

Aranui Trial Mobility Hub Concept of Operations

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Jacobs New Zealand Limited

Level 8, 1 Grey Street
Wellington, 6143
PO Box 10-283
Wellington 6011
New Zealand

T +64 4 473 4265
F +64 4 473 3369
www.jacobs.com

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Executive Summary

Introduction

Waka Kotahi New Zealand Transport Agency launched the Hoe ki angitū – Innovation Fund in 2022 to catalyse, enable and accelerate innovative transport projects by the private sector and non-government entities. This research report documents the development of a 'Concept of Operations' for a trial Mobility Hub. Jacobs New Zealand Ltd was funded \$299,800 to respond to the Innovation Fund's second challenge: Integrating low-emission first-and last-mile travel solutions into the public transport system.

The trial mobility hub is a single location providing access to a range of sustainable transport services which can include active, shared and public transport modes (see Figure A). Mobility Hubs can also support logistics (freight or mail), include attractive public space and provide transport wayfinding information.



Figure A: Mobility Hub concept (Source: CoMoUK 2020)

Project Vision and Goals

The vision for this project is to empower and facilitate local communities to shift travel towards active and sustainable transport options such as cycling and shared mobility modes. The Mobility Hub would create a foundation for an integrated network of Mobility Hubs within a local community.

In the longer-term, these Mobility Hubs could expand to locations across New Zealand. Each Mobility Hub would adapt to the local demographics and needs of users and could integrate with a Mobility as a Service (MaaS) ecosystem. The Concept of Operations will include a location, layout and operating model for the Mobility Hub that responds to the transport needs of the community, provides data for evaluation, and evidence and a model for wider roll-out.

Methodology

A literature review was undertaken to understand existing research, lessons learnt and the developments relevant to Mobility Hubs internationally and in New Zealand. International context was sourced from the UK, the Netherlands and Belgium. The trial site was selected by using multicriteria assessments to understand how possible communities and then sites align with project outcomes. The Mobility Hub components, design, and operating business model recommendations were informed by relevant good practice, local challenges, and lessons learnt from mobility service providers. Estimated costs and next steps were also identified.

Aranui was selected as the preferred community for the Mobility Hub. It had the best potential to meet project goals following a multicriteria assessment.

Aranui is in the eastern suburbs of Ōtautahi, Christchurch, approximately 6km from the central city. It is classed as a mid-low socio-economic area, has a diverse community, and has some transport disadvantage. Aranui is predominantly residential with pockets of retail and industrial land uses.

The Wainoni Community Centre was selected out of three possible locations in Aranui because it scored highest following another more detailed multicriteria assessment. It also had the highest community stakeholder support. The site is close to car parking, a local park, the library, and local shops. It is also a 5-minute scooter or cycle to a local kura community campus, supermarket and local bus stops.

The site lacks close walking access to local bus services, giving a greater need for accessible and active transport options to provide an alternative to private vehicles and support access to public transport. In addition, Christchurch City Council is progressing an adjacent Streets for Communities project to aid traffic calming.

The project team engaged with local government, community groups and mobility providers. Christchurch City Council and Environment Canterbury provided advice about local public transport and stakeholders in Aranui. The project team attended a meeting at the Aranui Community Trust Incorporated Society (ACTIS) Hub meeting in April to present on the project and receive feedback from members of the wider Aranui community, including local iwi.

In addition to e-bikes and e-scooters, the community also saw a need for non-electric bikes and scooters and adult tricycles to cater for different levels of mobility and demographics. This differed from the project team's assumptions that the community would only want facilities for shared e-bikes and e-scooters.

Following the selection of a preferred site, and consultation through the community meeting, typical Mobility Hub facilities were reviewed to confirm their suitability. The following facilities were chosen for the hub at Aranui: signage, scooter parking, repair stand for bikes and scooters, community pop-up event space and a public area with seating, water refill and rubbish bin. Bike parking and a parklet were not needed because these services were already available nearby. Direct access to public transport was not needed because there is no local bus route along the street. The hub is designed to cater for electric options and can support other types of bikes, such as tricycles, if they are present in the community.

It is proposed that the site is managed by a local community group, with small businesses or charities participating in the pop-up event space. The project team also identified further opportunities outside the scope of the trial that could enhance outcome delivery: a network of Mobility Hubs, upgrades to the local cycle network and the addition of events to enhance social outcomes like bike maintenance or cycle skills workshops.

A full business model has been developed based on guidance from CoMoUK¹, England's Economic Heartland², local community needs and lessons learnt by mobility service providers. Jacobs has taken a user-focussed approach to business model development, starting with consideration of service delivery before addressing operation and management, procurement, indicative costs, and funding opportunities.

An A3 illustration of the proposed Concept of Operations for the trial mobility hub, including design layout and business model details, is provided in Appendix A.

Mobility service providers Beam, Cityhop, Lime, Outbound, Ryd and Zilch shared useful information about existing business models in shared mobility and lessons learnt. Their insights were invaluable and helped inform concept development especially for service delivery, operations and management.

Key findings

The key findings from the literature review included that:

- While in its infancy in New Zealand, a trial Mobility Hub has the potential to deliver benefits such as improving access and mode interchangeability and reducing mobility clutter.
- Non-mobility features such as placemaking provide better value to the community.
- Stakeholder engagement is essential in all phases. Iwi partnerships will be important in New Zealand
- Users like the Mobility Hub to be close by, and to provide a range of vehicles and service options.
- A single Mobility Hub is less valuable than multiple Mobility Hubs. This will be a limitation to note in the evaluation.
- Adaptation of existing infrastructure can be prioritised over new infrastructure to support sustainability.
- If services are not available it will deter users, therefore the trial would aim to match demand.

Engagement took longer than planned and revealed unexpected preferences of the community. It was both a challenging and valuable part of the project. The Mobility Hub solution that the Aranui community needs and wants, and that is recommended in this report, is not what the project team had assumed at the start of the project.

The estimated total cost for an 18-month trial Mobility Hub could be between \$710,000 and \$890,000, made up of between \$340,000 and \$370,000 for further design and co-design with the community, between \$220,000 – \$290,000 for capital costs, and operating costs of \$150,000 – \$175,000 for a smaller option or \$200,000 – \$230,000 for a larger higher-impact option.

Implementation of the trial Mobility Hub has the potential to provide access, and environmental and health benefits. People might experience more transport choice and more community cohesion from using the hub and its facilities. They may also experience improvements in physical and mental health. There would also be improvement in our greenhouse gas emissions if people switched from using their cars to using active or shared modes.

The proposed trial Mobility Hub is expected to directly contribute to community outcomes in Aranui as identified by the community. The Mobility Hub will be a proof-of-concept that will provide guidance and

¹ Collaborative Mobility UK (CoMoUK – UK-based charity for promoting the social, economic, and environmental benefits of shared transport.

² England's Economic Heartland (EEH) – English sub-national transport body which provides transport advisory services relating to government infrastructure and policy frameworks.

support for decision-making on Mobility Hub implementation across New Zealand. The alignment with project outcomes is shown in the report in Table G.

Next Steps

Implementation of the trial will follow investigation of potential funding sources and would require more collaborative engagement and more detailed co-design with the community. Jacobs anticipates that further work could potentially be funded through the National Land Transport Programme (NLTP) subject to standard Waka Kotahi procurement procedures and further work to develop a detailed funding proposal.

If there is interest from one of the councils in Christchurch, then the next steps would be to confirm the Mobility Hub design and the assumptions related to financing and operation, and to compile a funding proposal. It is expected that the delivery of the funding proposal should take no longer than 6 months following approval to proceed.

Contents

1.	Introduction.....	1
1.1	Project Background.....	1
1.2	Mobility Hubs	1
1.3	Project Vision and Goals	2
1.4	Report Purpose	3
2.	Literature Review	4
2.1	International Context	4
2.2	New Zealand Context	7
2.3	Review Findings	8
3.	Community Selection.....	10
3.1	Initial Shortlisting Sift.....	10
3.2	Rapid Multi-Criteria Analysis.....	12
3.3	Final Selection.....	15
4.	Stakeholder Engagement	17
4.1	Engagement Approach.....	17
4.2	Local Government	18
4.3	Waka Kotahi	18
4.4	Community.....	18
4.4.1	Existing Community Insights.....	19
4.4.2	Primary Engagement.....	19
4.4.3	Community Feedback	20
4.5	Iwi	21
4.6	Mobility Partners.....	21
5.	Community Context	24
5.1	Strategies, Policies and Programmes	24
5.2	Demographics.....	26
5.3	Transport Context.....	30
5.3.1	Mode Distribution	30
5.3.2	Travel Behaviours	31
5.3.3	Road Access	31
5.3.4	Public Transport Access	33
5.3.5	Cycle Access.....	34
5.3.6	EV and Micromobility Access	35
5.4	Interdependencies.....	35
6.	Challenges and Opportunities	37
7.	Hub Specification.....	39

7.1	Hub Type	39
7.2	Modular Design	41
7.3	Optioneering.....	41
7.4	Component Selection.....	43
7.5	Initial Hub Specification	44
8.	Site Selection	46
8.1	Initial Optioneering	46
8.1.1	Wainoni Rd / Breezes Rd intersection.....	47
8.1.2	Wainoni Park.....	47
8.1.3	Pages Rd / Breezes Rd intersection.....	48
8.2	Multi-Criteria Analysis.....	49
8.3	Preferred Site.....	51
9.	Design Development	53
9.1	Site Components and Layout.....	53
9.2	Preferred Option	55
9.2.1	Hub Layout	55
9.2.2	District Planning Considerations.....	59
9.2.3	Resource Consent Considerations.....	59
9.2.4	Further Opportunities.....	60
10.	Business Model Development	62
10.1	Service Delivery	62
10.2	Operation and Management	64
10.3	Procurement.....	65
10.4	Indicative Costs.....	66
10.5	Funding Opportunities.....	68
10.6	Illustrative Model	71
10.7	Monitoring and Evaluation.....	71
11.	Conclusions	74
11.1	Summary	74
11.1.1	Project Goals.....	74
11.1.2	Project Risks.....	75
11.1.3	Benefits Review.....	76
11.2	Engagement Outcome.....	76
11.3	Evaluation	77
11.4	Next Steps.....	79
	Acknowledgements	80
	References	81

Appendices 83

Appendices

Appendix A. Concept of Operations 84
Appendix B. Rapid MCA – Community 85
Appendix C. Site Specific MCA 86
Appendix D. Option One: Low Impact Design 87
Appendix E. Option Two: High Impact Design 88
Appendix F. Environmental Screening Assessment 89
Appendix G. Consents Assessment Memo 90
Appendix H. Funding Opportunities 91

1. Introduction

1.1 Project Background

Waka Kotahi NZ Transport Agency launched the Hoe ki angitū – Innovation Fund in 2022 to catalyse, enable and accelerate innovative projects in the transport sector. Allocated over two years in a series of rounds, the \$15 million Innovation Fund will support private and non-government sectors to solve some of the most critical transport problems through innovation to 'move towards a safer, more environmentally friendly, accessible and better-connected transport system' (Waka Kotahi NZ Transport Agency, 2022).

Round One challenges of the Innovation Fund included the following:

- Challenge One: Accelerating the use of recycled materials and sustainable practices
- Challenge Two: Integrating low emission first and last mile travel solutions
- Challenge Three: Providing under-served communities with greater access to transport

Jacobs was one of the successful applicants for Challenge Two, with a proposal to develop a 'Concept of Operations' for a trial Mobility Hub in New Zealand. The proposal included a planning and investigation study to identify a suitable location and site, develop a concept plan, engage community and stakeholders, and develop an operational model and cost estimate to undertake the trial itself.

A Concept of Operations (ConOps) is a document describing the characteristics of a proposed system from the viewpoints of all stakeholders. The ConOps outlines how the trial Mobility Hub will be used, operated, managed, procured and funded.

1.2 Mobility Hubs

Mobility Hubs are still a novel idea, but through trials and deployment programmes they are rapidly gaining popularity globally. Mobility Hubs provide access at a single location to a range of sustainable transport services which can include active, shared and public transport modes. Mobility Hubs can also provide logistic components and an enhanced public realm.

By co-locating modes, Mobility Hubs provide a platform to increase visibility and exposure of mobility options, reduce 'mobility clutter' through formalised parking areas, and improve mobility asset utilisation by co-location of services and increased efficiency of the transport supply.

A Mobility Hub can provide a number of benefits, including:

- Supporting zero-emission first and last mile travel.
- Providing mobility options for under-served communities in both urban and regional areas.
- Enabling reduced private car use and ownership, critical for reducing emissions.
- Encouraging healthy and safe communities through the promotion of shared mobility options, with a focus on active transport.
- Synergising with potential future Mobility as a Service (MaaS) schemes to encourage greater access and use of active and lower utilised modes, thus influencing travel behaviour and incentives.

An example of the Mobility Hub concept is shown in Figure 1.1.



Figure 1.1: Mobility Hub concept (Source: CoMoUK 2020)

The project team has worked collaboratively with Waka Kotahi, local community stakeholders and mobility partners continually on this approach. Community engagement feedback was used to design customer-centred hub facilities to better meet the needs of the community through affordable and accessible transport options.

1.3 Project Vision and Goals

The vision for this Innovation Fund project is to empower and facilitate local communities to positively change their travel behaviours towards active and sustainable transport options such as cycling and shared mobility modes. In the short-term, this innovation concept would form the foundation of a future integrated network of Mobility Hubs in a local community. In the long-term, these Mobility Hubs would gradually expand to cities and towns across New Zealand by adapting to the local demographics and needs of users, potentially integrating with a Mobility as a Service (MaaS) ecosystem.

Realisation of this vision is expected to deliver the following outcomes, which align with the New Zealand government's Transport Outcomes Framework:

- Ensuring **inclusive access** for everyone in society to work, live and play by collaborating closely with stakeholders, partners, and the community, including Māori.
- Supporting **economic prosperity** through an efficient and integrated transport network to provide seamless connections.
- Maintaining **healthy and safe people** and communities through the promotion of shared mobility options, with a focus on active transport benefits.
- Encouraging **environmental sustainability** through greater use of sustainable zero-emission transport options and changing the travel behaviour of users.
- Providing greater **resilience and security** in transport networks by providing more travel options, that provide greater system redundancy.

The funded scope for this project is to develop a Concept of Operations for a trial Mobility Hub that would contribute to realisation of the project vision. This planning work will help minimise risks associated with this novel approach, allowing a realistic understanding of the costs and benefits of a trial to be developed. The trial would then provide primary evidence for assessment of viability of the Mobility Hub concept and support future funding decisions, as well as tailoring of the concept for NZ contexts.

To enable effective and efficient delivery of the required evidence, the Concept of Operations must provide a location, layout and operating model for the trial Mobility Hub that achieves the following goals:

- **Community outcomes** – implementation would contribute to delivery of project outcomes for the chosen community. This includes responding to the community's transport needs, integrating with existing and planned networks, and providing active and zero-emission travel options.
- **Trial deliverability** – can be implemented in a cost-effective and timely manner, provide robust data for evaluation and a repeatable model for potential wider roll-out of the Mobility Hub concept.

1.4 Report Purpose

The purpose of this report is to set out the process of developing a Concept of Operations (**Appendix A**) for a trial Mobility Hub in New Zealand that achieves the project goals. Key elements of the process were:

- Review existing research and findings on the mobility needs of users to better tailor the trial Mobility Hub to meet user demand.
- In collaboration with Waka Kotahi, identify a suitable location that will enable effective and efficient implementation and evaluation of a trial Mobility Hub.
- Co-design with relevant stakeholders, including government agencies and local community groups, in the planning and design of a suitable Mobility Hub to operate in the identified location in preparation for a future trial.
- Collaborate with mobility partners in the industry to offer a sustainable operating model for the trial Mobility Hub.

2. Literature Review

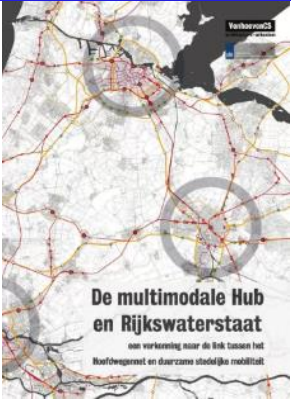
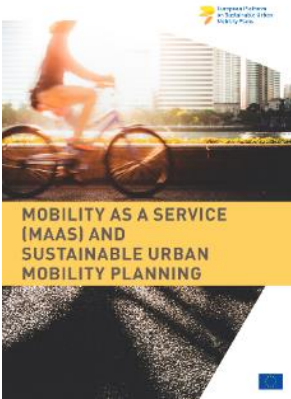
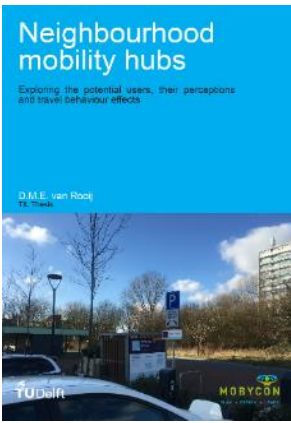
A literature review was undertaken at the beginning of the innovation project to inform the Concept of Operations for the trial Mobility Hub in New Zealand. The review sought to understand existing research, lessons learnt and the latest developments on Mobility Hubs internationally and in New Zealand.

2.1 International Context

An international literature review of Mobility Hubs was first undertaken, with sources and key findings outlined in Table 2-1.

Table 2-1: Summary of international literature review

Literature	Key Findings
<p>Mobility Hub Guidance (CoMoUK, 2022)</p> 	<p>Collaborative Mobility UK (CoMoUK) is the UK’s national organisation for shared transport, a charity for promoting the social, economic and environmental benefits of shared transport. The organisation’s resources include Mobility Hub guidance on planning, toolkits, business case, design process and case studies.</p> <p>Mobility Hubs can physically improve access and interchangeability of modes. Hubs potentially also allow for improved mobility asset utilisation by co-location of services, increasing visibility and exposure while reducing “mobility clutter” through formalised parking areas.</p> <p>The value of Mobility Hubs can be further enhanced through non-mobility features such as:</p> <ul style="list-style-type: none"> • Placemaking (e.g. retail, and food and drink facilities) • Logistics (e.g. parcel lockers) <p>A sample Mobility Hub design is shown in Figure 2.1.</p> <p>Website address: https://www.como.org.uk/documents/comouk-mobility-hubs-guidance</p>
<p>Parking & Mobility at Stations Design Manual (Network Rail, 2022)</p> 	<p>The Parking & Mobility at Stations Design Manual provides guidance for planning at stations across the UK and establishes Network Rail’s vision for the future integration and use of emerging technologies and new mobility services. The manual provides design parameters and guidance on common Mobility Hub components and features.</p> <p>Mobility Hubs vary in size and components, with each hub tailored to local needs and mobility objectives. Important elements to consider include: hub components, spatial context, visibility and accessibility, flexibility and scalability, safety, community appeal, branding and signage, and digital integration.</p> <p>The success of Mobility Hubs requires significant involvement of key stakeholders at all phases, from planning through to implementation and evaluation, primarily in helping to identify suitable locations and to confirm that services are customised to the needs of users.</p> <p>Website address: https://www.networkrail.co.uk/industry-and-commercial/supply-chain/existing-suppliers/buildings-and-architecture-design-guidance/</p>
<p>The Multimodal Hub and Rijkswaterstaat (Rijkswaterstaat, 2020)</p>	<p>Rijkswaterstaat is part of the Dutch Ministry of Infrastructure and Water Management and responsible for the design, construction, management and maintenance of the main infrastructure facilities in the Netherlands.</p> <p>Rijkswaterstaat investigated the development of multimodal hubs in relation to the main road network that Rijkswaterstaat manages. They found that Mobility Hubs types are dependent on the make-up of a city and its existing transport network and services, land-use and demographics. There are various means by which Mobility</p>

Literature	Key Findings
 <p>De multimodale Hub en Rijkswaterstaat <small>een verkenning naar de rol tussen het Noordwest- en de oostelijke gebiedsdeel</small></p>	<p>Hubs can be categorised, including differentiation between passenger and freight movement. An example (see Figure 2.2) approach is to class hubs based on geographical location, land-use and their function and alignment within the transport network.</p> <p>A 2-month mobility trial in Hoogkwartier was undertaken involving 47 participants to determine any potential link between mobility and (green) public space. The study found that a neighbourhood-oriented approach is important in the implementation of Mobility Hubs as it made people more open to change in travel behaviour. However, two months was found to be too short for behavioural change, the ideal duration is one year. The need for shared mobility services is also dependent on the accessibility of the area, with participants using shared mobility predominantly in areas not easily accessible by public transport.</p> <p>Website address: https://rwsduurzamemobiliteit.nl/publicaties/multimodale-hub-rijkswaterstaat/</p>
<p>Mobility as a Service (MaaS) and Sustainable Urban Mobility Planning (ERTICO, 2019)</p>  <p>MOBILITY AS A SERVICE (MAAS) AND SUSTAINABLE URBAN MOBILITY PLANNING</p>	<p>ERTICO (also known as European Road Transport Telematics Implementation Coordination) is an intelligent transportation system (ITS) organisation in Europe that promotes research and defines ITS industry standards.</p> <p>This document provides guidance related to Sustainable Urban Mobility Planning (SUMP), as part of a collection of documents relating to MaaS and the planning of Mobility Hubs.</p> <p>It notes that Mobility Hubs may assist in enabling complementarity of mobility options and ease of transfers, which is critical for MaaS. They can also potentially improve the utilisation of mobility supply system (ie “the whole is greater than the sum of its parts”) and also help the exposure and visibility of modes to potential users.</p> <p>Mobility Hubs can be either adapted from existing infrastructure or newly built:</p> <ul style="list-style-type: none"> Existing infrastructure adaptation – existing infrastructure can be adapted and repurposed as Mobility Hubs, which may include existing fuel stations or Park & Ride facilities. This allows consideration of the whole lifecycle of assets and be more sustainable. New infrastructure – where existing infrastructure cannot be repurposed into Mobility Hubs, new infrastructure can also provide benefits where there is demand (eg regional areas with limited public transport (PT), town centres and train stations). <p>Website address: https://erticonetwork.com/ertico-brings-its-expertise-in-its-and-maas-through-the-sump-guidelines/</p>
<p>Neighbourhood Mobility Hubs TU Delft, (Mobycon, 2020)</p>  <p>Neighbourhood mobility hubs <small>Exploring the potential users, their perceptions and travel behaviour effects</small></p> <p>D.M.E. van Rooij</p>	<p>Research was undertaken by TU Delft and Mobycon in the Netherlands that explores the potential users of neighbourhood Mobility Hubs, their perceptions and travel behaviour effects.</p> <p>As part of this research, extensive stakeholder engagement was undertaken including interviews with experts in the field of mobility, focus groups with potential users of the hub and a survey among residents of neighbourhoods with an active hub. The survey included responses from potential Mobility Hub users about what factors would influence uptake and use. Key findings include the following:</p> <ul style="list-style-type: none"> The physical distance, diversity of vehicles and service options ranked highly in terms of perceived attributes. The round-trip nature of hub use is perceived as the greatest weakness and indicated that a point-to-point hub network would be an improvement.

Literature	Key Findings
<p>eHUBS (Interreg, 2022)</p> 	<ul style="list-style-type: none"> This also means that cities need to think about a coordinated Mobility Hub strategy which considers user trip patterns and the different types discussed above rather than individual locations in isolation. <p>Website address: https://cenexgroup.nl/wp-content/uploads/2021/05/ThesisFinal-1.pdf</p>
<p>eHUBS (Interreg, 2022)</p> 	<p>eHUBS (which stands for electric Mobility Hubs) is a three-year European project from 2019-2022 that has on-street locations to bring together e-bikes, e-cargo bikes, e-scooters and/or e-cars, offering users a wide range of options to experiment and use in various situations. The project is being undertaken through six pilot cities: Amsterdam and Nijmegen (Netherlands), Leuven (Belgium), Manchester (UK), Dreux (France) and Kempten (Germany). The eHUBS project is run by a 15-partner consortium, led by the City of Amsterdam.</p> <p>The eHUBS Mobility Hub analysed was Leuven Station in Leuven, Belgium, which is one of 50 Mobility Hubs in the city. This hub's wide range of mobility services and convenient location make it attractive to users, who can also personalise journeys to their needs using the Hoppin MaaS platform. Due to its status as a university town, over half of Leuven's population are students and it is currently the Belgian city with the highest proportion of vehicle-sharing. In a study of all eHUBS locations, young adults (ie 18 to 34 years old) showed a greater inclination to use shared e-bikes and e-scooters than the rest of the population.</p> <p>However, 18% of surveyed Leuven residents indicated that the uncertainty of availability of shared mobility services makes them unwilling to use eHUBS. Users also said they would not want to walk further than five minutes to the nearest eHUBS location. As a response, the City of Leuven are considering installing more eHUBS, with a minimum of one hub per 2km² (ie at least one eHUBS within an 800m radius). Suitable signage at each eHUBS showing the environmental benefits of shared mobility services (especially EVs) could also potentially encourage a greater adoption of Mobility Hubs overall.</p> <p>Website address: https://www.nweurope.eu/projects/project-search/ehubs-smart-shared-green-mobility-hubs/</p>
<p>SmartHubs (SmartHubs, 2023)</p> 	<p>The SmartHubs project examines Mobility Hubs, dedicated on-street locations where users can choose from different shared and sustainable mobility options. This is being undertaken through Living Labs in five cities: Brussels (Belgium), Istanbul (Turkey), Munich (Germany), Rotterdam-The Hague metropolitan region (Netherlands) and Vienna (Austria). The SmartHubs project contains nine case studies, with 30 project partners and is led by the University of Twente.</p> <p>The SmartHubs Mobility Hub analysed was Mobility Point Bruno-Marek-Allee in Vienna, Austria. The Mobility Hub is owned by WienMobil, which runs most of the public transport network in Vienna, but is operated by MO.Point, a private mobility company founded in 2016.</p> <p>This Mobility Hub is unique due to its decentralised nature across three locations. The relatively low private vehicle ownership among residents makes it an ideal location for the Mobility Hub as it provides first and last mile connections via car and bike sharing to nearby bus, tram and metro stops. All rental vehicles must be returned to the original rental location at the end of a journey, which may be inconvenient to users and a missed opportunity, especially since MO.Point has nine Mobility Hub locations across the Vienna CBD.</p> <p>Website address: https://www.smartmobilityhubs.eu/</p>

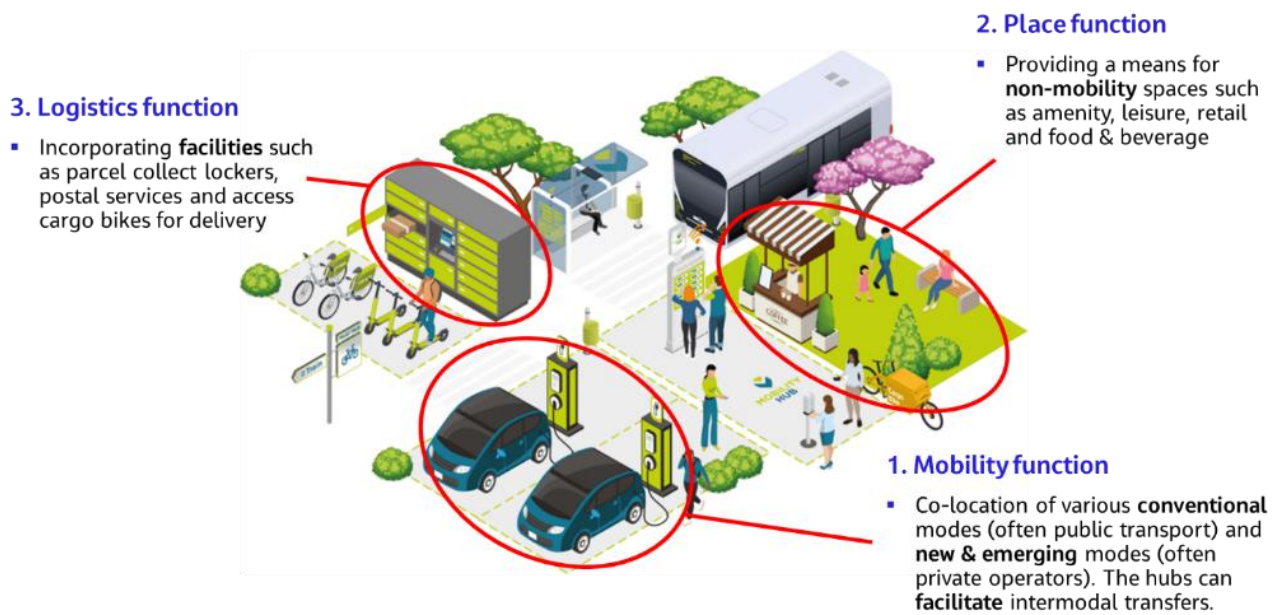


Figure 2.1: The three main functions of Mobility Hubs (Source: CoMoUK 2020)

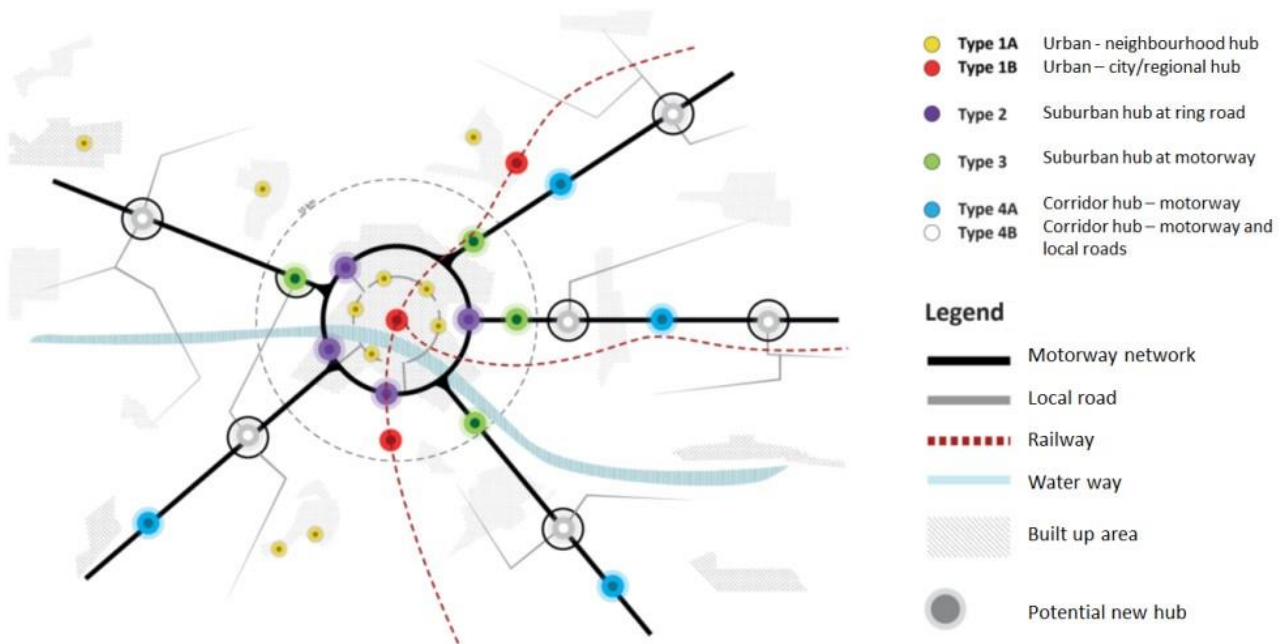
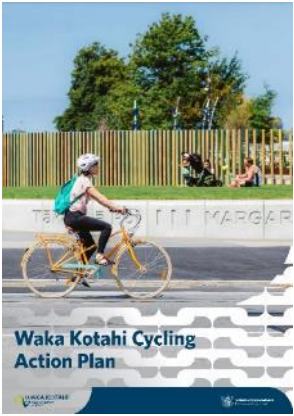



Figure 2.2: Mobility Hub typologies based on location and function (Source: Rijkswaterstaat 2020)

2.2 New Zealand Context

New Zealand currently has limited policy, guidelines or literature on Mobility Hubs as this concept is still in its early stages of development. The available literature is outlined in Table 2-2.

Table 2-2: Summary of local literature review

Literature	Key Findings
<p>Waka Kotahi Cycling Action Plan (Waka Kotahi NZ Transport Agency, 2023)</p> 	<p>The Waka Kotahi Cycling Action Plan (WKCAP) was developed to support councils as they develop their Regional Land Transport Plans (RLTPs) and Long-Term Plans (LTPs). In collaboration with Te Manatū Waka, this will eventually support a National Cycling Plan (NCP) to fulfil the requirement of the Emissions Reduction Plan (ERP) to 'significantly increase the safety and attractiveness of cycling and micromobility'.</p> <p>WKCAP contains four strategic priorities, the following two sub-priorities being most relevant to Mobility Hubs:</p> <p><u>Strategic priority 3.6 – Support innovative solutions that make cycling and micromobility safer and more attractive</u></p> <ul style="list-style-type: none"> • These include projects to design and develop 'Mobility Hubs' that bring together cycling and other mobility options to encourage first and last mile transport other than the private motor vehicle. <p><u>Strategic priority 4.4 – Enable first and last mile solutions in towns and cities</u></p> <ul style="list-style-type: none"> • A specific action is encouraging councils to look for opportunities to implement multi-modal hubs that let people easily access and combine different transport options at one location. <p>Website address: https://www.nzta.govt.nz/walking-cycling-and-public-transport/cycling/strategies-and-plans/waka-kotahi-cycling-action-plan/</p>
<p>Microtrial Mobility Hub at Auckland's Glen Eden Station (University of Auckland, 2022)</p> 	<p>As part of the Hoe ki angitū - Innovation Fund Round One challenges, the University of Auckland is piloting a small micromobility Hub at Auckland's Glen Eden Station (this was initially planned for Panmure Station) and a network of mini hubs in the surrounding neighbourhood for six months. The hub will include e-scooters and e-bikes, secured bike parking with power outlets for charging and high-visibility wayfinding to enhance accessibility.</p> <p>The trial is being undertaken by Auckland University in collaboration with the following partners:</p> <ul style="list-style-type: none"> • Beam – a multinational provider of shared e-scooters and e-bikes. • Big Street Bikers – installs and maintains electric and app-driven secure bike racks, LockyDock. • Micromobility Research Partnership (MRP) – a global partnership that undertakes collaborative research projects to educate stakeholders about more sustainable transport choices. <p>This project is the first of its kind for both Auckland and New Zealand.</p> <p>Website address: https://www.auckland.ac.nz/en/news/2022/11/07/project-funded-to-trial-bike-or-scoot-and-ride-panmure-station.html</p>

2.3 Review Findings

A high-level summary of key findings from the literature review and their relevance to the trial Mobility Hub are outlined in Table 2-3.

Table 2-3: Key review findings and relevance to trial Mobility Hub

Review Finding	Relevance to trial Mobility Hub
<p>The Mobility Hub concept can physically improve access and interchangeability of modes. It potentially also allows for improved mobility asset utilisation by co-location of services,</p>	<p>The Mobility Hub concept is still in its infancy in New Zealand but has the potential to improve the way residents travel between places. Micromobility devices are often left on streets in public areas, hence Mobility</p>

Review Finding	Relevance to trial Mobility Hub
<p>increasing visibility and exposure while reducing ‘mobility clutter’ through formalised parking areas.</p>	<p>Hubs can be a way to formalise parking areas and co-locate services in one place.</p>
<p>The value of Mobility Hubs can be further enhanced through non-mobility features such as:</p> <ul style="list-style-type: none"> • Placemaking, meaning enhancing public spaces through landscaping or street furniture • Services such as retail, and food and beverages • Logistics such as parcel lockers • Information and branding/signage 	<p>Non-mobility features, such as placemaking, can be added to the trial Mobility Hub to enhance the public realm, especially in areas with limited public features. The trial Mobility Hub could also offer logistics functions, but this would depend on the specific nature of the feature. Information and signage would be important to the trial to promote the different aspects of the Mobility Hub to the local community.</p>
<p>The success of Mobility Hubs requires significant involvement of key stakeholders at all phases, from planning through to implementation and evaluation, primarily in helping to identify suitable locations and to confirm that services are customised to the needs of users.</p>	<p>Planning this trial Mobility Hub will involve extensive stakeholder engagement from planning to implementation phases. It is important to understand the community’s needs and how the trial Mobility Hub can best be tailored to improve users’ mobility.</p>
<p>Mobility Hubs can be either adapted from existing infrastructure or newly built:</p> <ul style="list-style-type: none"> • Existing infrastructure adaptation – existing infrastructure can be adapted and repurposed as Mobility Hubs, which may include existing fuel stations or Park & Ride facilities. This allows consideration of the whole lifecycle of assets and opportunities to alter use over time. • New infrastructure – where existing infrastructure cannot be repurposed as Mobility Hubs, new infrastructure specially built as Mobility Hubs can also provide benefits where demand exists (eg regional areas with limited public transport, town centres and train stations). 	<p>Design and planning for this trial Mobility Hub will consider both existing infrastructure adaptation and new infrastructure provision, if required. The trial will identify a specific community in New Zealand and then narrow down to a site, which will be based on both existing and new infrastructure requirements.</p> <p>The trial will prioritise existing infrastructure adaptation in order to be more sustainable and minimise construction of any new infrastructure where possible. The project team will holistically consider each site to determine where the trial can potentially add the most value to local communities.</p>
<p>Uncertainty of availability of shared mobility services can deter potential users. This will likely lead to fewer repeat users and lower chance of new users trying out Mobility Hubs.</p>	<p>Design and planning for this trial Mobility Hub will seek to at least match shared mobility provision to demand to reassure potential users of service availability. This takes into account existing demand data and lessons learnt from mobility operators.</p>
<p>The physical distance to access (5-minute maximum walk preferred), diversity of vehicles and service options ranked highly in terms of perceived attributes of Mobility Hubs.</p>	<p>It will be important to locate the Mobility Hub in an area that can be easily accessible by users in a community. The vehicles and services offered in the trial must also be attractive to the local community.</p>
<p>The round-trip nature of a single Mobility Hub is perceived to offer less value than compared to a point-to-point Mobility Hub network. The type of Mobility Hub network will be dependent on the specific location and design.</p>	<p>This will be a key limitation to note in evaluating the trial Mobility Hub. Trialling multiple hubs would severely impact on the ‘Trial Deliverability’ goal due to the increased risks, costs and timescales required for multiple sites. Even a trial hub network would offer point-to-point options that are far more limited than a full network deployment.</p> <p>A single trial Mobility Hub was selected as it would still offer invaluable data and insights into its daily operations. The single hub trial will also allow the team to better understand any key challenges and opportunities for a future network.</p>

3. Community Selection

The selection of a suitable location in New Zealand for a potential trial Mobility Hub was undertaken in two stages – initial identification of a community (detailed in this section), followed by identification of a specific site (described in **Section 7**). This staged approach enabled a progressive escalation in level of analysis detail as the number of potential site options was reduced.

The identification processes have been shaped by the project goals of delivering community outcomes and trial deliverability, as set out in **Section 1.3**.

The initial identification of a community for the trial was made through the following steps:

- 1) Shortlisting sift of potential communities (detailed in **Section 3.1**)
- 2) Rapid multi-criteria analysis (MCA) of shortlisted options (detailed in **Section 3.2**)
- 3) Final selection of a community (detailed in **Section 3.3**)

Following selection of the community in which the trial Mobility Hub will be located, further information was gathered through identifying and engaging with stakeholders (**Section 4**) and reviewing the community context (**Section 5**).

3.1 Initial Shortlisting Sift

The project team undertook initial shortlisting of potential communities by analysing Stats NZ 2018 Census data at the Statistical Areas Level 2 (SA2) level, starting with a long list of all New Zealand SA2s. The analysis considered indicators that were readily available across New Zealand and which provide information about the potential for a trial hub to achieve the project goals in each community.

A sifting process was developed to reduce all 2,253 New Zealand SA2s down to a manageable shortlist. This required not only identifying fatal flaws but also weaknesses in critical success factors. The indicators and sifting process are outlined in Table 3-1.

Table 3-1: Initial shortlisting methodology by dataset

Dataset	Indicator	Process	Rationale
Goal: Community Outcomes			
Amenities	Percentage with access to fewer than seven basic household amenities ³	Sifted out areas below the highest proportion of reduced amenity (retained quartile 4 only)	Critical Success Factor: High proportion provides best potential for targeting inclusive access
Ethnicity	Percentage of population belonging to Māori & Pacific peoples	Sifted out areas below the highest proportion of Māori & Pacific peoples (retained quartile 4 only)	Critical Success Factor: High proportion provides best potential for targeting inclusive access
Personal income	Percentage with income less than \$50,000 (below median income)	Sifted out areas below the highest proportion of low income residents (retained quartile 4 only)	Critical Success Factor: High proportion provides best potential for targeting inclusive access

³ The NZ 2018 Census defines basic amenities to include basic cooking facilities, drinkable tap water, kitchen sink, refrigerator, bath or shower, toilet, and electricity supply.

Aranui Trial Mobility Hub Concept of Operations

Dataset	Indicator	Process	Rationale
Qualification	Percentage without a degree	Sifted out areas below the highest proportion of residents without a degree (retained quartile 4 only)	Critical Success Factor: High proportion provides best potential for targeting inclusive access
Goal: Trial Deliverability			
Travel to work	Percentage using public transport (PT)	Sifted out areas with relatively very low or high PT use (retained deciles 5 to 8 only)	Fatal Flaw: Very low use indicative of insufficient PT service to link to; relatively high use indicative of high accessibility, limiting demand for improved access
Age	Percentage between 15 and 39 years old	Sifted out areas with relatively low proportions of younger people (retained quartiles 3 and 4 only)	Critical Success Factor: High proportion of young adults provides best potential for uptake of shared services
Density	Mean population per square km	Sifted out areas with relatively low densities (retained quartiles 3 and 4 only)	Critical Success Factor: High population density provides best potential for competing against private car

Six communities were retained after the sifting process. It was agreed with Waka Kotahi to include a Timaru community (with the highest indicator quartiles overall), due to the potential for synergies with the MyWay demand responsive service. Where the sift had retained multiple communities in the same city, a single community was chosen as representative of the others. The final shortlist (in no particular order) was set as follows:

- Aranui, Ōtautahi, Christchurch
- Marchiel East, Te Tihi O Maru, Timaru
- Onekawa South, Ahuriri, Napier (also representative of Maraenui and Tamatea East)
- Nawton East, Kirikiriroa, Hamilton (also representative of Crawshaw)

These four general locations are shown in Figure 3.1.



Figure 3.1: Shortlisted Communities in New Zealand (Source: ESRI World Imagery, 2023)

3.2 Rapid Multi-Criteria Analysis

After the initial shortlisting of communities, the project team developed a rapid MCA to select a community with good potential for the trial Mobility Hub to meet project goals. Factors that could contribute to meeting the goals were considered and from these a set of criteria were identified that:

- Reflect performance against all factors and hence goals
- Can be assessed using either quantitative or qualitative analysis
- Are independent and avoid double counting

The indicators used for initial shortlisting were refined and developed into criteria; additional criteria were then added to improve the completeness and detail of analysis. A total of 14 criteria were identified, as outlined in Table 3-2.

Table 3-2: Community Selection - Rapid MCA Criteria by Goal

Criteria	Data Sources	Analysis	Rationale
Goal: Community Outcomes			
Diversity of potential users	Stats NZ 2018 Census	Quantitative – proportion of Māori and Pacific residents	Contribution to inclusive access outcome
Amenities	Stats NZ 2018 Census	Quantitative – proportion of households without access to all 7 basic amenities	Contribution to inclusive access outcome

Criteria	Data Sources	Analysis	Rationale
Income	Stats NZ 2018 Census	Quantitative – proportion of residents earning less than \$30k per annum	Contribution to inclusive access outcome
Educational outcomes	Stats NZ 2018 Census	Quantitative – proportion of residents without a degree	Contribution to inclusive access outcome
Employment	Stats NZ 2018 Census	Quantitative – proportion of residents not working	Contribution to inclusive access outcome
Local trips	Household Travel Survey 2011-2014 by region	Quantitative – average trip length	Contribution to integrated transport network outcome
PT uptake	Stats NZ 2018 Census	Quantitative – proportion of travel to work trips using PT	Contribution to integrated transport network outcome
Cycling uptake	Stats NZ 2018 Census	Quantitative – proportion of travel to work trips using a bike.	Contribution to both the healthy and safe communities and the zero-emission travel outcomes
Goal: Trial Deliverability			
Population density	Stats NZ 2018 Census	Quantitative – population density.	Contribution to potential demand by maximising catchment.
PT network provision and access	Council PT mapping	Qualitative – identifying typical walk distances to PT.	Contribution to potential demand by addressing unmet need.
Population age	Stats NZ 2018 Census	Quantitative – proportion of residents aged 15 – 39.	Contribution to potential demand by targeting those most likely to try new ways to travel.
Alignment with other programmes	Various	Qualitative – number, scope and relevance of other programmes.	Contribution to implementation by potential leveraging off other work.
Site opportunities	Satellite imagery, StreetView	Qualitative – number and indicative suitability of sites.	Contribution to implementation and operation by optimising site selection.
Other opportunities and challenges	Various	Qualitative – as identified	Opportunities and challenges not captured elsewhere.

For each shortlisted community, a score from 1 to 5 was given to each criterion, with '1' representing the lowest alignment and '5' representing the highest alignment. Note that all scores are given relative to the four communities, with equal weightings across the project goals. Criteria scores were averaged to calculate the contribution scores, which were then averaged to combine them into a score for each goal. The goal scores were then averaged to provide a final score. Unrounded scores were used at every step. A summary of all rapid MCA criteria and commentary on the scores for each community can be found in **Appendix B**.

Note that potential demand contributes to both the Community Outcomes goal and the Trial Deliverability goal as maximising uptake can impact on local benefits as well as the collection of evidence for evaluation. To avoid double counting, criteria impacting potential demand have been analysed under the Trial Deliverability goal only.

The scores for each community are shown in Table 3-3.

Aranui Trial Mobility Hub Concept of Operations

Table 3-3: Rapid MCA final scores of each community

Contribution (Criteria)	Score			
	Aranui, Ōtautahi, Christchurch	Marchwiell East, Te Tihi O Maru, Timaru	Onekawa South, Ahuriri, Napier	Nawton East, Kirikiriroa, Hamilton
Goal: Community Outcomes				
Inclusive access	4.8	3.4	4.6	4.2
<i>(Diversity of potential users)</i>	5	2	5	5
<i>(Amenities)</i>	4	2	5	4
<i>(Income)</i>	5	4	4	4
<i>(Educational outcomes)</i>	5	5	5	4
<i>(Employment)</i>	5	4	4	4
Integrated transport network	4.0	4.5	4.0	3.0
<i>(Local trips)</i>	4	4	3	2
<i>(PT uptake)</i>	4	5	5	4
Healthy and safe communities	5.0	5.0	5.0	5.0
<i>(Cycling uptake)</i>	5	5	5	5
Zero-emission travel	5.0	5.0	5.0	5.0
<i>(Cycling uptake)</i>	5	5	5	5
Goal: Trial Deliverability				
Critical mass	5.0	3.0	5.0	5.0
<i>(Population density)</i>	5	3	5	5
Unmet last mile need	5.0	3.0	3.0	2.0
<i>(PT network provision and access)</i>	5	3	3	2
Receptive demographic	3.0	3.0	3.0	5.0
<i>(Population age)</i>	3	3	3	5
Synergies with other work	3.0	3.0	1.0	3.0
<i>(Alignment with other programmes)</i>	3	3	1	3
Options for site optimisation	3.0	3.0	2.0	2.0
<i>(Site opportunities)</i>	3	3	2	2
Not captured elsewhere	3.0	4.0	3.0	3.0
<i>(Other opportunities and challenges)</i>	3	4	3	3
Summary				
Community Outcomes	4.7	4.5	4.7	4.3
Trial Deliverability	3.7	3.2	2.8	3.3
Final Score (Maximum Score is 5)	4.2	3.8	3.7	3.8

The differences in goal scores were generally driven by cumulative incremental differences in criteria scores. There were a number of points of distinction:

- Marchwiell East's relatively low Community Outcomes score was driven by a relatively low proportion of Māori and Pacific residents, and by relatively high access to household amenities.
- Marchwiell East's relatively low Trial Deliverability score was driven by limited opportunities for a first and last mile solution, due to MyWay's relatively low frequency service, and by a relatively low population density.
- Onekawa South's relatively low Trial Deliverability score was driven by the absence of a current Transport Strategy for Napier, denying opportunities to align with other works, and by a relatively small number of potential hub sites.

3.3 Final Selection

Aranui, Ōtautahi, Christchurch (see Figure 3.2 below) was selected as the preferred location for the trial Mobility Hub, scoring distinctly higher in the Rapid MCA than the other communities. Aranui ranked highest against the Trial Deliverability goal, and joint highest against the Community Outcomes goal (alongside Onekawa South, Ahuriri, Napier). Aranui scored higher in diversity and reflected a greater need for accessible and low emission transport options compared to the other three locations. Existing population density and age demographic for Aranui indicate potential for shared modes to compete against the private car. Following StreetView investigations, Aranui revealed multiple potential options for site locations, which are further discussed in **Section 7** of this report.

There are opportunities for the trial Mobility Hub to integrate with existing and proposed public and active transport initiatives including *Haeata Connections*. Christchurch City Council (CCC) received funding for Haeata Connections project in Aranui via Waka Kotahi Streets for People 2021-24 programme in 2022.

The Haeata Connections project is centred around the Haeata Community Campus and community in Aranui. The project has been initiated in response to safety issues (transport and personal) which impact people's ability to travel sustainably and safely. This project aims to deliver community lead initiatives that open the streets to people with a focus on local ownership and delivery.

The Future Streets Aranui Community Insights study which predicated the Haeata Connections project, provides useful background and community insight for this study.

Aranui Trial Mobility Hub Concept of Operations

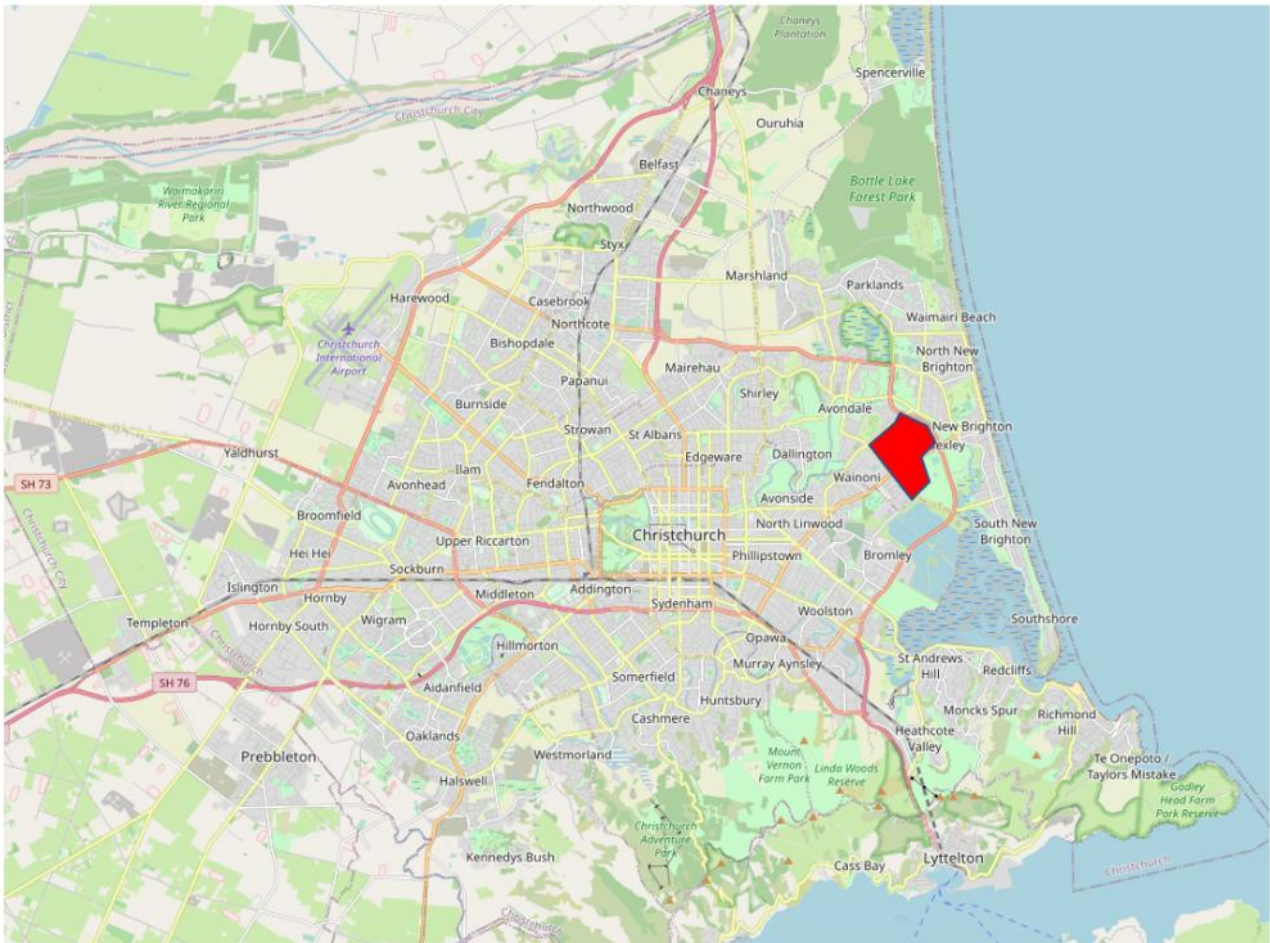


Figure 3.2 Location of Aranui in Christchurch (Source: OpenStreetMap, 2023)

4. Stakeholder Engagement

A key objective of this project was to co-design the trial Mobility Hub with relevant external stakeholders, including government agencies and community groups, to enable inclusive planning and design of a trial Mobility Hub that is tailored to the needs of the community.

4.1 Engagement Approach

An internal workshop was held with the project team to develop a list of interested parties and stakeholders. Discussions were then held with CCC and Waka Kotahi to refine the stakeholders and ensure the stakeholder engagement approach recognised existing work and engagement in the area on access needs. The CCC Community Development Adviser provided guidance on key engagement contacts and community insights.

The key external stakeholders identified for project are summarised in Table 4-1.

Table 4-1: Identified Stakeholders

Group	Who	Engagement Goal	Engaged with	
Local Government	Christchurch City Council			
	Communications and Engagement Team	Confirm key community stakeholders based on existing engagement work	Yes	
	Kaitohutohu Hāpori - Community Development Advisor		Yes	
	Transport Team – Streets for Communities program lead	Identify potential synergies with existing Streets for Community work and data share	Yes	
	Aranui Library	Understand the community uses for the library space. Understand any issues, challenges with considering a hub at the library	Via ACTIS	
	Environment Canterbury			
	Manager - Public Transport Strategy and Planning	Identify any future work or synergies and insight into PT connections	Yes	
	Environment Canterbury - General Manager Public Transport		Yes	
	Waka Kotahi	Multimodal Integration – Transport Services and Urban Mobility Manager	Confirm key community stakeholders based on existing engagement work.	Yes
	Community	Aranui Community Trust Incorporated Society (ACTIS)	Enhance understanding of the community's views, issues, barriers, and challenges - to inform concept development.	Yes
Aranui Bike Fixup		Yes		
Haeata Community Campus		No – covered in former existing research		
Chisnallwood Intermediate		Yes		
Shirley Boys High School		No – due to their time constraints		
Community Police		No		
Community Corrections		Yes (Via ACTIS initially)		
Iwi	Mana Whenua (Ngai Tahu)		Via ACTIS	
	Te Runanga o Nga Maatawaka		Via ACTIS	
Mobility Partners	Beam	To investigate existing business models in shared mobility, gather lessons learnt and to inform concept development.	Yes	
	Outbound		Yes	
	Lime		Yes	

Group	Who	Engagement Goal	Engaged with
	Ryd		Yes
	Zilch		Yes
	Cityhop		Yes

As shown in Table 4-1, it was not possible to engage with all identified stakeholders for this project, despite several follow ups. This was due to limitations in stakeholder availability and interest, likely due to this project being in the early stages of investigations and advice on sensitivity due to engagement fatigue. This is discussed further in **Section 4.4**.

In the later stages of investigations and implementation, more extensive engagement will be required to ensure alignment of outcomes with stakeholder requirements and develop a partnership with Iwi.

4.2 Local Government

Christchurch City Council were contacted early in the project. Jacobs held introductory meetings to seek CCC staff guidance on other potential stakeholders, drawing upon CCC's strong community connections. These discussions provided further insight into the area and challenges and sensitivities in engaging with the local community. CCC also provided a copy of *Future Streets Aranui Community Insights Study* which is being used to inform the Haeata Connections and provides useful background and community insight for this study. CCC had carried out previous investigations into multi-modal transfer hubs at key bus network nodes. Representatives from CCC's staff at Aranui Library were also engaged with at the ACTIS Hub meeting on 18 April 2023.

Environment Canterbury (ECan) were also informed of the project. ECan was open to supporting the potential synergies between the project and its own role in providing transport to communities. They noted that funding and resource constraints will require prioritisation across transport projects under its remit.

4.3 Waka Kotahi

Waka Kotahi is involved as a partner in several existing and ongoing programmes relevant to the Aranui community. Jacobs contacted the Waka Kotahi Urban Mobility team early in the project meetings to seek guidance on other potential stakeholders and to obtain insights into previous and ongoing work in the Aranui area. The Urban Mobility team provided guidance and expertise that helped shape the development of stakeholder engagement and informed the assessment of the Aranui community context.

4.4 Community

Feedback from CCC, Kaitohutohu Hāpori - Community Development Advisor helped to identify existing work and confirm relevant contacts. Discussions with CCC and Waka Kotahi provided insights into the context for engagement with the Aranui community:

- The primary point of contact with the Aranui community is ACTIS which chairs community hub meetings attended by relevant community groups and invited speakers.
- Many consultations have been held with the Aranui community in recent years, which has provided detailed information on community transport needs and views, but also has resulted in a degree of 'consultation fatigue' amongst the community.

This early engagement and stakeholder mapping enabled optimisation of the community engagement approach to leverage existing knowledge and data, and to tailor new engagement with community stakeholders to effectively manage expectations and avoid consultation fatigue.

Jacobs' approach built upon evidence from previous studies using targeted one-to-one engagement with community stakeholders to build up a thorough understanding of the issues and problems facing the Aranui community and to collect ideas for potential ways that these could be addressed by a Mobility Hub. These engagement findings were then validated at a presentation and feedback session during the ACTIS Hub meeting on 18 April 2023.

4.4.1 Existing Community Insights

Community engagement and assessment was undertaken as part of the Future Streets programme in 2018. The *Future Streets Aranui: Community Insights* study was carried out to better understand the perceptions of active travel within and around Aranui, including to and from the new Haeata Campus which was developed following the Canterbury Earthquakes. The report describes travel patterns, issues and opportunities for street activation and transport in the wider area. The findings and stakeholder engagement captured in the report are relevant to this study. The main scope of the Future Streets Aranui study was...

...to understand community perspectives of local travel and supporting data, and assess the level of need, to inform further active and public travel infrastructure investment in the Aranui area.

The report confirms there are significant opportunities for improving accessibility and promoting active travel in the Aranui community, but these need to be coordinated with greater collaboration between programmes and agencies. It identifies a need for "more effective, healthy, safe, user-friendly and environmentally responsive local travel, within the context of a lower-socio economic community". At the time of the study these opportunities were hindered by the lack of safe and attractive walking and cycling routes. From observations and discussions with the community, safety and limited options are still a concern.

4.4.2 Primary Engagement

Community Trust

The Aranui Community Trust Incorporated Society (ACTIS) was established to advocate for the Aranui community's interests, as well as providing information and support for the wider Aranui Community.

ACTIS was identified as the primary facilitator for access to the Aranui community and the coordinator for consolidating the views of relevant community groups' inputs to development of programmes and policies for the Aranui area.

Schools

There are several schools that service Aranui and provide an important connection for students and caregivers. Schools within the area include Haeata Community Campus, Chisnallwood Intermediate, St James School. Some high school-aged children also travel further afield to Orua Paeroa campus where Shirley Boys and Avonside Girls High Schools are co-located.

Several schools were contacted, and a meeting was held with Chisnallwood Intermediate on 20 March 2023 – this school serves a wide catchment, including approximately 300 children from Aranui. Jacobs was unable to directly engage with the other schools within the timeframe, but instead drew upon relevant findings from existing studies and engagement. Shirley Boys High School expressed interest in the project but were unable to meet within the timeframe.

Aranui Bike Fixup

Aranui Bike Fixup is a free bike maintenance group operating from the Breezes Road Baptist Church. The group provides direct support and advice to local cyclists, as well as tracking local issues relevant to walking and cycling in the area. A meeting was held with the coordinator of this initiative on 13 March 2023.

Department of Corrections

Christchurch Community Corrections (Rāwhiti) manages offenders on community sentences and provides facilities that can be used by community groups in the area. Rāwhiti staff work extensively with the local Aranui community from their site at Breezes Road.

Rāwhiti followed up after attendance at ACTIS hub meeting and indicated an interest in providing further input to any non-travel options at the Mobility Hub site.

The locations of where the primary engagement occurred in Aranui are shown in Figure 4.1.

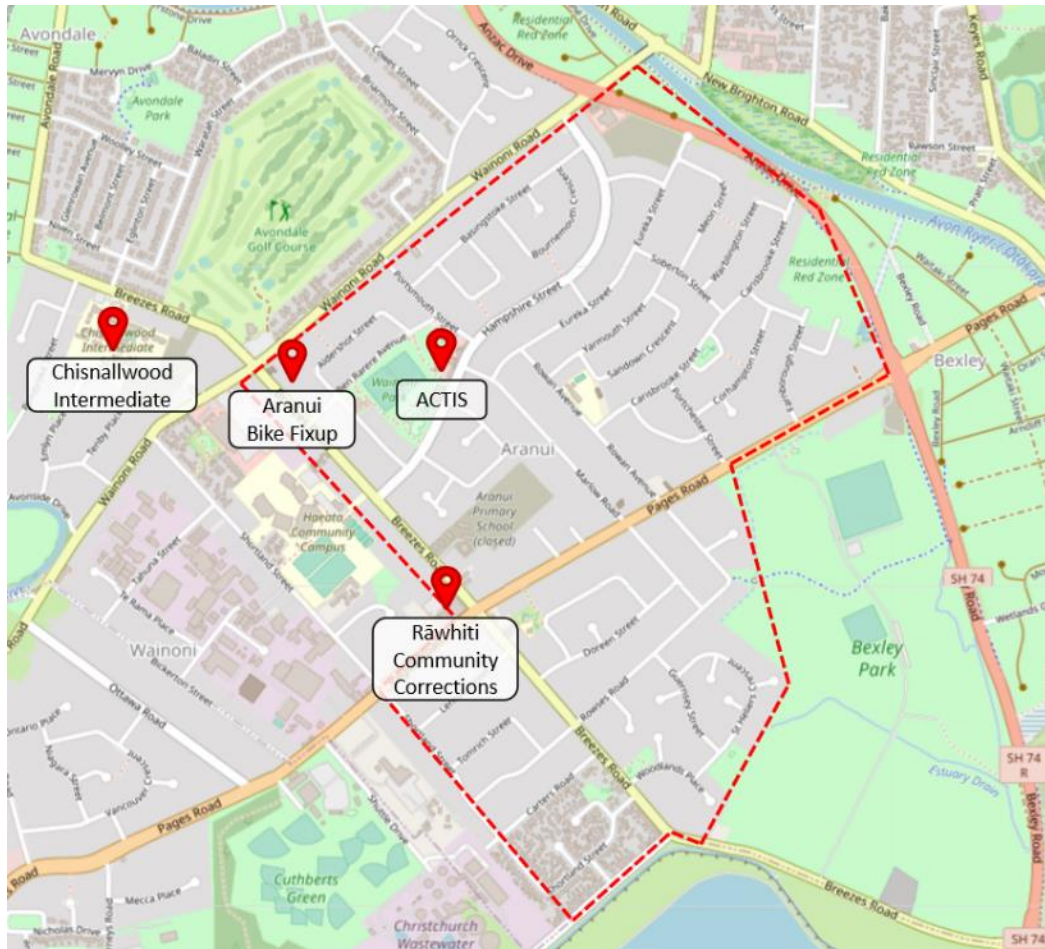


Figure 4.1 Locations of Primary Engagement in Aranui (Source: OpenStreetMap, 2023)

4.4.3 Community Feedback

The key themes that emerged from the review of previous engagement work, stakeholder discussions and the validation and feedback session at the ACTIS meeting were:

- **Coordination:** There was recurring feedback on the need to coordinate efforts. Unfulfilled projects have led to some mistrust of local and central government not proceeding with initiatives.
- **Road safety:** There is a perception that the local road network is unsafe, particularly for people walking and cycling and particularly at large intersections.

- **Personal safety:** There is a significant portion of the community in fear of crime and this impacts on travel choices and movement around the area. A Mobility Hub would need to be located in a location with high levels of activity and pedestrian footfall to help users feel safe.
- **Affordability of transport options:** The community is struggling with the cost of living due to low incomes locally and has limited funds to pay for mobility options such as e-scooters.
- **Car reliance:** Local public transport and active travel options do not provide an attractive alternative to car use.
- **Bus network:** Until it was withdrawn in 2012, Hampshire Street was served by bus route 51. The community has an aspiration to improve access by non-car modes to the centre of Aranui, by restoring bus service to Hampshire Street. A Mobility Hub could provide an alternative approach to improving options for access in Aranui.
- **Accessibility:** There are few travel options for children, the mobility impaired and elderly people. Unpowered bikes and scooters may be more attractive for children and three-wheeler bikes could help inclusion of mobility impaired and elderly people.
- **Training:** Many people in the community would need support to learn how to ride scooters and bikes and may struggle initially with online or app-based booking.
- **Location:** A location close to Hampshire Street is preferable due to its centrality to the area and existing community activity. Streets for Communities are progressing a small project looking at activating the space around Hampshire Street shops to aid traffic calming.

4.5 Iwi

Māori make up around 30% of the Aranui community (for more detail see **Section 5.2**). Engaging meaningfully with iwi will be essential to the development of a Mobility Hub in Aranui to access the benefits of incorporation of the iwi interests. Jacobs' experience shows a partnership approach is appropriate to work together on delivering good outcomes for Māori and the wider community.

Local iwi are partly represented through the Linwood Marae and are active participants in ACTIS meetings and activities and are also closely engaged with the Streets for Communities project. Jacobs therefore engaged with iwi through ACTIS, collecting feedback at the ACTIS meeting on 18 April 2023 – a representative from the local marae was in attendance.

As indicated, opportunities to partner with iwi would be a critical aspect of developing detailed designs for the Mobility Hub as the project develops. The timescales for the design stages will need to take this into account and not rushed.

4.6 Mobility Partners

One-on-one discussions were held with potential mobility partners to gather industry insights for development of the hub design and business model.

The main mobility services of each partner are shown in Table 4-2.

Table 4-2: Main mobility services of each partner

Service	Beam	Cityhop	Lime	Outbound	Ryd	Zilch
Operating in Christchurch?	North Island only	Yes, but only cargo vans	✓	Australia only	North Island only	✓
E-scooters	✓	-	✓	✓	✓	-
E-bikes	✓	-	✓	✓	✓	-
E-mopeds	✓	-	-	-	✓	-
Electric cars	-	North Island only	-	✓	✓	✓
Charging location	Off-site	On-site	Off-site	On-site	On-site	On-site

The one-on-one discussions with each mobility partner provided an understanding of their operating models and challenges through previous lessons learnt. This feedback was used as valuable inputs into high-level design characteristics and operational model for the trial Mobility Hub, which was then shared during engagement with stakeholders. The team recorded insights into general travel behaviours of customers, ownership and management structures, maintenance and charging strategies, hub and fleet design, customer support, signage, and security.

The main key findings influencing the current stage of design include:

- **Location:** Customers are more likely to notice and utilise vehicles which are placed in highly visible and accessible public spaces. Locating vehicles in centralised areas with passive surveillance reduces the likelihood of vandalism and theft.

Application to the trial hub: The selected area for the hub trial should be located within a highly visible area surrounded by local shops and sporting sites. The site should be well lit and subject to passive surveillance.

- **Land use fees:** Landowners usually request land use agreements and in many cases venues request payment for deployment of vehicles on their land. In some cases, the landowner will allow the company to use their land and pay for long term management of services across a larger residential space.

Application to the trial hub: A suitable government-owned site for the trial hub would help avoid potential conflicts or high fees associated with privately owned land, which could impact on the feasibility of timely implementation of the trial.

- **Signage:** Micromobility customers are more likely to respect vehicles and return them to their designated docking areas when parking spaces are neat in appearance and marked with obvious signage.

Application to trial hub: The modular design for the Mobility Hub should ensure inclusion of signage across entry point locations in accordance with the anticipated user needs and sightlines. Signage

may include information regarding hub facilities, etiquette, and directions to nearby facilities to be determined at the next stage of design.

The next stage of design will consider the following insights gathered from industry partners:

- **Ownership:** In most cases the company will earn revenue for their services or management of services, however ownership of land and infrastructure assets varies greatly depending on company processes and agreements with landowners and customers.
- **Costing:** Customer payment models vary and often operate through flat subscriptions, monthly charges, or separate charges per trip. Discounts may be applied in lower socio-economic areas or to incentivise returning of vehicles in designated docking areas.
- **User challenges:** Users often experience difficulties in using EV services for the first time. User guides should be provided to reduce risk of damage to vehicles or customer dissatisfaction (ie video tutorials, vehicles equipped with visual or written instructions). This may be compounded by the known community challenges around access to telecommunications and familiarity with use of app-based services.

5. Community Context

5.1 Strategies, Policies and Programmes

The relevant strategies, policies, and programme documentation relevant to the Innovation Fund are listed in Table 5-1.

Table 5-1: Relevant Strategy, Policy and Programme Documentation

Document	Purpose of Document	Relevance to Innovation Fund
Arataki 30-Year Plan (Waka Kotahi NZ Transport Agency, 2023)	<p>Waka Kotahi NZ Transport Agency’s 30-year view on key deliverable and priorities for long term land transport outcomes.</p> <p>Place based evidence to provide guidance on what is driving change and plans on addressing challenges and opportunities within the strategic context of the future land transport system.</p>	<ul style="list-style-type: none"> Strategies to encourage travel choice options and accessibility to a range of transport modes for smaller communities. “Better integrate transport and land use in our largest cities, and provide a wider range of options including walking, cycling, and public transport in smaller towns and cities.” User-based focus on wellbeing, sustainable travel options and improving connectivity and accessibility for its users. “To support wellbeing and create great places to live in Aotearoa New Zealand, the transport sector needs to focus less on the physical movement of people and goods (mobility), and more on safe, sustainable access and connectivity for all.” Guidance on designing for an equitable land transport system to ensure planning is unique to the specific needs and travel behaviours of relevant community stakeholders. “An equitable land transport system is one that: <ul style="list-style-type: none"> focusses on the outcome, such as access to employment, and removes barriers for different groups considers how transport accessibility, affordability, and availability impact people’s ability to fully engage in social and economic opportunities considers how personal preferences and choices influence engagement with the transport system.” Focus on delivering adaptable systems and revenue streams that integrate effectively with the existing environment. “The transport system needs an ongoing focus on maintaining existing assets along with targeted improvements to reduce risks. We also need to expand our understanding of resilience in urban environments, to ensure planning work is flexible and adaptable to change.”
Government Policy Statement on Land	Guidance on the allocation of the National Land Transport Fund to achieve the Government’s transport	<ul style="list-style-type: none"> Strategies to support equal health, social and employment opportunities through inclusive and safe transport options.

Document	Purpose of Document	Relevance to Innovation Fund
<p>Transport 2021/22-2030/31</p> <p>(New Zealand Government, 2020)</p>	<p>priorities and strategic direction for land transport activities over the next 10 years.</p>	<p>“Many New Zealanders are reluctant to travel by foot, bike, or micromobility options due to a lack of safe infrastructure. Safer roads, footpaths and cycleways, as well as safe public transport services, will give people a wider range of quality options to access opportunities.”</p> <ul style="list-style-type: none"> Encourages sustainable transports options which support inclusive access, health and safety. <p>“New Zealand’s cities need to be places where people can safely and enjoyably travel by low emissions transport modes such as walking, cycling, and emissions-free public transport.”</p> <ul style="list-style-type: none"> Ensures relevant transport infrastructure which will support the current and future needs of communities. <p>“In some cases, it may represent value for money to make investments ahead of demand, to support future developments (lead investments).”</p>
<p>The Climate Emergency Response Fund (CERF)</p> <p>(New Zealand Government, 2023)</p>	<p>Programme supporting climate resilience through funding towards low emission transport and decarbonised infrastructure improvements.</p>	<ul style="list-style-type: none"> Supports local councils in the delivery of strategic transport initiatives which prioritise low emissions travel options. <p>“An initiative is eligible for funding from the CERF if it is included in an Emissions Reduction Plan, or directly supports emissions reductions (domestically or internationally)”</p>
<p>Waka Kotahi Streets for People Programme 2021-2024</p> <p>(Waka Kotahi NZ Transport Agency, 2021)</p>	<p>NZ programme promoting local council strategic plans which support and monitor low-cost, scalable improvements to inform future permanent changes to the transport network.</p>	<ul style="list-style-type: none"> Recognising key transport issues and supporting improvements to the Aranui transport network through Aranui Connections project. <p>“This project aims to make streets in Aranui more people-friendly, safer and easier to use for everyone. Currently there are safety issues impacting the ability of students and local residents to move around the area. Christchurch City Council is co-designing with local school students, mana whenua and the wider public to develop better walking and cycling connections.”</p>
<p>Greater Christchurch Public Transport Futures Combined Business Case 2020</p> <p>(Greater Christchurch Public Transport Joint Committee, 2020)</p>	<p>Greater Christchurch Public Transport Futures Combined Business Case recommending a programme of improvements to increase the uptake of public transport over the next decade.</p>	<ul style="list-style-type: none"> Highlights concerns about low uptake of public transport in Christchurch and sets an investment objective to remove barriers to the uptake of public transport by 2028. <p>“Key Performance Indicators... increased number of PT trips...Improved the perceived areas of use of the PT system.”</p> <ul style="list-style-type: none"> Strategies to improve connectivity by active transport modes and provide direct connections to main origins and destinations. <p>“The ability to cycle or park and comfortably transfer to bus services gives greater flexibility to customers, allowing them to take full advantage of a direct and sustainable journey to their destination.”</p>

Document	Purpose of Document	Relevance to Innovation Fund
		<ul style="list-style-type: none"> Encourage multi-modal and sustainable network connections to allow for ease of transfer between modes. "Enhance the opportunities to transfer from various modes to the bus network • Transfer opportunities between connected bus and cycle networks including cycle lock ups and E-mobility stations at main transfer facilities."
<p>Draft Christchurch Transport Plan 2022 (Christchurch City Council, 2022)</p>	<p>Strategic direction for transport in Christchurch over the next 30 years.</p> <p>Focus on the issues and challenges to prioritise for the city and its communities.</p>	<ul style="list-style-type: none"> Strategies support the development of a productive and accessible low-carbon city. "A zero-emission transport system supports the city's greenhouse gas emissions reduction target of net zero by 2045. Sustainable living is achieved – where it's easy to use the bus, cycle or walk to get you to where you want to go, including for our mobility impaired and elderly residents and visitors." Future proofing transport solutions to cater for an increasing population and rising proportion of older people. "Our transport network needs to accommodate our growing, diverse, and aging population. We need to do our best to plan and invest in an agile way, so that our network can evolve as the world around us changes." Road to Zero, road safety strategy to reduce deaths and serious injuries on road to support safe streets and flexibility for road users. "A safe transport system protects vulnerable road users, like cyclists and pedestrians, and mitigates the risk of speed and other dangerous behaviours on our roads. It also enables people to have choice about how they travel by ensuring it is safe to walk, cycle, bus and drive."

5.2 Demographics

Aranui is located in the east of Christchurch and is classed as a mid-low socio-economic area. Aranui is a predominantly residential area, but with pockets of retail and industrial land uses.

As of 2018 census data, Aranui has a population of 4,200 residents with 30% of Māori and 9.5% of Pacific descent (Stats NZ, 2018). There is strong evidence of inequalities in income and education outcomes, providing an opportunity for the trial Mobility Hub to improve access to the existing network and deliver better social opportunities for residents and local travellers. Aranui has a population density of 2,921 residents/km² with 36.3% of the population being aged between ages 15-39 (Stats NZ, 2018). Users within this age range are the most likely to utilise micromobility and active transport options. Table 5-2 summarises the population and employment statistics from 2018 Census data for Aranui, compared with those for Christchurch and New Zealand as a whole.

Aranui Trial Mobility Hub Concept of Operations

Table 5-2: 2018 Census Data - Population and employment

	Aranui	Christchurch City	New Zealand
Number of residents	4,200	369,006	4,699,755
Number of Māori residents	1,257 (30%)	36,642 (10%)	775,836 (16.5%)
Median age (years)	30.0	37.1	37.4
Median age of Māori residents (years)	21.9	24.8	25.4
Number of male residents	2,106	183,972	2,319,558
Number of female residents	2,091	185,034	2,380,197
Percentage of full-time employed residents (%)	39.5	50.3	50.1%
Percentage of unemployed residents (%)	9.3	3.8	4.0
Percentage of residents undertaking full time study (%)	22.6	20.8	21.3%

Aranui has a significantly higher proportion of Māori residents (exceeding by 20%) compared to Christchurch as a whole. The proportion of residents who speak Te Reo Māori is over 3 times that of Christchurch City (Stats NZ, 2018). The strong presence of Māori residents in Aranui compared with Christchurch and New Zealand will enable the trial Mobility Hub to support inclusive access for equal social opportunities for diverse communities to work, live and play. Working in partnership with Māori will be important to ensuring that the final design will meet Māori needs.

Aranui consists of a younger population with lower rates of full-time employment compared to Greater Christchurch. The area exceeds Christchurch's proportion of unemployed residents by 5.5%, with almost a tenth of the population being unemployed (Stats NZ, 2018). There is strong evidence of inequalities in income and education outcomes in Aranui. In 2018, the median income for Aranui was \$21,300 with 3.1% of residents earning over \$70,000 compared with \$32,900 and 16.5% respectively for Christchurch City (Stats NZ, 2018). Reflecting the limited social opportunities present locally, rental prices in Aranui have not kept up with the broader increases seen across Christchurch, even seeing a fall between the 2013 and 2018 census (Figure 5.1). Affordability is therefore an important factor in planning the business model for a trial Mobility Hub.

The proportion of residents who do not own their own home is also growing, reiterating the economic and social inequality in the region. A great demand for affordable housing in Aranui demonstrates an alignment with need for future planning and accessible transport options. The trial Mobility Hub could support future enhancements to multimodal transport options, increasing access to employment opportunities for those who travel for work.

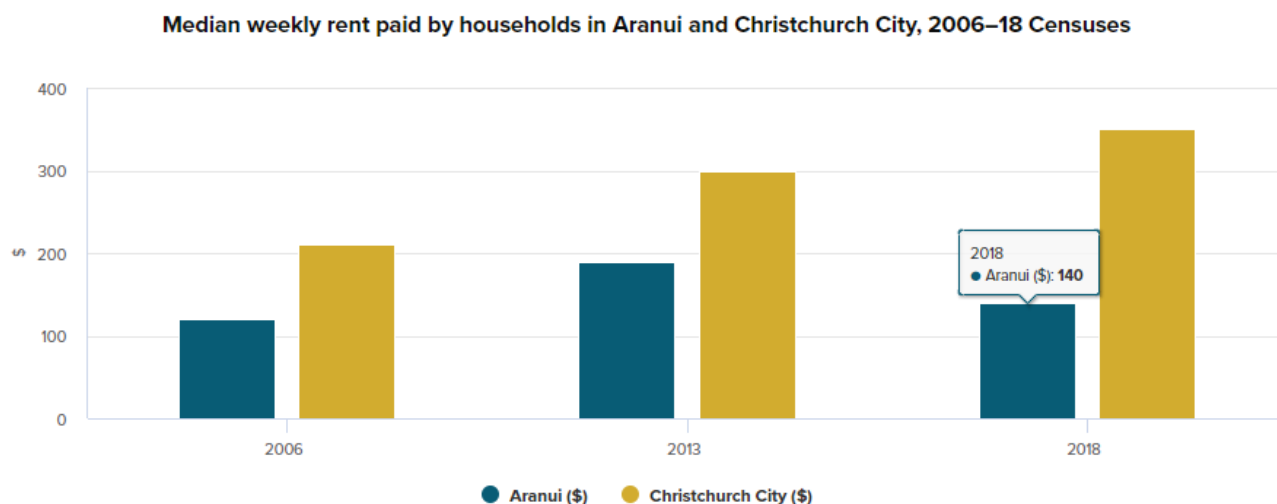


Figure 5.1 directly taken from 2018 Census place summaries (Stats NZ, 2018)

Similarly, only 89.7% of Aranui residents have access to all basic amenities compared with 94.2% of Christchurch residents (Stats NZ, 2018). The 2018 census defines basic amenities to include basic cooking facilities, drinkable tap water, kitchen sink, refrigerator, bath or shower, toilet, and electricity supply. 0.8% of Aranui residents reported having no access to any basic amenities at all. Aranui residents also reported a disadvantage in telecommunication access with 73.4% having access to internet and 90% having access to a mobile phone compared to 86.7% and 92.2% respectively for Christchurch (Stats NZ, 2018). A summary of amenities and telecommunication statistics for Aranui and Christchurch are listed in Table 5-3.

Table 5-3: 2018 Census Data - Amenities and Telecommunications

	Aranui	Christchurch	New Zealand
Median weekly rent per household (\$)	140	350	340
Residents with access to all basic amenities (%)	89.7	94.2	93
Residents with access to no basic amenities (%)	0.8	0.4	0.4
Residents with access to the internet (%)	73.4	86.7	86.1
Residents with access to cell phone or mobile phone (%)	90	92.2	91.9

This provides strong evidence of inequalities in housing outcomes, providing an opportunity for the trial Mobility Hub to support increased access to services and contribute towards better social opportunities for residents.

Aranui is home to a relatively high proportion of residents with activity limitations compared to Christchurch (Figure 5.2). There is a significant proportion of young people reporting having mobility constraints in Aranui, with 5.8% of people under 15 years, 8% of people aged 15-29 and 12.2% of people aged 30-69 reporting having one or more activity limitations (Stats NZ, 2018).

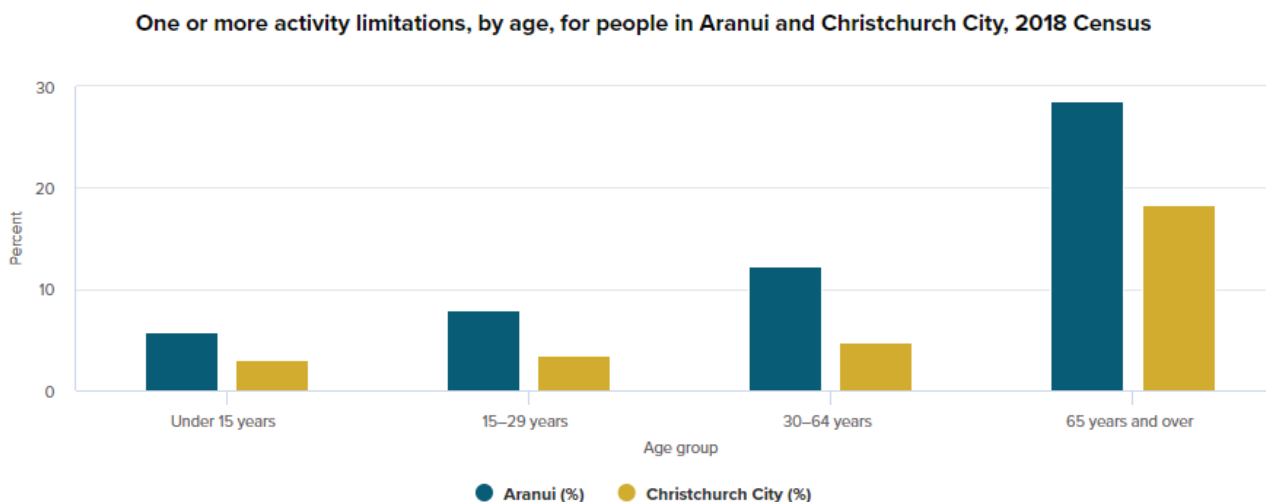


Figure 5.2: directly taken from (Stats NZ, 2018)

The 2018 Census recognises activity limitations for people living in Aranui who are described as having ‘a lot of difficulty’ or ‘cannot do at all’ one or more of the following activities: walking, seeing, hearing, cognition, self-care, and communication. This gap is seen in all age groups, though it appears to be greatest for people aged 30-64. Both locally and in Aranui, older people are most likely to report an activity limitation. The final hub design should be mindful of the activity limitations experienced by its potential users, and accessibility was a key consideration during the design phase of this project.

A well-designed Mobility Hub would increase convenience and safety for multi modal and micromobility access by providing improved links to activities, services, and between different transport services. Aranui demographics and transport context demonstrate a need for improved accessibility which may be achieved through designated safe spaces for access to inclusive and active transport options. The hub design should improve the public realm through inclusion of green space, waiting areas and safe shared paths to improve comfort and experience for users.

5.3 Transport Context

5.3.1 Mode Distribution

The modal distribution for work and education travel from Aranui 2018 Census data is shown in Figure 5.3.

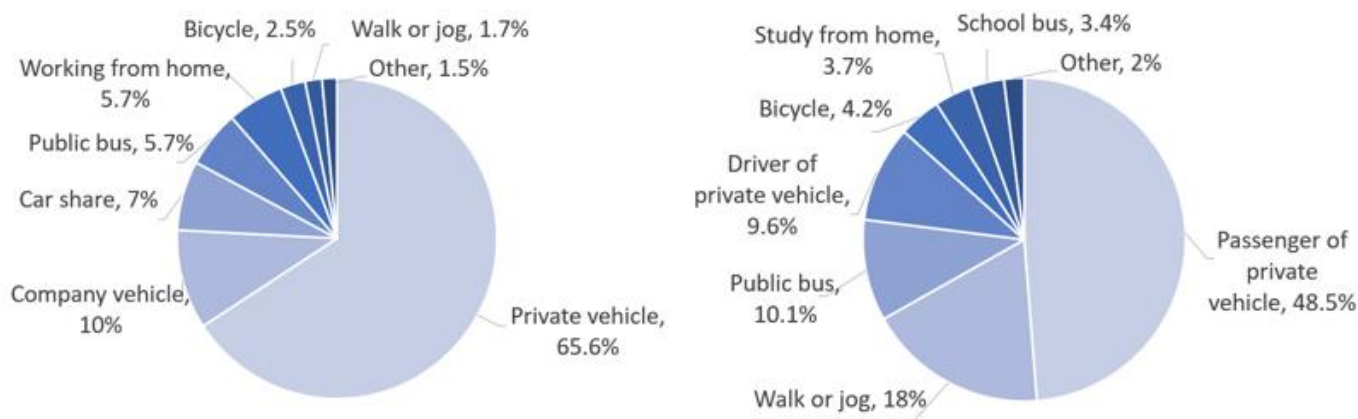


Figure 5.3 Modal distribution travel to work (left), travel to education (right)

The 2018 modal distribution for work and education travel from Aranui is compared against statistics for Christchurch and New Zealand in Table 5-4 and Table 5-5. Private vehicle is the most used mode of transport in Aranui with 39% of the households owning more than one car (Stats NZ, 2018). There is currently a low uptake of active transport for travel to work, although over 20% of children walk or cycle to school (Stats NZ, 2018). Overall, there are higher rates of private vehicle usage and lower rates of cycling and walking for travel in Aranui compared to Christchurch. During engagement, some stakeholders noted that this is through necessity rather than choice, with many children also lacking adequate equipment or clothing (rain gear) for cycling. Previous trial Mobility Hubs showed the ability to increase walking by 25% and decrease private vehicle usage by 39% (Holland, et al., 2018). Retrieved data also demonstrated that bike and micromobility trips were favoured in replacement of private vehicles, walking and public transportation (Holland, et al., 2018).

New Zealand 2018 Household Travel Survey revealed the average trip length to be 7.86km/trip, with most travel to work trips being outside of Aranui due to limited local employment opportunities (Stats NZ, 2018). Aranui shows a high dependence on private vehicles and barriers to micromobility and active transport options which could be addressed through the trial Mobility Hub.

Table 5-4 2018 Census data: Modal distribution travel to work

	Aranui	Christchurch	New Zealand
Private vehicle	65.6	61.6	57.8
Company vehicle	10	11.3	11.2
Car share	7.0	3.2	4
Public bus	5.7	4.2	4.2
Working from home	5.7	9.0	11.9
Bicycle	2.5	5.6	2.0
Walk or jog	1.7	3.9	5.2
Other	1.5	1.2	1.4

Table 5-5 2018 Census Data: Modal distribution travel to education (Aranui vs Christchurch City)

	Aranui	Christchurch	New Zealand
Passenger of private vehicle	48.5	35.6	39.1
Walk or jog	18.0	21.1	20.5
Public bus	10.1	9.0	7.1
Driver of private vehicle	9.6	15.9	11.1
Bicycle	4.2	9.1	3.6
Study from home	3.7	4.8	5.3
School bus	3.4	2.4	9.9
Other	2.0	2.0	1.3

5.3.2 Travel Behaviours

Future Streets Aranui: Community insights (2018) includes relevant research into the barriers and limitations that affect young people in Aranui regarding transport, based on analysis of interview responses.

The research finds that public transport is unlikely to be used by most young people due to perceived cost and limited bus services. Existing bus services do not service most students, with bus stops being 300 to 600 metres away from Haeata Community Campus and bus routes support limited directions of travel. Walking is the most common mode of transport in cases where families cannot afford access to a private or shared vehicle.

The interviewees also provided information on which nearby areas were considered important to them regarding accessibility and connectivity. This was confirmed during conversations with schools and ACTIS. The young interviewees reported that access to the local basketball courts and sporting venues as well as New Brighton Beach were important to their wellbeing. A significant proportion of trips being taken to and from Aranui are local, with a significant proportion of trips taken in Aranui being non-work trips (48.8%).

Mobility Hubs typically attract younger users and have been favoured over public transportation and private vehicle in previous trials. The trial Mobility Hub will provide further micromobility options and accessibility for young people who are underserved by the current public transportation options.

5.3.3 Road Access

The road network (shown in Figure 5.4 below) in Aranui consists of mostly local streets and some collector (Breezes Road and Hampshire Street) and arterial roads (Pages Road – major arterial and Wainoni Road – minor arterial). All roads and streets are predominantly designed with two-way single lanes of traffic and kerbside parking. At specific locations parking is replaced by cycle lanes. Major intersections such as those at Pages / Breezes Rd and Wainoni / Breezes Rd provide localised widening to accommodate two or three lanes each way to allow for turning opportunities.

Speed limits on the network are typically 50km/h, although Breezes Road has restrictions for school zones that limits speeds to 40km/h. Stakeholders noted that there are safety concerns at these intersections due to speed and limited pedestrian refuge for crossing.

Aranui Trial Mobility Hub Concept of Operations

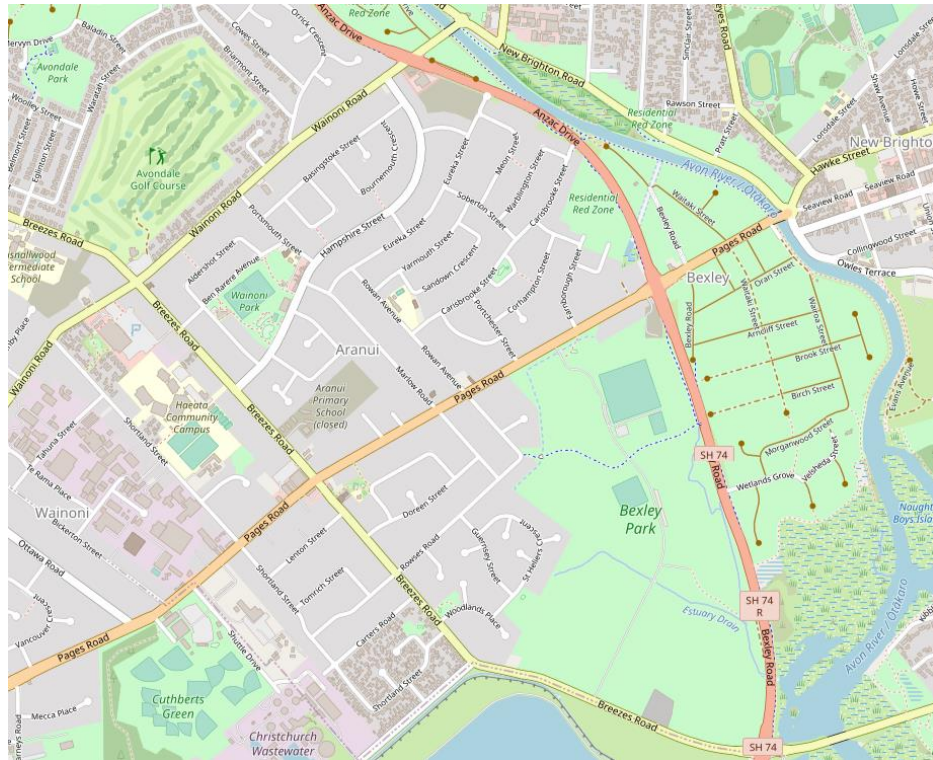


Figure 5.4: Aranui Road Network (Source: OpenStreetMap, 2023)

The Waka Kotahi open data portal has been examined to investigate data on Aranui traffic crashes reported by NZ Police. Aranui has faced one fatal road accident in the last 5 years. Crashes are most common along Wainoni Road and at major road intersections. NZ Police report issues with major speeding and risk of unsafe crossings. A previous Mobility Hub pilot scheme in Amsterdam saw residents give up their cars for a short period in exchange for credit to be used for public transportation, micromobility and car sharing. At the end of the scheme, 30% of the participants chose to permanently discard their car (CoMoUK, 2022). This indicates that a trial Mobility Hub in Aranui could present opportunities to contribute towards decreased private vehicle usage, congestion, and related traffic accidents.

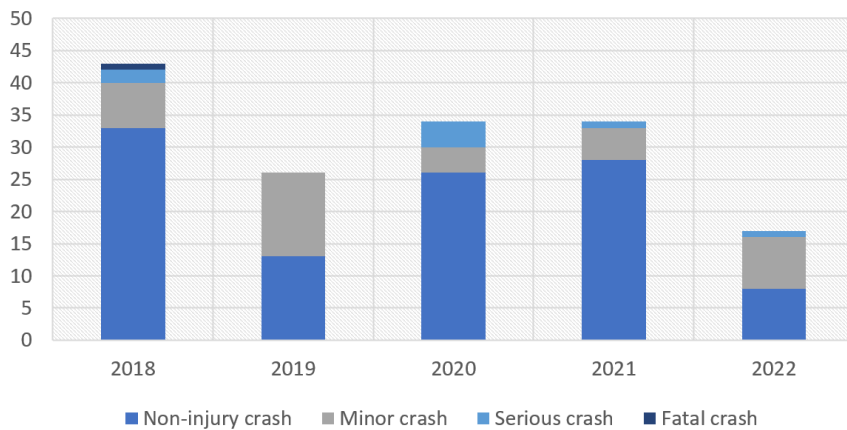


Figure 5.5: Aranui Road Crash Data 2018-2022 (CAS data)

Table 5-6: Aranui Road Crash Data 2018-2022 (CAS data)

Crash Type	2018	2019	2020	2021	2022	Total
Non-injury crash	33	13	26	28	8	108
Minor crash	7	13	4	5	8	37
Serious crash	2	0	4	1	1	8
Fatal crash	1	0	0	0	0	1
Total	43	26	34	34	17	154

5.3.4 Public Transport Access

The public transport network in Aranui consists of public bus services operated by Metro Christchurch. Two bus services currently run along Pages Road and Wainoni Road (Figure 5.6). Bus services operating along Pages Road provide access between New Brighton Beach and Rolleston. Bus services operating along Wainoni Road provide stops between Lincoln and Parklands. Each route offers 3-5 trips per hour during peak times and 1-2 trips per hour during off peak, with a significant proportion of the population residing within 400m of a bus stop.

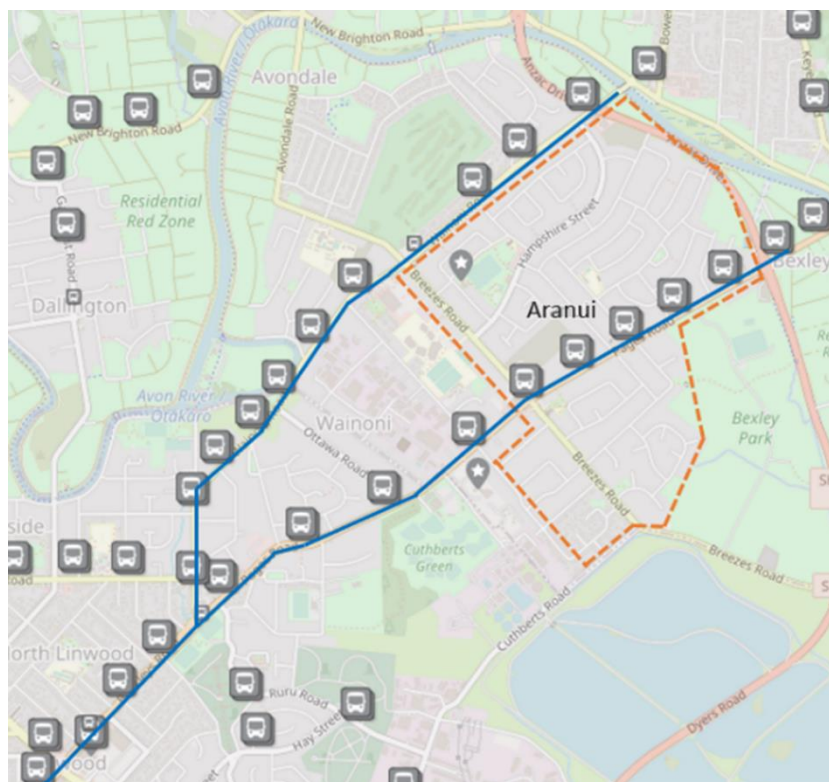


Figure 5.6 Bus routes operating in Aranui

There are currently no public transport options available in the middle of Aranui (along Hampshire Street), or for trips in the northern or southern directions. There are also currently no existing rail, metro, or tram services. ECan are looking at on-demand PT options across the region, with Aranui being considered, subject to other demands and funding constraints.

The lack of comprehensive public transport access in the area contributes to the low uptake and high car dependency presented by stakeholders in **Section 4**. The Mobility Hub would improve public transport access by providing multi-modal options for transfers. Whilst the proposed hub will support short round trips and

last mile trips, future upgrades to the public transport network may be required if car dependency is to be reduced locally.

5.3.5 Cycle Access

Painted cycle lanes are located on Wainoni Road and Pages Road, with a small number of discontinuous cycling lanes also available at main road intersections. Cycle lanes along Wainoni Road provide access to local bus services, the Pak'nSave supermarket and Shortland Playground. Cycle lanes along Pages Road provide direct access to Aranui Playground, as well as local access to Aranui Primary School from Breezes Road. Both the Wainoni Road and Pages Road lanes provide ongoing access towards Christchurch centre, though neither appear to be fully continuous for the length of the journey.

A designated cycling route is provided around Wainoni Park, providing access to Aranui Community Centre, Aranui Library and shops along Hampshire Street. Locally the Te Ara Ōtākaro Avon River Trail provides an 11km mixed surface trail route through nature that is suitable for bikes and likely used primarily for recreational activity. Some stakeholders reported a lack of cycling connections to local recreation and services. The cycling access in Aranui is shown in Figure 5.7.

Local engagement suggested that there were challenges to bicycle ownership in Aranui. The upfront cost of purchasing a good quality bike, the ability to maintain it and the ability to protect it from theft were all noted as barriers. Some feedback also indicated that it did not feel safe to ride a bike in Aranui, likely due to the limited infrastructure and noted instances of speeding. Whilst additional cycle infrastructure is beyond the scope of this study, addressing some of the above challenges to accessing bicycles is a key focus of the proposed hub.

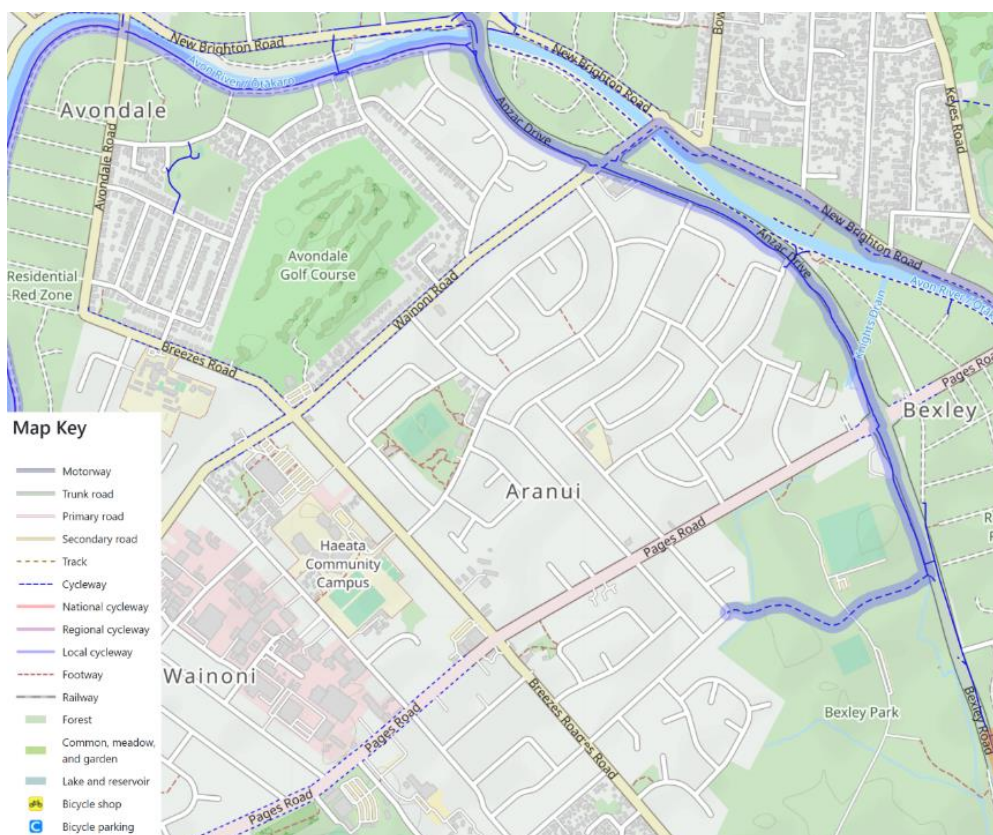


Figure 5.7: Cycling access in Aranui (Source: OpenStreetMap, 2023)

5.3.6 EV and Micromobility Access

One Electric Vehicle (EV) charging station is available along Wainoni Road at the Pak'nSave Supermarket carpark. It is not expected that EV ownership is high locally due to the high cost of purchasing a vehicle and low average incomes in Aranui. It is noted that for an average journey length of 8km an EV vehicle could be a suitable and relatively sustainable choice if they were more readily available to the population. Mobility partners reported low use of EVs in Aranui with users being more likely to use EV shared cars or micromobility devices for a one-way trip on their way home from work rather than during their morning commute.

Currently there are two micromobility operators in Christchurch: Lime and Neuron and the team observed two scooters in use during a site visit to Aranui. Christchurch City Council's live heatmap provides updates on locations of micromobility vehicles in Christchurch, showing existing use in the areas (Christchurch City Council, 2023). This heatmap holds records of all the micromobility trips since October 2018. In Aranui, this has ranged between 1,000 to 8,000 trips since October 2018, varying depending on the specific location of interest. This contrasts with nearby suburbs closer to the central city such as Linwood (up to 35,000 trips in the last 5 years), indicating that typical micromobility usage in Aranui is relatively low. However, as Lime and Neuron are paid services this suggests that at least some users are willing to pay to access micromobility locally. Feedback from the community (see Section 4.4.3) showed that there are some significant barriers to micromobility usage that a trial hub will need to address.

During a site visit a vandalised e-scooter was observed near Hampshire Street, suggesting that the current dockless system for local e-mobility may experience challenges and create negative local impacts.



Figure 5.8: Photo taken during site visit of vandalised e-scooter

5.4 Interdependencies

There are current opportunities to incorporate works into the Haeata Connections project currently being undertaken in Aranui as a part of the CCC Streets for People Project.

Aranui Trial Mobility Hub Concept of Operations

The Haeata Connections (Streets for People Project) is working to develop strategies to improve personal and travel safety for Aranui communities which have been limited in their ability to travel sustainably and safety. This includes activating the space around Hampshire Street shops to aid traffic calming.

Working with other programmes, initiatives and systems in the area, the trial Mobility Hub could form a part of an integrated systemic approach to tackling the significant and complex issues facing the Aranui community.

6. Challenges and Opportunities

Review of data and feedback from community and partner engagement has identified a number of existing challenges and opportunities to improve the current transport conditions. These are outlined in Table 6-1.

Table 6-1: Challenges and opportunities

Challenges	Opportunities
<p>Limited bus services and ease of access to stops: Bus services only operate along Pages Road and Wainoni Road, meaning that passengers travelling between the northern and southern regions of Aranui do not have access to connecting public transport options. Passengers wishing to travel between the northern and southern areas in Aranui by public transport will experience extended travel times by traveling back and forth across the suburb to transfer bus services at the Wainoni / Pages Rd intersection. NZ Transport Agency 'Future Streets Aranui: Community insights' 2018 report revealed that existing bus services do not service most students with only 20% of students living within 500 m of bus lines. Access to the bus network relies on walking significant distance which particularly impacts access for users with limited mobility.</p>	<p>Connectivity may be improved by locating EV and shared mobility options within the suburb's lesser serviced transport locations. Mobility Hubs services may provide an alternative mode of transport or providing customers with a means of reaching the nearest convenient bus stop. There is also an opportunity to increase safety and accessibility to active transport modes such as cycling, with 75% of student living within 2km from school.</p>
<p>Limited Safe Cycleways: NZ Transport Agency 'Future Streets Aranui: Community insights' 2018 report states that from NZ Police Survey of Aranui residents that most cyclists ride on the footpaths posing a risk for pedestrians and indicating a perception that local roads are unsafe for cyclists, consistent with the lack of safe cycleways in Aranui. Cycle lanes are currently only available along Wainoni Road with a designated bike track encompassing Wainoni Park.</p>	<p>Inclusion of lockers for helmet storage may increase safe cycling behaviours. Although outside the scope of the trial hub, there is an opportunity to incorporate safe cycle lanes on wider surrounding roads.</p>
<p>Personal Security Property Crime and Vandalism: NZ Police reported an increase in violent and property crimes over the past year. Crime rates in relation to burglary, theft and assault have shown an increase in the Christchurch, with the proportion of crimes which were theft-related increasing from 64% in 2021 to 71% in 2022. The Haeata Connections 'Community Engagement report revealed that personal security is of high concern for many residents in Aranui, and directly impacts the way that people choose to travel. Mobility partners reported some shared car customers have used vehicles for criminal activity or under false identification.</p>	<p>Proactive prevention of intentional vandalism to property may be reduced by locating trial hub facilities in well-lit public spaces with clear through sightlines, passive surveillance and by including additional CCTV surveillance. All fixed equipment should be secured to the ground through poured concrete to prevent theft. Robberies may also be reduced by ensuring adequate security locks for onsite equipment. Materials and designs should be chosen with consideration of their ability to protect from vandalism, and the operating system for mobile equipment should be linked wherever possible to a person's identity to encourage mindful and accountable use of the hub's facilities.</p>

Challenges	Opportunities
<p>Road Safety: Waka Kotahi open data portal has been examined to investigate data on Aranui traffic crashes reported by NZ Police. Aranui has faced one fatal road accident in the last 5 years. Crashes are most common along Wainoni Road and at major road intersections. NZ Police report issues with major speeding and risk of unsafe crossings.</p>	<p>The trial Mobility Hub could be designed for access via a local street or designated lane, avoiding busy roads or major intersections.</p> <p>Although outside the scope of the trial hub, local traffic calming could slow down vehicles and improve safety.</p>
<p>Affordability: Stakeholder engagement highlights that affordability is a key concern and could pose a barrier to use of the hub.</p>	<p>Engagement with mobility partners suggests that best practice in areas with affordability constraints may be to subsidise use of the hub.</p>
<p>Personal mobility and internet use issues: Following community engagement workshops, it is understood that Aranui sees a higher prevalence of personal mobility and general activity related challenges (as per Section 5.2). This could result in some members of the community being unable to access the hub’s services.</p> <p>It is also understood that some members of the community may not be able to easily access the internet, smartphones, or may not be familiar with the use of app booking systems.</p>	<p>The modular design for the hub should consider the provision of accessible mobility options. Hub design and layout should incorporate Universal Design principles to enable all users to access the facility, whatever their abilities.</p> <p>The service delivery model for the trial hub could include informational support, training and alternative methods of booking and payment to enable use by those with limited access to the internet or familiarity with app booking systems.</p>
<p>Integrated Planning: It was noted during consultation that some residents felt that there was not a joined-up approach to planning of infrastructure across Aranui, and that sometimes measures were promised but not delivered.</p>	<p>While this hub is a stand-alone project itself, care has been taken to interface with local projects like the Haeata Connections programme – an integrated systemic approach is needed to deliver positive outcomes efficiently and effectively for the community.</p> <p>As the projects progress it will be important to manage stakeholder expectations and clearly communicate any risks to delivery.</p>

7. Hub Specification

The design was developed through consideration of a range of options to find the most appropriate option ('optioneering'), a process guided by the review of literature, and by CoMoUK's approach in particular.

Component selection was carried out by filtering potential mobility and non-mobility related hub components based on their feasibility and relevance to the project outcomes and site context. A summary of the optioneering process is shown in Figure 7.1.

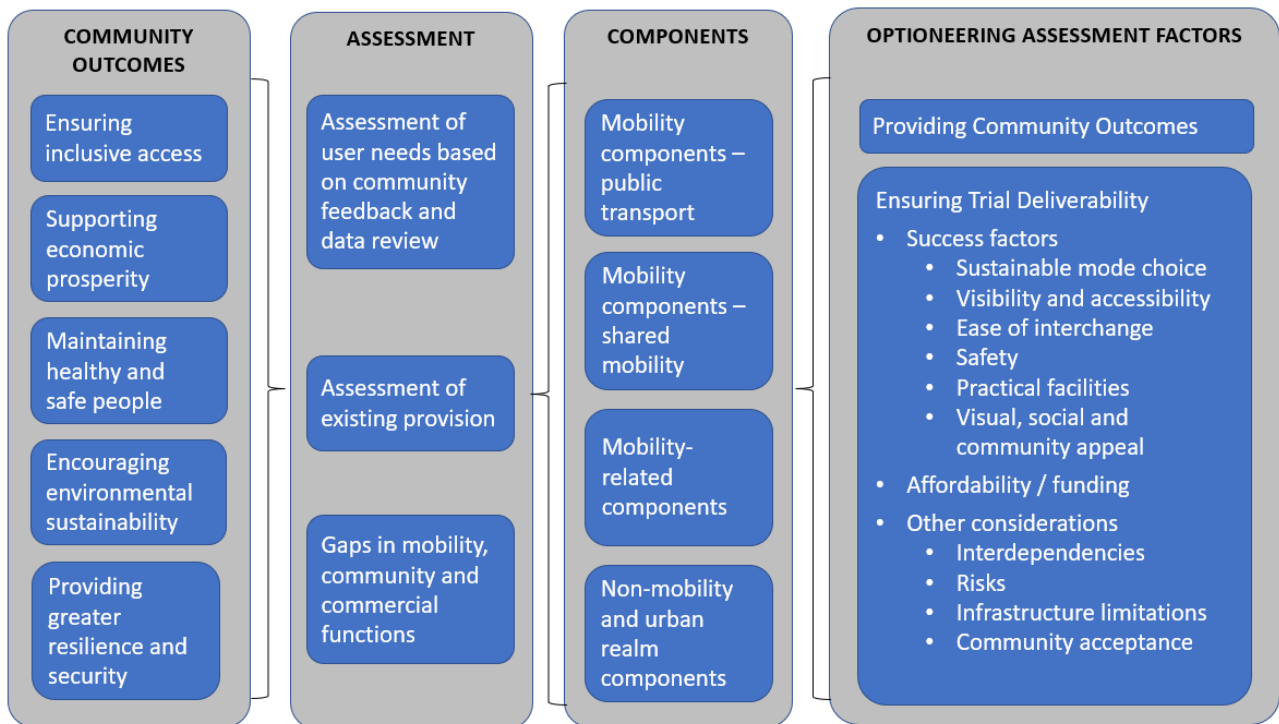



Figure 7.1: Optioneering Assessment Diagram for Component Selection

7.1 Hub Type

The CoMoUK Mobility Hub guidance contains five main hub types, outlined in Table 7-1.

Table 7-1: Mobility Hub typologies

Hub Type	Key Features
<p>Large interchange or city centre hub</p> 	<p>This type of hub is located in urban centres and generally integrates two or more public transport options, shared mobility options and supporting infrastructure such as large-scale cycle parking or EV charging bays. In the CoMoUK example pictured, there is a bus interchange, a train station in the background and information signage for the hub. The hub structures have consistent design within a built environment context, intended to give users an understanding of place and purpose.</p> <p>The city centre design uses existing public space around a large public transport hub to allow 'first and last mile' connectivity, which helps to reduce private car usage in urban areas.</p>

Hub Type	Key Features
<p>Transport corridor hub</p> 	<p>This type of hub is located in transport corridors, such as a major arterial route, and typically integrates a public transport, shared mobility and supporting infrastructure such as cycle parking. Transport corridor hub components can be either grouped together, or as seen in the example, placed along a road in a linear manner.</p> <p>As this is a transport corridor, wayfinding and accessibility are vital especially when users transfer from one mode to another. These transport corridor hubs often work best within a network of hubs. City centre and large town hubs can offer users a positive experience of shared transport and the interchange with public transport.</p>
<p>Business park or new housing development hub</p> 	<p>This type of hub is located in business parks or new housing developments, and typically integrates public transport, shared mobility and supporting infrastructure such as cycle parking. For business parks, there may also be shared fleets for business travel and the hub could become a place to gather after work that offers shelter and amenity. In the CoMoUK example, the hub could be as compact as needed as long as it offers users sufficient services and give a sense of place.</p> <p>For new housing developments, the green elements of the hub offering are especially important. Trees break up surfaced areas and grass offers somewhere to sit or for children to play. The green roofs are visually attractive and offer insulation against both heat and cold.</p>
<p>Suburban or mini hub</p> 	<p>This type of hub is located in suburban areas and generally integrates public transport and shared mobility options, as well as small scale supporting infrastructure such as bike repair stands and covered seating. These mini hubs are compact in nature but still offer a quality local space for people to congregate and socialise. These hubs should offer services that complement existing local services in the neighbourhood.</p> <p>Accessibility is a key consideration of suburban hubs to make transport inclusive for all members of the community. By providing quality infrastructure and services, new users can be enticed to try the hub and leave the car at home, especially for first and last mile trips.</p>
<p>Small town hub</p> 	<p>This type of hub is located in small towns, and generally integrates public transport (eg regional rail) and shared mobility options, as well as supporting infrastructure like cycle parking. As with suburban hubs, there is a strong link to first and last mile trips. In the CoMoUK example, services include buses, bike share and an EV car club along with journey planning information.</p> <p>The hub can potentially be located at the centre of a town, where the Mobility Hub can increase footfall to the economic centre of the small town. Public space becomes activated as people use different hub modes or services that have appeared around the hub.</p>

Source: <https://www.como.org.uk/guidance?mode=Mobility+hubs>

This proposed Mobility Hub in Aranui can be classified as a ‘suburban or mini hub’ in alignment with CoMoUK Mobility Hub guidance. As Aranui is located in the suburbs, a small-scale hub providing a range of different transport modes would best suit its location. Placemaking elements would also improve public realm surrounding a community space. Suburban hubs may operate as part of a hub network or as a standalone facility, as will be the case initially for the trial Aranui hub.

7.2 Modular Design

Potential modular design components were considered in the optioneering process of designing a trial Mobility Hub in Aranui. The literature review and mobility partner feedback and research into existing Mobility Hubs supported the development of a general inventory catalogue of potential mobility and non-Mobility Hub components which may be considered for the hub trial. A summary of potential hub components is listed in Table 7-2. These are general components relevant to New Zealand and not necessarily compatible with this site.

Table 7-2: Potential Mobility Hub components long list

A1: Mobility Components – Public Transport	A2: Mobility Components – Shared Mobility	B: Mobility Related Components	C: Non-Mobility & Urban Realm Improvements
<ul style="list-style-type: none"> • Rail • Bus • Ferry • Demand responsive transit minibuses • Ride hailing, taxis 	<ul style="list-style-type: none"> • Car share: back to base or one way; electric or hybrid or ICE • Bike share: back to base or one way; electric or unpowered • Cargo bike share, cargo bike logistics store • Other shared micromobility options eg scooters or mopeds; electric or unpowered • Ride sharing 	<ul style="list-style-type: none"> • EV charging bays • Bike parking (standard, covered, restricted access, charging) • Bike repair, pumps • Digital pillar, (information on transport and local area, ticketing) • Child car seats, bike seats & trailers • Community concierges, parcel last mile delivery • Mini-freight logistics hub 	<ul style="list-style-type: none"> • Improved public realm, safer crossings, step free access, road repairs, adjustments for disabilities • Covered waiting area, seating, planting etc • Parklet or community art • Kiosks for refreshments • Wi-Fi, phone charging • Parcel lockers • Mini fitness or play area • Co-working space • Outdoor water fountain

7.3 Optioneering

Following site visits, data review and community engagement sessions, the team gained insights into the general needs and local demands for transport access and infrastructure within the local community. This has enabled a customer-centred optioneering approach, while focusing on future mobility outcomes which would better serve the community and trial deliverability.

The optioneering assessment process for modular design components considered each class of component in turn:

- A1 and A2 Mobility Components
- B Mobility-Related Components
- C Non-Mobility-Related Components

The review of users' needs and existing conditions supported identification of which components would support achievement of the desired project goals.

Industry engagement

Industry engagement with mobility partners assisted in providing a range of existing options and their performance within different land use and social settings. Mobility partners reported an existing low use of shared mobility in Aranui based on their internal vehicle tracking and demand data. Aranui has reported relatively high levels of vandalism and some misuse of vehicles for criminal activity.

Community Feedback

Community engagement provided insights into the existing transport conditions and needs of the community. Due to the limited bus services operating in Aranui, residents need accessible and affordable connections for local travel within the suburb, favouring accessible active transport options such as bike share. There are opportunities to encourage future mobility through sustainable transport options such as shared bikes and scooters. Feedback favoured inclusion of unpowered micromobility as being more accessible for children and provision of three-wheelers for use by the mobility impaired.

To support the use of shared and personal micromobility, direct connections between the hub and the local micromobility networks should be provided. The hub may include bike facilities to encourage use of existing assets including public bike parking, bike pumps and repair facilities.

EV car share or charging facilities were not favoured by the community who reported these services as unlikely to be used by residents who are primarily facing issues regarding accessible connectivity with limited interest in electric transport advancements. Similarly, ride sharing, ride hailing and logistics functions did not attract community support as these are not aligned with local needs.

The community feedback showed support for public realm and accessibility enhancements to create a space that integrates with the existing community areas, increase activation of the area and to support security of prospective hub users.

Existing Conditions

The review of existing conditions confirms that there is limited access to bus services available in Aranui. This suggests that there is an opportunity to improve access to bus services through the inclusion of integrated facilities at the Mobility Hub including direct walking or micromobility links.

The review also identified issues with property crime and personal security in Aranui, which would support inclusion of public realm enhancements for activation and passive surveillance purposes; these could be reinforced by provision of CCTV.

From direct observations and online data that some users are willing to pay to access electric micromobility locally. Therefore, there may be some demand for electric scooters at the hub.

Following identification of a specific site, existing conditions were reviewed to confirm the appropriateness of the selected hub components.

7.4 Component Selection

Following the optioneering assessment, the long list of potential hub components was classified in Table 7-3.

Table 7-3: Component Selection

Component	Selected	Rationale
A1: Mobility Components – Public Transport		
Bus	✓	Potential to support public transport trips by connecting with local bus routes.
Rail	✗	No rail, ferry or demand responsive services operate in Aranui.
Ferry	✗	
Demand responsive	✗	
Ride hailing, taxis	✗	Not aligned with community feedback or needs.
A2: Mobility Components – Shared Mobility		
Bike share	✓	Community feedback supports unpowered bike and scooter provision - potential to support local cycling and micromobility trips. Evidence also indicates some existing demand for scooters.
Other micromobility	✓	
Car share	✗	Not aligned with community feedback or needs.
Cargo bike share	✗	
Ridesharing	✗	
B: Mobility Related Components		
Bike parking	✓	Potential to support local cycling trips by providing facilities.
Bike repair, pumps	✓	
Child car seats, bike seats & trailers	✓	Potential to support local cycling trips by improving accessibility for families.
EV charging	✗	Not aligned with community feedback or needs.
Digital pillar	✗	
Community concierges, parcel last mile delivery	✗	
Mini-freight logistics hub	✗	
C: Non-Mobility & Urban Realm Improvements		
Improved public realm	✓	Community feedback supports activation interventions at the hub to create a community space, provide passive surveillance and improve security.
Waiting facilities	✓	
Parklet or community art	✓	
Kiosk	✓	
Outdoor water fountain	✓	
Wi-Fi, phone charging	✗	Not aligned with community feedback or needs.
Parcel lockers	✗	

Component	Selected	Rationale
Mini fitness or play area	✘	
Co-working space	✘	

The principal mobility components identified were shared unpowered bikes and scooters – the feedback from the community was that three-wheeler bikes should also be included to help inclusion of mobility impaired and elderly people. The level of provision can be considered as a trade-off between the project goals. Optimising the Community Outcomes would indicate high numbers of bikes and scooters to maximise potential usage, whilst enabling Trial Deliverability aligns with a lower level of provision that can be more readily funded, managed and accommodated in a smaller site footprint.

Further considerations included:

- Advice from mobility partners indicated that micromobility deployments should enable continuity of service during maintenance and repair processes. Furthermore, review of literature showed that uncertainty of availability of shared mobility services can deter potential users. Taken together, these point towards providing at least two of each device type.
- Existing micromobility demand in Aranui is relatively low at no more than 8,000 trips in the last 5 years, compared with eastern suburbs closer to the central city such as Linwood (up to 35,000 trips in the last 5 years). However, feedback from the community (**Section 4.4.3**) shows that existing schemes are not attractive for all residents, due to cost and suitability for children, older people and those with activity limitations.

Taking all these factors into account, Jacobs recommends a trial deployment of:

- Three unpowered shared bicycles for general use
- Two electric three-wheeler shared bicycles for general use but targeted at older people and those with activity limitations
- Two unpowered scooters for general use but targeted at schoolchildren

The composition of the deployment is consistent with the characteristics of the Aranui community as assessed in **Section 5.2**.

To limit the infrastructure requirements at the trial hub and support the Trial Deliverability goal, the electric three-wheelers will be charged off-site. This aligns with current practice for shared micromobility providers.

7.5 Initial Hub Specification

In summary, the following Mobility Hub components have been initially selected:

- Three unpowered shared bicycles
- Two electric three-wheeler shared bicycles
- Two unpowered scooters
- Public bike pump facilities
- Public bike parking
- Connectivity to local bus routes

The design will also contain the following non-Mobility Hub components:

- Seating
- Rubbish bin
- Signage
- Lighting
- CCTV
- Drinking water fountain (optional depending on site capacity)
- Community street art, parklet (optional depending on site capacity with opportunities to engage community)
- Kiosk or café facilities (optional depending on site capacity)

8. Site Selection

8.1 Initial Optioneering

A site visit to Aranui was undertaken on the 23rd of March 2023 to identify suitable site locations and develop a better understanding of the Aranui community context. The team gathered useful insights and identified several locations during the visit with potential for deployment of a trial Mobility Hub that could meet project goals.

Three localities within Aranui were identified, each of which contain potential site locations for consideration in the initial optioneering (Figure 8.1):

- 1) Wainoni Rd/ Breezes Rd intersection
- 2) Wainoni Park
- 3) Pages Rd / Breezes Rd intersection

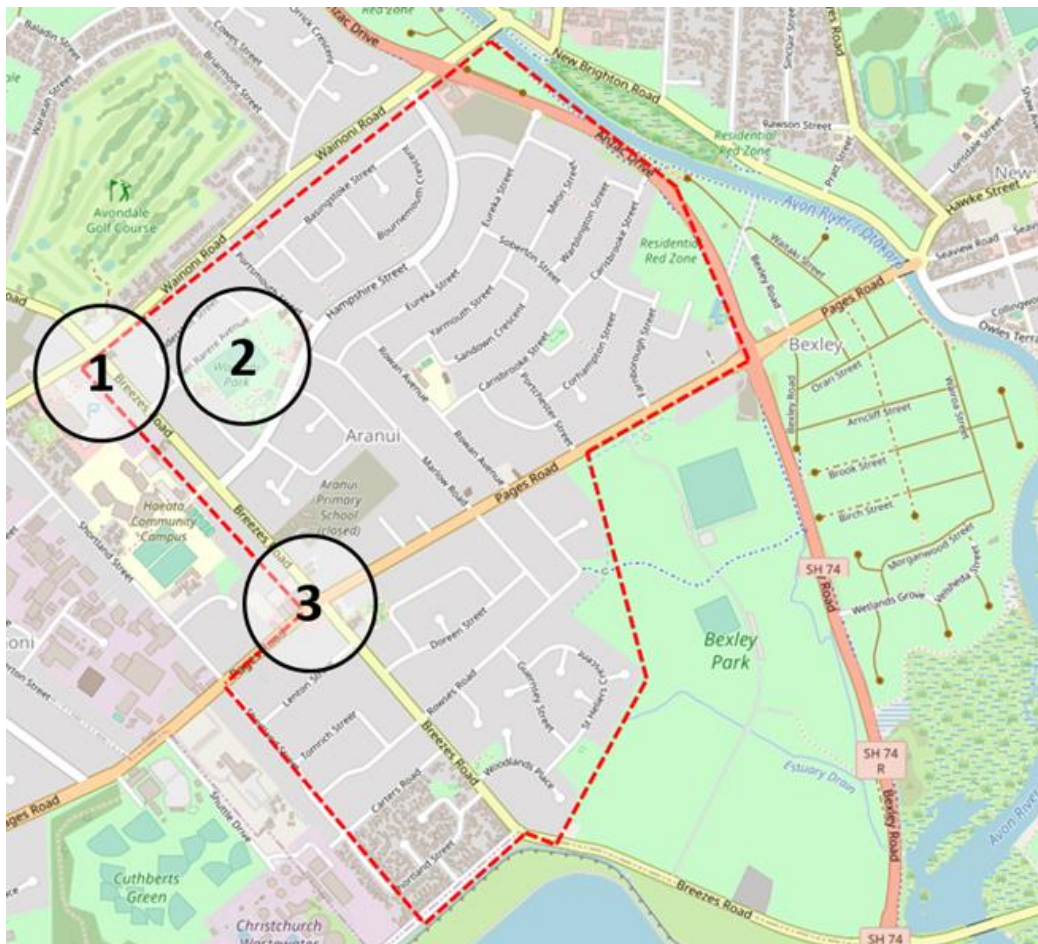


Figure 8.1 General localities for potential sites (Source: OpenStreetMap, 2023)

These localities are discussed in more detail in **Sections 8.1.1 to 8.1.3.**

8.1.1 Wainoni Rd / Breezes Rd intersection

The Wainoni / Breezes Rd intersection was considered a suitable potential location for the trial Mobility Hub and contains four potentially suitable sites on privately-owned land comprising:

- Pak'nSave Supermarket car park
- Allied service station
- Unutilised land at 179 Wainoni Rd
- Avondale Golf Club carpark

The Pak'nSave Supermarket carpark (Figure 8.2) contains a large amount of usable space as well as an existing EV charging station which shows potential to be built upon. The intersection is subject to high levels of passive surveillance being in proximity to a large supermarket, golfing facility, playground and petrol station. Cycle lanes and bus services are currently available along Wainoni Road. This site was considered to have the most potential for a Mobility Hub and was selected as representative of the locality of Wainoni / Breezes Rd intersection.



Figure 8.2: Pak'nSave Car park (left), Pak'nSave EV charging Station (right)

8.1.2 Wainoni Park

The Wainoni Community Centre is located adjacent to Wainoni Park and residential areas. Four potential government-owned sites were identified around Wainoni Community Centre comprising:

- Aranui Wainoni Community Centre Northern car park
- Aranui Wainoni Community Centre Southern car park
- Aranui Wainoni Community Centre playground
- Aranui Library Car Park

The Wainoni Community Centre area (Figure 8.3) is the furthest away from any existing bus services within the three considered localities. A designated cycle path is available around Wainoni Park and subject to a high level of passive surveillance around Aranui Library, sporting courts, playground, and local shops north of the site. The Aranui Wainoni Community Centre Northern car park was considered to have the most potential for a Mobility Hub and was selected as representative of the locality of Wainoni Park.



Figure 8.3: Wainoni Community Centre Entrance and bike stands (left), Wainoni Community Centre Northern car park (right)

8.1.3 Pages Rd / Breezes Rd intersection

The Pages Rd / Breezes Rd intersection revealed six potential site locations within the vicinity comprising:

- Rāwhiti Community Corrections
- Unutilised land at 331 Pages Road
- Mobil service station
- Unutilised land 352 Pages Road
- Unutilised land 304 Pages Road (former church)
- Unutilised land 305 Pages Road (former community centre)

The sites (Figure 8.4) are in proximity to cycle lanes and local bus services operating along Pages Rd. The sites are also subject to high level of passive surveillance being in proximity to a petrol station, convenience store, pharmacy, Kindergarten Learning Facilities, and local residential spaces. The Pages Rd / Breezes Rd intersection is within a school zone. The Rāwhiti Community Corrections site was considered to have the most potential for a Mobility Hub and was selected as representative of the locality of the Pages Rd / Breezes Rd intersection.



Figure 8.4: 331 Pages Road (left), 352 Pages Road (right)

8.2 Multi-Criteria Analysis

Following the initial optioneering, the project team developed a MCA to select a suitable site for the trial Mobility Hub in Aranui. Factors that could contribute to meeting the goals were considered and identified as follows:

- **Safety** – Contributes to the Community Outcomes goal, aligning with the outcome for healthy and safe communities. Takes into consideration the potential for vandalism and mistreatment of assets as well as the safety of its users.
- **Delivery** – Contributes to the Trial Deliverability goal. Considers the suitability of the land to meet administrative, design and operational requirements of the project to ensure successful delivery of the trial Mobility Hub.
- **Local Demand** – Contributes to both the Community Outcomes goal and the Trial Deliverability goal as maximising uptake can impact on local benefits as well as the collection of evidence for evaluation. To avoid double counting, criteria impacting potential demand have been analysed under the Trial Deliverability goal only. This factor assesses the likelihood of the hub being noticed and used, based on accessibility of existing transport infrastructure and proximity to potential users.

Under each factor a set of criteria were identified that:

- Reflect performance against all factors and hence goals
- Can be assessed using either quantitative or qualitative analysis
- Are independent and avoid double counting

A total of 10 criteria were identified, as outlined in Table 8-1.

Aranui Trial Mobility Hub Concept of Operations

Table 8-1: Site Selection - MCA Criteria by Goal

Criteria	Data Sources	Analysis	Rationale
Goal: Community Outcomes			
Site safety and security	Site visit, mapping and StreetView	Qualitative – local activity, availability of passive surveillance, CCTV and lighting.	Contribution to healthy and safe communities outcome by providing a safe and attractive hub.
Local road safety (actual and perceived)	Crash data and mapping	Quantitative – crash clusters Qualitative – road characteristics	Contribution to healthy and safe communities outcome by providing a safe and attractive hub.
Goal: Trial Deliverability			
Local activities and Place function	Mapping	Qualitative – walk distances to commercial, education and community facilities.	Contribution to potential hub uptake by aligning with local travel demand – supporting development of evidence.
Accessibility by active modes	Mapping	Qualitative – proximity to walking and cycling facilities.	Contribution to potential hub uptake by aligning with easy active mode access – supporting development of evidence.
Accessibility by PT	Mapping	Qualitative – proximity to bus stops and EV charging.	Contribution to potential hub uptake by aligning with easy PT access – supporting development of evidence.
Proximity to residential spaces	Mapping	Qualitative – walk distances to residential areas.	Contribution to potential hub uptake by maximising catchment and demand – supporting development of evidence.
Existing micromobility activity	Christchurch City Council SmartView	Quantitative – number of micromobility trips made locally.	Contribution to potential hub uptake by aligning with local travel demand for micromobility – supporting development of evidence.
Landowner	Assumptions based on current use	Qualitative – public and community facilities assumed to be on public land, otherwise private.	Contribution to potential for easier land acquisition.
Available land options	Site visit, mapping and StreetView	Number of potential sites in locality.	Contribution to potential for alternative sites.
Constructability	Site visit, mapping and StreetView	Existing hardstanding, access points or other relevant facilities.	Contribution to potential to leverage off existing assets.

The Pak'nSave (Wainoni Rd - Breezes Rd intersection), Wainoni Community Centre (Wainoni Park) and Rāwhiti Community Corrections (Pages Rd - Breezes Rd intersection) were scored against the 10 criteria and then ranked against their ability to meet project goals.

For each representative site, a score from 1 to 5 was given to each criterion, with '1' representing the lowest alignment and '5' representing the highest alignment. Note that all scores are given relative amongst the three sites, with equal weightings across the project goals. Criteria scores were weighted and averaged to calculate the contribution scores, which were then averaged to combine them into a score for each goal. The goal scores were then averaged to provide a final score. Unrounded scores were used at every step. A summary of all MCA criteria and individual scores for each location can be found in **Appendix C**.

The MCA score for each specific site is shown in Table 8-2.

Table 8-2: MCA scores for Aranui sites

Contribution (Criteria)	Score		
	Pak'nSave	Community Centre	Community Corrections
Goal: Community Outcomes			
Healthy and safe communities	3.0	3.5	2.5
(Site safety and security)	4	3	4
(Surrounding road safety)	2	4	1
Goal: Trial Deliverability			
Local demand	3.0	3.0	3.6
(Accessibility by active modes)	3	3	2
(Accessibility by PT)	3	2	3
(Local activities)	4	5	5
(Proximity to residential spaces)	3	4	5
(Frequency of micromobility trips)	2	1	3
Delivery challenge	2.5	4.5	3.0
(Landowner)	1	5	2
(Available land options)	4	3	5
(Constructability)	4	5	3
Summary			
Community Outcomes	3.0	3.5	2.5
Trial Deliverability	2.6	3.8	3.4
Final Score (Maximum Score is 5)	2.8	3.6	3.0

The differences in goal scores were generally driven by cumulative incremental differences in criteria scores. There were a number of points of distinction:

- Community Correction's relatively low Community Outcomes score was driven by the close proximity of the busy intersection of Pages Rd and Breezes Rd with a high level of crashes, including a fatality. This impacts on both the perceived and actual safety of the site for potential users of micromobility or cycles at the hub site.
- The Community Centre's relatively high Trial Deliverability score was driven by Council ownership of the land at the representative site and the alternative sites, contrasting with the generally private ownership of sites at the other localities.

8.3 Preferred Site

The Wainoni Community Centre was selected as the preferred site for the trial Mobility Hub (see Figure 8.5). The site revealed consistently high scores for both project goals. Importantly, the site ranked highest on the

Aranui Trial Mobility Hub Concept of Operations

Trial Deliverability goal, being the only government-owned site and showing lower potential for landowner conflicts and costly financial agreements. Community stakeholder feedback from the ACTIS hub meeting on 18 April showed the highest support for the site.

The site is within the Aranui Wainoni Community Centre car parking and near Wainoni Park, Aranui Library and local shops. The site is also within a 5-minute scoot or cycle from Haeata Community Campus, Pak'nSave supermarket and local bus stops. The site lacks close walking access to local bus services, within a 5-minute walk, demonstrating a greater need for accessible and active transport options to provide an alternative to private vehicles for residents and to support access to public transport. Streets for Communities are progressing a small project looking at activating the space around Hampshire Street shops to aid traffic calming.

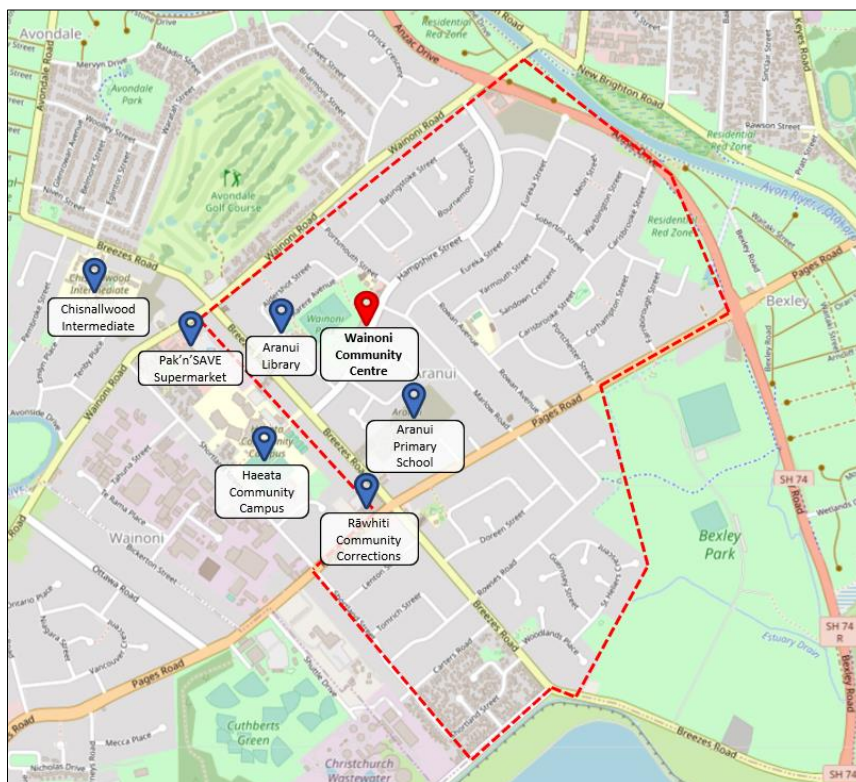


Figure 8.5 Location of Wainoni Community Centre within Aranui

9. Design Development

9.1 Site Components and Layout

Following the selection of a preferred site, the initially selected Mobility Hub components were reviewed to confirm their suitability for the Wainoni Community Centre site. Due to the close proximity of public bike parking at the Community Centre, it was not considered necessary to include further bike parking facilities in the trial hub. Similarly, the location at the edge of Wainoni Park reduced the potential greening benefit from inclusion of a parklet. No local bus routes currently operate along Hampshire Street, so direct connections to bus were also removed from the component list.

The Mobility Hub components were confirmed as follows:

- Three unpowered shared bicycles
- Two electric three-wheeler shared bicycles
- Two unpowered scooters
- Public bike pump facilities

The design will also contain the following non-Mobility Hub components:

- Seating
- Rubbish bin
- Signage
- Lighting
- CCTV
- Drinking water fountain (optional depending on site capacity)
- Community street art (optional depending on site capacity)
- Kiosk or café facilities (optional depending on site capacity)

The site was then examined to determine a suitable size and location for the hub within the chosen site.

Wainoni Community Centre provides two potential hub locations in the northern and southern parking lots. Figure 9.1, shows an aerial view of Wainoni Community Centre including the existing carparks, bike stands and adjacent sports courts.



Figure 9.1: Wainoni Community Centre Aerial View of Northern and Southern Carparks

Assessment of the locations is shown in Table 9-1. Overall, the northern parking lot was considered more suitable for the trial Mobility Hub due to its larger size, proximity and visibility from local shops and lower impact on existing assets.

Table 9-1: Assessment of feasible site locations within Wainoni Community Centre

Location	Advantages	Disadvantages
Northern Parking Lot	<ul style="list-style-type: none"> • Larger space available – reduce occupying majority of car parking spaces and lower impact on existing car park users. • Accessible parking available within carpark. • Existing street lighting available. • In proximity to local shops along Hampshire Road. • Good visibility from adjacent Road – high level of passive surveillance. 	<ul style="list-style-type: none"> • Higher chance of conflict with car movements.
Southern Parking Lot	<ul style="list-style-type: none"> • Directly next to sports courts and cycle path. • Direct route available to Aranui library (SW of site). • Direct route to nearby shops. • Existing street lighting available. • Good visibility from street. 	<ul style="list-style-type: none"> • Smaller site – likely to occupy higher proportion of current space having a higher impact on existing car park users.

Following the selection of the northern car park for the trial Mobility Hub, the team considered a variety of positions and sizes for the hub design within the car park. The northwest end of the carpark was selected as the preferred position for the trial Mobility Hub based on the following safety and environmental considerations:

- Reduced conflicts between cars and bike users
- Ease connection to bike track in Wainoni Park

- Easier to separate hub from rest of car park
- Opportunity to build on placemaking without blocking off car parking and driveway
- Minimised impact on existing accessible parking on site

Two final options were selected, comprising a low impact option and a high impact option as shown in Figure 9.2.



Figure 9.2: Location of preferred Mobility Hub, low impact option (left), high impact option (right)

The low impact option is positioned in the northwest corner of the parking lot and occupies four car parking spaces and approximately 52 square metres. The high impact option is positioned across the west end of the parking lot and occupies eight car parking spaces and approximately 174 square metres. The low impact option will only contain mobility and accessibility related components such as shared bikes, pumping services and seating. The high impact option enables the hub to also include placemaking elements through inclusion of a kiosk for food or beverage services, a water fountain and community art.

9.2 Preferred Option

9.2.1 Hub Layout

The preferred design offers a high degree of flexibility. Both a low and high impact design have been proposed, depending on the desired allocation of space for the trial, as shown in Figure 9.3 and Figure 9.4 on the next two pages, and at a larger size in **Appendix D** and **Appendix E**. The low impact option also has flexibility to be expanded into the higher impact option.

The layout of both options has been proposed on the basis of the following:

- Provision of suitable turning spaces for accessible modes (for example three-wheeled cycles which are placed such that they receive the widest turning circle).
- Minimising visual obstructions through the site and maintain through-visibility to maximise security.
- Opportunities to create flexible paved spaces within the site for community activities like streetscaping or parking for external e-mobility devices like Lime or Neuron scooters.

- Opportunities to link the hub site to external mobility options as noted in **Section 9.2.4**.
- Provision of signage at point of use explaining how to use all equipment.
- Landscaping, community art and street furniture to create a sense of arrival into the hub and connection with the surrounding environment.

In addition to the provision of infrastructure and facilities, both options benefit from improvements to access and egress from the car park via the provision of a new shared footpath and cycleway that connects the two existing paths running each side of the car park, and the provision of kerb ramps.

It should be noted that currently it is assumed that bicycles and scooters will be secured using wheel locks similar to those seen in Brisbane and London that can be unlocked using an app, website or site-based smart pole. However, space has been maintained in the design to also accommodate sheltered lockers as it is considered that these may enhance security of the equipment (balanced with the risk that they may be more visually intrusive and diminish through visibility of the site). Regardless of which locking system is chosen, there may be opportunities to integrate the rental process with existing community services.

Aranui Trial Mobility Hub Concept of Operations

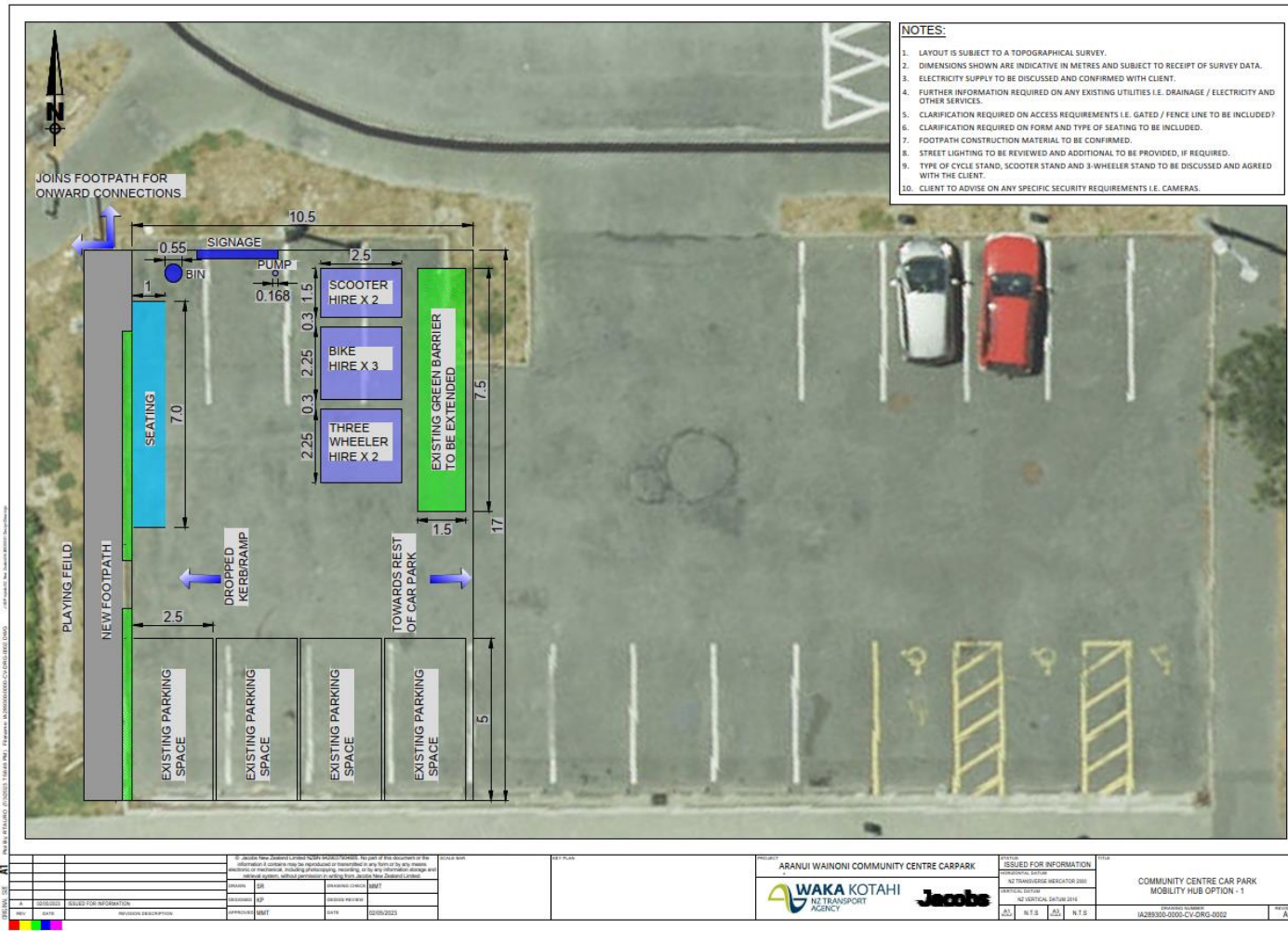


Figure 9.3: Preferred Option Design - Low Impact Option

Aranui Trial Mobility Hub Concept of Operations

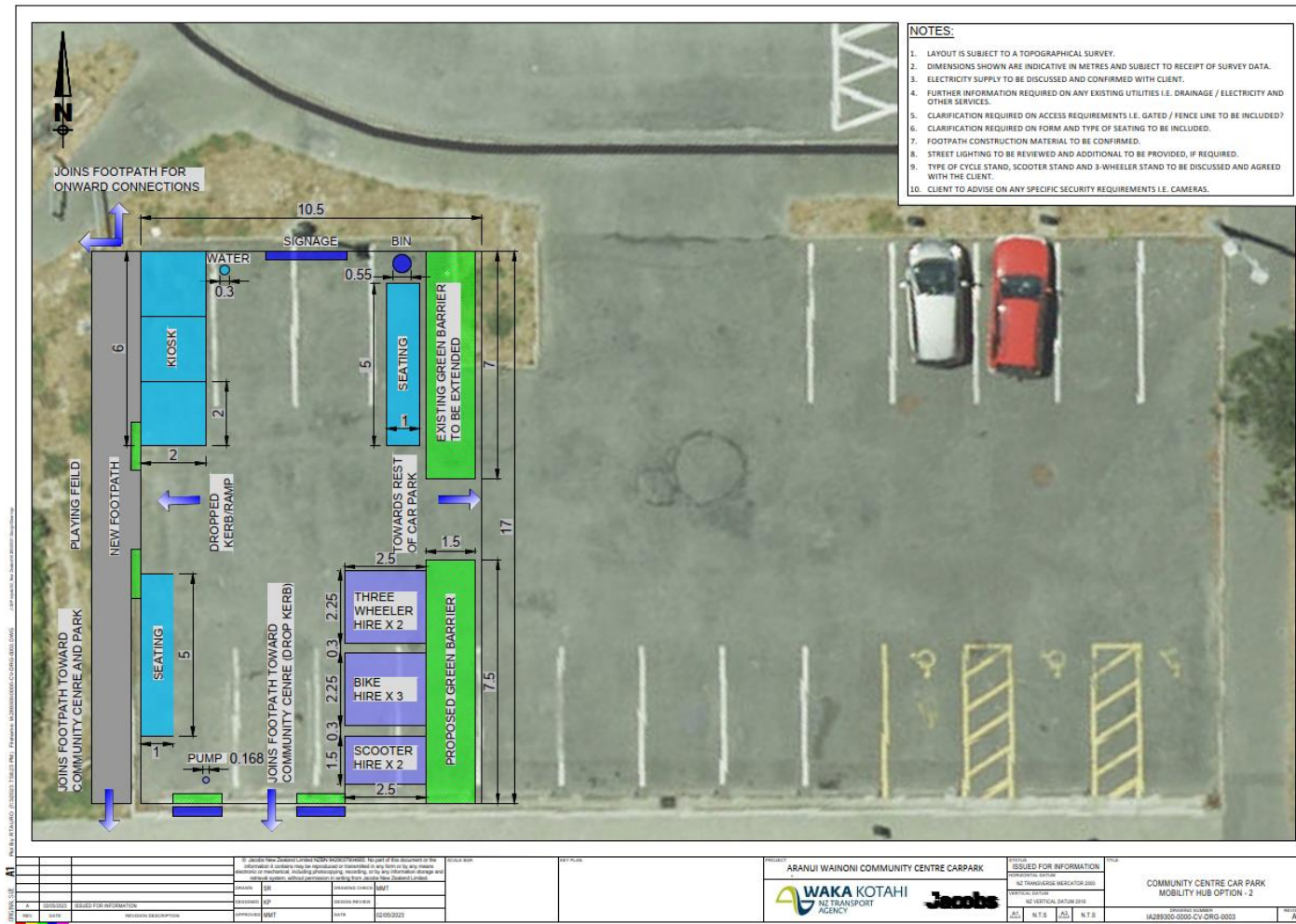


Figure 9.4: Preferred Option Design - High Impact Option

9.2.2 District Planning Considerations

To understand the likely feasibility of the design, a high-level assessment was undertaken for the proposed layout to consider any district planning requirements.

An Environmental and Social Responsibility screen has been prepared using the Waka Kotahi tool for the project (shown in **Appendix F**). Due to the project scope and scale of the project, the only environmental assessment that may be required to support the consent applications is a landscape and visual assessment. There is potential to encounter contaminated land (for example coal tar in the carpark) with impacts on cost and programme, but this can be managed if discovered during construction. A resource consent application needs to be discussed with Tangata Whenua, and as this is a Crown funded project, it is recommended that Waka Kotahi discuss the proposal with mana whenua at the next stage of design.

9.2.3 Resource Consent Considerations

To understand the likely feasibility of the design, consents assessments were undertaken for the proposed layouts.

A high-level planning assessment was undertaken (shown in **Appendix G**). This preliminary planning assessment concludes that resource consent is likely to be required from the Christchurch City Council as either a Restricted Discretionary Activity or a Non-complying Activity. This is subject to a pre-application meeting with Christchurch City Council to confirm whether the site is the parcel the project is on or the entirety of Wainoni Park. Assuming the site is the entirety of Wainoni Park, resource consent may be likely to be required for the following activities:

- Signs for the project (restricted discretionary activity) subject to size, location and lighting
- Distances between buildings and roads (restricted discretionary activity)
- Distances between buildings and internal boundaries (restricted discretionary activity)

If the site is considered to be the legal boundaries of RES 5207 (the parcel on which the project is proposed), the following may also require resource consent from the Christchurch City Council:

- A food and beverage kiosk (restricted discretionary activity)

The use of shared micromobility within Christchurch is covered under trading permits held by the respective operators under local bylaws for trading in public spaces. Provided the existing permits allow for the location of scooters and bikes on Council reserves, it is likely that no additional consent is needed to locate these at a defined location. It is also assumed that any car-sharing facility (if provided in future) would operate through a similar permit and would also not require resource consent. These matters should be confirmed with the Council.

Provided the relevant permitted activity standards are met, resource consent is not likely to be required from Environment Canterbury. In place of applying for a Certificate of Compliance, should this project proceed to the next stage, it is recommended that options of undertaking this project in partnership with the CCC are explored. This may allow for the relevant global resource consents held by the CCC with Environment Canterbury to be used in place of applying for a certificate of compliance as a streamlined process.

The site area is not listed as on the Hazardous Activities and Industries List (HAIL) register for contaminated land. However, it is noted that the adjacent Wainoni Park is listed as contaminated. There are also no cultural or heritage concerns with the project area.

One final consideration for the project is whether the proposal will have any impact on existing resource consents for the area. This is primarily a concern for any resource consents held by the CCC for the Aranui

Wainoni Community Centre. For example, this may include provisions for the number of car parks required which this project would reduce. At this stage of the project this has just been identified as a risk, as any consents for the area would need to be requested directly from CCC.

Overall, the planning assessment delivers the following recommendations and next steps should the project proceed:

- The conclusions of this assessment should be confirmed with CCC.
- Confirmation on whether the 'site' under the Christchurch District Plan in this instance would refer to the parcel on which activities are proposed or the entirety of Wainoni Park.
- Options of delivering this project in partnership with CCC should be sought.
- Existing resource consents for the land on which the project is proposed should be requested from CCC to determine any potential conflicts.

9.2.4 Further Opportunities

In addition to the proposed concept design, the study has also identified several additional opportunities that could be incorporated external to the core trial Mobility Hub scope as the scheme progresses.

Strategic planning for more hubs and an integrated network

It is anticipated that the hub in its standalone trial state will be used for circular trips, where people return their hired equipment after use at the same location from which they hired it. This presents challenges where users are looking to make one-way trips, or where the return trip is substantially later in the day than the outbound trip (but hire is costed on a time-basis). This may limit uptake initially and should be considered when evaluating the trial hub.

A longer-term vision for the hub is one that is part of a network of hubs, enabling users to return their equipment at hubs at the end of each journey rather than at the end of a round trip. It is anticipated that a network approach would result in much greater uptake of micromobility as the current 'circular trip' model is likely to be limiting. A hub network is expected to be potentially competitive against private vehicle travel and to form the basis for a Mobility as a Service system. Any hub network could be planned around existing or new cycle infrastructure, public transport routes and popular destinations. Following completion of the trial Mobility Hub, further work should be undertaken to plan a wider network of hubs across Christchurch.

Local Bus Routes

Desktop research and community feedback highlighted that the existing bus network in Aranui is limited, and in particular that there is potentially demand to reinstate the legacy route that passed along Hampshire Street. If this route were to be reinstated and a bus stop provided at the community centre there would be further opportunity to expand the Mobility Hub to facilitate interchange between the bus stop and the micromobility services available at the hub. Co-location of the bus stop would also enhance opportunities for people to undertake an entirely car-free journey as the hub would become accessible by public transport.

Local Cycle Network

While there are good local off-road cycling connections through Wainoni Park between the hub, community centre, playing courts and library, to encourage uptake and improve safety, consideration could be given to expanding the cycle network around the hub, better connecting it to key areas of local interest such as the school, shops, leisure route at Te Ara Ōtākaro Avon River Trail, recreation areas (New Brighton Beach and Bottle Lake Forest) and to the strategic cycle network towards Christchurch City Centre.

Parking for external e-mobility

There are also opportunities for the design to accommodate electric scooters and bikes as patterns of demand for shared mobility change over time, through changes in user needs or development of a wider Mobility Hub network. These may be new or drawn from the existing Christchurch-wide schemes (from existing on-street locations). This could partially resolve some of the observed challenges around street clutter caused by these scooters and bikes, by providing them a parking point. This also enables the integration of electric modes into the hub in a cost-effective way.

Community Activities

There is the opportunity to partner with the community to use the hub facilities to drive social outcomes. For example, bike maintenance workshops, cycle confidence programmes, community fun days and training for local schools using the kiosk (if it is run as a not-for-profit community facility). This is only likely to be achievable with the high-impact option due to the requirement for a flexible paved space.

Provision of a community EV

Due to the high prevalence of people with activity limitations and restricted public transport there may be an opportunity to provide a community EV with associated charge point external to the Mobility Hub site in the remaining car park spaces. It was not considered that a public car share scheme would be appropriate for this site, however there may be an opportunity to provide a community car share scheme that could be managed through the local community group (ACTIS) or community centre. The EV community car could be used to support a local service whereby volunteers drive residents to services such as doctor's appointments and community groups – providing better access to social and health services for the community.

10. Business Model Development

The business model for the trial Mobility Hub is primarily based on Mobility Hub guidance from CoMoUK and England’s Economic Heartland⁴ as well as from lessons learnt by mobility partners. Jacobs has taken a user-focussed approach to business model development, starting with consideration of service delivery before addressing operation and management, procurement, indicative costs and funding opportunities, which are outlined from **Sections 10.1 to 0**. The various business model aspects are summarised in **Section 10.6**, providing an illustrative model for the proposed trial Mobility Hub in Aranui. A Monitoring and Evaluation Plan outline is provided in Section 10.7.

10.1 Service Delivery

The service delivery model defines how users will interact with the shared mobility modes provided at the trial hub.

Service delivery model options span a range of topics at each step in the customer journey experience. The selection of a preferred option is driven by the expected needs and varied capabilities of hub users. The model options and preferred approach are outlined below in Table 10-1.

Table 10-1: Service Delivery Model Options

Topic	Options	Preferred Option
Sign-Up	<ul style="list-style-type: none"> Registration required, including verification of identity and address 	<p>Registration required, including verification of identity and address</p> <p>Registration (in advance or at booking stage) required to establish responsibility for hired equipment. This aligns with current practice by mobility partners.</p>
Booking channel	<ul style="list-style-type: none"> Automated, online or app-based Manual, by email, phone or in-person 	<p>Automated, online, or app-based Manual, by email, phone, or in-person</p> <p>An off-the-shelf solution for online or app booking is likely to be best suited to a small trial scheme, with customer support handling offline bookings. This approach may be reviewed in the longer-term.</p>
Payment structure	<ul style="list-style-type: none"> Pay-as-you-go Subscription 	<p>Pay-as-you-go</p> <p>Trial scheme needs to encourage people to give it a go without being locked-in by a subscription. This aligns with current practice by mobility partners. This approach may be reviewed in the longer-term.</p>
Booking in advance	<ul style="list-style-type: none"> Unlimited booking in advance (more than one week before) 	<p>Minimal booking in advance (day before)</p> <p>Booking approach should encourage equity of access to the scheme and discourage block-booking. Some degree of advance booking</p>

⁴ England’s Economic Heartland (EEH) – English sub-national transport body which provides transport advisory services relating to government infrastructure and policy frameworks.

Topic	Options	Preferred Option
	<ul style="list-style-type: none"> Limited booking in advance (less than one week before) Minimal booking in advance (day before) No booking in advance 	<p>allowed to enable usage outside business hours.</p>
Fees	<ul style="list-style-type: none"> Full recovery (usage fees to cover all operating costs) Significant recovery (usage fees to cover more than 60% of operating costs) Limited recovery (usage fees to cover 30-60% of operating costs) Minimal recovery or free (usage fees to cover less than 30% of operating costs) 	<p>Limited recovery (usage fees to cover 30-60% of operating costs)</p> <p>Fee-setting needs to be affordable for local people to encourage access, whilst supporting management of demand. This aligns with current practice in charging for public transport.</p>
Fee basis	<ul style="list-style-type: none"> Flat fee Fee charged by time Fee charged by distance 	<p>Fee charged by time</p> <p>Charging by time will incentivise short bookings to maximise potential daily users and will be simple to measure and calculate.</p>
Collection and Return	<ul style="list-style-type: none"> Hire period starts and finishes at the hub Hire period starts and finishes at defined local locations Hire period starts and finishes within a defined local area 	<p>Hire period starts and finishes at the hub</p> <p>Safety and security of users and equipment can be best managed at the hub. This approach may be reviewed in the longer-term.</p>
Equipment	<ul style="list-style-type: none"> Scooter or bike only Rider safety Scooter or bike security Passenger and cargo 	<p>Rider safety & Scooter or bike security</p> <p>Provision of a helmet for rider safety is necessary to meet legal requirements and support Road to Zero objectives. Provision of a lock will support equipment security and user access to activities during the hire period – enabling equipment to be secured whilst shopping, for example.</p> <p>Additional equipment for carrying a passenger (such as a child seat) or cargo (such as a trailer or panniers – although bikes should provide an integrated basket) would increase the complexity of operations and management. Further community engagement and discussions with the operator (once identified) will be required to decide what additional equipment can be offered.</p>
Usage	<ul style="list-style-type: none"> Lengthy hire period (more than a day) Moderate hire period (up to a day) Short hire period (up to 3 hours) 	<p>Short hire period (up to 3 hours)</p> <p>A short hire period supports the main expected needs of hub users (for relatively short distance travel to local activities), whilst maximising daily availability to multiple users. This aligns with current practice by mobility partners.</p>

Topic	Requirement
Bookings	The booking system shall include the facility to block off equipment that is unavailable due to maintenance or repair. The manual booking channels will include a booking line open during standard business hours as a minimum. Any additional manual booking channels will be confirmed with the managing community group, but. The booking line and app shall also allow for user feedback.
Monitoring and Evaluation	An outline of Monitoring and Evaluation requirements has been developed and is provided in Section 10.7 .
Marketing and Promotion	Marketing and promotion should be carried out in the local Aranui area to build awareness of the hub and what it offers. Activities should include a launch event, press releases, open days and fixed advertising posters. Locations for publicising the hub should include the Community Centre, ACTIS offices, Aranui Library, Haeata Community Campus, Pak'nSave Wainoni, Linwood marae, Chisnallwood Intermediate School, Shirley Boys High School and local bus stops.
Information, Support and Training	Signage at the hub should include an information board summarising the services offered and directing potential users to the app and managing community group. The app should provide access to guidance on using the hub services ('how-to-guides' and videos). At the launch event and subsequent open days, community group staff will explain and demonstrate how to use the services, including the app, hub infrastructure, scooters and bikes.

The kiosk proposed for the high-impact option should also be managed by the local community group, consistent with the management of the mobility services. Operation of the kiosk could either be in-house, or it could be rented out to a third party – a charity, small business or another social enterprise.

For the pop-up event space in the high impact option, the local community group can rent the space to third parties, such as small businesses, social enterprises, and charities, as needed, but it will still be managed by the community group.

The operation of the other non-mobility components of the hub, primarily cleaning and maintenance activities, could be contracted out to third parties. This would either be by direct arrangement between the community group and contractor, or via Christchurch City Council and its existing maintenance contractors.

Further engagement with community groups and corrections (who expressed interest in involvement) would be required as the trial hub progresses towards implementation to confirm the feasibility of the recommended operations and management model.

10.3 Procurement

The procurement model defines who selects the Mobility Hub components. Similar to management and operations, procuring a Mobility Hub can be done either by the lead body completely, resulting in direct control, or have all components outsourced to a third party or a combination of the two methods. The different procurement models are shown in Figure 10.2.

Aranui Trial Mobility Hub Concept of Operations

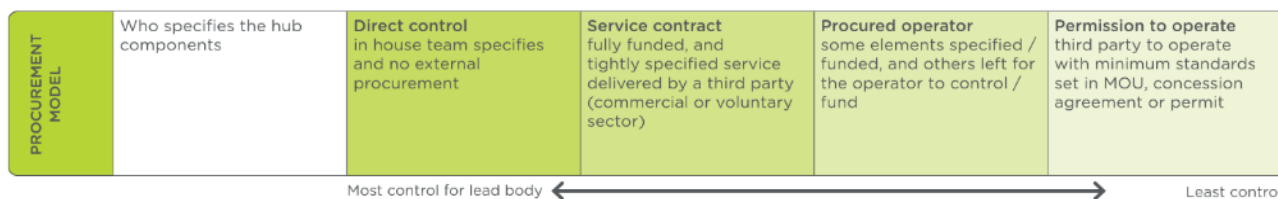


Figure 10.2: Mobility Hub procurement models (Source: CoMoUK 2021)

It is recommended that the hub components are primarily selected and controlled by the local community group or social enterprise that will be managing the hub, with support and guidance from CCC and with reference to Waka Kotahi requirements. A community group or social enterprise is ideal due to the community-driven vision for this trial Mobility Hub.

Further engagement with community groups will be required as the trial hub progresses towards implementation to confirm the feasibility of the recommended procurement model.

10.4 Indicative Costs

The proposed Mobility Hub will incur capital and operating costs throughout the duration of the trial.

Capital Cost

The potential capital costs include the following:

- Micromobility physical docking stations and bicycle repair stand
- Extension of existing green barrier(s)
- New infrastructure such as signage, lighting and footpath
- Improved public realm such as seating and planting.

High-level cost estimates have been prepared for the construction of each option. These costs include the anticipated cost of removing the hub at the end of its trial period, should it be decided that it is not required long term. The additional lighting and new footpath connection associated with the hub is not proposed to be removed as it is considered that this will provide ongoing benefit to the community regardless of the co-location of a hub.

Where possible items have been costed on a 'worst case' basis where the higher cost option is chosen (for example in relation to locking mechanisms where the smart wheel lock has been costed over the cheaper bike shelter options). Based on the high-level concept design, contingency has also been applied.

The estimated physical cost of construction for this scheme is \$220,000 – \$290,000. The work to date has highlighted that there are a number of activities to be undertaken in order to get to construction. These include stakeholder and community engagement using a design jam (collaborative brainstorming workshop), development and refinement of the scheme (or possibly additional options to meet community expectation and trial objectives) and construction drawings. At this stage, a total project budget for implementation could be in the range of \$560,000 – \$660,000 based on the current scheme. Should the hub be removed at the end of the trial, the physical reinstatement cost is on the order of \$48,000 – \$72,000. An additional \$100,000 – \$140,000 may be required to remove the trial and reinstate the area, as per previous comments.

Note that these costs are indicative only and highly likely to change as the preferred option, funding and detailed design are confirmed in subsequent stages of this project. A small allowance has been made for internal client management costs but do not include escalation or property costs. Through the trial, potential

modifications to the scheme may also be identified in response to community feedback. End user feedback will provide a better understanding of their needs and usage, to allow a successful rollout of Mobility Hubs in additional locations.

Operational Cost

Operating costs may include the following:

- Maintenance including the upkeep and replacement of infrastructure and equipment
- Cleaning
- CCTV
- Marketing and promotion
- Insurance
- System operating costs for the running of the hire scheme
- Management costs, including monitoring and evaluation
- Service charges such as electricity and water

Over the proposed 18-month trial period, these costs have been estimated to be on the order of \$150,000 – \$175,000 for the low-impact option or \$200,000 – \$230,000 for the high-impact option. These costs may be split between responsible bodies or may be fully covered by the main funding body for the scheme. Further investigation of these costs should be undertaken at the next stage of scheme development. It is expected that a significant proportion of operational costs will be covered by a pricing mechanism for use of the facilities, though this may be partially subsidised to align with affordability constraints.

Cost Summary

A summary of the indicative costs is provided in Table 10-3.

Table 10-3: Summary of Indicative Costs

Item	Indicative Cost (\$)	
	Low-Impact Option	High-Impact Option
Scheme development, pre-implementation and other implementation activities	340,000	370,000
Scheme construction	220,000	290,000
Implementation total	560,000	660,000
Operations	150,000 – 175,000	200,000 – 230,000
Reinstatement pre-implementation and other implementation activities	52,000	68,000
Reinstatement construction	48,000	72,000
Reinstatement total	100,000	140,000

An initial review of the potential benefits associated with the investment is provided in **section 11.1.3**.

10.5 Funding Opportunities

There are various potential funding sources available to help with the initial investment for the trial Mobility Hub in Aranui. These funding sources may include:

- National government funding
- Local government funding
- Communities funding
- Commercial sponsorship
- Hub income

A high-level review of each potential funding opportunity is outlined in Table 10-4. Refer to **Appendix H** for links to each of the funding opportunities.

Table 10-4: Potential funding opportunities

Category	Example	Description	Costs it Would Fund
National government funding	Ngā Kaupapa Huarahi o Aotearoa (2021-24 National Land Transport Programme)	The NLTP aims to deliver a land transport system that is safe, accessible, supports economic recovery and continues the transition to a more sustainable transport system. This project aligns with the 'Walking and cycling improvements' activity class in the NLTP, where it would target the 2023/24 funding allocation. The sub-class 'Nationally Delivered Walking and Cycling activities 2021-24' can support implementation of trial schemes such as this project.	Capital and operating costs
	Waka Kotahi Transport Choices Programme	Under the Government's emissions reduction plan, a \$348 million Transport Choices package was made available from the Climate Emergency Response Fund (CERF), focusing on aspects such as strategic cycling/micromobility networks. CCC proposed four projects that are currently going through a two-stage process with Waka Kotahi, so there may be potential for the trial to be part of these projects.	Capital and operating costs
	Energy Efficiency & Conservation Authority (EECA) Low Emission Transport Fund	The Low Emission Transport Fund (LETF) supports the demonstration of high potential and replicable solutions, and adoption of low emission transport technology, innovation and infrastructure to help accelerate the decarbonisation of the New Zealand transport sector. The first 8 funding rounds have closed, with each round containing \$1-5 million in funding. New funding rounds will be announced later in 2023.	Capital and operating costs
Local government funding (CCC)	CCC Sustainability Fund	The purpose of this fund is to encourage community, school, social enterprise or business projects that help meet CCC's climate change objectives and targets. It specifically references projects including those that <i>Increase the uptake of zero-emission mobility such as walking and cycling</i> . Generally, the fund will provide no more than 60% of the project costs with the remainder to come from other sources. The fund will open on 3 July 2023 and close on 7	Capital and operating costs

Aranui Trial Mobility Hub Concept of Operations

Category	Example	Description	Costs it Would Fund
		August 2023, with funding decision made in November 2023.	
	CCC Place Partnership Fund	This fund supports those seeking to strengthen connections between communities and their places and spaces to foster inclusion, local identity, shared experience and stewardship. It is designed to encourage and support short- or long-term projects, especially those that are well-planned and demonstrate a partnership approach. \$107,000 total funding is available for the 2023/24 financial year. Required to check funding availability and eligibility before filling out an application.	Operating costs
	CCC Strengthening Communities Fund	This fund supports community-focused organisations whose projects contribute to the strengthening of community wellbeing in the Christchurch city area. Multi-year funding is available. Applications for 2023 have closed and the fund will reopen in early 2024.	Operating costs
	Greater Christchurch Public Transport (PT) Futures programme	The programme has the long-term goal of doubling public transport uptake. The business case included multi-modal infrastructure, with a focus on 'Bike and Bus Share' alongside 'First and Last Mile' trips to improve customer experience. No explicit mention of what kind of funding opportunities available.	Capital costs
Communities funding	Christchurch Airport Community Fund	Christchurch Airport accepts applications for donations to charitable causes and sponsorship of community group activities or projects. The Fund is focused on sustainability, safety and wellbeing, and innovation.	Capital and operating costs
	Rātā Foundation large grants	Under this programme Rātā Foundation supports organisations which form part of the fabric of their communities and projects which provide wider community benefit. Funding is for requests over \$20,000 and there are no closing dates.	Operating costs
	Community Organisation Grants Scheme (COGS)	COGS provides grants to non-profit organisations delivering community-based social services that contribute to achieving locally determined outcomes. The organisation must have less than \$2 million annual operating expenditure for each of the past two years to make a request to COGS, and multi-year funding requests are available.	Operating costs
	Lottery Community grants	Available for not-for-profit organisations with a community or social service focus for ongoing operating costs or projects which help improve the quality of people's lives in their communities.	Operating costs
	The Lion Foundation funding	The Lion Foundation is a gaming trust. Funding is shared between the areas of community which includes arts, culture, heritage and environment (30%), health (15%), sport (40%) and education (15%).	Operating costs

Aranui Trial Mobility Hub Concept of Operations

Category	Example	Description	Costs it Would Fund
		Organisations must be incorporated and also have a Charities Commission registration or an IRD income tax exemption. Usually only up to six months funding.	
	Mainland Foundation grants	The Mainland Foundation is a gaming machine trust that accepts applications for a wide range of community projects. Only non-profit bodies may apply. Grants range from \$200 to \$100,000, although the average grant is around \$2,000. It is expected the Foundation would "part fund" an application.	Operating costs
Commercial sponsorship	Retail businesses	A number of NZ retail businesses (including supermarkets and home improvement stores) support their local communities, schools, clubs, charities and other not-for-profit organisations. Need to directly contact local store for sponsorship opportunities.	Operating costs
Hub income	Micromobility user charges	Income can be made from charging micromobility users whenever they use a micromobility device from the hub. These fares would need to be carefully considered to ensure they are equitable.	Operating costs
	Café or kiosk revenue	The community café or kiosk would generate income through daily operations. This income would be directly used to cover operating costs to ensure the sustainability of the café or kiosk.	Operating costs
	Community event pop-up space hire	The community event pop-up space could be hired out to local organisations or charities, resulting in income that would be reinvested back into the hub operations.	Operating costs
	Advertising and sponsorship	There could be advertising and sponsorship opportunities during the trial, either physical on the Mobility Hub or digitally on an operator website or app.	Operating costs

Note that many of the above funding sources are targeted towards community organisations and can only be applied by not-for-profit organisations or charities. To apply for this type of funding, partnership with a community organisation such as ACTIS would be required. This project did not explore the potential partnerships with community organisations but this will need to be considered at the next stage of the trial Mobility Hub.

10.6 Illustrative Model

An illustrative model is provided in Table 10-5 summarising the different business model aspects outlined in Sections 10.1 to 0. Note this model is indicative only and subject to partnerships and funding opportunities.

Table 10-5: Illustrative model for proposed Mobility Hub

Components	Who procures and controls	Who operates and manages	Who funds capital costs	Who funds operating costs
The hub and its infrastructure (footpath, signage)	Direct control: Community group	Lead body: Community group	National government and/or local government	To be determined
Bicycles, scooters and public bike repair stand	Direct control: Community group	Lead body: Community group	National government and/or local government	To be determined
Kiosk/café	Direct control: Community group	Lead body: Community group	Local government and/or communities funding	To be determined
Community pop-up event space	Permission to operate: Community group rents the space to third parties	Third party: Various small business and charities rent the space managed by community group	Local government and/or communities funding	To be determined
Public realm (seating, water refill station, rubbish bin)	Direct control: Community group	Third party: Operations and maintenance contractor	National government and/or local government	To be determined

This illustrative model may change during subsequent development of a funding proposal for the trial hub, depending on further community and stakeholder feedback. It will be continually refined to suit the needs of Aranui residents.

10.7 Monitoring and Evaluation

The trial Mobility Hub in Aranui will provide evidence for assessment of viability of a Mobility Hub concept in New Zealand. This will help Waka Kotahi and other stakeholders to make future funding decisions, as well as supporting tailoring of the concept for NZ contexts. In addition, the evidence will likely guide the decision to keep or remove the trial Mobility Hub on a longer-term basis.

Feedback from mobility partners has shown that a new micromobility scheme typically takes around 6 months before patterns of usage start to form. Jacobs therefore recommend that the trial period for the Mobility Hub is set to at least 18 months in order to allow evidence to be gathered across a full year of stable operations, in order to account for seasonality factors.

Evidence will be gathered through a robust monitoring and evaluation process, in line with good practice in NZ and internationally. A full Monitoring & Evaluation Plan will be agreed with the funding partner prior to delivery based on the mutually understood measures of success. The Monitoring & Evaluation plan should be used to understand if the project goals have been achieved. Example Key Performance Indicators that could be monitored include:

Construction

- Was the hub delivered to budget?
- Was the hub delivered to programme?
- Were any Value-Adds or savings identified during construction that could be applied elsewhere?
- Were there any adverse impacts during construction (for example, environmental impacts or noise complaints)?

Full Operation (reviewed every 6 months)

- Are the operational costs in line with what was projected?
- Have there been any challenges to operation?
- How many trips are being made using the hub's facilities?
- What proportion of trips are being made for employment, education and healthcare?
- Who is using the hub? What facilities are they using? Are any facilities more or less used than others?
- Have there been any instances of vandalism at the hub?
- What is the revenue of the hub? How does this compare to the operational cost?
- What proportion of trips are new or would have been made by other modes?
- There is also an opportunity to collect user feedback through the community centre, or through an optional online survey sent to users following the end of their hire session. Possible areas of interest could include:
 - How satisfied are users with the hubs facilities?
 - Do users feel safe using the hub?
 - Is the hub considered affordable?
 - Has the hub been successful in increasing active transport uptake or reducing car use?
 - Has the user's access to goods and services improved as a result of the hub?
 - Why has the user chosen to use the hub facilities?
 - Any other comments.
- If the high-impact option is chosen, monitoring of the kiosk and associated outcomes should also be undertaken.

Full operation reviews should be undertaken every 6 months and the results compared to understand any changes in the schemes operation or utilisation over time. Any major changes to the hub's local context, for example the introduction of new transport services or changes to local land-use, should be captured and considered during the monitoring phase.

End of Trial

As above, but with additional questions as below. These should be answered by key stakeholders, including local iwi, and users of the scheme using the mechanisms described above.

- Would you like the trial to be made permanent? Why?
- Is there anything you would change if the hub were to be made permanent?

As this is a trial, it is important to openly share lessons learned as part of the hub delivery. Following the end of the trial a research report should be compiled detailing the outcomes of the trial. This report should be published online such that other transport bodies are able to benefit from the lessons learned. The results of all monitoring and evaluation should also be used to take a decision whether or not to make the hub permanent, and any required changes.

11. Conclusions

11.1 Summary

This report details the investigations, engagement and analysis carried out to develop a Concept of Operations for a trial Mobility Hub in Aranui, Christchurch, New Zealand. Upon implementation, this hub would support positive outcomes for the Aranui community and enable the development of an evidence base to assess the potential for Mobility Hubs to be delivered more widely across New Zealand. Jacobs took an evidence-based approach to the study to ensure the robustness of the findings and provide confidence in the direct and indirect outcomes.

Evidence was drawn from:

- Literature review of existing Mobility Hubs research and findings on the mobility needs of users.
- Data sources including Census 2018, Household Travel Survey, City Council publications and mapping, as well as a site visit to enable identification of a suitable community and specific site location for the trial Mobility Hub.
- Review of additional information sources to understand the local land use and transport context, as well as community feedback from previous engagement. These sources included Waka Kotahi and Christchurch City Council databases.
- Engagement with relevant stakeholders, including government agencies and community groups, in the planning and design of the trial Mobility Hub.
- Collaboration with partners in the shared mobility industry to develop a sustainable operating model for the trial.

11.1.1 Project Goals

It is anticipated that the proposed trial Mobility Hub would enable achievement of the project goals. The hub would directly contribute to Community Outcomes through wider benefits brought to the local Aranui community by the trial hub. The hub would also provide Trial Deliverability, enabling it to act as a proof-of-concept that will provide evidence for assessing the Mobility Hub innovation and support decision-making on hub implementation across New Zealand. The alignment with project outcomes is shown in Table 11-1.

Table 11-1: Project Goals Summary

Project Goal		Community Outcomes
Community Outcomes	Ensure inclusive access for everyone in society to work, live and play by collaborating closely with stakeholders, partners, and the community, including Māori.	Initial engagement activities that established a connection with relevant stakeholders that can be built upon as the Mobility Hub progresses to implementation. Stakeholder feedback has been incorporated into the Concept of Operations, supporting the hub to provide inclusive access.
	Support economic activity through an efficient and integrated transport network to provide seamless connections.	The trial hub design includes additional footpaths via the hub and integrates a range of shared mobility options at a single location. Potential future expansion into a Mobility Hub network could support wider integration, including with public transport.
	Maintain healthy and safe communities through the promotion of shared mobility options, with a focus on active transport benefits.	The trial hub will provide a variety of active transport benefits, including walking links and integrated options for unpowered micromobility.

Project Goal		Community Outcomes
	Encourage the transition to zero-emission travel modes through greater use of sustainable transport options and changing the travel behaviour of users.	The trial hub will provide a variety of zero-emission travel modes, specified to meet community needs and provide an attractive alternative to the private car.
	Providing greater resilience and security in transport networks by providing more travel options, that provide greater system redundancy.	The trial hub will provide additional travel options by shared bike and scooter, supporting enhanced resilience.
Trial Deliverability	Implementation in a cost-effective and timely manner, providing robust data for evaluation and a repeatable model for potential wider roll-out of the Mobility Hub concept.	<p>The trial hub has been planned and designed to address significant demand and need for transport options, supporting potential uptake to enable sustainable operation and collection of robust evidence on hub viability. The location, components, layout and business model have been developed to manage risks to implementation and operation.</p> <p>The trial hub Concept of Operations has been developed using a robust and repeatable methodology, demonstrating how future hub development can be carried out.</p>

11.1.2 Project Risks

Potential risks to the successful implementation of the trial hub and appropriate mitigation have been considered and are outlined in Table 11-2 below.

Table 11-2: Project Risks Summary

Project Risk	Response
Stakeholder: competing priorities and low interest may continue to limit stakeholder participation in hub design and planning.	In the development of the Concept of Operations, stakeholder engagement has been initiated at an early stage. As the project progresses towards delivery, stakeholder interest and participation is expected to increase.
Funding: approval of full funding for trial implementation may not be granted.	A wide range of potential funding sources has been identified to provide alternative options.
Management: interest from organisations in taking on management of the hub may be limited.	Community group interest can be maximised through stakeholder engagement (see above) but may be necessary to consider alternative models.
Delivery – Demand: uptake of the hub services may not meet targets.	The Concept of Operations has been tailored to user needs. A robust monitoring and evaluation process has been outlined that will support adaptation of the trial in line with user needs.
Delivery – Maintenance: excessive costs of maintenance and repairs may occur if equipment is misused or vandalised.	The trial hub has been designed to maximise passive surveillance by locating at a highly visible activity area and keeping through visibility. The design also includes additional lighting and CCTV. Stakeholder engagement (see above) should aim to generate community buy-in to the hub and emphasise its value to the local area.

11.1.3 Benefits Review

The Land Transport Benefits Framework provides a consistent set of benefits and measures to be used in all planning and business cases for transport investment. The benefits are grouped under benefit clusters which align with the New Zealand government’s Transport Outcomes of inclusive access, economic prosperity, healthy and safe people, environmental sustainability, and resilience and security.

An initial review of indicative benefits from implementation of the trial Mobility Hub has been made and is outlined in Table 11-3.

Table 11-3: Indicative Benefits Summary

Benefit Cluster	Benefit	Measure	Recommendation
Inclusive Access 10. Changes in access to social and economic opportunities	10.1 Impact on user experience of the transport system	10.1.1 People – throughput of pedestrians, cyclists and public transport boarding	Potential primary benefit resulting from providing more transport choices to users.
	10.2 Impact on mode choice	10.2.1 People – mode share	Potential primary benefit resulting from users replacing private car trips.
	10.4 Impact on community cohesion	10.4.1 Social connectedness	Potential co-benefit resulting from providing improved access to social and community activities.
Environmental sustainability 8. Changes in climate	8.1 Impact on greenhouse gas emissions	8.1.1 Greenhouse gas emissions (all vehicles) 8.1.2 Mode shift from single occupancy private vehicle	Potential co-benefit resulting from users replacing private car trips.
Healthy and Safe People 3. Changes in human health	3.1 Impact of mode on physical and mental health	3.1.1 Physical health benefits from active modes	Potential co-benefit resulting from providing improved access to active and public transport modes.

The initial review identifies the framework benefits likely to be relevant to the trial Mobility Hub and provides initial consideration of potential benefits and their prioritisation as primary benefits (main impacts expected from the proposed intervention) or co-benefits (smaller impacts). In developing a funding proposal for implementation, the benefits would likely be further assessed and refined to optimise their relevance to the intervention.

An implementation of the trial Mobility Hub could provide both direct and indirect benefits. Direct benefits would be realised by the Aranui community as first-order impacts of the services provided by the hub and can be measured through monitoring and evaluation (see **section 10.7**). Indirect benefits would be realised at a national level by providing evidence of the potential for further Mobility Hub implementations to provide direct benefits to other New Zealand communities. This would enable better decisions to be made, providing second-order impacts across New Zealand.

11.2 Engagement Outcome

A key element of this project was to co-design the trial Mobility Hub with relevant external stakeholders, including government agencies and community groups, to enable inclusive planning and design of a trial Mobility Hub that is tailored to the needs of the community.

Both one-to-one discussions for evidence collection and a presentation and feedback session with community groups to validate findings and collect feedback on design responses was undertaken. Date from

previous community engagement was also used to augment findings where appropriate. The key findings from engagement are summarised in Table 11-4 below, together with the design response.

Table 11-4: Engagement Outcome Summary

Key Finding	Design Response
Coordination: Need for government agencies to coordinate efforts and to follow through with initiatives.	Identified potential to coordinate with Streets for People in subsequent stages of the hub project.
Road safety: Perception of an unsafe local road network.	Trial hub to be located away from arterial roads and major intersections.
Personal safety: Significant fear of crime impacting on travel choices.	Trial hub to be located in a high-activity area between retail and the Community Centre, with CCTV provided.
Affordability of transport options: Community is struggling with the cost of living.	Service delivery model to include subsidy for hiring fees. Providing alternative transport options not involving petrol costs relating to ICE cars.
Car reliance: Local public transport and active travel options do not provide an attractive alternative to car use.	Shared bikes and scooters to provide an attractive alternative to car use.
Bus network: changes to bus routes have resulted in limited access to public transport from central Aranui.	Trial hub to be located in central Aranui, providing shared transport options for accessing public transport on Pages Road and Wainoni Road.
Accessibility: Lack of travel options for children, the mobility impaired and elderly people.	Inclusion of unpowered micromobility to facilitate use by children and three-wheeler bikes to meet needs of mobility impaired and elderly people.
Training: Need for support to learn how to ride scooters and bikes and to use automated booking systems.	Service delivery model to include manual booking channel(s).
Location: A location close to Hampshire Street is preferred.	Trial hub to be located by Hampshire Street shops.

11.3 Evaluation

Reflecting on the project overall, there were several challenges, successes and lessons learnt for relevant future projects.

Challenges

At the start of the project, the trial Mobility Hub location had not been chosen, which meant that as communities were analysed in detail, the scope gradually changed. While Aranui was one of the potential communities identified in the Innovation Fund application process, there were many other communities identified across New Zealand during the rapid MCA analysis that were potential locations for the trial. It was therefore important to rapidly identify a community for the trial site in order to progress to the other study tasks. This was successfully achieved.

The most significant challenge was the community and stakeholder engagement task, which required more time and effort than expected due to limited stakeholder interest, community priorities and lead-in times. Jacobs has many existing relationships with key Christchurch City Council staff through previous local projects, but it still proved challenging to engage with CCC due to their limited staff resources and volume of work from other projects with a high local priority. ACTIS, the primary community organisation in Aranui, had a much higher degree of interest in this study. However, the timescales for engaging with ACTIS members were longer than expected as meetings with members are scheduled infrequently and on a fixed timetable. Jacobs worked with the Innovation Fund team at Waka Kotahi to agree an extension to milestone delivery for

engagement and this report, that took account of these unexpected delays. These extended milestone dates were achieved.

As engagement with stakeholders progressed, the project team developed a good understanding of the history of community engagement in Aranui, finding that there had been a lot of engagement compared with the delivery of outcomes. This limited community interest in further engagement, requiring an adjustment to the engagement approach to gathering insights and validating design options – following co-design principles but without requiring the level of community interest necessary to support a full co-design.

The history of community engagement in Aranui also made it critically important to manage expectations when consulting with the community, as Jacobs did not want to appear to be promising that the trial will be delivered at this stage, but rather present an opportunity for potential implementation at a later stage.

The engagement with ACTIS revealed that local residents wanted the trial Mobility Hub to provide non-electric micromobility solutions as well, instead of only e-scooters and e-bikes. This required some adjustment to the project team's thinking about what the trial hub might look like and how it would operate, but Jacobs remained committed to the principles of co-design with the community. The project team therefore prepared a reimagining of the trial Mobility Hub to include unpowered bikes and scooters to meet the preferences of the Aranui community. Jacobs expects that the preferences of local residents may change towards powered micromobility in future and have provided flexibility in the hub design to accommodate this. Similar feedback on users and appropriate modes was given by Bike Fix Aranui and the Chisnallwood School.

Successes

The project team successfully identified a site for a trial Mobility Hub, starting from the whole of New Zealand before resolving the choice down to the community and locality level. Jacobs used a right-sized approach that provided sufficient robustness to support the selection, taking into account the outcomes being sought and the feasibility of delivering a successful trial hub that can provide evidence to assess the viability of the Mobility Hub concept in New Zealand.

Engagement with mobility partners was accomplished successfully, with discussions held with almost all the shared mobility providers currently operating in Christchurch, in addition to partners operating in other Australasian cities. These discussions were invaluable in shaping the concept design and the Concept of Operations.

Lessons Learnt

A key take-away from this study has been that this work convincingly demonstrates the value of fully understanding external and internal influences on a community, practical constraints and needs of different users in a community. The Mobility Hub solution that the Aranui community needs and wants is not what the project team had assumed that the trial Mobility Hub would look like at the start of the project. One size does not fit all and this will be a key design consideration were a hub trialled and additional hubs established.

However, the study has also shown that achieving sufficient engagement with the community to deliver a co-design approach is challenging. In particular, it shows that a 16-week programme is not well-suited to a study involving community co-design and co-design should occur in advance. In a hypothetical re-run of this study, Jacobs would propose a longer programme at the project inception stage. There may also have been some benefit to the programme in incorporating an assessment of the community stakeholder context into the MCAs identifying the site. Nevertheless, looking to the trial implementation and beyond, the additional time required to deliver this study is less significant than the potential benefits from the trial hub.

11.4 Next Steps

Support from Waka Kotahi for the funding and delivery of this study has been critical, enabling Jacobs to identify a feasible trial hub location, design, business model and potential funding sources.

The pathway to implementation of the trial will be driven by further investigation of the potential funding sources and would require more detailed and collaborative community engagement – which should include co-design, as the community will be more willing to engage with a project that is closer to implementation. At present, the project team anticipates that further work could potentially be funded through the National Land Transport Programme (NLTP) 2021-24, subject to standard Waka Kotahi procurement procedures. Access to this funding will require further work to develop detailed funding proposals to identify the potential Investment Priority Measure, including further stakeholder engagement and detailed design.

Potentially, the next stage of the project would be confirmation of the hub design and all assumptions related to financing and operation. The outputs of this stage would be a funding proposal for the trial Mobility Hub at which point a final funding decision could be taken by the identified funding body.

The next stage of development should consider the following:

- Choice of preferred hub option.
- Further engagement to confirm details of the hub type, design and operational mechanisms (including pricing), this should include engagement with local iwi.
- Confirmation of all relevant utilities requirements, for example electricity and water.
- Identification of opportunities to engage the community in the hub's design and build (for example the incorporation of murals).
- Detailed design and costing for delivery of the 18-month trial including the renewal of the car park following the end of the trial.
- Assessment of expected benefits from implementation of the trial hub.
- Any required resource consent application and associated environmental assessments.
- Identification and agreement of any delivery partners including governance structure.
- Provisional procurement options for the site construction, including a provisional construction price.

It is expected that the delivery of the funding proposal should take no longer than 6 months following approval to proceed.

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This project would not have been possible without the contributions of external stakeholders, who have all provided useful information and perspectives on existing work and engagement in the area. Thank you to Christchurch City Council for helping Jacobs confirm key community stakeholders based on existing engagement work and identify potential synergies with existing Streets for Communities work. Thank you also to Environment Canterbury for helping Jacobs identify any future work or synergies and insight into public transport connections in Aranui as part of this project.

The project team would like to thank the Aranui Community Trust Incorporated Society (ACTIS) for allowing the Project Director to attend their ACTIS Hub meeting in April to give a presentation on the project and receive feedback from members of the wider Aranui community, including mana whenua represented through the Linwood Marae. Thank you also to Aranui Bike Fixup, Chisnallwood Intermediate and Christchurch Community Corrections (Rāwhiti) for providing time to help the project team gain a better understanding of the community's views, issues, barriers, and challenges, in order to inform concept development of the project.

Last but not least, the project team would like to thank the six mobility partners in this innovation project: Beam, Cityhop, Lime, Outbound, Ryd and Zilch. They have all generously shared useful information on existing business models in shared mobility and lessons learnt from the first-hand planning and operations of their organisations. These details were invaluable for the project team and helped inform concept development of the trial Mobility Hub, particularly around service delivery, operations and management.



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Appendices

Appendix A. Concept of Operations	84
Appendix B. Rapid MCA – Community	85
Appendix C. Site Specific MCA	86
Appendix D. Option One: Low Impact Design	87
Appendix E. Option Two: High Impact Design	88
Appendix F. Environmental Screening Assessment	89
Appendix G. Consents Assessment Memo	90
Appendix H. Funding Opportunities	91

Appendix A. Concept of Operations

Appendix B. Rapid MCA – Community

Appendix C. Site Specific MCA

Appendix D. Option One: Low Impact Design

Appendix E. Option Two: High Impact Design

Appendix F. Environmental Screening Assessment

Appendix G. Consents Assessment Memo

Appendix H. Funding Opportunities

The links to each of the funding opportunities are shown in Table H-1.

Table H-1: Links to funding opportunities

Category	Funding	Link
National government funding	Ngā Kaupapa Huarahi o Aotearoa (2021-24 National Land Transport Programme)	https://www.nzta.govt.nz/planning-and-investment/national-land-transport-programme/2021-24-nltp/
	Waka Kotahi Transport Choices Programme	https://www.nzta.govt.nz/about-us/about-waka-kotahi-nz-transport-agency/environmental-and-social-responsibility/cerf-programme/cerf-delivery-programmes/transport-choices/about/
	Energy Efficiency & Conservation Authority (EECA) Low Emission Transport Fund	https://www.eeca.govt.nz/co-funding/transport-emission-reduction/low-emission-transport-fund/
Local government funding (CCC)	CCC Sustainability Fund	https://ccc.govt.nz/culture-and-community/community-funding/sustainability-fund
	CCC Place Partnership Fund	https://ccc.govt.nz/culture-and-community/community-funding/place-partnership-fund/
	CCC Strengthening Communities Fund	https://ccc.govt.nz/culture-and-community/community-funding/scfund/
	Greater Christchurch Public Transport (PT) Futures programme	https://www.ecan.govt.nz/your-region/living-here/transport/public-transport-services/future-public-transport/
Communities funding	Christchurch Airport Community Fund	https://www.christchurchairport.co.nz/about-us/giving-back/community-fund/
	Rātā Foundation large grants	https://ratafoundation.org.nz/en/funding/how-we-fund/large-grants
	Community Organisation Grants Scheme (COGS)	https://www.communitymatters.govt.nz/community-organisations-grants-scheme/
	Lottery Community grants	https://www.communitymatters.govt.nz/lottery-community/
	The Lion Foundation funding	https://lionfoundation.nz/funding/
	Mainland Foundation grants	https://mainlandfoundation.co.nz/grant-funding/
Commercial sponsorship	Mitre 10	https://www.mitre10.co.nz/community
Sources of income	Micromobility user charges	N/A
	Café/kiosk revenue	N/A

Aranui Trial Mobility Hub Concept of Operations

Category	Funding	Link
	Community event pop-up space hire	N/A
	Advertising and sponsorship	N/A