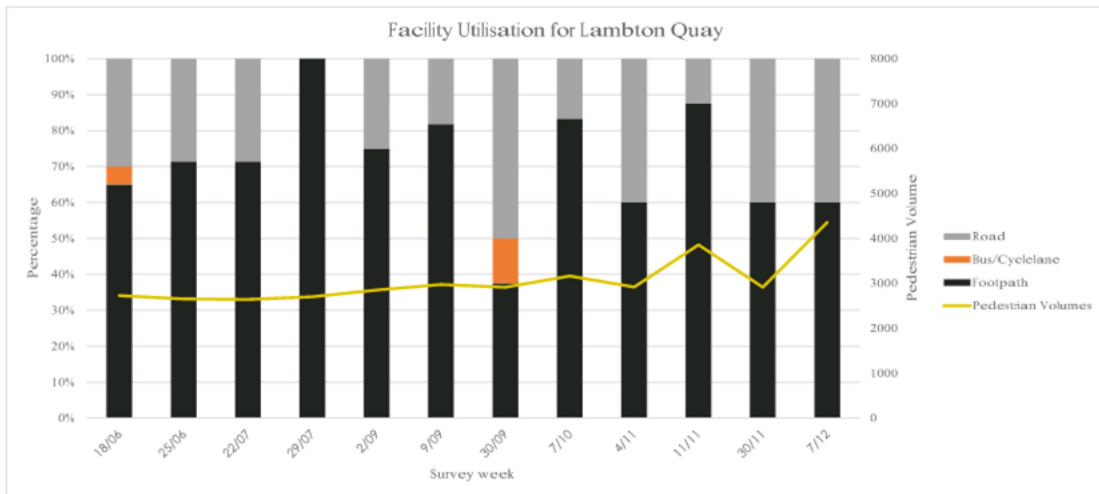
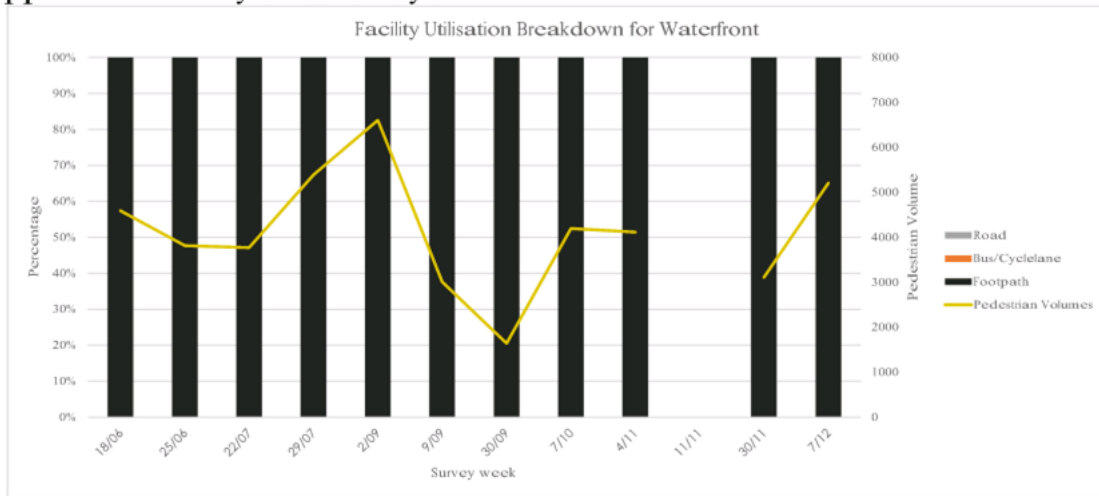
APPENDIX B: Rainfall

Kelburn	Date	Rainfall (mm)	Date	T max	T min	Rongotai	Rainfall (mm)	T max	T min	Average rainfall (mm)	Average Temp (C)	
26154	4/09/2019	0.6	4/09/2019	15.3	10.4	3445	0.1	14.8	10.1	79	0.4	13
26154	5/09/2019	4.2	5/09/2019	15.9	10	3445	4.5	16.5	10.9	80	4.4	13
26154	6/09/2019	24	6/09/2019	16.1	7.8	3445	18.7	11.2	5.3	81	21.4	10
26154	7/09/2019	3.6	7/09/2019	10.8	7.1	3445	1.9	10.9	8.7	82	1.8	9
26154	8/09/2019	0	8/09/2019	10.6	5.8	3445	0	11	6.9	83	0.0	9
26154	9/09/2019	0.8	9/09/2019	9.8	5.2	3445	0.2	11	6.5	84	0.5	8
26154	10/09/2019	0.2	10/09/2019	8.8	5	3445	0.6	10.2	6.6	85	0.4	8
26154	11/09/2019	0	11/09/2019	13.8	5.2	3445	0	13.9	5.5	86	0.0	10
26154	12/09/2019	0	12/09/2019	12.1	5	3445	0	12.2	5.7	87	0.0	9
26154	13/09/2019	0	13/09/2019	14.4	10.6	3445	0	14.9	11.3	88	0.0	13
26154	14/09/2019	22.4	14/09/2019	14.1	9.1	3445	18.8	15.8	10	89	19.5	12
26154	15/09/2019	12.2	15/09/2019	13.5	8.8	3445	13.3	15.2	9.6	90	12.8	12
26154	16/09/2019	2.4	16/09/2019	13.2	7.2	3445	6.9	15.1	8.6	91	4.7	11
26154	17/09/2019	0	17/09/2019	14.5	12	3445	0	15.3	12.9	92	0.0	14
26154	18/09/2019	0	18/09/2019	15.5	4.5	3445	0	16.8	4.8	93	0.0	10
26154	19/09/2019	0	19/09/2019	14.6	6.6	3445	0	14.6	6.5	94	0.0	11
26154	20/09/2019	0	20/09/2019	15.1	5.9	3445	0	15.3	4.9	95	0.0	10
26154	21/09/2019	0.2	21/09/2019	12.3	6.2	3445	0	12.9	5.9	96	0.1	9
26154	22/09/2019	0	22/09/2019	16	7.9	3445	0	14.5	8	97	0.0	12
26154	23/09/2019	0	23/09/2019	14	10.3	3445	0	15	11.4	98	0.0	13
26154	24/09/2019	5	24/09/2019	14.1	11.6	3445	3.9	15.5	12.9	99	4.5	14
26154	25/09/2019	0	25/09/2019	15.8	6.5	3445	0	15.9	6.8	100	0.0	11
26154	26/09/2019	0.8	26/09/2019	13.8	4.8	3445	1.7	14.2	8.5	101	1.3	10
26154	27/09/2019	0	27/09/2019	13.2	8.7	3445	0	14	7.9	102	0.0	11
26154	28/09/2019	0	28/09/2019	15.3	10.6	3445	0	14.5	11.1	103	0.0	13
26154	29/09/2019	0	29/09/2019	15.9	11.7	3445	0	16.7	12.6	104	0.0	14
26154	30/09/2019	0	30/09/2019	14.9	12.4	3445	0.1	17	13.4	105	0.1	14
26154	1/10/2019	1.2	1/10/2019	13.9	8.7	3445	0.7	14.9	9.1	106	1.0	11
26154	2/10/2019	5.2	2/10/2019	10.9	3.7	3445	2.4	11.7	4.7	107	3.8	8
26154	3/10/2019	11.4	3/10/2019	14.1	5.7	3445	7.9	14.5	6.5	108	9.7	10
26154	4/10/2019	0	4/10/2019	11	3.5	3445	0	11.6	3.8	109	0.0	7
26154	5/10/2019	0	5/10/2019	13.3	8.4	3445	0	14	8.1	110	0.0	11
26154	6/10/2019	19.8	6/10/2019	13.6	5.9	3445	21.2	14.5	7.6	111	20.5	10
26154	7/10/2019	0	7/10/2019	12	5.3	3445	0	12.3	6.1	112	0.0	9
26154	8/10/2019	0	8/10/2019	14.8	10.7	3445	0	16.3	11.6	113	0.0	13
26154	9/10/2019	0.2	9/10/2019	15.2	12.3	3445	0	15.8	13	114	0.1	14
26154	10/10/2019	8	10/10/2019	15.7	12.2	3445	4	17	12.9	115	8.3	14
26154	11/10/2019	18.4	11/10/2019	16.1	11.2	3445	18.8	17.5	12.1	116	18.0	14
26154	12/10/2019	0.2	12/10/2019	16.2	10.7	3445	0	16.9	10.7	117	0.1	14
26154	13/10/2019	0	13/10/2019	17.1	9.1	3445	0	16.6	10.4	118	0.0	13
26154	14/10/2019	0	14/10/2019	13.8	7.6	3445	0	13.5	8	119	0.0	11
26154	15/10/2019	0	15/10/2019	16.7	10.8	3445	0	17	11.6	120	0.0	14
26154	16/10/2019	2.8	16/10/2019	14.5	10.4	3445	0.8	14.6	11.3	121	1.8	13
26154	17/10/2019	1.2	17/10/2019	14	8.1	3445	0.2	14.2	8.8	122	0.7	11
26154	18/10/2019	4	18/10/2019	18.7	11.9	3445	6.6	16.1	12.9	123	2.3	16
26154	19/10/2019	38	19/10/2019	13.7	11.7	3445	32.8	14.9	12.8	124	34.4	13
26154	20/10/2019	0	20/10/2019	17.1	11.6	3445	0	18.1	11.9	125	0.0	15
26154	21/10/2019	0	21/10/2019	15.1	11.9	3445	0	16.1	13.3	126	0.0	14
26154	22/10/2019	1.2	22/10/2019	15.6	7.6	3445	0.9	16.8	9.8	127	1.1	12
26154	23/10/2019	17	23/10/2019	15.1	5.9	3445	11.3	16.7	6.8	128	14.2	11
26154	24/10/2019	0.8	24/10/2019	11.5	4.9	3445	2.3	13.4	5.6	129	1.6	9
26154	25/10/2019	1.2	25/10/2019	17.5	5.4	3445	0	18.5	6.5	130	0.6	12
26154	26/10/2019	0	26/10/2019	13.9	7.3	3445	0	14.4	8.8	131	0.0	11
26154	27/10/2019	0	27/10/2019	16.9	11.7	3445	0	17.9	12.4	132	0.0	15
26154	28/10/2019	0.8	28/10/2019	15.7	12.1	3445	0.2	17.2	13.8	133	0.5	15
26154	29/10/2019	0	29/10/2019	16.3	11	3445	0	18.3	12.1	134	0.0	14
26154	30/10/2019	0.4	30/10/2019	16.2	6.5	3445	0.2	17.7	7.5	135	0.3	12
26154	31/10/2019	0	31/10/2019	15.7	8.5	3445	0	16	9.9	136	0.0	13
26154	1/11/2019	0	1/11/2019	15.9	8.2	3445	0	16.2	10.3	137	0.0	13
26154	2/11/2019	0	2/11/2019	15.1	8.1	3445	0	14.5	10.6	138	0.0	12
26154	3/11/2019	0	3/11/2019	16	11.6	3445	0	18.4	12.5	139	0.0	15
26154	4/11/2019	0	4/11/2019	19.6	12.9	3445	0	20.7	13.9	140	0.0	17
26154	5/11/2019	0	5/11/2019	16.5	12.8	3445	0	18.5	13.8	141	0.0	15
26154	6/11/2019	0	6/11/2019	16.2	13.2	3445	0	17.6	14.5	142	0.0	15
26154	7/11/2019	0.4	7/11/2019	17.3	13.9	3445	0.1	17.6	14.7	143	0.3	16
26154	8/11/2019	0	8/11/2019	19.6	15.1	3445	0	20.1	16.2	144	0.0	18
26154	9/11/2019	0.2	9/11/2019	17	15	3445	0.1	18.4	16	145	0.2	17
26154	10/11/2019	7.2	10/11/2019	18.7	14.6	3445	4	20.2	16.2	146	5.6	17
26154	11/11/2019	68.4	11/11/2019	19.6	9.2	3445	77.1	21.3	10.6	147	73.3	15
26154	12/11/2019	11.8	12/11/2019	13.2	8.4	3445	11.1	12.8	9.4	148	11.5	11
26154	13/11/2019	0	13/11/2019	15.4	9.2	3445	0	14.8	11.3	149	0.0	13
26154	14/11/2019	6.4	14/11/2019	15.2	12.6	3445	4.4	16.3	13	150	5.4	14
26154	15/11/2019	1.8	15/11/2019	16.2	8.6	3445	3.3	17.7	9.1	151	2.6	13
26154	16/11/2019	0	16/11/2019	18.2	13	3445	0	19	14.3	152	0.0	16
26154	17/11/2019	0	17/11/2019	18.5	13.9	3445	0	18.7	15.4	153	0.0	16
26154	18/11/2019	0.2	18/11/2019	17.5	12.9	3445	0.1	19.5	14.2	154	0.2	16
26154	19/11/2019	2.6	19/11/2019	14.3	8.1	3445	2.8	16	8.6	155	2.7	12
26154	20/11/2019	4.8	20/11/2019	15.1	11.9	3445	3.3	16.9	13.2	156	4.1	14
26154	21/11/2019	0	21/11/2019	18.1	6.8	3445	0	17.7	8.2	157	0.0	13
26154	22/11/2019	0	22/11/2019	18	11.5	3445	0	18.2	12.8	158	0.0	15
26154	23/11/2019	0	23/11/2019	18.2	12.8	3445	0	18.7	13.9	159	0.0	16
26154	24/11/2019	0	24/11/2019	21.9	13.1	3445	0	21	13.3	160	0.0	17
26154	25/11/2019	0	25/11/2019	19.1	11.7	3445	0	19.7	12.9	161	0.0	16
26154	26/11/2019	0	26/11/2019	20.9	11.3	3445	0	18.3	12.6	162	0.0	16
26154	27/11/2019	0	27/11/2019	19.9	13.2	3445	0	21.1	14.1	163	0.0	17
26154	28/11/2019	0	28/11/2019	17.7	14	3445	0	19.3	15.4	164	0.0	17
26154	29/11/2019	0	29/11/2019	20.4	14.6	3445	0	21.6	15.9	165	0.0	18
26154	30/11/2019	0	30/11/2019	23.4	11.8	3445	0	22.6	13.3	166	0.0	18
26154	1/12/2019	0	1/12/2019	24	15.3	3445	0	22.8	15.9	167	0.0	20
26154	2/12/2019	1.4	2/12/2019	19.3	15.2	3445	1.3	20.9	16.5	168	1.4	18
26154	3/12/2019	1	3/12/2019	20.5	16.7	3445	0.4	20.8	17.8	169	0.7	19
26154	4/12/2019	7.4	4/12/2019	20.8	14.5	3445	6.1	22.8	15.1	170	6.8	18
26154	5/12/2019	0	5/12/2019	18.1	15.5	3445	0	20.3	16.8	171	0.0	18
26154	6/12/2019	0	6/12/2019	18.5	14	3445	0	20.9	15.3	172	0.0	17
26154	7/12/2019	0	7/12/2019	18.6	15.3	3445	0	20.5	16.6	173	0.0	18
26154	8/12/2019	27	8/12/2019	19	14.4	3445	22	21.6	15.7	174	24.5	18
26154	9/12/2019	18.6	9/12/2019	16.1	12.4	3445	16.6	18.4	14.2			

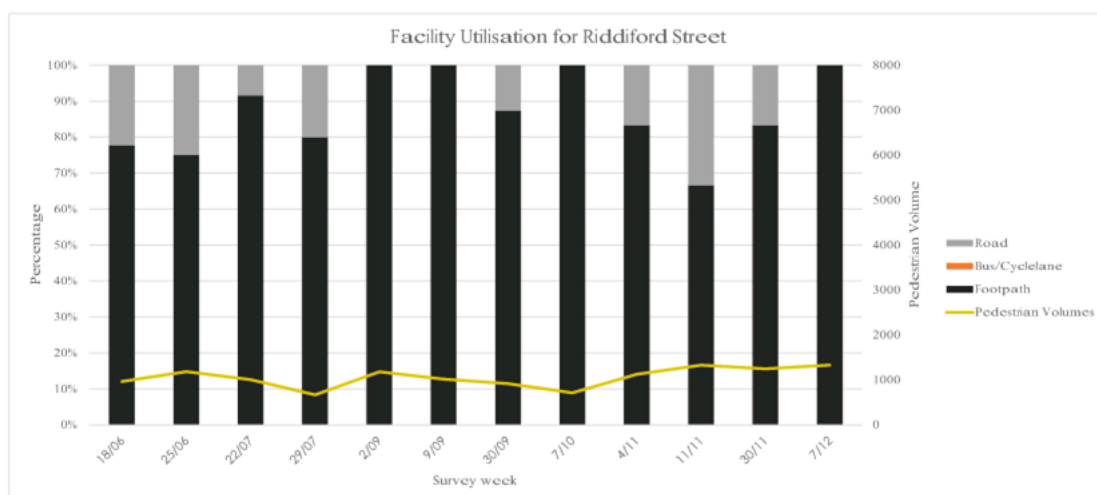
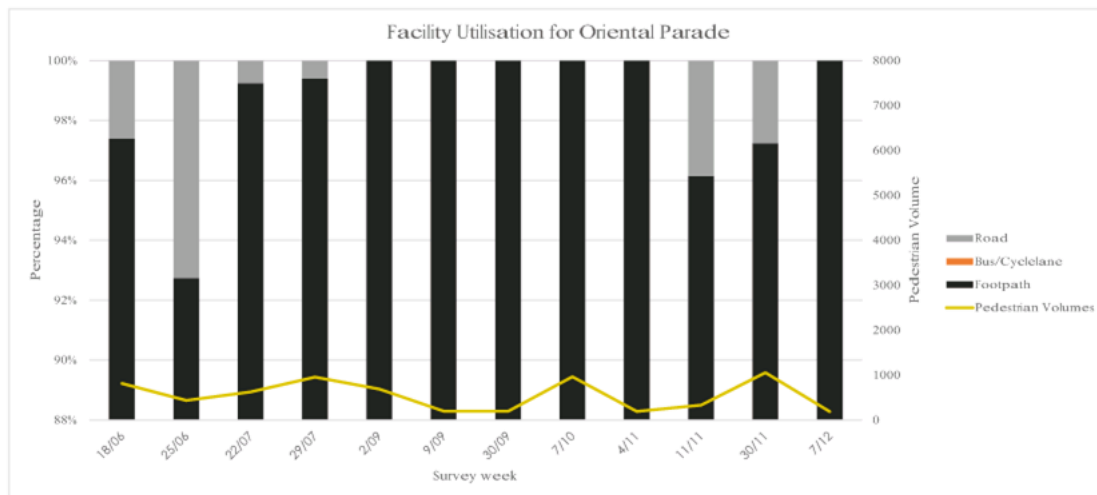
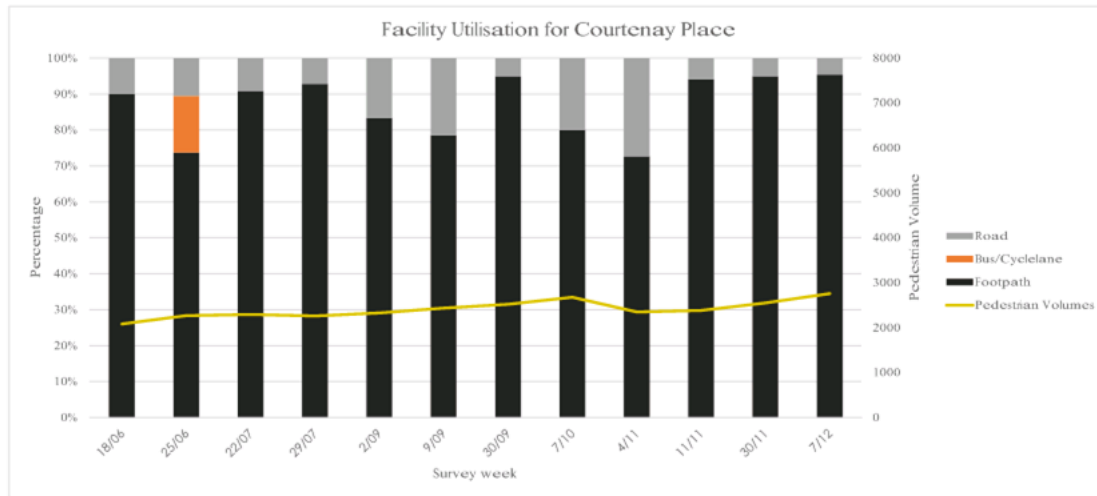
Appendix C: Scooter Volumes



Appendix D: Facility Utilisation by Site



Appendix D: Facility Utilisation by Site



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E-scooter survey results (wave 1 and 2)

April 2020

Prepared by Laura Dowdall-Masters, Research and Evaluation team

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2. Executive summary

1. Background

In June 2019, Wellington City Council launched a pilot e-scooter share scheme. Licences were given for 400 JUMP and 400 Flamingo e-scooters. A research project was run to understand the public's opinion of the e-scooter share scheme.

2. Method

An online survey was distributed in two waves:

- Wave one, July 2019 (one month after the scheme launched)
 - Survey link was sent the WCC primary research panel
- Wave two, December 2019 (six months after the scheme launched)
 - Survey link was again sent the WCC primary research panel
 - Survey link distributed through social media to the general public

The three respondent groups have been separated for reporting purposes, and look as follows:

	Sample size (n=)	Used an e- scooter	Not used an e- scooter
Wave one: WCC research panel	647	17% n=97	83% n=550
Wave two: WCC research panel	713	21% N=139	79% N=575
Wave two: general public	6,050	63% N=3,592	37% N=2,458

3. Key take-outs

Support for the e-scooter share scheme was relatively high.

Nearly two thirds thought the Council should let the scheme continue

- 60% of wave one and 58% of wave two panel respondents thought the scheme should 'maybe' or 'definitely' continue.
- 72% of the general public respondents thought the scheme should 'maybe' or 'definitely' continue.

The general opinion is the scheme had a positive effect on Wellington.

- 43% of wave one and 42% of wave two panel respondents thought the scheme had a 'positive' or 'very positive' effect on Wellington.
- The general public were more positive about the impact of the e-scooter share scheme with 64% reporting it had a 'positive' or 'very positive' effect on Wellington.

There are some issues around perceived safety and the use of e-scooters, particularly for pedestrians.

Around half of panel respondents and a third of general public respondents felt unsafe as a pedestrian sharing the footpath with e-scooters

- 47% of wave one panel respondents reported they felt 'unsafe' or 'very unsafe' sharing footpaths and other pedestrian areas that you are walking on with e-scooters. This increased slightly in wave two with 54% of respondents saying they felt 'unsafe' or 'very unsafe'.
- The general public felt less unsafe; 38% reported they felt 'unsafe' or 'very unsafe' sharing footpaths with e-scooters.

However, across all three samples the majority believe that at least most are riding e-scooters safely and responsibly.

- 60% of wave one and 56% of wave two respondents believe that 'all' or 'most' are riding e-scooters safely and responsibly.
- 65% of the general public sample believe that 'all' or 'most' are riding e-scooters safely and responsibly.

3. Background and method

4. Project background

In June 2019, Wellington City Council launched a pilot e-scooter share scheme. Licenses were given to local start-up Flamingo and JUMP, the latter owned and operated by Uber, to provide 800 (400 from each operator) e-scooters available for hire around the central city and suburbs.

To understand the public's opinion of the e-scooter share scheme, a research project was run to looking into the following topics...

- E-scooter awareness, and usage behaviours;
- Perceived safety as a rider and pedestrian, as well as during other modes of transport;
- Overall support for the scheme.

5. Methodology

An online survey was developed by the Research and Evaluation team and the Transport Planning team. The survey field work was distributed in two waves; the first wave of research was undertaken a month after the scheme launched to understand initial perceptions, and the second wave was launched following 6 months of the trail.

The wave one survey was sent to the Wellington City Council primary research panel¹, and was live from 18th July – 1st August 2019. This survey was not open to the general public.

The second wave of field work was open 9th December 2019- 30th January 2020, and the survey questions were consistent, aside from the addition of two questions around accessibility. The survey was sent again to the Wellington City Council primary research panel to gain a comparative sample to wave one.

A separate link was circulated through social media and press releases to the general public where anyone was able to have their say. JUMP and Flamingo also distributed this link to their user lists and encouraged them to participate in the survey.

It is important to keep in mind when reviewing these figures that all behaviours and observations are self-reported and therefore reflect an individual's subjective opinion about their own experiences, so should be interpreted with caution.

Throughout the report 'don't know' answers have been omitted from analysis, unless otherwise stated.

The survey contained four open-ended questions; these have been analysed separately (please see the Diagram report 'Wellington City Council e-scooter scheme survey').

¹ The Our Capital Views research panel ('the Primary Panel') uses quasi-random recruitment, and is curated to be representative of the Wellington City population by age, gender, ethnicity and ward.

6. Sample

6.1. Wave one: WCC Research panel

There was a total of n=647 respondents.

Respondents did not need to live in the Wellington City TA, but needed to visit the Wellington City area at least 'regularly' to qualify for the survey. N=15 respondents were screened out as they did not meet any of these criteria.

There was a total of n=97 (17%) of the sample who had rented an e-scooter (these are referred to in the report as 'users') and a total of n=550 (83%) of the sample who had not rented an e-scooter (these are referred to in the report as 'non-users'). Included in the non-user sample were n=66 respondents who were unaware of the scheme.

The sample was not weighted to reflect the gender and age of Wellington City residents.

6.2. Wave two: WCC Research panel

There was a total of n=713 respondents.

Respondents did not need to live in the Wellington City TA, but needed to visit the Wellington City area at least 'regularly' to qualify for the survey. N=18 respondents were screened out as they did not meet any of these criteria.

There was a total of n=139 (21%) of the sample who had rented an e-scooter (these are referred to in the report as 'users') and a total of n=575 (79%) of the sample who had not rented an e-scooter (these are referred to in the report as 'non-users'). Included in the non-user sample were n=61 respondents who were unaware of the scheme.

The sample was not weighted to reflect the gender and age of Wellington City residents.

6.3. Wave two: General public survey

There was a total of n=6,050 respondents.

Respondents did not need to live in the Wellington City TA, but needed to visit the Wellington City area at least 'regularly' to qualify for the survey. N=200 respondents were screened out as they did not meet any of these criteria.

There was a total of n=3,592 (63%) of the sample who had rented an e-scooter (these are referred to in the report as 'users') and a total of n=2,458 (37%) of the sample who had not rented an e-scooter (these are referred to in the report as 'non-users'). Included in the non-user sample were n=362 respondents who were unaware of the scheme.

Note that this sample has a far higher proportion of e-scooter users, which may impact the results.

The sample was not weighted to reflect the gender and age of Wellington City residents.

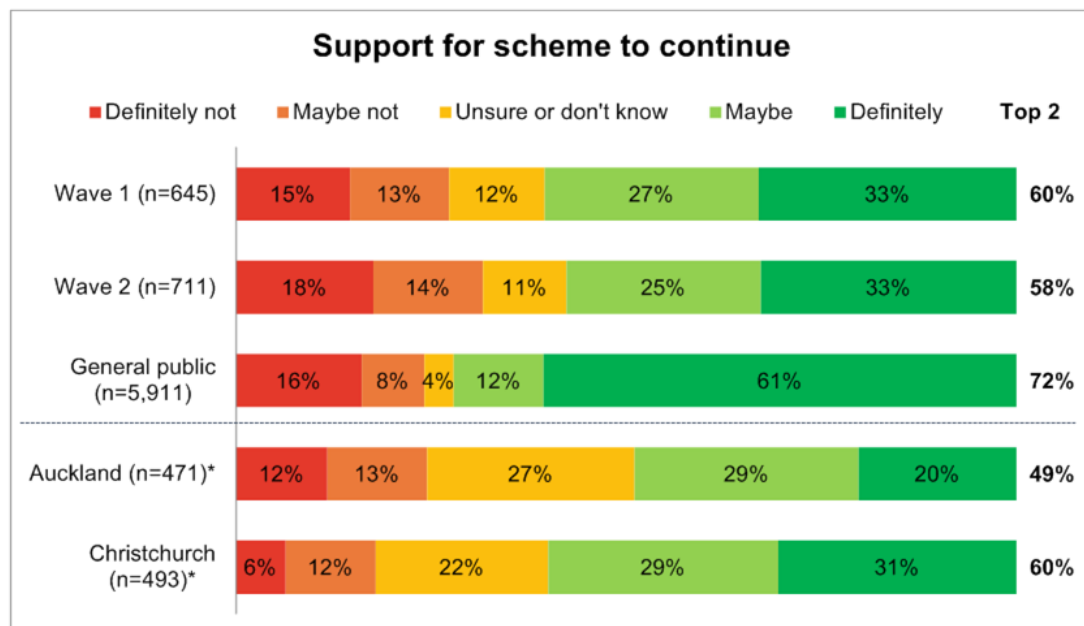
4. Summary

7. Overall summary

Support for the e-scooter share scheme was relatively high

Nearly two thirds thought the Council should let the scheme continue

- 60% of the wave one panel respondents thought the scheme should 'maybe' or 'definitely' continue. This remained relatively steady in wave two with 58% of respondents saying the scheme should 'maybe' or 'definitely' continue.
- 72% of general public respondents thought the scheme should 'maybe' or 'definitely' continue
- Wellington's level of support is on-par with Christchurch (60%) and above Auckland (49%)².



² *Auckland and Christchurch results taken from Kantar TNS research undertaken in December 2018. The scale used in the TNS research differs slightly from WCC research, so results are indicative only.

The general opinion was the scheme had a positive effect on Wellington.

- 43% of the wave one panel respondents thought the scheme had a 'positive' or 'very positive' effect on Wellington. This remained steady in wave two with 42% of respondents saying the scheme had a 'positive' or 'very positive' effect on Wellington.
- The general public were more positive about the impact of the e-scooter share scheme with 64% reporting it had a 'positive' or 'very positive' effect on Wellington.

There was a slight preference towards Flamingo.

- 12% of wave one and 14% 'slightly preferred' or 'preferred' Flamingo.
- This preference was more pronounced for the general public sample where 37% 'slightly preferred' or 'preferred' Flamingo.

There were some issues around perceived safety and the use of e-scooters, particularly for pedestrians.

Around half of panel respondents and a third of general public respondents felt unsafe as a pedestrian sharing the footpath with e-scooters

- 47% of the wave one panel reported they felt 'unsafe' or 'very unsafe' sharing footpaths and other pedestrian areas that they were walking on with e-scooters. This increased slightly in wave two with 54% of respondents saying they felt 'unsafe' or 'very unsafe'.
- The general public felt less unsafe, with 38% reporting they felt 'unsafe' or 'very unsafe' sharing footpaths and other pedestrian areas that they were walking on with e-scooters.

However, across all three samples the majority believed that at least most are riding e-scooters safely and responsibly.

- 60% of wave one and 56% of wave two respondents believed that 'all' or 'most' are riding e-scooters safely and responsibly.
- 65% of the general public sample believed that 'all' or 'most' are riding e-scooters safely and responsibly.

Walking was the most affected transport mode when it comes to issues experience and increased difficulty.

- Over half of wave (56%) one and wave two (62%) panel respondents found it 'more difficult' or 'somewhat more difficult' when travelling by foot.
- Just under half (45%) of the general public found it 'more difficult' or 'somewhat more difficult' when walking.
- People are most likely to report they have experienced a safety-related issue relating to people using e-scooters when walking (wave one panel: 55%, wave two panel: 66%, general public: 50% have experienced some issue), compared to when travelling by car or other motor vehicle or by bicycle.

- However, for the most part the most commonly reported safety related issue was being startled or frightened.

E-scooters are generally seen as fun and safe by users

The main motivation to use e-scooters was that they were faster and fun. However, for the general public sample, e-scooters were more convenient than other modes of transport.

- 41% of wave one and 36% of wave two reported the main reason they chose an e-scooter to take their most recent trip was it 'was faster to get around'.
- 32% of wave one and 26% of wave two reported the main reason they chose an e-scooter was it was 'fun'.
- The general public also see e-scooters as faster (48%) and fun (17%), but are more likely to also report they are 'more convenient than other modes of transport' (25%).

The main trips the panel samples were using e-scooters for were just for fun, or no destination in particular. However, the general public were using e-scooters to commute or to get to and from social activities.

- 55% wave one and 50% wave two reported the main trip type they used e-scooter for were 'just for fun/recreation with no destination in particular'.
- 45% of the general public reported the main trip type they use e-scooter for were 'to and from work', and 'to or from cafes, or bars or other social or sports activities'.

Most felt safe riding e-scooters.

- Around two thirds of wave one (65%) and wave two (65%) felt 'safe' or 'very safe' when riding e-scooters.
- Over three quarters (74%) of the general public felt 'safe' or 'very safe' when riding e-scooters.

Although e-scooters were being used for trips people would normally walk, they are also replacing motor vehicle trips.

- 27% of wave one and 24% of wave two e-scooter users reported they used uber/taxis less as a direct result of the e-scooter scheme.
- 20% of wave one and 26% of wave two e-scooter users reported they drove or were a passenger in a motor vehicle less as a direct result of the e-scooter scheme.
- Almost half (49%) of the general public sample reported they used uber/taxis less, and one a third (39%) drove or were a passenger in a motor vehicle less as a direct result of the e-scooter scheme.

8. Comparisons between the respondent groups

There was little difference between the opinions and experiences of waves one and two panel respondents. However, there are a few notable differences (more than a 10% increase or decrease);

- Those in wave two were more likely to have experience a safety related issue when travelling as a pedestrian, both any issue and that they had been startled or frightened.
- Those in wave two were more likely to have witnessed any issue, and were also more likely to have witnessed a near miss.
- Wave two e-scooter users rented or used the e-scooters less frequently; more people reported using them less than weekly.
- Wave two e-scooter users were less likely to report the main reason they took their most recent trip because it was 'fun'.
- The last trip wave two respondents took on an e-scooter was less likely to be just for fun with no destination, and more likely to be to or from specific sites such as parks and to or from cafes or bars or other social or sports activities.
- Wave two e-scooter users are less likely to report their preferred place to ride an e-scooter was on shared paths.
- Wave two e-scooter users were less likely to be satisfied with their experience with Flamingo.

It is also worth noting the age distribution changed between wave one and two of the panel samples, with wave two seeing a drop in the proportion of respondents who were under the age of 25 years. Past analysis has shown that younger people are more positive towards e-scooter rental schemes, which may have had an effect on the results of wave two.

The general public respondents were overall more positive towards the e-scooter share schemes, and felt safer as riders and pedestrians.

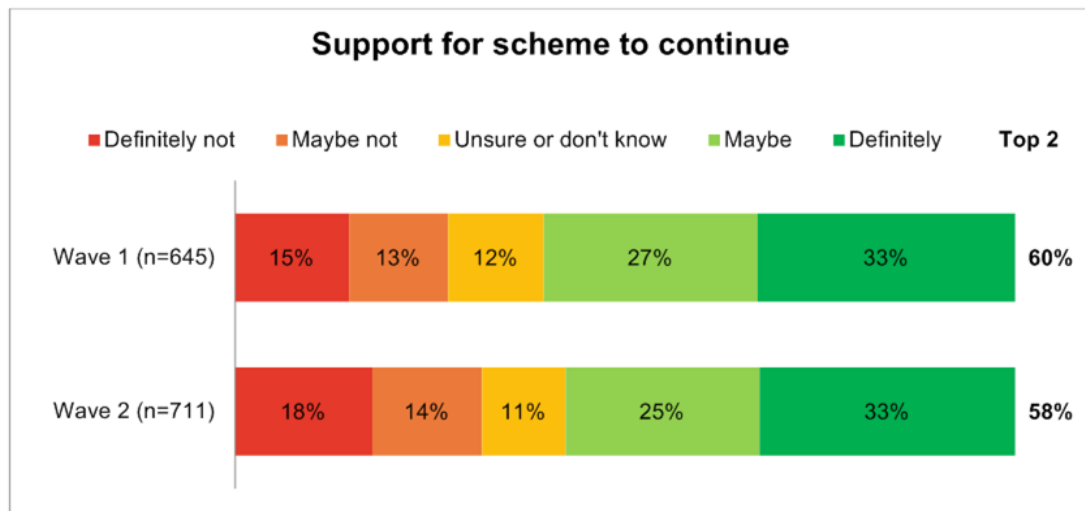
- The sample had more than double the proportions of e-scooter users, which may explain some of the differences as those who have used e-scooter as generally more favourable positive about e-scooter share schemes.
- The demographic make-up was also more skewed towards younger participants.
- The general public sample also reported experiencing slightly less safety related issues across all types of other transport modes, and reported witnessing less safety related issues.

5. Findings

9. High level support

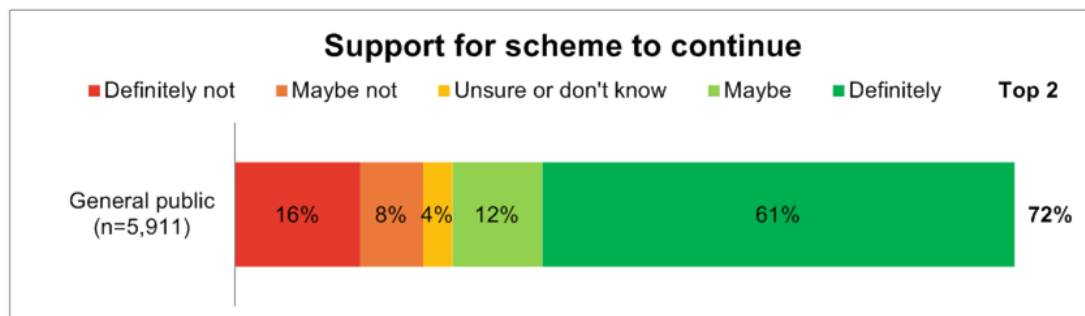
Overall, there is a relatively high level of support for the e-scooter rental scheme to continue from the panel respondents. Nearly two thirds of respondents thought that Council should allow the e-scooter share scheme to continue both after a month of operating (wave one, 60%) and after six months of the scheme operating (wave 2, 58%). High level support for the scheme has remained consistent between the two waves.

Figure 1. Results for question 'Do you think the Council should allow an e-scooter share scheme to continue to operate in the city?' by wave



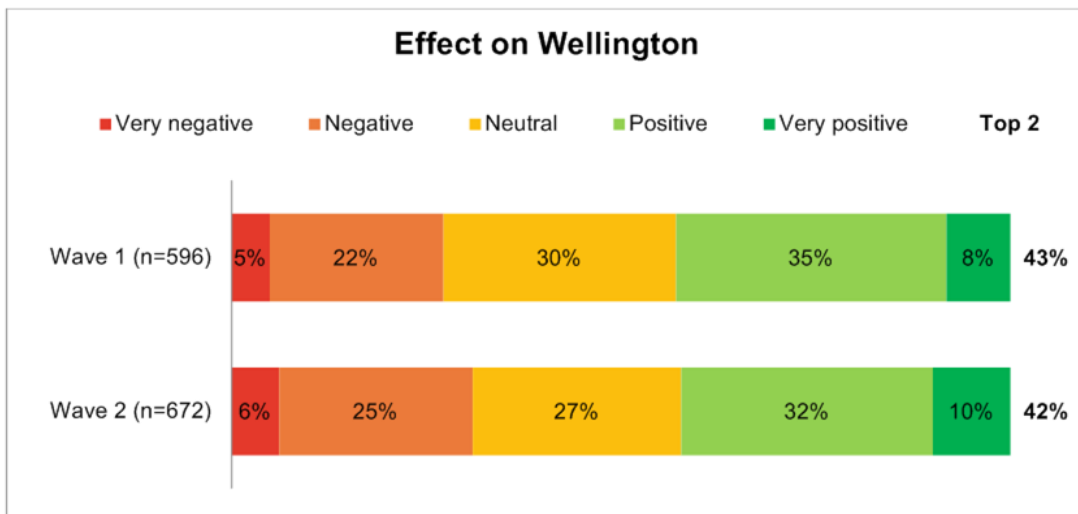
Support for the scheme to continue is stronger from the general public sample compared to panel sample, with nearly three quarters (72%) saying the Council should 'maybe' or 'definitely' allow the scheme to continue.

Figure 2. Results for question 'Do you think the Council should allow an e-scooter share scheme to continue to operate in the city?' of general public survey



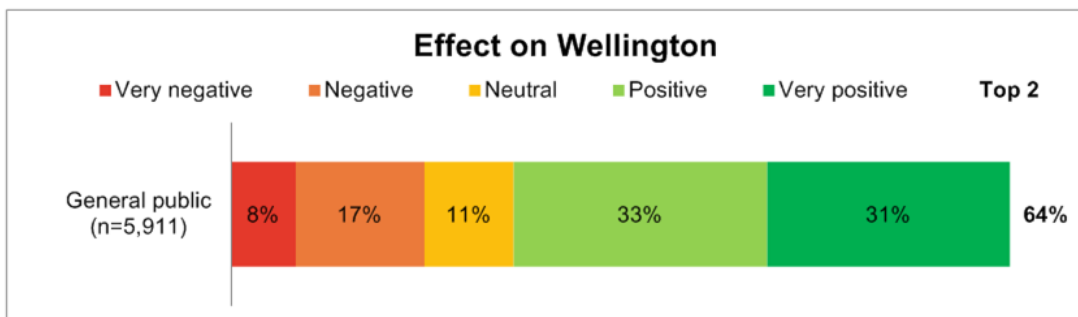
Respondents were asked what effect the scooter share scheme had had on Wellington since its introduction. The results of this remained consistent between wave one and two of the panel respondents, with just under half saying they believe the e-scooter share scheme had a 'very positive' or 'positive' effect on Wellington.

Figure 3. Results for question 'In your opinion, what effect has the JUMP and Flamingo e-scooter share scheme had on Wellington since the trial began in June 2019?' by wave (excluding 'don't know' answers)



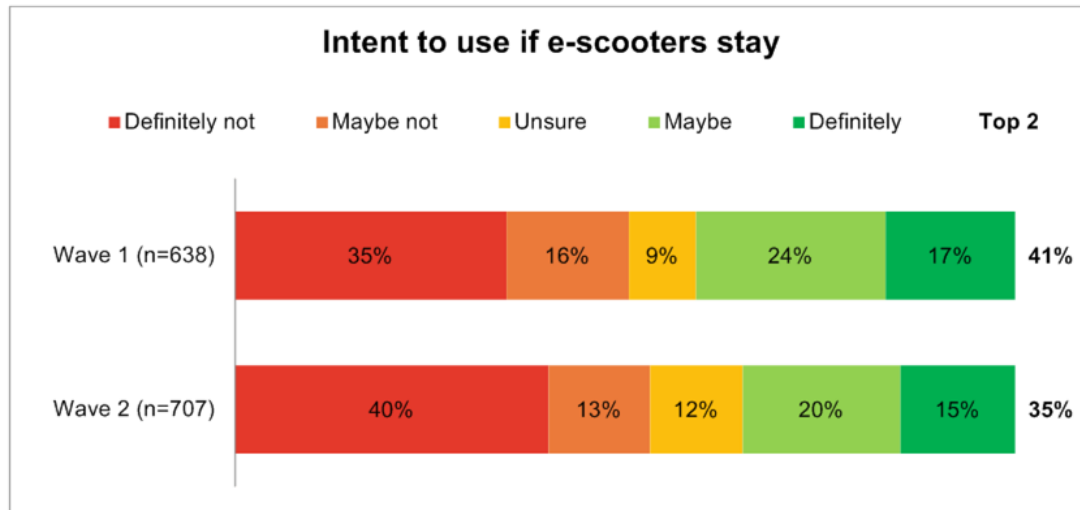
Around two thirds (64%) of general public respondents thought the e-scooter share scheme had a 'very positive' or 'positive' effect on Wellington. The general public sample were more positive about the impact of the e-scooter share scheme than the panel respondents, with around 20% more saying they think the scheme had a 'very positive' or 'positive' effect.

Figure 4. Results for question 'In your opinion, what effect has the JUMP and Flamingo e-scooter share scheme had on Wellington since the trial began in June 2019?' of general public survey (excluding 'don't know' answers)



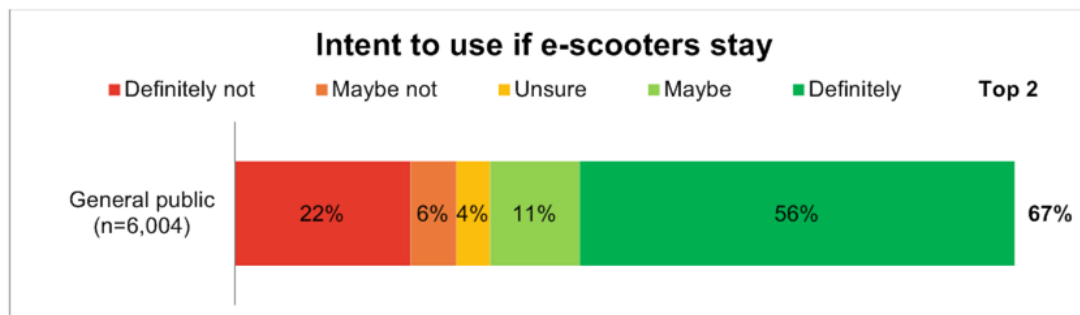
Intent to use the e-scooters if they stay has seen a slight decline between the two waves, dropping from 41% reporting they would 'maybe' or 'definitely' use it to 35% in wave two.

Figure 5. Results for question 'Do you intend to use JUMP or Flamingo e-scooters if they are allowed to stay in Wellington?' by wave



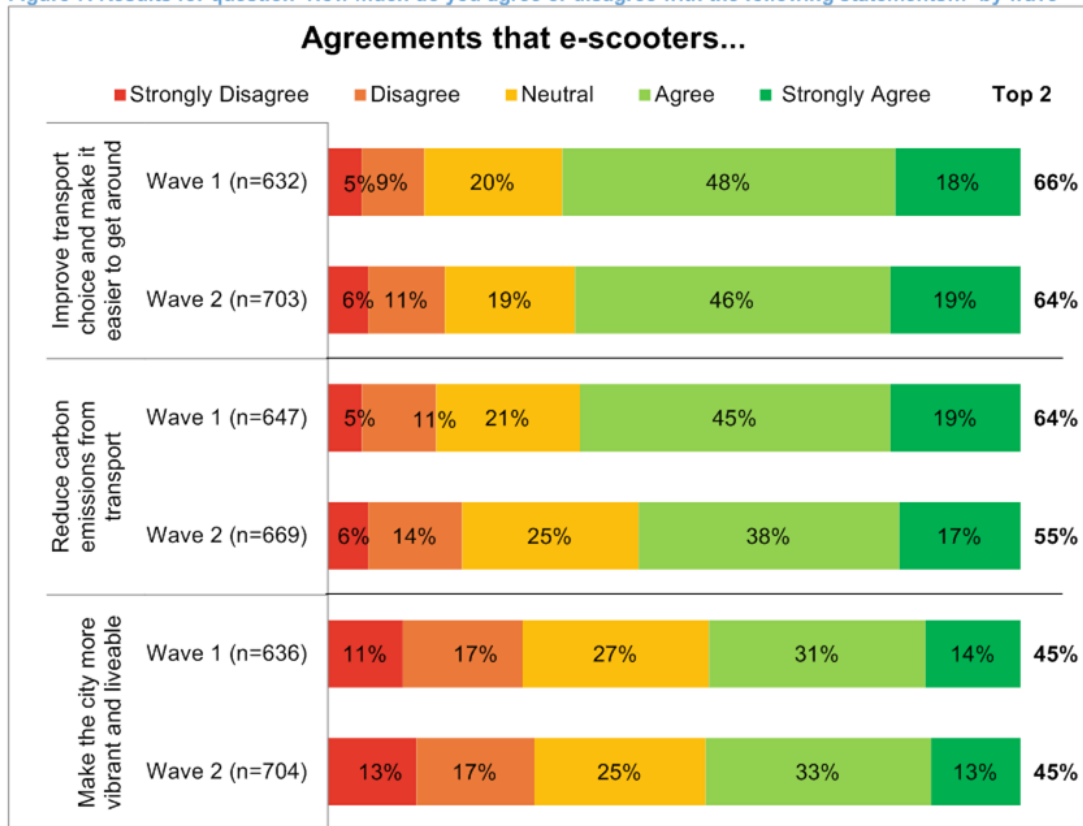
Over two thirds (67%) of the general public sample intend to use the e-scooter share scheme if it is allowed to stay. This is almost double the amount who said they would be likely to use the e-scooters if they were allowed to stay in wave two of the panel sample.

Figure 6. Results for question 'Do you intend to use JUMP or Flamingo e-scooters if they are allowed to stay in Wellington?' of general public survey



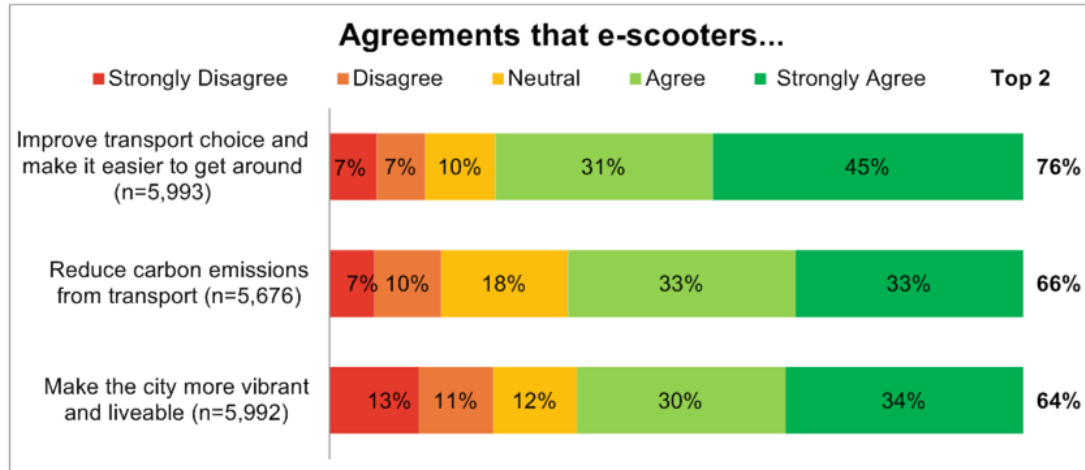
Around two thirds of wave one panel respondents agreed that e-scooters improve transport choice and make it easier to get around (66%) and reduce carbon emissions from transport (64%). They were less likely to agree that e-scooters make the city more vibrant and liveable (45%). These results were relatively consistent in wave two, however the proportion who agreed that e-scooters reduce carbon emissions from transport dropped by nearly 10 percentage points.

Figure 7. Results for question 'How much do you agree or disagree with the following statements...' by wave



Nearly 8 out of 10 of the general public respondents either 'agreed' or 'strongly agreed' that e-scooters improve transport choice and make it easier to get around (76%). Around two thirds also agree that they reduce carbon emissions from transport (66%) and that e-scooters make the city more vibrant and liveable (64%). Agreement across all statements was higher for the general public sample, compared to the panel samples.

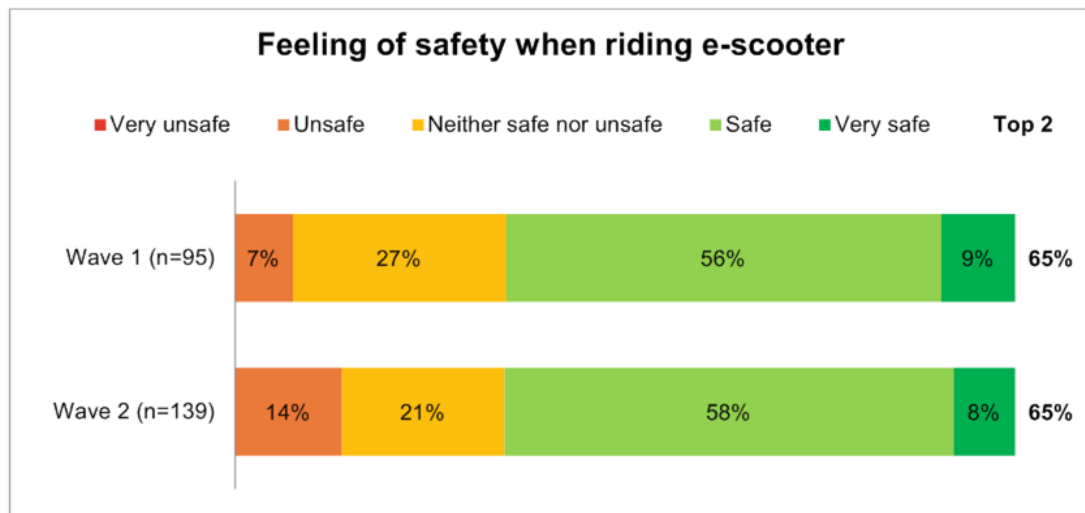
Figure 8. Results for question 'How much do you agree or disagree with the following statements...' of general public survey



10. Safety

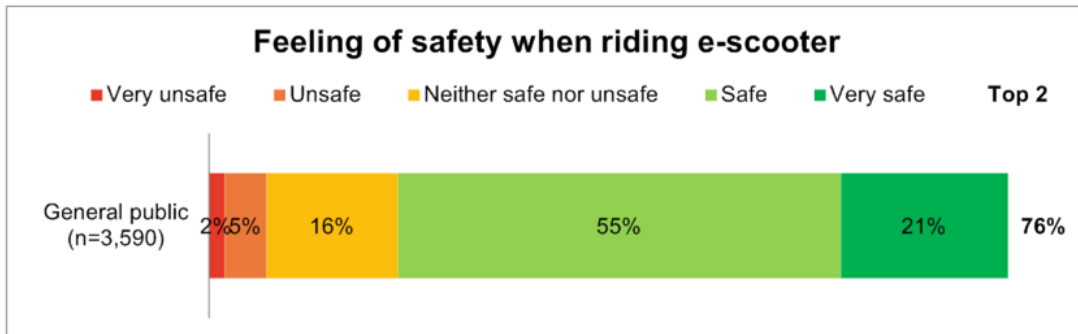
Around two thirds (65%) of panel respondents in wave one who had rented an e-scooter through the e-scooter share scheme felt safe when riding an e-scooter. This remained unchanged in wave two, although the proportion who felt 'unsafe' doubled. No respondents in either wave reported they felt 'very unsafe' when riding an e-scooter.

Figure 9. Results for question 'Overall, how safe or unsafe do you feel when riding an e-scooter?' by wave



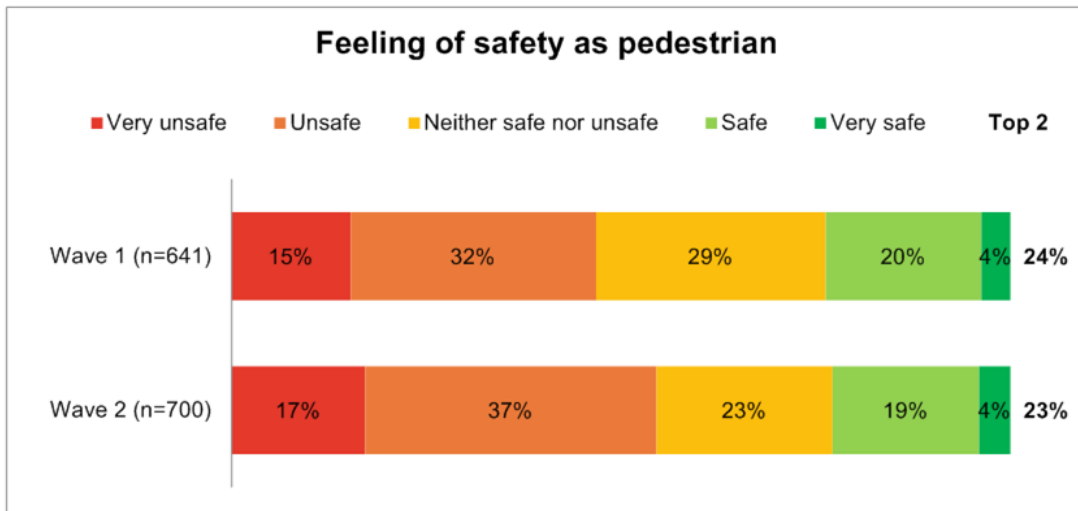
Around three quarters (76%) of the general public sample who had hired an e-scooter felt 'safe' or 'very safe' when riding an e-scooter. A higher proportion of the general public sample felt safer when riding an e-scooter than the panel respondents.

Figure 10. Results for question 'Overall, how safe or unsafe do you feel when riding an e-scooter?' of general public survey



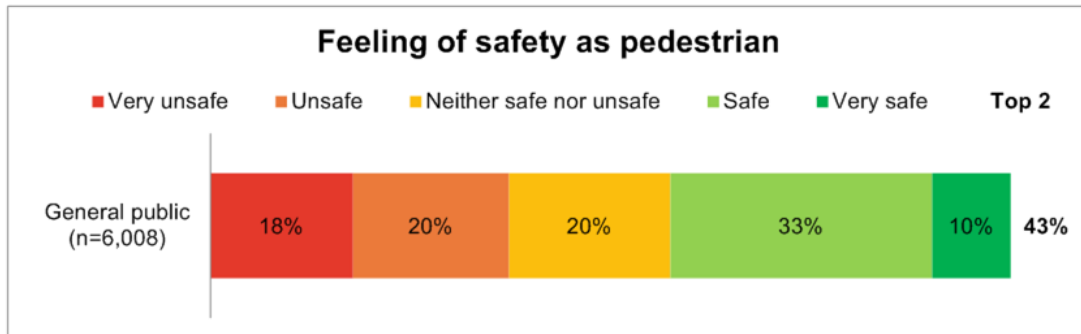
Around a quarter (24%) of panel respondents in wave one felt safe when sharing the footpath with e-scooter when they were a pedestrian. Although similar numbers felt safe between waves one and two, the proportion who felt unsafe has shown a small increase from 47% in wave one to 54% in wave two.

Figure 11. Results for question 'When e-scooters are sharing footpaths and other pedestrian areas that you are walking on, how safe or unsafe do you feel as a pedestrian?' by wave



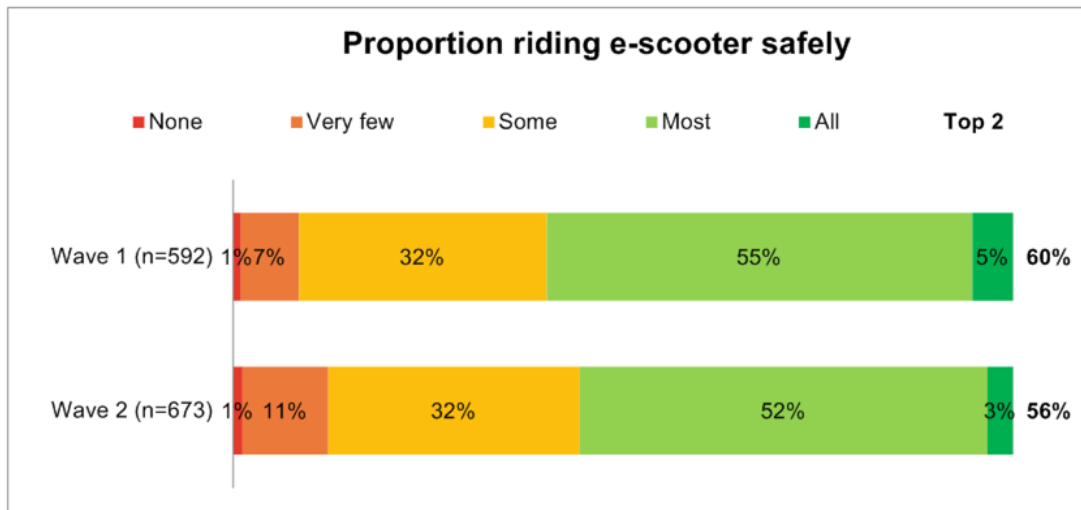
Nearly half (43%) of general public respondents felt 'safe' or 'very safe' when sharing the footpath with e-scooters as pedestrians. Similar to their feelings of safety when riding an e-scooter, general public respondents felt safer as pedestrians.

Figure 12. Results for question 'When e-scooters are sharing footpaths and other pedestrian areas that you are walking on, how safe or unsafe do you feel as a pedestrian?' of general public survey



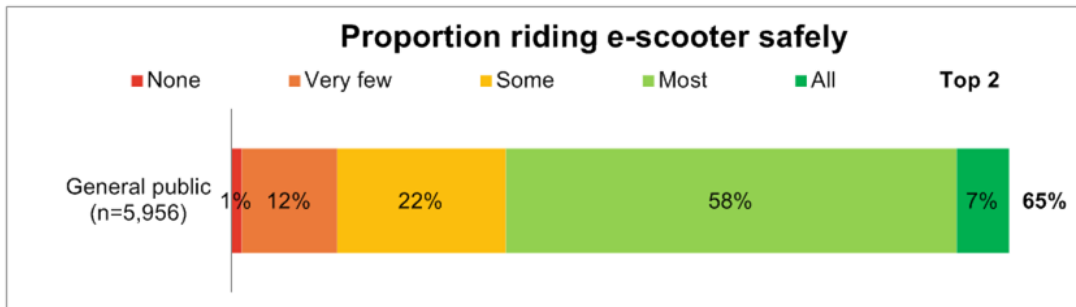
Most (92%) of the panel respondents in wave one thought that 'some', 'most', or 'all' e-scooter riders had been riding the e-scooters in a safe and/or responsible manner. In wave two this decreased slightly to 88% who thought that 'some', 'most', or 'all' e-scooter riders had been riding the e-scooters in a safe and/or responsible manner.

Figure 13. Results for question 'Overall, what proportion of JUMP and Flamingo e-scooters users, in your experience, do you think have been riding the scooters in a safe and/or responsible manner?' by wave (excluding 'don't know')



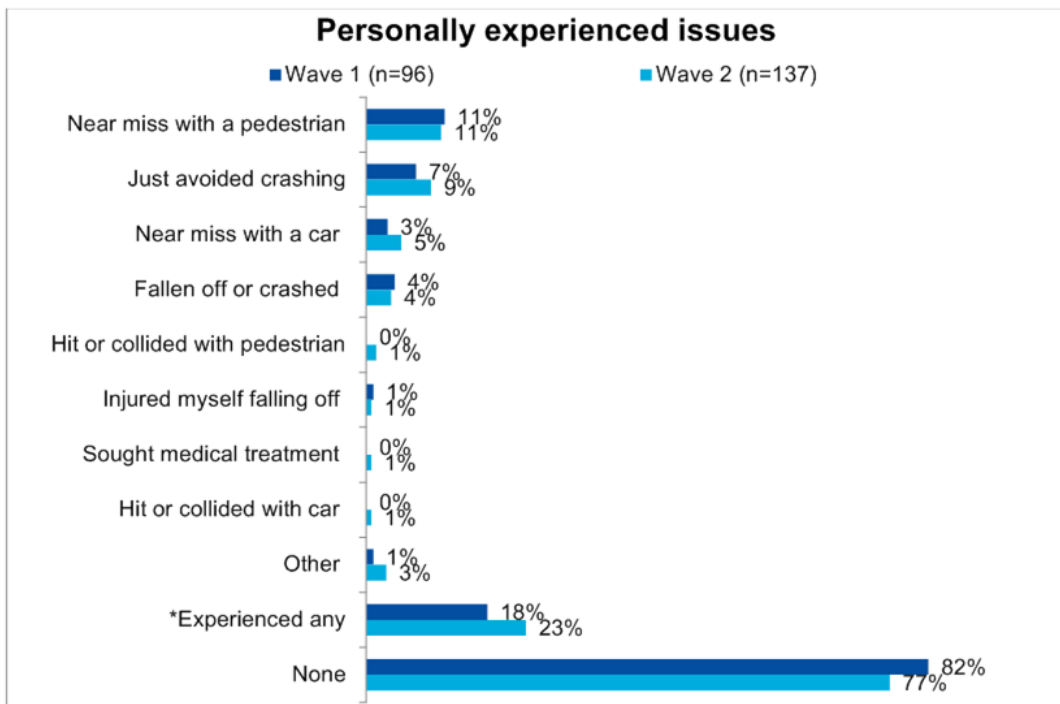
86% of the general public respondents felt that 'some', 'most', or 'all' e-scooter riders had been riding the e-scooters in a safe and/or responsible manner. This is about the same proportion as wave two panel sample.

Figure 14. Results for question 'Overall, what proportion of JUMP and Flamingo e-scooters users, in your experience, do you think have been riding the scooters in a safe and/or responsible manner?' of general public survey (excluding 'don't know')



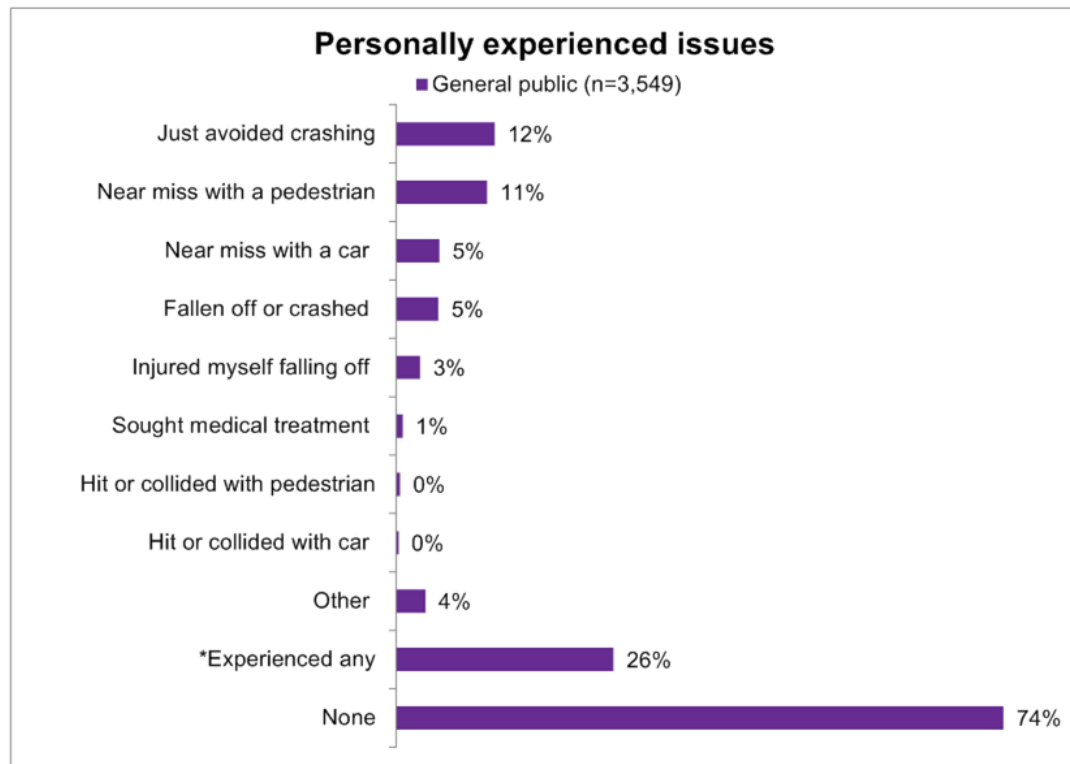
In wave one around one in five (18%) who had hired an e-scooter had experienced a safety-related issue when using a JUMP or Flamingo e-scooter. The most common issues experienced were a near miss with a pedestrian (11%) or just avoided falling off or crashing (i.e. near miss) (7%). In wave two a similar proportion (23%) of those who hired an e-scooter reported they had experienced a safety-related issue. As with wave one respondents, the most common issues experienced were a near miss with a pedestrian (11%) or just avoided falling off or crashing (i.e. near miss) (9%).

Figure 15. Results for question 'Have you personally experienced any of the following safety-related issues when using JUMP or Flamingo e-scooters? Please select all that apply' by wave



Around a quarter (26%) of general public respondents who had hired an e-scooter reported they had experienced a safety-related issue. In line with the results from the panel respondents, the most common issues experienced were just avoided falling off or crashing (i.e. near miss) (12%) or a near miss with a pedestrian (11%).

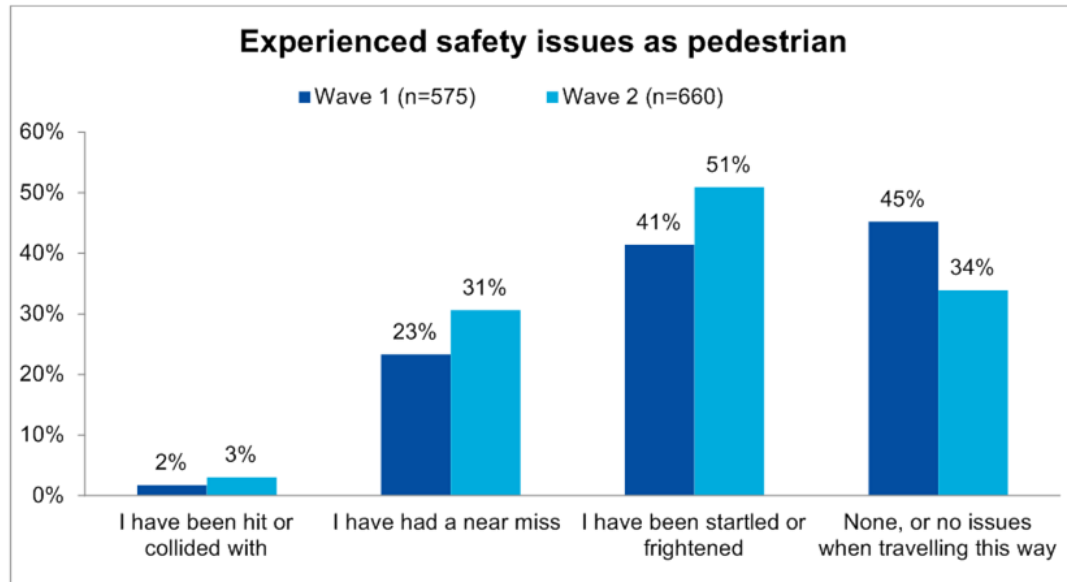
Figure 16. Results for question 'Have you personally experienced any of the following safety-related issues when using JUMP or Flamingo e-scooters? Please select all that apply' of general public survey



We asked respondents to tell us about any safety related issues they had experienced relating to people using JUMP or flamingo when using other modes of transport, including as a pedestrian, by car, and as a cyclist. Across both waves, panel respondents were most likely to report they had experienced safety issues when they were travelling as a pedestrian, followed by when they were using a car or motor vehicle. Panel respondents were less likely to experience issues when they were cycling. Greater numbers of panel respondents in wave two reported they had experienced any issue, regardless of mode of transport.

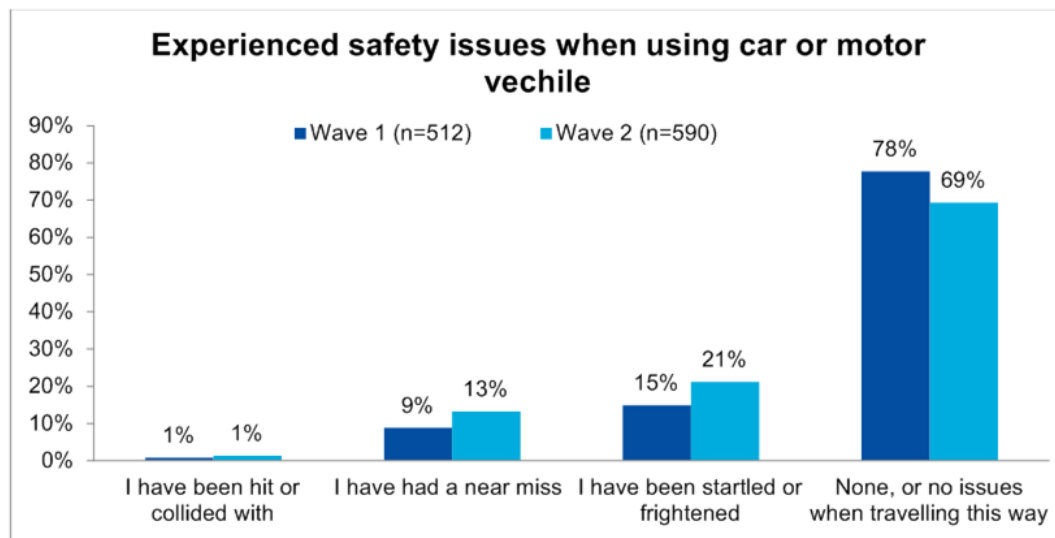
As a pedestrian, just under half (45%) of respondents in wave one of the panel sample reported they had experienced no safety related issues with people using e-scooters. This dropped to around a third (34%) in wave two. In wave two, the panel sample were more likely to report they had experienced safety issues as a pedestrian with 51% reporting they had been startled or frightened, and 31% saying they had had a near miss. A small number told us they had been hit or collided with.

Figure 17. Results for question 'When using other modes of transport, have you personally experienced any of the following safety-related issues relating to people using JUMP or Flamingo e-scooters? As a pedestrian...' by wave



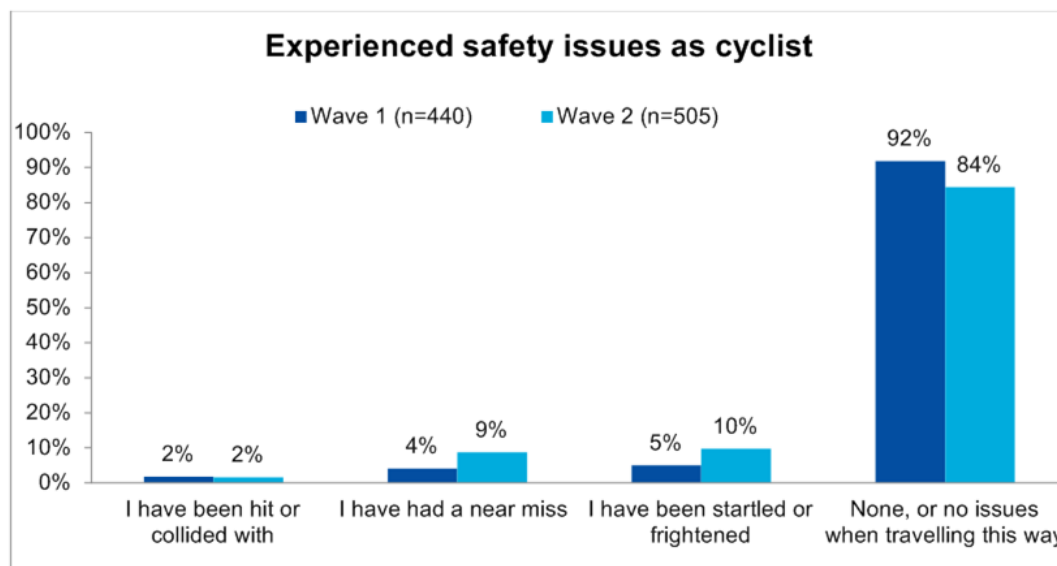
Between waves one and two of the panel samples the proportion who reported a near miss with an e-scooter or being startled/frightened by an e-scooter when using a car or other motor vehicle slightly increased. In wave two, 21% said they had been startled or frightened by an e-scooter (compared to 15% in wave one) and 13% said they had a near miss with an e-scooter (compared to 9% in wave one).

Figure 18. Results for question 'When using other modes of transport, have you personally experienced any of the following safety-related issues relating to people using JUMP or Flamingo e-scooters? As a car or other motor vehicle user...' by wave



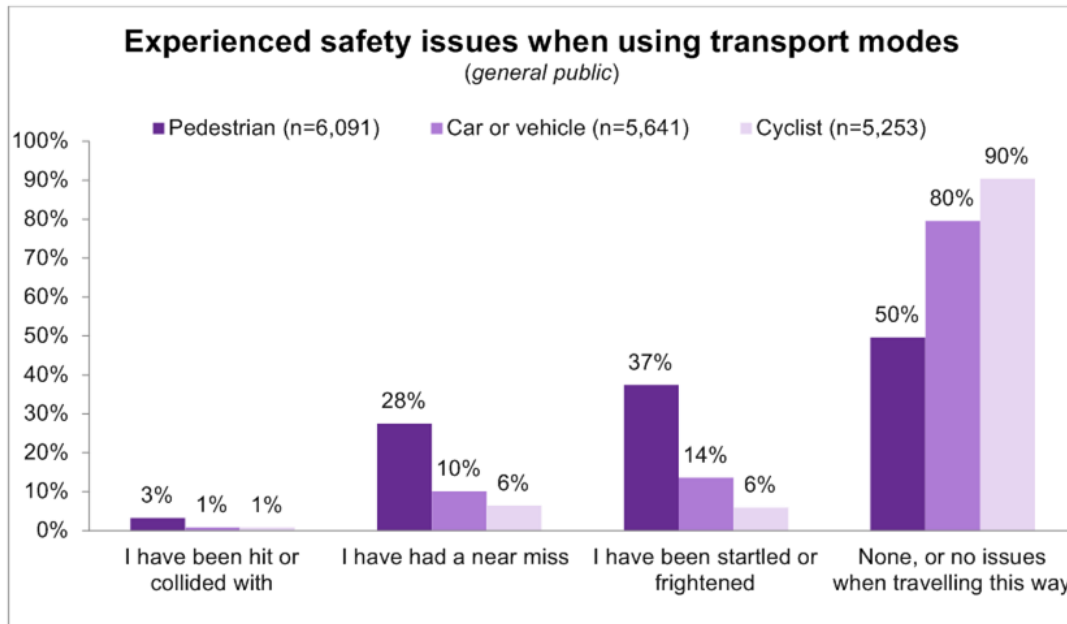
The number of reported safety issues experienced by cyclists also increased from wave one to wave two, with 8% reporting they experienced any safety issues with an e-scooter in wave one to 16% in wave two. Between both waves, the most common incident for cyclists was being startled or frightened (5% in wave one and 10% in wave two) followed by having a near miss (4% in wave one and 9% in wave two). There was a small number who said they had had an e-scooter collide with them when they were cycling.

Figure 19. Results for question 'When using other modes of transport, have you personally experienced any of the following safety-related issues relating to people using JUMP or Flamingo e-scooters? As a cyclist...' by wave



The general public sample reported similar patterns when it comes to which modes of transport had the most safety related issues relating to people using JUMP or Flamingo e-scooters. Half (50%) of general public respondents had a safety related issue with e-scooter as a pedestrian, however this drops to only 20% when using a car or other motor vehicle and 10% when cycling. The most common safety-related issue across the three modes of transport was being startled or frightened.

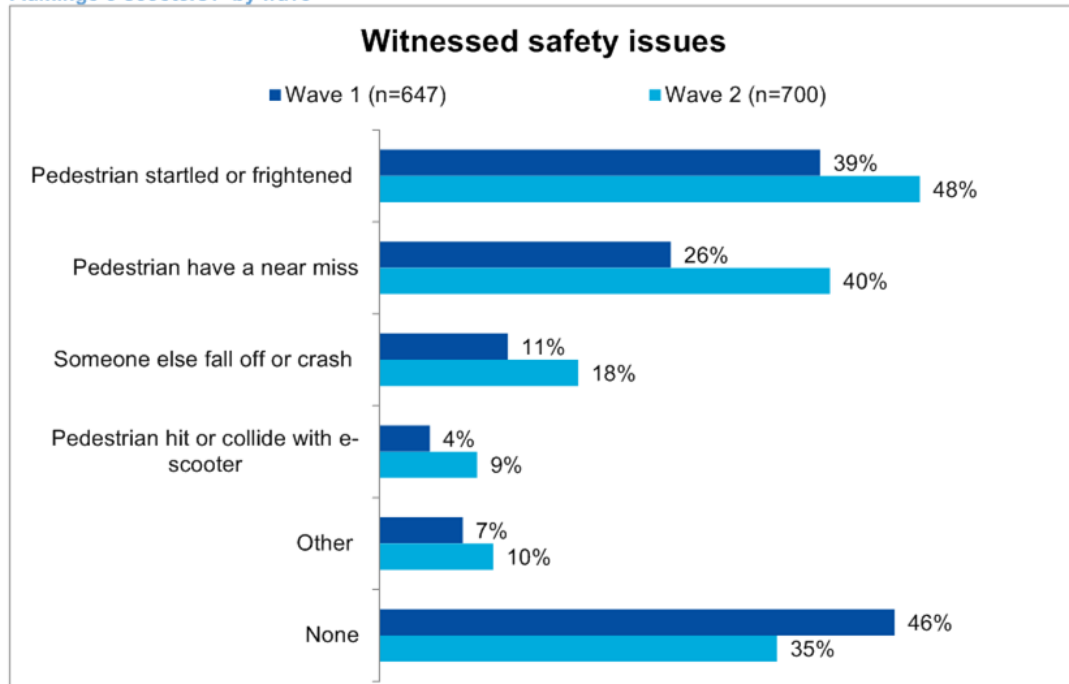
Figure 20. Results for question 'When using other modes of transport, have you personally experienced any of the following safety-related issues relating to people using JUMP or Flamingo e-scooters?' of general public survey



Respondents were also asked what safety related issues they had witnessed. In wave one, just over half (54%) reported they had witnessed some kind of safety related issue. Most commonly this was that they had seen pedestrians startled or frightened (39%), or they had seen an e-scooter have a near miss or nearly crash into a pedestrian (26%).

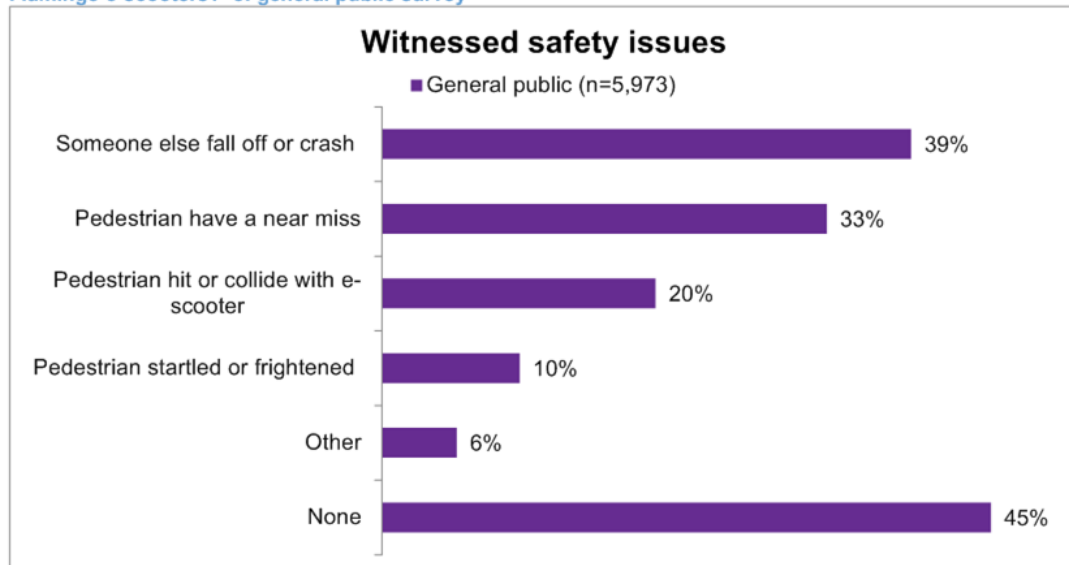
In wave two, this increased to nearly two thirds (65%) who reported they had witnessed any kind of safety-related issues of people using JUMP or Flamingo e-scooters. Just under half of the wave two panel sample reported they had witnessed a pedestrian get startled or frightened (48%), or had seen an e-scooter have a near miss or nearly crash into a pedestrian (40%).

Figure 21. Results for 'Have you witnessed any of the following safety-related issues of people using JUMP or Flamingo e-scooters?' by wave



Just over half (55%) of the general public sample had witnessed any kind of safety-related issue with people using JUMP or Flamingo e-scooters, on par with wave one and slightly lower than the wave two panel sample. Unlike the panel samples, general public respondents reported the safety related issue they had witnessed the most was someone else falling off or crashing (39%).

Figure 22. Results for 'Have you witnessed any of the following safety-related issues of people using JUMP or Flamingo e-scooters?' of general public survey



11. Effect on other modes of transport

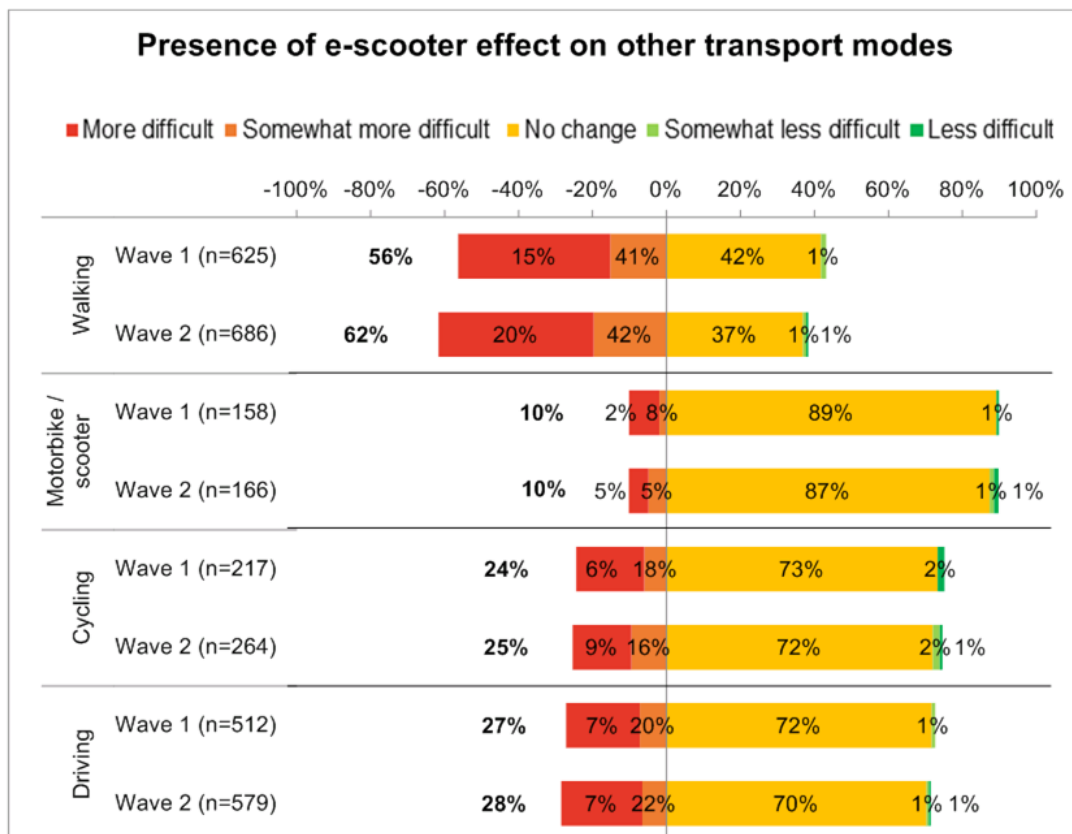
Respondents were asked several questions to indicate how the presence of the e-scooter share scheme had affected other modes of transport, including whether they had...

- Noticed that other modes of transport more or less difficult;
- Increased or decreased the use of other transport methods;
- Stopped any trips that they would have taken otherwise.

The presence of e-scooters had the most impact for those who walk, with over half (56%) in wave one saying it made walking more difficult; This increased to 62% in wave two.

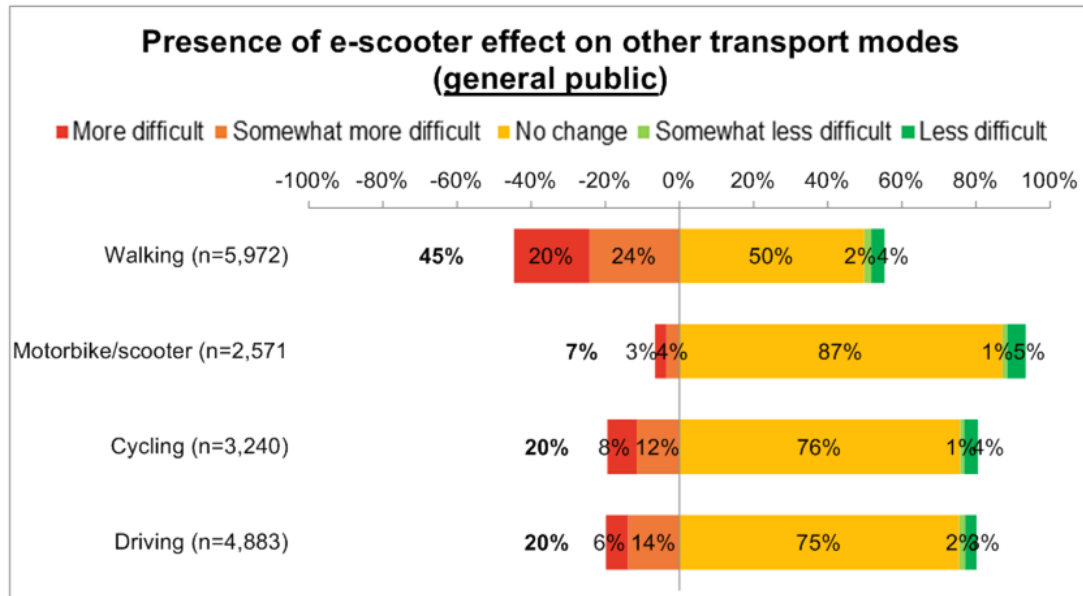
Around a quarter of wave one respondents reported that since the introduction of the e-scooter share scheme they found driving (27%) and cycling (24%) more difficult. One in ten (10%) found it more difficult when travelling by motorbike/scooter. There was little to no difference in the portion that found driving, cycling, or travelling by motorbike/scooter more difficult in wave two of the panel sample compared to wave one.

Figure 23. results of question 'Has the presence of JUMP and Flamingo e-scooters in Wellington made it more or less difficult for you when travelling by...' by wave



Just under half (45%) of the general public respondents found walking more difficult because of the presence of JUMP and Flamingo e-scooters. For the most part, travelling by motorbike/scooter (87%), bicycle (76%) and car (75%) has remained the same ('no change').

Figure 24. results of question 'Has the presence of JUMP and Flamingo e-scooters in Wellington made it more or less difficult for you when travelling by...' of general public survey

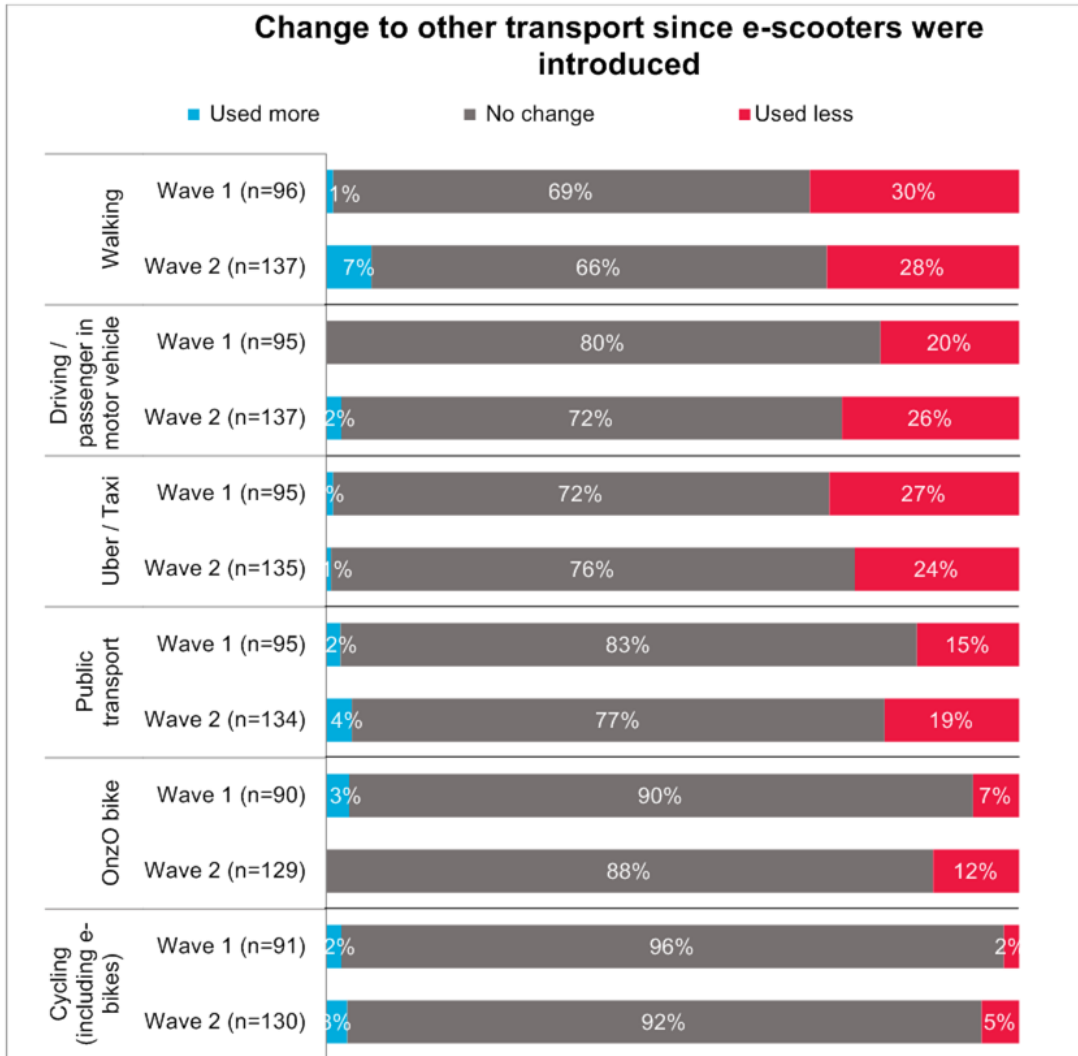


In July 2019 around a third (30%) of wave one panel respondents who had hired an e-scooter reported they were walking less as a result of the introduction of the e-scooter rental scheme. Wave one respondents were also driving or being a passenger in a motor vehicle (20%) and using uber/taxis (27%) less.

Wave two (December 2019) showed similar results; just under a third (28%) of panel respondents who had hired an e-scooter reported they were walking less as a result of the introduction of the e-scooter rental scheme. Similar proportions of respondents were driving or being driven less (26%) or using uber/taxis (24%) less as a result of the introduction of the e-scooter share scheme.

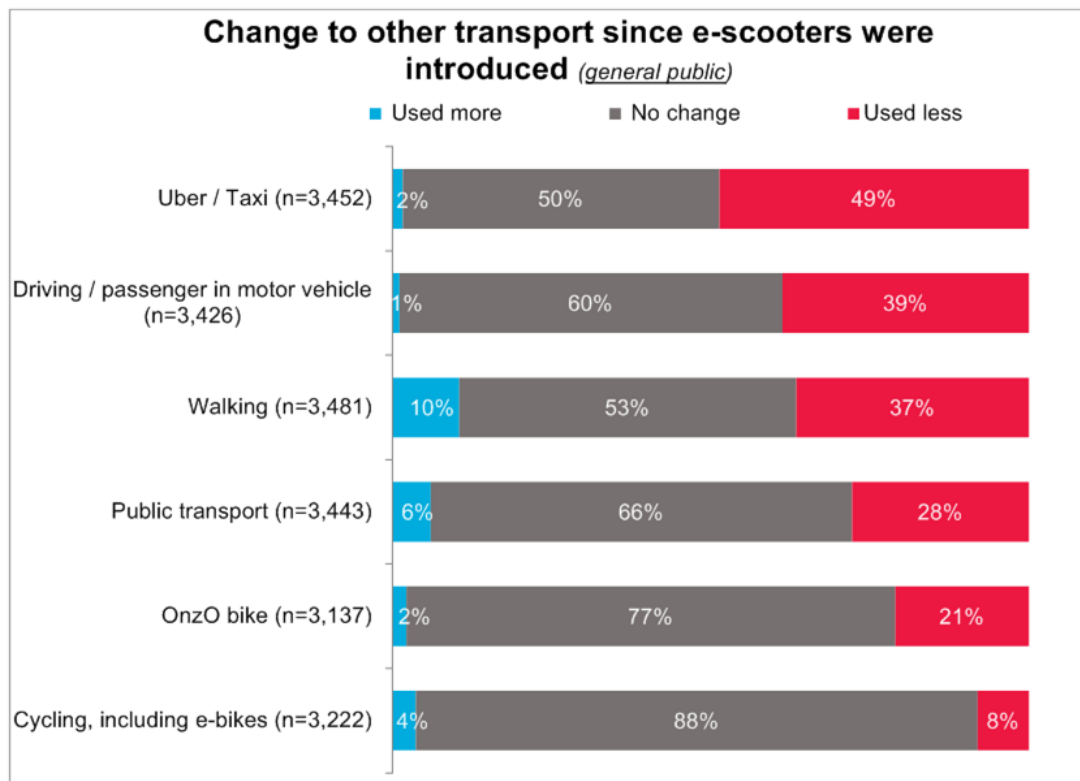
Across wave one and two usage of both ONZO bikes (90% in wave one and 88% in wave two) and cycling (96% in wave one, and 92% in wave two) remained relatively consistent.

Figure 25. Results of question 'Since you started using JUMP or Flamingo e-scooters, has your use of the following means of transport changed as a direct result of using the scheme?' by wave



Nearly half (49%) of the general public respondents reported they used uber or taxis less as a direct result of the introduction of the e-scooter share scheme. Around a third also reported they were driving or being driven (39%), walking (37%), or using public transport (28%) less. Similar to the panel respondents reported behaviour, the use of ONZO bikes (77%) and cycling (88%) saw 'no change' as a direct result of the introduction of the e-scooter share scheme.

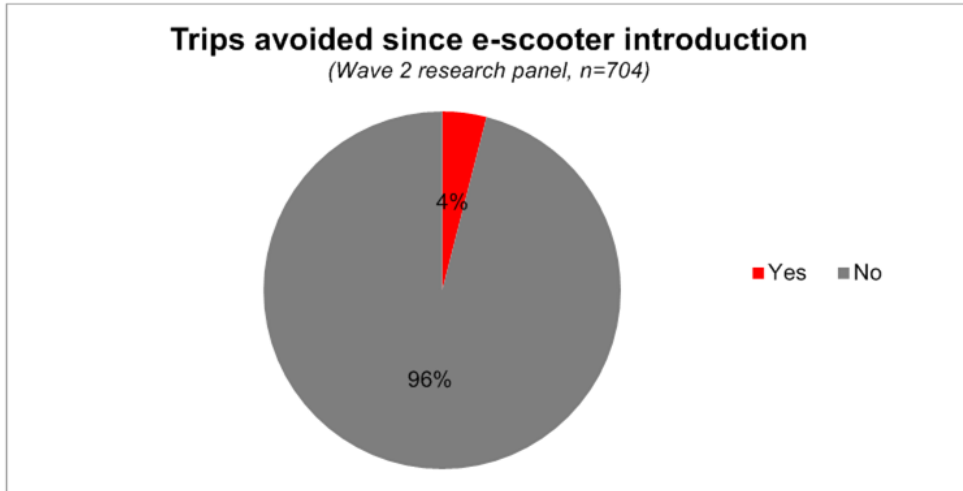
Figure 26. Figure 13. Results of question 'Since you started using JUMP or Flamingo e-scooters, has your use of the following means of transport changed as a direct result of using the scheme?' of general public survey



4% of the wave two panel sample had avoided making a trip they normally would since the introduction of the e-scooter share scheme³. Following this question, participants were asked if there was anything they would like to tell us about the trip they didn't make. The analysis of this qualitative data can be found in the Diagram report 'Wellington City Council e-scooter scheme survey'.

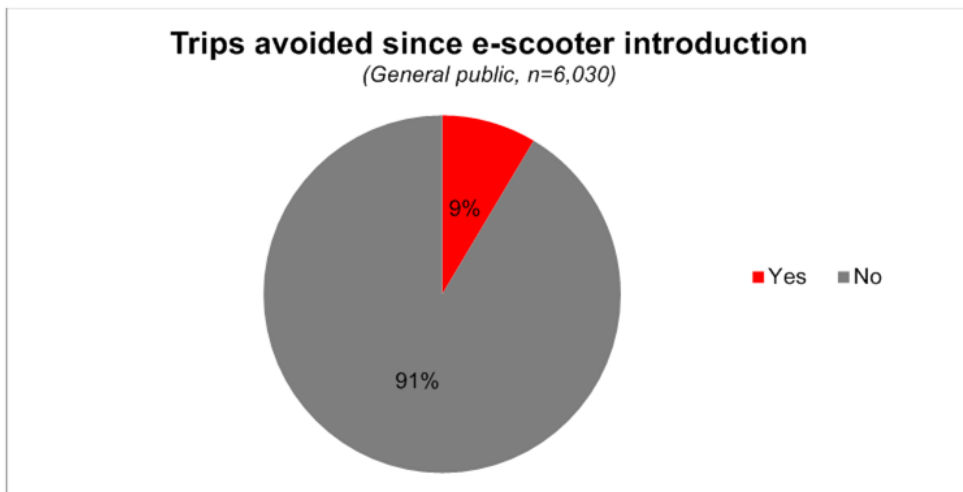
³ This question was added in wave two, so there is no comparable data from wave one.

Figure 27. Results for question 'Since the introduction of e-scooters in July have you avoided making, or not made, a trip you normally would due to the addition of e-scooters rental schemes?' of the WCC research panel respondents in wave 2



Nearly one in ten of general public respondents avoided making a trip they normally would due to the introduction of the e-scooters. Following this question, participants were also asked if there was anything they would like to tell us about the trip they didn't make. The analysis of this qualitative data can be found in the Diagram report 'Wellington City Council e-scooter scheme survey'.

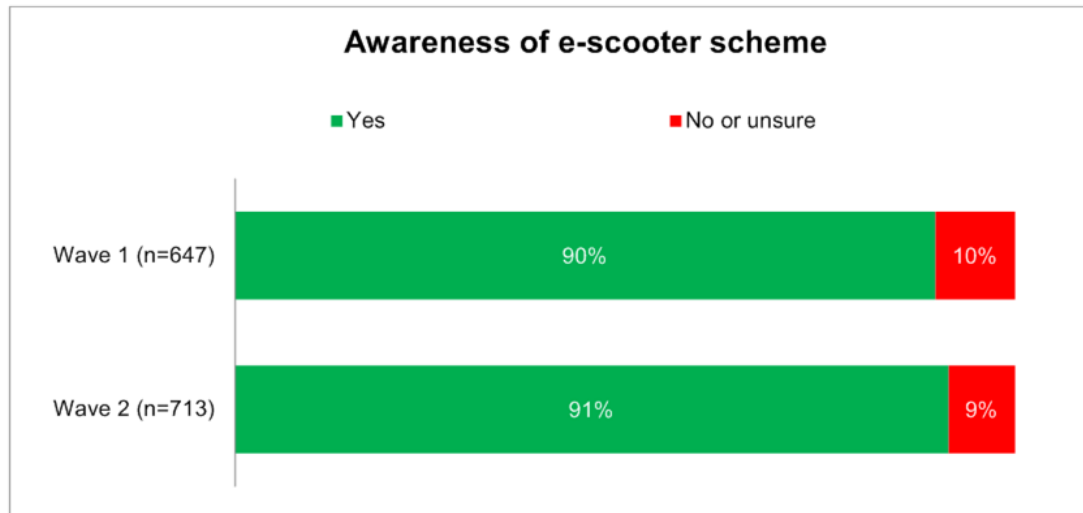
Figure 28. Results for question 'Since the introduction of e-scooters in July have you avoided making, or not made, a trip you normally would due to the addition of e-scooters rental schemes?' of the general public survey



12. E-scooter awareness, usage, and user results

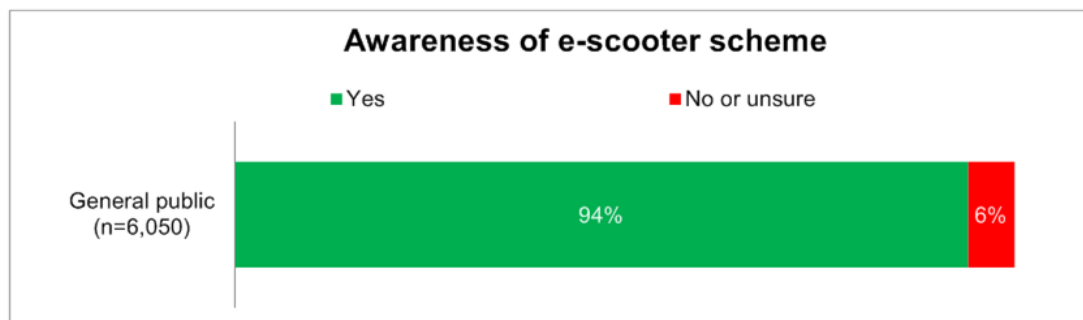
The vast majority of the panel respondents in both wave one (90%) and two (91%) were aware of the e-scooter share scheme operating in Wellington city.

Figure 29. Results for question 'Before today, had you seen or heard of any e-scooter share schemes in Wellington city?' by wave



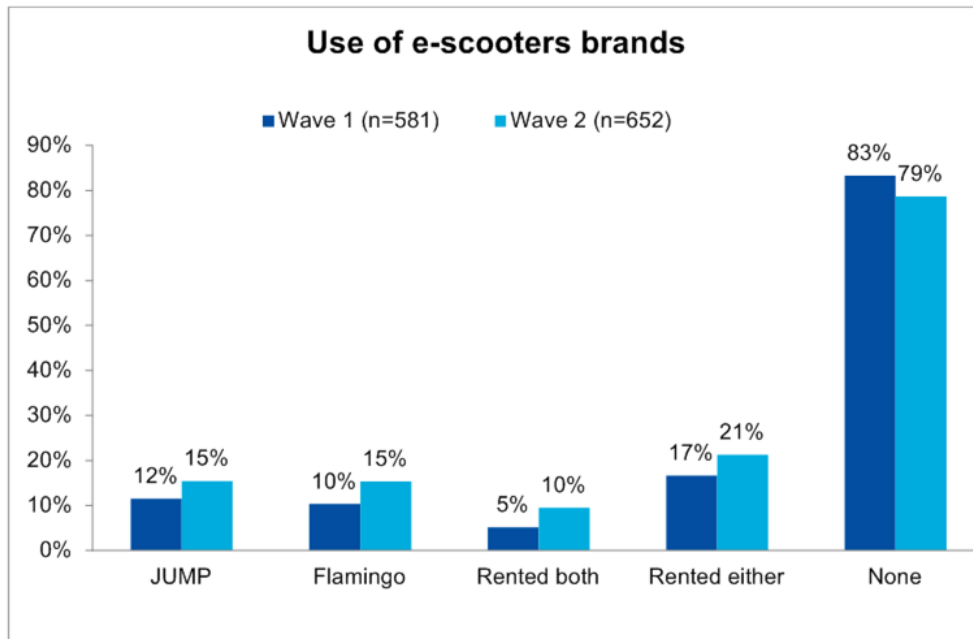
As with the panel sample, most (94%) of the general public respondents were aware of the e-scooter share scheme in Wellington city.

Figure 30. Results for question 'Before today, had you seen or heard of any e-scooter share schemes in Wellington city?' of general public survey



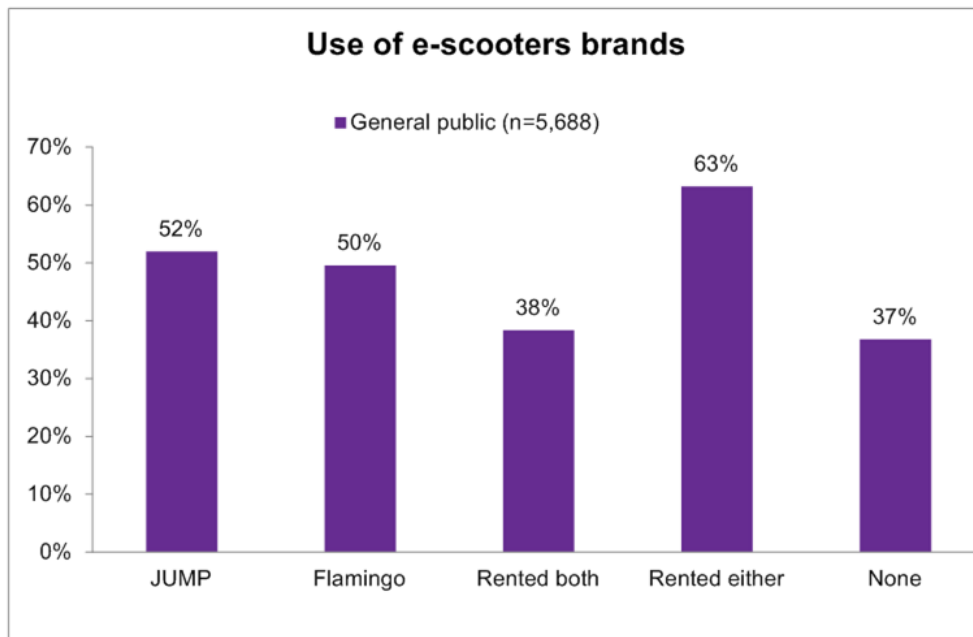
17% of wave one panel respondents had used/rented an e-scooter. Slightly more respondents had used a JUMP (12%) than a Flamingo e-scooter (10%). In wave two, the proportion of respondents who had used/rented an e-scooter increased slightly to 21%. The split of those who rented from the different companies evened out, with 15% saying they had rented JUMP and 15% saying they had rented a Flamingo.

Figure 31. Results for question 'Have you ever used/rented an e-scooter in Wellington before?' by wave



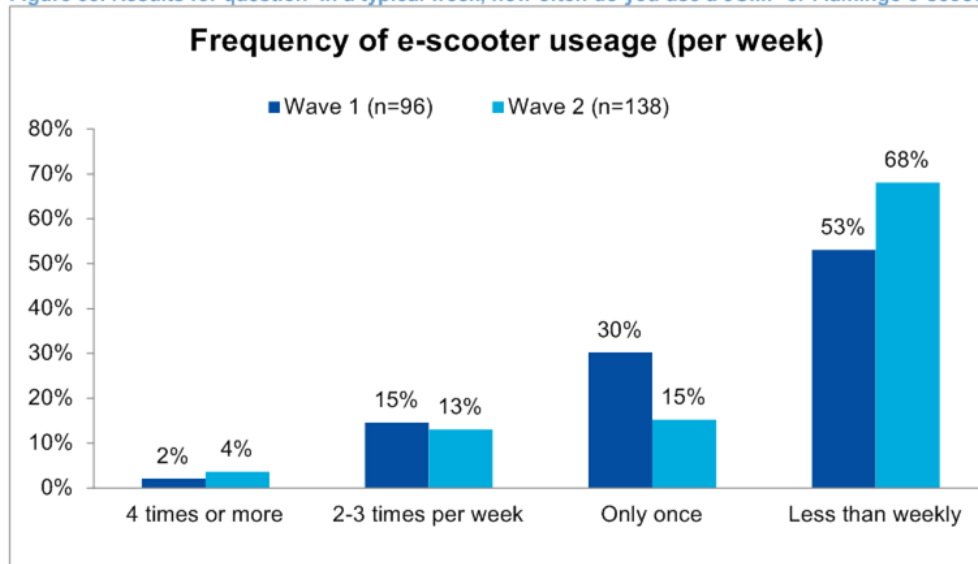
Nearly two thirds (63%) of the general public respondents had rented an e-scooter. Just over half (52%) had rented a JUMP and half (50%) had rented a Flamingo e-scooter. It is worth noting that over half of those who had rented an e-scooter had rented both JUMP and Flamingo e-scooters (38% of the total general public sample had rented both a JUMP and Flamingo e-scooter).

Figure 32. Results for question 'Have you ever used/rented an e-scooter in Wellington before?' of general public survey



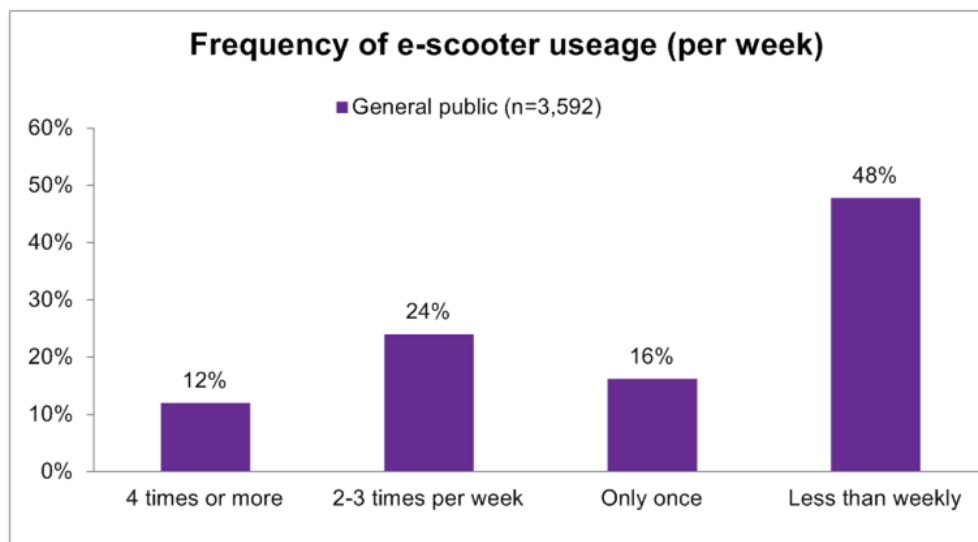
In wave one, around half (47%) of e-scooter users were using e-scooters at least weekly. In wave two the frequency of usage dropped, with around a third (33%) using e-scooters at least weekly.

Figure 33. Results for question 'In a typical week, how often do you use a JUMP or Flamingo e-scooter' by wave



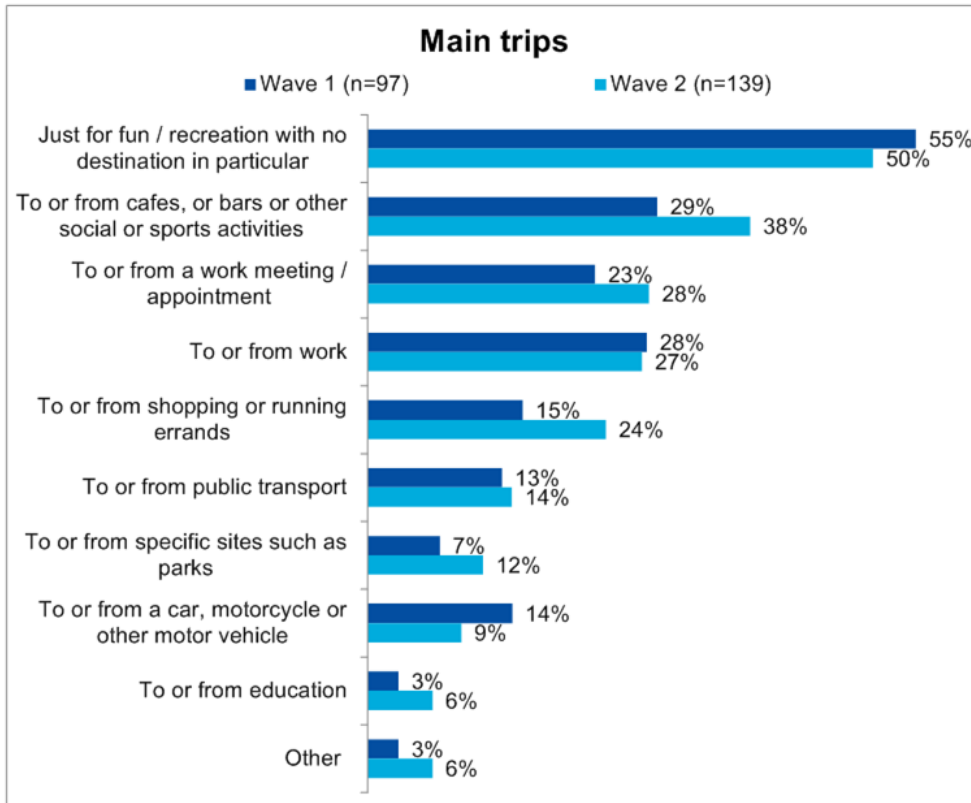
Over half (52%) of the e-scooter users in the general public sample were using the e-scooters at least weekly, with nearly a quarter (24%) using the e-scooters 2-3 times per week. Frequency of e-scooter use is higher for the general public sample compared to both wave one and particularly wave two of the panel respondents.

Figure 34. Results for question 'In a typical week, how often do you use a JUMP or Flamingo e-scooter' of general public survey



In wave one of the panel survey, the main trips e-scooter users were likely to make were just for fun with no destination in mind (55%), to or from cafes/bars or other social activities (29%), and to or from work (28%). In wave two, the main trip most e-scooter users were utilising e-scooters for were just for fun with no destination in mind (50%), followed by to or from cafes/bars or other social activities (38%), to or from a work meeting/appointment (28%), or to or from work (27%).

Figure 35. Results for 'What are the main types of trips that you use a JUMP or Flamingo e-scooter?' by wave



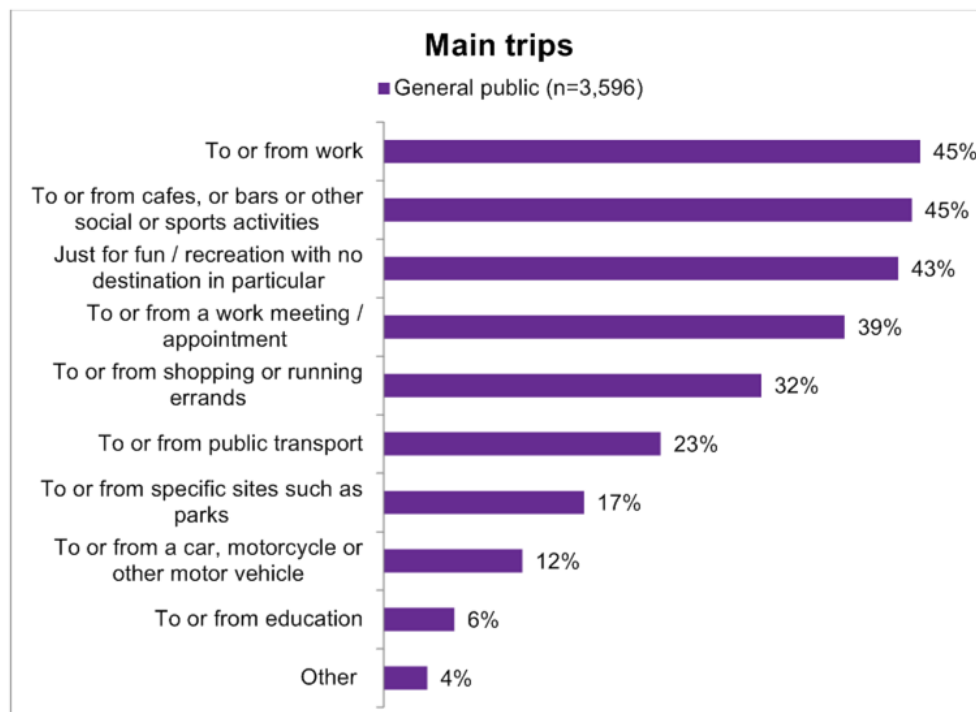
Between July and December 2019 the panel sample was more likely to use an e-scooter to or from cafes/bars or other social activities (9% increase from wave one to two) and to or from shopping or running errands (8% increase from wave one to two). There was a small decline in e-scooter users reporting they were using e-scooters to or from a car or other motor vehicle (5% decrease from wave one to two) and just for fun (4% decrease from wave one to two).

Table 1. Change between wave one and two for question 'What are the main types of trips that you use a JUMP or Flamingo e-scooter?'

Trip type	% change from wave one to wave two
To or from a car, motorcycle or other motor vehicle	-5%
Just for fun / recreation with no destination in particular	-4%
To or from work	0%
To or from public transport	1%
To or from education	3%
To or from specific sites such as parks	4%
To or from a work meeting / appointment	5%
To or from shopping or running errands	8%
To or from cafes, or bars or other social or sports activities	9%

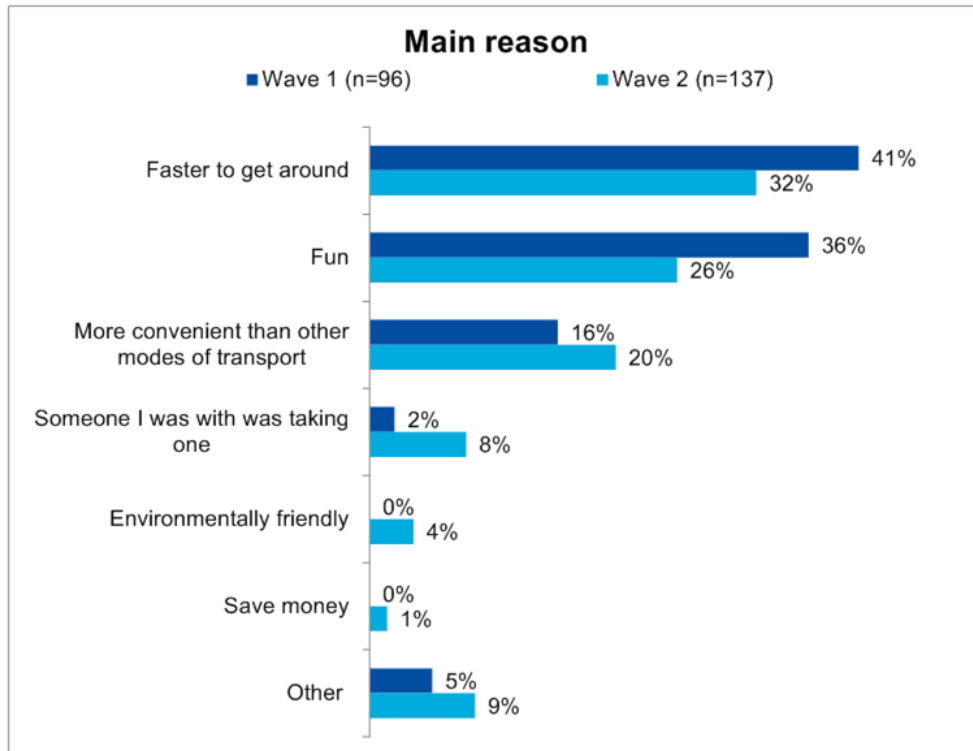
The main trip types general public e-scooter users were taking with e-scooters were to or from work (45%), to or from cafes/bars or other social activities (45%), and just for fun (43%).

Figure 36. Results for 'What are the main types of trips that you use a JUMP or Flamingo e-scooter?' of general public survey



In wave one, the most common reason panel respondents chose to use a JUMP or Flamingo e-scooter was that it was faster to get around (41%) and that it was fun (36%). Wave two panel respondents also reported the main reason they chose to rent an e-scooter on their most recent trip was that it was faster to get around (32%) and fun (26%).

Figure 37. Result for question 'Thinking about your most recent trip... What was the main reason you chose to use a JUMP or Flamingo e-scooter for that trip?' by wave



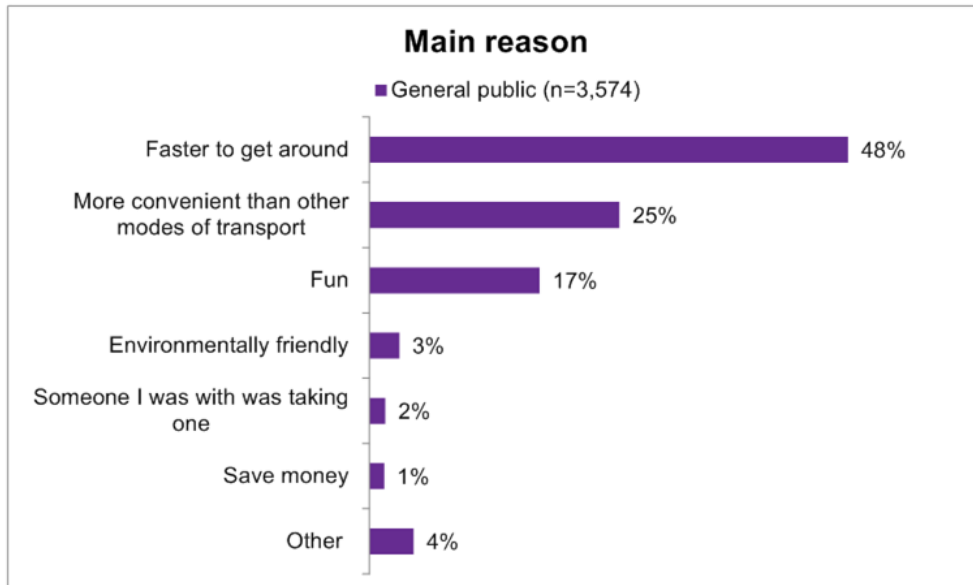
Compared to wave one, wave two panel respondents were less likely to say they chose to use an e-scooter for last trip because they were fun (decreased 11%) or faster to get around (decrease 9%) and were more likely to say it was because someone they were with was taking one (increased 6%) or that they were more convenient than other modes of transport (increased 5%).

Table 2. Change between wave one and two for question 'Thinking about your most recent trip... What was the main reason you chose to use a JUMP or Flamingo e-scooter for that trip?'

	% change from wave 1 to wave 2
Fun	-11%
Faster to get around	-9%
Save money	1%
Other	4%
Environmentally friendly	4%
More convenient than other modes of transport	5%
Someone I was with was taking one	6%

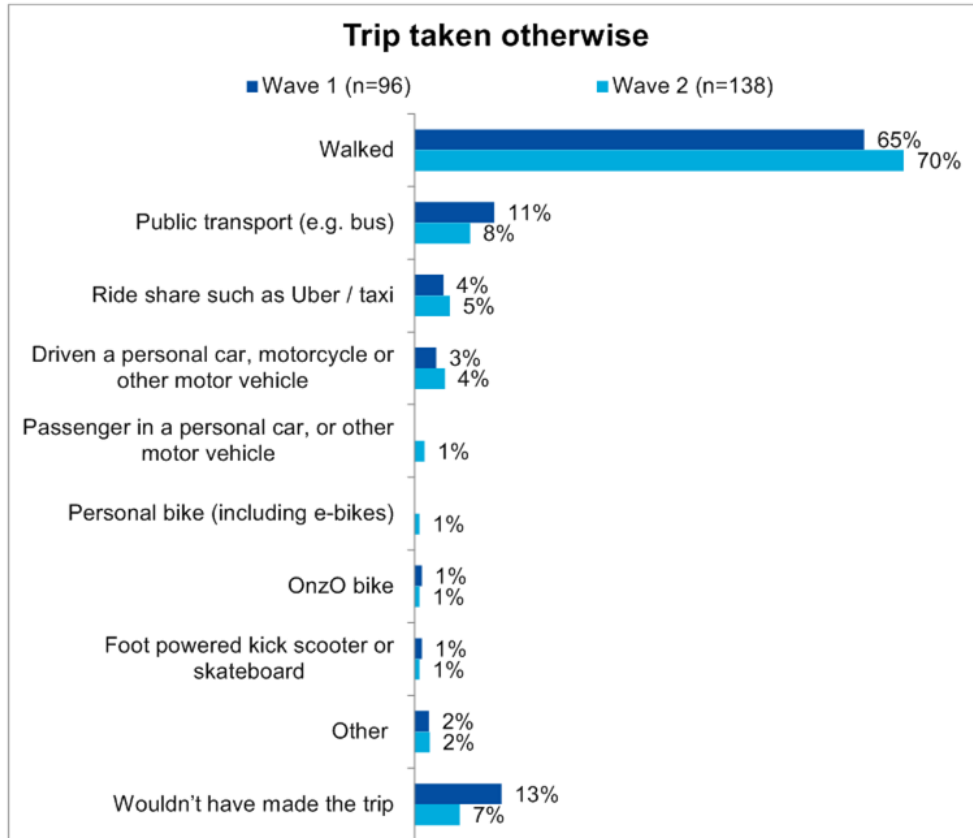
Almost half (48%) of general public respondents reported their main reason they used an e-scooter to take their most recent trip was that it was faster to get around. Other main reasons were that it was more convenient (25%) or fun (17%). Compared to the wave two panel respondents, the general public sample were less likely to report the main reason for choosing an e-scooter for their last trip was fun, and more likely to say it was more convenient than other modes of transport.

Figure 38. Figure 26. Result for question 'Thinking about your most recent trip... What was the main reason you chose to use a JUMP or Flamingo e-scooter for that trip?' of general public survey



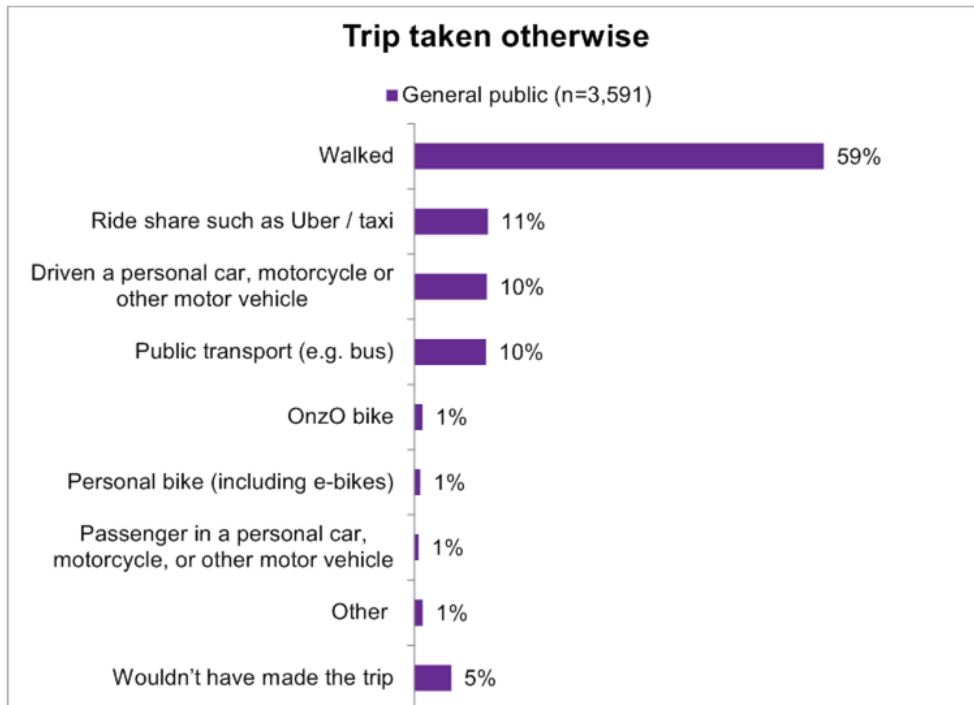
Around two thirds (65%) of the wave one panel sample would have made the most recent trip on an e-scooter by walking. Just over one in ten said that would have made the most recent trip by public transport (11%) or that they wouldn't have made the trip at all (13%). Wave two panel respondents were also most likely to say they would have made their most recent trip on foot (70%).

Figure 39. Result for question 'Thinking about your most recent trip... How would you have taken the trip otherwise?' by wave



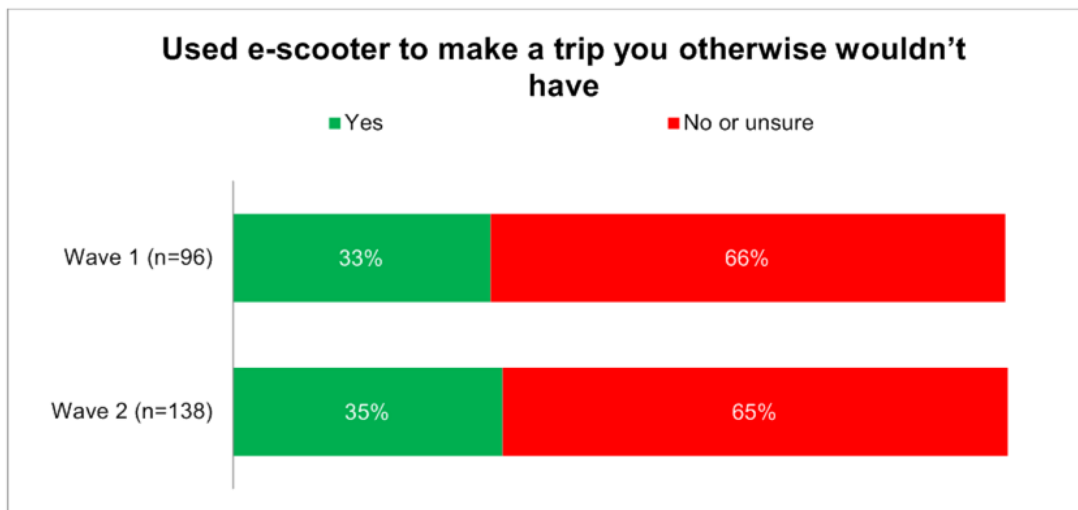
Over half (59%) of the general public respondents would have made the most recent trip on an e-scooter by walking. Around one in ten otherwise would have made this by rideshare such as uber (11%), driven (10%), or by public transport (10%). Compared to the wave one and two panel respondents the general public respondents were using e-scooters to replace more varied transport modes.

Figure 40. Result for question 'Thinking about your most recent trip... How would you have taken the trip otherwise?' of general public survey



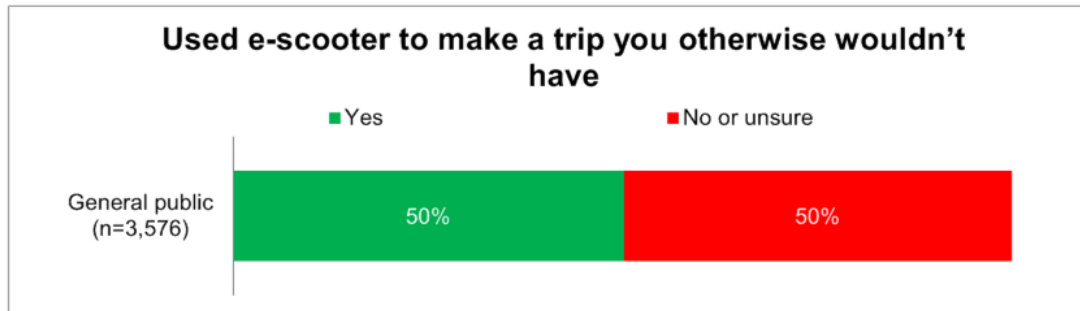
A third (33%) of wave one and just over a third (35%) of wave two panel respondents had ridden JUMP or Flamingo e-scooter to make a trip they wouldn't otherwise had made.

Figure 41. Results for question 'Have you ever ridden a JUMP or Flamingo e-scooter to make a trip you otherwise wouldn't have made?' by wave



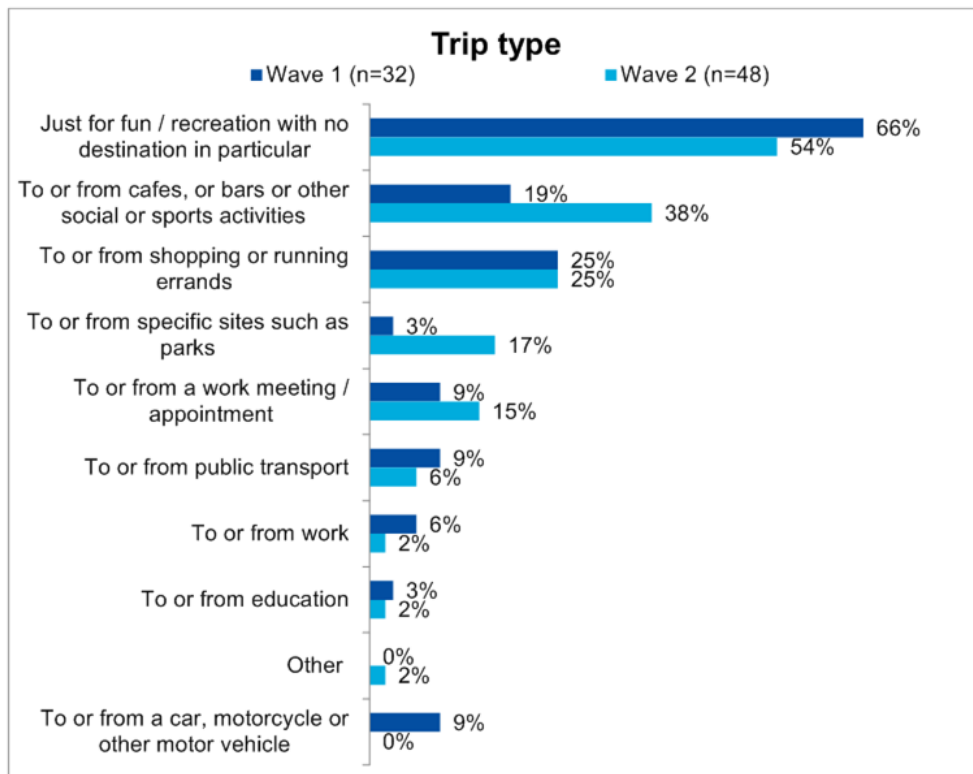
Half (50%) of the general public respondents who had used/rented an e-scooter had ridden JUMP or Flamingo e-scooter to make a trip they wouldn't otherwise had made. This is far higher than the proportion of panel respondents who had used an e-scooter to make a trip they otherwise wouldn't have.

Figure 42. Results for question 'Have you ever ridden a JUMP or Flamingo e-scooter to make a trip you otherwise wouldn't have made?' of general public survey



Of those who made a trip they normally wouldn't have in wave one, this trip was most likely to be just for fun or recreation with no destination in particular (66%). In wave two, those who made a trip that normally wouldn't have were also most likely to have done so just for fun or recreation with no destination in particular (54%).

Figure 43. result for question 'Which of the following trips have you made on a JUMP or Flamingo e-scooter that you wouldn't otherwise have made?' by wave



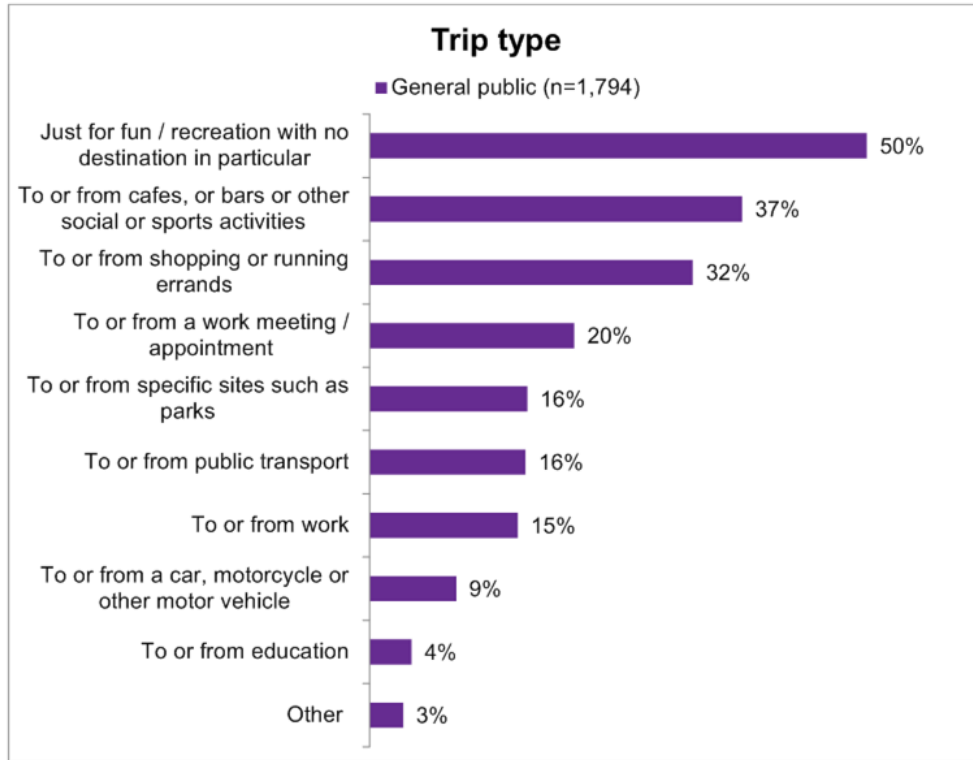
Between wave one and two of the panel sample a higher proportion reported they had used an e-scooter to go from cafes, or bars or other social or sports activities (an increase of 19% to 38% in wave two) and to or from specific sites such as parks (an increase of 14% to 17%) for trips they normally wouldn't otherwise have made. Although still the most common trip type, there was an 11% decrease between wave one and two of the proportion who reported the trip they otherwise wouldn't have made was just for fun (54% in wave two).

Table 3. Change between wave one and two for question 'Which of the following trips have you made on a JUMP or Flamingo e-scooter that you wouldn't otherwise have made?'

	% change from wave 1 to wave 2
Just for fun / recreation with no destination in particular	-11%
To or from a car, motorcycle or other motor vehicle	-9%
To or from work	-4%
To or from public transport	-3%
To or from education	-1%
To or from shopping or running errands	0%
Other	2%
To or from a work meeting / appointment	5%
To or from specific sites such as parks	14%
To or from cafes, or bars or other social or sports activities	19%

Similar to the wave one and two panel sample, the general public who made a trip they normally wouldn't have were most likely to report the trip was just for fun or recreation with no destination in particular (50%). Other common trip types the general public sample wouldn't have otherwise made were to or from cafes, or bars or other social or sports (37%) or to or from shopping or running errands (32%).

Figure 44. Result for question 'Which of the following trips have you made on a JUMP or Flamingo e-scooter that you wouldn't otherwise have made?' of general public survey



The most preferred place to ride e-scooter for wave one panel respondents that had hired an e-scooter was on shared paths (76%), followed by on the footpath (59%), and in separated cycle lanes (39%). In wave two panel respondents who had hired an e-scooter also told us that their preferred place to ride an e-scooter was on shared paths, however this dropped by 10% to 66%. The second most preferred place in wave two was on the footpath, which increased 3% from the wave one panel sample to 62%.

Figure 45. Results for question 'Which is/are your preferred place/s to ride e-scooters?' by wave

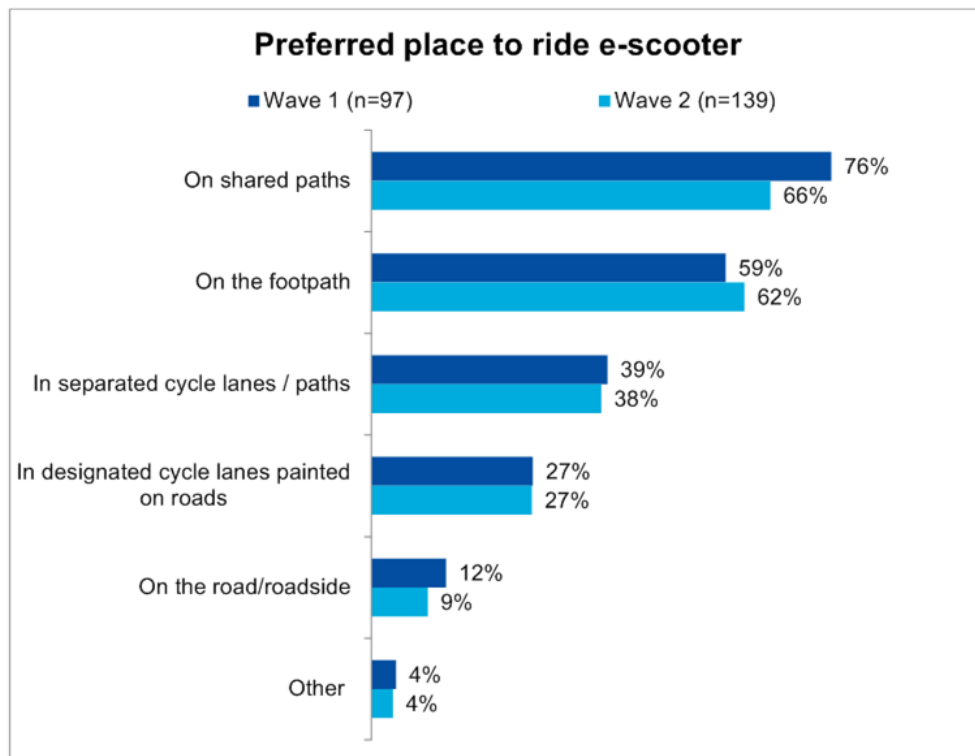
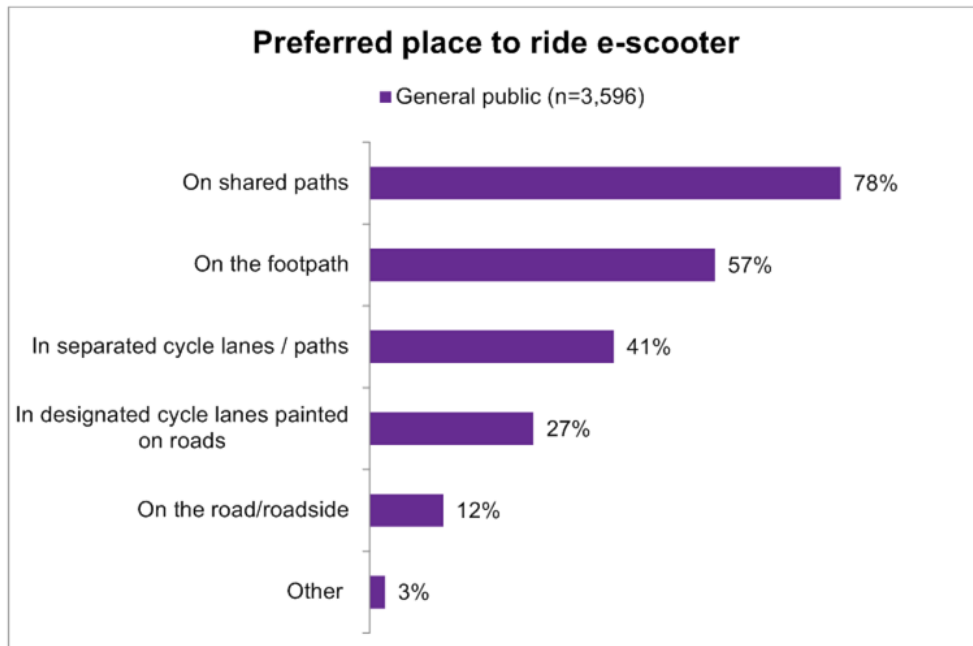


Table 4. Change between wave one and two for question 'Which is/are your preferred place/s to ride e-scooters?'

	% change from wave 1 to wave 2
On shared paths	-10%
On the road/roadside	-3%
In separated cycle lanes / paths	-1%
Other	-1%
In designated cycle lanes painted on roads	0%
On the footpath	3%

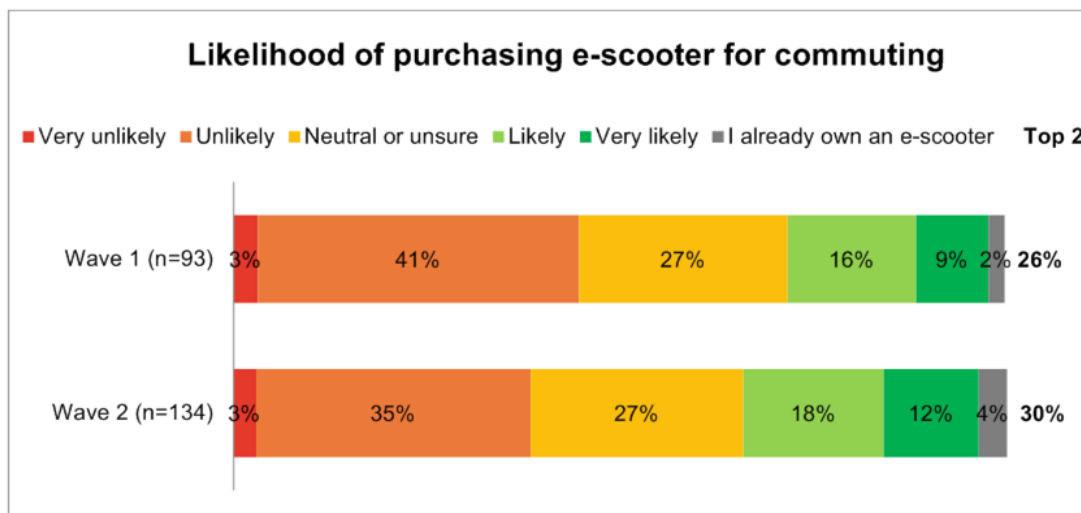
Over three quarters (78%) of general public respondents would prefer to ride e-scooters shared paths. Other preferred places to ride e-scooters where on the footpath (57%) and in separated cycle lanes (41%). These results were similar to the preference of the panel respondents.

Figure 46. Results for question 'Which is/are your preferred place/s to ride e-scooters?' of general public survey



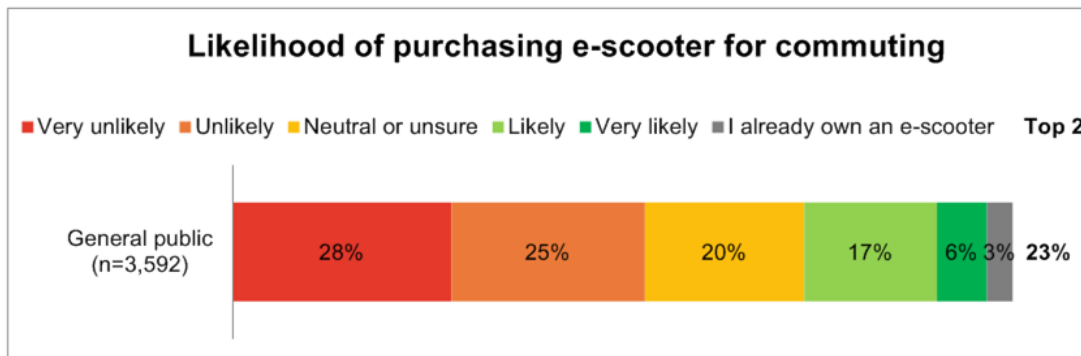
Over a quarter (26%) of the wave one panel sample were 'likely' or 'very likely' to consider buying an e-scooter for commuting. In wave two this increased slightly, with 30% reporting they would be likely to consider buying an e-scooter for commuting.

Figure 47. Results for question 'How likely are you to consider buying your own e-scooter for commuting?' by wave



Less than a quarter (23%) of general public respondents were 'likely' or 'very likely' to consider buying an e-scooter for commuting. Nearly a third (28%) reported they were 'very unlikely' to consider buying an e-scooter for commuting.

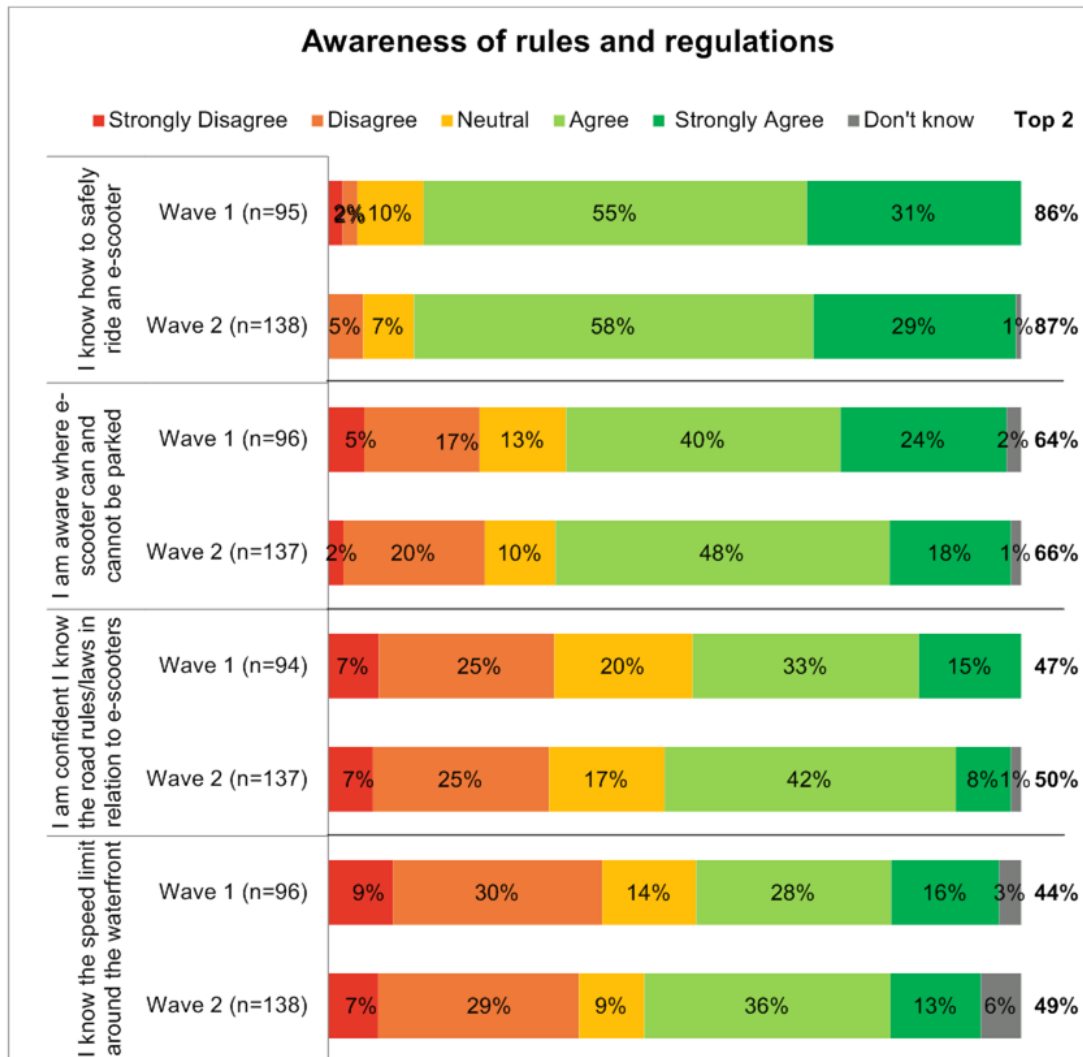
Figure 48. Results for question 'How likely are you to consider buying your own e-scooter for commuting?' of general public survey



Most (86%) respondents in wave one agreed that they knew how to ride an e-scooter safely, and around two thirds (64%) agreed that they were aware where an e-scooter can and cannot be parked. Wave one respondents were less likely to agree they were confident they knew the road rules or laws in relation to e-scooters (47%) or they knew the speed limit around the waterfront (44%).

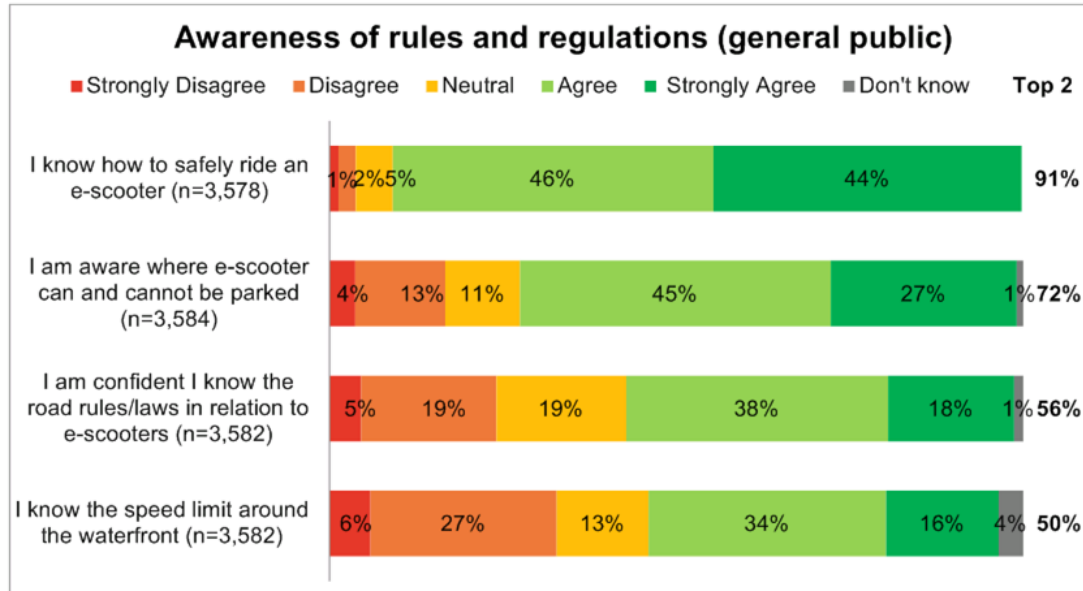
Wave two saw slightly higher levels of agreement across awareness of all rules and regulations. There was still strongest agreement that they knew how to ride an e-scooter safely (87%), followed by that they were aware where an e-scooter can and cannot be parked (66%). Around half agreed they were confident they knew the road rules or laws in relation to e-scooters (50%) or they knew the speed limit around the waterfront (49%).

Figure 49. Results for question 'How much do you agree or disagree with the following statements...' by wave



As with the wave one and two panel respondents, the general public sample were most likely to agree that they knew how to ride an e-scooter safely (91%), followed by that they were aware where an e-scooter can and cannot be parked (72%). Around half agreed they were confident they knew the road rules or laws in relation to e-scooters (56%) or they knew the speed limit around the waterfront (50%). Across all three samples respondents were least likely to agree they knew the speed limit around the waterfront.

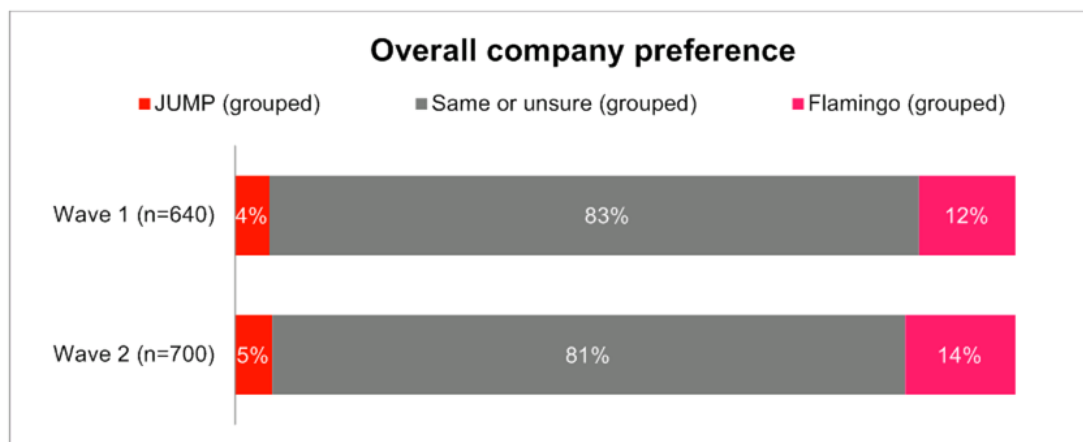
Figure 50. Results for question 'How much do you agree or disagree with the following statements...' of general public survey



13. Company preference

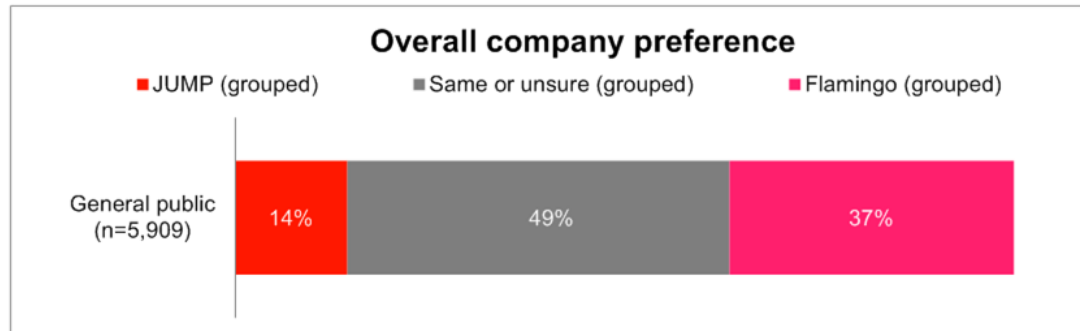
For the most part (83%), wave one panel respondent were unsure about which e-scooter company they preferred or thought they were about the same. However, there was a stronger preference towards Flamingo (12%) rather than JUMP (4%). Wave two results were similar, with the majority (81%) thinking they were about the same or unsure, and a slight preference towards Flamingo (14%) over JUMP (5%). Full results for company preference can be found in table 6 in the appendix.

Figure 51. Results for question 'Thinking about the two e-scooter share scheme providers, do you have a preference for either company?' by wave



Over a third (37%) of the general public sample had a preference for Flamingo out of the two e-scooter share scheme providers. Less than half (49%) were unsure or thought they were about the same. Although the panel and general public samples both showed a preference for Flamingo, the general public respondents were more opinionated in their responses. Full results for company preference can be found in table 6 in the appendix.

Figure 52. Results for question 'Thinking about the two e-scooter share scheme providers, do you have a preference for either company?' of general public survey



Respondents who had hired or used a JUMP e-scooter were asked to rate a variety of aspects of their interactions with the company, and their perceptions of cost and quality.

Over half of wave one panel respondents were satisfied with all the aspects of their experience with JUMP, aside from the cost of using a JUMP e-scooter (36%). Wave one panel respondents were most satisfied with the quality of the e-scooter (80%), and aspects of the app, including downloading and using the app (73%) and the safety instructions in the app (65%).

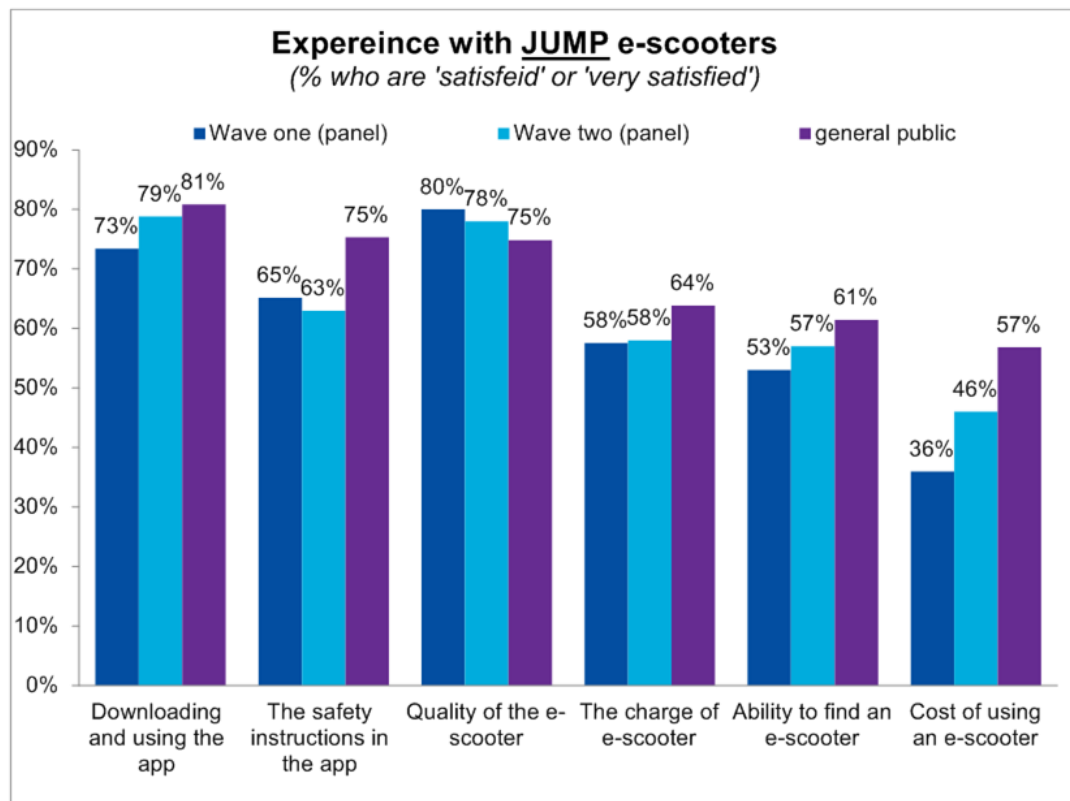
Wave two panel respondents were more satisfied with the cost of using an e-scooter (46%), downloading and using the app (79%), and the ability to find an e-scooter (57%) compared to the wave one respondents. Wave two panel respondents were about as satisfied (or slight less satisfied) with the charge of JUMP e-scooters (58%), the quality of the e-scooters (78%) and the safety instructions in the app (63%).

Over half the general public respondents were satisfied with all the aspects of the JUMP e-scooters. The general public sample were most satisfied with downloading and using the JUMP app (81%), as well as the safety instructions in the app (75%) and the quality of the e-scooters (75%).

Compared to the wave one and two panel sample, the general public respondents were more satisfied with the in app safety instructions, the charge of the e-scooters, and the cost of using an e-scooter.

Full results of the experience with JUMP e-scooters questions can be found in figure 66 and figure 67 in the appendix.

Figure 53. Summary of results for question 'Thinking specifically about your experience with the JUMP e-scooters, how satisfied or dissatisfied have you been with the following?' by panel and general public samples



Respondents who had hired or used a Flamingo e-scooter were asked to rate a variety of aspects of their interactions with the company, and their perceptions of cost and quality.

Wave one panel respondents were highly satisfied with most aspects of the Flamingo e-scooter, particularly downloading and using the app (95%), the quality of the e-scooters (90%) the safety, and the instructions in the app (80%).

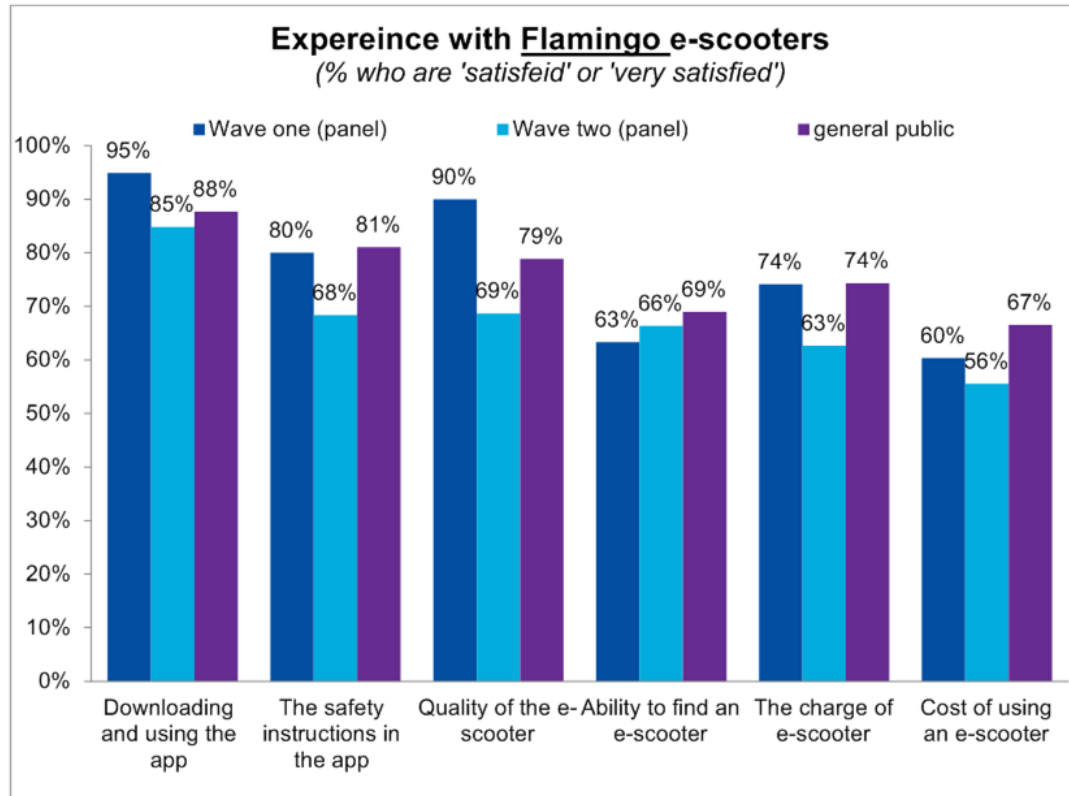
Satisfaction dropped for Flamingo in wave two, particularly with the quality of the e-scooters (a 21% decrease to 69% in wave two), the safety instructions in the app (a 12% decrease to 68% in wave two), and the charge of the e-scooter when you hire them (a 12% decrease to 63% in wave two).

Although satisfaction decreased relatively to the satisfaction scores received in wave one, it is worth noting that in wave two Flamingo out performed JUMP on all elements for wave two panel respondents, aside from quality of the e-scooter. It is of note that JUMP introduced a new model of e-scooter week commencing 16th December.

Satisfaction with Flamingo was high for the general public sample. Over two thirds of the general public sample who had hired a Flamingo –scooter were satisfied with all the aspects of their experience, particularly downloading and using the app (88%), the safety instructions in the Flamingo app (81%) and the quality of the e-scooters (79%). Flamingo out performed JUMP on all elements for the general public respondents.

Full results of the experience with Flamingo e-scooters questions can be found in figure 68 and figure 69 in the appendix.

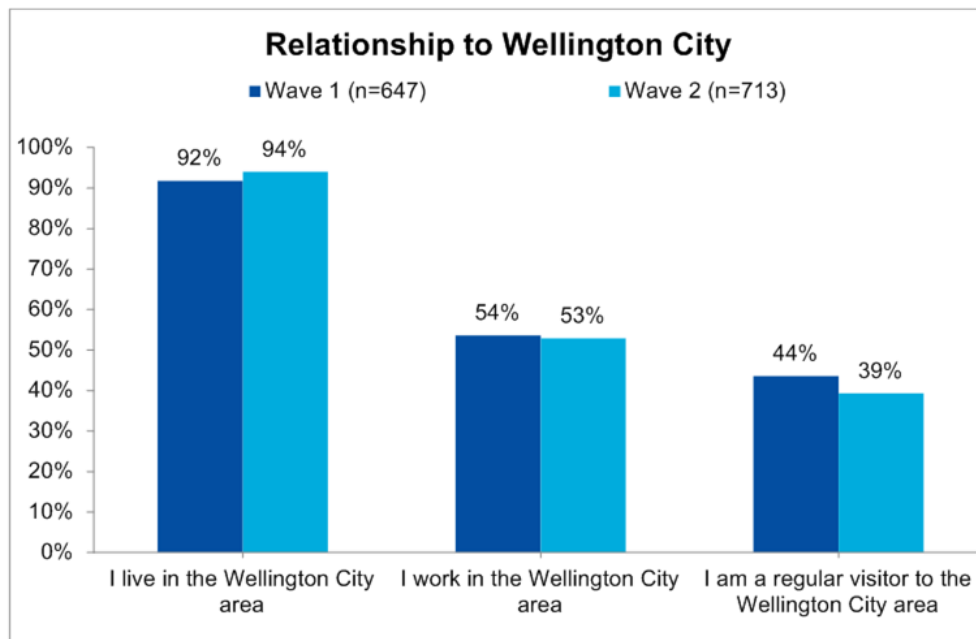
Figure 54. Summary of results for question 'Thinking specifically about your experience with the Flamingo e-scooters, how satisfied or dissatisfied have you been with the following?' by panel and general public samples



14. Demographics of respondents

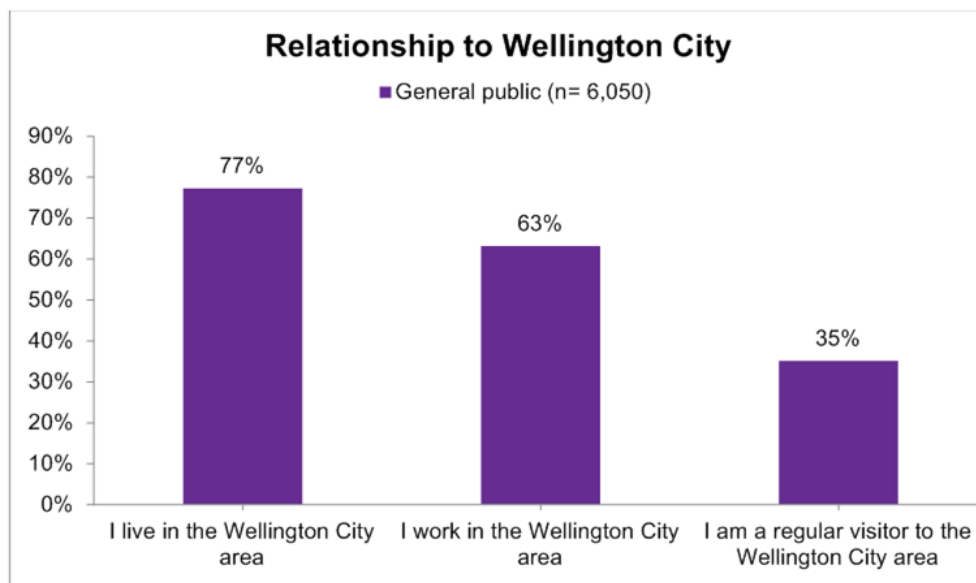
Most who completed the survey in wave one (92%) and two (94%) of the panel sample lived in Wellington city. Over half from the wave one (54%) and wave two (53%) respondents worked in the Wellington city area. Just under half (44%) from the wave one sample, and just under two fifths (39%) from the wave two sample regularly visited the Wellington city area. The relationship to Wellington city was relatively consistent between the two panel samples.

Figure 55. Results for question 'Which of the following situations describe you?' by wave



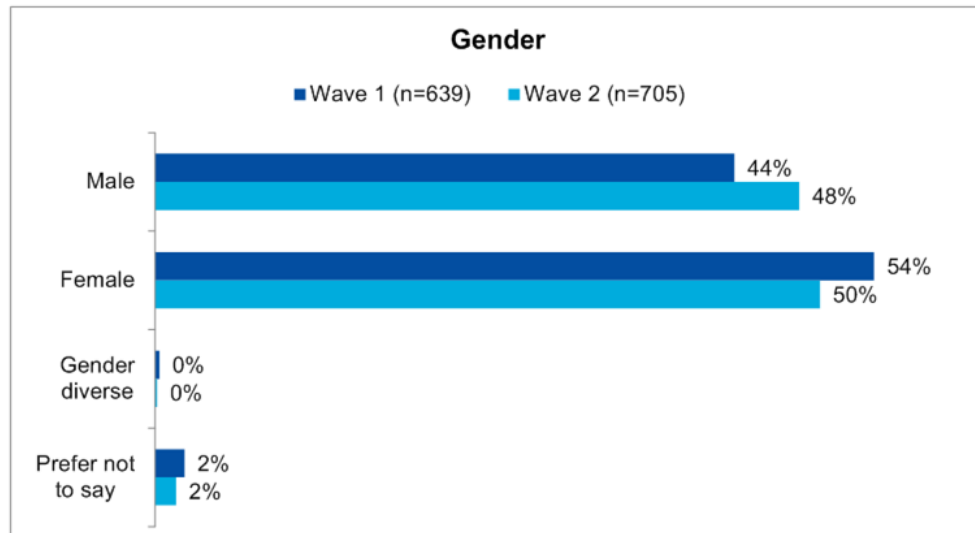
Around three quarters (77%) of the general public respondents lived in the Wellington city area. Just under two thirds (63%) work in the Wellington city area, and around a third (35%) regularly visited the Wellington City area. Compared to the wave one and wave two panel samples, the general public respondents were less likely to live in, and more likely to work in the Wellington city area.

Figure 56. Results for question 'Which of the following situations describe you?' of general public survey



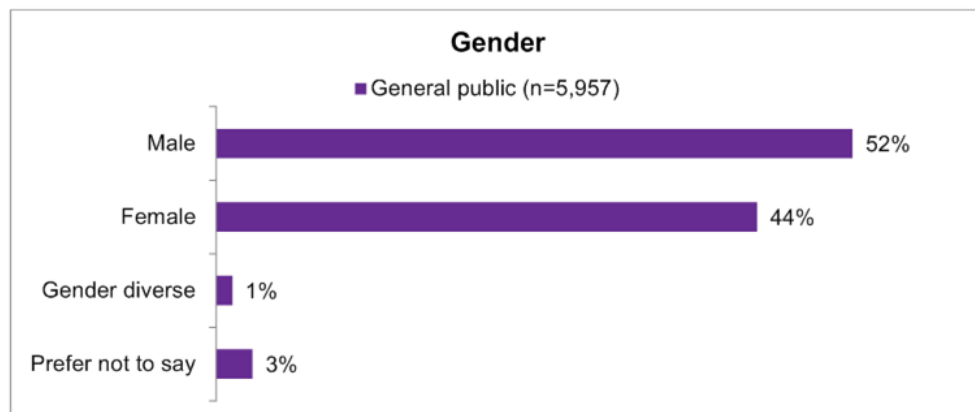
Just over half (54%) of the wave one respondents were female and just under half (44%) of wave one respondents were male. In wave two the ratio of males to females was closer to half and half; 50% of the sample were female and 48% were male.

Figure 57. Results for question 'What is your gender?' of general public survey



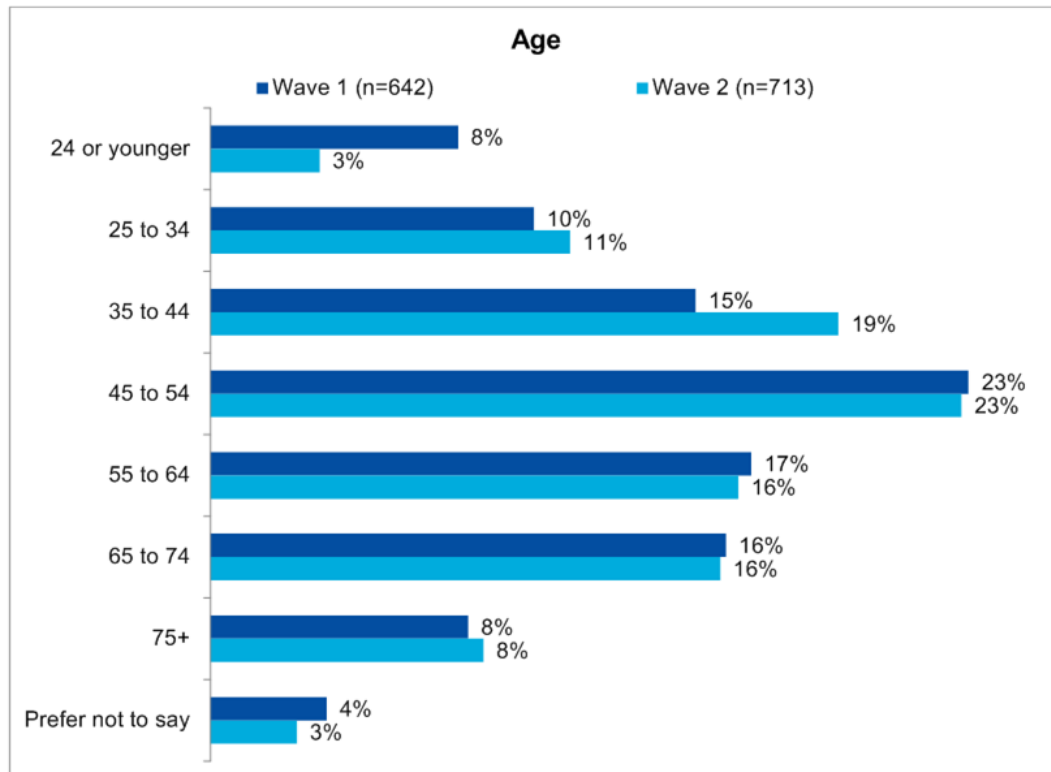
Over half (52%) of the general public respondents were male, and just under half (44%) were female. Compared to both wave one and two of the panel respondents, the general public sample had a higher proportion of men.

Figure 58. Results for question 'What is your gender?' by wave



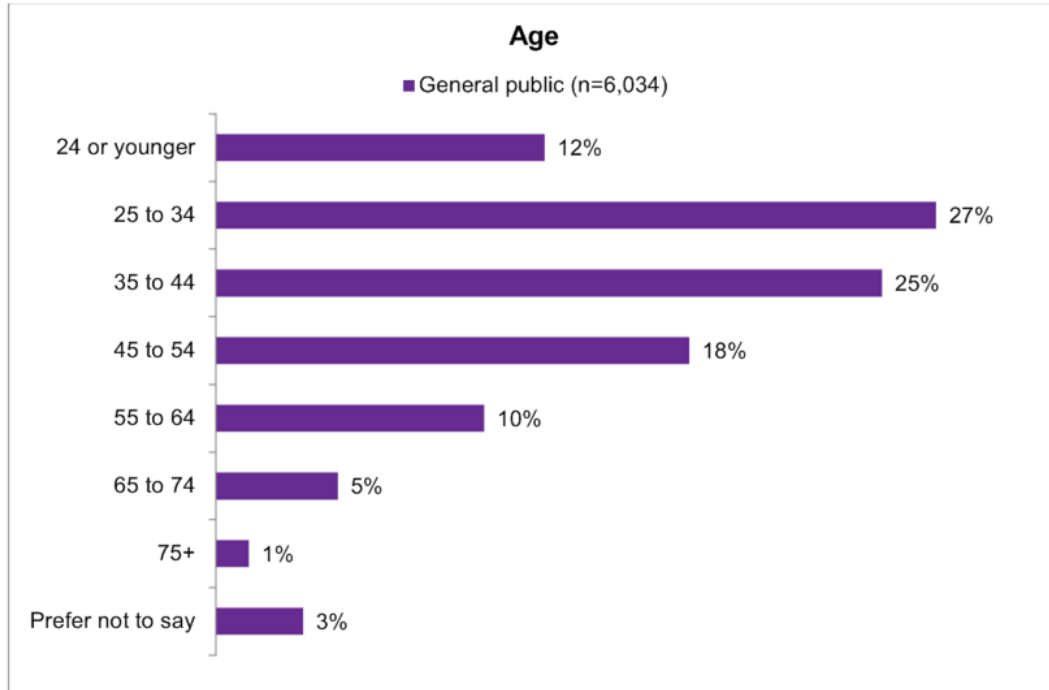
Wave one of the panel sample saw a good distribution of ages, as can be seen in figure 59. Wave two saw a drop in respondents who were under the age of 25 years, and a proportion increase in those aged 35 to 44 years. It is worth noting that past analysis has shown that younger people are more positive towards e-scooter rental schemes, which may have had an effect on the results of wave two.

Figure 59. Results for 'Which of the following age groups do you fall into?' by wave



Over one third (39%) of the general public sample were under the age of 35, which makes this a far younger group of respondents than the wave one and wave two samples. 64% of the general public survey are under the age of 45 years, compared to only 33% from wave one and wave two the panel sample.

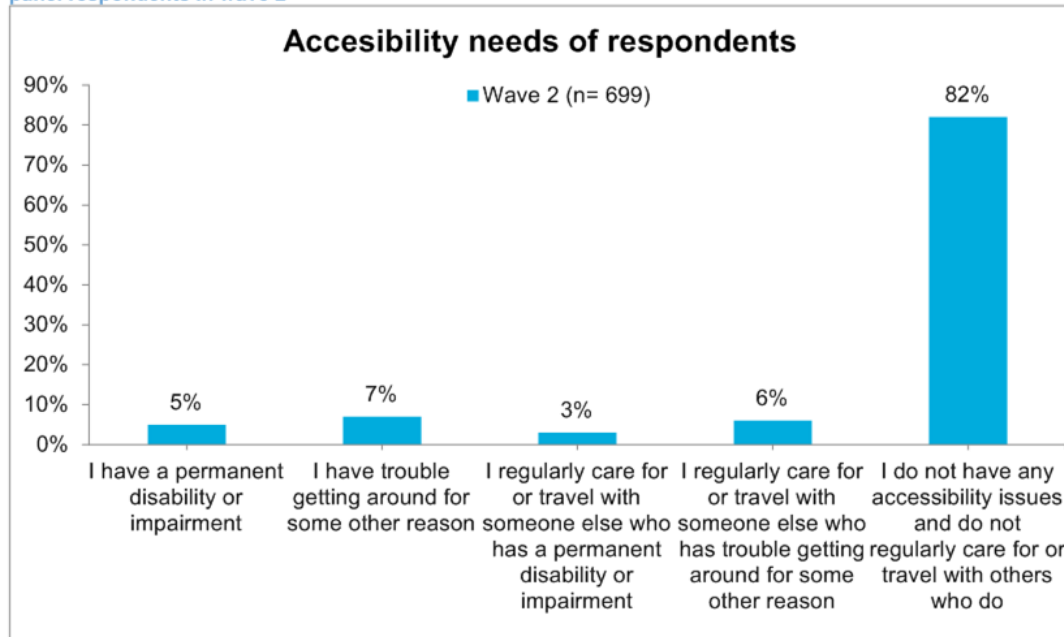
Figure 60. Results for 'Which of the following age groups do you fall into?' of general public survey



82% of the wave two panel respondents did not have any accessibility issues, or did not regularly care for or travel with others that do⁴. There were a small number of respondents that had trouble getting round for a reason other than a permanent disability (7%) or who regularly care for or travel with someone else who has trouble getting around for another reason (6%).

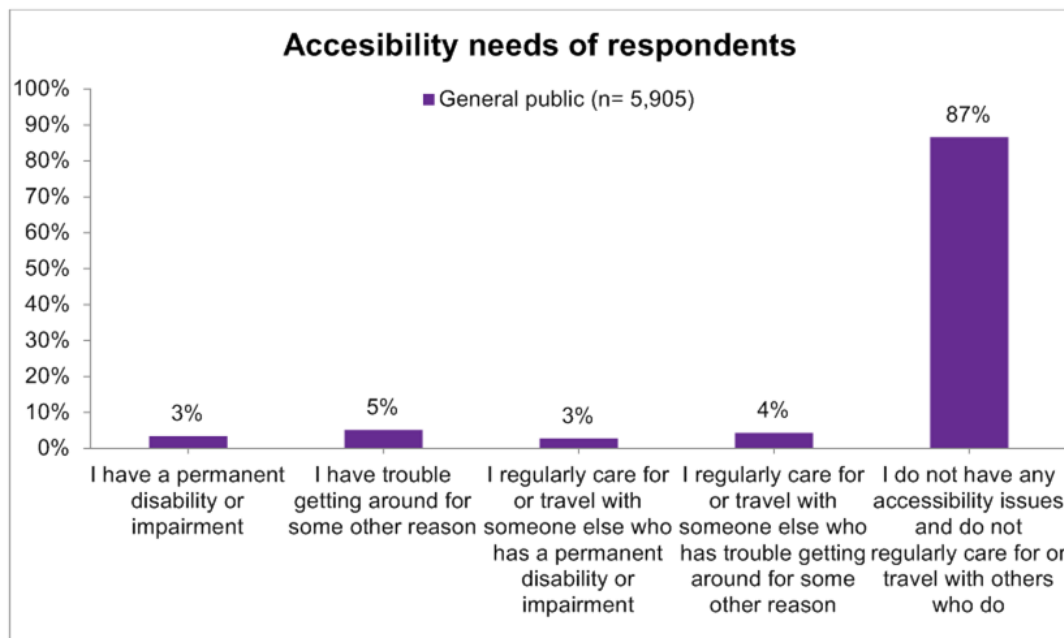
⁴ This question was added in wave two, so there is no comparable data from wave one.

Figure 61. Results for question 'Which of the following situations best describes you?' of the WCC research panel respondents in wave 2



Most (87%) of the general public sample did not have any accessibility issues, or did not regularly care for or travel with others that do.

Figure 62. Results for question 'Which of the following situations best describes you?' of general public survey



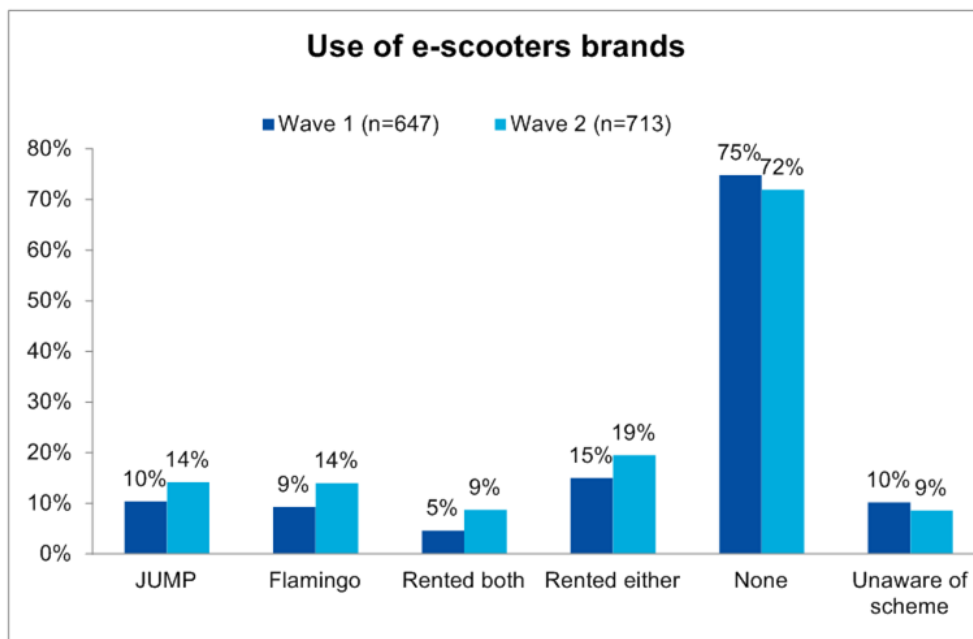
6. Appendix

15. Additional figures

Table 5. Calculations for total number of participants who started the survey compared to final sample size

	Final sample size (n=)	Total number of participants who started the survey (n=)	Participants who were screened at Q1 ⁵ (n=)
Wave one: WCC research panel	647	662	15
Wave two: WCC research panel	713	731	18
Wave two: general public	6,050	6,250	200

Figure 63. Results for question 'Have you ever used/rented an e-scooter in Wellington before?' by wave (total sample, includes separate figures for those unaware of the scheme)



⁵ In Q1 participants were asked what their relationship to Wellington City was. If they did not select that they live, work in, or regularly visit Wellington City we thanked them for their time and interest but did not ask them any further questions (we screened them from the survey).

Figure 64. Figure 65. Results for question 'Have you ever used/rented an e-scooter in Wellington before?' of general public survey (total sample, includes separate figures for those unaware of the scheme)

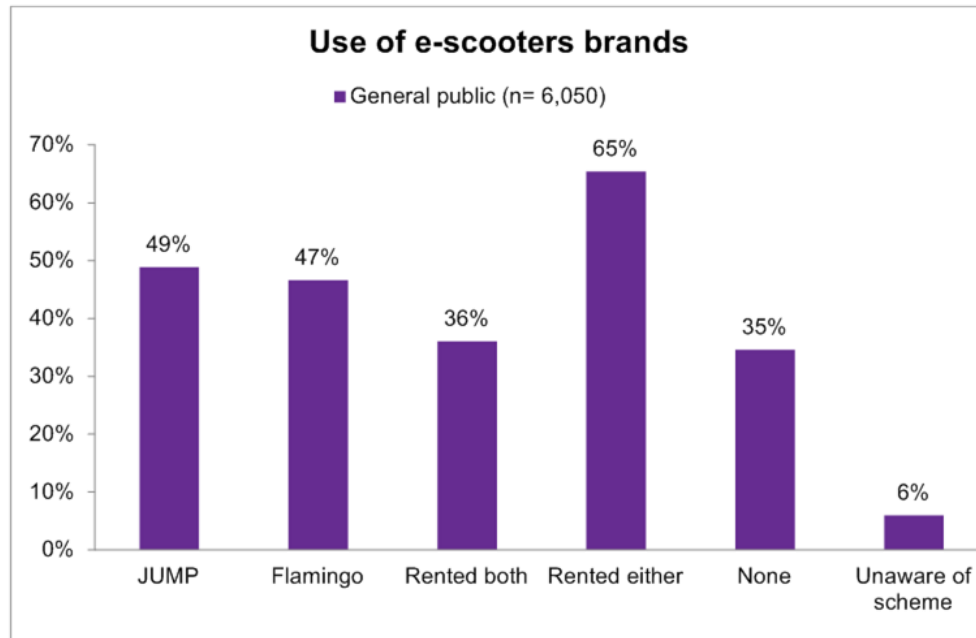


Table 6. Full breakdown of results for question 'Thinking about the two e-scooter share scheme providers, do you have a preference for either company?' by panel wave one and two and general public respondents

n=	Wave 1 (n=640)	Wave 2 (n=700)	General public (n=5,909)
Prefer JUMP	2%	3%	8%
Slightly prefer JUMP	3%	2%	6%
They are about the same	29%	32%	27%
Slightly prefer Flamingo	5%	5%	10%
Prefer Flamingo	8%	9%	26%
Unsure	54%	49%	22%

Figure 66. Full breakdown of results for question 'Thinking specifically about your experience with the JUMP e-scooters, how satisfied or dissatisfied have you been with the following?' by wave

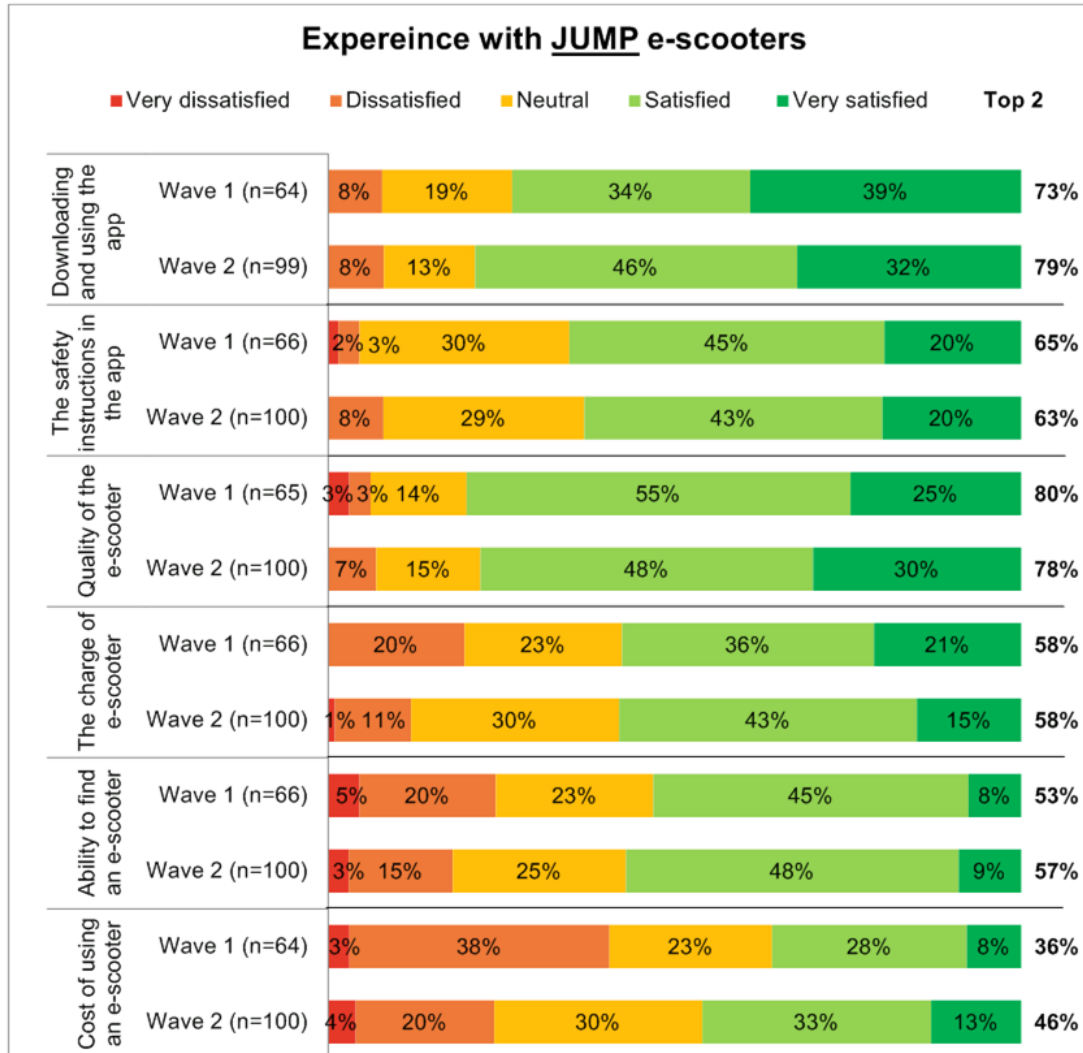


Figure 67. Full breakdown of results for question 'Thinking specifically about your experience with the JUMP e-scooters, how satisfied or dissatisfied have you been with the following?' of general public survey

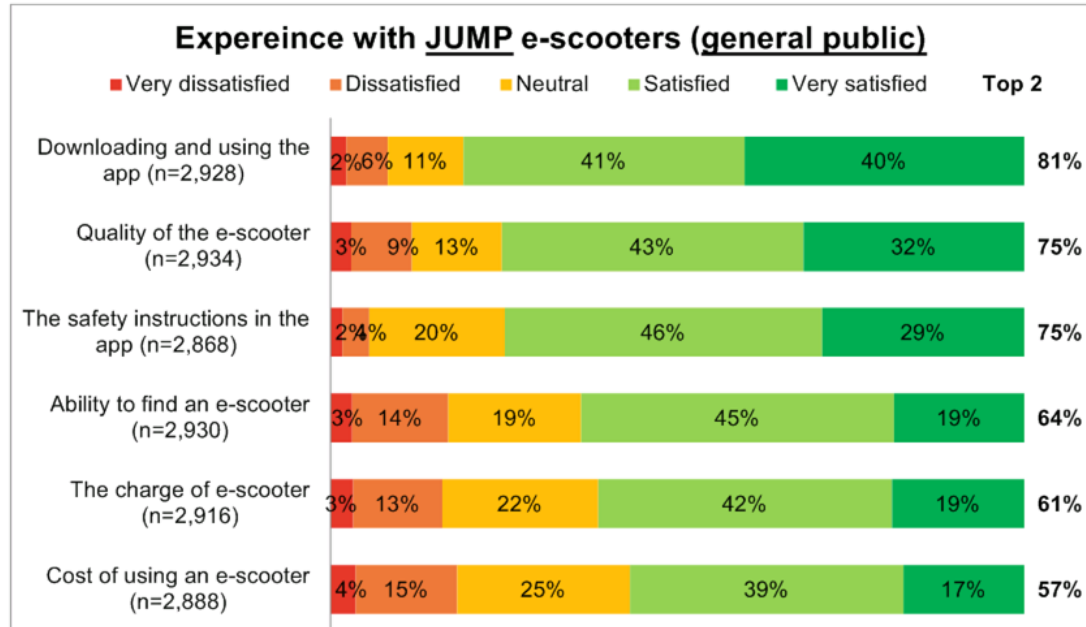


Figure 68. Full breakdown of results for question 'Thinking specifically about your experience with the JUMP e-scooters, how satisfied or dissatisfied have you been with the following?' by wave

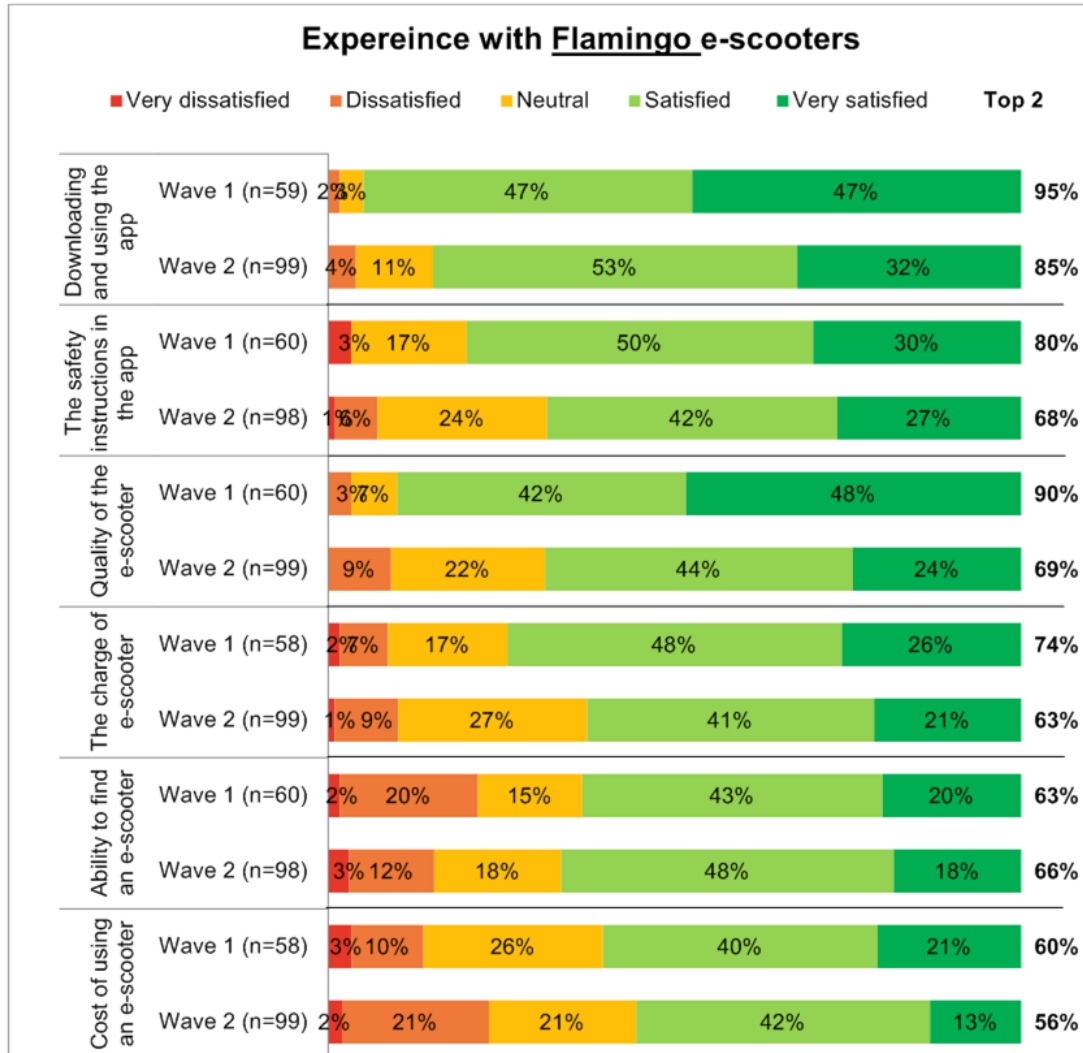
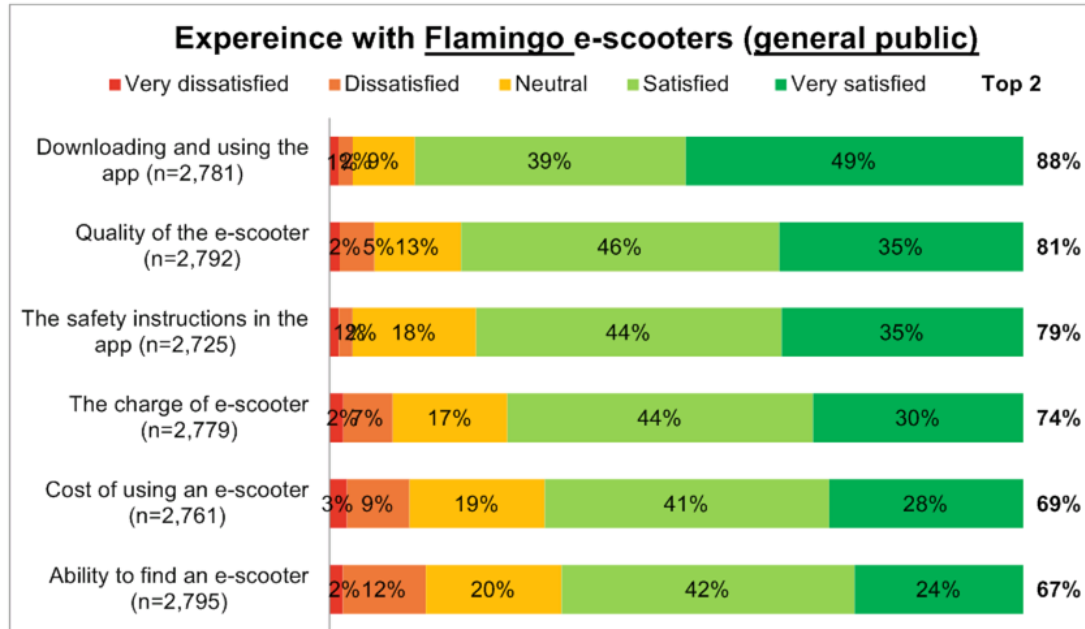


Figure 69. Full breakdown of results for question 'Thinking specifically about your experience with the Flamingo e-scooters, how satisfied or dissatisfied have you been with the following?' of general public survey



16. Wave one research panel summary provided in July 2019

Support for the e-scooter share scheme was relatively high

- Nearly two thirds (60%) of the total sample thought the Council should let the scheme continue.
 - Nearly all (93%) current e-scooter users thought the Council should let the scheme continue.
- Just under half (43%) of respondents think the scheme had a positive effect on Wellington.
 - Although only around a third (35%) of non-users thought the e-scooters were having a positive impact, over half (54%) think the Council should allow the share scheme to continue.
- There is a slight preference towards Flamingo. This is more pronounced for those who have rented an e-scooter.

E-scooters are generally seen as fun and safe by users

- The main motivation to use e-scooters was that they are faster (43%) and fun (36%).
- Over half (55%) of the main trips e-scooter were used for, and two thirds (66%) of trips that people otherwise wouldn't have made, were 'just for fun'.
- Around two thirds (65%) feel safe or very safe when riding e-scooters; only 7% felt unsafe.
- E-scooter trips are replacing motor vehicle trips; 27% of users reported they used uber/taxi and 20% used motor vehicles (driving or passengers) less since the e-scooter share scheme was introduced.

There are some issues around perceived safety and the use of e-scooters, particularly for pedestrians

- Nearly half (47%) feel unsafe as a pedestrian sharing the footpath with e-scooters. However, the majority (55%) believe that at least most are riding e-scooters safely and responsibly.
- The biggest safety issue experienced or witnessed was pedestrians being startled or frightened (41% experienced this); combined with the increased difficulty when walking (41% find walking more difficult) as a result of the presence of e-scooters, it will be interesting to see if the December 2019 results show participants find they have acclimatised to a busier footpath or if they still feel unsafe.



Wellington City Council e-scooter scheme survey
Survey comments – analysis findings

18 March 2020

Absolutely Positively
Wellington City Council
Me Heke Ki Pōneke

Introduction

The e-scooter share scheme trial and the public survey

- The e-scooter share scheme was launched in Wellington on 18 June 2019. The trial lasted 6 months in total, with operators being permitted to continue while the trial is evaluated.
- To assist in the analysis of the trial, a survey was sent out to the Council resident panel, as well as the public.
- The survey was opened for feedback on 9 December 2019, and closed on 2 February 2020, giving 55 days for participation.
- This report contains **analysis of comments from the survey**, and does not contain analysis of any quantitative data.



Not included in this report

N/A comments, and analysis of the operator preference question

N/A comments

There were a number of comments throughout this survey that did not effectively answer or attempt to answer the given questions, ie occurring when people wrote something in the box which indicated they did *not* have an answer to the question.

This included people writing in the comment box things like “N/A”, “No comment” or “Not applicable”.

This type of comment has been left out of the analysis in this report.

Some examples of statements categorised as N/A:

- “Not applicable”*
- “Nothing in particular”*
- “Nah”*
- “Nope”*
- “-”*
- “NONE”*

Operator preference question

The operator preference question asked: “Thinking about the two e-scooter share scheme providers, do you have a preference for either company?”. There was then the follow up opportunity to comment – “Would you like to tell us anything about your answer and your company preference?”

This report does not include the analysis of comments on this question. The focus of this report is on questions about the scheme as a whole, rather than individual operators.

Executive summary

Key overall findings from comments analysis

There were **10,329** comments across **the 4 questions analysed**, from which **six major themes** emerged:

1. **The e-scooters were largely seen as fun, vibrant, convenient, and positive for the environment.** People talked about how quickly the scooters had helped them get to work or to meetings. Others had used them when public transport had been absent, or had used them instead of driving/ride sharing apps (e.g. Uber). Others mentioned that although they didn't use the e-scooters personally, people tended to look happy when riding scooters. There was a general sentiment that the scooters were a good "alternative transport option".
2. **There was some sentiment that the e-scooters were unsafe, both for the people riding them and for pedestrians.** Lots of people were concerned about a lack of safety gear or helmets on scooter riders, and the high speed of the scooters was seen as unsafe for the riders and for pedestrians. More people talked about experiencing "near misses" with scooter riders than those that talked about actual falls or collisions they had experienced.

"Have avoided cab/taxi use on most days, have avoided using my personal car on several occasions. And, I now arrive at work with a smile."

"They bring another practical and fun alternative transport solution"

"e-scooter riders travelling on the road in the city going near me on my ebike with no helmet on is particularly dangerous and inappropriate as the aren't travelling as fast and could be hit, and don't indicate if turning or slowing down,"

"As the pedestrian density increases, so does the incidence of near misses"

Key overall findings from comments analysis continued

There were **10,329** comments across **the 4 questions analysed**, from which **six major themes** emerged:

3. **People identified issues the e-scooters caused for pedestrians and footpath users, especially vulnerable groups like the elderly, those with disabilities, and young children.**

Crowded or narrow footpaths and busy shared areas tended to come up in issues a lot. Inconveniently parked scooters were a key issue for the elderly or those with disabilities, who may trip over or have trouble moving a scooter blocking the footpath. Unpredictable and/or speedy riding was a key issue for those with young children, who were concerned that their kids may be hit by a rider.

"With e-scooters littering footpaths, some streets are just impassable to someone with mobility issues. Very rarely are any of the scooters parked considerately..."

"Feel less inclined to take my toddler walking along the waterfront after she nearly got hit by a kid zooming past on an e-scooter"

4. **There was a preference for e-scooters to be separated from pedestrians, and people talked about the lack of infrastructure to allow this.** Many people had a preference that the scooters not be used on the footpaths, due to the issues previously outlined. Lots of people said scooters should be encouraged or made to use cycle lanes, and in addition people talked about the need to build more bike/scooter lanes that were separated from pedestrians and other modes so that this could more realistically happen. More areas for parking scooters that were out of the way of pedestrians was also identified as a need.

"Do not cancel them but just provide more lanes for e-scooters, as sharing the footpath is just not safe."

"We need bike paths! For both cyclists and the e-scooters so the chance of collision is greatly reduced and the feeling of safety for everyone increased :) "

"Let's reallocate some onstreet carparks to e-scooter parks, to help reduce the number parked on foot paths."

Key overall findings from comments analysis continued

There were **10,329** comments across **the 4 questions analysed**, from which **six major themes** emerged:

5. **People identified a current lack of clarity and enforcement on rules and regulations, and a lack of guidance/education on e-scooter use.** People mentioned scooters operating/parked in areas which should have been geofenced or not allowed, mentioned wobbly new riders with issues controlling the scooter, and talked about seeing intoxicated people and people under the age of 18 riding the scooters. There was also talk about speed limits not being observed by e-scooter riders.

"I'm disappointed that the age limits don't seem to be enforced..."

"The charges for non-parking areas are ridiculous, the geofencing needs to be improved and made more obvious."

"GPS sensors, should limit the speeds in busy pedestrian areas and then open up speeds again where not so condensed."

6. **People still had questions about exactly what the e-scooter's role in the transport system is, or should be, and some also questioned the environmental impact.** Some people questioned whether scooters were actually replacing bus or car journeys, or they were just being used for "joyrides". Others expressed concern that using scooters instead of walking removed an opportunity for people to exercise. People also expressed concern about the short 9 month lifespan of the scooters and the batteries, when scooters were thrown in the ocean/vandalised, and the petrol use from driving to pick up the scooters to be charged again.

"They seem to be used in instances where people would walk anyway I don't think they're replacing cars"

"It's debatable whether they have a good impact on the environment as the batteries have a short lifespan."

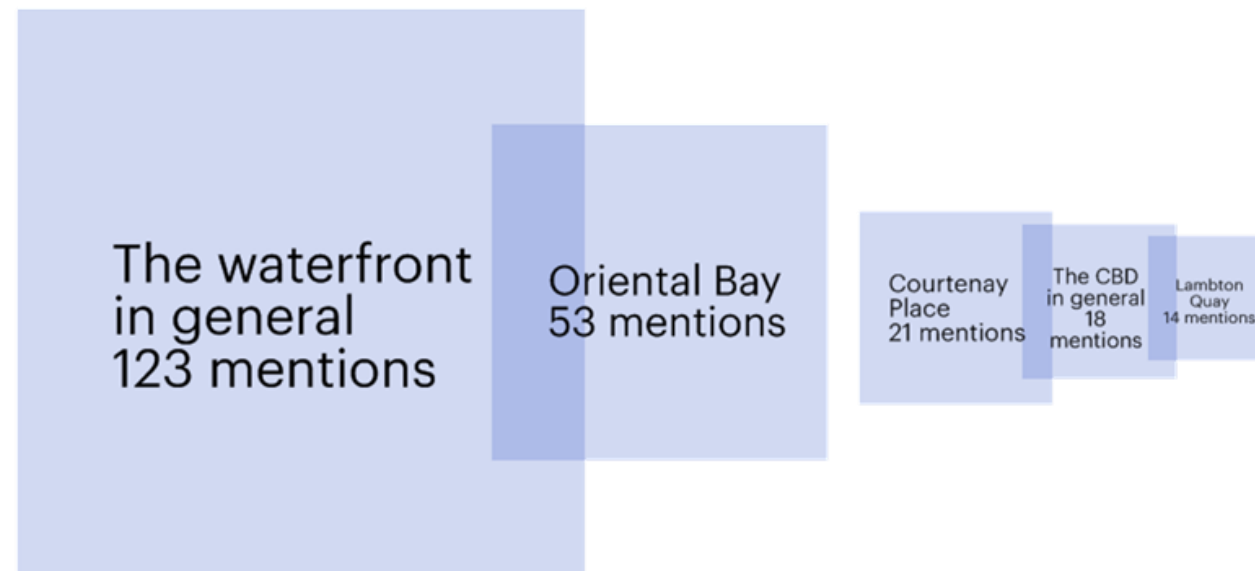
Wellington City Council

Is there anything you would like to tell us about the trip you avoided taking, or didn't make? For example, what type of trip this was, where you were going, and what made you avoid the trip.

397 comments

This opportunity for comment followed “Since the introduction of e-scooters in July have you avoided making, or not made, a trip you normally would due to the addition of e-scooters rental schemes?”

Areas people said they had avoided due to the presence of scooters:



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Is there anything you would like to tell us about the trip you avoided taking, or didn't make? For example, what type of trip this was, where you were going, and what made you avoid the trip.

397 comments

This opportunity for comment followed “Since the introduction of e-scooters in July have you avoided making, or not made, a trip you normally would due to the addition of e-scooters rental schemes?”

Comment themes that came up:

Some people read this question differently, leading to a number of comments talking about how they had used the scooters to “avoid” car, bus, or walking trips:

- <20 mentions
- 21-30 mentions
- 31-50 mentions
- 51-100 mentions



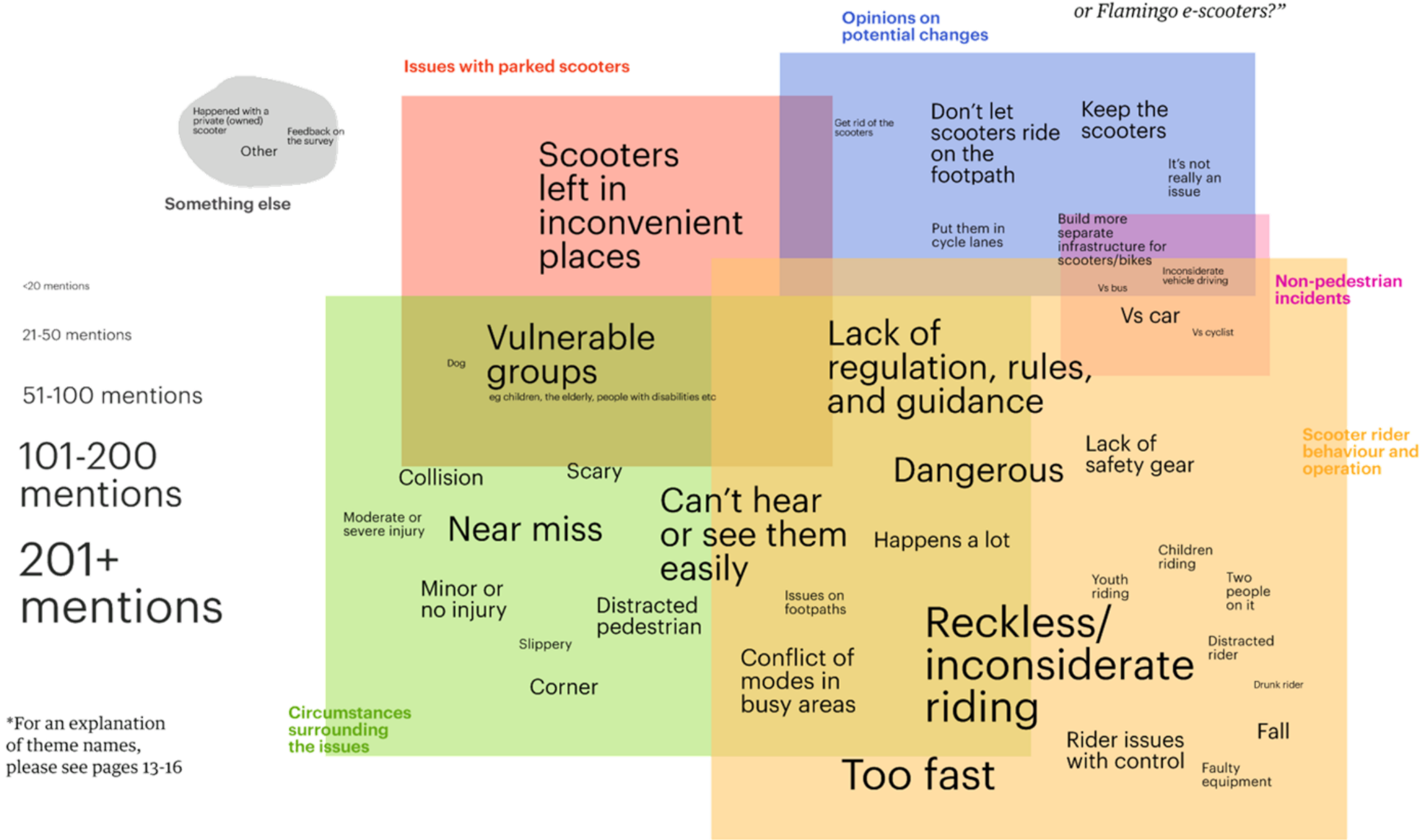
*For an explanation of theme names, please see pages 13-16

Wellington City Council

Is there anything you would like to tell us about the incident or issue you selected above?

1436 comments

This opportunity for comment followed the multi-choice question which asked: "Have you witnessed any of the following safety-related issues of people using JUMP or Flamingo e-scooters?"

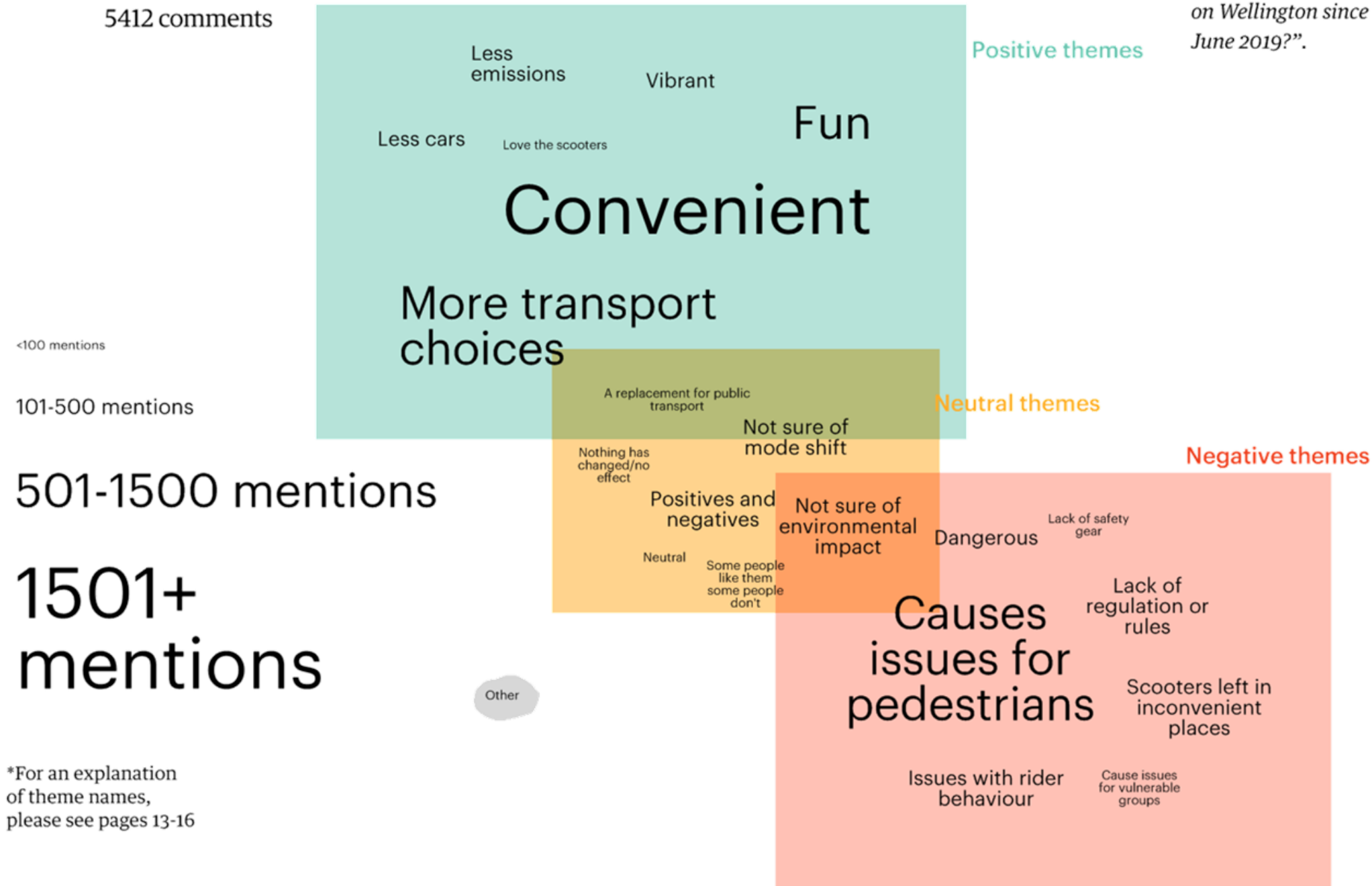


Wellington City Council

What makes you think that the JUMP and Flamingo e-scooter share scheme had a [insert answer from previous question] effect on Wellington?

5412 comments

This opportunity for comment followed the question which asked: "What effect has the JUMP and Flamingo e-scooter share scheme had on Wellington since the trial began in June 2019?".



*For an explanation of theme names, please see pages 13-16

Wellington City Council

Panel vs public— Top 5 themes for “What effects have the JUMP and Flamingo e-scooter share scheme had on Wellington?”

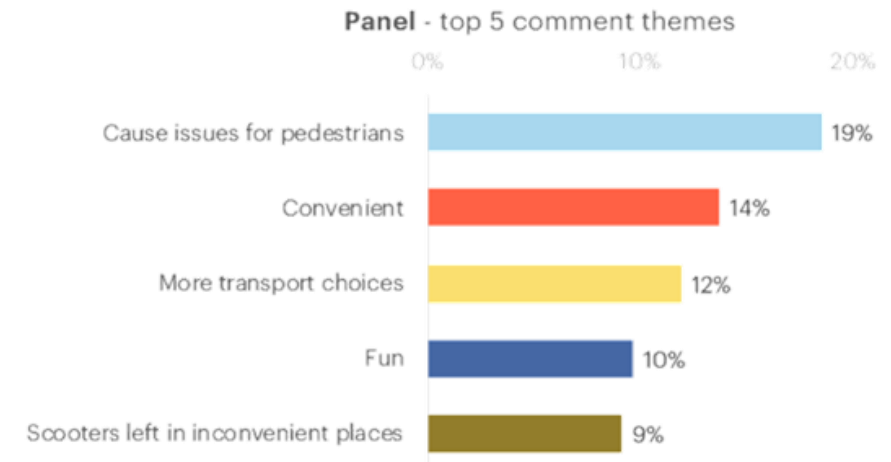
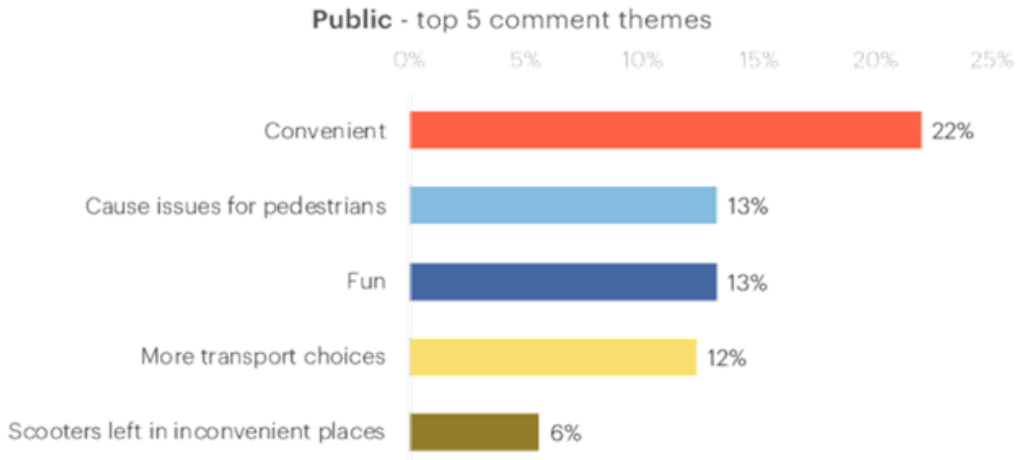
Panel: Themes from 565 comments
Public: Themes from 4847 comments

These graphs show the **top 5 themes** from the question “What effects have JUMP and Flamingo e-scooter share scheme had on Wellington?” for survey comments from the **public (4847)**, and from survey comments from the **panel (565)**.

We can see that in comments from the public and in comments from the panel, all the same themes appear in the top 5.

However in the panel comments, “cause issues for pedestrians” has appeared more frequently than “convenient”, while in the public comments, the reverse is true.

*For an explanation of theme names, please see pages 13-16



Wellington City Council

Do you have any final comments or feedback about JUMP or Flamingo e-scooters, or e-scooter share schemes in Wellington?

3084 comments

This was the last question in the survey and the final opportunity for comment. Some people used this section to address something other questions hadn't asked about, while others used it to reiterate previously expressed points or their stance on e-scooters in general.



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Theme name explanations

83 themes

Allow scooters to use cycle lanes	People advocating that e-scooters be allowed and encouraged to use cycle lanes.
Can't hear or see them easily	Pedestrians having difficulty seeing and hearing e-scooter riders because of their speed and silence.
Causes issues for pedestrians	E-scooters and their riders negatively affecting pedestrians.
Causes issues for vulnerable groups	E-scooters and their riders negatively affecting young children, elderly, people with disabilities, and pregnant women.
Children riding	Mention of children riding the scooters.
Collision	When a scooter rider collides with another person.
Conflict of modes in busy areas	When issues are caused by the convergence of bikes, scooters, pedestrians, and/or other in a congested area.
Convenient	E-scooters being convenient for users to find, use and get to where they are going.
Corner	Issues with riders/pedestrians travelling around corners, or from buildings/entrance ways.
Dangerous	Some aspect of the scooters being dangerous to riders and/or pedestrians.
Distracted pedestrian	When a pedestrian was not paying attention to surroundings, or on their phone, or wearing headphones, etc.
Distracted rider	When a scooter rider was not paying attention to surroundings, or on their phone, or wearing headphones, etc.
Dog	When a dog is involved in the use of, or an incident with, an e-scooter
Don't let them on footpaths	Asking/advocating for e-scooter riders and parked e-scooters to not be allowed to use the footpaths
Don't like them	Expressing a general dislike for e-scooters.
Drunk rider	When the rider of an e-scooter is intoxicated.
Fall	When a user falls off an e-scooter.
Faulty equipment	E-scooter was in poor condition and/or not functioning properly.
Feedback on app	General feedback on either the JUMP or Flamingo app.
Feedback on survey	Feedback and opinions on the survey, or mentioning format/question issues.
Fun	Users enjoying, or seeing others enjoy, the e-scooters.

Theme name explanations continued

83 themes

Fun and useful	Users enjoying the e-scooters and also finding them useful.
Get rid of them altogether	Calling for the e-scooters to be banned.
Good for the city	Mention that the scooters are good for Wellington.
Happened with a private scooter	When it is specified that an e-scooter involved was privately owned.
Happens a lot	When there are multiple occurrences.
I avoid shopping	Avoiding going shopping or to certain shopping areas due to the presence of e-scooters.
I stopped walking	Avoiding walking around the city or in a certain area due to presence of e-scooters.
I took a trip by using the scooter	When a user took a scooter instead of another means of transport they planned on taking, or instead of not making the journey.
I use a different route	Avoiding a certain route or changing the route because of the presence of e-scooters.
Improvements needed on hills	Mention of e-scooters' poor performance on hills.
Inconsiderate driving (vehicles)	Vehicles acting inconsiderately/dangerously on the road to e-scooter riders.
Injury	Somebody coming away with an injury of some degree.
Issues on footpaths	The e-scooters, or e-scooter riders, causing issues to footpath users.
Issues with JUMP	Specific issues brought up with JUMP scooters and/or the company itself.
Issues with rider behaviour	Scooter users behaving inconsiderately to others around them, ie going too fast, passing too closely, etc.
It's not really an issue	E-scooters don't really cause any problems to anyone.
Keep the scooters	Calling for the scooters to be kept in Wellington.
Lack of regulation, rules, and guidance	A need for more rules/regulations/restrictions and education around the e-scooters.
Lack of safety gear	Riders not wearing safety gear. This includes mentions of helmets, hi vis, and bells etc.
Less cars	Less cars being on the road due to people being able to use the e-scooters.
Less emissions	Producing less emissions because of e-scooter use compared to other modes of transport like bus or car.

Wellington City Council

Theme name explanations continued

83 themes

Limit the speed	A call for the speed of e-scooters to be slowed.
Love the scooters	Extremely happy about the presence and/or use of e-scooters .
Make it cheaper	A call for the use of e-scooters to be made cheaper.
Minor or no injury	When it is mentioned that there was no significant injury caused.
Moderate or severe injury	When it is mentioned that there was a moderate or severe injury caused.
More availability of scooters	A need for more e-scooters.
More restrictions and guidance needed	A need for more restrictions on e-scooters current rules/regulation and more guidance for users.
More scooter parking needed	A need for more/better parking facilities for e-scooters.
More separated scooter/bike infrastructure	A call to build more infrastructure for bikes and/or e-scooters that is separate from pedestrians and other modes.
More transport choices	E-scooters provide another transport choice to Wellington.
Near miss	When there is almost an incident or a rider closely passes a pedestrian.
Neutral	Indifferent either way.
Not sure of environmental impact	Unsure of the environmental impacts that the production and use of e-scooters have.
Not sure of mode shift	Unsure as to whether e-scooters truly help people to not use their car/the bus.
Nothing has changed/no effect	Have not noticed any changes since the introduction of e-scooters.
Other	Niche and/or unrelated topics.
Positives and negatives	Acknowledges that e-scooters have both positive and negative effects.
Prefer Flamingo	A preference for the Flamingo company over the JUMP/Uber company.
Put them in cycle lanes	A call for e-scooter riders to use cycle lanes.
Reckless/inconsiderate riding	Scooter users riding dangerously, recklessly, irresponsibly and/or behaving rudely to others.

15

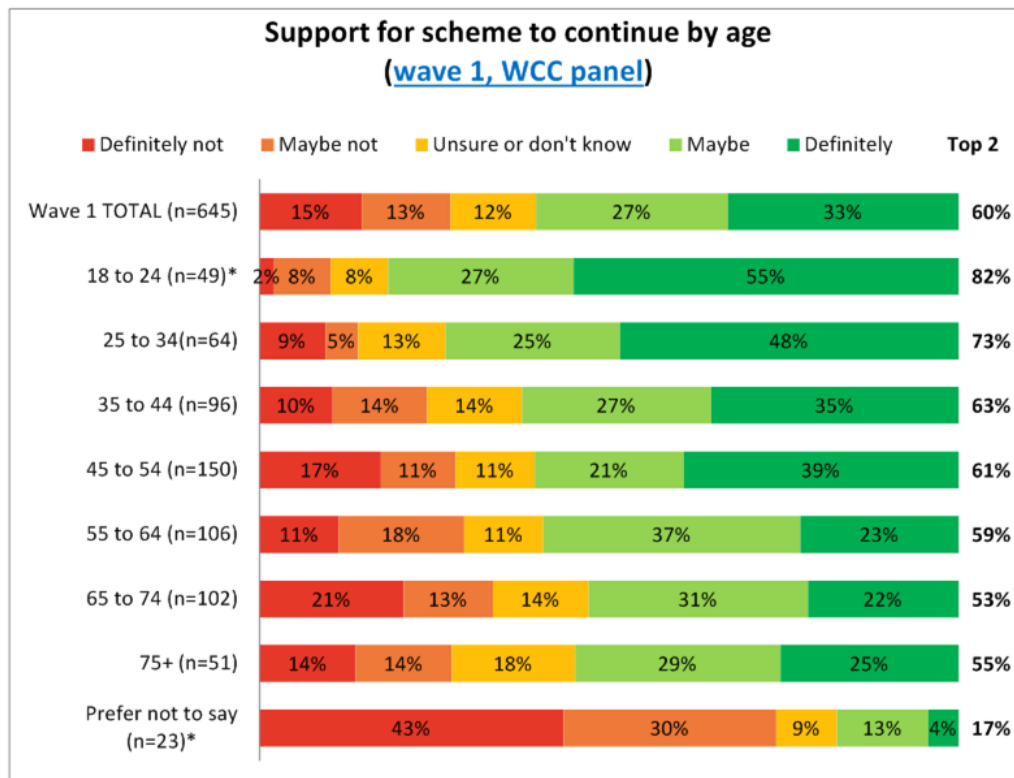
Theme name explanations continued

83 themes

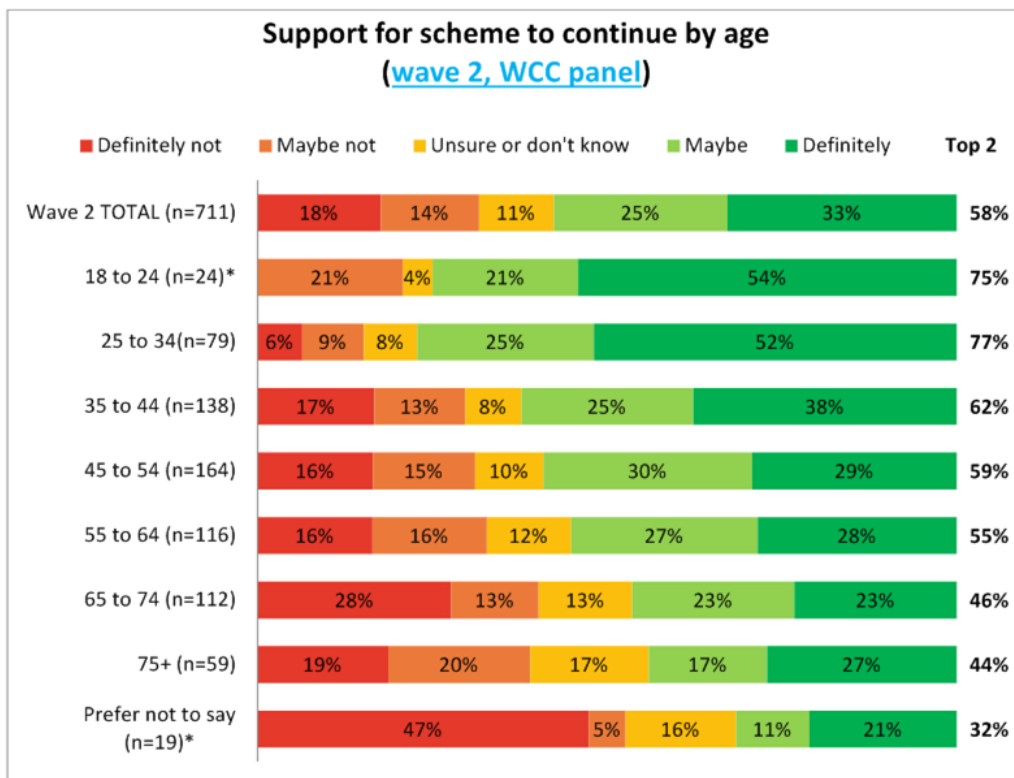
Replacement for public transport	E-scooters have replaced a user's need for public transport.
Rider issues with control	When a rider is inexperienced or has poor control of the e-scooter.
Riders should wear helmets	An expectation that riders should be wearing helmets.
Scary/surprising	The sudden presence of a scooter rider can be unexpected and/or frightening.
Scooters left in inconvenient places	Scooters being parked, dropped off and blown over in inconvenient places for pedestrians.
Slippery	When wet weather and/or a slippery surface were involved.
Some people like them, some people don't	When it is mentioned that some people enjoy them being around and others don't.
Survey feedback	When a comment/suggestion is made about the content, purpose, or format of the e-scooter survey.
Too fast	The speed of e-scooters is too fast.
Too slow	Some/all of the current e-scooters are too slow.
Two people on it	Two people riding the same e-scooter at the same time.
Vibrant	E-scooters contribute to Wellington being a vibrant city.
Vs bus	A bus was involved.
Vs car	A car was involved.
Vs cyclist	A cyclist was involved.
Vulnerable groups	When young children, the elderly, people with disabilities, and pregnant women are mentioned as people negatively affected by the e-scooters.
The scooters were in an area where they shouldn't have been	E-scooters in areas that they are not permitted to be, or in areas that should have had geo-fencing in effect but didn't.
Youth riding	A mention of 'youth', young people, teenagers or millennials, in regards to riding e-scooters.

Age by support for scheme to continue

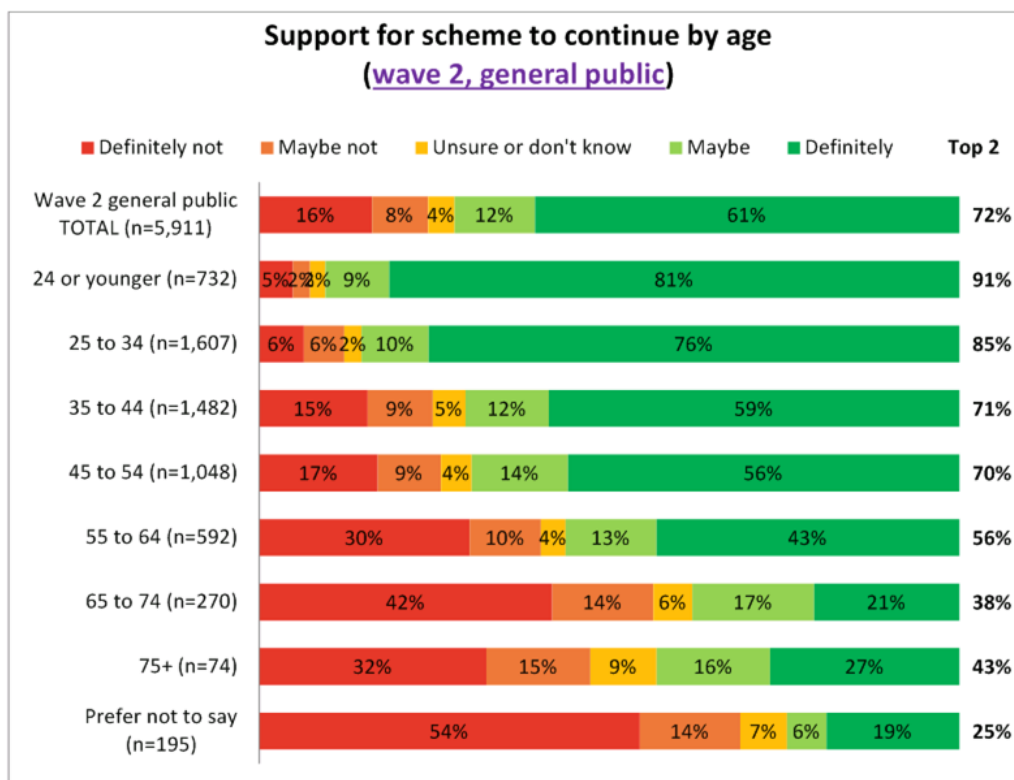
Results for question 'Do you think the Council should allow an e-scooter share scheme to continue to operate in the city?' by age for wave 1, WCC panel



Results for question 'Do you think the Council should allow an e-scooter share scheme to continue to operate in the city?' by age for wave 2, WCC panel

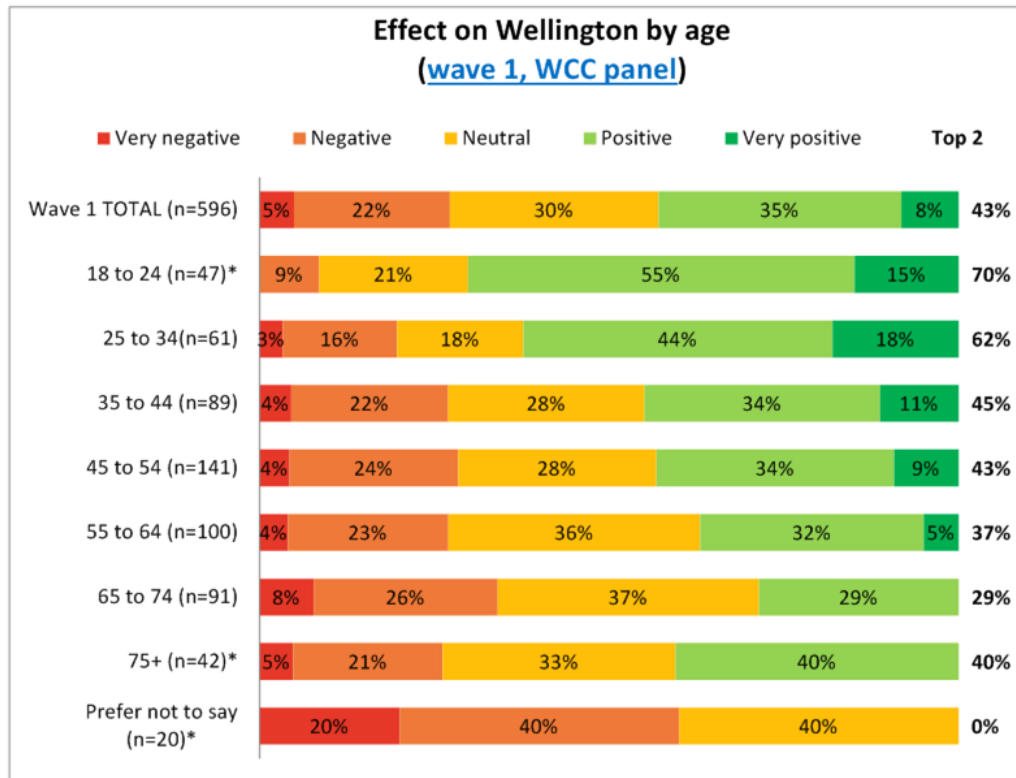


Results for question 'Do you think the Council should allow an e-scooter share scheme to continue to operate in the city?' by age for general public sample

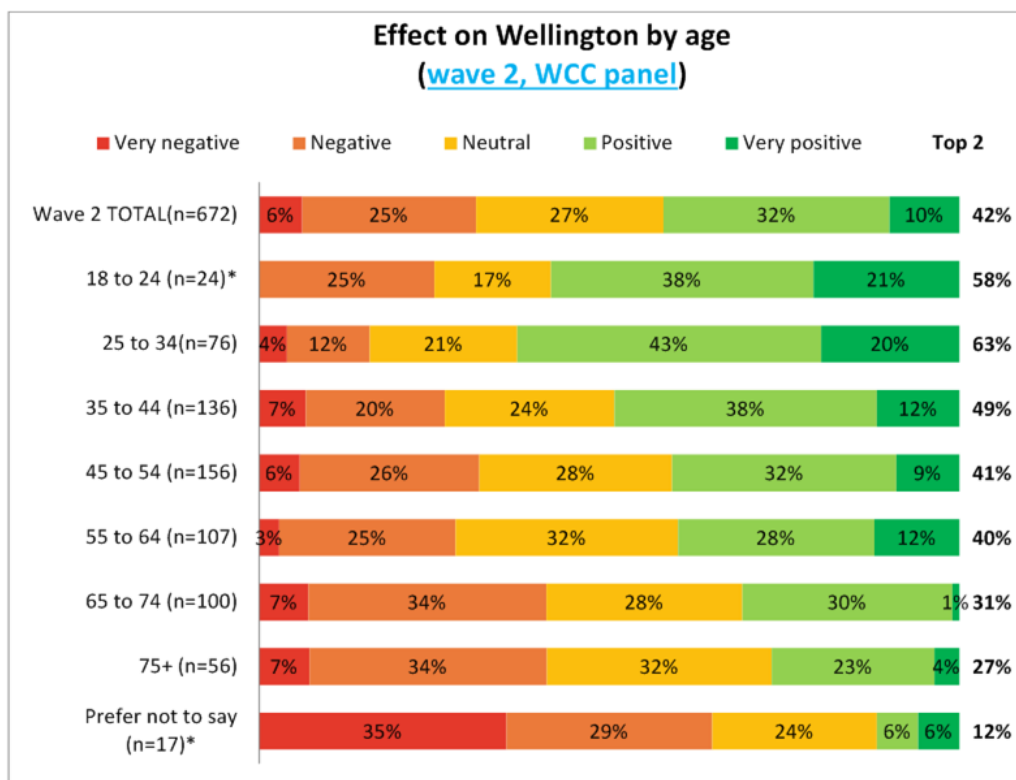


Age by effect of scheme

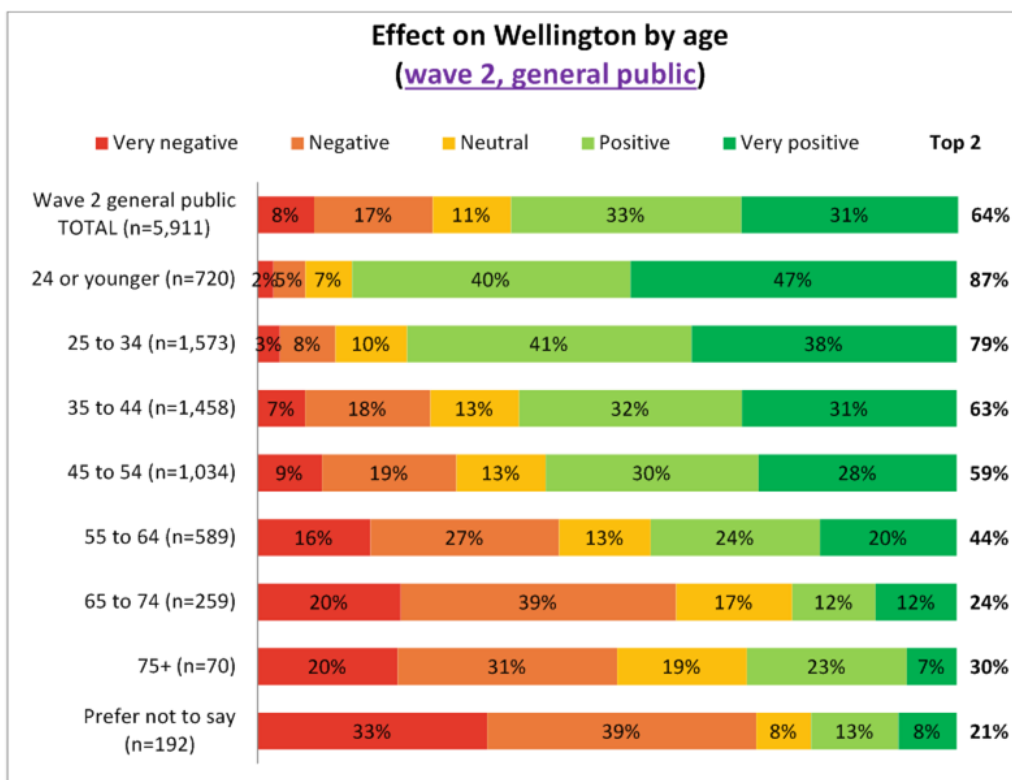
Results for question 'In your opinion, what effect has the JUMP and Flamingo e-scooter share scheme had on Wellington since the trial began in June 2019?' by age for wave 1, WCC panel (excluding 'don't know' answers)



Results for question 'In your opinion, what effect has the JUMP and Flamingo e-scooter share scheme had on Wellington since the trial began in June 2019?' by age for wave 2, WCC panel (excluding 'don't know' answers)

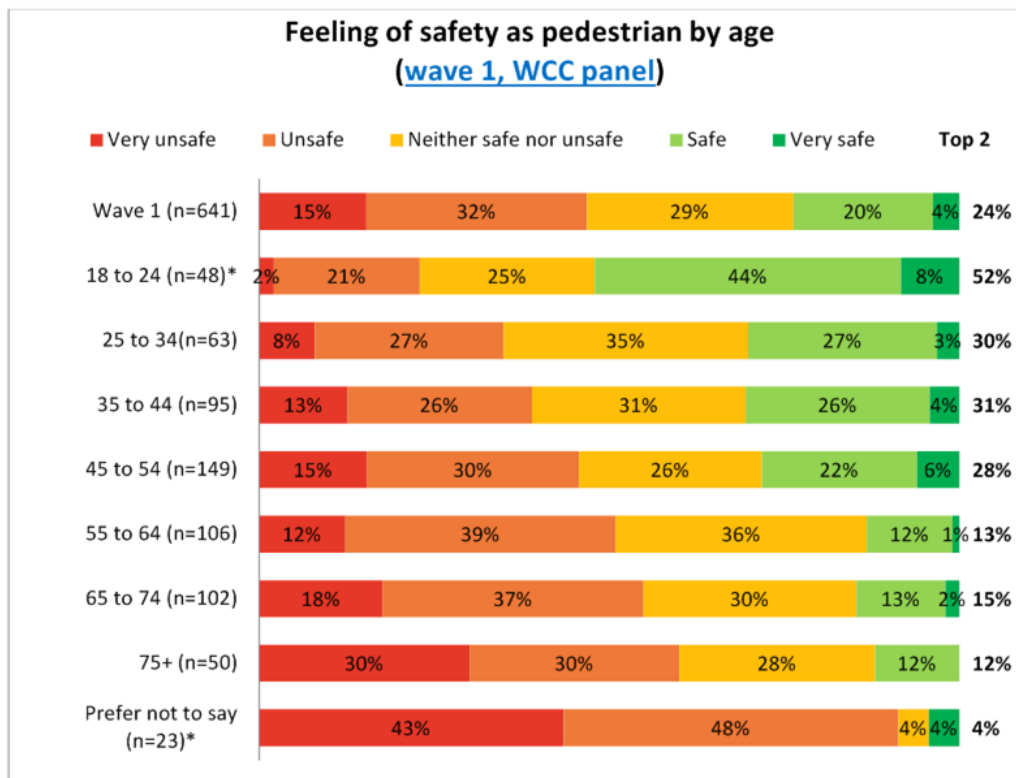


Results for question 'In your opinion, what effect has the JUMP and Flamingo e-scooter share scheme had on Wellington since the trial began in June 2019?' by age for general public sample (excluding 'don't know' answers)

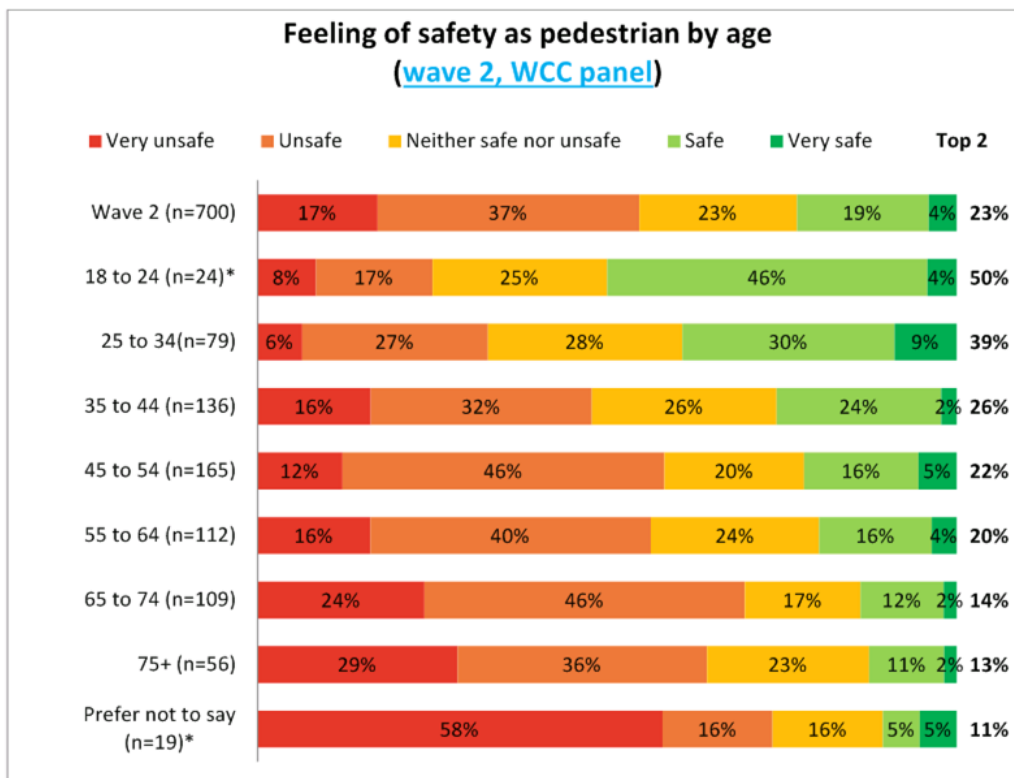


Age by safety as pedestrian

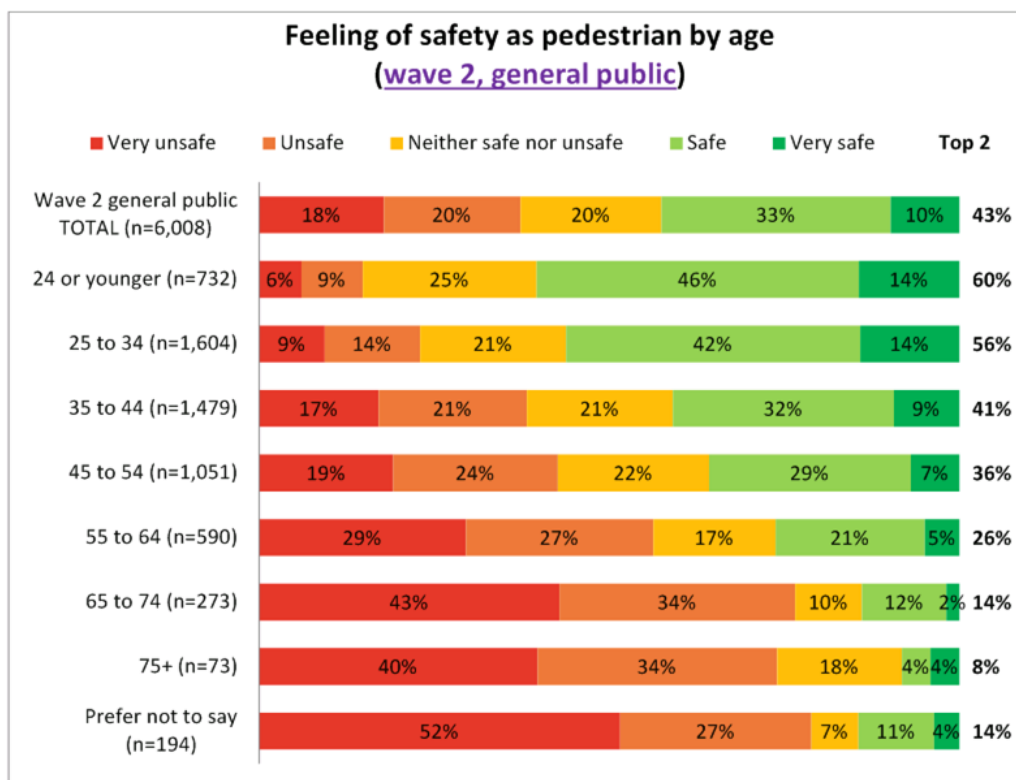
Results for question 'When e-scooters are sharing footpaths and other pedestrian areas that you are walking on, how safe or unsafe do you feel as a pedestrian?' by age for wave 1, WCC panel



Results for question 'When e-scooters are sharing footpaths and other pedestrian areas that you are walking on, how safe or unsafe do you feel as a pedestrian?' by age for wave 2, WCC panel



Results for question 'When e-scooters are sharing footpaths and other pedestrian areas that you are walking on, how safe or unsafe do you feel as a pedestrian?' by age for general public sample



Number of incidents

Results for question 'Have you personally experienced any of the following safety-related issues when using JUMP or Flamingo e-scooters? Please select all that apply' by wave and general public survey

	Wave 1 (n=96)	Wave 2 (n=137)	General public (n=3,549)
Fallen off or crashed a JUMP or Flamingo e-scooter	4	5	181
Injured myself as a result of falling off or crashing a JUMP or Flamingo e-scooter	1	1	103
Sought medical treatment due to an JUMP or Flamingo e-scooter crash	0	1	28
Just avoided falling off or crashing (i.e. near miss)	7	13	424
Hit or collided with a pedestrian	0	2	16
Had a near miss with a pedestrian	11	15	391
Hit or collided with a car or other motor vehicle user	0	1	10
Had a near miss with a car or other motor vehicle user	3	7	186
Other	1	4	126

None	79	105	2614
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Results for question 'When using other modes of transport, have you personally experienced any of the following safety-related issues relating to people using JUMP or Flamingo e-scooters?' by wave and general public survey

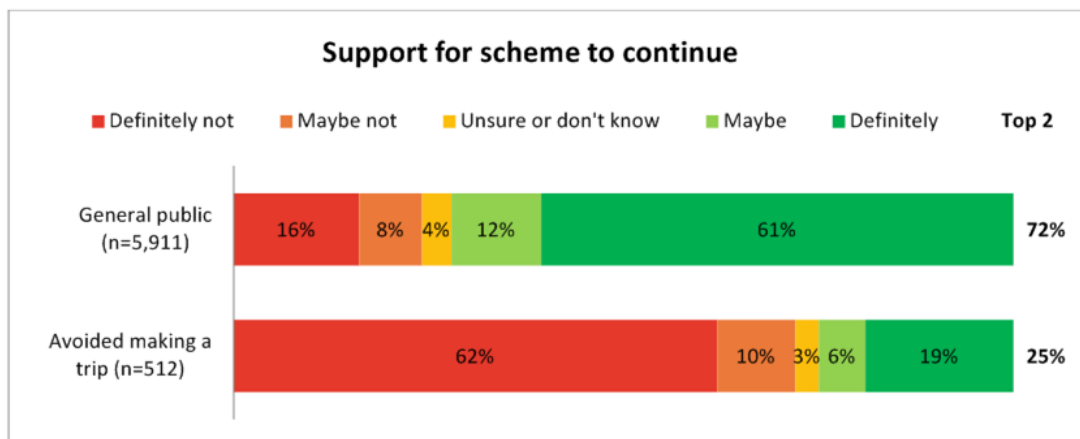
Pedestrian			
	Wave 1 (n=575)	Wave 2 (n=660)	General public (n=6,091)
<i>I have been hit or collided with</i>	10	20	200
<i>I have had a near miss</i>	134	202	1676
<i>I have been startled or frightened</i>	238	336	2277
<i>None, or no issues when travelling this way</i>	260	224	3023
Car or vehicle			
	Wave 1 (n=512)	Wave 2 (n=590)	General public (n=5,641)
<i>I have been hit or collided with</i>	4	8	48
<i>I have had a near miss</i>	45	78	570
<i>I have been startled or frightened</i>	76	125	766
<i>None, or no issues when travelling this way</i>	398	409	4487
Cyclist			
	Wave 1 (n=440)	Wave 2 (n=505)	General public (n=5,253)
<i>I have been hit or collided with</i>	8	8	43
<i>I have had a near miss</i>	18	44	336
<i>I have been startled or frightened</i>	22	49	311
<i>None, or no issues when travelling this way</i>	404	426	4747

Results for 'Have you witnessed any of the following safety-related issues of people using JUMP or Flamingo e-scooters?' by wave and general public survey

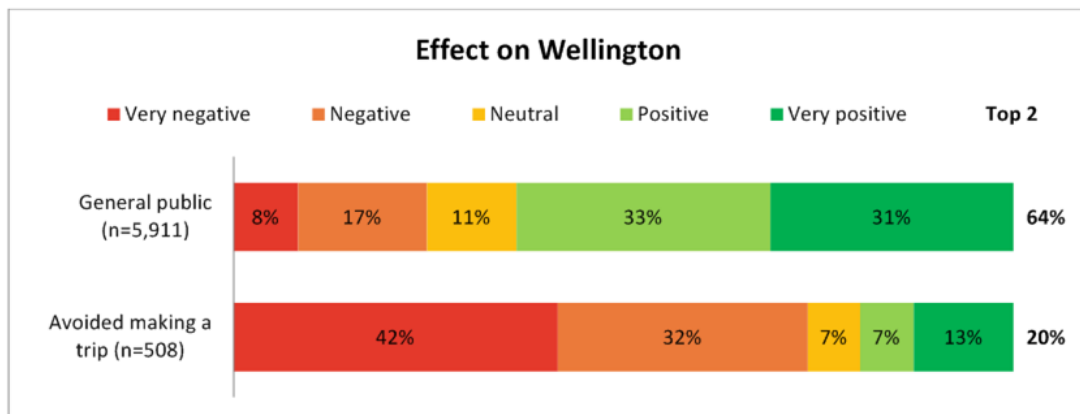
	Wave 1 (n=647)	Wave 2 (n=700)	General public (n=5,973)
<i>Pedestrian hit or collide with e-scooter</i>	29	61	612
<i>Pedestrian have a near miss</i>	168	281	1974
<i>Pedestrian startled or frightened</i>	254	337	2348
<i>Someone else fall off or crash</i>	74	124	1215
<i>Other</i>	48	71	333
<i>None</i>	297	248	2702

Results for the general public sample of those who have avoided taking a trip since the e-scooter trial was introduced (n=517)

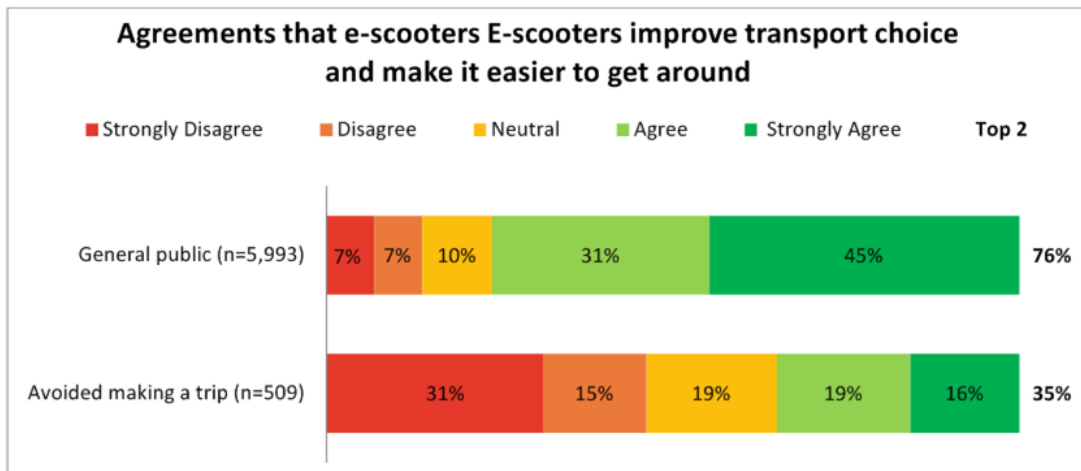
Results for question 'Do you think the Council should allow an e-scooter share scheme to continue to operate in the city?' of general public survey, and by general public users who have avoided making a trip since the introduction of the e-scooter share scheme



Results for question 'In your opinion, what effect has the JUMP and Flamingo e-scooter share scheme had on Wellington since the trial began in June 2019?' of general public survey (excluding 'don't know' answers), and by general public users who have avoided making a trip since the introduction of the e-scooter share scheme

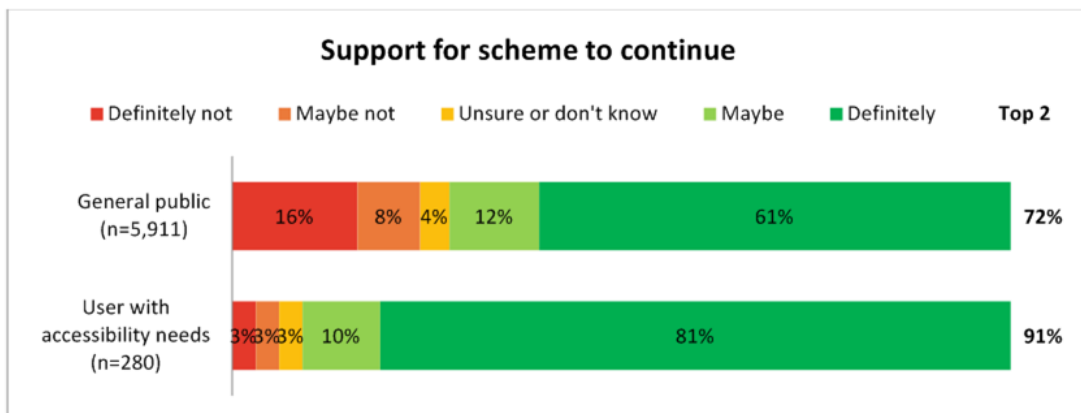


Results for question 'How much do you agree or disagree with the following statements...' of general public survey, and by general public users who have avoided making a trip since the introduction of the e-scooter share scheme

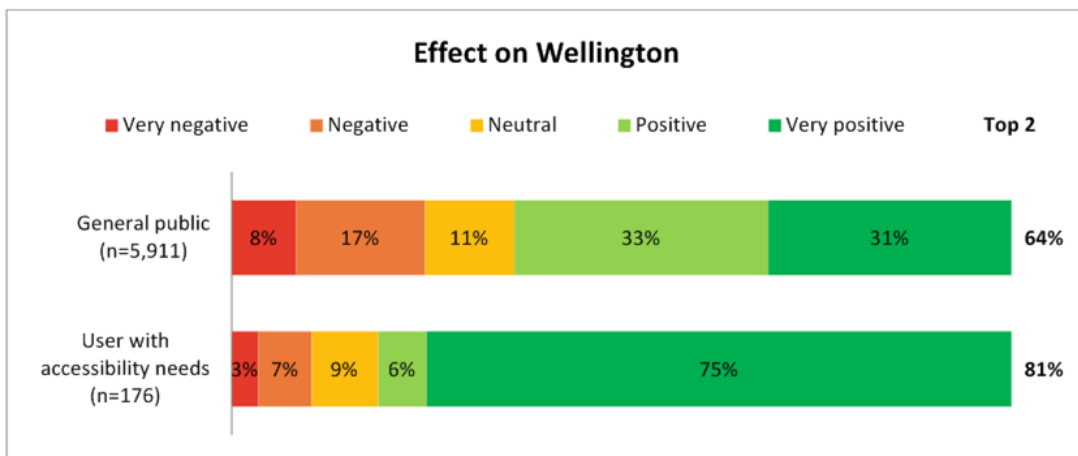


Results for the general public sample who rented an e-scooter and have an accessibility need (n=282)

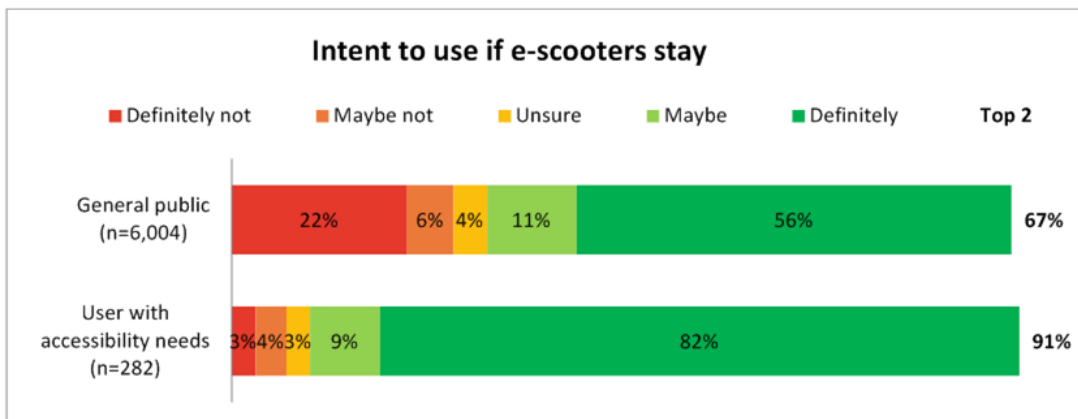
Results for question 'Do you think the Council should allow an e-scooter share scheme to continue to operate in the city?' of general public survey, and by respondents from general from the general public sample who have hired an e-scooter and reported they have an accessibility need or travel regularly with someone who does



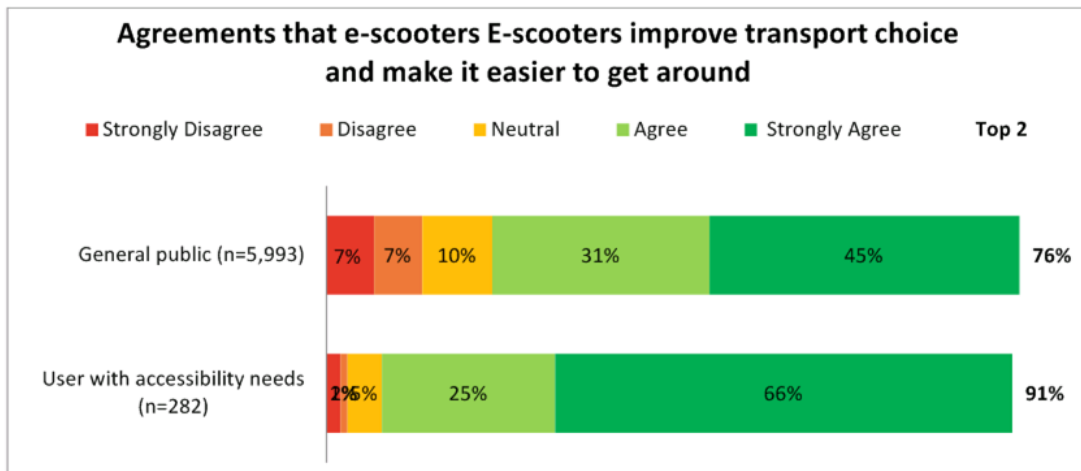
Results for question 'In your opinion, what effect has the JUMP and Flamingo e-scooter share scheme had on Wellington since the trial began in June 2019?' of general public survey (excluding 'don't know' answers), and by respondents from general from the general public sample who have hired an e-scooter and reported they have an accessibility need or travel regularly with someone who does



Results for question 'Do you intend to use JUMP or Flamingo e-scooters if they are allowed to stay in Wellington?' of general public survey, and by respondents from general from the general public sample who have hired an e-scooter and reported they have an accessibility need or travel regularly with someone who does



Results for question 'How much do you agree or disagree with the following statements...' of general public survey, and by general public, and by respondents from general from the general public sample who have hired an e-scooter and reported they have an accessibility need or travel regularly with someone who does



Results for question 'Have you ever ridden a JUMP or Flamingo e-scooter to make a trip you otherwise wouldn't have made?' of general public survey, and by respondents from general from the general public sample who have hired an e-scooter and reported they have an accessibility need or travel regularly with someone who does

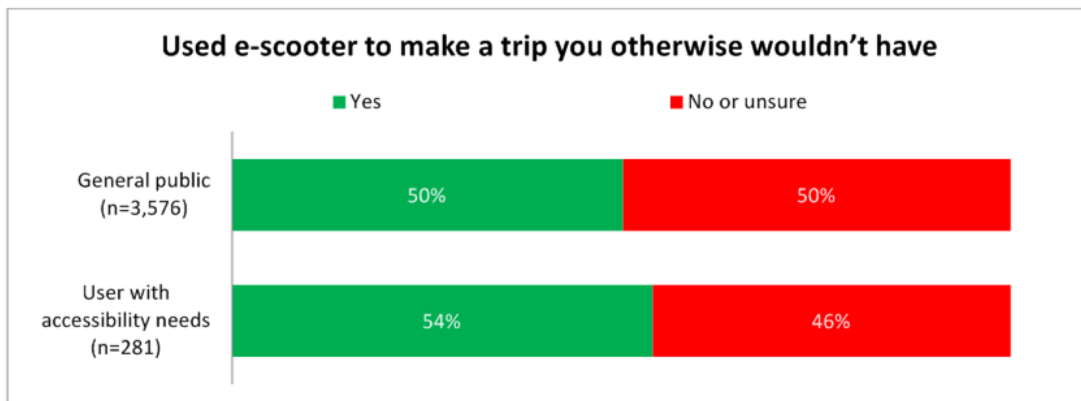
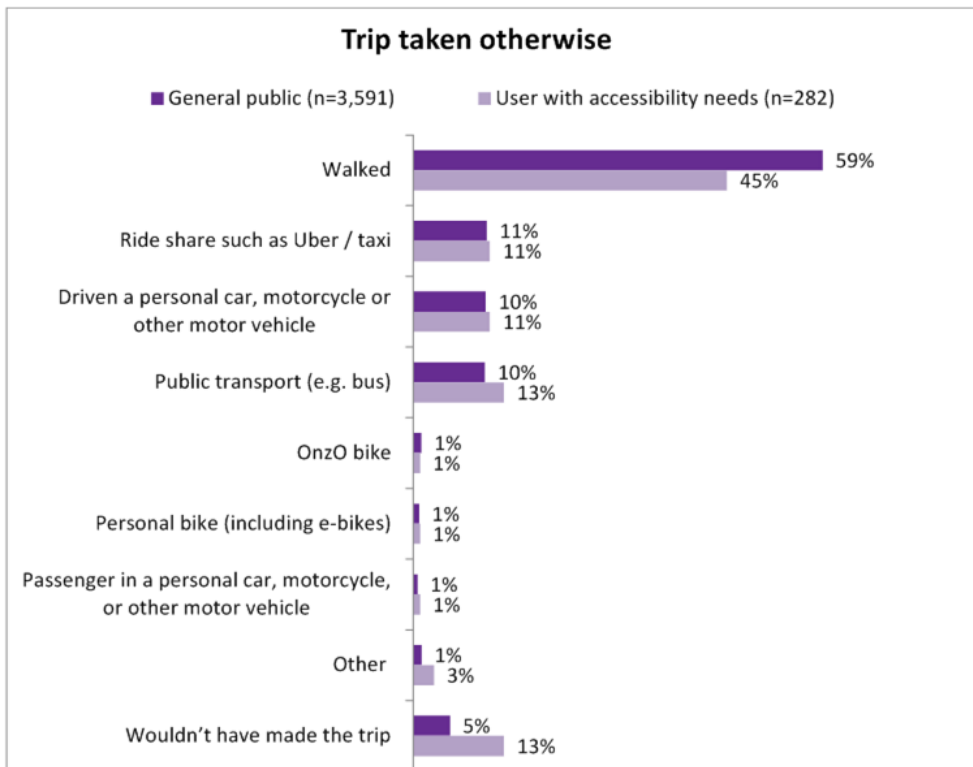


Figure 1. Result for question 'Thinking about your most recent trip... How would you have taken the trip otherwise?' of general public survey, and by respondents from general from the general public sample who have hired an e-scooter and reported they have an accessibility need or travel regularly with someone who does





Wellington City Council e-scooter enquiries/complaints

Analysis report

18 March 2020

Absolutely Positively
Wellington City Council
Me Heke Ki Pōneke

Wellington City Council

Introduction

Complaints or enquiries to the Council about e-scooters

- The e-scooter share scheme was launched in Wellington on 18 June 2019. The trial lasted 6 months in total, with operators being permitted to continue while the trial is evaluated.
- This report covers the enquires and complaints about e-scooters that the Council received from 18 June 2019 to 18 December 2019. There were 155 enquiries about e-scooters from 110 people received during this period.



Executive summary

Key overall findings from the analysis

- **The biggest theme from the enquires/complaints was around e-scooters being left in inconvenient places.** This ranged from complaints about e-scooters being left/parked in the centre of the footpath, to business owners complaining about company drop-off locations affecting their business. Most of the calls were alerting the Council to the position of one scooter in particular (ie isolated incidents), and a small number were about inconveniently placed scooters in general.
- **Lack of clarity around complaint systems and company responsibility also arose.** People had trouble having certain complaints resolved by the Council or by the scooter companies. They would often contact one of them, and if the issue had still not been resolved, they would then be referred to the other party, and sometimes still nothing would be done. Some people expressed the opinion that the communications between the Council and scooter companies needed to be strengthened and clarified for quicker resolution of issues.
- **There were a small number of people who made an enquiry or complaint about e-scooters in general.** People particularly brought up the perceived and/or actual danger of e-scooters in general, and the lack of rules and regulations around them contributing to this perceived and actual danger to pedestrians.

“Came in to complain that scooter companies are placing the scooters in rows across the footpath, which blocks half the path. This happens several times a week. I’m wanting them to think more about the placements.”

“Direct and immediate contact with the companies needs to be a priority if the e-scooters continue to stay in Wellington”

“I realise there is probably no earthly point in writing, but I feel so angry I want to make my voice heard anyway. In short, e-scooters have made Oriental Parade too dangerous for me to take my 7 year old daughter in the weekend.”

Wellington City Council

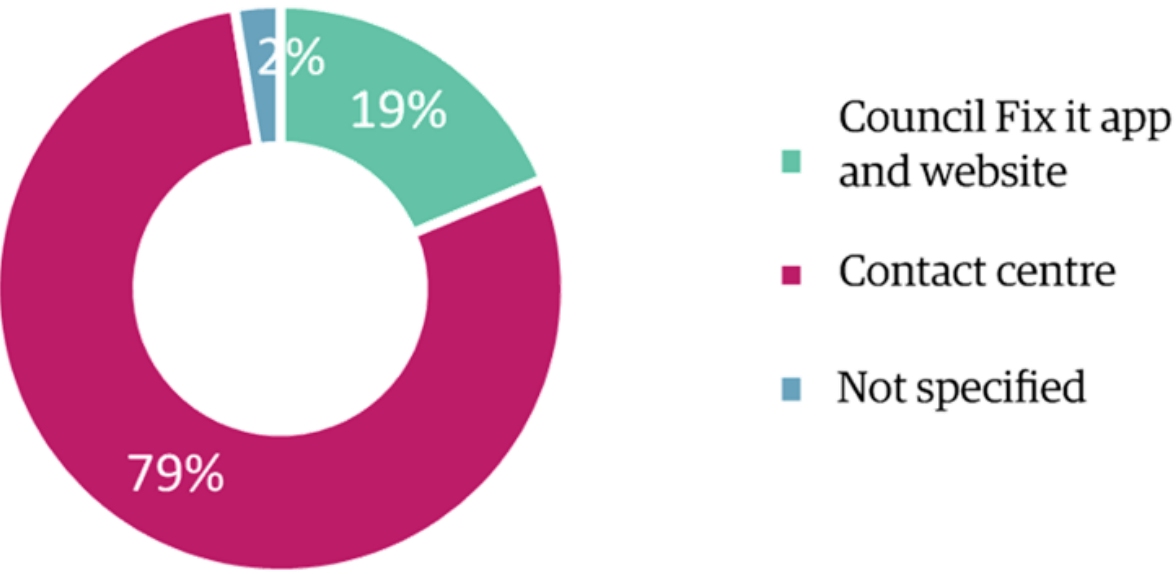
Enquiry channels

Ways people contacted the Council

These 155 enquires were received in two ways. One of these was via the Fix-it app or Council website, while the other was through the contact centre (mobile/telephone).

79% were received through the contact centre, 19% were received online through the Council website and app, and in 2% the channel was not specified.

Enquiry channels
of 155 enquiries

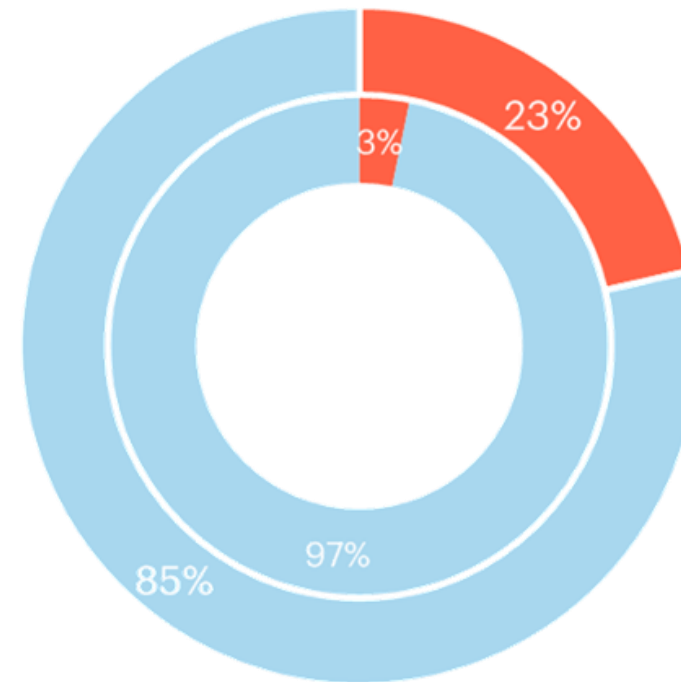


Frequent enquiries

People enquiring or complaining multiple times

Of these complainants there were some people that enquired or complained multiple times. This was often reporting other instances of similar issues.

Percentage of enquiries from the top respondents
of 155 enquiries total

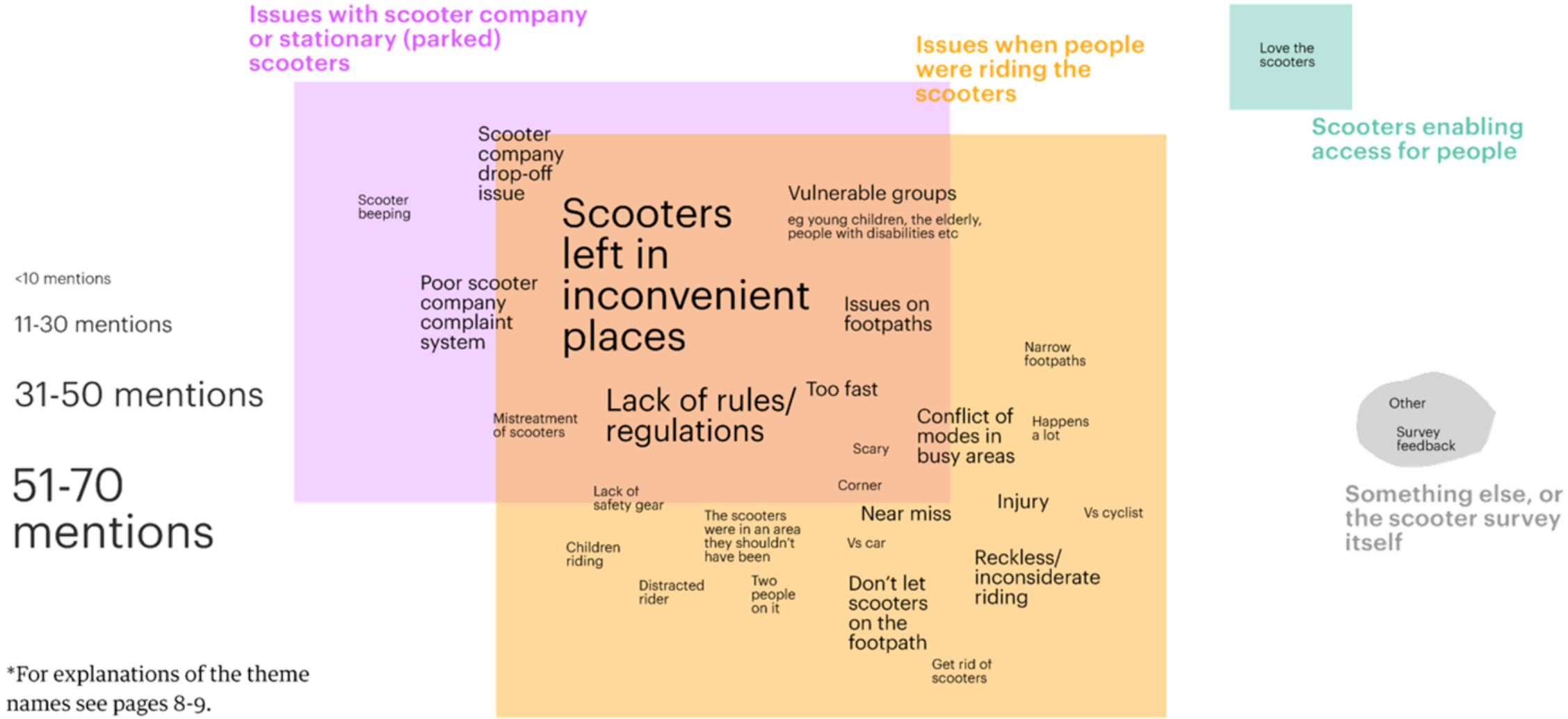


The **top 5 respondents (3%)** were responsible for **23% of the enquiries/complaints**. The top respondent was responsible for 16 enquiries/complaints (10% of the total).

Wellington City Council

Enquiry themes

From a total of 155 enquiries



Wellington City Council

Theme name explanations

29 themes

Children riding	Mention of children riding scooters.
Conflict of modes in busy areas	When issues are caused by the convergence of bikes, scooters, cars, pedestrians, and/or other in a congested area.
Corner	Issues with riders/pedestrians travelling around corners, or from buildings/entrance ways.
Distracted rider	A scooter rider was not paying attention to surroundings, or on their phone, or wearing headphones, etc.
Get rid of them	Calling for scooters to be banned.
Get them off the footpath	Asking/advocating for e-scooter riders and parked e-scooters to not be allowed to use the footpaths.
Happens a lot	When there are multiple occurrences.
Injury	Somebody coming away with an injury of some degree.
Issues on the footpath	The e-scooters, or e-scooter riders, causing inconvenience or danger to people on footpaths.
Lack of rules/regulations	A need for more rules/regulations/restrictions and education around the e-scooters.
Lack of safety gear	Riders not wearing safety gear. This includes mentions of helmets, hi vis, and bells etc.
Love the scooters	Extremely happy about the presence and/or use of e-scooters
Narrow footpaths	When narrow footpaths or walkways is mentioned in relation to the use of e-scooters.
Near miss	When there is almost an incident.
Other	Very niche and/or unrelated topics.
Poor company complaint system	When a caller complains about their ability to complain, get in contact, or get action from an e-scooter company.
Reckless/inconsiderate	Scooter users riding dangerously, recklessly, irresponsibly and/or behaving rudely to others.

7

Wellington City Council

Theme name explanations continued

29 themes

Scary	The sudden presence of a scooter rider can be unexpected and/or frightening
Scooter beeping	When a scooter is parked and making noises without a user.
Scooter company drop off	The locations and/or methods in which scooter companies drop off scooters.
Scooter mistreatment	Individuals treating e-scooters poorly. This includes throwing them, hitting them, etc.
Scooters left in inconvenient places	Scooters being parked, dropped off and blown over in inconvenient places for pedestrians and business owners.
Survey feedback	When a comment/suggestion is made about the content, purpose, or format of the e-scooter survey.
Too fast	The speed of e-scooters is too fast.
Two people on it	Two people riding the same e-scooter at the same time.
Vs car	A car was involved.
Vs cyclist	A cyclist was involved.
Vulnerable groups	E-scooters and their riders negatively affecting young children, elderly, people with disabilities, and pregnant women.
Where they shouldn't be	E-scooters in areas that are not permitted to be.

Table 1: Number of new claims that were registered with ACC between 18 June and 18 December from 2015 to 2019 for Wellington, broken down by injury type and injury site.

Injury Type	2015		2016		2017		2018		2019	
	Other	Head	Other	Head	Other	Head	Other	Head	Other	Head
Home Injury	12,340	455	12,767	514	13,241	514	13,078	494	12,838	494
Rugby Injury	1,384	70	1,351	87	1,355	105	1,223	88	1,207	77
Basketball Injury	505	10	529	14	558	17	545	15	538	15
Pedestrian Motor Vehicle Injury	45	9	67	6	63	14	62	6	60	13
Other	20,478	672	20,321	709	21,760	841	21,982	747	22,510	806
Total	34,752	1,216	35,035	1,330	36,977	1,491	36,890	1,350	37,153	1,405

Table 1: Number of new claims for e-scooter injuries in Auckland, Christchurch and Wellington for specified date ranges between 18 June 2015 and 18 December 2019.

Period	Region	Primary Injury Site	
		Head (Except Face)	Other
30 Sept 2018 - 31 March 2019	Auckland	62	859
30 Sept 2018 - 31 March 2019	Christchurch	47	492
18 June 2015 - 18 December 2015	Wellington	-	15
18 June 2016 - 18 December 2016	Wellington	<4	22
18 June 2017 - 18 December 2017	Wellington	-	16
18 June 2018 - 18 December 2018	Wellington	<4	29
18 June 2019 - 18 December 2019	Wellington	12	174

Caveats / notes on data

Accredited employer claims have been excluded.

New claims – the claims in these tables have been counted by the date that an accident occurred, and may differ to the date that a claim was registered with ACC.

Cell suppression of claim counts fewer than 4 show as "<4" or if manually suppressed show as ".." to ensure client privacy.

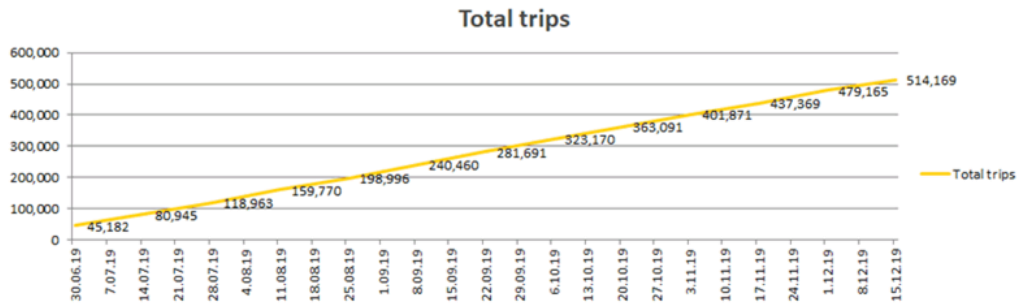
Location is based on where an accident occurred and may differ to where the client resided at the time.

The accident description is a non-mandatory free-text field on the ACC45 form. The nature and quality of responses varies. These data should therefore be considered indicative, but not a definitive count of claims.

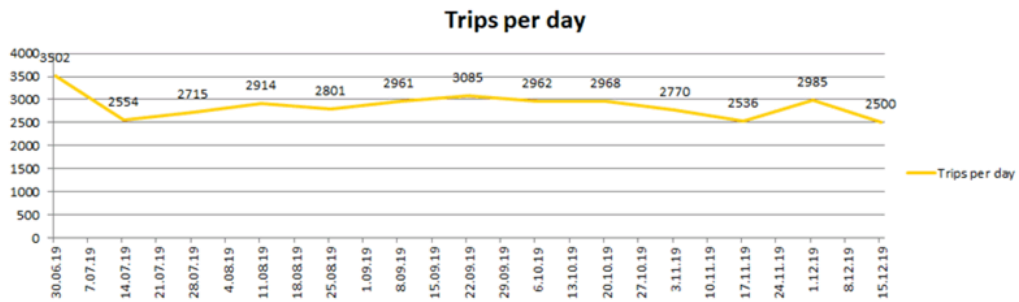
Data were extracted on 23 January 2020 and may differ if rerun at a later date.

Use of publically available e-scooters

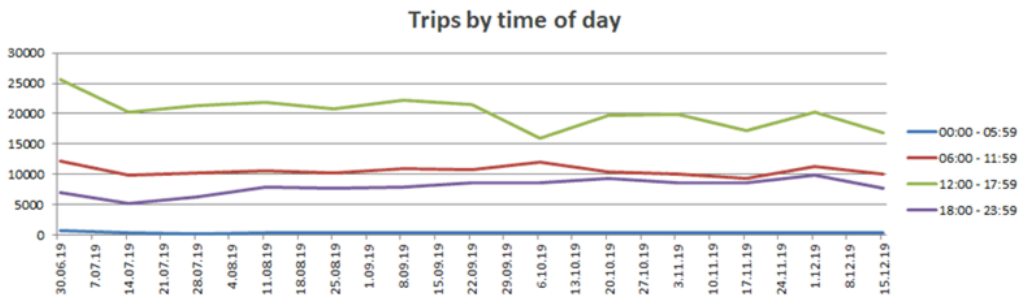
Over the duration of the trial there were 514,169 trips taken on publically available electric scooters.



This averages out to 2866 trips per day over the course of the trial.

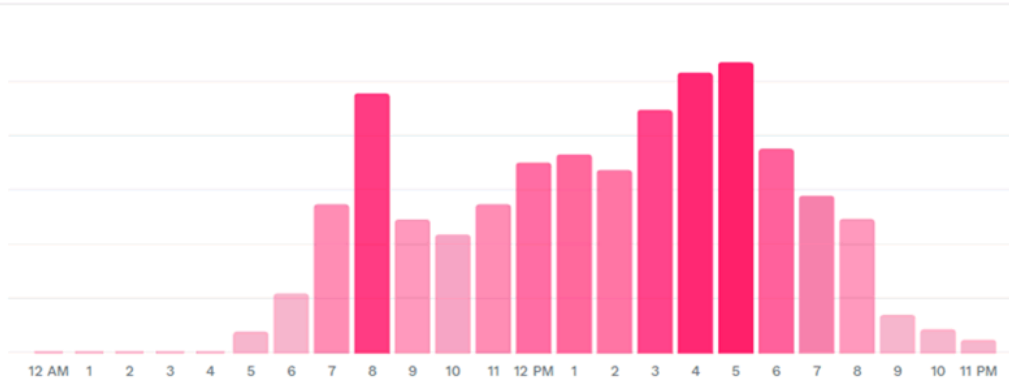


Midday to 6pm was the most popular time to ride electric scooters.

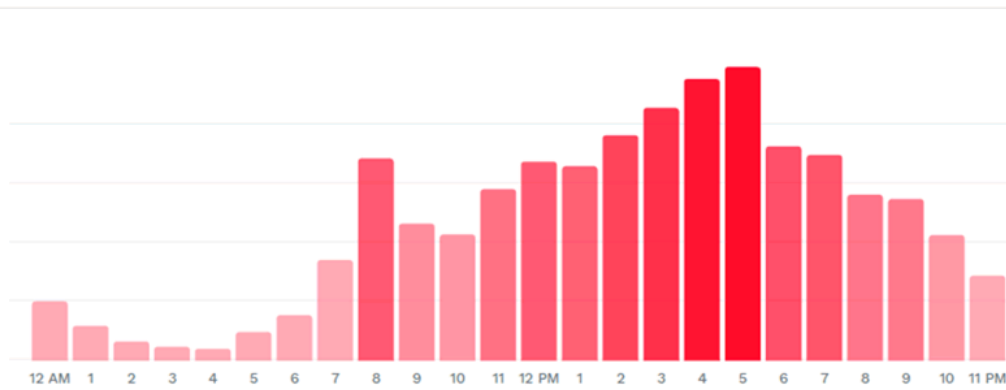


Trips taken by hour also shows a spike in ridership at peak times, showing the potential to help with the amount of private vehicles coming in to the city at those times.

Trips by hour for Flamingo in Wellington City Council Limits

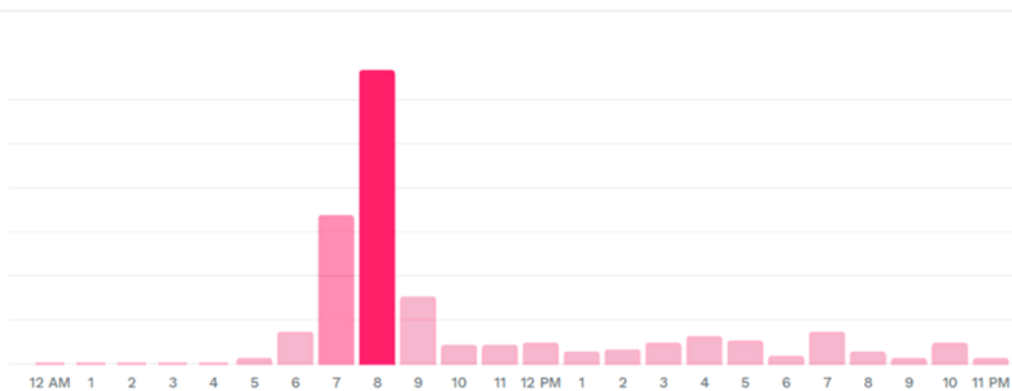


Trips by hour for Jump in Wellington City Council Limits

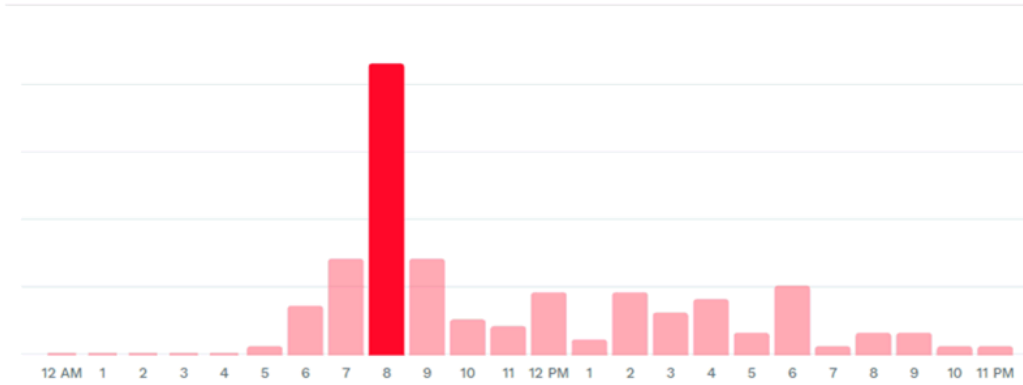


Officers also monitored the amount of trips being taken from the central railway station. There is a clear spike in ridership during the morning peak, indicating a strong connection with people using public transport through this hub.

Trips by hour for Flamingo in Railway Station Corral (Rev)



Trips by hour for Jump in Railway Station Corral (Rev)



Both operators reported on the number of issues that had been raised with them. Below is an amalgamation of the reporting. Usually open issues are requiring a response from the customer before being closed off.

Number of issues raised with operators during the trial period

	30.06.19	14.07.19	28.07.19	11.08.19	25.08.19	8.09.19	22.09.19	6.10.19	20.10.19	3.11.19	17.11.19	1.12.19	15.12.19
User Issues - opened	1,880	1,221	915	890	778	828	775	830	826	710	1,002	948	919
User Issues - closed	1,865	1,202	893	845	758	808	780	805	802	700	973	924	876
User Issues - outstanding	18	19	22	35	20	20	15	25	24	10	29	24	43

OMĀRORO RESERVOIR

Purpose

1. This report asks the Strategy and Policy Committee to approve Wellington Water Limited's proposal to invest in the Omāroro Reservoir.

Summary

2. Wellington City anticipates future economic and population growth to be focussed around its vibrant and compact central area. This growth cannot occur without investment in enabling infrastructure.
3. Central Wellington is known to be vulnerable to seismic activity, and infrastructure investment needs to enhance resilience while accommodating growth. Currently around the City, there is active investment in the seismic resilience of buildings, the road corridors, in Wellington Electricity's resilience programme, and in options for development of the port.
4. The three waters are integral to this picture. Wellington Water Limited has identified Omāroro reservoir as its top priority for Wellington City. Omāroro is designed to provide safe drinking water storage, to enable growth and provide operational and seismic resilience to the CBD and hospital.
5. Currently there is one day of stored water for the central area. Without Omāroro, Wellington is economically and socially vulnerable to a water outage from an earthquake or other event.

Recommendation/s

That the Strategy and Policy Committee:

1. Receive the information.
2. Note the budget estimate for the Omāroro reservoir has escalated by \$9.9m since April 2019 to \$68m (inclusive of the associated Wallace Street pipe works).
3. Agree that, as proposed by Wellington Water Limited, the current Three Waters annual plan capex budget will be maintained at current levels by delaying the Moe-i-te-Rā (Bell Road) reservoir project.
4. Note that any further amendments to the Three Waters capital expenditure programme will be considered as part of the Long-term Plan.
5. Note that an independent review of the Omāroro project did not raise any concerns or issues beyond those considered in the Business Case.
6. Note that Omāroro is a complex project that requires an elevated level of governance and that Wellington Water Limited will formally brief Council every six months on progress.

7. Note that Omāroro has been identified to the Government as a candidate for financial support (possibly in the form of loan funding) to assist the City with recovery from COVID-19.

Background

6. The day-to-day functioning, prosperity, and growth aspirations of Wellington City rely on an adequate supply of safe and healthy drinking water. This is especially the case for central Wellington – the primary driver of the City and the region’s economic activity and also home to around 70,000 people (a number that essentially doubles during business hours).
7. Existing supplies are insufficient to meet operational and seismic resilience requirements, and to accommodate forecast growth.
8. Wellington City Council owns the City’s public water assets. Wellington Water Limited (WWL) is funded to manage and operate the assets on the Council’s behalf, and to provide expert advice to Council on water investment and management.
9. In the 2018 Long-term Plan, Council agreed to fund WWL to construct the Omāroro reservoir in the 2018 to an estimated cost of \$41m. Omāroro is a 35 mega litre (35,000 m³) drinking water reservoir located in the Town Belt, within Prince of Wales Park in Mount Cook. The reservoir is to be fully buried and includes various pipeline connections to adjacent water networks.

Discussion

10. WWL advice is that Omāroro addresses a significant deficit in safe drinking water storage within the CBD and provides additional operational flexibility, significantly reducing the level of risk for loss of supply due to unforeseen circumstances. Currently, there is only one day of storage available to meet average demand in the event of a bulk water outage. A pipe failure in 2017 highlighted that such events are possible and the potential risk and impact will increase as growth progresses. A loss of supply or the significant water use restrictions to prevent it would have an estimated economic impact of \$70- \$100 million per day.
11. WWL anticipates that Omāroro will support forecast population growth of up to 46,000 people (68%) by 2066 while being sized to reflect anticipated improvements in water use efficiency and demand management over that period. Omāroro does not obviate the requirement to manage demand.
12. Omāroro forms a key part of the planned response to delivering an emergency water supply to the Wellington CBD and critical users such as the Wellington Regional Hospital in the event of a major earthquake or other natural disaster. A resilient water supply for the CBD is a ‘must have’ to ensure the City can respond to and recover from

a major earthquake. A significant earthquake capable of causing damage to infrastructure and the environment is likely within the lifetime of the reservoir.

13. In April 2019 WWL advised Council that the estimated cost had escalated to \$58.2m due to an initial underestimate and increased contractor costs.
14. WWL's current estimate is \$68.1m. The \$9.9m increase is due to:
 - an unforeseen change in seismic standard (\$8.5m),
 - delays caused by COVID-19 (\$1m), and
 - the difference between the estimate and the post-tender price (\$0.4m).
15. WWL proposes that Council manages the immediate impact of increases cost through delaying the Moe-i-te-Rā (Bell Road) reservoir project for consideration through the 2021-31 Long Term Plan.
16. Omāroro has been identified by the Region as a 'shovel ready' project that could commence as early as August 2020. It has been submitted to Crown Infrastructure Partners as a candidate for Government assistance because it can help to stimulate economic recovery from COVID-19. This is unlikely to reduce the capital cost to Council but may result in a reduction in the associated borrowing costs. The project is consented and a construction contract has been negotiated and is ready to award.
17. The project has been identified by officers as requiring an elevated level of oversight due to the level of complexity, cost, disruption and community interest. WWL will provide assurance of this oversight by formal reporting into the quarterly report and provision of six monthly briefings to the Strategy and Policy Committee. This is in addition to regular and systematic local briefings through the Community Liaison Group.

Options

18. WWL assessed three alternatives in developing the business case:

Option 1: Demand Management

19. Water demand management is a combination of hard infrastructure, including network leakage reduction and other soft, community-focused programmes, including education and other initiatives intended to drive down the use of water by individuals, households and commercial and other extra-ordinary users.
20. WWL advises that an intensified demand management programme is unlikely to deliver the required results within the required timeframe needed to grow capacity or provide general or disaster resilience. As noted above, it is expected that a demand management programme will also still be required, both as part of the Sustainable Water Supply initiative and to ultimately enable the 50-year growth projection with this investment.

Option 2: Distributed Water Storage

21. A key element of WWL's water supply resilience programme is that customers should store sufficient water to meet their basic needs for the first seven days after an event. However, only a modest proportion of customers have stored sufficient water, the quantity stored for seismic resilience is not sufficient to meet normal demand, and the stored water is not integrated into the network so that it can be used directly in the place of the normal supply. The cost of ensuring that all customers had sufficient water and were integrated into the network would significantly exceed the cost of the bulk water storage reservoir.
22. WWL considers that sizing Omāroro for operational and growth requirements means that it also has sufficient storage to meet the seismic resilience requirements for the CBD and for Wellington Regional Hospital. WWL considers that requiring the Hospital to invest in dedicated water storage would not reduce the required size for the Omāroro reservoir.

Option 3: Alternative Sites

23. The choice of this location, and the assessment of criteria against alternatives, has been considered by WWL through technical assessments and confirmed through the Resource Consent process.
24. In 2011 an options assessment identified potential options and sites for a 35 ML reservoir. Ten potential sites were long-listed for consideration. Of these, four sites – Prince of Wales Park, Torquay Terrace, Government House and Carmichael Reservoir – were shortlisted based on an assessment of their constructability. A multi-criteria analysis (MCA) was then conducted on the short-listed sites, including criteria such as ability to integrate into the existing network, ability to satisfy environmental and other considerations under the RMA, public acceptability, and construction practicality.
25. The Prince of Wales (Omāroro) site was preferred by WWL because of its location within the drinking water distribution network, relatively low excavation requirements compared to alternative locations, comparatively favourable environmental setting, and estimated cost relative to the other locations. A component of the costs for Omāroro includes the need for the reservoir to be buried to meet the planning requirements associated with development within the Town Belt. The Omāroro site was clearly the preferred site for both price and non-price criteria. This was further tested during the consent process.
26. WWL's business case and options development has been checked by an external independent expert appointed by Council officers.

Next Actions

27. If approved, WWL will commence work early in FY 2020/21.

Attachments

- Attachment 1. WWL Board Paper Omaroro Reservoir and Associated Pipeworks [↓](#) Page 203
- Attachment 2. Business Case - WCC - Omaroro Reservoir [↓](#) Page 220

Author	Mike Mendonca, Chief Resilience Officer
Authoriser	Moana Mackey, Acting Chief City Planner

SUPPORTING INFORMATION

Engagement and Consultation

Omāroro has been the subject of extensive formal and informal engagement and consultation.

Treaty of Waitangi considerations

WWL has engaged extensively with Mana Whenua on Omāroro.

Financial implications

The report outlines the cost amendments, which are recorded in the 2018 Long-term Plan, the 2020/21 Annual Plan, and will be further highlighted in the 2021 Long-term Plan.

Policy and legislative implications

There are no policy or legislative implications.

Risks / legal

Omāroro is a high profile, complex and expensive project that requires an elevated level of monitoring and governance from WWL, and assurance to the Council. This is described in the report.

Climate Change impact and considerations

Omāroro will facilitate further growth in the CBD and inner suburbs thereby supporting Wellington's compact urban form and the general direction of Te Atakura. WWL will measure carbon – the contract includes a requirement for the contractor to measure the carbon footprint.

Communications Plan

WWL already has an extensive communications plan in place.

Health and Safety Impact considered

There are significant and complex risks involving multiple PCBU on this site. WWL is responsible for managing these risks and for providing assurance to the Council that it has the requisite policies and processes in place.



Board Meeting

Paper number: 04
Board meeting: Friday, 1st May 2020
Agenda no: 2.1
Prepared: Stephen Wright, Manager, Major Projects, Network Development & Delivery
Approved: Tonia Haskell, General Manager, Network Development & Delivery
Recommended: Colin Crampton, Chief Executive

Omāroro Reservoir and Associated Pipe works

Purpose

1. To seek approval to present the revised cost for the Omāroro Reservoir and associated pipe works to the Wellington City Council (WCC).

Summary

2. The Omāroro Reservoir and associated pipe works project is a critical asset in the overall drinking water network. It will provide operational benefits, is sized for future growth and will be part of a resilient network should we be unfortunately struck by a large earthquake.
3. The scope and therefore the cost of the project has varied over the years. When the project was first put in Council plans, it was smaller, assumed to be on the surface, and didn't account for the constrained site. The February 2019 estimate (\$58.2M) approved by the Council, reflected the

investigated and consented project sized for a future Wellington. Approval of the project budget enabled us to move into the construction phase of the work.

4. The associated pipe works part of the project is in construction and is scheduled to be complete late August/early September 2020. The main reservoir has been tendered on the open market using a design and construct form of contract. Before we could tender the project we needed to complete the detailed design. As we moved into detailed design, we used a method of analysing seismic forces on structures which had been adopted following recent seismic events across New Zealand. This was not used during the preliminary design which the February 2019 estimate was based on. This has resulted in an estimated increase to the project of \$8.5M which is a large percentile increase based on total project cost.
5. Following discussions with council officers in the middle of 2019, it was agreed we should proceed with the tender to find out if this estimated increase in cost had flowed through to the tender price. We now know it has.
6. We believe the project is a good investment at the revised estimate of \$68.1M and WCC's independent reviewer has indicated in his draft advice that he agrees. However, in a post Covid-19 environment, the WCC needs to confirm the project's priority against everything else in its programme and approve funding for the revised cost.
7. The Omāroro Reservoir complies with the shovel ready criteria and is second on the Region list. However, we don't need to wait for an announcement as the criteria are applicable whether the project is in construction or not. It would not make sense to wait anyway because the need for releasing funds back in the supply chain is an immediate one and the Omāroro Reservoir can be used as a good first example. It also puts the Council in a good position as being seen to help themselves ahead of any Government offer of assistance.
8. We would argue that it is in all our best interests to award the tender now because the market will change significantly once any "shovel ready" announcements are made. [REDACTED]



Financial Summary

9. The project is made up of two parts as follows:

- a) The Omāroro reservoir itself; and
- b) The associated pipe works which connect the Omāroro Reservoir to the trunk supply mains and truck reticulation mains.

10. The following table outlines the revised February 2019 estimate including the estimated cost of two variations which have surfaced since the original estimate was reported to council; as follows:

- a) The change in seismic design standard valued at \$8.5M (in February 2019 equivalent estimating terms); and
- b) The \$1M estimated cost needed to keep the current HEB tender valid beyond the expiry of 31st March 2020.

	Cost components	February 2019 Revised Estimate
Council approved	Associated pipe works	\$15M
	Omāroro Reservoir	\$43.2M
	Subtotal	\$58.2M
Variations to be approved by Council	Estimated cost of seismic standard	\$8.5M
	Delay due to Covid-19	\$1.0M
	Difference between estimate and post tender cost	\$0.4M
	Revised Total	\$68.1M

11. The revised estimate can now be compared with the post tender estimate which includes the two variations within the tender price. The updated post tender estimate is \$68.1M (Attachment C). The Board should note:
- a) That the full cost of the change in seismic standard has flowed through to the final price, and
 - b) The original basis of estimate was sound as the post tender estimate is in close proximity to the adjusted February 2019 estimate.

12. There is a high level of confidence around the \$68.1M estimate as nearly all risk has been transferred to the contractor including cost escalation risk. We are currently negotiating on other contingency sums to see if risks, like ground conditions, can be transferred to the contractor.
13. The only outstanding risk not included is the long term effects of working under Covid-19 health and safety procedures. It is too early to estimate these and we suggest councils address these at a programme level rather than a project level once they are clearer.

Recommendation

14. It is recommended that the Board:
 - a) Notes that after WCC approved the project estimate, in February 2019, the associated pipe works component of the project was committed to construction and it is tracking to budget and for completion by the end of August 2020;
 - b) Following detailed negotiations with HEB contractors, that the final estimate for the combined project is \$68.1M and that there is a high degree of confidence in this estimate;
 - c) Notes this is an increase of \$9.9M over the previous estimate of which \$8.5M is due to an unforeseen change in seismic standard not included in the original February 2019 estimate;
 - d) Agrees the project remains a good investment for the region at the level of the revised estimate;
 - e) Approves seeking Wellington City Council approval for the revised estimate noting any future Covid-19 costs should be managed across all projects at the programme level so aren't anticipated or included here; and
 - f) Agrees any recommendation from Council officers on this project should emphasise:

- i. This project is truly “shovel ready” in that it can enter construction straight away and provide fiscal stimulus to the city within months; and



Attachments

15. There are three attachments:

- a) Attachment A: February 2019 Level 3 Estimate
- b) Attachment B: Updated April 2020 Level 5 Estimate
- c) Attachment C: Omāroro Reservoir Business Case

What are we trying to achieve?

16. Our drinking water aims are to provide the residents of the Wellington Metropolitan with a safe, reliable and resilient system. Currently we provide a high standard of safe water across our network, however some parts of the network are not as reliable or resilient as we would want.
17. The Wellington CBD and Eastern suburbs are particularly vulnerable because of a lack of storage and being so far away from our water sources. After the 2016 Kaikoura Earthquake, the Crown and Local Government Company invested in an above ground emergency drinking water system to provide 20 litres per person per day within 1000 metres of people’s homes. This system is complete other than the establishment of contracts for temporary desalination plants in the Eastern suburbs and the completion of the Omāroro Reservoir. The Omāroro Reservoir is intended to

provide drinking water storage for use before the CIR assets are up and running. It needs to be built to a high standard of earthquake resilience so that the water in it survives the earthquake and is then available to distribute to residents.

18. Currently we have less than 24 hours' storage of safe drinking water for the CBD. As the economic hub of the region we classify all the key elements of the drinking water network serving the CBD as critical and therefore should offer the highest possible standard. The minimum recognised standard for storage is 48 hours. This means residents can continue to receive safe water if there was a "burst" or disruption in the supply network to the city. This was demonstrated in 2017 when a water main burst in Featherston Street which almost cut off water to the city.
19. As our City grows we need more storage to support this growth. The Wellington City CBD is proposed as one of the key areas to support growth. We do however need to acknowledge that we use a lot of water per head of population across the Wellington Region and we have a high percentage of network losses. As our City continues to grow we need to be thinking about how to manage demand.
20. In summary, the Omāroro Reservoir and associated pipework is a critical asset in the drinking water system supporting Wellington City providing the following key benefits:
 - a) Delivers the minimum 48 hours storage for the CBD area to ensure businesses and customers can keep receiving safe drinking water if there is an interruption to supply;
 - b) Provides additional capacity to meet the forecast growth in the city for the next 10 - 20 years (depending on the speed of growth and demand); and
 - c) Is designed to survive an earthquake. It is a key asset in providing drinking water for Wellington CBD and the hospital until the network supply can be re-established.

What is the Scope of the Work?

21. The scope of the work is a 35 million litre capacity reservoir with associated reservoir pipe work, which connects it into the supply network from the treatment plants and into the distribution network to provide safe water to the residents, businesses and stakeholders of the city.
22. After significant optioneering, a knoll within the Town Belt above the Prince of Wales Park was chosen as the site. During community consultation for the project, as required under the RMA and the Town Belt Act, the visual impact of the proposed reservoir was considered significant so it was agreed to cut the reservoir into the side of the knoll and cover it to mitigate the Reservoir's visual impact. Resource consents and consents under the Town Belt Act were obtained in 2018.
23. The size of the reservoir and who should fund it has been debated for many years. After the City began to grow in 2017, the size issue was resolved because more storage was forecast to be needed than Omāroro alone so the size of the reservoir was maximised for the location. Early in the reservoir's life, it was proposed that the reservoir was co-funded between the WCC and the Wellington Hospital because of the benefits to the hospital both operationally and following a major earthquake.
24. After the 2016 Kaikoura Earthquake, a level of service standard was agreed for the provision of a resilient drinking water system as follows:
 - a) Residents, businesses and critical customers (e.g. the Hospital) would provide up to 7 days storage on site to serve their immediate post-earthquake drinking water needs; and
 - b) The local authority would provide safe drinking water after day 8 and in increasing quantities as the network was improved.
25. This level of service agreement once and for all resolved that the reservoir would be funded 100% by WCC ratepayers.

What is the budget for the work?

26. In February 2019, Wellington Water provided the level 3 estimate for the works (Attachment B). The reservoir and pipe works were estimated to have a cost range of \$55.8M to \$58.2M.
27. There was much publicity about the increase in cost from previous estimates, but these can largely be attributed to having to provide rough order of costs prior to the scope and consenting of the project being understood, and not being fully updated for real annual cost escalation. Early in the project life cycle, the reservoir was estimated using parametric values, assuming it was above ground and half of it was to be paid by the Wellington Hospital. This has led to the large difference between today's estimate and those of the past.
28. As a consequence of these issues we have developed a cost estimating manual and a basis for communicating the accuracy of estimates for our owners. We are now all aware of the risks of putting estimates into annual plans before activities have been investigated, scoped and consented.
29. At its February 2019 meeting, the Council approved the budgets for the project and the project entered the construction phase in two parts:
 - a) The associated pipe works supporting the reservoir, which are over 65% complete now, valued at \$15M; and
 - b) The Omāroro Reservoir itself which was to be tendered later because the pipe works needed to be substantially complete to ease disruption to traffic and the community.
30. The budget for the works will need to be adjusted for the ongoing impacts of Covid-19. The Wallace Street project was suspended for 5 weeks and we will need to vary the contract for the Contractor's holding costs. The ongoing impact of Covid-19 on the way contractors work will need more time to reassess and it is better to deal with these issues later than now.

A change in Seismic Standard has occurred

31. The estimate provided to Council in February 2019 was based on a preliminary design. Once the estimate was approved by the Council, we proceeded to the detailed design.
32. Between the preliminary design and the detailed design and after considering recent seismic events across New Zealand, the method for assessing forces on underground forces was updated. The new method required detailed modelling whereas the old method used simplified procedures. Research found the use of simplified procedures did not fully capture all the possible loads on buried structures. Once the modelling for these loads for Omāroro was completed in March 2019, the impact of this change was understood. This new standard required a re-design of the reservoir's foundations adding an estimated \$8.5M of cost.
33. This emerging risk was not foreseen at the time we went to Council in February 2019 although the standard had been changed before we completed the estimate. The reason the full extent of this oversight was not known was because the detailed modelling had not been completed. In hindsight, this risk should have been clearer and an allowance made for its cost made in the February 2019 estimate. When we were advised of the change to the standard in June 2019, it was our advice to Council that it should be adopted because we live in a seismically active area and the Omāroro Reservoir has very high criticality in our water supply system.
34. This large increase in cost was unsettling for everyone. After significant discussion with WCC, it was agreed we should proceed to tender to find out the real cost of the project. In addition, the WCC commissioned an independent review of the investment proposal. Bruce Wattie was appointed to do this.

35. We tendered the reservoir using the most up-to-date procurement methods – competitive Early Contractor Involvement. This method allows for contractors innovations and to transfer the risk to the contractor in a way which generates best value for money. HEB contractors have succeeded in winning the tender and the Board approved naming HEB as the preferred tenderer. The tender was valid until the end of March 2020.
36. The tender process was successful with innovations received on the roof design and headroom between the water level and roof, the shear key design and the way the earth was backfilled against the reservoir.
37. The HEB tender was submitted on the basis of being given approval by the end of March 2020, and this reflected the tender process we ran which closed in November 2019. Its's normal to hold costs for about 3 months. We are currently outside this date but have mitigated some of HEB's concerns by agreeing to minor works orders to carry out some additional geotechnical work and prepare the necessary management plans (\$315K). [REDACTED]
38. The updated estimate for the project is \$68.1M (see Attachment C).
39. This updated estimate has higher levels of confidence because the work has now been tendered so we know the price and therefore a number of risks have been mitigated. The most significant remaining risk is ground conditions varying from what we have assumed and the possibility of finding contamination.
40. There still remains uncertainty over the ongoing effects of the Covid-19 rules around Health and Safety. These are yet to play out fully and are very difficult to estimate now. We believe the best way to manage this risk is to assess the impacts in say, six months' time and discuss this with the Council at a programme level because the impacts will be felt across all projects.

Is the project a worthwhile investment?

41. It is our opinion that the Omāroro Reservoir and associated pipework is a very worthwhile investment for the region. It is a critical element of infrastructure supporting the Wellington CBD and thus a priority for the region.
42. We have tendered the work using the most up-to-date procurement methods and have a final design and price which we believe is best value for money for this site.
43. Bruce Wattie has indicated verbally and in his draft summary that the Omāroro Reservoir is a good investment.
44. On this basis we propose we seek WCC approval for the revised estimate for the work.

Council to consider Omāroro in light of Covid-19

45. The Covid-19 virus and mitigation plans has had a significant impact on the financial position of WCC due to reduced non-rate based revenues and a lower than budgeted rate strike for the 20/21 financial year. The Council advises us that some of this impact can be offset by increased borrowing, but decisions on critical infrastructure need to be taken at the whole of Council level.
46. The Council is currently considering the priority for this project in amongst all its other priorities, but has informed us they can consider our Omāroro request once the draft 20/21 Annual Plan has been agreed. This was done on the 30th April 2020.
47. One other issue is the proposed fiscal stimulus proposal by Government in the form of supporting Local Government in the funding of what they term “shovel ready” projects. The Omāroro project qualifies as being “shovel ready” as it is currently the number 2 project in the Region’s priority list. Our reading of the supporting material supplied by Government is that there is no reason to delay the Omāroro Reservoir pending advice

from Government as they are committed to assist projects in construction as well as those ready for construction. The rationale is that Covid-19 has affected the overall financial position of Council not particularly this project. We would also argue the project should proceed straight away as it will provide immediate fiscal stimulus to the region.

Are there other factors to consider?

48. We tendered the Omāroro project in a window of time after the Government decisions to reduce investment in roading were made and about the time the main structures on Transmission Gully were being completed. We hoped contractors would be interested in this job because while it is a significant regional project, it is not significant on a national basis. As it turns out, the decision was a good one because once the tender was closed, the Government announced a major infrastructure package in January 2020.

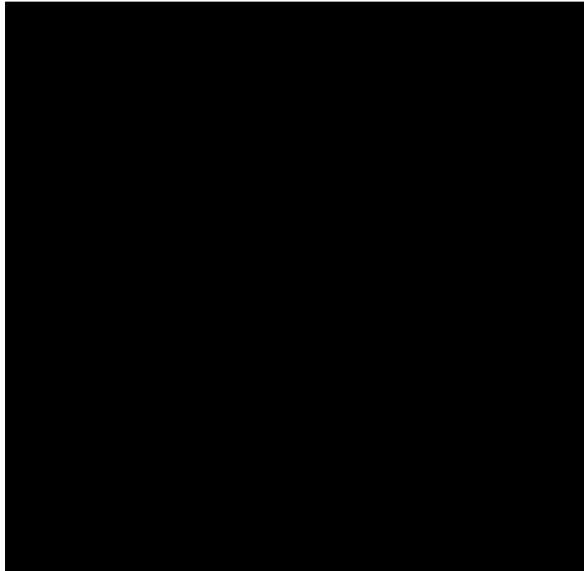
[REDACTED]

51. The advantage of proceeding with this project now is that we have a nationally competent structures contractor staying in the region who could well build “shovel ready” projects.

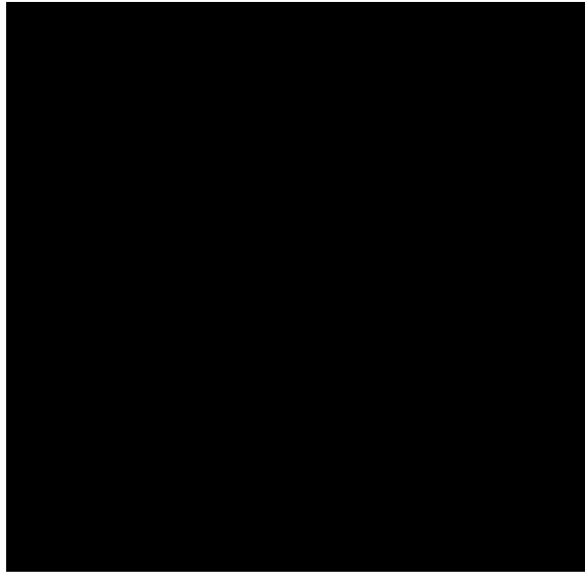
The Omāroro Project is a Significant Regional Project

52. The three waters networks have become much more visible to both Central Government and Local Government in the aftermath of the Havelock North drinking water failure. The Government has legislation in the House for a national drinking water regulator.
53. Proceeding with this project now confirms WCC's commitment to providing the very best services to our residents, and provides confidence in the future of Wellington. It will be a foundation project for the new Council to approve and show Wellingtonians critical infrastructure is at the heart of the Council's core role. It will also demonstrate Council's desire to reduce the impact of the Covid-19 virus lockdown by providing fiscal stimulus which will flow through to sub-contractors and suppliers to the project.

Attachment A:
February 2019 Level 3 Estimate



Attachment B
Updated April 2020 Level 5 Estimate



Attachment C
Omāroro Reservoir Business Case

See attached document

Commercial in confidence

Business Case – Omāroro Reservoir

A resilient water supply for Wellington CBD:
providing for growth, operational resilience and natural
disaster readiness





Document Information

	Position
Document ID	UXCVRCAQA2-583569028-101
Document Owner	Stephen Wright
Issue Date	4 May 2020
File Name	N/A

Document History

Version	Issue Date	Changes
V1.0	18 Dec 19	Stephen Wright - First Draft
V1.1	19 Dec 19	Fraser Clark, Laurence Edwards – Revised Draft
V3.0	9 Mar 20	Fraser Clark – Revised Draft
V4.0	10 Mar 20	Fraser Clark – incorporating changes following independent review
V5.0	30 May 20	Fraser Clark – incorporating WWL Board and WCC independent review feedback
FINAL	4 May 20	Stephen Wright – accepted all marked up changes and updated finances

Document Review

Role	Name	Review Status
GM Network Development and Delivery	Tonia Haskell	19 Dec 19 – Review Revised Draft
GM Network Development and Delivery	Tonia Haskell	10 Mar 20 – Review Revised Draft
GM Network Development and Delivery	Tonia Haskell	4 May 20 – Review Final Version

Document Sign-off

Role	Name	Sign-off Date
CEO	Colin Crampton	4 May 2020



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Executive Summary

An adequate supply of safe drinking water to the CBD is fundamental to the City and Region

The day-to-day functioning, prosperity, and growth aspirations of Wellington City rely on an adequate supply of safe and healthy drinking water. This is especially the case for the City's CBD – the primary driver of the City and the region's economic activity and also home to around 70,000 people (a number that essentially doubles during business hours).

Existing supplies are insufficient to meet operational and seismic resilience requirements, and to accommodate forecast growth

The existing water storage infrastructure that serves the CBD and critical infrastructure such as Wellington Regional Hospital is insufficient to meet operational and seismic resilience requirements, and has no capacity to meet the significant increase in population growth that is now expected. A loss of supply to the CBD during normal operation, or the unavailability of water after an earthquake would have a significant economic impact and create a public health and sanitation risk for all of the CBD's residents, workers and visitors.

The new Omāroro Reservoir addresses all of these shortcomings

Omāroro is a new drinking water storage reservoir proposed and planned to be built in Prince of Wales Park, Mt Cook to service the CBD and surrounding area.

- **Reducing the risk of a loss of supply due to asset failures or water quality events:** Omāroro addresses a significant deficit in safe drinking water storage within the CBD and provides additional operational flexibility, significantly reducing the level of risk for loss of supply due to unforeseen circumstances. A pipe failure in 2017 highlighted that such events are possible and the potential risk and impact will increase as growth progresses. A loss of supply, or the significant water use restrictions to prevent it would have an estimated economic impact of \$70- \$100 million per day.
- **Enabling expected growth:** Omāroro will support forecast population growth of up to 46,000 people (68%) by 2066 while being sized to reflect anticipated improvements in water use efficiency and demand management over that period.
- **Essential to the CBD and Hospital's earthquake response and recovery:** Omāroro forms a key part of the planned response to delivering an emergency water supply to the Wellington CBD and critical customers such as the Wellington Regional Hospital in the event of a major earthquake or other natural disaster. A resilient water supply for the CBD is a 'must have' to ensure the City can respond to and recover from a major quake. A significant earthquake capable of causing damage to infrastructure and the environment is likely within the lifetime of the reservoir.

The project is aligned with national and regional lifelines strategies

The construction of the Omāroro reservoir is a key investment within the Wellington region's Lifeline Utilities Project – the investment programme across all lifeline utilities to prepare the City and the region to respond to and recover from a major earthquake. That Project was established



under the direction of central government out of their concern for the potential impact of such an earthquake on both the region and the nation.

The project is part of Wellington City's Resilience Strategy and Long Term Plan

The project is also part of our Water Supply Resilience Recommended Programme of works. This programme was endorsed by all of our client councils, including Wellington City Council (WCC). Relevant aspects of the programme, including this reservoir, were then included in the WCC 2018-2028 Long Term Plan. The project is also consistent with WCC's Wellington Resilience Strategy – an overarching strategy covering a comprehensive resilience approach for infrastructure, people and places across the City, and with our obligations under the Civil Defence and Emergency Management Act 2002.

New water storage of this size and in this location is the best option available

Omāroro is the best option for delivering on the service outcomes. Alternative approaches such as demand management, distributed customer storage and tankering will not deliver the required outcomes, and other reservoir locations are more expensive and do not offer the same network configuration benefits.

Experienced, Tier 1 contractors have had input to the design, and tendered competitively

The project is currently in the procurement phase and a preferred contractor has been identified. The proposed costs are now understood to a high level of confidence and with well-defined contingencies. The costs have been developed using a Competitive Early Contractor Engagement methodology that has captured the benefit of the contractors' knowledge and experience into the constructability of the design while retaining a competitive process. The preferred contractor's proposed solution has been reviewed by a suitably qualified, third-party geotechnical engineer and the risk assessment has been reviewed by an independent procurement specialist.

The remaining project risks have been identified, allocated and costed The remaining project risks have been reviewed by both Wellington Water and the preferred contractor, and agreement reached on the share of risk that will be owned by each party in delivering the project. The most material of these risks relates to the ground conditions [REDACTED] and discussions are underway to see if this risk can be fully costed into the contract prior to commencement.

The project is managed by an experienced team using robust project management processes

The delivery of the project will be managed by an experienced team of project professionals with demonstrated experience in similar, large infrastructure projects with access to the full range of technical specialists. Recognised project management methodologies are being applied and appropriate governance is in place. The experienced team (including the preferred supplier), robust project management approach and well defined contracts should be expected to result in effective project delivery. Regular progress reporting will be provided to WCC.

Costs are \$9.9m over budget but can be accommodated within the overall capital programme

The total cost estimate and budget request is \$68.1 million, including the contingency allowance and delays in awarding the contract. This is an increase of \$9.9 million on the existing approved budget. The project can be accommodated within the existing budget allowance provided by



WCC in the 2018-2028 Long Term Plan for reservoir upgrades and renewals at this increased cost. This can be achieved by adjusting the timing of the project and its associated inlet and outlet pipeline and by a one-year delay of the planned Bell Road reservoir replacement project (Moe-i-te-Rā Reservoir). These timing changes can be readily managed through their being incorporated into the existing project management arrangements.

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The Wellington CBD requires additional water storage

Wellington City's drinking water is supplied from Greater Wellington Regional Council's (GWRC) water treatment and bulk transfer pipeline network. The water is delivered to Wellington City Council's (WCC) primary water storage reservoirs, from where it is typically distributed to connected consumers by gravity. The water distribution occurs by 'water supply zone' (WSZ) with each WSZ being fed by one or more reservoirs.

The Wellington Low Level Zone (Zone) encompasses most of the Wellington CBD. Under normal operating conditions, the Zone is supplied from the Waterloo Water Treatment Plant via three existing reservoirs with a total capacity of 34.3 Megalitres (ML)¹.

The Zone's requirements are different from most other WSZs in the city as it serves both a residential population and all of the commercial and business activity of the CBD. The Zone's resident population of around 70,000 essentially doubles during business hours². The Zone also contains critical services such as Wellington Regional Hospital (and other hospitals) and is at the heart of central government activities.

The potential need for additional water storage for the Zone was first identified in the early 2000s and has been considered in a range of strategic assessments. The timeline of the project setting out these milestones is provided as Appendix 1.

The conclusion of these strategic reviews has been that the Zone has limited ability to continue to supply water through a major bulk water supply outage, and has insufficient water storage to meet resilience requirements following a major earthquake or other natural disaster.

Significant population growth is also expected within the CBD, further increasing the risk of loss of supply following events that disrupt supply to the Zone, and increasing the post-event resilience requirements.

Additional water storage is required to address these shortfalls, with the implications of each factor described in more detail below.

¹ Macalister Park, built in 1992 at 20 ML, Carmichael built in 1960 at 7.8 ML, and Aramoana, built in 2005 at 5.5 ML. A megalitre is one million litres, or one thousand cubic metres.

² The most recent published data, from 2013, had 127,000 workers employed in Wellington City. This number will have increased since then in line with GDP growth, and the majority will be employed in the CBD: <https://profile.idnz.co.nz/wellington/workers>.



Enabling growth

Capacity assessments show that the Zone has storage constraints that will restrict growth, reduce the level of service below specified requirements, and increase the risk of a loss of supply event.

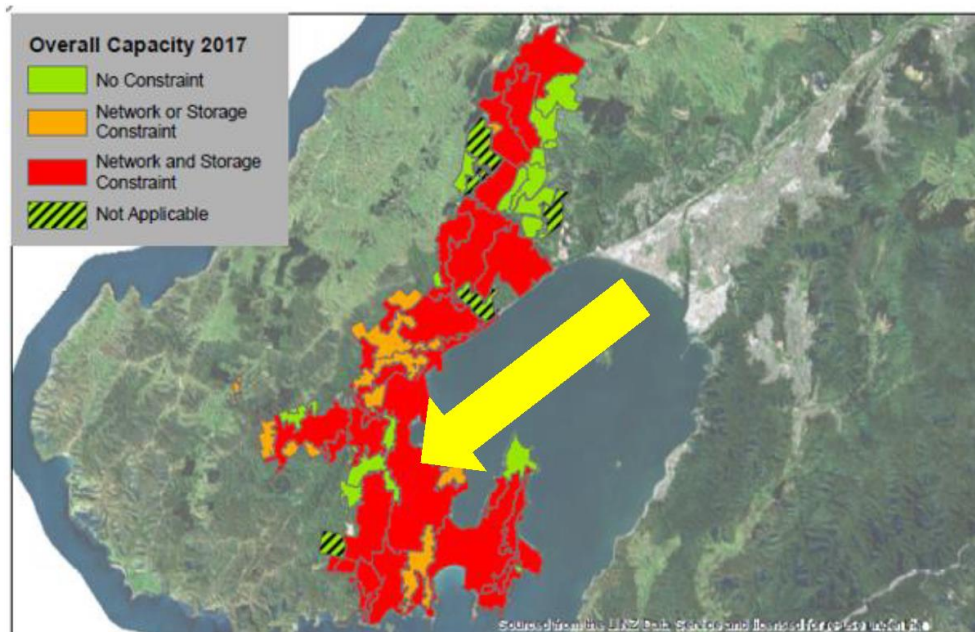


Figure 1: Wellington City’s water storage and supply capacity by zone as at 2017³. The Zone (as identified by the yellow arrow) has both storage and network constraints (red colour)⁴.

For modelling and design purposes we consider both Statistics NZ’s growth forecasts and independent projections. These are all based on census data and the analysis of other economic and social data⁵. We typically apply the Statistics NZ “high growth” forecast as this is an accepted and prudent approach for considering long-term infrastructure needs.

Current forecasts predict a significant increase in the population residing in the Zone, increasing the extent of the water storage constraints:

Design parameter - growth	
Population served	67,576 people in 2016

³ From NPS-UDC Three Waters Infrastructure Enabled Development Capacity, May 2019
⁴ Orange indicates one or other of storage or network constraints and green indicates no constraints. The extent of the constraints across the City means that investment is required to enable the expected growth to occur without compromising the required levels of service.
⁵ The forecasts do not consider constraints in the three waters networks.



	113,000 people in 2066
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If this growth proceeds in the absence of an increase in drinking water storage it will increase the risk of reduced levels of service in the CBD (i.e. increased use of water use restrictions), increase the risk of a total loss of supply (see operational resilience, below) and make it more difficult to recover from an earthquake or other natural disaster.

Supporting operational resilience

General, day-to-day operational resilience is the ability to respond to system events and fluctuations in demand while still achieving the required Levels of Service. Fundamental to this is delivering continuity of supply – ensuring the city’s businesses, residents and critical customers have water when they need it. Without water the city’s activity would come to a stop and the risks to public health start to become significant.

Resilience to asset failures and outages

The vulnerability of the current system was highlighted in early 2017, following a major pipeline break in Featherston Street in the CBD. The failure resulted in the loss of supply to the existing Zone reservoirs for a number of hours, causing them to drop to alarming levels even with urgent requests to the public to conserve water. Additional storage increases the time available to respond these sorts of unexpected events.

Resilience to water quality issues

System events are not limited to asset failures. A key component of our ‘multi-barrier’ approach to preventing contaminated water from reaching our customers is our ability to isolate the bulk water system (that supplies the reservoirs) from the reticulation system (the reservoir and downstream network). This also enables the reticulated water to receive additional chemical treatment to further reduce the public health risk.

Network constraints resulting from how Wellington City has developed and its water supply has been adapted over time mean a direct supply to the Zone is required in addition to the existing storage to ensure that demand can be met. This significantly reduces time available and operational ability to respond to potential contamination due to unforeseen issues at the treatment plants or from the bulk supply network itself. Additional water storage increases the buffer available to address any water quality issues.

Enabling repairs and maintenance

The structure and composition of Wellington’s water supply networks, particularly the storage reservoirs, presents challenges with maintenance and renewals. For example, the reservoir at McAlister Park has never been taken off-line for service and cleaning in it’s nearly 30-years of service. It has not been possible to do this due to the risk of loss of supply to customers as a result of the very limited storage capacity of the remaining reservoirs. As the years pass without cleaning or maintenance, the likelihood of needed maintenance and repair will increase.

The inability to clean and maintain the reservoirs is linked to the system’s resilience to water quality issues. It heightens the risk of contamination through making it more difficult to isolate a reservoir and deal with any contamination before it reaches the public supply lines.



Additional storage enables the isolation of the Carmichael and McAlister Park reservoirs for routine maintenance and cleaning to be appropriately programmed.

Enabling connectivity and redundancy

We can reduce the system's vulnerability by increasing the level of redundancy. The introduction of additional storage and the associated connections into the network can increase the flexibility of both the bulk water and water reticulation systems.

This additional connectivity and redundancy, and the ability to enable repairs and maintenance and provide resilience to outages and water quality issues can only be provided through bulk water storage in the network. Alternative approaches such as demand management, distributed customer water storage and bulk water tankering either cannot provide this flexibility or would do so at a significantly higher cost⁶.

Design requirements and deficits

The normal water storage requirements for a Zone are assessed based on two different scenarios. One of these relates to potential "within the day" operational requirements – meeting the maximum daily demand requirement (including firefighting). The other relates to providing a buffer to enable issues in the bulk water system to be addressed. For the latter, we assume two days of storage at average daily demand is required to allow sufficient time for operational crews to respond to a supply disruption or contamination event.

The specific design requirements and the associated key design parameters for the storage are set out in Appendix 2. The Zone is showing a deficit against all of the design levels that will get worse as the expected population growth progresses. The Zone's deficit against each of the operational resilience requirements is set out in the table below:

Year	Storage deficit (ML)		
	Maximum within day demand	Bulk water outage buffer - baseline	Bulk water outage buffer – with water conservation
2016	8.4	30.0	30.0
2066	35.6	73.3	28.5

i.e. in 2016, there was a 8.4 ML shortfall against the peak, 'within day' demand and a 30 ML shortfall against the target buffer for managing through a bulk water system outage. By 2066 these deficits are expected to increase to 35.6 ML and 73.3 ML respectively (or 28.5 ML for the bulk water outage, if significant demand management reductions have been achieved).

The table indicates that, for this Zone:

⁶ These options are discussed further under 'Alternative options' in the 'Economic case' section of this paper.



- the system would struggle today to meet the maximum within day peak demand scenario without some form of emergency demand management and will need to double the available storage to meet forecast growth⁷
- **there is only just over one day of storage available to meet average demand in the event of a bulk water outage.** This will reduce down to around 16 hours with forecast growth
- the storage volume would still need to nearly double to achieve the required storage buffer even in the event of highly successful customer water conservation initiatives.

Event likelihood

As part of understanding the necessity for investment it is useful to consider the likelihood of an operational resilience event occurring and the identified deficits being tested.

As noted above, in 2017 a pipeline failure in Featherston Street nearly resulted in the available storage being exhausted. As the age of these pipeline assets increases the likelihood of similar failures is likely to increase. The chance of similar events occurring in the future is **likely**.⁸ As growth progresses, the time available to respond to any such event will also reduce.

Within the last year there were at least three instances of reservoirs in the region where contamination was detected, requiring operational management. The chance of a similar event occurring in the future is **likely**.

Providing natural disaster resilience

Wellington City is vulnerable to the risk of a prolonged water supply interruption in the event of a major earthquake or other natural disaster (i.e. landslides, tsunami) as a result of the region's geography and water source locations.

The Wellington metropolitan region has three main water supply plants and the water network supplying Wellington City has long bulk water pipelines that cross known earthquake fault lines multiple times. A major earthquake could severely damage the pipelines and potentially also the water treatment plants,⁹ resulting in a shortage of water. Widespread damage of the reticulation network (the pipes that take water from reservoirs to taps) could also take many weeks to repair.

Based on current estimates, it could be more than 100 days before normal supply can be restored to the Zone. Storage within the Zone plays an important role in meeting the health

⁷ Measured usage indicates actual peak demand within the Zone can greatly exceed the calculated 'within day' demand. In this case the storage deficit, and risk of loss of supply would be even greater.

⁸ An increased focus on asset condition assessment will help to mitigate the risk of such events but the total length and extent of assets and ground conditions means that unexpected failures may still occur.

⁹ A range of seismic resilience-related improvements are being made to the treatment plants and bulk supply pipelines under GWRC's 2018-2028 Long Term Plan that are intended to help mitigate these risks. The risks to the reticulation network can only be mitigated through a long term programme of asset renewals.



needs of residents in such an event. The stored water, supplemented by water supplied from back-up sources, helps residents to meet their basic needs.

The Wellington Water Supply Resilience Recommended Programme

The need for additional water storage for Wellington's CBD and the Regional Hospital was stressed through Wellington Water's strategic case¹ for improving the resilience of water supply in the Wellington Region. That case identified the key problem statements (in summary) as:

- the network crosses numerous fault lines
- the network itself (including its water storage) is fragile and susceptible to breakage
- the linear configuration of the network provides no redundancy
- there will be disruption to other utility providers following an earthquake.

The case was endorsed by all of Wellington Water's client councils in 2017 and funding was provided to enable the development of a programme business case to deliver a more resilient drinking water supply for the region.

The business case was developed with input from a range of relevant parties, including the client councils, critical customers, other utilities and the civil defence and emergency sector, and is summarised in 'Towards 80-30-80', our Water Supply Resilience Recommended Programme (Programme)^A.

Design requirements

The Programme sets out Wellington Water's long term goal for the levels of service that we will provide in a major event: that 80% of residents will have 80% of their water needs within 30 days after the event. This is a 50-year vision, recognising the significant level of investment that is required to achieve this level of service. In the near term (i.e. until the 50 years of investment is completed the system is expected to provide the following levels of service):

Days 0-7	Emergency	People and business are self-sufficient, relying on their own stored water
Days 8-30	Survival & Stability	Residents collect up to 20 litres per person per day (sufficient for basic comforts) from distribution points
From Day 30	Restoration & Recovery	Provision of near normal reticulated water services commences for some locations and progressively expands

These standards mean that the design requirement for resilient storage reservoirs is that they should provide 20-litres per person per day from day 8 following a major event. In addition to the storage required to provide for residents, stored water is required to support Wellington Regional Hospital^B and other critical users (see Appendix 2). The Zone currently has a deficit of storage when assessed against this design requirement.



Design requirements – natural disaster storage	
Water storage	29 ML deficit as at 2016

New storage reservoirs are designed to meet the relevant New Zealand codes and standards (see Appendix 2).

Event likelihood

GeoNet, part of GNS, publish forecast probabilities for large earthquake events in the Central New Zealand region. This region includes Wellington City. At the time of writing the forecast possibilities are:¹⁰

Within the next	Earthquake magnitude range	Chance of occurrence	Best estimate
Year	M7.8 or greater	0.3% to 3%	1% (very unlikely)
	M7.0 or greater	2% to 14%	6% (very unlikely)
Decade	M7.8 or greater	2% to 20%	7% (very unlikely)
	M7.0 or greater	10% to 60%	30% (unlikely)

GNS has also calculated the average return period (or frequency) for large earthquakes in the region, based on the evidence of previous events. These return periods are based upon the intensity of ground shaking using the Modified Mercalli Intensity (MMI) scale - a globally recognised reference for assessing and comparing the impact of earthquakes. The calculated average return periods are:

MMI Level	Average return period	Best estimate
MMI 7	~ 30 years (3%)	Difficulty experienced in standing. (As the 2016 Kaikoura earthquake was felt in Wellington)
MMI 8	~ 120 years (0.8%)	Severe shaking felt.
MMI 9	~ 400 years (0.3%)	Violent shaking felt. (2011 Canterbury earthquake)

¹⁰ Source: https://www.geonet.org.nz/earthquake/forecast/central_nz as at 6 March 2020. The data is referenced to a start date of 15 November 2017.



MMI 10	~ 1350 years (0.08%)	Extreme shaking felt
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This indicates that a significant earthquake (i.e. at least MMI 7) can be expected within the lifetime of the new water storage infrastructure.

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The benefits of additional storage

The previous section has highlighted that the Zone has insufficient water storage to meet operational and earthquake (and other natural hazard resilience) and that the situation will become worse as growth progresses. The benefit of the additional storage is that it will mitigate the potential impact of any operational or seismic event.

The additional storage will also directly enable growth, but the associated benefits are essentially the same as the core benefits – it will reduce the need for water restrictions or prevent a loss of supply in an operational event, or will ensure that there is sufficient water available to meet the basic needs of the increased population in a major seismic event. An estimate of these benefits is set out below.

Impact of a short-term (hours to days) loss of supply

The total loss of water supply to the Zone, including the CBD and the hospitals, even of short duration, will have a significant impact on the function of the City. The supply of water is fundamental to public health and sanitation, and a lack of water would necessarily result in all activity having to cease. At best, some homes and businesses would still be able to function on a limited basis using stored water. Re-starting water supply after an outage would also have impacts as the system re-fills.

One way to estimate the potential scale of the impact is to consider the GDP generated by the City (on the basis that a total loss of supply would impact on all economic activity). The most recent GDP figure for Wellington City is \$26,169 million¹¹ or about \$72 million a day. Around 75% of this GDP is generated in the CBD.

As an alternative reference, modelling by Wellington Electricity, the electricity lines business that services the City, suggests that the loss of electricity supply to the metropolitan region of Wellington would have an impact of at least \$110 million per day¹².

Wellington Water has not undertaken any modelling or analysis to calculate the economic impacts of a loss of supply to its customers. This has typically been done by other lifeline utilities such as electricity to meet regulatory requirements, but has not been required for the water sector.

In the absence of any water-specific data, **an order-of-magnitude impact level of around \$70-\$100 million per day for a total loss of water supply to the CBD** appears to be a reasonable estimate. Significant water use restrictions to try and avoid a total loss of supply would also be expected to have an impact in the tens of millions of dollars.

¹¹ To end-December 2019, taken from:

<https://ecoprofile.infometrics.co.nz/wellington%20City/QuarterlyEconomicMonitor/Gdp>.

¹² This is just the impact of the initial loss of supply, which is expected to be around 60% of total supply requirements. The number has been taken from their 'Earthquake Readiness' Business Case, dated 5 December 2017 (<https://www.welectricity.co.nz/disclosures/earthquake-readiness/>).



Impact of a longer-term (days to months) loss of supply

The consequences of the loss of water supply to the Zone and CBD from a major seismic event cannot be looked at in isolation. Such an event would impact across all of the lifeline utilities. The Wellington Lifelines' Project (Lifelines Project) concluded that an earthquake seriously affecting the Wellington region (including Wellington City) does not just impact the region's economy, but has an even greater negative economic impact on the nation. The major risk for New Zealand is that a large event will badly affect the Wellington CBD, which generates 77% of total GDP for Wellington City, 48% of total GDP for the Wellington Region, and 8% of national GDP.¹³

The Lifelines Project estimated that a magnitude 7.5 (M7.5) earthquake on the Wellington Fault Line would result in a loss to New Zealand's GDP over a 5-year period of approximately \$16 billion. This is just the economic cost and excluded recovery costs, infrastructure and building damage, and societal impacts.

If the full suite of preferred investment programmes (totalling \$3.6 billion) are implemented before the earthquake occurs, the expected economic loss over a 5-year period reduces to around \$10 billion (i.e. a \$6 billion reduction). That programme includes the Omāroro Reservoir as part of the 'Phase 1' initiatives to be completed in years 0-7. The programme will also provide the additional benefit of mitigating the impact of other possible seismic events or natural disasters.

The Omāroro Reservoir is as a "must do" investment within the proposed Lifelines Programme. If there is insufficient resilience in the water supply to the CBD it will not be possible for the City to respond and recover even if all the investment in areas such as transport and electricity is completed.

¹³ 'Wellington Lifelines Project – Protecting Wellington's Economy Through Accelerated Infrastructure Investment Programme Business Case', 4 October 2019: <https://wremo.nz/about-us/lifeline-utilities/>.



Strategic Case

Alignment to national and regional strategy

As noted above, the Wellington Lifelines Project has identified the targeted infrastructure investments required to mitigate the likely economic impact of a M7.5 earthquake on the Wellington Fault. The Lifelines Project noted that, due to Wellington's strategic importance, the proposed investment programme will also benefit the wider national economy.

The Lifelines Project is also consistent with central government strategy and objectives – it was jointly-funded by central government and was the last phase of a set of a central government-led initiatives to review the region's lifelines resilience in light of the impacts of the 2016 Kaikoura earthquake. The vulnerabilities identified in this review included:

- the high possibility that a significant seismic event would result in the Wellington Region being cut off from the rest of the country for a significant period of time (months)
- the large at-risk population
- the large number of critical central government processes that are completely or mainly reliant on functioning Wellington lifelines.¹⁴

The Lifelines Project has identified Omāroro as one of the region's and Wellington Water's prioritised investments for completion in Phase 1 of the initiative (years 0-7).

Meeting CDEM Act obligations

Local authorities and Lifeline Utilities' responsibilities in an emergency situation are outlined by the Civil Defence and Emergency Management Act 2002 (CDEMA). The CDEMA requires lifelines utilities to follow a systematic approach of reduction, readiness, response, and recovery (4 Rs) planning to discharge their responsibility of continuing to operate (albeit at a reduced level) following a major disruption.

The Omāroro Reservoir forms part of Wellington Water's response across the 4Rs – the new reservoir is designed to retain its integrity in a major earthquake (reduction) and forms part of our overall approach of moving from meeting basic needs (readiness and response) to the restoration of full services (recovery) after the event.

Alignment to Wellington Water strategy

The need for additional water storage for Wellington's CBD and the Regional Hospital was stressed through Wellington Water's strategic case for improving the resilience of water supply in the Wellington Region (as discussed in the earlier 'Natural disaster resilience' section).

¹⁴ From Appendix C of the Lifelines Project's business case.



The resulting Programme identifies that, in the absence of investment, Wellington CBD could be without safe drinking water for more than 100 days after a major earthquake. The ‘New Initiatives’ identified to address this issue include a new water reservoir to serve the CBD.

Alignment to WCC strategy and plans

The need for new water storage is also reflected in WCC’s strategies and plans. WCC’s current 10-Year Plan^C makes resilience and the environment a priority. The Plan notes that the Council has an obligation as kaitiaki (guardians) of the city to make its infrastructure more resilient. For water supply this includes adding storage capacity and making network improvements to support population growth and enhance the city’s overall resilience.

The Plan’s Statement of Service Provision includes the objective of increasing the security of drinking water and notes that a reliable, resilient and adequate supply of clean and safe water is critical for the health, wellbeing and prosperity of all residents. Omāroro is identified as a key project, with the objective of significantly reducing the time to restore water supply to the central city and Wellington Regional Hospital after a major event.

WCC’s Wellington Resilience Strategy^D includes actions to ensure emergency water supply for Wellington Regional Hospital after an earthquake (action #26) and to invest in water resilience and awareness (#27). The latter action is proposed to be the scaling up of the “Towards 80-30-80” Programme.

Alignment with Wellington Water service goals

The provision of a new reservoir for Wellington CBD aligns with the following Wellington Water strategic service goals.

	<p>We plan to meet future growth and manage demand Provision for future growth in the CBD – as discussed in ‘Growth’, above.</p>
	<p>We provide three water networks that are resilient to shocks and stresses The new storage will be designed to survive a significant shake. Together with our above ground emergency water system, we will be able to provide basic living requirements until the overall network returns to service. It will also provide critical customers, including the Wellington Regional Hospital, with safe water post-event.</p>
	<p>We provide safe and healthy drinking water Sufficient storage is provided in the system for safety and operational resilience.</p>



Economic Case

Omāroro was added to the WCC 2018-2028 Long Term Plan in response to Wellington Water's 'Towards 80-30-80' Programme, which identified a shortfall in the supply of water to meet demand following a major event. While the 80-30-80 programme focuses on resilience against a natural and significant disaster, as noted earlier in this document, there is a notable shortfall in the supply of water to meet current needs, growth requirements, and the general operational resilience required of a well-functioning infrastructure network.

Reservoir storage capacity

The storage provides seismic and operational storage, including capacity to support firefighting, manage emergencies, meet diurnal demands, reduce supply risk in a contamination event or major outage, and meet the demands of future growth.

All reservoirs, including the new reservoir are assumed to be 70% full at the time of an earthquake event for the purposes of calculating the resilience storage requirements, reflecting normal fluctuations in operating levels and the typical location of reservoir inlet pipework.

As a result of the various analyses and reports completed to date, Wellington Water's Three Waters Decision Making Committee (Committee) confirmed that a volume of 35 ML, as initially proposed, is appropriate^{E,F}. Omāroro enables:

- peak day demand to be met for at least 30 years of projected population growth. Demand management initiatives within this timeframe would enable additional growth to be facilitated
- operational water safety and plant outage resilience with 50 years of projected population growth with reasonable levels of demand management¹⁵ in place
- emergency safe drinking water supply post-seismic event for the Zone and its critical customers including Wellington Regional Hospital.

Alternative options

Demand Management

Water demand management is a combination of hard infrastructure, including network leakage reduction and other soft, community-focused programmes, including education and other initiatives intended to drive down the use of water by individuals, households and commercial and other extra-ordinary users.

Experience from across the global water sector shows that an intensified demand management programme is unlikely to deliver the required results within the required timeframe needed to

¹⁵ Customer demand management is one of the key components of our Sustainable Water Supply strategic programme. The programme is seeking an initial 10% reduction in gross per capita water demand within the two LTP periods commencing in 2021.



grow capacity or provide general or disaster resilience. As noted above, it is expected that a demand management programme will also still be required, both as part of the Sustainable Water Supply initiative and to ultimately enable the 50 year growth projection with this investment.

Distributed water storage

A key element of our water supply resilience Programme is that our customers should store sufficient water to meet their basic needs for the first seven days after an event. However, only a modest proportion of customers have stored sufficient water, the quantity stored for seismic resilience is not sufficient to meet normal demand, and the stored water is not integrated into the network so that it can be used directly in the place of the normal supply. The cost of ensuring that all customers had sufficient water and were integrated into the network would significantly exceed the cost of the bulk water storage reservoir.

Similarly, sizing Omāroro for the Zone's operational and growth requirements means that it also has sufficient storage to meet the seismic resilience requirements for the Zone and for Wellington Regional Hospital. Requiring the Hospital to invest in dedicated water storage would not reduce the required size for the Omāroro reservoir.

Alternative site options

Omāroro has been selected as the preferred site based on accessibility, size, location and height from sea-level (in order to facilitate gravity supply).

The choice of this location, and the assessment of criteria against alternatives, has been considered through technical assessments and confirmed through the Resource Consent process.

In 2011 an options assessment was undertaken to identify potential options and sites for a 35 ML reservoir serving the Zone. Ten potential sites were long-listed for consideration. Of these, four sites - Prince of Wales Park, Torquay Terrace, Government House and Carmichael Reservoir - were shortlisted based on an assessment of their constructability. A multi-criteria analysis (MCA) was then conducted on the short-listed sites, including criteria such as ability to integrate into the existing network, ability to satisfy environmental and other considerations under the RMA, public acceptability, and construction practicality.

The Prince of Wales (Omāroro) site was preferred because of its location within the drinking water distribution network, relatively low excavation requirements compared to alternative locations, comparatively favorable environmental setting, and estimated cost relative to the other locations. A component of the costs for Omāroro includes the need for the reservoir to be buried to meet the planning requirements associated with development within the Town Belt.

As an operational resilience measure, the introduction and integration of Omāroro reservoir enables direct supply to each of the Zone's reservoirs, and for isolation of each so that unforeseen contamination identified through testing or other means can be appropriately contained and managed. It will also allow supply of water to the Zone without the need to maintain the direct connection from the bulk water supply.

The options assessment and preferred site selection is detailed in the MWH Report – Proposed CBD Reservoir Options, 24 March 2011⁶.



A further review of site options and evaluations to date was completed and accepted as part of the Notice of Requirement (NoR) consent process. The independent hearing commissioners for NoR accepted that the Prince of Wales Park site was the best option, and endorsed the options evaluation in their decision to recommend that consent be granted:

'Considering the importance of the water supply network and the size of the investment in a large reservoir, it is prudent to go through a rigorous examination of potential sites. From our reading of the evidence we consider that the various reports, and Mr Spargo's peer review, lead us to the conclusion that the analysis of alternative sites has been robust, fit for purpose and has applied sensitivity testing to challenge the outcomes of an analysis of alternatives.'

Comparison to the 'status quo' (i.e. the 'do nothing' option)

In the absence of a new water storage reservoir in the Zone, the CBD will continue to be supplied by the three existing reservoirs and the direct connection. The consequences of this, including the compounding impact of growth, are set out earlier in this document.

Comparison to the likely counterfactual

System outage or water quality issue

In the event of an outage or water quality issue in the existing system that was expected to result in the demand exceeding the water available from the existing reservoirs, the most likely approach would be to call for customers to reduce demand and to make arrangement for bulk water to be delivered to the reservoirs using trucks with water tanks.

Achieving customer demand reductions relies on the effectiveness of the communication and the willingness and ability of customers to respond. A relevant comparison is the response of customers to the request to reduce water demand to avoid wastewater discharges into the harbour following a wastewater pipe failure in late-December 2019. The observed reduction was less than 3% (and within typical day-to-day demand variability).

The effectiveness of tankering will be dependent upon the extent of customer demand reductions and the duration of the outage. Meeting average daily demand would require 3,200 tanker loads, or more than 130 loads per hour. This is not possible to achieve in practice, even if enough trucks were available. It would also be dependent upon the availability of bulk water supplies, which may also be influenced by the nature of the outage event (i.e. is bulk water available? If so, what is the nearest available filling point?). The tankering that is practicable will also likely cost hundreds of thousands of dollars per day.¹⁶

In summary then, the counterfactual would see customers having to make significant reductions in water demand that will constrain their ability to maintain normal functions. The economic

¹⁶ The 24/7 tankering of wastewater sludge due to the failure of the sludge transport pipeline at Mt Albert is costing around \$2.5 million per month. The number of truck movements is lower than would be required for the drinking water scenario. The tankering of drinking water also requires special precautions to ensure water safety.



impact could be of a similar order of magnitude to that for a total loss of supply, especially when the costs associated with attempting to maintain supply are included.

Following a major earthquake

The 'Towards 80-30-80' Programme is based upon customers storing sufficient water to meet their basic survival needs for the first 7 days after a major earthquake, with the bulk water reservoirs and back-up water sources becoming available to meet basic needs from day 8.

There is an existing seismic storage deficit of 29 ML (see the section 'Providing natural disaster resilience' above). This means that there is insufficient water available to supply the hospital and to meet the basic needs of residents unless additional water can be supplied into the Zone. The risk to public health will increase significantly and the chance of a successful recovery will be significantly reduced. The ability to supply additional water into the Zone will be influenced by the state of the available infrastructure, especially the roading network and the bulk water supply network.

It appears highly unlikely that the counterfactual will enable the required response and recovery outcomes to be achieved, increasing the likelihood that the worst case scenario identified in the Lifelines Resilience Project will be realised (\$16 billion impact versus \$10 billion impact).

COMMERCIAL IN CONFIDENCE



Commercial Case

The detailed design of the reservoir was completed in July 2019. The proposal at the time was to go to the market with a lowest conforming price methodology. However, feedback from the contractor market was that, due to contractor workloads and their current state of risk aversion, we were less likely to secure a competitive price using this approach. The Omāroro project involves complex engineering and construction methodologies that increase the project design and construction risk and warrant an alternative procurement approach.

Wellington Water has applied a range of mitigations to ensure these risks are appropriately managed, most notably through adopting a Competitive Early Contractor Engagement (ECI) methodology. This methodology utilises the experience and knowledge of skilled contractors to challenge the constructability of the design and improve value by reducing estimated project costs, while also retaining the benefits of a competitive price for the work.

Stage 1 – approach to recognised Tier 1 contractors

A “Statement of Interest and Ability” was sought from contractors in September 2019. Five Tier One contractors responded: Brian Perry Contractors, Downer, Fulton Hogan, HEB and McConnell Dowell. After a review of their submissions and interviews, Downer and HEB were selected to participate in the subsequent Value Engineering Process and submit Tenders.

Stage 2 – identify cost efficiencies through value engineering

The two selected contractors have worked with our design engineers and project team to thoroughly understand the requirements for the project and provide value engineering proposals¹⁷. The design has been modified as a result of the contractors’ inputs and then priced competitively. Both contractors also submitted alternative designs with the benefit of understanding the base design’s requirements and limitations.

Stage 3 - Award contract (competitive tender with independent review)

Five offers were received from the two tenderers. Each contractor submitted a tender for a conforming design, one provided a tender with further value-engineering opportunities, and both provided alternative design-build offers of their own.

Our evaluation of the offers included assessing both price-based and non-price attributes. The evaluation included a technical review of each of the five design proposals and the review of the contractors’ assessments and valuation of risk. The technical review included an independent analysis of each design by a suitably qualified, third-party geotechnical engineer, and the risk assessments were reviewed by an independent procurement specialist.

Once the technical reviews and risk assessment were complete, prices were viewed and a report produced detailing the reviews and assessment, and a preferred tender recommended. This

¹⁷ “Value engineering” involves a review of the proposed design to identify opportunities to achieve the same outcomes at lower cost, or to remove design elements that do not contribute to the desired outcomes.



process concluded in January 2020 with a recommendation that was endorsed by the Wellington Water Board in February 2020.

Robust project management to ensure effective delivery

In addition to an experienced, Tier 1 contractor, the project team also includes highly experienced project management staff within Wellington Water, supported by specialist engineering consultants. Wellington Water's project team have all successfully delivered infrastructure projects of this size and complexity in the past.

The project will also apply recognised project management disciplines and processes, including appropriate project governance.

The combination of the experienced team, a robust project management approach and well-structured and defined contracts is expected to result in effective project delivery. Regular progress reporting will be provided to WCC during the project.

COMMERCIAL IN CONFIDENCE



Financial Case

We are required to fund all capital projects within the annual budget allocated by each client council. Any changes to cost estimates require the programme for the delivery of projects to be adjusted so that overall costs remain within the total annual budget.

Residual risk and contingency

The project risks have been reviewed by both Wellington Water and the preferred contractor, and agreement reached on the share of risk that will be owned by each party in delivering the project. The risk share is defined by the contract and there is general agreement of this risk apportionment. The most significant risks that will remain with Wellington Water are:

- ground conditions, in particular variances in soil and rock properties, and contaminated material
- adverse weather
- availability of water for testing.

While ground investigations have been undertaken to inform the design, there is a risk that soil and rock conditions vary sufficiently that the design needs to change. The preferred contractor has now provided the range of conditions within which there would be no change to the design. This has provided clarity to define the value of risk Wellington Water owns and has been used to inform the probability value.

The preferred contractor has been asked to provide a price to take ownership of the ground condition risk but will not be able to provide a response until late March 2020.

The contingency that needs to be budgeted in addition to the contracted value is [REDACTED]. The delay in awarding the contract in March has been to add a further \$1.0 million. The total project costs including the contingency and delayed contract award is \$68.1 million. This is \$9.9 million (17%) greater than the budget approved by WCC on 18 March 2019.¹⁸

The increase relative to the approved budget is due to changes to the design approach to reflect a recent update in international best practice for seismic geotechnical engineering. This change in approach resulted in larger structural elements than in the design used in setting the budget.

Programme Change

To ensure we remain within the annual budget allocated by WCC we propose to re-programme the proposed works as detailed in the table below.

¹⁸ The March 2019 budget was, in turn, an increase on the budget originally included in the 2018 LTP. The March 2019 budget increase reflected a combination of scope omissions and cost inflation. As the project has progressed the level of uncertainty in the costs has reduced. The new costs reflect a fixed price contractual agreement with known contingencies. A full history of the project costs is provided as Appendix 3.



Financial Year	Total	18/19	19/20	20/21	21/22	22/23	23/24
Council Approved Change (March 2019)							
Wallace Street Pipelines	15.00	7.00	8.00				
Omaroro Reservoir	43.20	1.40	8.00	14.30	14.30	5.20	
Total	58.20	8.40	16.00	14.30	14.30	5.20	0.00
Current Estimate							
Wallace Street Pipelines	15.00	1.10	12.40	1.50			
Omaroro Reservoir	53.10	1.30	0.80	12.90	25.30	12.80	
Total	68.10	2.40	13.20	14.40	25.30	12.80	0.00
Approved Budget vs Current Estimate	9.90	-6.00	-2.80	0.10	11.00	7.60	0.00

The impact of the programme change and increased cost in FY22/23 will be accommodated by delaying the Moe-i-te-Rā reservoir (Bell Rd Reservoir replacement) project by approximately twelve months. Construction of this project will be scheduled to commence in July 2023 after Omāroro has been completed.

The impact of a delay in Moe-i-te-Rā reservoir is considered minor, with that project currently under review. The benefits from the construction of Omāroro reservoir are considered to be greater than the costs and consequence of the delay in constructing Moe-i-te-Rā reservoir.

Current project financial status

As at March 2020, construction of Omāroro’s inlet and outlet pipelines, together with other nearby three waters pipelines (total project cost \$15.0M) is estimated at 65% complete and \$5.0M has been invested in the development, consenting and detailed design of the reservoir itself.



References

The following documents have been referred to in the Business Case text:

- A. Strategy - Towards 80-30-80 Water Supply Resilience Recommended Programme (2017)
- B. Memo - Capacity Infrastructure Services to Wellington City Council (22 November 2010)
- C. WCC Long-term Plan, 2018-2028 (<http://ltp2018.publications.wellington.govt.nz/>)
- D. WCC 'Wellington Resilience Strategy', 2017 (<https://wellington.govt.nz/about-wellington/wellington-resilience-strategy>)
- E. Three Waters Decision Making Committee Paper – Hospital Prince of Wales Reservoir Capacity (21 July 2016)
- F. Three Waters Decision Making Committee Minutes – Hospital Prince of Wales Reservoir Capacity (21 July 2016)
- G. Report – Proposed CBD Reservoir Options Assessment (24 March 2011)
- H. Notice of Requirement and resource consent application:
<https://www.wellingtonwater.co.nz/publication-library/pow-wcc-notice-of-requirement/>
<https://www.wellingtonwater.co.nz/publication-library/pow-rcapplication-gwrc/>
<https://www.wellingtonwater.co.nz/publication-library/prince-of-wales-reservoir-omaroro-reservoir/>
- I. Strategy – Water Supply Resilience Strategic Case (2015)
<https://www.wellingtonwater.co.nz/dmsdocument/125>



Appendix 1 – Project timeline

- 1970's A new reservoir is proposed near Prince of Wales Park in the Town Belt as a replacement for a reservoir that was approaching the end of its useful life.
- 1988 Brickell Moss carried out a Scheme Option Assessment for Wellington Low Level Zone Water Storage assessing various site options for one or more reservoirs at 20ML capacity. As a consequence of this assessment WCC constructed a 20ML reservoir at Macalister Park in the town belt.
- 2002 Population increase, identification of the need for emergency storage for the Wellington Regional Hospital in Newtown, and GWRC's desire for additional buffer storage for effective operation of the bulk water supply led WCC to further investigation of sites for a 35 ML reservoir. Technical investigations were initially focused on four sites on the Town Belt including above Government House, Chest Hospital, Alexandra Park and the existing Bell Road reservoir.
- 2004 SKM is engaged to undertake preliminary investigations to determine a suitable site for the reservoir. Their report identifies the Prince of Wales Park as the preferred option, noting that a volume of 35 ML could be accommodated on the site. At that time it was proposed that the project be jointly funded by WCC, GWRC and Capital and Coast District Health Board (CCDHB), with the total additional storage required potentially up to 56ML^A.
- 2010 GWRC advised that additional storage was no longer needed to provide operational capacity within the network as the result of an upgrade of the pumps at the Waterloo treatment plant. CCDHB advised they would no longer commit to funding the reservoir. The required reservoir volume was reviewed and 35ML was agreed with WCC as an appropriate storage volume for the site.
- 2011 MWH commissioned by Capacity Infrastructure Services (Capacity) to review all available site options and identify the preferred location for the 35 ML reservoir. Their report confirmed Prince of Wales Park as the preferred site location following completion of a thorough short listing and multi-criteria analysis (MCA) approach.
- 2012 Capacity issued a Request for Tender for preliminary design of the reservoir on behalf of WCC and awarded the work to CH2M Beca Ltd. The preliminary design report was completed in May 2013 and the project was subsequently put on hold.
- 2014 Wellington Water established and took over responsibility for developing and delivering the reservoir from Capacity.
- 2015 Wellington Water completed the Water Supply Resilience Strategic Case. This case sets out the strategic context for investing in improvement of the water supply network. A new reservoir at Prince of Wales Park was identified as a critical project in the



subsequent programme business case 'Towards 80-30-80'. The reservoir project resumed in 2016 to progress to detailed design and construction stages.

- 2016 A further review of the required volume of the reservoir was carried out. Wellington Water's 3 Waters Decision Making Committee¹⁹ confirms the proposal aligns with Wellington Water's strategic outcomes and required levels of service and that the reservoir's capacity should be 35 ML.
- 2017 A licence under the Town Belt Act is secured to allow the project to be constructed in the Wellington Town Belt. A Notice of Requirement (NoR) was lodged in September 2017^H. As part of this consenting process, a thorough review of all available alternative options was carried out that concludes the reservoir is the most cost effective and best practicable option available (supporting the similar recommendation from MWH's 2011 report).
- 2018 An independent panel of commissioners recommends the NoR be approved and supports all of the proposed consent conditions.
- 2018 WCC confirms community support for the project through consultation on the 2018-2028 Long Term Plan (LTP) and includes Omāroro Reservoir in the capital works programme.
- 2019 March – WCC agree to an increase in funding following a review of the cost estimate to accommodate significant construction price increases.
- November - Wellington Water commences procurement process for design and build of the Omāroro Reservoir.
- 2020 February - Wellington Water recommendation of preferred contractor to Board.

¹⁹ This committee is an internal Wellington Water committee that considers and affirms the technical approach to all major investments. Its membership is primarily Chief Advisors and relevant subject matter experts.



Appendix 2 – Design and performance requirements

Level of service requirements

Design Criteria	Design Standard	Reference
Design Life	100 years	Regional Standard for Water Services 2019, Clause 6.2.1
Seismic resilience	Designed to Importance Level 4: Ultimate Limit State (ULS): 1:2,500 year ARI Serviceability Limit State (SLS): 1:1,000 year ARI	AS/NZS 1170.0:2002
Storage capacity	To achieve* the maximum of: a. 2 x Average Daily Demand (ADD) b. Peak Day Demand (PDD) + 20% + Fire Flow allowance as per SNZ PAS 4509 c. The seismic requirements (see below) *actual volume required to include appropriate consideration of site constraints, projected population growth and assumed future demand management.	Regional Standard for Water Services 2019, Clause 6.2.8.2 Table 6.2. Note: the 2016 RSWS was updated to these criteria based on independent review of international best practice.
	Resilience requirements for in-zone supply following a significant seismic event: a. Ability to meet basic Level of Service requirements: <ul style="list-style-type: none"> Supply of 20 litres per person per day to all residents in-zone over days 8 to 30 following a significant seismic event (i.e. the survival and stability state). Supply of allocated water quantities to Tier 1, 2 and 3 Critical Customers (including schools, aged care facilities, medical centres, lifeline utilities etc.). b. Ability to service economic Level of Service requirements: <ul style="list-style-type: none"> Supply of water into the reticulation network for fault finding and repair before Day 31 after a major seismic event. c. Ability to supply economic Level of Service requirements: <ul style="list-style-type: none"> 80% of normal demand supplied to 80% of users (businesses and residents) beginning on Day 31 after a major seismic event. 	Towards 80-30-80
Water supply pressure	Reservoir to provide gravity flow to supply zones (also enables continuity of supply in the absence of power supply ³)	-



Key design parameters

Design Parameter	Design Values
Population served	67,576 people in 2016 113,000 people in 2066
Average Daily Demand (ADD)	32 ML per day in 2016
Assumed demand management (for comparison)	Per capita consumption decreases at 1% per year for first 50 years then remains constant
Seismic storage required for critical customers	29 ML is the total requirement needed for critical customers through emergency and survival and stability states.
Assumed total water storage level at time of seismic event	70%
Water supply pressure	The reservoir needs to be located with a 'top water level' of around 92 metres to maintain a system pressure consistent with the existing reservoirs in the Zone.

COMMERCIAL IN CONFIDENCE

Commercial in confidence

Appendix 3 – Project cost history

The table below sets out how the expected cost of the project has changed over time, and the reasons for the changes.

TIME	COST LEVEL	COST ESTIMATE	BASIS OF ESTIMATE	PURPOSE	ACTIVITY
Oct 2012	3	\$17.9M	“Parametric” pricing based on; <ul style="list-style-type: none"> • Similar reservoirs 	Comparison of options as part of option selection process	<ul style="list-style-type: none"> • Establishes baseline for LTP
May 2017	3	\$29.5M	Update of 2012 price plus; <ul style="list-style-type: none"> • Overheads • Construction price increase • Consultants project management cost • Contingency to reflect only Level 3 estimate • Scope change of removing surplus excavated material off site 	Inform 80-30-80	<ul style="list-style-type: none"> • Used to inform 80-30-80 strategy • Consultation commenced with local community • Value presented to Audit NZ
Apr 2018	3	\$40.9M	Update of 2017 pricing plus; <ul style="list-style-type: none"> • Consultants design cost • Construction price increase 	Inform 2018-28 LTP	<ul style="list-style-type: none"> • Update to inform LTP
June 2018	3	\$49.2M	Schedule of quantities from preliminary design plus; <ul style="list-style-type: none"> • Construction price rates • Construction methodology • Legal and comms • Risk and management fee 	Level 3 estimate prior to consenting phase	<ul style="list-style-type: none"> • Value used to inform 2019 annual plan
Dec 2018	3	\$58.2M	Update of June 2018 price plus; <ul style="list-style-type: none"> • Construction price increase • Tender price for Wallace Street 	Update of June 2018 value	<ul style="list-style-type: none"> • Value provided as WCC update to June 2018 briefing following unexpected increase in Wallace Street pipeline tender values
Jun	4	\$66.7M	Update of June 2018 price plus;	Level 4 estimate at completion	<ul style="list-style-type: none"> • Completion of detailed design phase



2019			<ul style="list-style-type: none"> Increase structural elements in response to change in methodology for assessing soil loading on buried structures 	of detailed design	
Feb 2020	Tender	\$66.9M	Tender price plus contingency	Establish project budget for tender negotiations	<ul style="list-style-type: none"> Completion of tender phase
Apr 2020	Pre Award	\$68.1M	Post tender negotiations plus impact of delayed start	Agreed project cost estimate including contingency	<ul style="list-style-type: none"> Completion of procurement phase

COMMERCIAL IN CONFIDENCE

DANGEROUS AND INSANITARY BUILDINGS POLICY REVIEW

Purpose

1. This report asks the Strategy and Policy Committee to note that a review of the Dangerous and Insanitary Buildings policy has been completed. It asks the committee to agree to consult with the community on the proposed changes to the policy.

Summary

2. The Building Act 2004 (the Act) requires territorial authorities to have a Dangerous and Insanitary Buildings policy and to review that policy every five years. The purpose of the policy is to set out the approach the Council will take in the performance of its functions under the Act in relation to any dangerous, insanitary or affected buildings it identifies.
3. Officers have reviewed this Policy and consider that the policy is operating well and is fit for purpose. Some legislative and technical clarifications are needed but no change in policy direction is proposed.
4. The Act requires that the special consultative procedure (section 83 of the Local Government Act 2002) be used for changes to the Dangerous and Insanitary Buildings policy. A draft Statement of Proposal (attachment 1) outlines proposed amendments to the policy.

Recommendation/s

That the Strategy and Policy Committee:

1. Receive the information.
2. Note that a review of the Dangerous and Insanitary Buildings policy has been completed by officers.
3. Agree to consult with the public on the Dangerous and Insanitary Buildings policy as attached to this report: the draft Statement of Proposal (attachment 1)

Background

5. The Act requires territorial authorities to have a Dangerous and Insanitary Buildings policy and to review that policy every five years.
6. The purpose of the policy is to set out the approach the Council will take in the performance of its functions under the Act in relation to any dangerous, insanitary building, or affected buildings, it identifies.

7. In 2017, in response to the Canterbury earthquakes, a separate section of the Act came into effect for the management of earthquake-prone buildings. Sub-part 6A of the Act outlines special provisions for the management of earthquake prone buildings and are therefore outside the scope of the Dangerous and Insanitary Building provisions of the Act and of this policy. At the Council, work on Earthquake prone buildings is managed through a separate programme of work and is managed by the Resilience team.
8. The Act sets out the definition (Section 121) of a dangerous building as likely to cause injury or death or damage to other property in the ordinary course of events (excluding the occurrence of an earthquake), for example if a building is likely to collapse. The definition also refers to buildings where, in the event of a fire, injury or death to any persons in the building or to persons on other property is considered likely.
9. An insanitary building (Section 123) refers to situations where a building is offensive, or likely to be injurious to health, due to how it is situated or constructed or because it is in a state of disrepair. An insanitary building also includes situations where there are moisture penetration problems, lack of potable water or sanitary facilities.

Review of the policy

10. Council issues Notices to Fix to property owners for a wide variety of problems (for example unconsented building work or dumping of waste) and issued approximately 1,100 over the last five years often following complaints received. However this policy deals with those few cases that meet the high threshold of being dangerous or insanitary as set out in the Act.
11. Since the last policy update in December 2014, Dangerous or Insanitary Notices (WCC 094) have been issued in relation to 14 properties. Working with building owners on these matters can be complex and time consuming and progress often takes place over several stages. In the majority of cases however, the dangerous notice is complied with in a reasonable timeframe.
12. The reasons for the notices issued included fire damage, fire safety, slips undermining dwellings, sewage leaks, dangerous walls and insecure cladding. A senior technical compliance officer makes a determination on whether to issue a notice and confers with structural engineers or appropriate Fire and Emergency New Zealand staff as necessary. None of the buildings over the last five years were heritage listed buildings.
13. As at 2 March 2020, there were four buildings with issued notices requiring work to reduce or remove the danger. Outstanding notices are actively managed and officers work with building owners unless this poses undue safety risks to Council staff. Failure to comply with a notice can lead to prosecution or an infringement notice being served.
14. Legislative requirements around notices requiring building work and notices restricting entry to the building are different under the Act. In the case of restricting entry, the Act only allows for two notices to be issued if there is a need to restrict entry to the building, for a maximum of 30 days each. The legislation assumes that 60 days should be sufficient to reduce or remove the danger or resolve the insanitary problem to the stage where there is no longer a need to restrict entry. In practice, 60 days may be insufficient to rectify the situation to that point.

15. Often building owners complete work over multiple stages and it would be preferable for notices to reflect progress and make clear Council's work and entry requirements at each stage. If Council gets the opportunity to provide feedback on the Act's provisions, officers consider that limiting notices to two only, can be problematic if entry still needs to be restricted after 60 days. At all times, public safety is prioritised and hoardings and notices are erected to ensure there is awareness of the situation. Officers are proposing that the policy include a reference that Council can only re-issue these notices once.

Use of warrant powers

16. The Act allows for the Chief Executive of a territorial authority to apply for a warrant under section 129 where there is immediate danger to the safety of people. In the last five years two warrants were applied for and one has been used (1 Allenby Terrace). The Allenby Terrace case involved a number of fires, resulting in significant fire damage. A warrant was obtained for the Council to complete the necessary demolition to make the site safe and also clean-up asbestos-laden material present throughout the site.
17. Ultimately the High Court, at the Council's request, ordered the sale of the Allenby Terrace property to recover the significant Council costs for demolition, unpaid rates and legal costs. The legal process for cost recovery took over four years.
18. A warrant was also obtained under section 129 for 55-67 Molesworth Street. Earthquake damage (from 13 November 2016 earthquake) had resulted in immediate and imminent risk of injury to people in the vicinity due to severe damage to a central column in the external frame and visible shear failures at the base. The damage worsened with aftershocks. There were a number of affected buildings in the vicinity where access had to be limited until demolition was completed.

Other issues considered

Earthquake prone buildings

19. There are currently over 500 buildings in the Wellington city area on the national Earthquake Prone Building Register. Building owners generally have 15 years to complete strengthening work or 7.5 years if they are priority buildings. If work is not completed within those timeframes, the Act provides a number of pathways for progressing the situation.
20. Officers are of the view that it is unlikely that earthquake prone buildings will meet the threshold for "dangerous" or "insanitary" as a result of their notices lapsing. However, if they do become dangerous or insanitary, during or after their notice period, the policy is fit for purpose to apply to that type of situation.

Heritage buildings

21. None of the buildings issued with notices in the last five years were heritage buildings. While the primary function of this policy is to ensure public safety and make a situation safe, an important secondary consideration is the preservation of heritage values. In practice that would mean involvement of the heritage team, and/or Heritage New Zealand in the development of a scheme of works to rectify the building.

22. Since the last review of this policy, the Historic Places Act 1993 has been replaced by the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPT 2014). The new heritage legislation resulted in some changes to archaeological authority provisions, but the only consequential change for the Dangerous and Insanitary policy is to update the legislative reference and associated terminology.
23. The current policy refers to the key documents (Council's Heritage Policy 2010, District Plan and Resource Management Act 1991) that guide the protection of heritage values. Officers consider that the policy could be improved by including a reference to the District Plan Schedules, where the heritage buildings are actually described.

Climate change

24. An increasing number of extreme weather events and sea level rise may result in more buildings becoming dangerous or insanitary over time. At this stage, the policy is considered fit for purpose to apply on a case by case basis and provides the necessary compliance tools to resolve those issues. The proposed policy includes a new contextual reference that climate change may be one of many causal factors for dangerous and insanitary buildings.

Next Actions

25. If the Strategy and Policy Committee agrees, the next step will be the release of a Statement of Proposal inviting submissions on the policy.

Attachments

Attachment 1. [Attachment 1 - Draft Statement of Proposal](#) [↓](#)

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Author	Kate Hodgetts, Senior Policy Advisor
Authoriser	Stephen McArthur, Director, Strategy and Governance Baz Kaufman, Manager Strategy

SUPPORTING INFORMATION

Engagement and Consultation

Officers have discussed the existing policy on heritage buildings with officials from Heritage New Zealand. Officials are comfortable that the wording reflects the intent of the Building Act 2004 and HNZPT 2014 from a heritage perspective.

The Ministry of Business, Innovation and Employment has not updated its policy guidance for Territorial Authorities on this area of the Building Act 2004.

Treaty of Waitangi considerations

Te Tiriti o Waitangi has been considered in the review of this policy. Except in emergencies where demolition constitutes emergency works (RMA Section 330 and 330A), resource consents are required for demolition work. Standard resource consent processes require appropriate consultation with mana whenua. Protection of archaeological sites, in the case of demolition, is afforded through Heritage New Zealand's legislative powers under the HNZPT 2014.

Financial implications

Continuation of the existing policy settings will not result in additional cost to Council. Remedying dangerous or insanitary buildings is paid for by property owners, or the costs recovered through the Courts if Council completes work.

Policy and legislative implications

There are no new policy or legislative implications as a result of this review.

Risks / legal

This policy review presents no new risks to be considered.

Climate Change impact and considerations

If climate change impacts result in an increasing number of dangerous or insanitary buildings as a result of extreme weather events, the policy is considered fit for purpose to apply on a case by case basis.

Communications Plan

The Statement of Proposal will be made available through libraries and service centres and information will also be available on the Council website.

Health and Safety Impact considered

The Dangerous and Insanitary Buildings policy enables the protection of the health and safety of the general public where there are building-related risks. Notices are issued to property owners under the Building Act 2004 and require timely remediation of dangerous or insanitary building related risks.

Building Compliance and Consent staff working on these assessments are appropriately trained in health and safety systems and consult specialists (e.g. structural engineers, fire and emergency staff) as needed.

This policy review presents no new health and safety risks to be considered.

Attachment 1: Draft Statement of Proposal

Proposed amendments to the Dangerous and Insanitary Buildings policy

Summary of information in statement of proposal

The Building Act 2004 requires Wellington City Council to review its Dangerous and Insanitary Buildings policy every five years.

As part of that review, we propose to:

- Include a contextual reference to climate change;
- Update the policy to reflect new legislation (the Heritage New Zealand Pouhere Taonga Act 2014);
- Include a reference that where buildings are subject to Heritage Orders, heritage covenants and encumbrances, there may be other consents that are required (in addition to a resource consent);
- Clarify that heritage buildings are those outlined in District Plan Schedules; and
- Align the maximum number of Notices that Council will issue with the provisions in the Building Act 2004.

The proposed amended policy is attached.

Have your say

The Council invites your views on the proposed amendments to the Dangerous and Insanitary Buildings Policy. To have your say on the proposed amendments you can:

- make a submission online at wellington.govt.nz/have-your-say/consultations
- download a submission form from the website and email it to policy.submission@wellington.govt.nz
- fill in the submission form and send it to: Freepost 2199, Dangerous and Insanitary Buildings Policy Review, Policy Group, PO Box 2199, Wellington 6140
- drop a completed submission form to our service centre at 101 Wakefield Street.

You can get more copies online at wellington.govt.nz, the Service Centre, libraries, by emailing policy.submission@wellington.govt.nz or phoning 04 499 4444.

Written submissions open on Monday 1 June 2020 and close at 5pm on Friday 26 June 2020.

Next steps

Please submit your feedback by 5pm on Friday 26 June 2020.

A report on feedback will be considered by the Council's Strategy and Policy Committee in July, and the Council will make a final decision in July/August 2020.

DRAFT

Statement of Proposal

Proposed amendments to the Dangerous and Insanitary Buildings policy

Wellington City Council is reviewing its Dangerous and Insanitary Buildings policy which is a requirement of Section 131 of the Buildings Act 2004.

The changes proposed are largely technical in nature, rather than a change in policy direction.

Proposed change 1: Include a contextual reference to climate change

Reason for proposed change

There may be many possible reasons that result in a building becoming dangerous or insanitary. Where a building has been become dangerous or insanitary as a result of climate change or for any other reason, the policy will apply to ensure public safety and reduce or remove the danger. The following wording is proposed to be added in the Policy Objectives section.

There may be a wide range of reasons that cause a building to become dangerous or insanitary, including extreme weather events or sea level rise as a result of climate change.

Proposed change 2: Update legislative references

Reason for proposed change

The current policy references the Historic Places Act 1993. In 2014, new legislation came into effect, the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA 2014).

An associated terminology change is also proposed to refer to buildings "listed" under the HNZPTA 2014 rather than "registered".

Proposed change 3: Reference other consent requirements for Heritage buildings

Reason for proposed change

The current policy refers to the need for a Resource Consent if a heritage building is to be demolished (excluding in the case of emergency works).

Where buildings are subject to Heritage Orders, heritage covenants and encumbrances, there may be other consents that are required in that situation. The Council considers that a general statement alerting property owners that other entities (eg Heritage New Zealand) may have additional consent requirements is appropriate.

Proposed change 4: Clarify that heritage buildings are outlined in District Plan Schedules

For the avoidance of doubt, Council considers that the following additional wording is a useful cross reference to clarify the definition of heritage building:

Except in emergencies where demolition constitutes emergency works under sections 330 and 330A of the RMA, heritage buildings (outlined in District Plan Schedules) in Wellington City cannot be demolished without Resource Consent.

Proposed change 5: Number of Dangerous and Insanitary Notices that can be issued

Section 125 (1A) (e) of the Building Act 2004 differentiates Dangerous and Insanitary Notices that restrict entry to a building to particular persons or groups of persons for particular purposes. In those cases, Council is only able to issue one further notice, not multiple notices.

This proposed change aligns with the provisions in the Building Act 2004, Section 125 (1A)(e).

If dangerous or insanitary conditions continue, the Council will issue further notices requiring the owner to carry out the remedial work. Where a notice has been issued that restricts the type of entry to the building, only one further notice may be issued.

The proposed amended policy, the Dangerous and Insanitary Buildings policy is provided in this statement of proposal.

A copy of the current policy can be viewed online
<https://wellington.govt.nz/~media/your-council/plans-policies-and-bylaws/plans-and-policies/a-to-z/dangerinsanitarybldgs/files/dangerous-dec-2014.pdf?la=en>

**Proposed amended Dangerous and Insanitary Buildings
policy**

1. INTRODUCTION
2. POLICY OBJECTIVES
3. POLICY PRINCIPLES
4. PRIORITIES
5. HERITAGE BUILDINGS
6. GENERAL APPLICATION
7. RECORD KEEPING

DRAFT

1. INTRODUCTION

This policy was developed in response to requirements set out in the Building Act 2004 (BA04).

This policy has a tenure of five years from the adoption date before it must be reviewed.

This policy was developed using the special consultative procedure under the Local Government Act 2002 which included discussion with principal Council stakeholders, principal external stakeholders, adjacent territorial authorities, the Greater Wellington Regional Council, and the public.

Amendments to this policy must also be made in accordance with the special consultative procedure.

2. POLICY OBJECTIVES

The policy's objective is to discharge BA04 responsibilities for dangerous, insanitary and affected buildings. The policy indicates the Council's general approach and its priorities in performing its functions in relation to dangerous, insanitary and affected buildings. The policy also expressly deals with the performance of those functions in relation to buildings that are also heritage buildings.

It is the building owner's responsibility to ensure that buildings comply with the BA04 requirements. The Council can give no assurance or guarantee that any building is safe or sanitary at any time. There may be a wide range of reasons that cause a building to become dangerous or insanitary, including extreme weather events or sea level rise as a result of climate change.

The Council's responsibility is to ensure that when dangerous or insanitary conditions are found, the danger is reduced or removed and the owner takes action to prevent the building from remaining dangerous or insanitary. Where an owner fails to take steps to address the dangerous or insanitary state of a building, the Council may exercise its powers to take those steps on the owner's behalf and to seek to recover any resulting costs from the owner.

This policy applies to all buildings, even if a building consent, code compliance certificate or other form of certificate (such as a certificate of acceptance or a certificate for public use) has been issued previously. This is because, the current use and/or maintenance of the building, events affecting building performance (such as fire or natural hazard events), or the state of nearby buildings can all impact on the health and safety of building occupants.

3. POLICY PRINCIPLES

This policy has been developed considering the purpose and principles of the BAO4 which, amongst other things, seek to ensure that:

- people who use buildings can do so safely without endangering their health
- people who use a building can escape from the building if it is on fire.

4. PRIORITIES

The Council will respond promptly to a complaint about a building and will inspect the building to assess its dangerous or insanitary status. The assessment will determine whether immediate or urgent action is necessary, and confirm if the building is or is not dangerous or insanitary. If an immediate response is needed, Section 129 of the BAO4 gives the Council options to take action.

In general, 10 days is a minimum period for any danger to be removed or the insanitary conditions to be fixed – unless the situation requires immediate rectification.

5. HERITAGE BUILDINGS

The Council's Heritage Policy 2010, its District Plan and section 6 (f) of the Resource Management Act 1991 (RMA) reflect that historic heritage is a matter of national importance. Those documents collectively anticipate that work on a heritage building will be done in a manner that protects its heritage values.

Except in emergencies where demolition constitutes emergency works under sections 330 and 330A of the RMA, heritage buildings [\(outlined in District Plan Schedules\)](#) in Wellington City cannot be demolished without Resource Consent. These emergency works can be done where any sudden event means that a building is likely to cause loss of life, injury or serious property damage (for example, if a building wholly or partially collapses).

The BAO4 requires that if a building is [listed](#) under [the Heritage New Zealand Pouhere Taonga Act 2014 \(HNZPTA 2014\)](#), we send a copy of any notice issued under section 124 of the BAO4 to Heritage New Zealand (HNZ).

If demolition is proposed to a building that was constructed before 1900, the archaeological provisions of the [HNZPTA 2014](#), apply. Seek advice from the HNZ on any other permission required under the [HNZPTA 2014](#).

Deleted: registered

Deleted: the Historic Places Act 1993 (HPA)

Deleted: HPA

Deleted: HPA

[Additional consents may be required for work affecting buildings subject to Heritage Orders, and buildings that are subject to heritage covenants and encumbrances.](#)

The owner(s) of a heritage building that is identified as dangerous or insanitary should consult with Council's heritage advisors when developing a scheme of works to address the building's dangerous or insanitary aspects.

6. GENERAL APPLICATION

The Council's general approach is outlined below:

1. Detect

When a complaint is received or a Council officer observes a potentially dangerous or insanitary condition:

- the event is recorded on the Council's databases
- the building records are searched if time allows
- an inspection is arranged.

2. Assess

The building is assessed to determine:

- if there has been any illegal building work and/or an unauthorised change of use
- the standard of maintenance of specified systems for fire safety, water supply and other systems
- the state of repair of the building structure, services and passive fire protection
- the safety level offered by the building compared to any relevant "acceptable solution"¹.

A decision as to whether the building is dangerous or insanitary, and if dangerous or insanitary whether any other buildings should consequently be regarded as affected buildings, is made by an authorised Council officer who may obtain expert advice where appropriate and options to reduce or remove the danger or to fix the insanitary conditions are explored.

¹ An acceptable solution is a document issued by the Ministry of Business, Innovation and Employment as one way of compliance with the Building Code.

3. Act

When a building is determined to be dangerous and/or insanitary, the Council will contact the building owner or their agent to discuss remedial options. In some cases the urgency of the situation may not allow the Council to contact the building owner.

The building owner can agree to complete the work within a specified time, otherwise the Council can issue a notice to require the work be done to reduce or remove the danger or to fix the insanitary conditions.

If there is immediate danger to building users, the Council can arrange the work to remove the danger or fix the insanitary conditions and recover costs from the owner.

When a building (Building A) is determined to be dangerous, the Council will contact the owner/s of any adjacent, adjoining or nearby building (Building B) i.e. an 'affected building' as defined in section 121A of the BA04. The Council will provide the Building B owner with a copy of any notice issued for Building A under section 124(2)(c) or (d) of the BA04. The Council will also provide the Building B owner with information relating to the Council's monitoring and enforcement actions in relation to Building A. The Council may, at its discretion, exercise any of its powers under section 124(2)(a), (b) or (d) in relation to Building B.

4. Monitor

The building will be re-inspected to confirm the required actions have been completed or a written notice has been complied with.

5. Enforce

If dangerous or insanitary conditions continue, the Council will issue further notices requiring the owner to carry out the remedial work. Where a notice has been issued that restricts the type of entry to the building, only one further notice may be issued.

Continued failure to comply with a notice can lead to prosecution or an infringement notice being served.

Another option is the Council arranges the work and recovers the costs from the building owner, in accordance with the process set out in section 126 of the BA04.

Where immediate danger to the safety of people is likely, or immediate action is necessary to fix insanitary conditions, the Council's Chief Executive may exercise his or her discretion to issue a warrant under section 129 of the BA04.

7. RECORD KEEPING ON THE LIM

The following information will be recorded on the Land Information Memorandum (LIM) for a property:

- where dangerous and insanitary conditions, or affected building status, are confirmed but not resolved
- any outstanding written notice under section 124(2) of the BAO4, along with explanatory information of the BAO4's requirements.

Information is not included on a LIM when dangerous or insanitary conditions, and affected building status, have been resolved. Note information about those matters may still be made available in response to a request for information in accordance with the Local Government Official Information and Meetings Act 1987.

DRAFT

SAFER SPEEDS HEARING SUBCOMMITTEE TERMS OF REFERENCE

Purpose

1. This report asks the Strategy and Policy Committee to amend the terms of reference of the Safer Speeds Hearing Subcommittee so that the subcommittee can hear submissions from the public regarding speed limit change consultations beyond the ones proposed for central city.

Summary

2. At its 13 February 2020 meeting, the Strategy and Policy Committee resolved to appoint a subcommittee to hear submissions from members of the public with regards to the proposed central city safer speeds. The subcommittee would then report on the results of the submissions and make final recommendations to the Strategy and Policy Committee.
3. The subcommittee was appointed to ensure the efficient use of councillors' time and resources.
4. It is anticipated that more speed limit change consultations will occur in the next few months; and in order to maintain efficiency and efficacy it is recommended that the subcommittee be able to hear and make recommendations on submissions regarding speed limit change across the city rather than only on those proposed for the central city area.
5. The amended terms of reference will allow the Safer Speeds Hearing Subcommittee to hear submissions on the speed limit changes to all streets in Wellington City before reporting back to the Strategy and Policy Committee. The subcommittee's current terms of reference have been attached to this report.

Recommendation/s

That the Strategy and Policy Committee:

1. Receive the information
2. Agree to the amended delegated authority of the Safer Speeds Hearing Subcommittee in its terms of reference as follows:

Delegated authority: The subcommittee will have responsibility and authority to ascertain, accept and hear submissions on the review of all speed limit changes in Wellington City and make recommendations to the Strategy and Policy Committee.

Options

6. The Strategy and Policy Committee has two options:
- a) Agree to amend the subcommittee's terms of reference.
 - b) Decline to amend the subcommittee's terms of reference and hear all speed limit change submissions other than those related to the proposed central city speed limits as part of items on Strategy and Policy Committee agendas.

The latter option is not recommended as it might interfere with other business of the committee and also require organising Strategy and Policy Committee meetings at short notice.

Next Actions

7. Upon approval, Democracy Services will amend the current terms of reference to reflect this change, and liaise with officers to set the subcommittee meeting dates for future speed limit change hearings.

Attachments

Attachment 1. Safer Speeds Hearing Subcommittee terms of reference [↓](#) Page 274

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Authoriser	Jennifer Parker, Democracy Services Manager Stephen McArthur, Director, Strategy and Governance

SUPPORTING INFORMATION

Engagement and Consultation

A hearings subcommittee will allow for more efficient engagement with the public.

Treaty of Waitangi considerations

NA

Financial implications

NA

Policy and legislative implications

NA

Risks / legal

NA

Climate Change impact and considerations

NA

Communications Plan

NA

Health and Safety Impact considered

NA

4.4 Safer Speeds Hearing Subcommittee

Chair	Councillor Jenny Condie
Membership	Mayor Andy Foster Councillor Diane Calvert Councillor Laurie Foon Councillor Rebecca Matthews Councillor Iona Pannett Councillor Tamatha Paul Councillor Sean Rush Councillor Nicola Young
Parent Committee	Strategy and Policy Committee
Quorum	5
Frequency of meeting	As and when required

Area of focus

5. The Safer Speeds Hearing Subcommittee is responsible for receiving submissions from the public on the proposed 30 km/h speed limit for the city centre.

Delegations

6. The Safer Speeds Hearing Subcommittee has the responsibility for and authority to:
 - (a) Ascertain, accept and hear submissions on the review of the proposed central city safer speeds and make recommendations to the Strategy and Policy Committee.

Sunset Clause

7. The subcommittee will be discontinued once required hearings have been concluded and recommendations have been made back to the Strategy and Policy Committee.