



THE UNIVERSITY OF
AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

**MEDICAL AND
HEALTH SCIENCES**

WHAT'S IT LIKE TO SWITCH FROM A CAR TO AN E-BIKE TO COMMUTE TO WORK?

This report provides an overview of findings from a small e-bike feasibility trial run at Auckland City Hospital in 2018

Report on the
University of
Auckland e-
bike trial
(phase one)
at Auckland
City Hospital

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Executive Summary

Introduction

This report provides an overview of findings from a small e-bike feasibility trial run at Auckland City Hospital. This small trial was run in order to gather information about the feasibility of running a larger trial at Auckland City Hospital to explore the health impacts of using an e-bike to commute to work. This report provides an overview of the experiences of participants who took part in the trial, including their perceptions of the best and worst things about switching to an e-bike for a month. It also examines capacity issues around encouraging greater mode shift from car to bike, and issues that may be encountered running a larger e-bike trial at Auckland City Hospital.

The best things	The worst things
<p>1.Improved mood when you get to work:</p> <ul style="list-style-type: none">- Feeling happier and more 'alert' when you get to work.- Commuting itself is more 'fun' and enjoyable.- Reduction in anxiety about being late due to traffic delays or finding a park. <p>2.Saving time:</p> <ul style="list-style-type: none">- More time at home in the mornings. Not having to 'plan in' extra time for potential traffic delays.- Saving time on work trips - Quicker than the staff shuttle to get between Auckland and Greenlane Hospitals. <p>3.Saving money:</p> <ul style="list-style-type: none">- Saving money on petrol and parking at Auckland City Hospital.- Avoiding the extra parking expenses associated with moving between Auckland City and Greenlane Hospitals.	<p>1.Feeling unsafe riding on the road with cars.</p> <p>2.Biking in the rain - Having to think about and plan for changes in the weather.</p> <p>3.Range anxiety – Worrying about running out of battery.</p> <p>4.Wasting money on parking for the days when you ride, if you pay fortnightly for parking.</p>

What could ADHB do to encourage more people to shift from car to e-bike for their work trips:

- 1) Additional secure bike parking (bike cages)
- 2) Help to reduce the cost barrier for staff. Options include:
 - a. A group purchase of e-bikes on behalf of staff (When Tauranga City Council did this recently, 52 staff bought bikes through the scheme);
 - b. A salary sacrifice scheme to enable staff to pay off an e-bike like they pay regularly for car parking;
 - c. Extending the ADHB gym subsidy scheme to include an e-bike discount for staff;
 - d. Changes to parking charges to make casual parking cheaper for those who usually ride a bike, and occasionally want to drive when it's raining.
- 3) Submit in support of planned protected cycleways in areas likely to be used by ADHB staff to travel to work or between work sites. Work with Auckland Transport to identify priority areas for new protected cycleways in areas that would make it safer for ADHB staff to cycle or e-cycle to work and between work sites.

Introduction: The study

We ran a small e-bike trial with five staff from Auckland City Hospital. The trial was designed as a feasibility study to assist the University of Auckland to prepare for a larger e-bike trial based at the hospital. We provided the participants with an eZee electric bike (and panniers, lights, lock, rain poncho, helmet) for 4 weeks (mid March to mid April 2018). Bikes were provided by Electric Bike Team, Auckland. We selected participants who lived more than 1km and less than 20km from Auckland City Hospital, and who were NOT currently biking or walking to work. Participants attended a three-hour training session, were given a bike map for their area, and a taxi chit in case of breakdown. They also had an odometer on their bike, which recorded total kms travelled, as well as average and maximum speed. Staff from Electric Bike Team called each participant after one week to check how they were doing with the bike, and provided them with a number to call from 6am to 10pm if they needed assistance or advice. Participants completed an International Physical Activity Questionnaire (IPAQ) at the beginning and end of the trial, and also completed a one hour interview with Dr Wild at the conclusion of the study. The interviews were coded and analysed using NVivo 11.

Who took part?

ADHB sent out the invite to an existing list of 415 staff members who reported in 2016 that they wanted to be kept informed about any potential e-bike trials at ADHB. Forty seven staff contacted the research team to say that they wanted to participate. We selected five eligible people on a first come first served basis, with three men and two women taking part. The participants included three medical staff, and two non-medical staff. All were working at Auckland City Hospital, and one was travelling between Auckland City Hospital and Greenlane Hospital on a regular basis. Four were full-time and one was working three days a week. Two of the participants were Pakeha, one was Pakeha/Maori, one Chinese, and one Indian. Three were aged between 45 – 54, one was aged between 55-64, and one participant was in the 65-74 age bracket. Three participants were living in the western suburbs so were able to do a significant proportion of their commute on the Northwestern protected cycleway. The other two participants were living in the eastern suburbs. One had a mix of protected cycleway and on-road riding, and the other participant was primarily on-road. Commute length varied from 3km to 20km each way.

How realistic is e-bike commuting? Did people use their bikes?

All of the participants used their bike most days to commute, unless it was raining. One participant biked rain or shine, and the other four participants avoided biking if it was raining or forecast to rain when they left for work. The participants covered an average of 333 kms each over the four weeks (Between 165km and 446km). They also all used their bikes to do some recreational riding during the weekends, or after work, as they generally reported finding the bikes 'fun' to use. As well as improving their commuting experience, they also reported enjoying getting the chance to spend more time outdoors, having the chance to explore the city a bit more without having to deal with parking hassles, and using the bike to ride with their families on the weekends:

"So I used the bike pretty much 5 days a week at least, most of the days I commuted to work unless there was heavy rain, and in fact one day even in heavy rain I commuted to work. ... I think I did a lot of recreational cycling too. ... I wanted to get out early in the morning, so I used to go up to Mission Bay or St Heliers. So you actually weren't just commuting to work ...I was doing a bit more, let's say from work and instead of going straight home, I would take a nice ride." (Participant two)

What were the best things about commuting to Auckland City Hospital on an e-bike?

Saving time

Like many Aucklanders, most of the participants have found themselves leaving earlier and earlier for work in order to avoid traffic delays. Because bicycles are a fairly nimble form of transport, cyclists tend to experience fewer congestion-related delays, and to have greater 'arrival time reliability'. The staff in this study reported that getting to spend a bit more time at home in the morning was one of the best things about using an e-bike to commute. The also reported that being able to combine exercising and commuting reduced the length of their day:

"I guess at the moment I've got a little routine, so I leave home at 6:30am to get here, early so I can leave at 4pm, latest 4pm and ... that's primarily to skip traffic, and I've gotten used to that. So, with the bike, I guess the advantage is if I need to stay back for another half an hour, or 5-10 more minutes, then I don't stress out as much, I just go oh well I'll just get on a bike, traffic will be what it is, because I don't have to worry about getting stuck at pinch points and things like that. So that's the, I guess, the plus side. The other plus being normally, when I drive to work I try and go for a run after work, normally I do some exercise after work, whereas cycling I guess that gives me the exercise that I should be doing, and if I cycle both ways then it's, I probably exercise for a longer duration than I normally would." (Participant one)

"It's definitely faster than the car, and it changed my, it would change my work habits a little bit: I've started working quite early and simply because of the need to beat the traffic. That's the benefit, but sometimes it doesn't work because sometimes it means I'm having to, I'm still having to stay late, so I'm just getting very long days and not getting any benefit, all because of having to come early in the morning. Average time coming in, would have been somewhere in the 30 minute (range), whereas years ago when I rode on a bike it was 45 minutes or something. Certainly in a car it's about that in the traffic, yeah so it's faster, definitely." (Participant three)

This particular participant also said using an e-bike saved him time because he needed to travel between Auckland and Greenlane Hospitals, and previously he would have driven in to Auckland City Hospital then caught the shuttle to Greenlane, to avoid paying for parking and spending time looking for parking in both places. On the e-bike he could go freely between sites without having to pay for parking, and the e-bike was quicker than using the staff shuttle:

"I had this opportunity so I actually chose to enjoy the going to Greenlane in the morning on the bike, and then take the bike from Greenlane to Auckland hospital, at one point beating the shuttle, between the hospitals. This was a fantastic feeling, because it's a bit of a joke between me and the bus driver, because off I headed and then we got to

the lights and he went on, I went a different way that was safer, and when I got there, there he was still coming along because he'd been stopped at different traffic lights, and he had to stop and pick up passengers on the way. So I literally beat him to Auckland hospital. I did skite about it a bit. Why wouldn't I? (Participant three)

Less parking stress for everyone

In general, people reported having to spend less time looking for a park at work, and they also liked the fact that they could go out and get stuff done in their lunch hour or after work, and not have to worry about the stress of finding a park. One of the medical staff who participated in the study also said he liked the fact that biking freed up car parks for patients, who were also experiencing parking stress:

"[It's] constant. You just need to stand [outside at] 1pm when the afternoon clinics start, outside the car park and you'll know the drama unfolds all the time, and I think 50% of the staff can actually, 30% can cycle I'm sure, or even less, even if it's 10% it's better isn't it, it's so much nicer, yeah I think it could help with other things too." (Participant two)

Feeling happier and more alert when you get to work

Staff noted that the combination of more time spent outdoors, and the 'feel better' effects of exercise made them feel happier and more 'awake' when they arrived at work:

"You feel like you've done some form of exercise, and it clears your head before you start work. And then after work it clears all the cobwebs out, so I don't come home as grumpy." (Participant four).

"The best thing for me, is the buzz that I get from it. ...What is it that they call it, the endorphins, and going at that time of the morning it's like, there's not much traffic and it's quite quiet, and I actually enjoy that quiet time. ... I feel good when I get to work. ... I'm feeling up a lot with it, [it has] improved my mental wellbeing." (Participant five)

Exercise and fitness

Four out of five of the participants felt that the trial had a positive effect on their fitness. Two of the participants stopped going to the gym, as they felt they were getting enough exercise biking, and found e-biking more enjoyable. One participant reported that she had lost weight during the trial. The e-bike was seen as a relatively easy and 'enjoyable' way to get some exercise:

"I think it was the whole fitness thing too. Yeah because my other bike, I did go out on it but it just wasn't enjoyable. [With the e-bike] you still get a bit of fitness in and you still feel good, but they're so easy." (Participant four)

The e-bike was also seen as a good way to increase your fitness because it provided exercise with a 'purpose'. This particular participant was previously going to the gym, but she has stopped, because she says she found it 'boring' in comparison to e-biking:

"Come the second week ... I decided I really needed to start accepting that I'm getting old, and that I shouldn't put my hand up for this sort of stuff, I'm bloody ridiculous, and then suddenly I got my fitness, and oh I just want to keep doing it now. It's great, I'm doing something with a purpose, and yeah a reason for doing it." (Participant five)

Removing the stress of riding up hills in particular was seen as enabling people to take advantage of the enjoyable aspects of cycling, as well as making them feel more 'confident' about their ability to sustain an exercise routine, and work it into their day successfully:

"At first it's a new experience actually, which is quite nice and I think because, what put me off cycling was the hills, and if you could kind of get over that with a little bit of power in the bike. That was really good, and definitely I think you [are] kind of pushed to do a bit more cycling, and kind of you want to do a bit more, and it kind of builds your commuting to work plus your exercising and that's straightaway a bonus ...I think for people who are not that fit too, I think it will be helpful because it gives you that additional thing of saying hey look I'm up and about doing something, it's a confidence thing isn't it, it's not just a bike it's a bit more than a bike I think." (Participant two).

"On the hills of course I just smile and wave, up you go, which is amazing." (Participant three)

As one other staff member said, the other important part of successfully incorporating exercise into the day was the way that the e-bike helped her to make sure that she could "actually have a conversation" and avoid "looking like a beetroot" when she arrived somewhere. One of the participants also noted that the e-bike had helped him to increase the amount of exercise he was getting, because he had found other forms of exercise difficult since he injured his back:

"[B]ecause I had a back injury just before the trial, I was kind of going off exercise a little bit, but on the cycle I actually did a lot more. I think that's what it is really, because let's say you had a certain kind of injury which prevents you from walking or running, I think cycling is not a bad option, like swimming really I think it's less, I think it's a more efficient way of working out and I think can lead to less injuries if you're set up properly. ... So actually I did a lot more than what I would have done those particular weeks." (Participant two)

What were the worst things about commuting to Auckland City Hospital on an e-bike?

Safety and the experience of e-cycling

There were no significant incidents or crashes during the trial. Three out of four of the participants had experienced a small incident during the initial adjustment period, a pedal banging a shin, tipping over while starting, and banging the front wheel into a wall when turning slowly. This is consistent with our other New Zealand e-bike research that shows that minor single bicycle incidents are fairly common, while people adjust to the power and weight of the bike:

"[C]oming out of that park at the front of ED, you've got to go up a hill, and I forgot to turn on the, the thing, so I kept biking up and then thought Jesus this is heavy, and it tipped. Yeah but I didn't hurt myself, and I was more embarrassed that somebody had seen me doing it, so yeah so now I always check that I've turned on, because that was embarrassing." (Participant four)

One participant did experience a near-miss that frightened him, however he noted that he felt he was able to handle it safely due to the defensive braking techniques taught during the trial training:

"So there was one where I was, it was night time, I was cycling back from St Heliers, onto the Domain Road, it's a dark road actually, so just near where the ASB kind of stadium was, you turn a left into the Domain and there was a car who came was turning right, and he just cut me across right. Had I not slowed down and stopped he would have hit me. ...I think it's not an e-bike related thing, I think it was a bad driver in the middle of the night, so I think that was what it was, I think it's nothing to do with the e-bike as such, he just didn't see me, or didn't, chose not to see me. I had the full reflectors, I had the lights, I was not invisible and yeah I think it's Auckland, needs a bit of training, the motorists need a bit more training on cyclists. It's nothing to do with the bike. (Participant two)

The final participant, who did the largest amount of on-road riding, including between Grafton and Auckland City Hospitals said he experienced no safety issues at all:

"No, no slide slips, no unusual braking, cars, did anybody come near me? I don't think I can recall a time. Nobody tried to cut me off. It just didn't happen." (Participant three)

Even without experiencing any incidents, however, several of the participants did report finding it stressful when they had to mix with cars in heavy traffic or on narrow roads. One participant from the eastern suburbs had to negotiate one particularly stressful 'merge' point in heavy traffic on his commute and he said he could feel himself 'relax' when he finally got onto the quiet residential streets near his home:

"No for me it's only when I get towards, getting towards my house, that's when you're back on the residential roads. In a sense it's a lot more relaxing. I mean, the suburb I live in is quite quiet, so I know once I get past, like, the [Main] Road, crossing the small roads again, I'm kind of almost 'ok I'm safe now', kind of thing. I've got past all the major heavy traffic roads, and I'm on the residential bits and I kind of lose, you know, my guard goes down, because, you know, there's no constant stream of cars behind you, coming up behind you, you've just got to look out for the odd one, person coming home or coming out of their driveway kind of thing." (Participant one)

The participants who lived in the western suburbs reported really valuing having access to a significant stretch of off-road cycleway:

"I mean I'm doing it because I don't have to drive in the traffic, if I had to drive on the roads, [I] wouldn't be doing it and that's it, end of story." (Participant five)

Although despite there being strong support for the need for more separated cycleways, two of the participants did mention that they felt that using an e-bike improved the safety of on-road riding for them compared to using a push-bike, because their e-bikes gave them the ability to accelerate a bit faster and 'harmonise' their speed with motorists:

"No, St Lukes Road was fine, and once again speed's really good because you're basically keeping up with the flow of traffic really, you're catching them up at the lights, your acceleration is really important, getting away at lights, you're actually across that crossing before that car next to you or behind you has actually accelerated, he can't accelerate as fast as you can actually. ...So you're across and to the left out of harm's way fairly quickly, which I think is really good." (Participant three)

Another participant said he also felt that he was more 'visible' and motorists gave him more 'space' when riding an e-bike compared to the experience of riding a pushbike:

"[Y]ou're taking a bit more of the road space, you're still going faster and I think the cars are watching you a bit more carefully, they don't try and push you off, for some reason I think that's what it is, and I think the power, and the grippiness of the tyres, I think overall gives you much more safety and visibility on the road for some reason." (Participant two).

The weather – riding in the rain

The trial ran from mid-March to mid-April, so while participants felt comfortable biking most of the time, many said they were unsure whether or not they would keep biking through winter. Rain was the most commonly cited barrier to using the e-bike:

"If I did buy one I'd be ...thinking if it rains too much you probably won't end up using it, and I guess some days where I have to go to different places for meetings and things like that, so I probably wouldn't bike in during those times. But yeah no something to factor in for I guess the spring, autumn, summer months, but definitely not something I would think about doing in winter." (Participant one)

"I think the biggest deterrent is of course the weather. If it's bad you can't cycle."
(Participant two).

"The weather's a bit, even though that bike's got wider wheels so you're not likely to skid as much, but, yeah it's the visual stuff in the rain is not, like you don't feel as safe as you do in a car when it's raining. So I wouldn't, if it was raining in the morning, I wouldn't bring it" (Participant four)

Having said this, however, several of the participants said they were unsure whether winter weather and rain would be as much of a deterrent as they feared. Two of the participants talked about how they had had experiences cycling home in the rain, and it hadn't been as off-putting as they imagined:

"Yeah look I think I thought it would put me off actually, but I quite enjoyed it because I think these bikes have got the power, and they've got better I think, the tyres are much more grippier, so you don't feel that unsafe in the rain, and you feel like doing it, and there was a day when I kind of cycled for about 10km in the rain actually, which was fine, and I stopped for a few minutes when it was too heavy, but I didn't feel unsafe. ...You get wetter a bit more but I think it was fun, and it's good to have those bags and all that, it was set up nicely because I think with those bags you don't mind throwing a few things in the bag, they're fairly waterproof bags and all that, so I think you know I used it a few times in the rain. I enjoyed it actually." (Participant two)

Another staff member said that when she had ridden a pushbike to work in the past, rain had been very off-putting, but she found it less discouraging on an e-bike:

"So before I used to think oh if it's going to be wet and windy I won't do it, whereas it would have to be quite bad now. ...Well it's because it's easier on the e-bike. A bit of rain doesn't hurt you. It's more wind that's off-putting. Ok wind and rain go together generally, ...and it's more tiring, and you're not tired out on an e-bike. [Also] ...actually I felt on the e-bike a lot more solid, and a lot more safe than if I was on a pushbike, and you're still going to go pretty much the same speed, you might pull it back a little bit to be a bit safer, it's still the same traffic whether it's raining or sunny, you're still stuck in the same dreary old traffic, with the chance of someone having a nose to tail and holding you up for ages on the road anyway, so it makes sense." (Interview three)

Range anxiety – worrying about running out of battery

Consistent with other studies on e-bike use, 'range anxiety' or the fear of running out of battery was seen as a downside of using an e-bike, particularly on days where you might need to add work trips on top of an already decent commute to work and back:

"There's a couple of times when I was just, it just didn't work for me, and the distance I knew I was going to have to travel. ...I wasn't confident that it would do the journey, and I really didn't, because the bike's really heavy, and I really found it a struggle, and I tried a couple of times. ...[D]ownhill is ok, and the flat's very hard, and uphill is almost impossible

without any battery power. ...Yeah and that will be my consistent question, and it plays on your mind because you don't feel comfortable, ... that would be the thing that would worry me.” (Participant three).

Parking disincentives

One of the participants said that the structure of parking charges at Auckland City Hospital discouraged him from continuing to use an e-bike to commute to work, because he paid by the fortnight, so he was ‘wasting money’ each day he bought his bike in:

“[T]he car park we get ... it's for the whole time, you can't go, it's not pay as you go kind of thing, so I'd have to work out well is it worth it then if you're getting a car park, ...like for example doing the trial I can't go oh look I don't want a car park for a month or something, because I end up riding in. You can't say that. You have to pay for it all year. ...Well I could decide not to have it, then what happens when it rains, you probably have to pay the normal rate which I think they are, I kind of worked out that the minute I park one day in a week, at normal rates I'm probably better off just paying for the whole week.” (Participant one).

Cost

Consistent with other studies, the high relative cost of e-bikes was considered a barrier to purchasing their own e-bike to continue to commute to work:

“I actually think cost is going to be your biggest challenge really. ... It does seem like a lot of money, a lot of outlay. It is fair to say though that in a hospital where professionals are, a lot of people do have the income to support it, you know, but then a lot of people who work here don't as well, and we often forget them, we think oh hospital nurses, doctors, technicians but you know it could be cleaning staff, just people who are on a lower wage. A lot of people when you talk to them say, and I'm sure you have heard this before, the price will come, down I'll wait. But while they're waiting they're not commuting, they're sitting in a car while they're waiting (Interview three)

There was also some further uncertainty and anxiety about a lack of knowledge about what additional ongoing costs might be involved in using and running an e-bike compared to a car.

Needing to have a shower

One participant said that he found having to find extra time to have a shower in the morning at work an inconvenience; however this same staff member also said that overall he thought that biking to work was saving him time because he could leave later, and he didn't need to find additional time after work to exercise:

“I guess the other thing that was slightly inconvenient, I guess is having to shower when you come in. You know because if you drive in, like I drive in the morning I just get to work and I'm good to go, whereas on the bike, you come in have to cool down, go for a shower and then that, although I get the flexibility, that actually adds to the time. But it's not a big deal. The shower facilities here are decent, they're not terrible, but there's just a time factor. Like if I get in, if I drive in I'm in here 7:05am, I'm pretty much good

to go, whereas if I get in here at 7:05am on the bike, then you know it's like I have to get my key, get the clothes, get the towel, go for a shower and that adds, anywhere between 10-15 minutes difference.” (Participant one)

How well is Auckland City Hospital set up to encourage mode shift from car to e-bike?

In general the participants felt like ADHB is doing a good job of promoting cycling. All of the participants were happy with the showering situation at ADHB:

“[L]ovely shower facilities for us, we can walk in and change into work greens and all that so, I think work wise ADHB is perfectly positioned for cycling.” (Participant two)

Although one participant did wonder if the showering infrastructure would be adequate if you had forty e-bikers wanting to shower and start at a similar time. Four staff members used caged parking, and one was taking his bike into his office. Three were happy with bike parking, and two think that the caged bike parking areas are too full, and there is a need for more bike parking at Auckland City Hospital, particularly if we are to run a bigger 40 bike trial:

“I see a lot more cyclists and I think especially ADHB I think they're more friendly with cycles, but I think already the cycle parks are full, there's no spaces. It was full but I just parked in the middle of the cycle park really, sometimes I got a slot sometimes I didn't, but just shove it in somewhere. They need another two of them (bike parking areas), I think, it's filling up fast, a lot of interest.” (Participant two)

Two participants pointed out that because they start very early that they find it easy to find a park in the caged areas in the morning, but the parks are overly full (no room in the bike stands, bikes piled up against other bikes, making it hard to get bikes out sometimes) when they leave in the afternoon.

How could ADHB encourage more people to switch from car to e-bike?

1. More secure bike parking

2. Help staff to reduce the up-front cost of purchasing an e-bike

Consistent with other research in New Zealand and overseas, the staff who participated in this trial reported that cost is a barrier to buying an e-bike to commute to work. ADHB could explore options to reduce the up-front cost to staff, including through a group purchase, a salary sacrifice scheme, or enabling low-income staff members to put the existing gym membership subsidy towards an e-bike. Several of the participants mentioned the value of exploring some way to bring the cost down for ADHB staff:

"[T]he cost is a factor, I think what people should encourage, like in Australia I think you have the salary sacrifice kind of schemes, where if you can actually use it to buy this thing, or even for a gym membership or to buy a cycle, and make it a pre-tax thing, you probably would, the cost would come down significantly. ...I think those are the kind of things ADHB can do, because if you work in the private world sector, and it's a good company there are a lot of perks which come with it, whereas in the DHBs the perks are not that much, so these are the kind of little things which hey look, the kind of it's a value thing isn't it, for the nurses and other people, and Dr's tend to be paid a bit more so they probably can afford it, but still if you make it a group thing, and even everybody I think, any staff in the hospital can buy an e-bike through a discounted scheme, it would be such a nice gesture." (Participant two)

3. Sharing stories of e-bike users, and developing e-bike champions:

One participant thought it would be useful to use the staff intranet to share the experiences of staff who participated in the trial:

"[I]f you sold the stories and, you know looked at the group, say that we did it, and ... you sold your story about, you know, the parking, saving on the parking, you've got your exercise, you've got these wonderful bike tracks, and it's a safe way to go to work, people will, and there's lots of ways, you know like on, using like the intranet stuff, because that's how most staff get all their comms. I think, you know, e-bikes are becoming more and more popular too. People always ask you is it an e-bike." (Participant four)

4. Give more staff the opportunity to try out an e-bike:

Research shows that getting the chance to try an e-bike, because of the high 'novelty' and 'enjoyment' factors, is a strong incentive to purchasing an e-bike. Several staff mentioned that they had others in their team who were keen to participate in a similar trial. On this occasion another 42 ADHB staff contacted us to say that they would also like to try out commuting to work via e-bike if the opportunity were available to them:

"I mean a couple of staff here have had goes on it, so you know one of them is going to go and see if they can get one of the bikes so yeah. I've definitely been selling the e-bikes. I think they're great." (Participant four)

5. Support separated cycle lanes

The staff involved in the trial reported that more high quality, separated cycle lanes was the key thing that would encourage them, and others they know at work to cycle, or e-cycle more. As a large employer, with a workforce that is valued by the city, ADHB can provide an important voice in support of planned separated cycleways, as well as requesting new cycleways in areas where ADHB staff would use them to commute to work and between ADHB work sites.

Conclusion: The potential for future e-bike trials at Auckland City Hospital

Overall, this first small e-bike trial was considered a success, and provides a good foundation for running a larger e-bike trial at Auckland City Hospital. All of the participants used the bikes frequently, without any significant incidents, and reported finding most aspects of the experience to be enjoyable. Two of the staff members involved have now switched from car to e-bike for their daily commute, and two others are thinking about the prospect of buying an e-bike in the spring. The fact that Auckland Transport is currently undertaking an extensive cycleway building programme, seeking to address the primary barrier to e-bike use reported by participants – lack of cycleways, provides an important incentive to continue to improve and expand facilities for cyclists at ADHB worksites.

Rain and inclement weather were also reported to be another significant barrier to e-bike commuting by participants; however, there was also some uncertainty amongst several participants about whether this hesitation would persist if they gained some real-world experience of winter biking. Certainly other research we have conducted with longer-term e-bikers in Auckland suggests that rain tends to be less off-putting for e-cyclists than traditional pushbikers, for the reasons participants in this study have alluded to. Finally, the participants had a number of important ideas about ways that ADHB could provide workplace incentives for e-cycling, including more bike parking, helping staff to bring down the cost of purchasing an e-bike, and using the stories of these participants to promote e-biking to work at Auckland City Hospital.