

New South Wales Health Promotion Demonstration Research Grants Scheme

CYCLING CONNECTING COMMUNITIES



DOES THE PROMOTION OF CYCLING INFRASTRUCTURE
INCREASE POPULATION CYCLING LEVELS
AND PHYSICAL ACTIVITY?



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Abbreviations and acronyms

ABHI	Australian Better Health Initiative
CCC	Cycling Connecting Communities
HPS	Health Promotion Service
LGA	Local Government Area
RTA	Roads and Traffic Authority
SSWAHS	Sydney South West Area Health Service
TAFE	Technical and Further Education

Executive summary

Introduction

With only about half of NSW adults achieving recommended levels of physical activity, new strategies are needed. Active travel, and in particular cycling, has considerable potential to increase physical activity by building it into regular activities. Few studies have rigorously evaluated cycling promotion programs.

The intervention

The Cycling Connecting Communities project was a health promotion program designed to encourage the use of newly completed off-road cycle paths through south west Sydney. Intervention strategies included community engagement and social marketing, and were based on the transtheoretical model of behaviour change and stages of change. It included strategies designed to raise awareness and knowledge of the cycleway route, address the psychological barriers to cycling, encourage trial of the infrastructure and serve as reminders and reinforcers of cycling behaviour.

Method

The primary research question was 'Can a new cycling facility and multi-strategy community-based intervention increase the level of cycling and physical activity at a community level among residents living in the area around the cycleway?' The evaluation consisted of a baseline (n=1,450) and follow-up survey (n=909) of a cohort of residents in the intervention area (Fairfield and Liverpool), as well as a socio-demographically similar area (Bankstown), both with similar bicycle infrastructure. Bicycle counters were placed on the main bicycle paths in both the intervention (n=2) and comparison areas (n=2), monitoring daily bicycle use.

Results

The telephone survey results showed a greater proportion of respondents (13.5%) in the intervention area had heard of the Cycling Connecting Communities project compared with the comparison area (8.0%) (p=0.013). Among those people that had heard of the Cycling Connecting Communities project, there was a significantly higher proportion of respondents who had ridden in the last year in the intervention area (32.9%) compared with the comparison area (9.7%) (p=0.014).

There was a significant increase in use of bicycle paths in the intervention area (28.3%, compared with 16.2% in the comparison area). Path use was associated with increased cycling, with 29.1% of path users having cycled in the past year compared with 20.6% of non-path users having cycled in the past year (p=0.01). These findings were confirmed by the bike count data, which showed increases in both the comparison and intervention area, but with a significantly greater increase in the intervention area from an average of 23.6 per day (95% confidence interval 21.9 - 25.4) in the first year of the project and which was maintained at the end of the project with an average of 28.3 bicycles counted per day (95% confidence interval 25.6 - 31.1). This represents a 19.9% increase in the intervention area, compared with a 12% increase in the comparison area (p=0.021).

When type of rider was examined, there were significantly more people who described themselves as novice or beginner riders who had ridden in the past year in the intervention area (11.5%) compared with 1.4% in the comparison area (p=0.013). There was a significant increase (from 37.9% to 44%) in the proportion of people who said that they had a bicycle that they could use in the intervention area, with no change in the comparison area (32.1%). There was a higher proportion of respondents in the intervention area who said they wanted to ride 'more' or 'much more' (62.4%) compared to the comparison area (55.6%) (p=0.05).

There was no overall increase in the prevalence of cycling in the intervention area, and therefore there was no difference in overall levels of physical activity between the intervention and comparison areas.

After adjusting for baseline levels of minutes riding, there was a significant increase in the total mean number of minutes riding in the intervention area [compared with the comparison area ($p=0.039$)], with an increase in the total mean minutes cycled in the past week from 188.6 minutes to 233.0 minutes in the intervention area, compared with a decrease in the comparison area from 274.3 minutes to 134.1 minutes. Forty per cent of people riding in the past week achieved the recommended minimum physical activity level just by cycling.

Conclusions

Despite relatively modest resources, the Cycling Connecting Communities project appears to have created awareness of the project, increased use of bicycle paths, increased cycling among novice or beginner riders, increased the mean number of sessions of cycling, increased the mean number of minutes cycled in the past week and increased the desire to want to ride more. Increasing levels of cycling is likely to lead to increased levels of physical activity in the community, but cannot be confirmed in this study. Greater resources for the intervention would have increased the reach of the program, and a larger sample (with more cyclists) was needed to detect small changes in the study cohort. This might have been achieved by capping the age limit of the sample (at 60 years) and surveying only potential cyclists (for example, those with access to a bicycle). It is recommended that this program be repeated in another area with mixed land use and greater population density, and with a refined evaluation strategy.

SECTION 1

Introduction

Background

This project was initiated in response to the 40% of urban NSW residents who are not adequately physically active according to levels of activity recommended for good health¹ and the 41% of urban NSW residents who are overweight or obese.¹

The funding application for this project was titled 'Does cycling infrastructure and its promotion increase population cycling levels?' A package of project interventions was developed and promoted in the community as the Cycling Connecting Communities (CCC) project and this demonstration project will be referred to hereafter as the CCC project.

The project was conducted by the Health Promotion Service (HPS) of Sydney South West Area Health Service (SSWAHS) from 2006 to 2009. It was funded by the NSW Health Promotion Demonstration Research Grant Scheme, with additional funds from the SSWAHS HPS.

Rationale

Physical inactivity is a major modifiable risk factor for cardiovascular disease (CVD) and independently affects other CVD risk factors such as non-insulin diabetes mellitus, total blood cholesterol level, obesity and hypertension.¹ Maximum cardiovascular disease benefit occurs when people move from a sedentary lifestyle or low state of cardio-respiratory fitness to a moderately active or moderate fitness level.³

Nationally, the annual direct health care cost attributable to physical inactivity is estimated at \$377 million per year.⁴ It was estimated that 122 deaths per year from coronary heart disease, diabetes and colon cancer could be avoided for every one per cent increase in the proportion of the population who achieve adequate physical activity.⁴

Incorporating incidental physical activity which results from regular lifestyle behaviours has been found to be more cost-effective than physical activity achieved through structured exercise programs.⁵ Therefore, the concept of

'active transport' is an important one. The term 'active transport' relates to physical activity undertaken as a means of transport. This includes travel by foot, bicycle and other non-motorised vehicles.⁶ The National Road Safety Action Plan specifically encourages alternative modes of transport to cars: "Additional benefits to the health sector could accrue by way of a lower incidence of lifestyle-related diseases due to safer cycling and pedestrian activity"^{7, p25}

Cycling is the fourth most popular recreational activity in Australia, is increasing as a means of transport, and confers substantial health benefits as a form of regular physical activity that is accessible to people of all ages.⁸ The epidemiological evidence is growing that cycling has health-enhancing effects, independent of other leisure-time physical activity. A large Danish cohort observed a 39% reduction in the risk of all-cause mortality over 15 years of follow up, in those that cycled to work, and this was independent of sport and other physical activity.⁹ Similar large population studies have shown positive effects of active commuting by bicycle on reduced mortality and cardiovascular risk among Finnish adults,¹⁰ and similar risk reduction for Chinese adults in Shanghai.¹¹ Ecological observations have noted lower rates of obesity in regions with high rates of cycling.¹² Despite the perceived risks of cycling, the absolute magnitude of the risk is low, and the benefit to risk ratio is overwhelmingly positive; the chronic disease prevention benefits, obesity reduction and mental health benefits are substantial.¹³

There is almost no analysis of the role of socio-economic status in cycling in Australia. There are anecdotal reports of the people most likely to commute to work by bicycle being in higher socio-economic status occupations and living within five kilometres of the CBD. Census data do confirm high increases in cycling in the inner Sydney Local Government Areas (LGAs) up to 10km around the CBD.¹⁴ However, participation in public cycling events is much more diverse, with participants equally distributed across Sydney.¹⁵ More new bicycles than cars have been purchased in Australia in each of the previous nine years¹⁶ and this is partly a reflection of low priced reasonable quality bicycles manufactured in China that are now readily available. Increases in cycling among early adopters, who are typically

well educated and receptive to new things, is consistent with a diffusion of innovation model of health promotion.

There has been very little Australian or international research evaluating the effectiveness of infrastructure and environmental changes upon increasing population levels of physical activity.¹⁷ The best example that building and promoting adequate cycleway facilities increases regular cycling comes from Western Australia where the Travelsmart program, which included mass media publicity, and an individualised marketing program to interested people, reported a 53% increase in bike trips at 12 month follow-up.¹⁸ Skills in the use of bicycles and in planning travel behaviour were also found to increase cycling.^{18,19} Cycling skills courses have also been shown to lead to increases in cycling frequency and duration.²⁰ Although often poorly evaluated, interventions to increase levels of cycling have generally been successful.²¹

A new Sydney Roads and Traffic (RTA) built cycle and walk-way, the Parramatta-Liverpool Rail-Trail was recently evaluated,²² one of the few such studies internationally. With only minimal promotion of the Rail-Trail, moderate increases in trail use and small increases in cycling activity among residents who lived within 1.5km of the trail were found.²² It is unknown if promotion of bicycle paths leads to an increase in the proportion of adults who meet the physical activity recommendation on population levels, or whether the new cycle path simply attracted existing cyclists away from other routes and away from other modes of exercise. Further, there was no control area/trail and those increases that were observed may have been due to general increases in cycling in NSW.²³

SECTION 2

Project aims and objectives

Aims

The aim of this study is to increase the proportion of the population considered sufficiently physically active and increase the proportion of people cycling in the Liverpool and Fairfield LGAs.

Objectives

The objectives of the CCC project were to:

- Detect increases in message recall, especially promotion of cycling and walking opportunities, following the intervention period
- Evaluate the impact of the campaign on cycle path usage and on short trips made by bicycle
- Detect increases in cycling behaviour and changes in the proportion of people who are sufficiently physically active
- Assess the reasons for using and not using the cycle path and the likelihood of future use.

The intervention

Intervention overview

The planning of the interventions was based on a social marketing framework applied locally and using behaviour change theories including the transtheoretical model and stages of change. ²⁴ The aim was to maintain the current behaviour of cyclists using the cycleway and encourage the movement of non-cyclists through at least one of the stages of change known as pre-contemplation, contemplation, preparation, action and maintenance. These stages of change and their meaning to this project are described in Table 1.

Table 1: Interpretation of stages of change for cycling behaviour

Stages of Change	Meaning for project
Pre-contemplation	No intention to ride a bike within the next six months
Contemplation	Intention to ride a bike within the next six months
Preparation	Intention to ride a bike within the next month and has taken behavioural steps in this direction, such as purchasing a bike, researching place to ride and/or people to ride with.
Action	The behaviour of riding a bike has occurred at least once recently.
Maintenance	The behaviour of riding a bike is regular and there is little temptation to relapse.

The population of the target area was considered to be in one of three distinct cycling behaviour groups and were generally at different stages of change and requiring different strategies to encourage change. These were non riders, rarely rides and regular riders. Generally the population within the target area could be categorised into stages of changes according to Table 2.

Table 2: Categorisation of the target area population by stage of change and cycling behaviour

Stage of Change	Cycling Behaviours		
	Non riders	Rarely rides	Regular riders
Pre-contemplation	✓		
Contemplation	✓	✓	
Preparation		✓	
Action		✓	✓
Maintenance			✓

A number of processes of change were employed to encourage individuals within the target population to progress through the stages of change. Specific strategies were selected in relation to each process of change. These strategies included a number of communication activities and events which incorporated a range of messages. The main message, that cycling is a healthy activity necessary for good health, was incorporated into the main project resources, in particular, the 'Discover Fairfield and Liverpool by Bike' map and the 'Thinking about cycling' information brochure. This message was continually reinforced throughout the project in posters and fliers which were distributed to promote specific interventions as well as media articles (Appendix 1) and advertisements promoting those events.

The intervention was intended to target adults and this was broken into three segments:

- Young people (18-25 years)
- Families
- Mature aged

Different strategies were designed to target the three age groupings, but with a significant degree of cross-over (see Table 3).

Table 3: Overview of project strategies

Strategies	Activities	Location	When
Media launch		Miller TAFE	September 2007
Information distribution	Bike map and information leaflet	Widespread coverage	Ongoing
Skilling (free courses)	Free courses	Fairfield and Liverpool sites	Sessions each season
Awareness	One hour community and workplace presentations	Widespread coverage	2008
Trialling – easy level	Community rides	Liverpool and Fairfield sites	Late 2008 and 2009
Trialling - commuting	Ride to Work Day	Liverpool and Fairfield sites	October 2007 and 2008
Trialling – intermediate level	Spring Cycle	Liverpool	October 2008
Transport generators	TAFE	Miller, Liverpool, Wetherill Park	Ongoing

The project was implemented in the LGAs of Liverpool and Fairfield, with Bankstown as the comparison area. All three areas are characterised by higher levels of non-English speaking residents compared to the rest of Sydney, and higher levels of social disadvantage. There were approximately 170,000 residents of Bankstown, 179,000 residents of Fairfield and 164,000 residents of Liverpool at the (2006 Census).

Focus groups

Objective

A series of focus groups were conducted with people who lived and worked within the intervention study area to better understand the factors that would facilitate or hinder use of the bicycle paths, particularly for non-riders and occasional riders. The groups were also designed so as to understand the factors that would persuade people to think about or use the bicycle paths.

Recent research in inner Sydney suburbs identified that a significant barrier for occasional and non-riders was perceived danger from riding on roads.²⁵ This study also identified other barriers including lack of confidence and poor riding skills, lack of bicycle maintenance skills, lack of fitness, initial investment required to purchase a bicycle and scarcity of accessible places to ride.

The objective of the south western Sydney focus groups was to discover whether there were additional barriers

and enablers to cycling in the intervention area and to determine whether those barriers and enablers already identified still applied. The focus groups were also used as a pre-testing component of social marketing strategies and as an opportunity to include the local community in developing cycling programs. The intention was to expose the participants to a range of promotional messages, project identities and possible types of project promotional resources to ascertain their suitability for use in the project.

Process

Seven focus groups were held with eighty five participants (Table 4). The participants were a mix of women, men and young people with representation from a diverse cultural background who lived or worked in the Liverpool and Fairfield LGAs.

The groups were primarily selected from existing community groups that were prepared to participate. In order to broaden the demographic reach, one group was organised with a large local club. Table 4 lists the organisations involved and number of participants in each group. All participants in the focus groups were offered a \$25 gift voucher for participating in the focus group.

Table 4: Characteristics of focus group participants

Organisation	Demographic	Number of participants
Fairfield West Public School	Parents	13
Vietnamese women's group	Culturally and linguistically diverse women	13
Liverpool College of TAFE NSW	Female welfare students	9
Warwick Farm Community Group	Women and men	8
The Hub (Miller) Community Group	Women	7
Bonnyrigg High School	Young people	12
Cabramatta Leagues Club	Older men and women primarily from CALD communities	12

A one hour session was held for each focus group during May and June 2007. Each group was guided through a series of semi-structured questions as detailed in Appendix 2 to ascertain how they felt about their cycling in general, how they felt about their cycling in Fairfield and Liverpool, how they felt about other people riding a bike and what would encourage them to ride a bike or ride a bike more often.

The participants were also invited to comment on a range of aspects with regard to the future project design, both seeking feedback on proposals and input on alternatives. This included:

- Potential names for the project
- Slogans and messages
- Previously used resources such as fact sheets, fridge magnets, water bottles, slap bands.

The focus group responses at each session were captured on butcher's paper and taped. After the focus group sessions themes were identified, analysed and recorded.

Results from the focus groups

Analysis of the barriers and motivators for cycling were significantly consistent with previous research with some variation and differences in emphasis. Safety was again the main issue, but there was more emphasis on personal safety issues with bikes at risk of theft and children at risk of being bullied because they have a bike.

There was a general lack of knowledge about the existing network of cycle paths. For many of those who were aware of these paths, there was a perception that they were isolated, not well lit and unsafe.

The majority of participants had experience cycling as a child. Their experiences had generally been positive but they no longer cycled for a wide range of reasons such as fast and busy traffic, moving from a more cycling friendly area or country, lack of access to a bike, accident/injury or they had an unacceptable image of cycling. There was a strong awareness of the health, fitness and environmental benefits of cycling and some participants said that they would like to participate in events and courses that may be offered.

There was general approval of the proposed name, Cycling Connecting Communities, which could be shortened for general use to CCC, and approval of the slogan 'c u on the cycleway'. A more detailed discussion of these results can be found in Appendix 3.

Project identity and launch

Objective

As one way to raise the consciousness about the project and cycling we sought to establish a unique identity for the project with a name and logo which would be used in all

marketing and promotion of the project and on any resources produced by the project (Appendix 4).

A key feature of the intervention was the design of resources that act as cues to engage cycling. Items such as slap bands and water bottles were designed with specific project images and served as reminders through stimulus control to promote the bicycle paths (Appendix 5).

Project name and slogans

The name Cycling Connecting Communities project was proposed by the Advisory Committee from a short list put together from suggestions received from that Advisory Committee and the HPS, SSWAHS.

The proposed name encapsulated the aim of the project in reaching out to the local community and associating a positive context with cycling. The name was long but for regular use was shortened to CCC project. This name and others were reviewed by a series of community focus groups. There was general support for the name Cycling Connecting Communities project.

Fairfield City Council was a partner in the CCC project with representatives on the Advisory Committee. They held a competition for cycling slogans to be used to promote the launch of their new bicycle recycling facility at the Fairfield Showground, and there was also the potential for them to be used in the CCC project. These suggestions were reviewed by focus groups participants. Potential slogans were also sought from the Advisory Committee. As a result the following two slogans were identified as being useful for the CCC project:

- c u on the cycleway
- Get fit while you sit

Project logo

Both Fairfield City Council graphics department and a commercial graphics design company (CAD Monkey Design) were asked to provide a selection of logos for the CCC project. A short-list of logos was recommended by the HPS Communications team and was shown to a range of people throughout Liverpool Hospital for comment. As a result the final version as depicted in Appendix 4 was selected.

Photo shoot/photo library

For marketing and promotional purposes the CCC project required a portfolio of photos depicting cycling in the

Fairfield and Liverpool areas. As the image of cyclists in lycra can have a negative influence on non cyclists, ²⁶ new images were required to depict ordinary everyday cycling in clothing that was not immediately recognised as cycling specific. The company CAD Monkey Design was engaged to create a portfolio of cycling photographs taken in the local area. A photo shoot was organised in June and members of the local bicycle group and SSWAHS staff members were invited to participate at a selection of bike path locations throughout the Liverpool and Fairfield areas. A photo library was set up from the portfolio created, for use in project materials created throughout the life of the project.

Project resources

A range of project resources was produced or purchased and branded with the project name, logo and/or messages as listed in Table 5.

Table 5: Project resources produced

Resource type	Quantity
Bike map	20,000
Information booklet	5,000
Water bottle	2,000
Slap band	2,000
Bike bells	1,000

A map titled 'Discover Fairfield and Liverpool by Bike' showing the bicycle paths and useful cycling routes in the area was considered the key resource item in raising awareness for non and infrequent cyclists alike by illustrating the extent of local bike paths. A booklet titled 'Thinking about Cycling' was created to complement the map. This book was designed to encourage change in people's behaviour by addressing concerns potential cyclists may have and providing useful contact information to assist them to follow through on their intentions to cycle. Both items were branded with the CCC project logo and name with links to the CCC web site for further information. These resources are further described in the next section.

Water bottles and reflective slap bands were selected as the main resource items that would be designed with specific project images and serve as cues to engage in cycling. Water bottles were seen as a useful accessory for cycling, particularly during the hot summers and highly valued by non and infrequent cyclists. The design of the project logo and project web address also served to reinforce the

connection to the CCC project with easy access to further information. While slap bands do have a useful purpose when worn while cycling, they were primarily produced as a novelty item to be given away at cycling events. The message on the slapband was 'c u on the cycleway', as per the CCC project slogan, and the slapband was highly desired by children and adults alike.

Bike bells were also purchased as a useful item, with no project branding, to be given away at cycling events and to encourage safer cycling.

A one-page information sheet about the CCC project was produced along with a template for a double sided Cycling Calendar to be updated quarterly with upcoming cycling courses and events. Both were branded with the CCC project name and logo.

Project Web Site

A project specific web site (<http://www.cyclingconnectingcommunities.net/>) was set up as a one-stop source of information about the project which could be referenced in all other project material.

Project launch

The launch of the CCC project was planned to provide the first media opportunity to raise awareness of this project, its resources and the cycling infrastructure in place. It was also an opportunity to bring together the existing project partners and engage with future partners such as local bike shops and major employers who could contribute to the success of the project.

This event was planned to take place just before Spring to take full advantage of this popular cycling period. It was to take place in a location in Liverpool, since Fairfield City Council had already raised the profile of cycling in Fairfield through their activities and a launch at the Fairfield Showground. The Miller College of TAFE NSW was approached since it is a major educational institution adjacent to an existing cycleway. This was also an excellent opportunity to initiate a cycling intervention with the College as a trip destination.

Miller College responded very positively and the launch was scheduled for Monday 3 September on the library lawn. It was planned to be a modest media event with invitations to the key partner organisations including health, local government, TAFE NSW - South Western Sydney Institute, RTA, and cycling and their members. The Member for

Liverpool, Paul Lynch MP, who was also the Minister Assisting the Minister for Health (Mental Health) at the time, was invited to launch the project. Representatives from Miller College, NSW Health and SSWAHS were also scheduled to speak.

Miller TAFE organised a raffle for a bike donated by the local bike shop through their Student Representative Association, which was drawn at the launch. Over fifty invitees attended the launch and received information about the project and the project resources.

A media release was organised from the office of Paul Lynch and sent to the local newspapers, the *Liverpool Leader* and *Liverpool Champion*. The *Liverpool Champion* included a feature on the project, the launch and upcoming activities on the front page of the next issue with another follow-up in the following week.

Bike map, booklet and dissemination

Bike map and booklet production

A consultant was engaged to produce the bike map later titled 'Discover Fairfield and Liverpool by Bike'. This map covers the intervention area and surrounds and shows the location of bike paths and a network of useful routes using those paths and local roads (Appendix 6). Local bicycle groups and staff who cycled locally were also asked to suggest bicycle friendly routes. This map was integrated into a double-sided product and showcased two recreational routes and provided additional information (see Appendices 7 and 8). This information included a general description of the CCC project and some of its activities, useful hints on cycling and local contact information as well as healthy physical activity and positive environmental and community messages about cycling.

A booklet titled 'Thinking about Cycling' was produced. This booklet was designed for those in the pre-contemplation and contemplation stages and provided answers to some concerns often expressed about cycling. This also provided a list of contacts that would be useful for someone thinking about cycling.

Dissemination of bike map and booklet

Copies of the map were delivered to a range of outlets for distribution. On-going distribution outlets were Liverpool and Fairfield City Councils, bike shops and the local bicycle groups. The councils distributed them through their council offices, libraries, local community centres and gyms.

Local bike shops distributed them to their customers. Local bicycle groups distributed them to their contacts who were often people preparing to start cycling. Supplies were sent to the RTA for distribution through all their outlets including their online ordering system.

In January 2008, a major New Year promotion of the CCC project and its resources and activities was implemented. This promotion was intended to encourage non riders and infrequent riders to think about cycling, raise their awareness of how cycling could benefit them and how they could prepare themselves for cycling activity. The bike map was the key attractor and people were invited to ring for their own copy. This was advertised through a range of channels including the distribution of a letter box flier to all households in the intervention area, paid advertisements in the local paper, local club newsletters and posters at local outlets. The most effective distribution strategy during this campaign was the letter box flier.

Single day promotional displays were set up in local shopping centres and bike maps and other resources were distributed directly to the public. They were held at Bonnyrigg, Prairiewood and Carnes Hill. This was a very effective strategy for the distribution of large quantities of the bike map into the non-riding and infrequent cycling target group.

A copy of the bike map was provided to every participant at the CCC skills courses and offered to participants at all CCC events.

Table 6 shows a summary of the number of bike maps distributed through each outlet. The information booklet was distributed alongside the bike map but in much smaller quantities.

Table 6: Bike map distribution outlets

Distribution outlet	No of bike maps*
Councils	8 boxes
Bike shops	6 boxes
Shopping centres	5 boxes
2008 New Year campaign (requests)	200 maps
Events and courses	6 boxes
TAFE NSW – Miller College	10 boxes
RTA	5 boxes
Bike groups	3 boxes

* Each box contained 450 bike maps

Cycling skills courses

Objective

One of the main intervention strategies in Spring 2007 was the offer of free cycle skills courses. These courses were intended to provide assistance to members of the public who wanted to ride but did not, either because they had never learnt to ride, had lost confidence, or needed to improve their skills to ride as adults and/or on busier roads. Adults who lived and worked in the intervention area were the primary target for the skills courses, although children were also included as part of family groups.

Skills course Spring 2007 planning

At the beginning of the project four skills courses were identified for delivery to the public. They are described in Table 7, and a list of courses and participation is given in Appendix 9.

Table 7: Type of cycling skills course, target group and length of time

Skills course	Target	Time
Learn to ride	Adults who cannot balance on bike	1 hour lesson repeated as necessary
Back on your bike	Adults who need to develop their basic skills and/or gain confidence in cycling	2 lessons, 3 hours each
Commute by bike	Adults who want to develop their cycling skills for riding on roads	2 lessons, 3 hours each
Family cycling adventure	Adults and children to ride and improve their basic cycling skills	4 hour ride with tips on cycling skills

SSWAHS had previously organised 'Back on your bike', 'Commute by bike' and 'Family cycling adventure' courses in the inner west of Sydney. The 'Learn to ride' was a new initiative that had previously been left to commercial coaches to arrange. However, it was considered essential to this project considering the socio-economic demographic of the area.

A program of courses was planned for Spring 2007 using two locations, one in Fairfield the other in Liverpool. Professional community coaches were engaged to run the cycling skills courses. Eight bicycles were purchased for use in the skills courses by people who either had no bike or could not easily transport their bike to the course. These bicycles were stored at Fairfield Showground adjacent to

the local bicycle group club house. The bicycle group had been initiated by Fairfield City Council and the Council had also provided the club house. Initially there was no bike hire available at the Liverpool site.

The skills courses were promoted widely through the local media with paid advertisements, articles in the local media about CCC, posters placed at local outlets, the CCC and council websites, and SSWAHS intranet services. A Spring 2007 Calendar was produced, which included skills courses, local bicycle group rides and other cycling information, and was distributed through the local outlets. A request was also made to local schools to promote the 'Family cycling adventure' course in their school newsletters and it was also promoted at a Liverpool Sports Expo Day for schools.

Skills course Spring 2007 outcomes

The skills courses were assessed at the completion of the Spring 2007 program with the following findings:

- There was little demand for the 'Commute by bike' course.
- There was little response to the 'Family cycling adventure' using local newspaper advertising. It was promoted again for the school holidays in January but was cancelled due to lack of numbers.
- Mid-week courses were difficult to fill from the general public. Places were often filled by staff from the health service who had more flexible work hours.
- The lack of bikes which could be lent to participants at Liverpool was a deterrent to the viability of courses being run in that area.
- The Fairfield location was an excellent location with good support but there were availability issues due to other activities at Fairfield Showground. It was often difficult to schedule a follow-up session on a following weekend. Saturdays were always unavailable at that location.
- The 'Learn to ride' courses were very popular but difficult to satisfy demand as only one or two participants could be booked into an hour session and it was physically demanding on the coach.
- There was large variability in participants' abilities to achieve the 'Learn to ride' skill level. While most learnt to balance in a one hour session, others took two or three sessions, while others could master the skill in 15 minutes. This impacted on scheduling.

Skills courses Spring 2007 recommendations

- The 'Commute by bike' and 'Family cycling adventure' courses were dropped from the public program.
- A focus to be made on special 'Learn to ride' course days.
- Scheduling for the 'Back on the bike' course is more flexible as a single three hour session with bookings for further sessions as required. Those doing 'Learn to ride' could then graduate to 'Back on the bike' once they had successfully mastered the balance skill.
- Limited bike hire to be offered at the Liverpool location through an arrangement with the Fairfield bicycle group.
- Cycling skill and cycling adventure be offered directly to community groups and schools as a result of contacts made through other CCC project activities such as the Cycling Presentation.

Skills courses run

The type of courses offered and run are summarised in Table 8. The full schedule of courses is included in Appendix 9.

Table 8: Participation in Skills Courses

Type of Course	Location	No of courses	No of participants
Back on your bike	Fairfield	9	39
Back on your bike	Liverpool	2	7
Learn to ride	Fairfield	9	27
Learn to ride	Liverpool	3	6
Special groups		12	43

Skill course results

Skills courses were successful at improving people's cycling skills and confidence and preparing them for cycling activity. In this area there was especially a demand for 'Learn to ride' and 'Back on your bike'. There is a need to explore different models for 'Learn to ride' to cater to the demand. To maximise participation in these courses, the availability of bike hire was essential. It also needed to be flexible in terms of location, which required easy access to transport of those bikes.

Community events

Objective

Running community events provides the opportunity for people who can already ride a bike to get out and ride, and to learn new places to ride safely. Promotion of these community events also forms the basis for developing media promotion and generally raising awareness of cycling within the whole community. Participation in national and state based events can increase the profile of a local community event which leverages off these existing programs. While the main objective was to encourage people to trial recreational cycling, National Ride to Work Day is also an opportunity for people to trial commuter cycling behaviour. See Appendix 10 for examples of posters and flyers produced to advertise the rides and events.

National Ride to Work Day

National Ride to Work Day is a national event which is part of a behaviour change program run by Bicycle Victoria to encourage workers to commute to work by bike on that day. The event is held in October. Liverpool Hospital had previously participated once in this event as a workplace. The CCC project trialed this as a broader community event in 2007, with a community breakfast held in a park adjacent to Liverpool Hospital (Bigge Park). As this was considered a successful event with 50 participants it was decided to replicate this event in 2008. In 2008 there was a higher level of activity with marketing to local businesses. A community breakfast for cyclists was also held in Fairfield at the Hospital, with Council staff riding to the breakfast.

The CCC project supported this event both by employing a range of strategies prior to the event to encourage workplace and employee participation in the event and also by staging community breakfasts on the date of the event which were open to all people riding to work. The local media was approached to raise awareness of the event with a number of articles published in the Liverpool newspapers. In Liverpool an attempt to engage with local employers was made through a presentation to the local Chamber of Commerce. This had limited success but established additional media links and resulted in an arrangement with a local gym for extra incentives to support the event. The event was also promoted by the local shopping centres with extra large posters on display within both the Liverpool and Fairfield main shopping centres.

A presentation kit was put together for employers, consisting of a range of high quality promotional material available from the Cycling Promotion Fund, Bicycle Victoria as well as CCC project resources. Employers in the Liverpool area were cold called in the lead up to the 2007 event and a promotional letter offering further assistance was mailed out to a large number of employers in the Fairfield and Liverpool areas in 2008.

Liverpool and Fairfield Hospitals are major employers in each area and the event was widely promoted internally through posters, fliers and on the intranet. A small stall was setup in the foyer of Liverpool Hospital for one day to promote the event to staff.

A team challenge was initiated in Liverpool though only two teams participated. At Liverpool Hospital a contact was made available for assistance in the lead up to the event and as a result two people were matched to ride together and several requests for information about bike parking and showers were responded to.

A community breakfast was set up with food from Bakers Delight, a national sponsor, fruit, drinks and access to a coffee van provided. In 2008 the local gym also provided water bottles as part of a sponsorship deal.

The Fairfield community breakfast was setup in the grounds of Fairfield Hospital, not far from the cycleway network. The Fairfield Ride to Work Day event was a cooperative effort by the CCC team, Fairfield Hospital and Fairfield City Council.

Despite the increased activity with businesses, the outcome for 2008 was less than in 2007 with around 40 participants at the Liverpool breakfast and around 25 at Fairfield. There was rain on the day and evening prior to the event which would have reduced attendance. However, it is unlikely that cycling to work in the Liverpool area will grow significantly with only increased marketing and promotion, because more infrastructure support is required. There is potential to increase the numbers cycling to work at a large employer like Liverpool Hospital but it requires better access to useful secure bike parking and showers before more intense promotion will be effective.

Liverpool Bike Week Event 2008

NSW Bike Week is a state-wide NSW Government initiative that raises the profile of cycling as a healthy, easy, low cost and environmental friendly alternative to driving for short trips in a local community. Councils and other organisations are encouraged to run organised bicycle events in a safe and supported environment and the RTA provides start-up funding to assist in the promotion of these events.

Fairfield City Council runs a NSW Bike Week event each year, but Liverpool City Council had not done so for many years and had no plans to do so. This created an opportunity for the CCC project to run the NSW Bike Week event for the Liverpool area.

A community bike ride event was planned for a local community. Wattle Grove was chosen because of its pleasant network of local bicycle paths and also because the relatively high uptake of the bike map in the area indicated a good level of cycling interest. The event was designed in partnership with the local bicycle user group who ran the ride.

Promotion consisted of

- Design and production of a promotional flyer which was distributed to letterboxes in the surrounding local area
- Design and production of a poster which was displayed at the usual outlets in Liverpool
- Placement of advertisements in the local newspapers
- Production of a banner for the Liverpool Bicycle User Group (BUG) and their promotion at the local shopping centre on the Saturday prior to the event

The event was fully catered with a coffee van, breads, fruit and water. All CCC resources were available. The bicycle group offered a basic skills session prior to the ride and the local bike shop offered free bike checks at the event prior to the ride.

The event was very successful for a local community event with approximately 60 participants. It received good media coverage in both local newspapers after the event.

City of Sydney Spring Cycle 2008

The City of Sydney Spring Cycle is an annual event that is run by Bicycle NSW, costing participants \$55. While it has historically run from North Sydney to Olympic Park, additional starts were proposed for 2008 including the possibility of a Liverpool start. The CCC project lobbied Bicycle NSW to include the Liverpool start in 2008, and this was agreed upon with volunteer support from the CCC project.

A flyer was designed in cooperation with Bicycle NSW to promote this event. The double sided flyer was also used to promote the NSW Bike Week event to maximise exposure in the area.

The cost to enter the event was considerable and it was felt that made it a difficult event to promote in the Liverpool area. Consequently, the older school age market was also a target audience since the entry fee for that age group was lower. A business card-sized flyer promoting the event was designed and local high schools were approached to allow presentations at school assemblies to talk about the event and to distribute the business cards.

The event was a small success with about 200 participants mostly drawn from areas beyond the intervention area.

Australian Better Health Initiative funded community rides

The success of the Liverpool Bike Week event provided a model that could be replicated in other local communities in Liverpool and Fairfield. To make it more accessible to lower socio-economic areas, it was also desirable to provide free bike hire. A grant from the Australian Better Health Initiative (ABHI) provided the opportunity to run four such events over a four month period in 2009.

Four localities were chosen where there was good access to a network of cycle paths. Two were identified in the Liverpool area and two in Fairfield; each site could be supported by the relevant local bicycle user group. For each event the ride was designed in coordination with the bicycle user group. A leaflet describing the route was also produced. Resources made available from ABHI included healthy recipe books, Measure Up booklets and measuring tapes, and CCC project resources. At locations where facilities were available, the event was catered with morning tea and coffee available while participants registered for the ride, arranged hire bikes, had bike checks by the bike shop,

and filled up water bottles. Healthy breads, fruit and drinks were supplied after the ride.

These events were promoted following the model of production of a flyer and the distribution of the flyer to letter boxes. This was supplemented by an email promotion to previous participants at CCC events, advertising on council websites, newspaper notices, and on the SSWAHS intranet site.

The events were a huge success with bad weather the only negative for the Liverpool based events as outlined in Table 9.

Table 9: Timetable of community rides supported by ABHI funding

Month	Location	Participants	Notes
February	Lurnea	12	Heavy rain showers
March	Fairfield	80	
April	Warwick Farm	50	Showers
May	Canley Vale	90	

Partnerships

The CCC project interventions were realised with the support of a large number of partners. The CCC project directly worked on specific interventions with some of these partners. In other cases, the partners added significant value to other interventions and/or assisted in their promotion.

Key partners and members of the Advisory Group were Liverpool and Fairfield City Councils, who supported and promoted CCC activities. Fairfield City Council had already initiated their own cycling related projects consisting of a Bicycle Recycle project to improve access to cheap bikes and the setup of a local bicycle group in Fairfield, called the Western Sydney Cycling Network. Council established a club house and trailer at Fairfield Showground which was the base for the Bicycle Recycle operations and community rides program which was run by that bicycle group. This facility improved access to cheap bikes, provided a base for hire bikes and for the running of some skills programs and cycling events. The members of the bicycle group also ran the ride and bike hire component at some CCC events. The

Bicycle Recycle facility, the Western Sydney Cycling Network and their community rides program were promoted as part of CCC interventions for the value they added to encourage behaviour change around cycling in the community.

The CCC project worked with Liverpool City Council to encourage the development of their Bike Plan which would sustain and improve bicycle facilities in the area. The project also ran the Liverpool Bike Week event for council under a corporate sponsorship arrangement. Both Liverpool and Fairfield City Council participated as workplaces in the Community Engagement Program (see Community Engagement Strategy) and National Ride to Work Day activities.

The local bicycle group in Liverpool, LiveBUG, also ran the ride component of a number of activities. They usually set up a stall at the local shopping centre on the weekend prior to promote the event. LiveBUG assisted in the promotion of National Ride to Work Day events within Liverpool Hospital and both bicycle groups supported their respective community breakfast for those events.

The RTA was also a key partner on the Advisory Group. The RTA had a major role in the evaluation component of the CCC project through the installation, maintenance and reporting from four bicycle counters located in the intervention and control areas. The RTA provided an outlet for the distribution of the bike map through their resources website, as well as providing new cycling resources. The RTA was also a source of additional promotional funding for the NSW Bike Week event.

The CCC project worked with local bike shops to promote CCC activities and resources. Bike shops added value to CCC activities by providing free bike checks to participants at all community ride events. The local Liverpool Bike Shop also set up low cost bicycle maintenance classes for their customers.

The TAFE colleges in the area, Miller, Liverpool and Wetherill Park were identified at the beginning of the project as special intervention projects to encourage more cycling to TAFE, and to generally target a younger market. Miller College was approached early in the project as a launch site and an excellent partnership developed with that TAFE College over the life of the project.

TAFE was a major outlet for CCC project resources with the bike map distributed on orientation days at Miller College,

and also through the Student Association student packages for both Miller and Liverpool TAFE colleges. Bike maps were available throughout the semester at the Miller library as part of a CCC display including the CCC banner which was subsequently transferred to Wetherill Park College.

Sixteen bike racks were supplied to Miller College from the project. The TAFE used these racks as a practical work exercise in a number of their course subjects. Miller College also developed a Transport Access Guide which included information about bicycle parking.

As a result of the CCC project Miller College offered a Certificate 11 Bicycle Course to provide pathways to training and employment in bicycle maintenance for unemployed and Aboriginal youth.

The potential for setting up a TAFE campus bicycle user group and bike bus/bike buddy strategies were investigated but there was insufficient demand. Local riders were put in contact with the local bicycle group and interaction with the student community occurred through the student associations. Similarly there was insufficient demand for a ride a work day event at the TAFE campuses without extra CCC project involvement.

Liverpool and Fairfield Hospitals were major sites for the promotion of CCC project resources and activities. Posters and fliers were placed around both sites and messages placed on the intranet and distributed via hospital email lists. A stall was held in the Liverpool Hospital foyer in the lead up to the Bike Week, Spring Cycle and National Ride to Work Day events in 2008.

Community engagement strategy

The CCC project developed a one-hour presentation which was delivered to 351 people attending 24 community or workplace groups between February and September 2008. The objective was to raise awareness of cycling, the benefits of physical activity, the CCC project activities and resources and how to progress to riding a bike or to ride a bike more.

A handout titled 'Exploring Cycling' was produced which helped participants identify where they were now in terms of 'Getting Started', 'Gearing Up' or 'Regular Rider', how to take the first step towards starting and what to do next (Appendix 11).

The initial plan was to train several local active members of the bicycle groups to run the presentation so that the presentation could receive broad coverage through the intervention area. This proved to be impractical due to lack of time in conjunction with the high level of other cycling activities, so the presentations were largely run by a HPS staff member.

Groups were identified through initial community contacts provided by the councils. A promotional flier was developed and distributed at CCC supported events. Staff from the local hospitals, councils and TAFE campuses were also targeted for the presentation. Once a presentation was scheduled a promotional template was updated to help the group promote their event.

Participants were asked to complete an evaluation form and asked to be recontacted for six and twelve month follow-ups to evaluate whether there were any change in their cycling behaviour as a result of the presentation. While 156 people consented, only 90 people completed the six month survey and only 30 completed the twelve month survey. Response levels were much too low for a detailed analysis. However, some respondents said they had talked about cycling with friends and family.

A number of skills courses and rides were run with specific community groups as a result of this community engagement strategy.

Evaluation methods

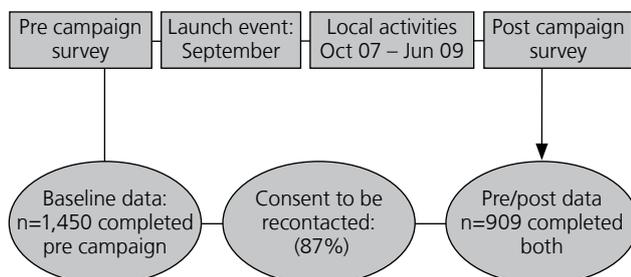
The impact evaluation used two approaches (Study 1 and 2) and two different data sources.

Study 1: Research questions related to telephone surveys

1. Is there a significant increase in self-reported cycleway use for cycling or walking, and in the percentage of cyclists who used the cycleway in the past month and did this use vary across population sub-groups (age, sex, education attainment, ethnicity, car owners)?
2. Did the intervention campaign result in a significant increase in unprompted and prompted awareness of the cycleway?
3. Did the intervention result in a significant increase in cycling commuting or recreational cycling and which groups are more likely to change these behaviours?

The evaluation design was quasi-experimental with a cohort study with two data collection points in an intervention and comparison area (Figure 1). The cohort evaluation focused on a random sample of adults, aged 18 years or older, living within two kilometres from the cycleway in suburbs that will be defined as the intervention area. The comparison area included a random sample of adults of the same age and within the same distance to another new cycleway in a different but demographically similar part of Sydney.

Figure 1: Design of impact evaluation using a telephone survey



Sample

Respondents were selected using a three-stage sampling process. In the first stage postcodes within two kilometres from the two bicycle paths were identified. In the second sampling stage households in these areas were linked to the Electronic White Page Directory to randomly select telephone numbers for each sample group. In the third stage each household was telephoned and screened for eligible respondents. Eligible respondents were aged 18 years or older, and spoke English. If there was more than one eligible person per household, respondents were selected randomly using the most recent birthday technique.

Data collection

Data were collected using standard computer assisted telephone interview techniques. The baseline interview (approximately 10 minutes) was conducted in May-June 2007 (Appendix 12). Respondents who consented to participate in a follow-up interview were re-contacted 24 months later, with follow-up interviews conducted in May-June 2009. Socio-demographic characteristics (including age, sex, educational attainment, income, marital status, presence of children in the household and car ownership) were asked only at baseline. These questions were replaced with campaign process evaluation questions in the follow-up interview (Appendix 13).

Main outcome measures:

Physical activity behaviour:

- Total time cycling per week: estimated time spent on cycling in the past week (based on the National Active Australia measure)
- Sufficiently active: sufficient to confer health benefit if total time is greater or at least 150 minutes.
- Total time cycling per week: estimated time spent on cycling in the past week.
- Total sessions of cycling per week: number of times spent on cycling continuously for at least 10 minutes in the past week.

Prompted awareness of bicycle paths: the percentage of cyclists who knew about the cycleway.

Usage of bicycle paths: based on if respondent had ever used the new bicycle paths for any purpose.

Attitudes: agreement with selected attitude statements used in previous studies (asked only at follow-up)

Statistical analysis

For the cohort of survey respondents for whom there was both baseline and follow-up data, regression analyses (general linear regression was used for continuous measures and logistic regression was used with categorical measures) tested the significance of differences between the intervention and comparison areas adjusting for baseline differences, socio-demographic characteristics and potential confounders. Pre-post changes in the cohort were examined with paired t-tests for continuous variables and McNemar's test for categorical measures using STATA (Version 10).

Study 2: Research question related to bike count monitoring

1. Is there a significant overall increase in the daily means of bike counts along the cycleway not explained by seasonal, weekend and weather variations?

Data collection (Evaluation of bike counts from RTA bike counters)

Four 'Trafficorders', devices that are designed to monitor traffic volumes by type and speed with a reliability range between 95%-98%, were placed at different points along each of the bicycle paths. The devices recorded activity for every quarter of an hour, hourly, and 24 hours for each day during the monitored period. The data are retrieved from the devices as Excel files, separately for each location, and contain all the segmented readings for each day. The 24 hour readings for each location were plotted by dates to check for outliers and to observe time patterns. In addition, precipitation level and the minimum or maximum temperature for each day during the monitored period was provided by the nearest meteorology stations and was included in the data sets. These data were compared over the 24 months of the project.

Statistical analysis

Negative binomial regression analysis (STATA command 'nbreg') compared the area daily bicycle counts between the intervention and comparison areas over time (using an interaction term) and tested for statistical differences. Negative binomial regression (STATA command 'nbreg') was used in the analysis, which is a regression technique used for nonnegative count variables where the count variation is expected to be greater than that of a true Poisson. The average daily means and the variance over the project period were calculated for each location and for the intervention and comparison areas as totals.

Evaluation results

Baseline survey

A total of 1,450 interviews were completed, with a response rate of 64.7 per cent. Interviews averaged 12.5 minutes. There was little difference between the intervention and comparison areas at baseline, although there was a higher level of cycling in the intervention area (25% compared with 19%). Most respondents (n=1,254, 86.5%) agreed to be re-contacted 24 months later and to be asked similar questions.

There was no statistically significant difference between the profiles of respondents in the intervention and comparison areas in terms of basic demographics at baseline (Table 10).

Table 10: Selected characteristics of survey respondents in the intervention and comparison areas at baseline and the SSWAHS population

Characteristic	Baseline (n=1,140)			SSWAHS
	Intervention %	Comparison %	Total %	
Age				
18-29	17.2	16.4	16.8	26.4
30-44	21.8	17.8	20.1	31.9
45-60	29.2	25.3	27.5	22.9
61+	31.8	40.5	35.4	18.8
Sex				
Male	40.2	41.9	40.9	49.5
Female	59.9	58.1	59.1	51.5
Ethnicity				
Born in Australia	55.2	56.7	55.8	52.6

* p<0.05

At baseline there was higher bicycle ownership in the intervention area (p=0.02) (excluding those with a disability), greater use of bicycle paths in the intervention area (p<0.01) and a slight tendency for respondents in the intervention area to have cycled more recently (Table 11). There were no differences in self-reported health, physical activity levels, minutes riding a bicycle in the past week, and whether respondents had seen any advertising about cycling.

Table 11: Cycling related variables in the intervention and comparison areas at baseline

Characteristic	Baseline (n=1,140)		
	Intervention %	Comparison %	Total %
Has used a bicycle			
Yes	37.9 *	32.0	35.3
Rider status			
Rode today	1.2	0.6	0.9
Last week	5.5	3.5	4.6
Last month	5.9	5.5	5.7
Last year	12.7	9.8	11.4
Longer than a year	63.7	65.3	64.4
Never	11.1	15.4	12.9
Physically active			
Yes	43.7	49.3	46.1
Self rate health			
Excellent	13.6	17.3	15.2
Good	52.5	48.4	50.8
Fair	26.8	24.8	25.9
Poor	7.1	9.5	8.1
Seen advertising about cycling			
Yes	12.8	14.4	13.5
Used cycle path			
Yes	23.6 *	15.2	20.0
Wants to ride more			
Yes	67.6	62.2	65.4

* p<0.05

At baseline 14.6% of the sample reported a disability which prevented them from riding a bicycle. This proportion increased significantly with age (4.5% in the younger age group to 30.1% in the oldest group), and was slightly more frequent in women (16.4%) compared with men (12.7%). Of those people without a disability, 22.6% had cycled within the last 12 months, and 12.9% had never cycled. Men (39.6%) were more than twice as likely to have cycled in the last year compared with women (17.5%), and there was a general decline in cycling with older age (Table 12). Almost three quarters (73%) of people rode for recreation or fitness the last time they cycled, with women more likely to cycle for recreation compared to men who were slightly

Table 12: Key baseline cycling variables by age and sex (%)

Cycling variables	Males					Females				
	Age groups					Age groups				
	18-29	30-44	45-60	61+	Total	18-29	30-44	45-60	61+	Total
Has a bicycle	52.2	47.9	51.7	24.0	45.5	47.0	36.3	40.7	11.9	34.9
Rode today	1.2	2.4	3.7	1.0	2.2	-	-	-	-	-
Rode last week	11.8	12.2	8.0	3.9	9.2	1.4	2.5	1.3	-	1.4
Rode last month	14.1	13.4	8.0	3.9	10.0	3.5	3.3	3.1	0.7	2.7
Rode last year	17.7	17.1	13.1	4.8	13.5	16.7	12.7	6.9	2.7	10.1
Sum	44.8	45.1	32.8	13.6	34.9	21.6	17.5	10.3	3.4	14.2
Rode more than a year ago	54.12	51.8	63.5	79.8	61.4	61.8	69.8	63.5	68.2	66.4
Never rode	1.2	3.1	3.7	6.7	3.7	16.7	11.8	25.2	28.4	19.4
Would like to ride more	55.6	73.8	74.7	48.0	66.5	70.2	73.0	58.5	39.0	64.6
Used paths	20.7	19.3	26.2	15.0	20.3	21.7	17.8	21.2	11.8	17.8
Physically active	60.5	51.5	43.9	43.0	48.3	50.3	40.6	43.3	36.2	41.9

more inclined for fitness. Younger people were more likely to be cycling for social reasons or to the shops.

Respondents with children less than 5 years (23.6%) were as likely as those without children (23.2%) to ride within the last year, but those with children 5-18 years were most likely to have ridden within the last year (42.2%) ($p < 0.01$).

Overall, at baseline, two thirds of respondents wanted to ride more than they currently did (65.4%), with equal interest by men and women and the greatest interest in the 30-60 year age ranges for men and 18-44 year age range for women.

At baseline, men (48.3%) were more likely than women (41.9%) to be sufficiently physical active, with the youngest being the most active. Of those respondents who were physically active, 41.9% of men had cycled in the past year, compared with 26.5% of respondents having cycled who were physically inactive ($p < 0.05$). However, only 17.4% of women who were sufficiently physically active had cycled in the past year, compared with 11.7% of women who were inactive ($p = 0.03$).

In a subsample of respondents ($n = 697$), those who reported that they thought it was easy to cycle around their neighbourhood were more likely to have ridden a bicycle in the last year (49.0%) than those reporting it was not easy (36.2%), and this remained significant after adjusting for age and sex ($p = 0.033$). Similarly, proximity to destinations of interest was significantly associated with recent riding after adjusting for age and sex ($n = 1,185$; $p = 0.048$), with

those who reported close proximity to destinations of interest more likely to have ridden a bicycle in the last year (31.6%) than those reporting they were not in close proximity (25.3%).

Self-reported ease of riding was associated with an 8% increase in riding in the last year when stratified by how important it is to live where it is easy to cycle and how close the respondent lives to destinations of interest (Table 13).

One in five respondents (20%) had used the local bicycle paths, and there was no difference by age or sex. Respondents were more likely to use the path if they thought they were safe (25.9% compared with 10.8%, $p < 0.001$). Respondents who had ridden a bicycle in the past year (24.9%) had used the paths more than non-riders (18.1%), after adjusting for age and sex ($p = 0.042$).

Table 13: Proportion of respondents who had ridden a bicycle in the last 12 months by ease of cycling in their neighbourhood, importance of easy cycling, and proximity to destinations of interest (n=693)

Factors influencing cycling	Not easy to cycle (%)	Easy to cycle (%)
Not important it be easy	26.2	24.7
Important it be easy to cycle	20.4	28.6
Not close to destinations	19.9	19.6
Close to destinations	26.4	34.0

Process evaluation

Section Three of this report describes the CCC intervention strategies. In addition to the range of activities and dissemination of resources, it is worth noting that CCC staff supported the establishment of a new Bicycle User Group in Liverpool (LiveBUG), worked with and promoted the newly established Western Sydney Cycling Network (bicycle recycling scheme and Bicycle User Group), and effectively lobbied Liverpool City Council to develop its Bike Plan, which was released for public consultation in June 2009.

Impact evaluation

The follow-up survey pilots were undertaken in April 2009, data collection commenced in May and was completed on

5 June 2009. On average, the interview took 11.9 minutes to complete. Of the 1,254 respondents at baseline who agreed to be re-contacted, 1,013 (80.8%) were able to be contacted, of which 909 agreed to be interviewed (89.7% response rate).

Demographic characteristics

There was a greater proportion of older respondents in the comparison area at the follow-up survey (Table 14), but otherwise no difference between areas. There was a loss of younger people at the follow-up, as well as students and respondents not born in Australia.

Cycled in the last year

At follow-up, almost a quarter (25.8%) of respondents in the intervention group had cycled in the last year,

Table 14: Demographic characteristics of the baseline sample and study cohort by intervention and comparison areas, and those lost to follow-up

Characteristic	Baseline (n=1,140)			Cohort (n=909)			Lost to follow-up (n=541)
	Intervention %	Comparison %	Total %	Intervention %	Comparison %	Total %	Total %
Sex							
Male	40.2	41.9	40.9	39.8	39.9	39.8	42.7
Female	59.9	58.1	59.1	60.2	60.2	60.2	57.3
Age							
18-29	17.2	16.5	16.9	14.4	12.7	13.7	22.3*
30-44	33.2	26.9	30.5	32.5	26.1	29.8	31.6
45-60	27.2	25.1	26.3	29.0	24.3	27.0	25.1
61+	22.4	31.5	26.4	24.0	37.0*	29.6	21.0*
Education							
No formal	8.8	8.0	8.4	7.9	7.2	7.6	9.9
School Certificate	24.1	19.8	22.3	25.4	19.3	22.8	21.4
HSC	18.3	17.4	17.9	17.9	16.2	17.2	19.1
Trade	26.3	22.0	24.5	26.2	24.9	25.6	22.5
University	25.9	16.9	20.8	17.7	26.0	21.2	20.1
Other	4.8	6.2	5.4	5.0	6.5	5.6	6.7
Currently studying							
Yes	13.3	14.8	13.9	11.0	13.1	11.9	17.4*
Country of birth							
Australia	47.3	43.2	45.5	55.4	61.4	58.0	48.5*
Employment							
Full-time	39.1	32.1	36.1	39.7	29.3	35.2	37.5
Part-time	11.7	11.6	11.7	12.5	14.4	13.3	8.8
Keeping house	11.6	11.7	11.7	11.4	9.3	10.5	13.7
Aged pension	11.4	11.9	11.6	12.7	12.6	12.7	9.8
Other	26.2	32.7	28.9	23.7	34.4	28.3	30.2

* p<0.05

compared with 19.4% of respondents cycling in the last year in the control area (p=0.06) (Table 15). This difference may be explained by the higher level of cycling in the intervention area at baseline (25.2%) compared with the control area (19.3%).

Logistic regression analysis using 'having cycled in the past year' as the outcome variable, shows a significant association with this variable and younger age, being male and baseline cycling (in the past year) (Table 16). There was no statistical difference in the proportion of respondents by rider types between the baseline and follow-up (Table 17), nor when within individual changes were examined.

Table 15: Cycling uptake in the intervention and comparison areas at the baseline and follow-up survey

Characteristic	Baseline (n=1,140)			Follow-up (n=909)		
	Intervention %	Comparison %	Total %	Intervention %	Comparison %	Total %
Has a bicycle to use						
Yes	37.9	32.0	35.3	44.2*	32.1	39.1
Rider status						
Rode today	1.2	0.6	0.9	1.5	0.8	1.2
Last week	5.5	3.5	4.6	4.4	4.9	6.6
Last month	5.9	5.5	5.7	6.7	3.9	5.5
Last year	12.7	9.8	11.4	12.1	10.0	11.1
Longer than a year	63.7	65.3	64.4	62.5	64.3	63.3
Never	11.1	15.4	12.9	12.7	16.2	14.2
Physically active						
Yes	43.7	49.3	46.1	48.7	53.7	50.8
Self-rate health						
Excellent	13.6	17.3	15.2	11.4	12.9	12.0
Good	52.5	48.4	50.8	48.9	50.8	49.7
Fair	26.8	24.8	25.9	30.4	28.9	29.7
Poor	7.1	9.5	8.1	9.4	7.5	8.6
Seen advertising about cycling						
Yes	12.8	14.4	13.5	17.5	14.9	16.4
Used cycle path						
Yes	23.6 *	15.2	20.0	28.3*	16.2	23.1
Wants to ride more						
Yes	67.6	62.2	65.4	62.4*	55.6	59.6

* p<0.05

Table 16: Logistic regression analysis of having cycled in the past year by age, sex, baseline cycling and area of intervention (n=764)

Characteristic	Coefficient	Std. Err	z	P>z	95% Confidence Interval
Area of intervention	0.0534422	0.2033998	0.26	0.793	-0.3452141 to 0.4520986
Age	-0.0413476	0.006793	-6.09	0.000	-0.0546616 to -0.0280336
Sex	0.7133881	0.2013766	3.54	0.000	0.3186972 to 1.108079
Baseline cycling (in past year)	2.084041	0.2113464	9.86	0.000	1.669809 to 2.498272

Table 17: Rider type in the control and intervention areas at baseline and follow-up

Rider Type	Baseline (n=1,140)			Follow-up (n=909)		
	Intervention	Comparison	Total	Intervention	Comparison	Total
	%	%	%	%	%	%
Beginner or novice	14.7	17.7	16.0	17.7	23.4	20.1
Occasional but tentative	14.2	20.1	16.7	18.0	15.6	17.0
Occasional but competent	60.2	51.4	56.4	53.6	47.7	51.2
Regular rider	10.9	10.9	10.9	10.7	13.3	11.8

* p<0.05

There were no differences between the intervention and comparison areas in the proportion of respondents who had cycled in the past year overall or when the data were stratified by age and sex sub-groups. When type of rider was examined, there were significantly more people who described themselves as novice or beginner riders who had ridden in the past year in the intervention area (11.5%) compared with 1.4% in the comparison area (p=0.013).

Cycle path use

Despite similar path use at baseline, there was a significantly greater use of the bicycle paths in the intervention area (28.3%) at follow-up compared with the comparison area (16.2%) (p<0.001) (Table 15) and path use was significantly associated with an almost 10 per cent increase in having cycled in the past year (29.1% in the intervention area compared with 20.6% in the comparison area (p=0.010). There was also a significantly greater proportion of respondents in the intervention area who were likely to use the paths in the future (28.6%) compared with the comparison area (17.8%) (p<0.001).

Awareness of CCC project

A greater proportion of respondents (13.5%) in the intervention area had heard of the CCC project compared with the comparison area (8.0%) (p=0.013) (Table 18). Among those people that had heard of the CCC project, there was a significantly higher proportion of respondents who had ridden in the last year in the intervention area (32.9%) compared with the comparison area (9.7%) (p=0.014). This relationship remained significant after adjusting for baseline cycling (p=0.021). There were no differences by age or sex in the profile of those respondents who recalled awareness of the CCC project, although respondents who described themselves as occasional riders at baseline in the intervention area were most likely to recall awareness of the CCC project (73.7%) compared with the comparison area (23.5%) (p=0.004).

Table 18: Exposure to the Cycling Connecting Communities and use of bicycle paths by intervention area at follow-up

Exposures/ use of paths	Control		Intervention	
	Number	%	Number	%
Seen any cycling ads in last month	58	14.9	91	17.5
Ever heard of CCC	31	8.0	70	13.5*
Participated in any rides or events	8	2.2	12	2.4
Noticed increases in cycling among friends and family	83	21.3	130	25.0
Talked about cycling with friends and family	157	40.4	229	44.0
Has anyone encouraged you to ride	79	21.4	114	22.8
Have you encouraged anyone to ride	121	31.1	182	35.0
Used any of the bicycle paths for any reason	63	16.2	147	28.3**
Likely to use paths in future	63	17.8	140	28.6**
* p<0.05				
** p<0.01				

Changes in attitude

There were no differences in responses to attitude statements in the intervention or control areas. There was a high level of agreement that cycling is enjoyable, but also that riding with traffic is too dangerous and that motorists need to be educated about giving cyclists a fair go on the roads (Table 19).

Access to a bicycle

There was no difference in the frequency of cycling between the intervention or comparison areas by whether the respondent had access to a bicycle they could use. However, there were significantly more respondents in the intervention area that had one or more bicycles in the household (63.1%) compared to the comparison area (47.8%) (p<0.001) and having one or more bicycles in the household was significantly associated with having ridden in the last year (p<0.001) adjusting for intervention area.

Table 19: Per cent agreement with attitude statements by intervention area

Attitude statements	Control	Intervention
Motorists need to be educated to give cyclists a fair go on the road	83.5	85.6
If cyclists want equal rights on the road they should pay registration fees or road taxes	39.4	35.0
It is very frustrating sharing the road with cyclists	14.7	16.2
Cyclists should be able to ride on main roads, without cycle tracks, during peak hours	14.7	17.4
Cyclists are courteous on the roads to motorists	50.1	46.4
Riding a bicycle is very enjoyable	92.4	91.3
Cycling to places can be quicker and more convenient	65.2	66.3
Cycling on the road with traffic is too dangerous	84.9	87.1

Desire to ride more

There was a higher proportion of respondents in the intervention area who said they wanted to ride 'more' or 'much more' (62.4%) compared to the comparison area (55.6%) and this effect was significant for all rider types except novices or beginners (p=0.05). Wanting to ride more was significantly associated with having ridden in the past year (p<0.001).

Minutes riding in the last week

In the intervention area, among those that had ridden in the past week there was a slight decrease in the mean minutes cycling for recreation or exercise (169.5 minutes to 152.1 minutes per week), but a large increase in the mean minutes cycling for transport (76.9 minutes to 174.2 minutes per week). In the comparison area there was a much bigger drop in the mean minutes of recreational cycling (190.3 minutes to 121.3 minutes per week) and a large drop in mean minutes of cycling for transport (197.6 minutes to 71.7 minutes per week).

For the small subset of respondents that had ridden in the previous week at both baseline and follow-up (n=18) a similar pattern was observed (Table 20).

Table 20: Mean minutes cycled and mean number of sessions cycled in the past week (paired data only)

Reason for cycling	Comparison		Intervention	
	Minutes (n=6)	Frequency (n=6)	Minutes (n=12)	Frequency (n=12)
Cycling for exercise				
Pre	188.3	2.7	120	1.67
Post	133.3	2.0	230	3.0
Difference, t-test	55, p=0.499	-0.67, p=0.175	110, p=0.082	1.33, p=0.059
Cycling for travel				
Pre	85	1.5	35	1.0
Post	6.7	0.667	150	2.33
Difference, t-test	-78.3, p=0.220	-0.83, p=0.383	115, p=0.062	1.3, p=0.043
All cycling				
Pre	273.3	4.17	155	2.67
Post	140	2.67	380	5.3
Difference, t-test	-133.3, p=0.231	-1.5, p=0.137	225, p=.021	2.67, p=0.004

Overall, among those that had ridden in the past week at baseline or follow-up, there was an increase in the total mean minutes cycled in the past week from 188.6 minutes to 233.0 minutes in the intervention area, compared with a decrease in the comparison area from 274.3 minutes to 134.1 minutes. Using the small subset of paired data, after adjusting for baseline levels of minutes riding, there was a significant increase in the total mean number of minutes riding in the intervention area compared with the comparison area (p=0.039).

The increase in minutes riding can be explained in part because of an increase in the number of times participants went riding in the past week in the intervention area (2.9 to 4.8 times), and a slight decrease in the comparison area (4.6 to 4.5).

Mean minutes of physical activity

There was no significant difference between the intervention and comparison area with regard to the total mean minutes of physical activity. There was a similar amount of change in the mean minutes of physical activity – from 234.1 to 260.7 minutes per week in the comparison area, and 210.9 to 242.2 minutes per week in the intervention area. Mean minutes of cycling in the past week was significantly associated with total mean minutes of physical activity per week (p<0.001), after adjusting for area of intervention, age and sex.

Proportion meeting physical activity guidelines

There was no statistical difference between the intervention area (48.7%) and the comparison area (53.7%) (p=0.130) in the proportion of respondents meeting physical activity guidelines of 150 minutes of moderate intensity physical activity per week. However, of those people who met the physical activity guidelines, 28.1% had cycled in the past year (16.0% in the past month) compared with 16.8% of those not meeting the guidelines having cycled (6.5% in the past month) (p<0.001 for both past year and past month comparisons). Forty per cent of people riding in the past week achieved the recommended minimum physical activity level just by cycling.

Bicycle counter results

Initial observations of the daily bicycle counts in the intervention and comparison areas suggested that there might be a slight increase in bicycle path use in the intervention area (Figures 2 and 3).

Figure 2: Comparison area daily bicycle counts from January 2007 to June 2009

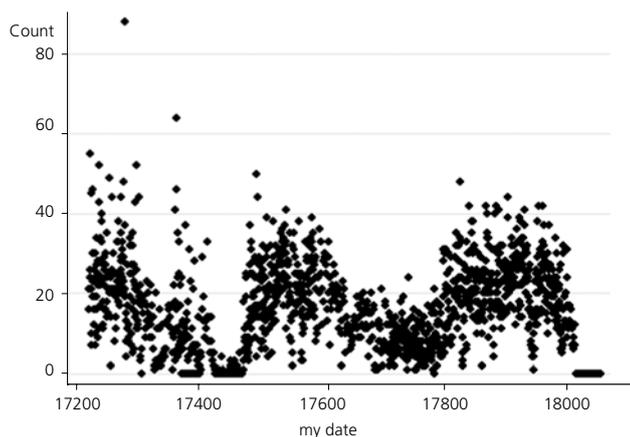
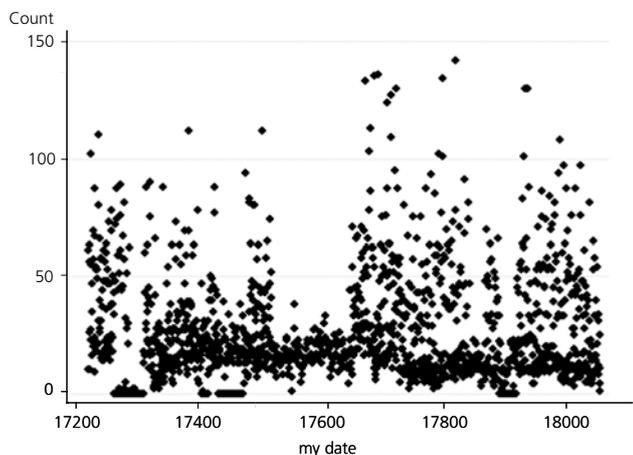


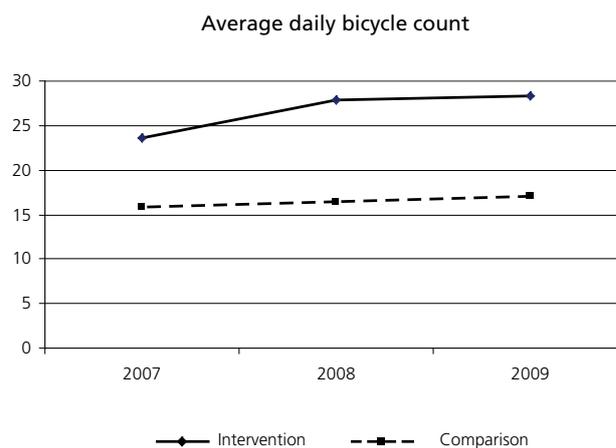
Figure 3: Intervention area daily bicycle counts from January 2007 to June 2009



Bicycle count data indicate increases in both the comparison and intervention area, with a significantly greater increase in the intervention area from 23.6 per day (95% confidence interval 21.9 - 25.4) in the first year of the project and which was maintained at the end of the project with 28.3 bicycles counted per day (95% confidence interval 25.6 - 31.1). This represents a 19.9% increase in the intervention area, and is compared with a 12% increase in the comparison area. Figure 4 shows the average daily bicycle count by intervention area over time (using westward data).

The larger intervention effect was found in the Fairfield area, where there was a 37.4% increase in bike path use between 2007 and 2009, compared to a smaller but still substantial increase in the Hoxton Park area (27.8%).

Figure 4: Bicycle counts in the intervention and comparison areas over time



These results are confirmed in the multivariate analyses (using negative binomial regression and adjusting for weekends, rainfall, minimum and maximum temperatures) with the interaction between area of intervention and time being statistically significant ($p = 0.021$).

SECTION 6

Discussion

In the intervention area the CCC project appears to have increased awareness of the project, increased use of bicycle paths, increased cycling among novice or beginner riders, increased the mean number of minutes cycled in the past week and increased the desire to want to ride more. However, there was no overall increase in the population frequency of cycling, or increase in the proportion of respondents reporting that they cycled regularly.

The increased use of bicycle paths in the intervention area (28.3%, compared with 16.2% in the comparison area) may have resulted from increased awareness of the network of cycling paths through distribution of project resources such as a new bicycle map (Discover Fairfield and Liverpool by Bicycle). As there was no overall increase in the frequency of cycling, it is likely that the project redirected existing cyclists to bicycle paths. The bicycle paths, while relatively new, already had one in five respondents using them. This use indicates that they were not completely new facilities. If they had been, there might have been a relatively greater jump in the proportion of survey respondents who had used them.

Among those people that had cycled in the past week, there was an increase in the mean number of minutes cycling in the intervention area, with those people using the bike paths and cycling more therefore gaining a health benefit. It is possible that an increase in the overall community prevalence of cycling would lead to an overall increase in population physical activity,²⁷ but this conclusion cannot be reached in this study. Cycling was a significant component of their total minutes of weekly physical activity for those people that cycled, with 40% of cyclists achieving all the minimum 150 hours of moderate intensity physical activity just from cycling. However, there were not sufficient numbers of respondents cycling in the past week to influence the overall levels of physical activity. A US study found that sixty percent of the cyclists surveyed cycled for more than 150 minutes per week during the study and nearly all of the bicycling was for utilitarian purposes, not exercise.²⁸

Being aware of the CCC project was also associated with a higher frequency of cycling in the intervention area, but the relatively low recall of the project in the community would have minimised possible impacts. A much stronger

communication strategy is needed to have an impact at a community level. The overall budget for this project was about \$300,000, but between two thirds and three quarters of this amount was taken up by the salary of the project officer and the pre- and post- evaluation telephone surveys. This did not leave much funds for the communication strategy, which had to rely on editorial stories in local newspapers, letterboxing, and other forms of distributing written information. There is good evidence that the project activities are effective in increasing cycling levels, however, the limited project resources meant that only a relatively small proportion of the population were exposed to or participated in project activities.

It was disappointing that there was no overall increase in the frequency of cycling in the intervention area. Possible explanations were low levels of exposure to the project and its activities, dissemination of the project messages in the comparison area, and long distances to destinations of interest (identified in the baseline survey as a barrier).³¹ Use of higher exposure media such as television or radio may be necessary to achieve adequate dissemination of the message, but this will make the definition of comparison areas more important.

At baseline, there was an association between cycling in the past year and being sufficiently physically active for men, but not for women. This is consistent with other health survey research that found that men who cycled to work, but not women, were less likely to be overweight or obese compared with other journey to work modes.^{32,33} Cycling to work for weight loss or management could be a marketing angle, if it were perceived to be safe.

At baseline the factor most predictive of cycling in the past year was perceived ease of cycling in the respondent's neighbourhood. Having good cycling infrastructure will obviously increase the perception that cycling is easy. Being close to destinations was another significant factor associated with recent cycling. This is consistent with US research, which found that a disproportionate share of the bicycling occurred on streets with bicycle lanes, separate paths, or bicycle boulevards.²⁸ Other research from the US has found positive associations between miles of bicycle pathways per 100, 000 residents and the percentage of

commuters using bicycles,²⁹ and that new bicycle lanes in large cities will be used by commuters.³⁰

This study highlights that in this western Sydney intervention area, which is heavily car dependent, a shift to cycling will require a change in urban planning and density (making destinations of interest much closer), better cycling infrastructure and probably a much greater investment in social marketing. It would be important to repeat this study in a more densely populated urban area, where trip distances were not so great a barrier.

This project raises some questions about the value of limited social marketing. Policy changes that make car use less appealing (eg increased costs of fuel, less parking availability) are likely to have as much, if not more, impact as information and persuasion campaigns. If only a small amount of resources are available, then maps and bicycle path signage may be a better investment than other forms of communication.

The bike count data confirmed the self-reported use of the bicycle paths in the intervention area, confirming the lack of change in the frequency of cycling before and after the intervention. Limitations of these counters included that they were prone to damage and took some time to be repaired, and that they were only in two specific locations in the intervention. Furthermore, some of the reported increased use of the paths and increased cycling is likely to have occurred in other sections of the bike paths, or on other connected paths.

A limitation of the evaluation was that the actual number of people who had cycled in the past week, month or even past year, was relatively low. This meant that statistical power to compare the intervention area with the comparison area was weak. A much greater sample was needed. However, a strength of this project has been the high degree of rigour involved in conducting the pre- and post-evaluation, with excellent response rates for both surveys, and a high quality data-set provided to the investigators for analysis. The use of bike counters to cross-calibrate the self-reported data is also a strength of the study.

SECTION 7

Conclusions and recommendations

This study shows that use of cycling infrastructure can be increased with a combination of theoretically based social marketing and opportunities for people to ride in a safe and social context. Communication strategies that inform potential users of where the infrastructure is located (such as maps and route signposting) are critical. Users of this infrastructure are likely to be existing cyclists and novice or beginning riders who are trialling a new behaviour. Those people who use the cycling infrastructure will tend to cycle for longer if encouraged to ride. Cycling confers known health benefits to the riders, and 40% of cyclists will meet their minimum physical activity requirements simply through cycling.

It is recommended that:

- This study be replicated in an environment with mixed urban planning use and higher population density
- Future cycling or infrastructure programs commit a higher level of resources to the intervention
- Future social marketing programs should use higher exposure mediums such as television and radio.

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APPENDIX 1

List of Cycling Connecting Communities media articles

Date	Paper*	Title	Intervention	Comment
05/09/2007	LC	Cycling a head start to fitness	Launch	Front page. Launch Photo.
12/09/2007	LC	Car take a hike, its time for bike	Launch, Skills Courses	Launch photo
19/09/2007	SWRA	Ride road to better health	Launch	Launch Photo
03/10/2007	FCC	Schoolkids get fun	Family Skills Course	Photo
10/10/2007	LC	A chance to ride and save time	Ride to Work Day (pre)	Photo
24/10/2007	LC	Healthy and wealthy	Ride to Work Day (post)	Photo
03/10/2007	SWRA	Ride to work	Ride to Work Day (pre)	
20/02/2008	LC	Nothing sweet about results	Health programs	
21/05/2008	LL	Ride to better efficiency	Ride to work Day (pre)	Photo
04/06/2008	LL	Workers leave bikes at home	Research	
01/10/2008	LC	Fun and exercise for cyclists on a lakeside ride	Bike Week	Photo
01/10/2008	LL	Ride to health	Bike Week	Photo
29/10/2008	LL	Pedal power gets health workers on the job	Ride to Work day	Photo
05/11/2008	LC	Pedal way to better health	Spring Cycle	Photo
04/02/2009	LC	Ride to good health	Liverpool Bike Plan	Photo

*Papers:

LC	Liverpool Champion
LL	Liverpool Leader
SWRA	South Western Rural Advertiser
FCC	Fairfield City Champion
CRVT	Cooks River Valley Times

Focus groups topics

How do you feel about your riding a bike?

- Did you ride a bike as a child? If so, what are your memories of riding a bike? How did you feel when you rode a bike? Are there any emotions you recall which you associate with riding a bike.
- Did you continue riding a bike as a youth? If so, why did you ride? How did you feel when riding a bike?
- Do you still sometimes ride a bike? If so, for what purpose? How do you feel riding a bike?
- Do you think riding a bike (in general) is a good idea and why?
- Do you think riding a bike (generally) is bad or silly idea and why?

How do you feel about your riding a bike in (fairfield, liverpool) ?

- Do you think this would be a good place to ride? Why or why not? What would be the problems / issues? What's good about riding in ...?
- Are there good bike paths? Can you find them? Are they easy/difficult to access from your home?
- What stops you from riding to get around your area?
- Are there any trips you make in a car which you think could be easy to do on a bike instead?

How do you feel about other people who ride a bike ?

- Do you expect that people that ride bikes are different to you?
- Do you think:
 - Its only OK to ride on the paths on the weekends for recreation?
 - Its just for children?
 - They cant afford to run a car?
 - They are fool hardy to ride on a road?
 - They are very fit people?
 - They are trying to get fitter?
 - They care about the environment?
 - Nothing at all?

- Do you experience any emotions (good or bad) when you see people riding a bike
 - On the road
 - On the footpath
 - On a bike path

What would encourage you to ride a bike (more often)

- If you don't ride at all, what would you consider riding with the family, friends or on your own on safe local paths (what would help you do that)
- Would you consider using the bike to go to do short local journeys (less than 3 kilometres) such as to your local shop, to see a friend close by? Do you think that would be a good idea or silly or you don't see the point? What would help you do that?
- Would you consider using the bike to go to work or to TAFE? Do you think that would be a good idea or silly or you don't see the point? What would help you do that?

Results of focus groups for the Cycling Connecting Communities Project in Fairfield and Liverpool

Overview

Eighty-five participants attended seven cycling focus groups in Liverpool and Fairfield between May and June 2007. The focus groups were conducted to see if there were specific cycling issues that are relevant and different from what the research already shows about promoting and participation in cycling, and also to identify what environmental and social changes were required to increase cycling in and between Liverpool and Fairfield.

The focus groups were also a component of a social marketing campaign to include the local community in developing a cycling program for the area they either live or work in, in order to increase use of an identified cycling corridor between Fairfield and Liverpool. Proposed resources (fact sheets, maps, posters, support gifts) and project name and slogans were also tested for suitability in supporting cycling activity in Fairfield and Liverpool. .

The participants were mainly 'not regular riders'; female (n=67) and male (n=16), parents; young people; diverse cultural backgrounds including a Vietnamese women's group; community workers and TAFE teachers. Their ages ranged from teenagers to 70 years olds with a high representation of 30 – 60 year old people. There was a high number of people who were not employed, stay at home parents and pensioners.

The topic of cycling was received favourably and there was a lot of interest in being involved and to try or return to cycling by attending courses, rides and events. People said they would be interested in riding with their family and for social, health and fitness reasons.

From childhood - to adolescence – to adulthood

Most of the people participating in the focus groups had positive childhood experience of riding bikes and many commuted as a child to school. Fewer used cycling as a young person to commute to work or university.

People born overseas who cycled in their country of origin

Participants who spent their childhood and youth in other countries experienced cycling as part of every day life by commuting to both school and work by bike in their country of origin. However, most did not continue using cycling as a mode of transport or for recreation once arriving in Australia. Some said they did try but found there weren't enough facilities and cycling was perceived as not being safe (eg parking and the traffic conditions). There were a few people who said they recently started to return to cycling for recreation and social reasons with family and friends.

Why people stopped cycling and don't cycle now

People stopped cycling mainly because:

- they learnt to drive
- they moved to a different area
- they came to Australia
- poor infrastructure and motor car traffic were disincentives to cycle
- it wasn't the image they wanted to identify with because it was – not fashionable/cool
- they had an accident/injury
- they don't have a bike

Still riding and recently started to cycle

Only two cycled regularly and for transport. There were a few people who said they recently took up cycling for fitness, family and social activity. One started to ride as an activity to do with her boyfriend.

The participants who were parents said most of their children rode bikes but mainly in the backyards or in parks and on bike paths close by. There was a bit of discussion about how it was not easy to take bikes by car to cycle paths.

There was some confusion between what was a cycleway; what is a bike path and what is a cycle lane. When using the word 'cycleway' people usually associate it with the cycle lanes on expressways/ highways.

However there was a great interest in revisiting their cycling experiences and the couple that never cycled was interested in learning. There were safety concerns about cycling, eg risk of being attacked on a bike and being safe riding in congested traffic. There were quite a few people that identified they need to lose weight before taking up cycling. Another person identified as having osteoporosis and was scared her bones would break if she fell off a bike. There were a few people who stated that even though they weren't cycling they were doing other forms of physical activity like walking and going to the gym.

Motivators/enablers

Participants were mainly motivated to attend courses and rides/events for family and social reasons. There was also interest in cycling for health, fitness, environment and financial benefits.

Courses, rides, events

Many people didn't know about bike gears and would generally benefit from doing a cycling course. There was interest in social and family cycling. Participants suggested that it would be beneficial to have cycling opportunities for children eg courses, rides and adventures. And that information about courses and rides would be helpful.

Health, fitness and environment benefits

Participants knew of the health, fitness and environment benefits and were motivated by this to cycle.

Financial benefits

Rising petrol prices were a motivation for cycling.

Improved infrastructure and environment

Participants suggested that they would be more likely to cycle if there were:

- continuous cycleway
- increased bicycle parking
- lighting of the cycleway
- fencing in risk areas of sliding down a river embankment
- maintenance of the cycleway eg fallen branches.

Places to cycle

Participants were motivated if they had places to cycle such as parks, picnic grounds; cycle ways; as well as having local destinations to cycle to such as schools and shops.

Barriers

There were identified barriers to cycling in Fairfield and Liverpool and there were a few health reasons people identified as why they wouldn't cycle.

Safety

Safety was an issue in a number of ways. People felt there was a criminal element in the area that bikes and children would be at risk eg bikes, children, mobile phones and wallets will be stolen and they would be bullied for their bikes. It was felt that if they left their bikes parked somewhere they wouldn't be there when they returned. It was also perceived that the cycleways were isolated and unsafe. There were some issues with lighting and broken glass.

Traffic congestion

Traffic congestion was seen as a barrier as they felt they were at risk of being knocked down by a car or felt cars dominated and there was little consideration for cyclists.

Don't have a bike

Many participants didn't have a bike or access to one and only one participant with children said their children did not have a bike.

Didn't know where the cycling infrastructure was located

Participants didn't know of the cycling infrastructure and didn't know where to access it and a map would be beneficial in finding access to the cycleways.

Health reasons

The health reasons people gave for no cycling included the following:

- *Weight loss.* Many women expressed that they needed to lose weight before they could ride as they have extra large bottoms and would need large bike seats to ride comfortably. Additionally, because of their weight they were worried they would not be able to balance on a bike.
- *Osteoporosis.* An older woman said she would like to participate but was concerned that her bones were too frail and would break if she fell off a bike.

Resource, message testing, strategies

The project name

The community workers thought the Cycling Connecting Communities name was too long for promotion to the community but good as a project name and when describing the project. They mainly focus group participants liked the abbreviation/promotional name CCC with the tag – ‘C U on the cycleway’ ie ‘CCC – C u on the cycle way’. The young people would like to refer to it as the ‘Crazy Cycling Crew’. There was also a bit of interest in ‘Ride on’. No other names were popular.

Slogans

The ‘get fit while you sit’ slogan was popular with the women. No other slogans were named. Though in discussion with one of the groups it was thought ‘Families that ride together, play/stay together’ could be a good slogan for families.

Resources and giveaways

The resources used in the past including maps, fact sheets of rides courses etc would be beneficial when adapted with local information and the local population identified. Participants expressed there could be some benefits of having translated resources.

People liked the cycling related giveaways used in the past. The idea of bells was well received but the young people thought horns would be good.

Cycling courses, rides and events

There was an overwhelming response to courses and many people wanted to go on rides especially family and cycling adventures (course and ride).

Road show

The ‘roads show’ concept was thought to be a good idea to gain information about local rides, courses and receive resource information.

Comparison of results with inner west focus groups

These focus group results were consistent with the SSWAHS 2005 focus groups results held in the inner west of Sydney (Leichhardt and Marrickville)³⁴ in the areas of cycling safety and appropriate infrastructure. The following similarities were noted:

- Safety with respect to crime was a dominant theme eg having bikes stolen, cycling on isolated bike paths/ cycleways and being bullied not just for your bike, but also for their wallet and mobile phone
- Information about enablers and barriers to cycling from culturally and linguistically diverse groups including information from a significant number of Vietnamese Women
- A majority of participants didn’t know the cycleway/ pathway existed and how to access it
- Many of those who did know it existed, perceived it as being unsafe eg isolated and not well lit
- There is a perception that if you are overweight you are not able to participate in cycling
- Varied reasons were identified why people actually stopped cycling and don’t cycle any more
- There were people identifying they had returned to cycling for mainly family, social and health reasons.

Conclusions

The majority of participants cycled as a child. The rate of cycling declined during adolescence and further declined in to adult hood. The people that stopped cycling, identified diverse reasons as to why they stopped as well as reasons as why they don’t cycle any more.

There were many reasons why people stopped cycling: including: started driving; traffic; moved house or country; poor infrastructure and motor vehicle traffic; wasn’t an image they wanted to identify with; had an accident/injury and don’t have a bike.

The people who didn’t cycle anymore and recently returned to cycling, already had experience in cycling especially those that came from other countries, where there was a lot of people cycling and commuted to school and work by bike. However they stopped when they came here and perceived there was not a cycling culture in Australia that it did not have supporting infrastructure and/or was dangerous.

The majority of parents in the group had provided bikes for their children and didn’t do anything specific to teach them to ride. However the majority of these children were restricted as to where they were allowed to ride (eg in their backyards) and escorted by parents to near by cycleways. Some families occasionally travel out of area to Sydney Olympic Park or Centennial Park.

There was a significant interest in family cycling and people saw themselves riding with their children, so riding as a family, would motivate them to cycle. However they wanted places to cycle to like parks, picnic grounds, schools and shops.

There was a lot of interest in children receiving cycling education via courses either through schools or community courses and rides. Many adults felt they would also benefit from doing a cycling course to learn or brush up on skills especially with gears and manoeuvring.

A predominant issue in the Fairfield and Liverpool focus groups was safety, with the respect to crime. Isolated bike paths were associated with the potential of being attacked, bullied for their bike or their wallet or mobile phone and fear of children being stolen or 'snatched'.

Participants were concerned about the dangers of riding amongst traffic and the fear of being knocked into. This could make it challenging for people to access identified cycleways by bike as taking bikes by car was perceived as an 'effort'.

There was expressed interest in cycling for health and fitness benefits. However, some participants were concerned that they were too big to ride so their bottoms would not fit comfortably on their bike seat and they weren't sure if they could balance on a bike because they were too overweight. The discussions started out as 'the seats are too small' which led to discussion about bottoms being too big.

There was interest in cycling to improve their health but there were two people who thought that cycling would not assist them as they were too at risk namely osteoporosis and a hip injury which cycling would aggravate.

Some cost issues came up about affordability of bikes, so they were encouraged by Fairfield City Council bike loan scheme. But there was also interest in cycling as a way to reduce costs with rising petrol prices.

The focus group participants knew the benefits of cycling as a way to have fun, get fit and be healthy. They expressed interest in being involved in cycling courses, events and rides held in the community. The proposed information resources and gifts were thought to be a good idea to inform the community of the benefits of cycling, available

cycling opportunities eg courses, rides and events and reminders to cycle.

It was felt that the proposed project name described the project well but was too long and not catchy enough for promotional use. They thought an acceptable use of the name could be 'CCC – c u on the cycleway'. There were lots of other names but nothing predominant. A couple of slogans were liked 'get fit while you sit' and 'families that cycle together play and stay together'.

Using a cycling information session or road show could be a good way to promote cycling and help people identify why they need to make cycling part of their life.

The focus groups provided information that will be fed back to councils and police about environmental, infrastructure and safety issues that could be improved to make cycleways more accessible and well used. For example: improvements of footpath and safety fencing in some parts of the cycleway; having a continuous cycleway; the possibility of lighting being installed to improve on safety; and increased provision of secure bicycle parking.

Recommendations

- That the project team consider these results when finalising the project interventions and when designing promotional messages and interventions eg tailor projects eg for women, for families etc.
- Council to receive information on possible environment and infrastructure improvements, for example, having continuous cycleways, consider lighting and improve safety issues on the cycleway and also consider traffic calming techniques to access higher risk areas.
- Project to provide information to local police council on community concerns around safety re crime prevention and traffic management issues for riding.
- The groups who attended the focus groups will receive ongoing information about cycling opportunities as a majority of participants expressed an interest in supporting or participating in the cycling project.
- A specific strategy to be developed to address the perception that if you are overweight that you can't cycle.
- Present results of the focus group at a conference (cycling, Health Promotion) with possible title 'Is my bum too big for this?'

- Incorporate the recommendations from 2005 focus groups into the intervention design, including:
 - Support novice riders to develop confidence and skills
 - Lobby for dedicated , off-road cycle paths (wide, well lit and clearly sign posted)
 - Introduce a system to trial without a significant financial investment – eg a community bicycle loan scheme or bicycle pools eg like Fairfield’s loan system
 - Rider support systems eg finding a buddy/bike bus opportunities
 - Bike maintenance skills
 - Knowledge of safer routes
 - Having infrastructure to support cycling such as designated cycleways; secure bike parking(bike lockers/visible racks) located at shopping districts, workplaces and recreational facilities
 - Better inter-modal transit connections and secure parking at transport hubs
 - To promote regular cycle commuting on-road lanes (that do not force riders into dangerous car door zones) are required to provide direct routes and faster travel speeds
 - Longer commute end of trip facilities

Author and data analysis: Jeni Bindon

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Cycling Connecting Communities logo

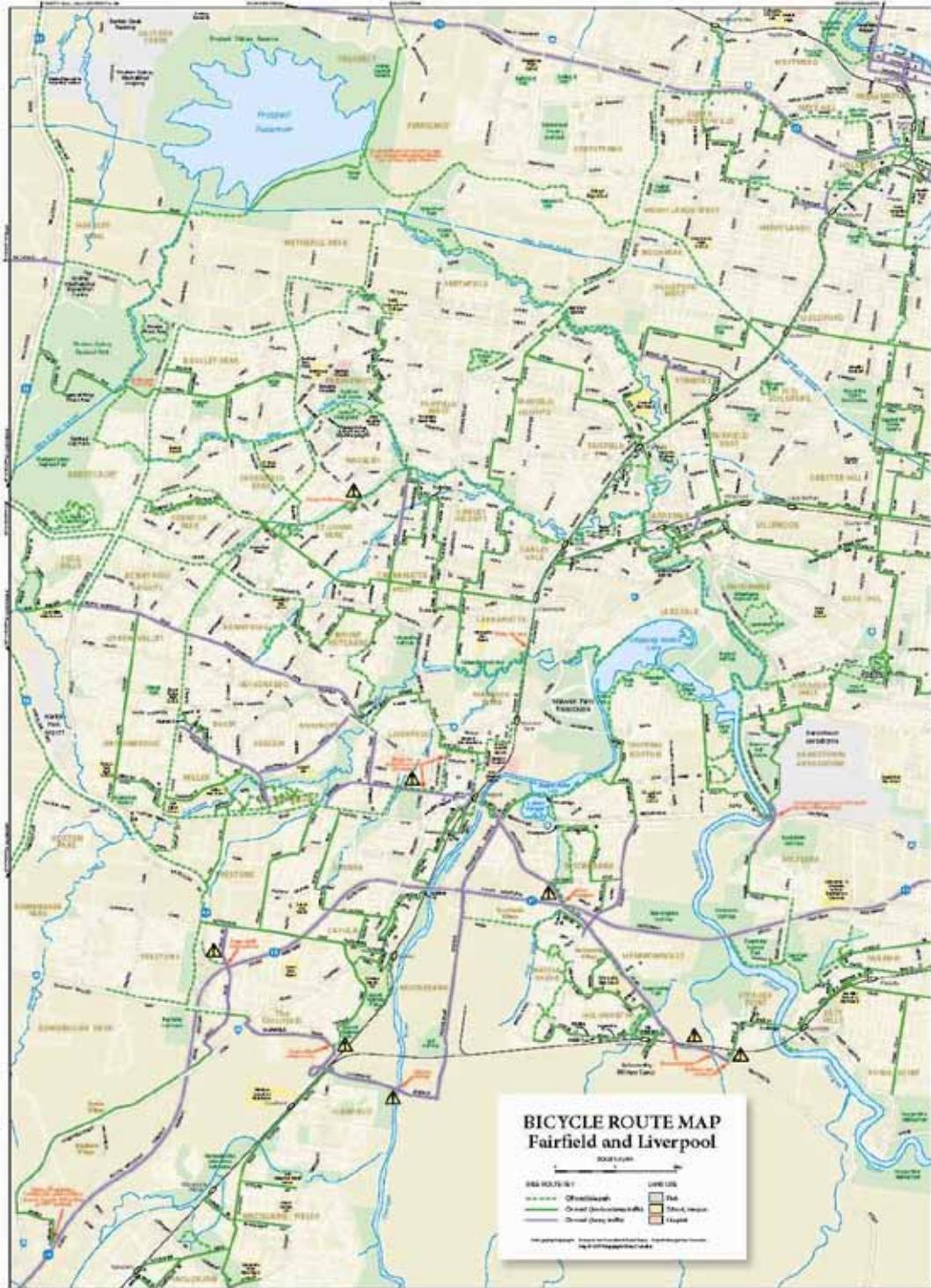


APPENDIX 5

Cycling Connecting Communities resources

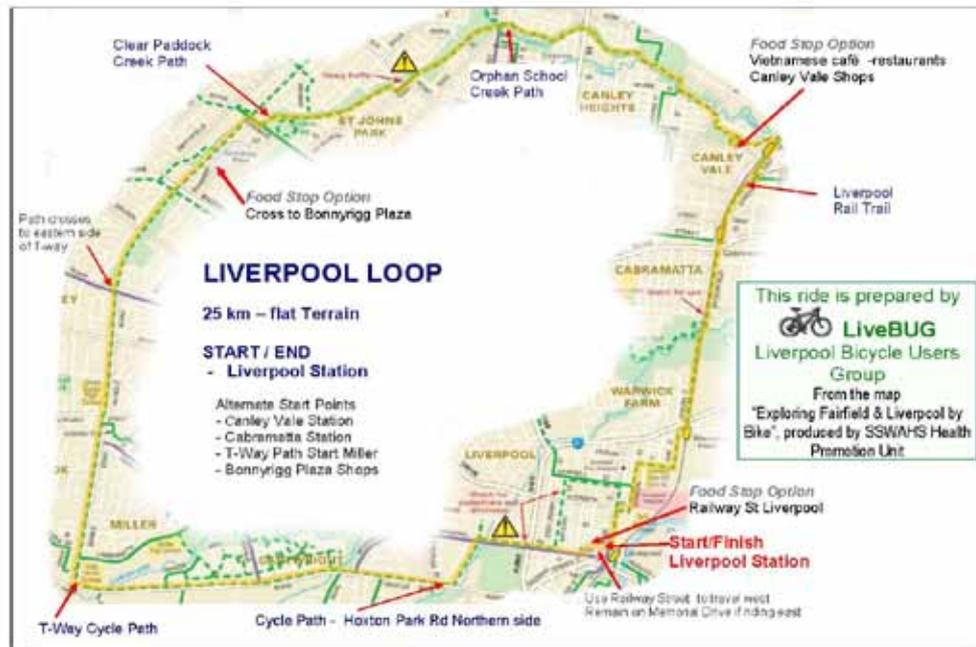


Discover Fairfield and Liverpool by bike (Cycling Map)

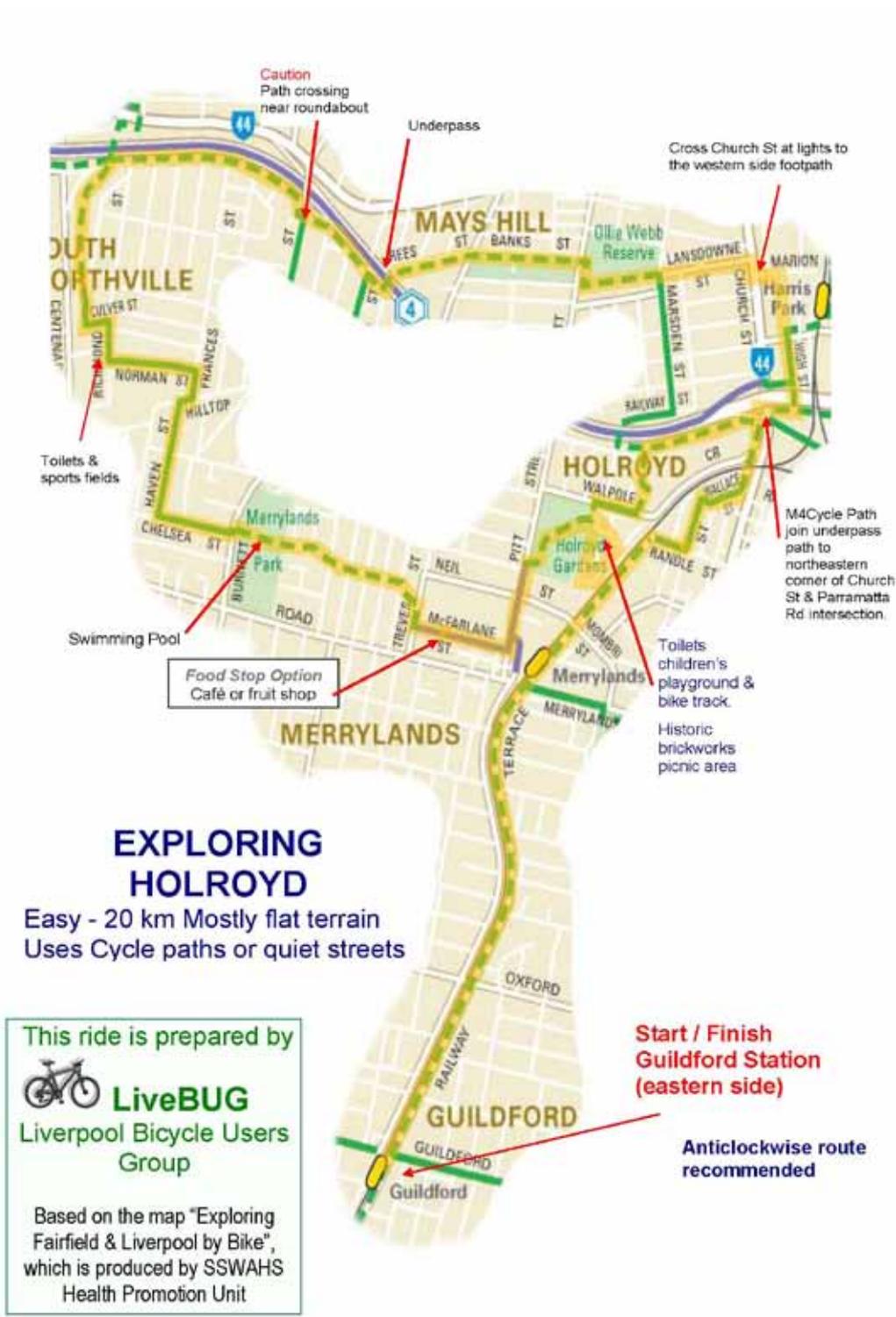


APPENDIX 7

Liverpool Bicycle User Group ride map along intervention bicycle paths



Liverpool Bicycle User Group ride map



Cycling Connecting Communities skills courses conducted

Date offered	Course offered	Location	Participants/outcome
Tues 4 Sept 2007	Back on your bike	Fairfield	4
	Learn to ride	Fairfield	1
Tues 11 Sept 2007	Back on your bike	Fairfield	4
	Learn to ride	Fairfield	1
Tues 18 Sept 2007	Commute by bike	Fairfield	1 booking – cancelled and offered as Back on your bike session
Sat 22 Sept 2007	Back on your bike	Liverpool	Cancel – no demand at location
	Learn to ride	Liverpool	3
Tues 25 Sept 2007	Commute by bike	Fairfield	Cancel no demand. Transferred to Back on your bike with 4
Sat 29 Sept 2007	Back on your bike	Liverpool	Cancel – no demand at location
	Learn to ride	Liverpool	2
Sun 30 Sept 2007	Commute by bike	Liverpool	Cancel no demand.
Sun 14 Oct 2007	Commute by bike	Liverpool	Cancel no demand
Thurs 11 Oct 2007	Family cycling adventure	Fairfield	Cancel no demand
Sun 4 Nov 2007	Back on the bike	Fairfield	6 and 2 no show
Sun 4 Nov 2007	Learn to ride	Fairfield	3 and 1 no show
Sun 11 Nov 2007	Back on the bike	Fairfield	6 and 2 no show
Sun 11 Nov 2007	Learn to ride	Fairfield	4
Sun 18 Nov 2007	Back on the bike	Fairfield	3 and one no show
Sun 18 Nov 2007	Learn to ride	Fairfield	4
Wed 16 Jan 2008	Family cycling adventure		Cancel insufficient demand
Mon 18 Feb 2008	Learn to ride	Fairfield	Cancel no demand
Sun 24 Feb 2008	Learn to ride	Fairfield	4 plus one no show
Mon 25 Feb 2008	Learn to ride	Fairfield	No demand
Sun 9 Mar 2008	Learn to ride	Fairfield	4
Thur 6 Mar 2008	Back on the bike		Cancel no demand
Thur 13 Mar 2008	Back on the bike		Cancel no demand
Sun 16 Mar 2008	Back on the bike		Cancel
Sun 30 Mar 2008	Back on the bike	Liverpool	3
Sun 30 Mar 2008	Learn to ride	Liverpool	1 no show
Thurs 3 April 2008	Cycling Adventure	Fairfield	Community group
Sun 6 April 2008	Back on the bike	Liverpool	4
Sun 6 April 2008	Learn to ride	Liverpool	1
Thur 10 April 2008	Cycling adventure	Bonnyrigg	Community group
Tues 29 July 2008	Cycling skills	Liverpool	School group
Tues 12 Aug 2008	Cycling skills	Liverpool	School group
Wed 13 Aug 2008	Cycling adventure	Miller	Aboriginal group
Mon 18 Aug 2008	Cycling skills	Miller	Playgroup
Tues 19 Aug 2008	Cycling adventure	Liverpool	School group
Wed 20 Aug 2008	Cycling skills	Miller	Playgroup
Thur 21 Aug 2008	Cycling skills	Miller	Playgroup
Mon 25 Aug 2008	Cycling skills	Fairfield	School group

APPENDIX 9 CONT.

Date offered	Course offered	Location	Participants/outcome
Sun 7 Sept 2008	Back on the bike	Liverpool	Cancelled
Sun 14 Sept 2008	Back on the bike	Liverpool	6 booked. Cancel weather; rescheduled
Sun 14 Sept 2008	Learn to ride	Liverpool	4 booked. Cancel weather; rescheduled
Sun 28 Sept 2008	Back on the bike	Fairfield	4 plus 1 no show
Sun 28 Sept 2008	Learn to ride	Fairfield	3 plus 1 no show
Fri 10 Oct 2008	Cycling adventure	Fairfield	Large Vietnamese group
Sun 9 Nov 2008	Back on the bike	Fairfield	3 plus 1 no show
Sun 9 Nov 2008	Learn to ride	Fairfield	3 plus 1 no show
Sun 14 Nov 2008	Back on the bike	Fairfield	5 plus 3 no show

Examples of flyers and posters produced to promote rides and events

THIS YEAR ...

WOULD YOU LIKE TO BE HEALTHIER?
SPEND TIME WITH FAMILY AND FRIENDS?
LEARN SOMETHING NEW?
SAVE MONEY ON PETROL?
HELP SAVE THE PLANET?

YOU CAN. IT'S EASY. HERE'S HOW:

- Get on a bike
- Cycle somewhere together
- Enrol in a free cycling course
- Use a bike to get around
- Ride more, drive less

GET A FREE BIKE MAP OF FAIRFIELD & LIVERPOOL

Call the Cycling Connecting Communities project on **9828 5911** or call the RTA on 1800 060607. Maps also available from local outlets such as bike shops, council offices, gyms and libraries.

Visit www.cyclingconnectingcommunities.net for more information about cycling in the Fairfield and Liverpool, including upcoming free activities and cycling courses.

ABOUT THE FREE COURSES

BACK ON THE BIKE
For basic skills and confidence before getting on a bike.

LEARN TO RIDE
If you have never learnt to ride then this is your chance.

Live Life Well
NSW HEALTH
SYDNEY SOUTH WEST
OUR WAY TO HEALTH



Be part of the Liverpool team challenge in
**Australia's biggest
active workplace event**

Hop on your bike and join thousands of others on

National Ride to Work Day - 15 October 2008

Free breakfast
at Bigge Park, Liverpool
from 7 - 9am for all riders.

Have fun
Save \$\$\$ on petrol
Be active

Find out more at
www.cyclingconnectingcommunities.net

Register at www.ride2work.com.au

Team up with work colleagues for
the Liverpool Team Challenge.
Call 9828 5911 for more info.

Prizes to be won!

For tips about how you can
gear up and join in on the day, visit
www.cyclingconnectingcommunities.net



The National Ride to Work Day breakfast in Liverpool is proudly supported
by local partners Bakers Delight, ABC Bike Shop, Fernwood Liverpool
and Sydney South West Area Health Service.



Discover Lake Loop **by** Sunday 17 May **bike**

www.cyclingconnectingcommunities.net

On Sunday 17 May get on your bike and have a fun morning exploring the cycle paths of Canley Vale, Lansvale and Cabramatta.

Discover Prospect Creek, Cabramatta Creek and Chipping Norton Lake.



Free bike checks from ABC Bikes on the day.

(If your bicycle needs prior maintenance, ABC Bikes branches are located at Liverpool and Fairfield Heights)

No bike? No worries. Free bike hire available.

Contact 9828 5911 by Thursday 14 May to book your free bike.

Date: Sunday 17 May 2009

Times: 9am – registration, bike hire, bike checks, refreshments and skills refresher
9.45am – registration closes and pre-ride briefing
10am – both rides start

Event details: Cyclists of all ages welcome – free bike rides led by qualified ride leaders. Free Healthy Food Fast cookbook per family.

- Maxi ride – 15km ride for adults and children over ten years, wheels greater than 50cm diameter
- Mini ride – 5km for small wheels and beginners

Children 16 years and under must be accompanied by a cycling adult for both rides.

Location: Adams Park, Canley Vale (entry off Sackville Rd).



www.abc2measuresupcyclingnetwork.com.au

Supported by the Measure Up campaign, part of the Australian Better Health Initiative. www.measureup.gov.au



Sunday 19 October

Welcome Spring in a memorable way!
Experience the thrill of pedalling through beautiful open spaces on some of western Sydney's best bike tracks, and then celebrate your ride in festival style at Sydney Olympic Park.

New for 2008 - Ride Liverpool

20km plus 10km option at
Sydney Olympic Park



www.springcycle.com.au

Lurnea and Casula **by** bike

www.cyclingconnectingcommunities.net



Get on your bike and have a fun morning exploring the cycle paths of Lurnea, Casula and Prestons in a safe and friendly environment.

Free bike checks from ABC Bikes.

No bike? No worries. Free bike hire available.



Contact 9828 5911 by Thursday 12 February to book your free bike.

Lurnea and Casula **by** bike

www.cyclingconnectingcommunities.net

Date: Sunday 15 February 2009

Times: 9am - registration, bike hire, bike checks, refreshments and skills refresher
9.45am - registration closes and pre-ride briefing
10am - both rides start

Event details: Cyclists of all ages welcome - free bike rides led by qualified ride leaders.

- Amalfi Park Mini Ride - 3km for small wheels and beginners
- Lurnea Casula Maxi Ride - 12km for adults and children over ten years, wheels greater than 50cm diameter

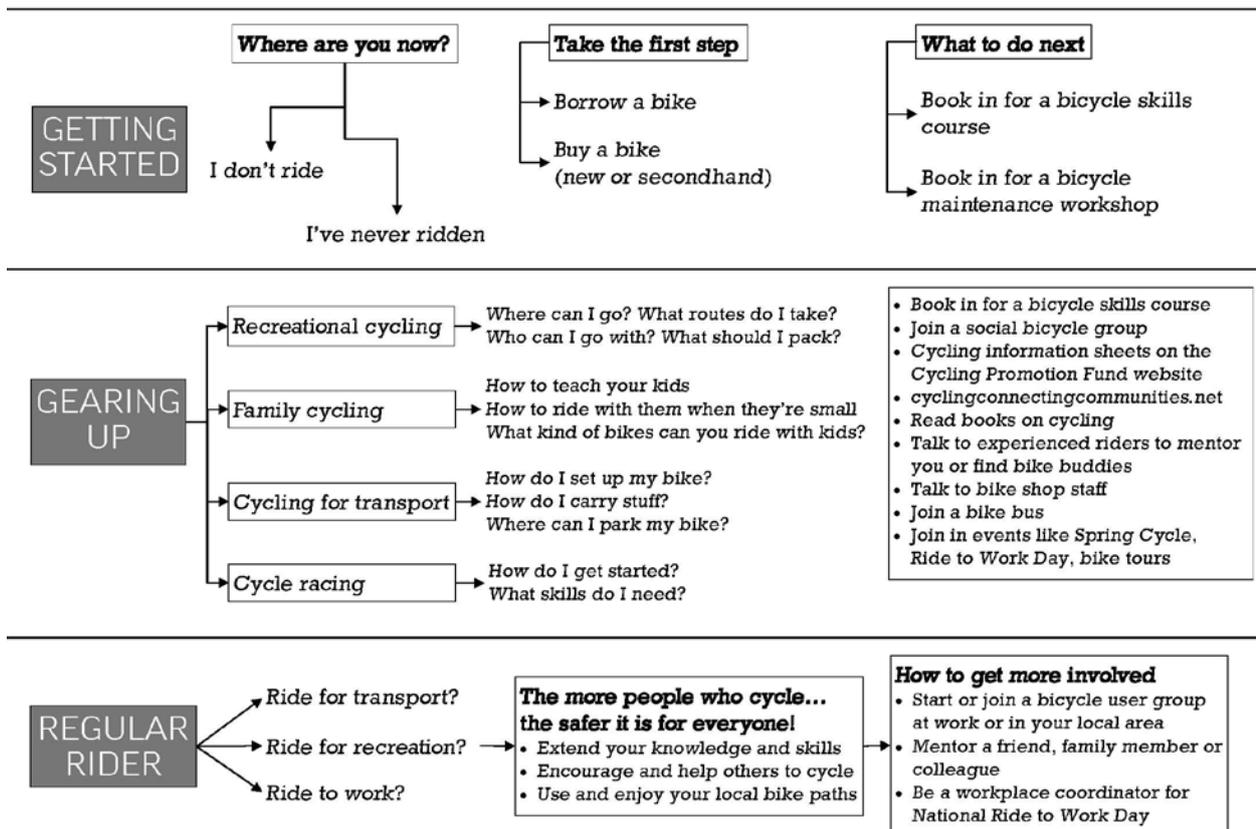
Children 16 years and under must be accompanied by a cycling adult for both rides.

Location: Paciullo Park, Lurnea (near Calabro Ave, car parking entry from Reilly St)



Handout used as part of the community engagement strategy and cycling 'roadshow' presentation

EXPLORE CYCLING



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Baseline cycling survey questionnaire 2007

Good afternoon/evening, my name is _____ . I'm calling on behalf of the Sydney South West Area Health Service. We're conducting a follow-up study on physical activity and cycling in the local area.

Firstly, can you tell me how many people aged 18 and over live in your household?

[EXPLAIN IF NECESSARY THE RESPONDENT MUST BE CHOSEN BY COMPUTER]

NOTE:

THERE ARE VARIATIONS ON THE FOLLOWING SCRIPT IF:

- (i) There is no eligible person
- (ii) There is one eligible person who is not the speaker
- (iii) The respondent refuses the question but wishes to continue (and household is eligible).

If the respondent absolutely refuses the interview is terminated.

Are you the oldest, the 2nd oldest, 3rd oldest, etc. of the people aged 18 or over?

The computer has chosen the _____ person as the one I should speak to from your household. Could I please speak to that person?

[IF RESPONDENT IS NOT AT HOME, ARRANGE A SUITABLE TIME TO CALL BACK]

When required respondent is on the line repeat introduction if necessary.

Only if more information is required

Sydney South West Area Health Service is undertaking a survey of residents to better understand their level of physical activity and cycling. The interview is voluntary, anonymous and confidential. Is it OK to talk to you now?

(Interviewer, if respondent refuses, offer freecall)

- 0 or 1 Proceed
- 2 No - Refusal
- 4 Not Now spoke to respondent - Call back arranged
- 6 Respondent unsuitable (explain in comments)
- 66 Respondent unavailable for survey period (comments)
- 8 Not in area/quota done
- 14 Language problem
- 8. Not in area\quota done

To begin, we would like to ask you some questions about your physical activity in relation to cycling...

1. Are you prevented from undertaking any physical activity, including cycling because of a physical condition or disability?

- 1 Yes
- 2 No

[IF Q1 = 1, then skip to Q15]

2. When was the last time you rode a bicycle for any reason? Was it:

- 1 Today
- 2 Within the last seven days
- 3 Within the last month
- 4 Within the last year
- 5 Longer than a year
- 6 Never

[IF Q2 = 5 or 6, then ask Q2a]

2a. What is the main reason you haven't ridden a bike?

- 1 Nowhere to ride locally
- 2 No time to ride locally
- 3 Roads are too dangerous
- 4 Drivers are too aggressive
- 5 Not fit enough
- 6 Don't like it
- 7 Do other activities
- 8 Have small children
- 9 Family care responsibilities
- 10 Don't own a bike

Other_____

[If Q2a = 1-10 or other, then skip to Q5]

3. Where were you going when you last rode a bicycle?

[Enter as many as apply]

- 1 Work
- 2 Shops
- 3 Friends / social activity
- 4 Recreation
- 5 Fitness /training
- 6 Other

4. Was that...

[Enter as many as apply]

- 1 on the road
- 2 on a separated bike lane
- 3 on a bicycle path next to the road
- 4 in a park
- 5 other

5. How many bicycles are there in your household?

[If Q4>0, then ask 5a]

5a. Is there a bicycle at your home that is available for you to ride?

- 1 Yes
- 2 No

[If Q5a = 1, then skip to Q6. If Q5a = 2, then ask 5b]

5b. What is the main reason you do not own a bike?

- 1 Nowhere to ride locally
- 2 No time to ride locally
- 3 Too expensive
- 4 Don't know how to find the right bike
- 5 No time to buy a bike
- 6 No room to store a bike
- 7 Don't know how to look after a bike
- 8 Other_____

[If Q2 = 6 or Q5b = 1to8, then skip Q6, Q7, Q8, Q9]

6. How would you describe yourself as a bicycle rider? Would it be...

- 1 Novice or beginner
- 2 Occasional but tentative rider
- 3 Occasional but competent rider
- 4 Regular rider

7. If it were possible for you personally, would you like to ride a bicycle:

- 1 Much less than you do now
- 2 Less than you do now
- 3 About the same as you do now
- 4 More than you do now
- 5 Much more than you do now
- 8 Don't know
- 9 Refused

8. Using the following scale, how easy is it for you to ride a bicycle around the neighbourhood where you live? Would you say...

- 1 Not at all easy
- 2 Somewhat easy
- 3 Moderately easy
- 4 Very easy
- 5 Extremely easy
- 8 Don't know
- 9 Refused

9. Using the following scale, how important is it to you that you live in a neighbourhood where it is easy to ride a bicycle? Would you say...

- 1 Not important
- 2 Somewhat important
- 3 Moderately important
- 4 Quite important
- 5 Very important
- 8 Don't know
- 9 Refused

[IF Q2 = 1 or 2 then ask Q10, 11, 12, 13]

The following three questions ask specifically about the amount of time you have spent cycling...

10. In the last week how many times have you ridden your bike, for at least ten minutes, for recreation or exercise?

_____ times

- 8 Don't know
- 9 Refused

11. What do you estimate was the total time you spent riding your bike continuously in the last week for recreation or exercise? In hours and/or minutes.

_____ minutes _____ hours

- 8 Don't know
- 9 Refused

12. In the last week how many times have you ridden your bike to get to or from places (work, shopping, friends)?

_____ times

- 8 Don't know
- 9 Refused

13. What do you estimate was the total time you spent riding your bike in the last week to get to or from places?

In hours and/or minutes

_____ minutes _____ hours

- 8 Don't know
- 9 Refused

14. In the last month, have you seen or heard any advertisement or message specifically promoting bike riding?

- 1. Yes
- 2. No

[IF Q14 = 2, then skip to Q15]

14a. What was the message about, [record up to 2 only]

1. _____

2. _____

14b. Where did you see/hear that message?

[Allow multiple responses]

- 1 Radio
- 2 TV
- 3 Newspapers
- 4 Local newspapers
- 5 Bus boards / Billboards
- 6 Magazines
- 7 Brochures /newsletters
- 8 Other

[Interviewer: read for respondents in intervention area]

The following questions are related to your use of the bicycle paths connecting Liverpool to Miller, Prairiewood and Fairfield, whether you cycle or not....

[Interviewer: read for respondents in control area]

If control area, the following questions are related to your use of the bicycle paths connecting Bexley to Bankstown, whether you cycle or not....

15. Have you ever used any part of these bicycle paths for any activity?

- 1 Yes
- 2 No

[IF Q15 = 2, then skip to Q16]

15a. In the past month how many times have you used this bike path?

_____times

15a. What was the main reason you used it?

- 1 cycling to work
- 2 cycling to other destinations
- 3 cycling for recreation
- 4 walking for exercise, recreation or socialisation
- 5 Other kind of activity such as scooter, roller blade, skateboard
- 6 Other, specify_____

16. How likely are you to use any of these bike paths in the future?

- 1 very unlikely
- 2 unlikely
- 3 not sure
- 4 likely
- 5 very likely

17. How safe would you feel cycling on any of these new bike paths during daylight, would that be...

- 1 Very unsafe
- 2 A little unsafe
- 3 neither safe nor unsafe
- 4 A little safe
- 5 Very safe
- 8 Don't Know [Do Not Read]

[IF Q17 = 3,4,5,8, then skip to Q18]

17a. Why would you feel unsafe using the bike path during daylight?

Now we would like to ask you some more general questions about your level of physical activity...

18. How would you rate your current level of health? Would that be

- 1 Poor
- 2 Fair
- 3 Good
- 4 Excellent

19. Compared to others of the same age and sex, are you:

- 1 Much less physically active
- 2 Less physically active
- 3 About the same
- 4 More physically active
- 5 Much more physically active

20. Compared to this time last year, are you;

- 1 much less physically active
- 2 less physically active
- 3 about the same
- 4 more physically active
- 5 much more physically active

The following questions are about any physical activities that you may have done in the last week:

21. In the last week, how many times have you walked continuously, for at least 10 minutes, for recreation, exercise or to get to or from places?

_____times

- 8 Don't know
- 9 Refused

22. What do you estimate was the total time that you spent walking in this way in the last week?

In hours and/or minutes

_____minutes _____ hours

- 8 Don't know
- 9 Refused

The next four questions exclude household chores, gardening or yardwork:

23. In the last week, how many times did you do any vigorous physical activity which made you breathe harder or puff and pant? (e.g. jogging, cycling, aerobics, competitive tennis)

_____times

- 8 Don't know
- 9 Refused

24. What do you estimate was the total time that you spent doing this vigorous physical activity in the last week?

In hours and/or minutes

_____minutes _____ hours

- 8 Don't know
- 9 Refused

25. In the last week, how many times did you do any other more moderate physical activities that you have not already mentioned? (e.g. gentle swimming, social tennis, golf)

_____times

- 8 Don't know
- 9 Refused

26. What do you estimate was the total time that you spent doing these activities in the last week?

In hours and/or minutes

_____minutes _____ hours

- 8 Don't know
- 9 Refused

Now some final questions about you:

28. What suburb do you live in?

1	Abbotsbury	44	Hinchinbrook
2	Arncliffe	45	Holsworthy
3	Ashbury	46	Horsley Park
4	Ashcroft	47	Hoxton Park
5	Banksia	48	Hurlstone Park
6	Bankstown	49	Hurstville
7	Bardwell Park	50	Kingsgrove
8	Belfield	51	Lakemba
9	Belmore	52	Lansvale
10	Beverly Hills	53	Liverpool
11	Bexley	54	Lurnea
12	Bexley North	55	Marrickville South
13	Bonnyrigg	56	Miller
14	Bonnyrigg Heights	57	Moorebank
15	Bossley Park	58	Mt Lewis
16	Busby	59	Mt Pritchard
17	Cabramatta	60	Narwee
18	Cabramatta West	61	Old Guildford
19	Campsie	62	Padstow
20	Canley Heights	63	Peakhurst
21	Canley Vale	64	Penshurst
22	Canterbury	65	Prairiewood
23	Carramar	66	Prestons
24	Cartwright	67	Punchbowl
25	Casula	68	Revesby
26	Cecil Hills	69	Riverwood
27	Chipping Norton	70	Rockdale
28	Chullora	71	Roselands
29	Clemton Park	72	Sadleir
30	Condell Park	73	Smithfield
31	Earlwood	74	St Johns Park
32	Edensor Park	75	Turrella
33	Edmonson Park	76	Undercliffe
34	Fairfield	77	Villawood
35	Fairfield East	78	Wakeley
36	Fairfield Heights	79	Warwick Farm
37	Green Valley	80	Wattle Grove
38	Greenacre	81	Wetherill Park
39	Greenfield Park	82	Yennora
40	Guildford	Other	
41	Guildford West		
42	Hammondville		
43	Heckenberg		

36. Using the following scale, how close to where you live are the places you want to go to, like shops, restaurants, public transport? Would you say...

- 1 Not close at all
- 2 Somewhat close
- 3 Moderately close
- 4 Quite close
- 5 Very close

37. What is your height _____ cms

_____ feet
 _____ inches

38. What is your weight? _____ kg

_____ stone
 _____ pounds

38. What is your age? _____ years

- 1 Refused

[IF Q32 = 9, then ask for age group]

Could you tell me which of the following age groups best describes you?

- 1 18-24
- 2 25-29
- 3 30-34
- 4 35-39
- 5 40-44
- 6 45-49
- 7 50-54
- 8 55-59
- 9 60-64
- 10 65+
- 99 Refused

33. Are you male or female? [only ask if unsure]

- 1 Male
- 2 Female

34. How many other adults usually live in the house? _____

35. How many children under 18 live in the house? _____

[IF Q35 = 0, then skip to Q37]

36. Of these children, how many are under 5 years of age? _____

37. What is highest level of education you have completed?

- 1 No formal qualifications
 - 2 School Certificate (Year 10/4th Form) or equivalent
 - 3 Higher School Certificate (Year 12 / 6th Form) or equivalent
 - 4 Trade or TAFE qualifications
 - 5 University degree or higher
 - 6 Other Tertiary qualifications
- Other [TYPE IN ANSWER]

99 Refused

38. Are you currently undertaking any form of study?

- 1 Yes
- 2 No

39. In which country were you born?

- | | |
|----------------------------|--------------------------|
| 1 Australia | 19 Macedonia |
| 2 Canada | 20. Malaysia |
| 3 Cambodia | 21 Malta |
| 4 Chile | 22 Netherlands (Holland) |
| 5 China (excluding Taiwan) | 23 New Zealand |
| 6 Croatia | 24 Philippines |
| 7 Egypt | 25 Poland |

- | | |
|--------------|-------------------------|
| 8 Fiji | 26 Serbia / Montenegro |
| 9 Germany | 27 Singapore |
| 10 Greece | 28 South Africa |
| 11 Hong Kong | 29 Sri Lanka |
| 12 Hungary | 30 United Kingdom |
| 13 India | (England,Scotland, |
| 14 Indonesia | Wales, Nth Ireland) |
| 15 Iraq | 31 USA |
| 16 Ireland | 32 Vietnam |
| 17 Italy | - Other, please specify |
| 18 Lebanon | 99 Refused |

40. In the last week, which of the following best describes your employment status?

- 1 Worked full time
- 2 Worked parttime
- 3 Work casual
- 4 Unpaid voluntary work
- 5 Unemployed and looking for work
- 6 Keeping house
- 7 Aged pensioner
- 8 Other pensioner
- 9 Retired

[IF Q40 = 5 to 9, then skip to Q44]

41. How do you usually get to work?

[Allow multiple responses]

- 1 Public Transport
- 2 Private or work motor vehicle
- 3 Bicycle
- 4 Walk
- 5 Work at/from home

[IF Q41 = 5, then skip to Q44]

42. Approximately how far is your home to your workplace?

- 1 Less than 0.5km
- 2 less than 1km
- 3 less than 3km
- 4 less than 5km
- 5 less than 10km
- 6 less than 15 km
- 7 15km or more

That's all the questions I have for you today. Thankyou for your time, your information will assist Sydney South West Area Health Service to better understand residents' physical activities in the local area.

43. How long does it usually take you to get to work?

_____Mins

44. How many registered cars are usually parked at your household overnight, whether private or company owned ?

_____ (cars)

45. Would you consent to us contacting you again in 2 years time for a similar survey?

- 1 Yes
- 2 no

[IF Q45 = 1, THEN RECORD DETAILS]

To help us contact you, we will require details of your name and any suitable contact phone number:

First Name: _____

Last name: _____

Home phone number: _____

Mobile phone number_____

It would be helpful also if you could give us an alternative contact number for you should you move address (e.g. parents, a relative or friend).

Phone: _____

Relationship to You: _____

Follow-up cycling survey questionnaire 2009

Good afternoon/evening, my name is _____ . I'm calling on behalf of the Sydney South West Area Health Service. We're conducting a follow-up study on physical activity and cycling in the local area.

We spoke to _____ in May 2007 who agreed for us to contact them again. Can I speak to _____ ?

(If respondent is not home, arrange a suitable time to call back)

When required respondent is on the line repeat introduction if necessary.
Only if more information is required

Sydney South West Area Health Service is undertaking a follow-up survey of residents to better understand their level of physical activity and cycling. The interview is voluntary, anonymous and confidential. Is it OK to talk to you now?

(Interviewer, if respondent refuses, offer freecall)

- 0 or 1 Proceed
- 2 No - Refusal
- 4 Not Now spoke to respondent - Call back arranged
- 6 Respondent unsuitable (explain in comments)
- 66 Respondent unavailable for survey period (comments)
- 8 Not in area/quota done
- 14 Language problem

To begin, we would like to ask you some questions about your physical activity in relation to cycling...

1. Are you prevented from undertaking any physical activity, including cycling because of a physical condition or disability?

- 1 Yes
- 2 No

2. When was the last time you rode a bicycle for any reason? Was it:

- 1 Today
- 2 Within the last seven days
- 3 Within the last month
- 4 Within the last year
- 5 Longer than a year
- 6 Never

(IF Q2 = 5 or 6, then skip to Q5)

3. Where were you going when you last rode a bicycle?

(Enter as many as apply)

- 1 Work
- 2 Shops
- 3 Friends/social activity
- 4 Recreation
- 5 Fitness /training
- 6 Other

4. Was that...

(Enter as many as apply)

- 1 on the road
- 2 on a separated bike lane
- 3 on a bicycle path next to the road
- 4 in a park
- 5 other

5. How many bicycles are there in your household?

(IF Q4>0, then ask 5a)

5a. Is there a bicycle at your home that is available for you to ride?

- 1 Yes
- 2 No

[If Q2 = 6 then skip to Q13 – missing Q6 to Q12]

6. How would you describe yourself as a bicycle rider? Would it be...

- 1 Novice or beginner
- 2 Occasional but tentative rider
- 3 Occasional but competent rider
- 4 Regular rider

7. If it were possible for you personally, would you like to ride a bicycle:

- 1 Much less than you do now
- 2 Less than you do now
- 3 About the same as you do now
- 4 More than you do now
- 5 Much more than you do now
- 8 Don't know
- 9 Refused

8. Using the following scale, how easy is it for you to ride a bicycle around the neighbourhood where you live? Would you say...

- 1 Not at all easy
- 2 Somewhat easy
- 3 Moderately easy
- 4 Very easy
- 5 Extremely easy
- 8 Don't know
- 9 Refused

(IF Q2 = 1 or 2 then ask Q9, Q10, Q11, Q12)

The following four questions ask specifically about the amount of time you have spent cycling...

9. In the last week how many times have you ridden your bike, for at least ten minutes, for recreation or exercise?

----- times

- 8 Don't know
- 9 Refused

10. What do you estimate was the total time you spent riding your bike continuously in the last week for recreation or exercise? In hours and/or minutes.

-----minutes ----- hours

- 8 Don't know
- 9 Refused

11. In the last week how many times have you ridden your bike to get to or from places (work, shopping, friends)?

----- times

- 8 Don't know
- 9 Refused

12. What do you estimate was the total time you spent riding your bike in the last week to get to or from places?

In hours and/or minutes

-----minutes ----- hours

- 8 Don't know
- 9 Refused

13. In the last month, have you seen or heard any advertisement or message specifically promoting bike riding?

- 1 Yes
- 2 No

(If Q13 = 2, then skip to Q15)

14a. What was the message about,

(record up to 2 only)

1 _____

2 _____

14b. Where did you see/hear that message?

(Allow multiple responses)

- 9 Radio
- 10 TV
- 11 Local newspapers
- 12 Letterbox leaflet
- 13 Bus boards/Billboards
- 14 Magazines
- 15 Brochures/newsletters
- 16 Friends/work colleague
- 17 Community group
- 18 Other

15. Have you ever heard of the Cycling Connecting Communities project?

- 1 Yes
- 2 No

16. Have you participated in any bicycle rides or events (including courses or presentations) in the last 2 years?

- 1 Yes
- 2 No

If yes, please describe _____

17. Among your friends and family, have you noticed any increase in their cycling behaviour in the last 12 months?

- 1 Yes
- 2 No

(If Q17 = 1 then skip to Q18)

17a. What about any increase in cycling behaviour among your friends and family in the last 2 years?

- 1 Yes
- 2 No

18. Have you talked about “anything to do with cycling” with your friends or family in the last 12 months?

- 1 Yes
- 2 No

If so, what was it about? _____

(If Q18 = 1 then skip to Q19)

18a What about the last 2 years?

- 1 Yes
- 2 No

19. Have any friends, family or work colleagues encouraged you to ride a bicycle in the past 12 months?

- 1 Yes
- 2 No

(If Q19 = 1 then skip to Q20)

19a What about the last 2 years?

- 1 Yes
- 2 No

20. Have you encouraged any friends, family or work colleagues to ride a bicycle in the past 12 months?

- 1 Yes
- 2 No

(If Q20 = 1 then skip to Q21)

20a What about the last 2 years?

- 1 Yes
- 2 No

Attitude scale

On a scale from 1-5 where 5 is strongly agree, and 1 is strongly disagree, please indicate how much you agree or disagree with the following statements:

21a. Motorists need to be educated to give cyclists a fair go on the road

21b. If cyclists want equal rights on the road they should pay registration fees or road taxes

21c. It is very frustrating sharing the road with cyclists

21d. Cyclists are courteous on the roads to motorists

21e. Cyclists should be able to ride on main roads (without cycle tracks) during peak hours

21f. Riding a bicycle is very enjoyable

21g. Cycling to places can be quicker and more convenient *

21h. Cycling on the road with traffic is too dangerous

(Interviewer read for respondents in intervention area)

The following questions are related to your use of the bicycle paths connecting Liverpool to Miller, Prairiewood and Fairfield, whether you cycle or not

(Interviewer read for respondents in control area)

If control area, the following questions are related to your use of the bicycle paths connecting Bexley to Bankstown, whether you cycle or not....

22. Have you ever used any part of these bicycle paths for any activity?

- 1 Yes
- 2 No

(If Q22 = 2, then skip to Q23)

22a. In the past month how many times have you used this bike path?

_____times

22b. What was the main reason you used it? (open ended)

- 1 cycling to work
- 2 cycling to other destinations
- 3 cycling for recreation
- 4 walking for exercise, recreation or socialisation
- 5 Other kind of activity such as scooter, roller blade, skateboard
- 6 Other, specify_____

23. How likely are you to use any of these bike paths in the future?

- 1 very unlikely
- 2 unlikely
- 3 not sure
- 4 likely
- 5 very likely

24. How safe would you feel cycling on any of these new bike paths during daylight, would that be...

- 1 Very unsafe
- 2 A little unsafe
- 3 neither safe nor unsafe
- 4 A little safe
- 5 Very safe
- 8 Don't Know (Do Not Read)

25. How safe would you feel riding a bicycle in your neighbourhood?

- 1 Very unsafe
- 2 A little unsafe
- 3 neither safe nor unsafe
- 4 A little safe
- 5 Very safe
- 8 Don't Know (Do Not Read)

Now we would like to ask you some more general questions about your level of physical activity

26. How would you rate your current level of health? Would that be

- 1 Poor
- 2 Fair
- 3 Good
- 4 Excellent

27. Compared to others of the same age and sex, are you:

- 1 Much less physically active
- 2 Less physically active
- 3 About the same
- 4 More physically active
- 5 Much more physically active

28. Compared to this time last year, are you;

- 1 much less physically active
- 2 less physically active
- 3 about the same
- 4 more physically active
- 5 much more physically active

The following questions are about any physical activities that you may have done in the last week:

29. In the last week, how many times have you walked continuously, for at least 10 minutes, for recreation, exercise or to get to or from places?

_____times
8 Don't know
9 Refused

30. What do you estimate was the total time that you spent walking in this way in the last week?

In hours and/or minutes
_____minutes _____ hours
8 Don't know
9 Refused

The next four questions exclude household chores, gardening or yardwork:

31. In the last week, how many times did you do any vigorous physical activity which made you breathe harder or puff and pant? (e.g. jogging, cycling, aerobics, competitive tennis)

_____times
8 Don't know
9 Refused

32. What do you estimate was the total time that you spent doing this vigorous physical activity in the last week?

In hours and/or minutes

_____ minutes _____ hours

- 8 Don't know
- 9 Refused

33. In the last week, how many times did you do any other more moderate physical activities that you have not already mentioned? (e.g. gentle swimming, social tennis, golf)

_____ times

- 8 Don't know
- 9 Refused

34. What do you estimate was the total time that you spent doing these activities in the last week? In hours and/or minutes

_____ minutes _____ hours

- 8 Don't know
- 9 Refused

Now some final questions about you:

35. What suburb do you live in now? (discuss with survey company)

(If they moved out of the area in the last two years, when did they move, and where to?)

1	Abbotsbury	44	Hinchinbrook
2	Arncliffe	45	Holsworthy
3	Ashbury	46	Horsley Park
4	Ashcroft	47	Hoxton Park
5	Banksia	48	Hurlstone Park
6	Bankstown	49	Hurstville
7	Bardwell Park	50	Kingsgrove
8	Belfield	51	Lakemba
9	Belmore	52	Lansvale
10	Beverly Hills	53	Liverpool
11	Bexley	54	Lurnea

12	Bexley North	55	Marrickville South
13	Bonnyrigg	56	Miller
14	Bonnyrigg Heights	57	Moorebank
15	Bossley Park	58	Mt Lewis
16	Busby	59	Mt Pritchard
17	Cabramatta	60	Narwee
18	Cabramatta West	61	Old Guildford
19	Campsie	62	Padstow
20	Canley Heights	63	Peakhurst
21	Canley Vale	64	Penshurst
22	Canterbury	65	Prairiewood
23	Carramar	66	Prestons
24	Cartwright	67	Punchbowl
25	Casula	68	Revesby
26	Cecil Hills	69	Riverwood
27	Chipping Norton	70	Rockdale
28	Chullora	71	Roselands
29	Clemtown Park	72	Sadleir
30	Condell Park	73	Smithfield
31	Earlwood	74	St Johns Park
32	Edensor Park	75	Turrella
33	Edmonson Park	76	Undercliffe
34	Fairfield	77	Villawood
35	Fairfield East	78	Wakeley
36	Fairfield Heights	79	Warwick Farm
37	Green Valley	80	Wattle Grove
38	Greenacre	81	Wetherill Park
39	Greenfield Park	82	Yennora
40	Guildford	Other	
41	Guildford West		
42	Hammondville		
43	Heckenberg		

36. Using the following scale, how close to where you live are the places you want to go to, like shops, restaurants, public transport?

Would you say...

- 1 Not close at all
- 2 Somewhat close
- 3 Moderately close
- 4 Quite close
- 5 Very close

37. What is your height _____ cms

_____ feet

_____ inches

38. What is your weight? _____ kg
_____ stone
_____ pounds

39. How many other adults usually live in the house? _____

40. How many children under 18 live in the house? _____

(IF Q40 = 0, then skip to Q42)

41. Of these children, how many are under 5 years of age? _____

42. In the last week, which of the following best describes your employment status?

- 1 Worked full time
- 2 Worked part-time
- 3 Work casual
- 4 Unpaid voluntary work
- 5 Unemployed and looking for work
- 6 Keeping house
- 7 Aged pensioner
- 8 Other pensioner
- 9 Retired

(IF Q42 = 5 to 9, then skip to Q46)

43. How do you usually get to work?

(Allow multiple responses)

- 1 Public Transport
- 2 Private or work motor vehicle
- 3 Bicycle
- 4 Walk
- 5 Work at/from home

(IF Q41 = 5, then skip to Q46)

44. Approximately how far is your home to your workplace?

- 1 Less than 0.5km
- 2 less than 1km
- 3 less than 3km
- 4 less than 5km
- 5 less than 10km
- 6 less than 15 km
- 7 15km or more

45. How long does it usually take you to get to work?

_____ Mins

46. How many registered cars are usually parked at your household overnight, whether private or company owned ?

_____ (cars)

That's all the questions I have for you today. Thank you for your time, your information will assist Sydney South West Area Health Service to better understand residents' physical activities in the local area.

