Reducing Barriers to Cycling for our Disabled and Mobility Impaired Community

Programme delivered by Bike Auckland and Grab Your Wheels. This project was formulated with advice and input from a range of disability organisations, with a special thank you to #AdaptMTB and Cycling Without Age.

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Executive summary

Bike Auckland received $27,258 from Waka Kotahi's Transport Innovation Fund, Hoe ki angitū, to showcase inclusive cycling options for disabled and mobility impaired people through a series of try a bike events and identifying accessibility barriers on the existing bike path network in Tāmaki Makaurau Auckland. Hoe ki angitū, was set up to support the private and non-government sectors to develop and accelerate innovative solutions to solve some of our big transport challenges. This project responds to a challenge set by the fund: to provide under-served communities with greater access to safer low-emission transport options.

Objectives of the Project

Through discussions with disabled and mobility impaired riders, and disability organisations, Bike Auckland identified 8 key barriers to cycling for disabled and mobility impaired people. We focussed on two of these key barriers: the time and cost of travel to try 'non-standard' cycles, and the frequent inaccessibility of cycleways and pathways for 'non-standard' bikes. We also gave consideration to a third key barrier: lack of visibility and awareness of various cycle types. Therefore the main objectives of the project were to increase visibility and awareness of various bike types, make it easier for disabled and mobility impaired people to access the kind of bike that works for them, to increase accessibility of existing pathways, and spread awareness of existing safe and comfortable places to ride.

Methodology

To reduce these barriers, we delivered a TryaCycle event series in a visible location and completed an audit of 50km of cycle paths across the region. We partnered with Grab Your Wheels, Let's Travel to deliver the TryaCycle event series, the audit and the Report. We also connected with #AdaptMTB for their insights from their Give it a Go days.

The event series was held in a visible location at Base Spaces next to Silo Park in Tāmaki Makaurau Auckland on 5 consecutive Sundays from 23 April 2023, with the last event on 4 June 2023 due to weather-related postponements. The series kicked off with a celebratory opening day and had a wide range of accessible and adaptive bikes, disability inclusive entertainment, and a fully accessible toilet. Some bike suppliers were not able to attend later events, so there was a more restricted pool of bikes available for most of the event days.

The path audit included 8 cycle routes across Tāmaki Makaurau, 6 of which were focussed on for the Report. It was completed by a group of disabled and mobility

impaired riders, as well as riders with disabled people on board (eg. in a bike trailer), using a variety of cycle types. The routes were rated from very poor to very good and comments were provided on seventeen cycling infrastructure characteristics that are important for people using various disability-inclusive bike types, such as width, camber, turning radius, and gradients. The ratings and feedback are recorded in the *Tāmaki Makaurau Auckland Inclusive Cycling Report 2023*, which is available on Bike Auckland's website and in Appendix 1: *Reports and media about barriers to inclusive cycling*. Bike Auckland has shared the Report with relevant government agencies to encourage improvements, and is currently in the process of sharing the findings with the disability community so they can more easily find out which pathways are accessible for their bikes.

Key findings

Although there were only 9 responses to the TryaCycle post-event survey, making the results indicative-only, the following provided valuable insight for future events:

- Most enjoyed the feeling of independence and joy of riding a bike, some for the first time, and for many, for the first time in over 2 years.
- Around half hadn't been sure they could ride a bike at all before attending
- More than half said the experience made them feel more able to cycle more regularly
- The most popular bike to try was an upright adult tricycle / trike
- Nearly half said they wanted to buy a bike (either because of the TryaCycle experience or they had already wanted to), with a number commenting that the bikes were too expensive to purchase
- All agreed that the TryaCycle event series achieved its aim to increase visibility of different kinds of bikes and cycles, and most respondents believed that the series helped provide people with the opportunity to trial various bikes, increased awareness that some disabled people can cycle, and created greater inclusion for disabled people into the cycling community
- An open question "What else could we do to reduce barriers to cycling for people with mobility difficulties?" yielded responses encouraging us to advocate for access improvements on existing and future cycleways. One suggestion included "promoting disability cycling to existing cycling groups."

Although there were a range of different bikes available, it was difficult to find bikes for children, and tall people. We received feedback that we should provide more options for children, taller and heavier people.

In the path audit, Te Ara ki Uta ki Tai (the Glen Innes to Ōrākei route) received the highest number of very good ratings across bike types, whereas the Tāmaki Drive on-road cycle lanes and shared paths scored the lowest. Quiet Routes transitions and

connections also scored very low. The Pakuranga Rotary Path and Grafton Gully scored poorly for some bike types. The other seven cycleways scored more positively for accessibility overall, with ratings ranging from very good to neutral. The findings of the audit are provided in the Report: Tāmaki Makarau Auckland's Inclusive Cycling Report 2023 (the Report) that was compiled by Grab Your Wheels on behalf of Bike Auckland (linked in Appendix 1).

The audit identified inconsistency in cycleway design, insufficient width, poor signage and wayfinding, and the poor accessibility of train stations as main barriers. Other barriers highlighted were a lack of mobility car parks near cycle paths, narrow turning angles, steep gradients, curb cuts, poor maintenance, challenging terrain on alternative routes and detours, physical barriers to get on and off the path (such as bollards), and non-inclusive facilities and play equipment at destinations. The Report identifies solutions in response to these barriers, which provide guidance to path designers about how to make cycle paths accessible for all. These are detailed in Appendix 3: *Inclusive Cycling Report section 6.4 Summary of Recommended Solutions*.

Insights

Bike Auckland's approach of involving the disabled community in strategy, design and delivery meant that the project targeted and addressed genuine barriers to cycling for the disability community.

Bike Auckland learned a lot about accessibility challenges and we are now more confident to advocate for greater inclusion and accessibility for a range of bikes. We are proud of the written blogs and video conversations we shared which brought a greater awareness to the wider cycling community. Our mahi has inspired and influenced others; other Councils and community groups are interested in doing similar initiatives, and transport professionals have said the report and findings helped them to think differently about what makes an accessible cycle path.

We had challenges associated with the weather, the range of bikes available, data capture, audit scheduling and project delays. However, sometimes these difficulties gave us more information about barriers for people with disabilities (eg. how landslides tend to be cleared by only leaving space for two wheeled bikes). We learned from the challenges and have noted in the report what we would do differently next time.

Next steps

We intend to host more TryaCycle events, following through on the learnings from the 2023 series. Ideally any future events would include a wider range of bikes and some bikes for heavier people. The ultimate goal is to find a permanent location for regular ongoing events in Tāmaki Makaurau Auckland for people to have the opportunity to try various inclusive bikes.

We have begun to present the results of the audit to relevant transport agencies and will advocate for the highlighted issues to be addressed, pushing for a more inclusive and accessible cycle network across Tāmaki Makaurau Auckland. Longer term, we intend to support other groups to organise similar audits of cycle paths in other areas across Aotearoa New Zealand.

1. Introduction

For some people riding a bike is easier and less painful than walking. For them, a bike can become a mobility aid. However, there are many barriers to cycling for our disabled and mobility impaired community.

More than 44%[1] of people in Tāmaki Makaurau don't drive. There are a range of reasons including: age, disability, seizures, attention deficit hyperactivity disorder, medication, or simply because they don't want to. Over 2023 Bike Auckland had a focus on reducing barriers to cycling for people with disabilities and mobility impairments, so that, as Cycling Without Age say, everyone can feel the wind in their hair.

Some disabled people need 'non-standard' cycles to be able to ride. In some cases, cycling represents the only way they can get around independently. Some examples of these types of bikes include Tricycles, tandem bikes, handcycles (where you use your hands to operate the pedals), recumbent cycles (where you are practically lying down, feet-first, low to the ground), and wheelchair bikes. It's important to note that for some disabled and mobility impaired people a "standard" two wheeled bike, such as a low-step through E-bike, will be suitable and will provide a powerful increase in their mobility and independence. A 'standard bike' can be an invisible mobility aid.

Through discussions with the disability community, Bike Auckland identified three key barriers to cycling that this project has been designed to reduce: a lack of awareness and visibility of 'non-standard' bikes, the time and cost of travel to try 'non-standard' bikes and the frequent inaccessibility of cycle paths.

Hoe ki angitū, was set up by Waka Kotahi to support the private and non-government sectors to develop and accelerate innovative solutions to solve some of our big transport challenges. Bike Auckland received $27,258 from the Innovation Fund, to showcase inclusive cycling options through a series of try a bike events and a path audit to identify accessibility issues on 50km of the cycle path network in Tāmaki Makaurau. This project responds to a challenge set by the fund: to provide under-served communities with greater access to safer low-emission transport options.

[1] According to Waka Kotahi NZTA data 24% of over 16s across the region do not have a restricted or full drivers licence. Including the 20% of the population who are under 15, as shown in Census data, more than 44% of our region does not drive.

2. Objectives

Cycling can be a crucial transport mode for the disabled and mobility impaired community. Many cannot drive, choose not to drive, or would simply like to ride a bike. For some, cycling is the only way to get around independently. But disabled and mobility impaired people can require unique and expensive bikes that are not easy to find. There can also be limitations on the design of infrastructure they can access and use compared to “standard” two- wheeled bikes.

The main objectives of the project are to increase visibility and awareness of ‘non-standard’ bike types, make it easier for people to try out the kind of bike that works for them, and increase access to safe and comfortable places to ride.

3. Methodology

Over 2022, before Bike Auckland applied for funding, we connected with a variety of disabled and mobility impaired people who cycle, caregivers who take dependents on board their bikes, and organisations who give support to disabled people. We kept the phrase “nothing about us without us” in our minds and through conversations with the disability sector we were able to better understand the barriers to cycling they experience and the kinds of initiatives that would be most likely to help. Representatives from Cycling Without Age Point Chevalier and Grab Your Wheels Let’s Travel (an

accessible travel blog) helped Bike Auckland put together the funding application, ensuring it accurately captured the challenges to cycling for disabled and mobility impaired people. We decided to address the following three barriers and designed the associated programme to address them.

The barriers:

- Awareness and visibility of ‘non-standard’ accessible bikes is limited. There is little representation of diverse bike types in imagery and stories about cycling. This reduces the likelihood that disabled and mobility impaired people will know that there are bikes that may work for them.

- Access to different types of accessible bikes is difficult. Many of the appropriate bikes are sold and adapted in the Southern end of the North Island, and in the South Island. This travel requirement, to find out if a cycle *might* work for them, is a significant barrier, given the cost, time, and the additional challenges that disabled people face when travelling.

- Available knowledge of which bike paths are accessible, and what accessibility challenges they may face, is limited, and negative experiences of paths being inaccessible can put people off cycling altogether.

The programme:

- ‘Non-standard’ bikes and their riders to be included in Bike Auckland’s imagery and communications, shared with our audience and transport and government agencies.

- A series of TryaCycle events in a visible location in Tāmaki Makaurau Auckland for people to try a range of cycles which suit different disabilities without having to travel very far.

- A path audit of 50km of key cycle paths across Tāmaki Makaurau by disabled and mobility impaired riders, to see if they are accessible for the types of bikes which disabled, and mobility impaired people use. Results of the audit shared on the Bike Auckland website, highlighting which paths are accessible for various types of bikes, and shared with the disability community through our networks and partner networks. Also sent to relevant authorities, advocating for accessibility issues to be addressed.

Once funding was approved, Bike Auckland partnered with Kimberly Graham from Grab Your Wheels to deliver the project. Kimberly already had extensive connections within the disabled community. Kimberly's lived experience and depth of knowledge meant the planning for the event series and the path audit considered the community and their needs. Bike Auckland also provided support for the project and arranged for another contractor to assist with planning and delivery.

Our approach to delivery was inclusive, highly collaborative, and considered. We achieved our deliverables and milestones, though we had to extend the timeline considerably.

Methodology - TryaCycle events

To design and deliver the TryaCycle events we needed to choose a location, find bikes, decide when to run events, and promote them.

When choosing the location, we balanced requirements for:

- A physically safe space for people to try the bikes (a reasonably sized flat concrete space away from motor vehicles)
- Access from various transport modes
- Ability to store the bikes onsite
- Access to a disability accessible toilet
- Protection from weather (being inside)
- Risk of COVID transmission (requiring mask wearing and ventilation or being outside)

We chose the Base Spaces (courts by Silo Park) because it has a large flat concrete space, providing people with a safe space away from motor vehicles to become comfortable with the bikes. It is also close to a range of transport modes; it is near bus stops, relatively close to the trains and ferries, there is space for parking nearby, it is connected to the cycle network, and the surrounding streets are safe at 30km/hr. There is also a nearby wheelchair-accessible toilet, though unfortunately it is not a fully-accessible toilet. Silo Park also has high bike and pedestrian traffic over the weekends, making the events highly visible and attracting curious passers-by; helping to increase awareness of the range of bike types that exist.

We were able to store most of the bikes in a container on site which reduced our transport costs (and emissions). Being outside meant that some immune compromised people would feel safe to come to the event, but it was vulnerable to the weather. The container which stored the bikes provided some shelter and nearby structures provided shade from both sun and light rain.

It was important to have a diverse array of cycles represented in the graphic design for the series. We contracted Kim Littlejohn from #AdaptMTB to do the graphic design, as she has experience with various types of bikes through the mahi #AdaptMTB do with the adaptive mountain bike community. #AdaptMTB gave us some tips for our events based on their experience with running Give it a Go days, which focus on increasing access to adaptive mountain biking. The event series was promoted through disability support organisations as well as our own networks.

The series was set to run over 5 Sundays in a row, so people could show up in the knowledge that we would be there, without having to check in advance. This is similar to how bike hubs operate. There was also the option to book a slot online, so people would not have to wait to try the type of bike which they wanted.

The series kicked off with a celebratory opening day. At this event there were a variety of suppliers of a wide range of bikes, free coffee for anyone who came on a ‘non-standard’ or adaptive bike, disability inclusive entertainment, and a fully accessible toilet and changing room.

We were able to have a wide range of types of bikes available at the events, such as, trikes, tandem bikes, handcycles, recliner bikes, wheelchair bikes, and low step-through bikes as well as e-bike versions. We arranged to borrow bikes for the event series from both Disability Sport Auckland and the Auckland Whānau Special Needs Support Group, as well as a few from individuals, which were available for every day of the series. For the opening day several other suppliers were also able to come with their range of cycles; Bikes and Trikes Hamilton, Medix21, BeachWheels NZ, Electric Bike Team, and Cycling Without Age Pt Chev also brought their Trishaw to give people rides in. However, some of the bike types were only available if the supplier was able to attend the event, and they were not willing to come to every event in the series. As such, there was a more restricted pool of bikes available at the events that followed the original opening event. We arranged that some suppliers would only attend the event if one of their bikes was booked in advance through an online booking form. While some were disappointed that a few of these events were quieter, they provided a safe and calm environment for people who may have otherwise been too overwhelmed by a larger event (eg. some autistic people).

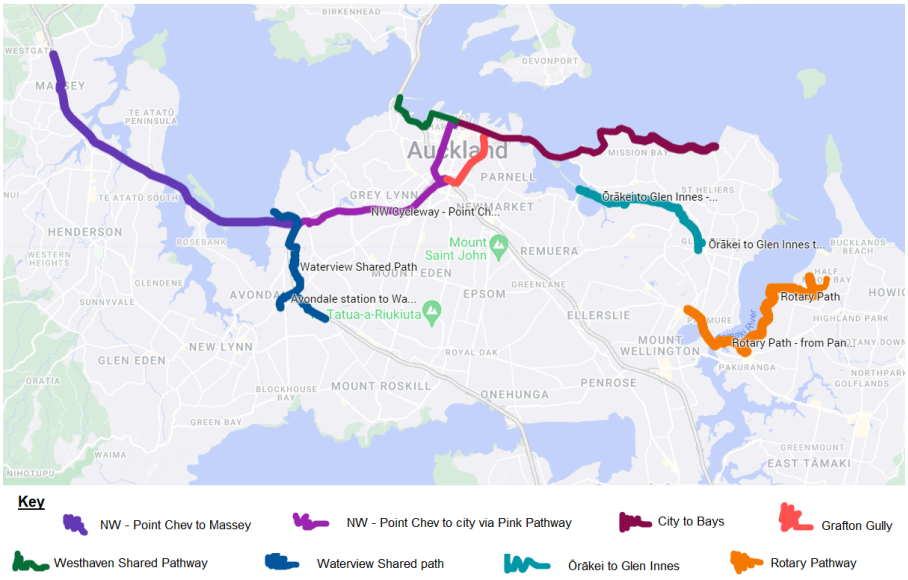
Methodology - Path audit

To design and plan an audit of 50km of key cycle paths we needed people to conduct the audits, identify characteristics of the paths to rate, develop a rating scale, choose the cycle paths and write up the Report.

We deliberately chose auditors that are disabled, experience mobility difficulties, or support a disabled person who they take with them on a bike, recognising them as experts in their own access requirements. They were able to share observations and perspectives that abled people would be less likely to notice and provide. They mostly used their own bikes for the audits, ensuring authentic feedback inspired by their unique perspectives.

The auditors were involved in the planning of the audit as well. A draft form was created that described the rating scheme and the characteristics of cycle paths that would be reviewed. It was circulated to the auditors for their feedback before being finalised. It is attached in Appendix 4: *Auckland Cycleway Audit form.*

Our aim was to audit 50km of cycleways across the region. With this in mind, we chose to audit 8 key cycle routes (spanning 12 different cycle paths) including protected cycle lanes, shared paths, an on-road cycle path, a quiet route, and a shared footpath. We used a five-point star rating scale from very poor to very good. We recorded feedback from each of the riders on seventeen cycling infrastructure characteristics that are important for various “non-standard” bike types, such as width, camber, turnaround space and gradients. We also asked auditors to provide ratings and feedback on cycleway transitions and connections. The main routes which were audited are shown on the map below.



Most path audits were conducted together as a group, with at least one of each bike type on each audit. However, as the audits progressed there were some scheduling and weather difficulties, which meant some auditors rode the pathways independently.

We contracted an experienced report writer to advise the team on how to collate feedback and for oversight of the report itself. Once the Report was completed, Bike Auckland published the Report on our website. We shared the Report to various transport agencies and consultancies, as well as to other nonprofits and community groups. We are now presenting our findings to relevant stakeholders, increasing visibility and awareness of the various people who cycle, barriers to cycling for disabled and mobility impaired people, and potential solutions. We are encouraging agencies to make accessibility information about cycleways available.

Pictured above - Fiáin d'Leafy presenting to the 2024 Cycle Action Network meetup 'CAN-Do' about Bikes for Mobility and the findings of the Inclusive Cycling Report.

4. Key findings

The TryaCycle events and the audits provided many positive experiences and more awareness about barriers to cycling for people who ride diverse bike types. These findings provide us with insight and information for running future events, and to share with local governments, transport professionals, the cycling community, and the disability community.

TryaCycle Findings
The main highlight of the TryaCycle events was how excited and happy most of the people were when they tried the bikes - especially the kids and their parents. The video of Maddy on Attitude TV (link in Appendix 1: *Reports and media about barriers to inclusive cycling*) was particularly joyous. Sharing this video and other stories in the media will help to bring greater awareness of different types of bikes, and the knowledge that some disabled people can cycle, to a wider audience.

Another highlight was the learnings we gained and how these have given Bike Auckland more confidence to advocate for greater inclusion and accessibility for events, programmes, and cycle infrastructure. We are proud of the presentations, written blogs and video conversations we have created which brought a greater awareness to the wider cycling community that some disabled people can cycle, that there are a range of bikes available, and that cycle paths and events should be inclusive and accessible (links in Appendix 1). We believe this has brought about a shift in understanding and preconceived notions of who can cycle, and what a cyclist looks like.

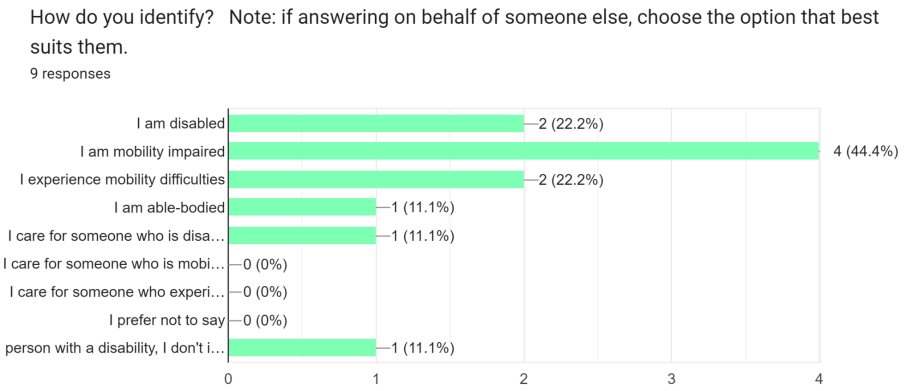
Some lovely comments about the TryaCycle events from our survey:

> *“Totally amazing”*
>
> *“[opportunities] for families being able to cycle together.. community building.”*
>
> *“So much support to find the bike that worked best”*
>
> *“It was great trying different bikes that day and I even got help from the staff carrying me back onto my wheelchair. The whole experience was super fun and sweet and I appreciate it!” “They were helpful with everything!!”*

Our post-event survey revealed that attendees' most enjoyed the experience of riding a bike and the feeling of independence (for some it was their first time ever riding, for others it was the first time in a very long time!). Many also highlighted the friendly support and assistance they received from staff and volunteers.

We had 9 responses to the survey, therefore we can only consider these results as indicative:

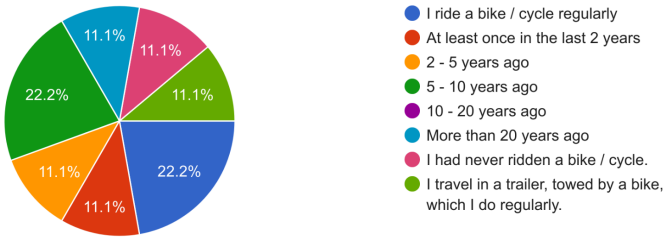
- Demographics: 6 of the respondents identified as women / female, 6 as European / Pākehā, 1 as Māori, and 4 booked to trial the bike in advance. Respondents lived in various local board areas across the region, with slightly more from the Albert-Eden local board area than others.
- 4 of the respondents identified as mobility impaired, 2 as experiencing mobility difficulties, and 2 identified as disabled. 1 respondent clarified they preferred being called a 'person with a disability'. This was a multi-answer question so some respondents ticked multiple options.



- 5 respondents preferred the term "bike" as an inclusive term, over other options such as "cycle"
- 1 had never ridden a bike, 1 had ridden more than 20 years ago. 2 last cycled between 2 - 10 years ago. 1 cycled infrequently in the last 2 years, while 3 of the respondents already cycled regularly (or were carried on a bike regularly eg. on a wheelchair bike or in a trailer)

Before coming to the TryaCycle event, when did you last ride a bike / cycle? Note: if answering on behalf of someone else, choose the option that best suits them.

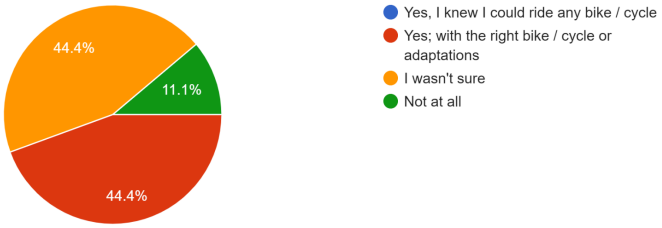
9 responses



- 5 weren't sure if they could ride a bike before attending TryaCycle or expected they wouldn't be able to at all.

Before coming to the TryaCycle event, did you think you would be able to ride a bike / cycle? Note: if answering on behalf of someone else, choose the option that best suits them.

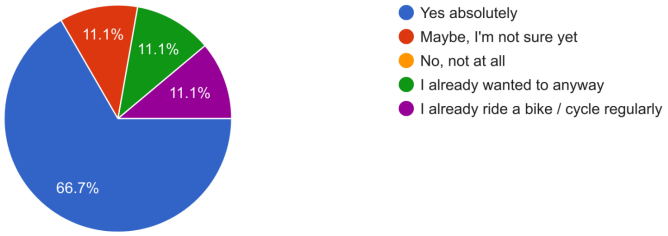
9 responses



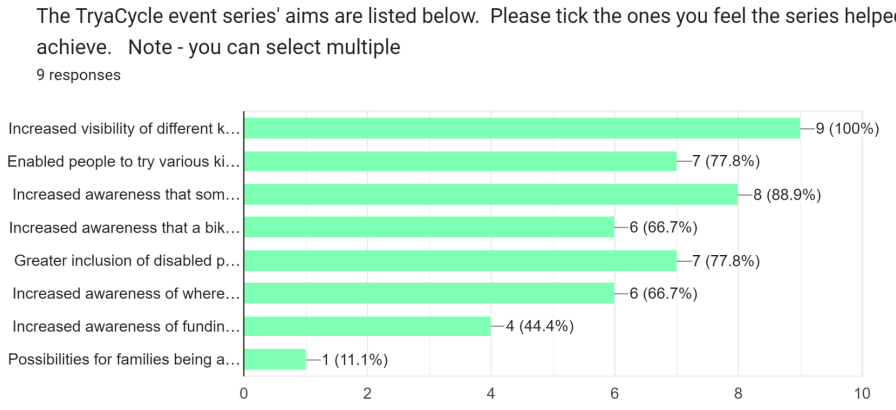
- The most popular cycle to try at the events was an upright adult tricycle / trike
- 6 of respondents said the experience made them feel more able to cycle more regularly. However, many respondents shared that the financial barrier means that they still cannot cycle.

Has this experience made you feel able to use a bike / cycle more regularly? Note: if answering on behalf of someone else, choose the option that best suits them.

9 responses



- 3 respondents said the experience made them want to buy a bike, with 1 replying that they had already wanted to anyway, and 2 saying maybe, not sure. Using the “other” box some respondents commented that the cycles were too expensive to purchase or that they’d prefer to borrow or hire them occasionally.
- 9/9 respondents believed that the TryaCycle event series achieved its aim to increase visibility of different kinds of bikes and cycles. 8 believed the series had increased awareness that some disabled people can cycle, 7 respondents believed it helped provide people with the opportunity to trial various bikes, and that it had created greater inclusion for disabled people into the cycling community. 6 respondents believed the series had been helpful for increasing awareness that a bike can be a mobility aid, and increased awareness of where to purchase various bikes, with 4 believing we had increased awareness of the available funding options. 1 respondent added to the list of aims that we had helped to achieve “possibilities for families to be able to cycle together; community building.”



Although the survey sample size (9) was quite small, the following results provided valuable insight for future activities:

- The most popular cycle to try at the events was an upright adult tricycle / trike
- 6 respondents said the experience made them feel more able to cycle more regularly. However, the financial barrier means they can’t cycle.
- 4 respondents said they wanted to buy a bike (either because of the TryaCycle experience or they had already wanted to), but a number of respondents commented that the cycles were too expensive to purchase.
- All respondents agreed that the TryaCycle event series achieved its aim to increase visibility of different kinds of bikes and cycles, and most agreed that the series helped provide people with the opportunity to trial various bikes, increased awareness that some disabled people can cycle, and created greater inclusion for disabled people into the cycling community.

- In an open answer box, respondents urged Bike Auckland to advocate for access improvements for existing and future cycleways, including better disability parking options alongside trails. One suggestion included “promoting disability cycling to existing cycling groups.”

Cycle Path Audit Findings

Our key findings from the audit are summarised in Appendix 2: *Path matrix and summary of considerations*. It is a snapshot of which cycleways are delivering on inclusion for various bikes, and which are not. The full findings are provided in the Report: Tāmaki Makaurau Auckland’s Inclusive Cycling Report 2023 (the Report) that was compiled by Grab Your Wheels on behalf of Bike Auckland. This is linked in Appendix 1.

Te Ara ki Uta ki Tai (Glen Innes to Ōrākei pathway) received the highest number of very good ratings across all bike types, whereas the Tāmaki Drive on-road cycle lanes and shared paths scored the lowest for accessibility across all bike types. Quiet Routes transitions and connections also scored very low across all bike types. The Pakuranga Rotary Path and Grafton Gully also scored poorly for some bike types. The other 6 (Quay Street, Westhaven Shared Path, the Pink Path, Waterview Shared Path, and the North Western Pathway from Point Chevalier to Massey, then separately from Point Chevalier to City) scored more positively for accessibility overall, with ratings ranging from very good to neutral.

The most significant barrier identified across our region is that the cycle network is incomplete and people have difficulty safely reaching the existing sections of cycleway. The other main barriers identified during the audit were inadequate curb cuts, steep ramps, and the poor accessibility of train stations (eg. elevators too small, broken down, or ramps too steep). One path auditor said “you have to be an athlete” to go up a ramp to the train station (8% gradient) using a manual wheelchair. Other accessibility barriers highlighted during the audits include steep gradients, inconsistency of cycleways, poor maintenance, physical barriers to get on and off the path (such as bollards), insufficient width, cambers, and sharp turning angles. The Report identifies a set of solutions in response to these barriers that are listed in Appendix 3: *Inclusive Cycling Report section 6.4 Summary of Recommended Solutions*. These provide understanding of the accessibility challenges for various bike types, and some direction to path designers for making accessible cycle paths.

Note - Waka Kotahi have since released a draft Accessible Cycling Infrastructure Design Guidance Note which should be referred to for more information on designing accessible pathways.

Path leading from Eric Armishaw Reserve

This path leads to steps....

... but no signage.

We received a very positive response to the Report from people within transport agencies. It has increased awareness of accessibility and existing problems across our transport network for people working within transport agencies. These shifts in awareness and perceptions of cycling will lead to a practical improvement for our cycle network.

The Report also provides a useful baseline that we can refer to for comparison to other cycle infrastructure and for Tāmaki Makaurau Auckland over time. It will be a useful tool for ensuring our advocacy is inclusive.

Posts encroaching on cycling section

Unavoidable tipping danger caused by a wide kerb drop. This creates a lane less than 1m. A bit of paint here is needed to alert wider cycles.

5. What worked well

Our approach of involving the disabled and mobility impaired community in strategy and design meant that the project targeted and addressed genuine barriers to cycling for the disability community. We were able to deliver the projects in a relevant and supportive way because it was led by someone well connected to the disability community, and with an understanding of the challenges they face.

Our mahi has inspired and influenced others. We have been contacted by various Councils and community groups from across Aotearoa NZ who have interest in doing similar initiatives.

TryaCycle series
The feedback from the TryaCycle series was overwhelmingly positive. The series was appreciated by almost everyone who attended, as shown by the following quotes:

- *“Amazing, really appreciate the effort people went to provide the AFO's (ankle foot orthoses) duct tape and transfer assistance needed for me to try.”*
- *“Felt really empowered… Fantastic job by team on the day… they really did make it as easy as possible”,*
- *“They went out of their way to give me a go and adapt what they had. Superb.” “[My favourite part was] the feeling of cycling independently with my feet.”*
- *“I loved it” “[My favourite part was] Riding again. I hadn’t ridden since i was a teenager”*

Promoting the event series through disability support groups meant that we reached our target audience directly.

5/9 survey respondents were unsure if they would be able to ride a bike before they attended, but they all discovered there was a bike that would work for them. Almost all were interested in purchasing a bike but many face financial barriers.

Path Audit

Many barriers that the path audit team faced - such as there not being accessible toilets, or a particular path being too dangerous for riders of specific types of bikes to attempt - ended up in the Report as valuable information. Our project manager visited each cycle path in advance to identify an accessible meeting location. There are photos of the barriers below.

The path audit team enjoyed the process and they felt valued by being asked to give their perspective. Their involvement in creating the audit form meant that they understood how to fill it in and what to keep in mind when auditing the pathways. It also made them more engaged in the project. The auditors gave feedback that the process of auditing the pathways was well organised and the instructions were very clear. Auditing the pathways as a group became a fun, social event, inspiring the auditors to stay involved. In addition, the option to audit the pathways independently provided greater flexibility and a faster process.

We received some positive feedback from stakeholders who read the Report:

> *“This will give us as designers a much better understanding of how to design more inclusively. Which is what we are always trying to do of course…. but gaining the understanding and insight into real experiences of pieces of the network, from so many different people on bikes is hugely valuable.” - Claire Graham, MRCagney*

> *“Reading this was a lightbulb moment for me. I suddenly realised that some cyclists can’t dismount. I cycle up Hendry Ave [renowned for being very steep] with my son in the trailer attached to my E-bike and if that’s too much for me I can just get off and push the bike up. But I suddenly realised some people can’t do that, so they might not have the confidence to tackle the hill. I realised providing information about gradients is important.” - Auckland Transport employee*

In addition to the Report, we have shared written and video pieces, and we are now presenting our findings to various stakeholders, including arranging for Grab Your Wheels to present at an online Active Modes Infrastructure Group forum meeting about barriers to cycling for disabled and mobility impaired people. People working in the transport sphere have said these communication pieces have helped to change their perspectives and have kick started discussions within their teams.

> *"I shared the blog [physical barriers to inclusive cycling] with the Innovation Team and it started a good discussion on the inaccessibility of some of our cycleways. I am also guilty of saying that e-bikes are cheating so this was great to challenge my thinking."* *- Waka Kotahi employee*

The photos below were taken during the path audits and include some of the barriers they experienced.

These gates were found along many neighbourhoods exiting from the path. They are impassable to all non-standard cycles.

This post is at the Farm Cove public toilets. The only side we can access is just 1m in width. For cycling, this acts as a pinch point to navigate.

High signage, small font size

Low signage, small font size

Good contrast and height

6. What didn’t work well

We had challenges associated with the weather, the types of bikes available, and with people involved in the project. We describe the challenges here, note the learnings and provide some ideas for what we could do differently next time.

The severe weather conditions and resulting landslides in Tāmaki Makaurau Auckland in the beginning of 2023 disrupted and delayed all aspects of the project. The rain and flooding interrupted the planned path audits, and the stormy conditions postponed some of our TryaCycle events. The landslides and damage from the storms meant that some pathways were unable to be audited in a timely manner, or only able to be audited by some bike types. However, the approach by councils to clearing landslides did show us valuable information. For instance, some pathways were partly cleared, leaving enough room for a two wheeled bike to go past, but not for a wider bike or people using mobility devices.

Landslip, no prior warning

Landslip, no prior warning

Gate closed three months earlier.

We originally had two people contracted to support each other as they managed both aspects of the programme. However, the additional contractor moved overseas abruptly. Alongside this, our main contractor had an unexpected, difficult personal situation which meant they needed to take some time off and then to more slowly complete the remaining work. This delayed the final path audits and the path audit Report. It also meant we were unable to follow up with attendees of the TryaCycle events in a timely manner, which may have contributed to the low response rate to the survey.

It was important to us that the people who managed this project had experience with the disabled community, and so it was not easy to find a suitable replacement contractor when these difficult circumstances arose. We were also mindful that working with the disabled community requires support and patience for difficult situations such as illness. We accepted the extended timeline and worked with the main contractor to support them to continue the mahi when it was suitable for their circumstance.

TryaCycle Series

Although we had largely positive feedback from those that attended, there were some issues with the range and types of bikes available, with the number of attendees for events when they were postponed as a result of poor weather, with our data capture, and with event signs.

Some of the non-local suppliers of bikes (that attended the opening day) were unable to commit to the remainder of the event series because of the time and cost of repeated travel and accommodation. As a result, there was not as large a selection of cycles for the remaining events. There were some local suppliers who arranged that only if their bikes were booked through the online bookings system they would attend. However, this caused confusion for some attendees who had expected all types of cycles to be available without needing to book.

Immediately after the opening event, the weather became really stormy, so we had to postpone a few events. The postponed events did not receive as much marketing as the original events, which corresponded with a lower turn-out. In addition, some disabled people could not attend on the weekend because their caregivers or support workers were not available (all events in the series were on Sundays).

Most of the bikes supplied for the majority of the TryaCycle events were for short or average height teens and adults. It was difficult to find bikes suitable for younger children, and tall people. We received feedback that we should provide more options for children, as well as taller and heavier people. This meant that although the event was about inclusivity, it was not inclusive for as many people as we would have liked.

Our process to capture people's contact details were inadequate. We do not have an accurate count of how many people attended the events and tried the bikes, though we estimate it was in the hundreds. Due to our main contractor's situation, we sent out the follow-up survey quite late and only 9 people responded (out of the 50 people whose emails we had captured).

Feedback at the events and through the survey revealed that the signs for the event were not in a visible enough location, causing some confusion as to where to find the event, and that the temporary disabled parking spaces were not marked clearly enough. Also, although staff and volunteers were friendly and supportive, some did not kneel or squat when talking to people using a wheelchair or reclining cycle, which can cause the person to get a sore neck from looking upwards.

Path Audit

The path audit schedule was tricky to arrange at times. Rainy, cold, and windy conditions can more severely affect some disabled people, leading to illness (particularly if they are immunocompromised). There were instances of equipment failure which made it difficult to find enough trike riders in particular, creating further scheduling difficulty. Most, but not all, auditors were able to audit the relevant pathways at a later date or they used a slightly different bike.

Sharp turning into a two-way cycleway

Typical drain causing hazard to trikes and sharp turn from footpath

Other delays and challenges resulted from the weather and the trains being down. The flooding and resulting road maintenance and landslides caused delays for the audit team. However, the delays and the ways in which they were remedied provided information for the audit Report. Train lines (particularly the Eastern Line) were down often which made it difficult for some auditors to reach meeting locations. It also affected the audit team's ability to assess using the train as a connection to the pathways. However, the impact of not having access to the train was also useful information.

7. Potential improvements

For future path audits or TryaCycle events, we note below a few things we would do differently. The project could have continued to the planned timeline if there had been additional people involved in organising and managing the project as a whole. In the future, to give more resilience to projects, we would apply for additional funding and budget for an additional person with the relevant expertise.

TryaCycle Series

- We would promote a couple of extra rain dates in addition to the main event dates.

- We would host the TryaCycle event series over 4 consecutive days including a couple of weekdays and the weekend. This would enable suppliers to more easily stay in Tāmaki Makaurau, resulting in a greater range of cycles for people to trial. It would also enable attendees to come on a day that best suits them and their support workers (where applicable).

  "We really enjoyed being part of TryaCycle, it was really well run, excellent marketing and had a great bunch of suppliers there so everyone could try a variety of bikes. The location was great … and the coffee stand was a lovely touch. The only improvement from our side would be to hold less events, therefore ensuring bigger turnout on the days you have it." – Beachwheels NZ

- We would plan and promote a quiet event day. The quieter days we had during this project were more pleasant and appropriate for some people (eg. some autistic people).

- We would provide better signage to direct people to the event space and would have a fully accessible toilet on all event dates (we had the fully accessible toilet only for the opening event. For the following events there was a wheelchair accessible toilet nearby).

- We would ensure there was a clear process for capturing people's contact information, and keep track of how many people attended and tried the cycles at each event. We would ensure follow up occurred, especially if staff or volunteers promised information or assistance.

- Staff and volunteers would be reminded of etiquette for working with disabled and mobility impaired people – such as squatting or sitting when talking to someone in a wheelchair or reclining cycle.

- If we had the funding to purchase a diverse selection of bikes, instead of relying on suppliers, we could have a wider range of cycles available, including child-size, S – M frames, and XL frames at more events. Also, we could take cycles to other events across the region, increasing visibility and access.

Path Audit

- We would have a larger number and range of auditors to ease scheduling challenges (particularly more trike riders)

- We would ensure digital assets are all in one, easy-to-access place - both during the project, and after the project is complete.

8. Has our support led to further opportunities

Hoe ki angitū has led to further opportunities. Both aspects of the project have attracted a lot of attention from across Aotearoa NZ, with enthusiasm from many other Councils and community groups to do something similar. We are also more connected with disabled and mobility impaired cyclists, and the disability community as a whole, which has set us up for more projects in partnership in the future, and more inclusive advocacy.

The Tāmaki Makaurau Auckland Inclusive Cycling Report 2023 is a wonderful resource for us to highlight which pathways are already accessible for certain bikes, and to advocate for changes to make the cycleway network more accessible as a whole. The Report has gained the interest of a range of people within transport organisations. We have been invited to present our findings to various transport groups - and have already presented to a few.

We have also discussed with Auckland Transport ideas for how to provide inclusive bike options for participants of their bike skills courses.

9. Next steps

Short term
We have been presenting the Tāmaki Makaurau Auckland Inclusive Cycling Report 2023 to relevant transport agencies, and will continue these presentations. We will advocate for the highlighted access issues to be addressed, and for a more inclusive and accessible cycle network across our region.

We will continue to include a focus on inclusive cycling in our online communications. Most immediately this will be a celebration of Waka Kotahi's updated Accessible Cycling Infrastructure Design Guidance Note which was released as a draft on 15 March 2024. Our Report provides us with information and photos to use in our online media, increasing awareness within our audience and for other cycling groups.

We will be connecting with Auckland Council to suggest they provide more accessibility information about cycleways on their paths website. We will also share information about the accessibility of cycleways in Tāmaki Makaurau with the various disability organisations we have connected with, so they can share it to their audiences for greater awareness.

We aspire to hold (or support another organisation to hold) another TryaCycle event series over 4 consecutive days (2 weekdays and the weekend), as this was one of our learnings from the TryaCycle 2023 series. We will investigate how to provide more cycle options for children, tall people, and heavy people, including E-bike options. Most bikes are rated for a maximum weight of 120, so there is a barrier for those who weigh over 120kg.

Medium term
We plan to further explore the barriers for heavier people to cycling. Cycling can be a huge fitness and health booster and is gentle on joints. This barrier is a lost opportunity not only for transport options but also for the health of our communities. This issue is particularly relevant for empowering more Pasifika and Māori people to cycle. USO, a Pasifika cycling group, is working on reducing this barrier with the bikes they provide through Motuhenga, their bike library in Eastern Porirua.

We will continue to connect with the various groups who are doing similar mahi in slightly different spaces: eg. Recreation Aotearoa and #AdaptMTB. We will support this mahi where we are able to and continue to share information about access improvements as they are made.

We would like to explore working with Auckland Transport to create more inclusive cycling options for their Bike Skills courses. This may facilitate our longer term goal of providing more regular access to accessible bike types for Aucklanders.

We will investigate partnering with a relevant Pasifika or Māori-led community organisation such as Triple Teez or Ōtara Bike Burb (who we are already connected with through our bike burb programme), and potentially a research group, for mahi towards reducing barriers to cycling for heavier people.

We will track improvements made to the cycle paths in Tāmaki Makaurau, to understand the impact the cycle path audit may have had from an advocacy angle. We recognise that progress on the accessibility issues raised by the cycle path audit may take some time. It can take a long time for small changes to get actioned (it took more than 5 years to get a bollard removed in Henderson). We are confident that the Report and our advocacy has already had an impact of greater awareness within transport agencies and decision makers. While it is difficult to measure, or to attribute specifically to our mahi, we hope to see flow on effects of other inclusive initiatives and improvements.

Long term

Our long term aim is to create (or facilitate the creation of) a permanent and free facility which provides access to, and visibility of, 'non-standard' and inclusive urban bikes, similar to Wheels for Wellbeing in the UK. This could be provided by Bike Auckland or through support to another aligned organisation. It would preferably operate alongside one of the bike repair hubs. The cycles could be brought to various other events across the region to increase visibility and reach a wider audience.

We intend to assist other groups to organise similar audits of pathways elsewhere in Tāmaki Makaurau Auckland and around Aotearoa New Zealand.

Appendix 1: Reports and Media About Barriers to Inclusive Cycling

- Tāmaki Makaurau Auckland's Inclusive Cycling Report 2023
  'The Report'
  https://www.bikeauckland.org.nz/inclusive-cycling-report-2023/

- Attitude TV episode starring our TryaCycle event
  My Perfect Family - Maddison Blitvich
  (Skip to 18.44 to see Maddy find the perfect Trike for her at one of our TryaCycle events)

- Our Auckland interview:
  Bike Auckland is making cycling more accessible

- Bike Auckland's website:
  Inclusive Cycling Campaign Summary
  Physical Barriers to Inclusive Cycling
  The Inclusive Cycling Board Game
  Chain Reaction: Shanith's Story of Inclusive Cycling
  The Link Between Equality, Mobility, and Accessibility

- Grab Your Wheels Let's Travel piece:
  Duet Tandem Wheelchair Bike Review

Appendix 2: Path Matrix and Summary of Considerations

Inclusive Cycling Reviews on Auckland Cycleways											
KEY	VERY GOOD	GOOD		NEUTRAL		POOR		VERY POOR		NO RECORD	
	★★★★	★★★		★★		★		○			
	Tandem wheelchair bike		Bike with trailer		Wheelchair with hand-cycle attachment		Recumbent rider		Trike	
	Manual	Power-assist	Manual	Power-assist	Power-assist	Power	Hand-cyclist	Pedal-cyclist	Manual	Power-assist
										
Auckland Cycleways										
Protected cycle lanes	Quay Street	★★★	★★★	★★★	★★★	★★★	★★★★	★★★	★★	★★★	★★★
	Northwestern city to Nixon Park	★★	★★	★★★★	★★★★	★★★				★★★	★★★
Shared cycle paths	Westhaven Shared Path	★★★★				★★★★	★★★	★★★	★★★	★★★★	★★★★
	Pakuranga Rotary Path	★	★★★	★★	★★	★★★	★★★	★	★	★	★★★
	Glen Innes to Ōrākei	★★		★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★	★★★★
	Northwestern Point Chevalier to Westgate	★★★	★★★	★★★★		★★★	★★★★	★★★		★★★	★★★★
	The Pink Path	★★★		★★	★★	★★★★	★★★★	★★★	★★★	★★★	★★★
	Grafton Gully to K-Road	★	★★★			★★★	★★★★	★★★	★	★	★★★
	Waterview Shared Path	★★★	★★★			★★★★	★★★★	★★★	★★★	★★★	★★★
On-road cycle lanes	Tāmaki Drive	★	★	★	★	★	★	★	○		
Quiet routes	Cycleway transitions and connections	★	★★	★	★	★	★★	★	★	★	★
Shared Footpaths	Tāmaki Drive	○	○	○	○	○	★	○	○	○	★

[Click here for a larger PDF](#) which you can zoom in on

Inclusive Cycling – Other Considerations and Notes

	Tandem wheelchair bike		Bike with trailer		Wheelchair with hand-cycle attachment		Recumbent rider		Trike	
	Manual	Power-assist	Manual	Power-assist	Power-assist	Power	Hand-cyclist	Pedal-cyclist	Manual	Power-assist
										
Other considerations										
Turning circulation limiting effort (m)	5m		5m		3m	Can reverse, max 2m	5m		3m	
Adapted cycle width	635mm		850mm		800mm		800 – 850mm		780mm	
Adapted cycle length	2700mm		3900mm		1500mm		2500 – 2800mm		1800mm	
Commuter / recreation / both	Both	Both	Both	Both	Both	Both	Recreation	Both	Both	Both
Notes – *Cycling infrastructure barriers to inclusive cycling*										
Barrier interactions *(ie people and parked cars)*	>1m apart - buffer		>1m apart - buffer		>1m apart - buffer		>1m apart - buffer		>1m apart - buffer	
Posts, bollards, gates *(width clearance)*	>1.5m		>1.5m		>1.5m		>1.5m		>1.5m	
Cyclist safety *(against motorcars)*	Essential		Essential		Essential		Essential		Essential	
Camber	The wheelchair component can easily tip on certain cambers, especially when cornering. We see rough cambers along footpath cycleways in particular.		Not a problem unless excessive (pushchairs would tip too) where bike can go buggy can too.		Can tip on cambers that exceed minimum gradients, particularly if made to do a sharp turn.	Steep cross slope provides challenges. Only encountered on Pakuranga Rotary Path.	Tippy on rough camber.		Tippy on rough camber.	
< 1m width for cycle lane	Minimum width 1.5mm for single lane (ideally 2m). 4m for two-way.		1.5m for single lane (double our buggy width) – 3m for two-way – Orākei Path is great size example.		Ideally 4m for a two-way cycle path.		Prefer 2m single lane and 4m for two-way. Riding closer to ground with wider wheels means being vigilant not to hit them.		Prefer 2m single lane and 4m for two-way.	
Lack of turn around space *(circulation width 3-5m)*	Wheelchair disconnects from bike if needed. Rides with an assistant (captain) to manoevre and pedal.		Trailer disconnects from bike if needed. Can do a multi-point turn, but will block pathway.		Cycleways providing 4m in width score highly.	Wheelchair can disconnect with apparatus.			Need a good turning circle.	
Rest spots	We often block cycleways if insufficient space is available to pull into.		Need a large area to pull length of trailer into, otherwise we block cycleway. Orākei Cycleway good example of this.			Rest spots not required.	Required on long inclines.		More space to pull off cycleways needed.	
Public transport access *(for cyclists) – NB: buses are presently not accessible*	Trains and ferries (unreliable, access & capacity) – if a lift used at a station we would need to detach bike from wheelchair.		Trains and ferries are possible, but buggy will block entranceway and access for other passenger.		Needs 1.8m space on modes and larger lifts 1.8m		Easier in off-peak. Space limitations, train station lifts are not wide enough.		Train station lifts make using the train difficult. The Newmarket lift does no fit a trike. Otahuhu a bit wider. It would be great to know which stations have lifts that are more amenable to trikes.	
Mobility parking	We need longer mobility parks and safe rear entry via hoist.		Need long mobility parks with min of 3m clearance at rear access for rear hoist and buggy to come out back – can come out back onto footpath.		Safe transfer space from driver side needed. Often transferring onto road.	We need longer safe entry	Longer mobility parking for bike trailer on the rear of vehicle.		N/A	
Secure bike parking	We would disconnect bike from wheelchair / buggy, could lock up against present systems.		We would disconnect bike from wheelchair / buggy, could lock up against present systems.		Don't need as cycle is used as a mobility device.	Don't need as cycle is used as a mobility device.	If rider is able to transfer out of a recumbent trycycle there are no secure bike parks wide enough to lock up to.		Trikes are wider needing wider points to lock up to: eg sheffield bike racks; can only use the double decker parking if there are outside spaces; too heavy to hoist on top rack.	
Recreation *(ie playgrounds, beaches, picnic benches)*	Limited – little inclusion.		Need wheelchair flat / level hard surface access, trailer disconnects if needed, very limiting not a lot is suitable.						N/A	
Public amenities *(ie accessible toilets)*	Standard accessible toilets do not work for us. We need carer assistant toilets liek Changing Places.		Cannot use standard accessible toilets – need "Change Places" – with hoise and height adjustable bed.		Can use standard disability bathrooms as apparatus can disconnect.		Can't use bathrooms mid-route, only start / finish.		N/A	
Gutters (cycleways)	Gutters will tip up tandem wheelchair bike, we have to avoid them. They need to be clearly painted as they are a health and safety issue. There needs to be enough safe space to get around them.		Need yellow highlight or paint to indicate the change in surface level. Extra available width given to get around them or have them covered.		Troublesome, need to avoid. Sometimes space is notgiven when using concrete barriers against traffic to avoid them.	Drains are an issue on main arterials. Have to ride around them.	Drains and gutters are natural hazzards. Health and safety issue for other cyclists and traffic due to width.		Drains and gutters are natural hazzards. Health and safety issue for other cyclists and traffic due to width.	
Kerb separators *(for protected cycleways)*	Placement needs to have >1m clearance between them to enable wheelchairs / adaptive cyclists / pushchairs to access or exit.		Access between separators need to be 1.5m wide. Paint them bright colours, eg. orange. - Nelson Street a good example. Driveway access was indicated differently.		Gutters need to have coverings if using kerb separaters along cycleways.		Preferably used with >2m width cycle-lanes in both directions. Riding closer to ground with wider wheels means being vigilant to not hit them.		Gutters need to have coverings if using kerb separaters along cycleways.	
Maintenance (imperfections)	Doesn't cope well with roots or pot holes. We also find detour signage doesn't consider disabled cyclists.		Greenery – like grasses, need to be pruned back to prevent getting caught in wheels.				Gravel and potholes can cause punctures.		Gravel and potholes can cause punctures. Roots will cause tipping.	
Steep gradients	Depends greatly on the fitness of the captain & the weight of the wheelchair user. Less than 3% with rest areas is more inclusive.	Gradients >10% for prolonged periods would run down battery and become challenging.	Gradients are a challenge without power assist. (Nelson Street, Glen Innes) – needs to be a concrete path or smooth / good traction surface, preferably with flat sections like the path Glen Innes to Orākei. Gravel paths will cause us to skid and lose traction. Walking up is difficult as pulling / towing weight.		Gradients steeper than 1:10 for prolonged periods are challenging. Over >10%	Steep gradients are fine as long as a path is paved and speed can be maintained. Alternative is reversing. Requiring unobstructed path in full view.	Riders can not get off and walk up if gradients are too steep. This is where signage is crucial for adaptive riders to judge effort for gradients. Paved trail essential for all weather cycling. Drainage on steep slopes prevent run off across path. They also are unable to stand up to put more effort into climb.		Not great on gradients more than 1 – 2%	Gradients over >10% for prolonged periods would run down battery and become challenging.
Signage and wayfinding	Prefer following route painted on cycleway itself. As a Captain we are constantly looking at the ground to avoid terrain imperfections, so signage on the ground is helpful.		Signage painted on ground is good. We like good size fonts used with good contrasting colour. People with low-vision will find this essential. Signs could be at both low level standard height. Try and keep directional signs clean of clutter – eg logos, advertising, Bike Auckland, heritage trail, Lion or Rotary Club, etc – should have own signage.				Preferably set lower so riders don't need to strain neck and painted wayfinding on road is helpful.			

[Click here for a larger PDF](#) which you can zoom in on.

Appendix 3: Inclusive Cycling Report section 6.4
Summary of Recommended Solutions

- **Signage and wayfinding:**
    - Lower signs so recumbent riders can see them.
    - Signs that indicate some flat, easy to pull off, rest areas.
    - Earlier warning for path closures.
    - Better sign design, such as with contrast colours.
    - More mirrors on blind corners.
- **Access to the cycle path / cycleway itself:**
    - Mobility car park spaces near places to transfer in/out of vehicles and wheelchairs.
    - Dropped kerbs so adaptive cycles can enter/exit a cycle path.
    - Safe access to public transport and enough space provided on board (i.e. ferries, trains).
    - Bollards and staples with a minimum 1.5m clearance to allow for wider cycles (often seen at 1m clearance).
- **Space:**
    - Shared paths with width of 3m or 4m at minimum (as per the Auckland Transport design guide).
    - For separated and protected cycleways a width of 2m for uni-directional, or 4m for bidirectional.
    - Enough space for adaptive cycles to turn around, ideally 5m.
- **Inclusive recreation at destinations:**
    - Ability to enter a playground (no walls/bark).
    - Space around picnic tables for wheelchairs.
    - Inclusive play equipment.
    - Accessible public toilets.
- **Maintenance:**
    - Detours / alternative routes / mitigation that allows for wider and longer cycles, not just walkers / two-wheeled bikes.
    - Keep trees, bushes and grasses trimmed back from cycleways, to minimise risk of wheel entrapment.
- **Gradients:**
    - Clear information on signs about gradients to allow adaptive riders to anticipate the effort needed to take on the inclines.
- **Inconsistencies:**
    - Consistency in design where possible, continuation of cycle paths (not changing sides of the road, or from footpath to road, then disappearing, then appearing again on footpath).

Appendix 4: Auckland Cycleway Audit Form

Click here for the full PDF

Auckland Cycle Audits by GYW Adaptive Riders Team

Auckland Cycleway Audit

Name of Auditor						
Cycling Reason(s)	*Commute*	☐	*Recreation*	☐	*Well-being*	☐
	Health	☐	*Social*	☐		

Cycleway/Path Audited

Which cycleway are you auditing and its Auckland Transport classification?

Name		**Type**	*Shared*	☐	*Dedicated*	☐
Distance		**Duration**				
Two-Way		**Single**				

Access to Cycleway or Path

How did you find the route to the cycleway? How accessible was it? Did you feel unsafe at all and why? *Choose one or more of the following to best describe experience ie if using private vehicle did you find mobility parking close by & access to cycleway/path safe?*

Entry via Adjoining Cycleway	☐
Bus / Train / Ferry	☐
Footpath/Unprotected/	☐
Safe or Unsafe / Other	☐
Private Vehicle / Taxi	☐

1

Width of Cycleway

What is the approximate width of the cycleway?

Less than 1m	☐	**1 - 2m**	☐	**2-3m**	☐	**3-4m**	☐

Below is a table providing **best practice** widths for all ability riders; these minimum requirements are recommended by a UK advocacy group for inclusive cycleways.

Infrastructure	Minimum Width	Ideal Width
Access, Control Point	1.5m	2.0m
Cycle Lane	1.5m	2.0m
1-way cycle track	1.5m	2.0m
2-way cycle track	2.8m	4.0m

Table 1 - A Guide to Inclusive Cycling, P42

What Type of Adaptive Cycle are you Riding?

Type of Cycle						
Minimum Accessible Width						
Adequate Turning Points	Yes (Qty)	☐	No	☐	N/A	☐

Pinch Point Locations & Description

Record areas (with photo evidence) of 'pinch points' like narrowing of path, bollards, gutters, overgrown bushes, gates, maintenance signage, traffic islands, chicanes, buffer strips and common street furniture i.e., lamp posts, bins, seating, etc.

Terrain/Surface of Cycleway

What is the terrain or surface like?

Sealed/Paved	☐	**Wooden Boardwalk**	☐	**Unsealed/Gravel**	☐
Cobbled	☐				

Gradient & Camber

Is it relatively flat or cambered? Camber is needed to drain water, but it should not exceed over 2.5%. Anything above causes slippage and tipping, especially with 3-wheeled cycles.

Cambered	☐	**Flat**	☐	**Gradients**	☐

If you ticked 'yes' to gradients are they short lasting/lengthy *(rough estimate in meters)*?
Gradients that are lengthy can take too much physical effort, remembering some riders are unable to stand up to put more strength into pedaling.

Signage/Wayfinding

How did you find the signage? *Was it consistent, well placed, missing, legible? Were you left unsure where to go? Asked to dismount anywhere?*

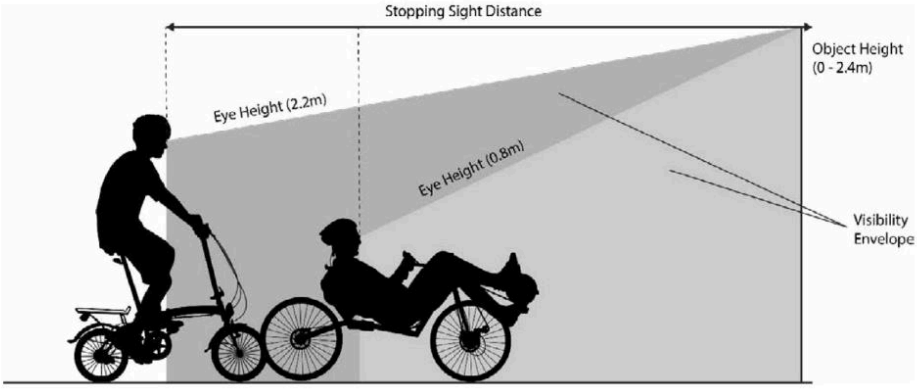


Table 2: Department Of Transport UK - P42 Cycle Infrastructure Design

Examples:

Crossings

How did you find crossing roads? *Please provide photo evidence of any uncontrolled crossing you feel should be controlled. How are the kerbs/drop kerbs?*

Traffic Lights	☐			
Good Time Given	☐			
Accessible Buttons	☐			
Traffic Lights needed	☐		*Location?*	
Kerbs Cuts	*Smooth*	☐	*Problematic*	☐
Uncontrolled	*Safe*	☐	*Unsafe*	☐

Maintenance

Did you come across any maintenance on-route? If yes, was it well signposted indicating an accessible deviation? Please give details below with location, if possible provide a photo.

Speed Humps, Gates & Bollards

Speed humps & bollards are put in place to slow traffic or cyclists down. Did any of these inclusions exist along the cyclepath and provide a barrier?

Imperfections

Road Surfaces should be free of potholes, slip-hazard or other hazards, to minimize severe discomfort from bumps and shocks. They can also cause riders to swerve & be put at risk from oncoming or overtaking traffic.

Accessible and Inclusive Facilities

At any point along the cycleway/path did you consider facilities were accessible and inclusive. Did they present any barriers to your overall experience?

Mobility Parking

Did you find a mobility parking flat with enough space to perform transfers in and out of cycle/mobility devices?

Playgrounds

How accessible and inclusive are the playgrounds along the way? *NB 'inclusive' means a child/adult is able to participate alongside their peers.*

Picnic Areas

Are there any accessible picnic benches and an accessible route to get to them?

Beach Access

If there is a beach along the way can you access it?

Shops / Cafes

If you are using your adaptive cycle as your mobility device then shops and cafes are generally challenging to get into.