

# **Bike Now: exploring methods of building sustained participation in cycle commuting in New Zealand**

Carolyn O'Fallon, Pinnacle Research & Policy Ltd, Wellington  
Cycling Advocates Network, New Zealand

**Keywords:** cycle commuting, New Zealand, workplace, cycling, bike bus, bike buddying, cycle fleet, bike parking, evaluation

## **ABSTRACT**

The aim of the Bike Now research project was to explore specific “actions” that could be undertaken in the context of a workplace to encourage people to take up (and continue) cycling to work. The actions included: bike mentoring / buddying; establishing ‘bike buses’; providing cycle skills training; creating secure parking at the workplace; and providing a ‘cycle fleet’ at the workplace for travel during working hours, among others.

The Bike Now project involved approximately 40 workplaces in Auckland, Wellington, Nelson, and Blenheim, New Zealand for a 12 month period in 2007 and 2008. Specially trained coordinators worked with ‘champions’ within each workplace to identify the initiatives of interest in their particular location (through an online survey of employees), implement them (as was feasible), and then to complete a ‘follow up’ survey online. This paper reports on the strengths and weaknesses of the process used; the effectiveness of the initiatives implemented; and provides some guidance for future programmes to encourage cycle commuting. While the presence of Bike Now in the workplace served to increase awareness of cycling, and encouraged some people to commence cycle commuting, none of the initiatives stood out as particularly successful.

## **BACKGROUND**

The aim of the Bike Now research project, funded by the New Zealand Transport Agency and working with Cycling Advocates Network, was to explore specific “actions” that could be undertaken in the context of a workplace to encourage people to take up (and continue) cycling to work. Six specific “actions” or interventions that can be undertaken in the context of a workplace, either as part of a workplace travel plan or as a separate programme, to encourage people to take up (and continue) cycling to work were included as part of the Bike Now programme:

- Bike mentoring: another name for this is ‘buddying’, where a lesser-experienced cyclist is paired with a ‘seasoned’ commuting cyclist who can provide support (such as route planning; fixing punctures or other basic repairs; teaching of safe cycling habits; taking a ‘familiarisation’ ride together) for the journey to and/or from work. The pair may choose to have an on-going cycling arrangement or it may be short term.
- ‘Bike bus’: in the US, these are commonly known as “cycle pooling”, essentially operating like a carpool, but with each participant on their own

cycle. The group arranges a meeting point and time, and cycles to work together. In many cases the journey home is taken individually, but it could also be done as a group.

- Cycle skills training: this would be to provide the necessary skills to be road safe on the commuting cycle journey.
- Installation of secure 'parking' at the worksite – this could be stands, cycle lockers; a cage or shed; or in an unused room in the building.
- Provision of a cycle "fleet" at the workplace for travel during working hours (to see clients, attend meetings, personal business, etc). If people have a means of travel available to them at the workplace, it may mean that they are able to leave their car at home and use another mode to travel to work.
- Arranging for short term hire or lease of a bike, so that an inexperienced cyclists or non-bike owner can 'give it a go'.

In the initial survey of staff, we also gathered information regarding other actions that the workplace could consider alongside Bike Now initiatives, including:

- Providing a "guaranteed ride home" in the event of a family or other emergency. This could be as simple as making a taxi chit book available.
- Having a car or taxi chits available during the day for staff to attend meetings.
- Negotiating access to or installing showers and clothing lockers in or near the workplace.

We did not expect to implement every intervention in every workplace. Rather the focus was on those interventions identified by employees as having the greatest potential for successful implementation and uptake of cycling to work.

The focus of Bike Now was less on providing (costly) physical infrastructure, such as cycle lanes and showers, and more on interventions designed to overcome misperceptions about cycling generally, negative attitudes, personal safety and security concerns, lack of confidence and so on. Where physical infrastructure, such as lack of showers and changing facilities, was reported by employees as a significant constraint, these were noted and reported to the employer for potential future action, as well as becoming a part of the findings of this research project.

## TRIAL METHODOLOGY

### FROM THE WORKPLACE PERSPECTIVE

From the point of view of the workplaces involved in the trial, involvement in the Bike Now project required the following inputs, all of which were extensively supported by our coordinators:

1. Initiating the Bike Now project in their workplace, through a presentation by the Bike Now coordinator at a staff meeting; an email to staff; flyers; and/or 'article' in the staff bulletin.
2. Completion of a survey by staff to:
  - a. ascertain their interest in any or all of the *Bike Now* initiatives; and

- b. to establish baseline cycle use and attitudes towards cycling for the organisation.
3. Implementing various Bike Now initiatives and having a 'celebration' once these were (largely) in place. The nature of the celebration was up to the workplace.
4. Completion of a follow up survey to assess the success of the Bike Now project in their workplace.

## FROM THE PROJECT TEAM PERSPECTIVE

Behind the scenes, the project team identified several tasks to ensure the successful implementation of the trial and evaluation programme. These are described below.

### 1. Project set up in conjunction with end users:

- Establish extended project team (e.g. contract "trial administrator" overseeing coordinators working with businesses and the coordinators themselves).
- Branding finalised: after brainstorming, consultation with stakeholders and investigation on the internet, the Bike Now was selected as the project brand. We saw branding as an integral part of creating credibility with businesses and organisations being approached to join the trial.
- Final selection of locations for trial. We had committed to having Auckland and Wellington as two of the three centres and wanted to include one smaller regional centre, such as Tauranga, Hamilton, Christchurch or Nelson. Based on previously established working relationships and support for the project, we chose to include the Nelson area (including Richmond and Stoke) in our project. Due to 'word-of-mouth', we included three businesses located in Blenheim.
- Finalisation of criteria for selecting the 40 organisations and businesses to participate in the trial. We considered a range of criteria, including:
  - Size of organisations – we chose to only include organisations with ten or more staff, as with fewer staff it would be much more difficult to implement some of the initiatives.
  - Ability to have staff complete an on-line survey – due to cost and time constraints, we could not offer both an on-line and paper-based version of the survey. This criterion resulted in four interested businesses not being able to participate in the trial.
  - Ability or willingness of the workplace to have emails circulating to all staff to encourage them to complete the first Bike Now survey. This criterion was added later, once coordinators began recruiting workplaces into the trial and the first workplaces were completing the surveys. Where 'personal' emails were not delivered to individual's email box, we found that response rates were severely compromised, such that we were unable to provide advice about what initiatives could be implemented in the workplace. Adopting this criterion resulted in the withdrawal of four organisations from the project.
  - Whether businesses were located in close proximity to each other (clustered) or more 'scattered' - we chose not to restrain recruiting in this way, as we wanted to be certain of getting the full 'complement' of 40 businesses/organisations.

- Presence of a champion: Every business / organisation recruited was required to have a 'champion' present. The champion could be an enthusiastic cyclist; human resources person; chief executive or Board member – who worked with the coordinator to implement Bike Now in their workplace.
- Presence of at least one committed cyclist: ideally, the business had at least one committed cyclist who was willing to assist with implementing some of the Bike Now initiatives.

## **2. Prepared a range of resources for the trial, including:**

- 'Phase I' process manual for coordinators – we devised a comprehensive manual for the recruiting and initial surveying phase of the trial. The manual included:
  - an initial email for contacting potential champions, with a more detailed 'follow-up' email for those who expressed interest;
  - scripts for phone calls with potential Bike Now champions and the chief executives of the organisations;
  - a script for presentations to staff to launch the Bike Now project in their workplace. This was supplemented with a 'generic' powerpoint presentation prepared by one of our coordinators.
  - templates for emails to staff inviting them to complete the online survey; thanking those who had completed it and reminding others to do so half way through and near the end of the two week survey;
  - flyers to promote Bike Now in the workplace and encourage survey completion;
  - text for 'articles' in staff bulletins or newsletters;
  - templates for reporting the first survey results to the champions.
- 'Phase II' process manual for coordinators – a second manual was created to support the coordinators in working with the champions to implement the selected Bike Now initiatives in the workplaces. Again, this includes templates for various emails, action plans, flyers, etc.
- Trainer's manual for the one day bike-to-work skills workshop. The workshop was designed to be delivered in a one day (6-hour) block, or in two 3-hour or three 2-hour blocks.
- 'Best practice' handouts for initiating bike buddying, bike buses, cycle fleets, and secure cycle parking in the workplace. Information on secure cycle parking and cycle fleets drew on the material available in the New Zealand Sports and Recreation Commission (SPARC) guide Cycle Friendly Employers. The guidelines were created as 'stand alone' handouts for organisations and individuals to use, and include templates for flyers to promote the initiative, safety rules, agreements, forms, etc as appropriate.
- Developed two additional resources on planning a cycling route and repairing a flat tyre / basic bike maintenance.

## **3. Trained Bike Now coordinators and cycle trainers (for the cycle skills workshop)**

Coordinators received one-day of training in Wellington by a trainer skilled in facilitation, to ensure they had a consistent approach to the project and were fully

aware of what Bike Now was offering to workplaces. The training day also created a sense of 'team' commitment for a group of people scattered across the country.

Cycle trainers were also provided with training appropriate to their level of skill. In Wellington, we were able to contract a professional trainer to deliver the workshop; in Auckland, we contracted an experienced cyclist with leadership experience who received one day's training in delivering the workshop. In Nelson/Marlborough, the cycle trainer prepared our cycle skills workshop manual.

#### **4. Developed the initial survey tool**

The initial survey had a 2-fold intention:

- to identify employees interested in particular interventions;
- to establish baseline travel behaviour, including mode use and attitudes for evaluation purposes.

As noted above, the survey was completed on-line only; no paper-based format was available. We recommend having both available where possible, as there are many businesses where staff do not have ready access to computers to complete an on-line survey (particularly in factory settings).

In establishing the survey content, we held a focus group with Cycling Advocate Network members. We also extensively pre-tested the survey, first for the content and later for 'workability' as an on-line survey.

The first survey took 5-10 minutes to complete, and gathered information such as:

- Whether or not a disability or long-term illness prevented the respondent from cycling
- Availability of a bike for cycling
- Propensity to take up cycle commuting (current commuting habits; 'stage of change'; and physical activity levels);
- Current car drivers were asked about car usage during the work day (as a possible barrier to switching to cycling)
- Interest in cycling to and from work, as supported through various Bike Now initiatives
- If not interested in cycling under any circumstance, respondents asked to indicate why
- If an experienced cyclist, the respondent was asked if they would assist with implementing Bike Now initiatives in their workplace
- Demographic information: age, gender, household composition and number of cars available in the household. The latter two factors were identified by previous New Zealand-based survey analysis (Sullivan and O'Fallon, 2006) as having a significant impact on the likelihood of respondents to walk or cycle on a regular basis.

#### **5. Recruited workplaces to participate in trial**

As noted above, we intended to recruit 40 workplaces into the trial from Auckland, Wellington, and Nelson. We drew on a variety of sources to gain initial entry to a workplace.

Our first port-of-call was the Health Sponsorship Council's (HSC) BikeWise Business Battle (Battle) membership database. The HSC contacted the people who acted as co-ordinators for the Battle from workplaces located in Auckland, Wellington, and Nelson with an email inviting them to express their interest in joining the Bike Now project. From this approach, we had about 20 responses, over half of which did actually join the trial.

Coordinators also contacted people and workplaces whom they knew had an interest in cycling, as well as workplaces known to have an interest in the health of their employees; who had a "green outlook" (e.g. members of sustainable business organisation; or were known to "lead by example" (e.g. government agencies; local government). Unexpectedly (i.e. without being asked to do so), we also had several instances where one workplace contacted another to tell them about the project and encourage them to join Bike Now. Various city or district councils staff members assisted in the recruitment process. In some cases, we had multiple sites of the same organisation (e.g. 2 Gen-i sites; 2 Ministry of Education sites). Each was counted as a separate workplace. As can be seen in Table 1 and Table 2 below, we recruited a range of workplace types (hospitals; city councils; central government agencies; consulting firms; and energy providers) and a range of employee numbers (ten had less than 50 employees; and 16 had more than 200).

**Table 1 Types of workplaces completing the first survey**

<b>Business category (ANZSIC)</b>	<b>Number of organisations</b>	<b>Comment</b>
Retail trade (including food, clothing, cars and other goods)	--	
Property and business services	8	energy provider (4 sites); insurer (3 sites); and architect
Consulting and research services	8	3 Crown Research Institutes; 3 private sector firms
Personal and other services (including travel agencies, hair)	1	Private sector support service
Finance and insurance	--	
Education, health and community services	7	4 hospitals; 1 health service; 3 tertiary institutes (staff only)
Manufacturing	1	
Accommodation, cafes and restaurants	--	
Transport and storage	--	
Cultural and recreational services	1	
Communications services	5	
Local and central government administration	9	5 city council locations; 4 central government offices
Wholesale trade	--	
Construction and repair of buildings	--	
<b>Total</b>	<b>40</b>	<b>0</b>

**Table 2 Number of staff at each workplace**

<b>Number of staff</b>	<b>Number of workplaces</b>
10-19	3
20-49	7

50-99	4
100-199	10
200+	16
Total	40

Workplaces moved through the trial phases as they were recruited, such that each one is on its own “timetable” within the trial. The timetables effectively ‘merged’ once the Bike Now initiatives were implemented within the organisations, so that workplaces completed the follow-up surveys at the same time.

## INITIAL INTEREST IN BIKE NOW AND OTHER CYCLING INITIATIVES

3,934 people from 40 workplace locations responded to the first survey.<sup>1</sup> 109 of these respondents had a disability or a long term illness that prevented them from cycling. Excluding these people from the analysis left us with 3,825 respondents. Of these, 2,379 respondents stated that there was a bicycle in working order usually available for their use.

Respondents were invited to indicate all of the ‘options’ that would encourage them to cycle to work more often than they did at the time of the first survey, and were offered the opportunity to select ‘Nothing would encourage me to cycle to work’ as well as to specify ‘other’ options not listed (refer Table 3). In the case of the ‘other reasons’, a number of respondents indicated that owning a bike; having cycle lanes installed on their route to work (particularly over the Auckland Harbour Bridge); living closer to work; and better weather would all be factors to encourage them to cycle to work.

**Table 3 Options which could encourage respondents to cycle more often to work (Note: respondents could select as many as they wanted to)**

Which of the following options would encourage you to cycle to work more often than you do now?	Number of people	% of all responses
<b>People who might cycle to and/or from work if these Bike Now initiatives occurred:</b>		
If I could join a <b>BIKE BUS</b>	320	5%
If there was secure <b>PARKING</b> for bikes at work	868	12%
If I could attend a <b>BIKE-TO-WORK SKILLS COURSE</b>	400	6%
If an experienced ‘ <b>BIKE BUDDY</b> ’ could help me get started cycling to work	239	3%
If I had help planning a safe / quiet route to ride to work.	533	8%
If I knew what to do if I had a puncture or other problems with my bike (how to fix it or where to get it fixed)	497	7%
If I could rent a bicycle and other cycling equipment to “give it a go”	337	5%
<b>Other possible actions that could encourage cycle commuting:</b>		
If I knew a car or (free) taxi fare was available to use for emergencies during work hours	612	9%
If I knew a car or taxi fare was available to use to see clients / attend meetings during work hours	293	4%
If I had access to showers and clothing lockers at or near my workplace	1082	15%
Nothing would encourage me to cycle to work	1030	15%

<sup>1</sup> Note: some workplaces had multiple sites (e.g. Capital & Coast District Health Board had 12 sites) access the first survey. All but one site dropped out after completing the first survey, largely due to poor response rates.

Other reasons	853	12%
---------------	-----	-----

We also asked if respondents would ride a bicycle during the day (e.g. to go to meetings, for running errands, or to get some exercise) if bikes, helmets, and locks were provided as part of their workplace 'vehicle fleet'. 866 respondents said 'yes, definitely', while another 1,048 indicated they were 'not sure'.

134 experienced cyclists offered to become 'bike buddies' for non-cyclists; 77 offered to lead a bike bus (49 said yes to both). 355 experienced cyclists declined to have any involvement in the Bike Now project.

## IMPLEMENTATION PROCESS

We 'lost' several workplaces during the implementation phase, for various reasons:

- In one case the business's head office decided to fully implement Bike Now in two locations, and carry out its own implementation of cycling initiatives in its other New Zealand-based sites, including two worksites originally included in our 40 workplaces;
- Very low response rates from some workplaces meant there was no clear mandate to proceed in two workplaces;
- One workplace was located in the suburbs, at the top of a long, steep hill;
- Champions varied in their degree of commitment and availability to Bike Now, which meant that despite a lot of encouragement by coordinators, Bike Now didn't move through to the implementation phase in five workplaces; and
- In three workplaces, the champion moved on (changing employment or went on long term leave), and did not have someone to replace them.

This meant that 27 workplaces made efforts to implement Bike Now initiatives. Bike Now coordinators had a manual which provided them guidance on implementing the actions identified by respondents as being of interest to them.

**Table 4 Bike Now initiatives proposed and taken up in workplaces**

Initiatives offered / taken up	No. of workplaces participating	Comment
Improved/more secure cycle parking	5	Hooks; Sheffield stands; secure cage
Cycle skill workshops	All	
Bike buddying (including route planning)	9	
Bike bus	All	Bike buses were set up & promoted in the wider community. One Auckland-based business established a bike bus with 5 people on it
Workplace cycle fleet	5	MHosp=2; NH= 2; ACC; Ccdhb = 2;
'have a go' (bike 'lease')	3	Done with existing fleet bikes
Puncture workshop	13	Some provided for free by experienced cyclist in organisation; others offered as a workshop with a small fee
Ironing facility provided	2	This was done using the \$250 incentive provided as part of the Bike Now programme.

We spent considerable time and effort promoting free cycle skills workshops, including offering them in different formats (6-hour weekend day workshop; two 3-hour after work sessions; and 2 2-hour after work sessions), and found there was very poor uptake. For example in Wellington, only about 5% of those who said they were interested actually participated in the workshops.

Similarly we developed and promoted the bike bus concept extensively: developing three routes in each regions, organising a schedule and ‘bus conductors’, advertising on the BikeWise website, at Bike-to-work breakfast events, on community radio, in the Nelson City Council newspaper and a local community newspaper. We operated the ‘buses’ for approximately a month in Nelson and Wellington, but only had the conductors on the bus, never any passengers. Two businesses did establish bike buses during the year Bike Now was in operation, one with 5 people on it and another with 2-3.

### THE APPARENT IMPACT OF BIKE NOW: THE ‘AFTER’ SURVEY

1,623 people from 27 organisations responded to the follow up (after) survey. This represents approximately 17% of the total work population in the 27 workplaces. Thirty-six respondents had a disability or a long term illness that prevented them from cycling. Excluding these people from the analysis left us with 1,587 respondents.

Those who responded to the survey consistently reported an increase in the cycling, whether it was frequency to work in the past three months (Figure 1); amount of cycling to work in mid-2008 compared with September 2007 (Table 5); or the amount of cycling for other reasons in mid-2008 compared with September 2007 (Table 8). In addition, several champions reported large increases in the number of bikes being stored at their workplaces.

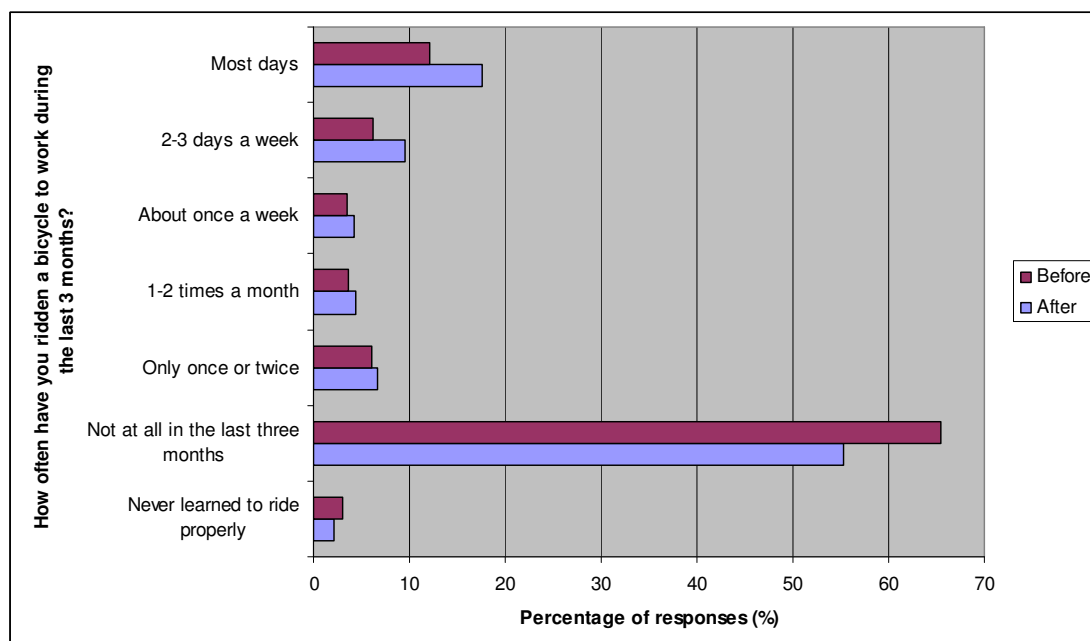
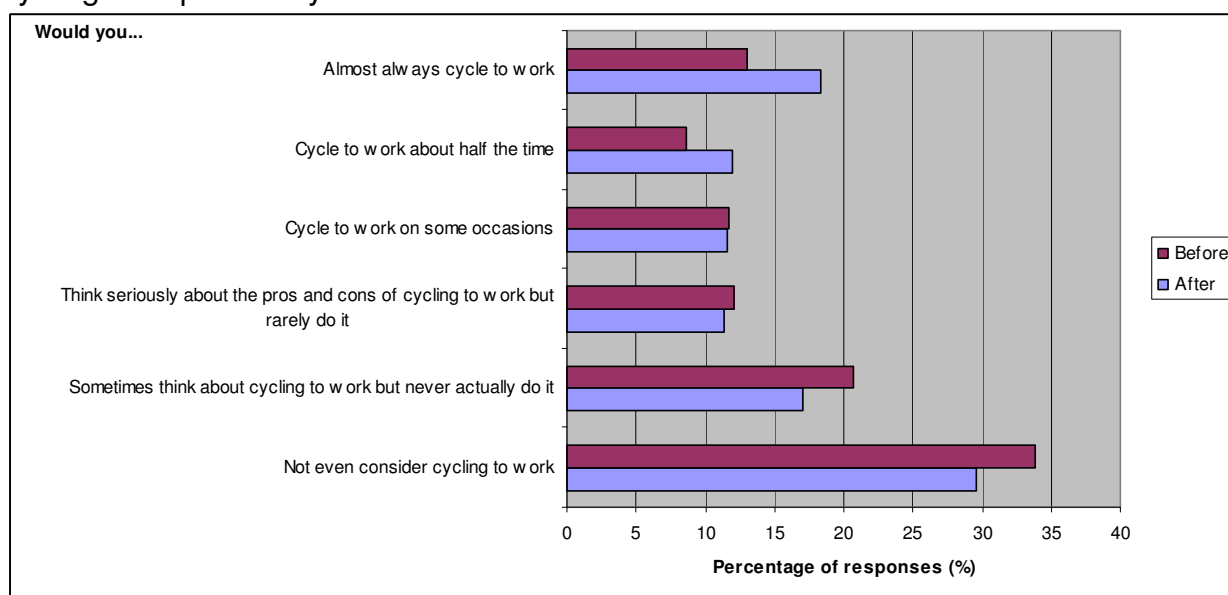


Figure 1 Comparing respondents' frequency of cycling to work in before and after surveys

There was also an apparent shift in attitude towards considering cycling to work, i.e. 'stage of change' (Figure 2), wherein more people were aware of cycling than previously.



**Figure 2 Comparing respondents' 'stage of change' in before and after surveys**

Those who had cycled to work at least once in the previous three months were asked to compare how much they were riding now with how much they were riding in September 2007 (which was just prior to the implementation phase of Bike Now). As Table 5 shows, 216 people (2% of the total work population in the 27 workplaces) said they were riding more frequently to work now than previously. 150 (69%) of those riding more frequently said they were riding 'over 1 hour more per week', while the remainder were riding up to '1 hour more per week'. Nearly one-half (49%) said they replaced 'drive a car' with cycling trips; while around 20% replaced walking trips and 21% replaced public transport trips with cycling.

**Table 5 Comparing relative frequency of cycling to work in September 2007 and mid-2008**

Compared with September 2007, do you ride your bike to work	No. of responses	% of Responses
Less than I did in September	112	16.6
About the same as I did in September	347	51.4
More than I did in September	216	32.0
Total	675	100.0

We asked these people for the three main reasons they were riding more often, and gave a list of reasons, with the option of specifying 'other reasons'. Unfortunately (from our point of view!) Bike Now initiatives did not feature hugely in the reasons people gave for increasing their cycling to work (refer Table 6). Rather, external factors such as the 'cost of petrol' and 'wanted to improve my health / manage my weight (both were 19% of the reasons selected); and 'wanted to get fit' (18% of all reasons selected) featured heavily.

**Table 6 Main reasons for riding to work more often in mid-2008 (Note: respondents could choose up to three main reasons)**

What are the main reasons you ride to work more often now than you did in September 2007?	No. of times reason selected	% of all reasons selected
Attended a (4-6 hour) bike skills workshop	4	1%
More secure bike parking at work	22	5%
Gained confidence working with a bike buddy/mentor	2	0%
I had help planning a route to ride to work	4	1%
Iron & ironing board were made available at work	1	0%
Bike pump &/or other equipment installed at work	7	1%
Attended a puncture / basic bike maintenance workshop	1	0%
My workplace organised access to showers and/or clothing lockers at or near my workplace	15	3%
Bought a bike	47	10%
Wanted to get fit	88	18%
Wanted to improve my health / manage my weight	93	19%
Moved house (closer to work / further away from work)	45	9%
No longer have a car	12	2%
Cost of petrol	94	19%
Other reason	51	10%
Total	486	100%

Bike Now initiatives featured in about 11% of the responses, although the 'other reasons' reveals that the presence of Bike Now in the workplace was apparently a sufficient catalyst to action for some:

- 'Got confident with route, lots of support from other staff, got fitter and enjoyed more, save money on bus fare'
- 'getting bike lights given out at the hospital awareness day' (2 people)
- 'I live quite far from work (30km). I realised I could drive half way to work with my bike in the boot, park up, then cycle the rest of the way. I could do this much more frequently than cycling the full distance.'
- 'We had a BikeWise week so I thought I would uphold our 100% participation of our office'
- 'I started my kids biking to school, then I ride to work from there.'
- 'Find it saves time (much quicker than walking or driving) and it ends up saving money spent on busses or parking/petrol. I realised that it isn't much of a hassle organising work clothes in the morning.'

Other reasons cited by several people included a desire to be environmentally-friendly, enjoying cycling to work and finding it 'faster and cheaper than taking a bus or car'. One person summed it up:

'It's a great kick start to the day and good wind down at the other end. Gets the blood pumping to the brain!!!'

We also asked people who ridden to work at least once in the previous three months what they thought their riding to work behaviour would be in September 2008. Their responses were largely positive, as shown in Table 7 below.

**Table 7 Speculation about the frequency of riding to work in the future**

Thinking ahead to September 2008, will you be riding to work....	No. of responses	% of responses
Definitely less than I did in September 2007	18	2.7
Less than I did in September 2007	13	1.9
About the same as I did in September 2007	317	47.0
More than I did in September 2007	144	21.3
Definitely more than I did in September 2007	152	22.5
I don't know	31	4.6
Total	675	100.0

All respondents were asked to reflect on their cycling for reasons other than to and from work (e.g. for running errands; recreation; exercise). Table 8 shows that 315 reported that they were doing more such cycling in mid-2008 than in September 2007.

**Table 8 Comparing relative frequency of cycling for reasons other than going to work in September 2007 and mid-2008**

Please exclude riding to and from work. Compared with September 2007, do you now ride your bike for exercise / recreation / to run errands / shopping / etc...	No. of responses	% of Responses
Less than I did in September	281	18.1
About the same as I did in September	957	61.6
More than I did in September	315	20.3
Total	1553	100.0

## **DID THE IMPACT REALLY HAPPEN?: THE PROBABILITY OF (EXTENSIVE) BIAS**

Overall, while the response has been largely positive (all the markers suggest that there is more cycling occurring in the workplaces now than prior to Bike Now), we have to acknowledge that bias-related issues undoubtedly affect our findings, including:

- Self-selection bias (could be identified as non-response bias): those who have something to 'trumpet' respond to the survey, while those who have not changed their habits do not. Within our survey, we asked those who did not change their cycling habits about their reasons for this, but there will be those that did not respond simply because they saw that a 'cycling survey' did not apply to them.
- Potential recall bias exists, where respondents could either fail to recall certain events or inaccurately match their level of cycling activity now to the recall period specified in the survey (September 2007). Elsewhere, particularly in studies of recreation participation, Tarrant et al (2003) note that

recall bias has typically produced overestimates of participation, particularly where the recall period is six-months or longer (as was the case in our survey).

- While the survey was conducted on a 'before' and 'after' basis with the same 27 organisations, it was not a 'proper' panel survey (using the same respondents before and after Bike Now was implemented, in effect 'using respondents as their own controls'), in that we did not match respondents from the before survey with those of the after survey. Logistically, this was beyond our budget to manage (the first survey was available to a pool of 17000 respondents). It is also clear from the results that some people only answered the after survey (e.g. they began working for the organisation after September 2007 or shifted cities).
- We did not have a 'control group' (or independent group) of businesses where Bike Now had not been initiated to take account of the impact of possible 'external factors' (e.g. increased cost of petrol; weather) on baseline cycling behaviour. It is possible that there was a general trend towards increased/decreased cycling to work due to such external factors. This could have the effect of decreasing or increasing the reported change in cycling to work.

Considering external factors (such as petrol price increases), we examined Auckland Region's (2009) manual cycle monitoring regional summary report for March 2007, 2008 and 2009 data. The Auckland monitoring programme offers a consistent set of cycle count data collected from the same locations, at the same time periods and days of the week on an annual basis since 2007. Our Auckland businesses were primarily located in Auckland City and on the North Shore, two areas which have quite different cycle count data: in Auckland City, the steady trend is a decline in the average number of cycle movements over the three year period while North Shore City has had a consistent increase. The contrasting trends make it difficult to comment meaningfully on our results, which showed increases in all locations.

- Potentially faulty measuring devices (in terms of the specific questions used in a questionnaire which may have biased the response towards a positive finding). We did minimise the bias from question wording through careful design of survey questions, pilot testing, and analysis of pilot-test results.

While there are some obvious steps we could take to overcome some of these biases, the time and resource constraints we faced pre-empted these.

## CONCLUDING REMARKS

The Bike Now project was an enormously complex undertaking given, as it did, the involvement of 40 workplaces and 6+ initiatives. We collected a lot of data (both qualitative and quantitative), only some of which is reported here. A more complete

report will be published by the New Zealand Transport Agency in late 2009/early 2010.

Fundamentally, our observation is that the presence of a programme, and its associated activities, in the workplace may be sufficient to encourage people to increase their frequency of cycling to work, irrespective of whether or not they actually participate in the initiatives on offer. It appears that increasing the *awareness* of the opportunity to cycle may be sufficient to generate some cycling. We could not specifically pinpoint any one initiative that we offered as being 'effective'. The presence of response bias and the lack of evidence about the effectiveness of the specific Bike Now initiatives meant that it has not been worthwhile to attempt a benefit-cost analysis.

Until there are effective, relatively inexpensive ways of addressing the possible bias in research programmes such as ours, it will be difficult to state with *absolute certainty* that we have made the difference we set out to make.

## References

O'Fallon, C. Bike Now: Reporting on the first phase of a project aimed at building sustained participation in cycle commuting in New Zealand. Paper presented to New Zealand Cycling Conference, November 2007, Napier, New Zealand.

Tarrant, MA; Manfredo, JM; Bayley, PB and Hess, R. 1993. Effects of recall bias and non-response bias on self-report estimates of angling participation. *North American Journal of Fisheries Management* 13:217-222.