ACTIVE TRANSPORT

What is this?

Active transport relates to physical activity undertaken as a means of transport. It includes travel by foot, bicycle and other non-motorised vehicles. Use of public transport is also included in the definition as it often involves some walking or cycling to pick-up and from drop-off points. Active transport does not include walking, cycling or other physical activity that is undertaken for recreation.[1]

Why is it important?

Walking and cycling provides physical activity, social connectedness and "eyes on the street", enhancing safety, as well as being environmentally sound, non polluting and economical modes of transport that do not compound the problem of congestion.

The provision of good quality active transport infrastructure encourages people to walk and cycle. As more people engage in these activities, fewer cars are on the roads thereby relieving congestion, lessening vehicle emissions. Cyclists and pedestrians often experience safety in numbers when drivers become more aware of those using other modes of transport and accident rates are reduced.[2]

Walking includes any transport on footpaths: jogging, skateboarding, scootering, or wheelchair or mobility scooter use. Walking and cycling are low-impact forms of exercise in which almost everyone can participate, thus contributing to increased physical fitness, lower levels of obesity and increased mental wellbeing.[3]

Current recommendations are for adults to accumulate thirty minutes of moderate-intensity activity, such as brisk walking, on at least five days per week. This moderate-intensity activity can be accumulated in several bouts of at least ten minutes and is sufficient to bring health benefits.[4] Using public transport is also classified as active transport, as there is usually a physically active component to the journey, and public transport also has the aforementioned benefits.

Data

The New Zealand Household Travel Survey is an ongoing survey conducted for the Ministry of Transport. Each year, people in 4,600 housholds throughout New Zealand are invited to record all the time they spend traveling over a two day period. Data is presented over a three year rolling period to determine the time spent using the various modes of transport.

Between 2007 and 2010, walking made up 13 percent of the time traveled and cycling made up 2 percent. On average, women spend more time walking that men, walking 63 minutes

[1] National Public Health Partnership (NPHP). 2005. Be Active Australia: A Framework for Health Sector Action for Physical Activity 2005-2010 http://www.nphp.gov.au/publications/documents/nphp_baa_aug_05_no_cover.pdf Accessed 17.09.12.
[2] Community and Public Health. 2012. Review of studies that have quantified the economic benefits of intervention to increase walking and cycling for transport. http://www.cph.co.nz/Files/QuantEconBenefitPhysicalActive.pdf
[3] Bauman, A., Rissel, C., Garrard, J., Ker, I., Speidel, R., Fishman, E. 2008. Cycling: getting Australia moving. Barriers, facilitators and interventions to get more Australians physically active through cycling. Melbourne, Cycling Promotion Fund. http://www.cyclingpromotion.com.au/images/stories/downloads/CPFHlthRpr08V3prf1.pdf Accessed 17.09.12.
[4] Health Scotland. 2007. Health impact assessment of transport initiatives. Edinburgh: Health Scotland. http://www.healthscotland.com/uploads/documents/5039-03686_NHSHIAGuideFinal1.pdf Accessed 17.09.12.

per person per week, compared to 50 minutes per person per week for men. Individuals that cycled at least once per week averaged 28 minutes of cyclying per week.

A telephone survey of a representative sample of 400 Christchurch residents aged 15 years and over in 2008[5] found 157 people (39.25%) said that they cycled. Of those who cycled, 27% said they cycled to work, and 68% said they cycled for recreation. A larger sample of residents made up of the 157 cyclists from the telephone survey, with an additional 243 cyclists intercepted for face-to-face interviews across Christchurch reported that 42% cycled to work and 70% cycled for recreation. The level of cycling had remained stable compared to a previous survey in 2005. There were a higher number of males than females, and the intercepted cyclists cycled more often than those from the telephone survey.

Data from the 2006 census reported transport to work being dominated by use of the private motor vehicle (48%) with public bus, cycling and foot each used by approximately 5% of the population. Rising prices of petrol as well as increasing awareness of the importance of sustainable forms of transport however are leading to changing trends.

Table 1 Percentage of commuters in Christchurch 1991-2006 (based in NZ Census data) who travelled to work in the following ways

Means of Travel	1991	1996	2001	2006
Drove a Car / Truck / Van	59.3	60.9	60.6	60.2
Bicycle	8.9	6.7	5.7	5.1
Walked or Jogged	4.2	4.1	4.4	4.5
Public Transport	4.3	3.4	3.5	4.1
Passenger in Car / Truck / Van	4.9	4.0	3.4	3.6
Motor Bike or Power Cycle	2.4	1.3	0.8	0.7
Worked at Home	3.4	5.0	5.5	5.3
Did not go to Work	10.6	10.8	12.4	11.5

Note: All figures are for the usually resident population who are employed and aged 15 years and over.

Christchurch has the third highest rate of commuter cycling in New Zealand.[6] Palmerston North and Nelson have the highest levels nationally, with 7.5% and 7.2% respectively.

The number of cyclists in Christchurch has increased by 10% in the last year as shown in Figure 1 overleaf. Data from Council intersection counts shows an impressive 14% increase in the number of adults commuting by bike since 2007. However, over the same period, the number of children choosing to bike to school, who currently make up less than 12% of all cyclists, has dropped by 15% as shown in Figure 2 overleaf.

[5] Opinions Market Research. 2008. Market research report for Cycling Monitor 2008: prepared for the Christchurch City Council. Christchurch: Opinions Market Research. http://resources.ccc.govt.nz/files/CyclingMonitor2008-cycling.pdf Accessed 17.09.12.

[6] The information in this paragraph and the rest of the section on data is provided by the Christchurch City Council from their own resources.

Figure 1 Christchurch Cycle Counts

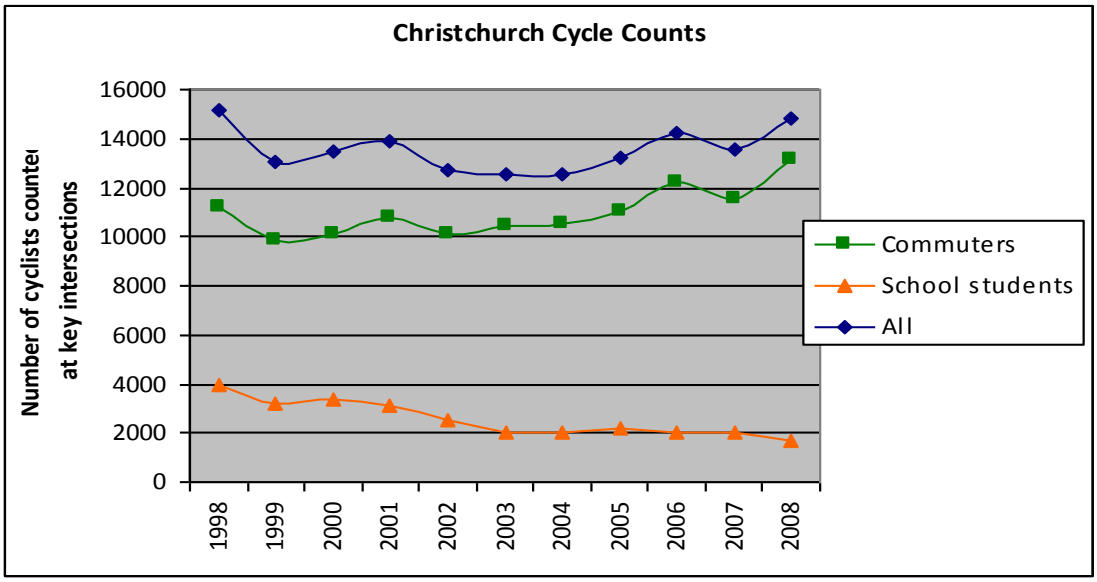
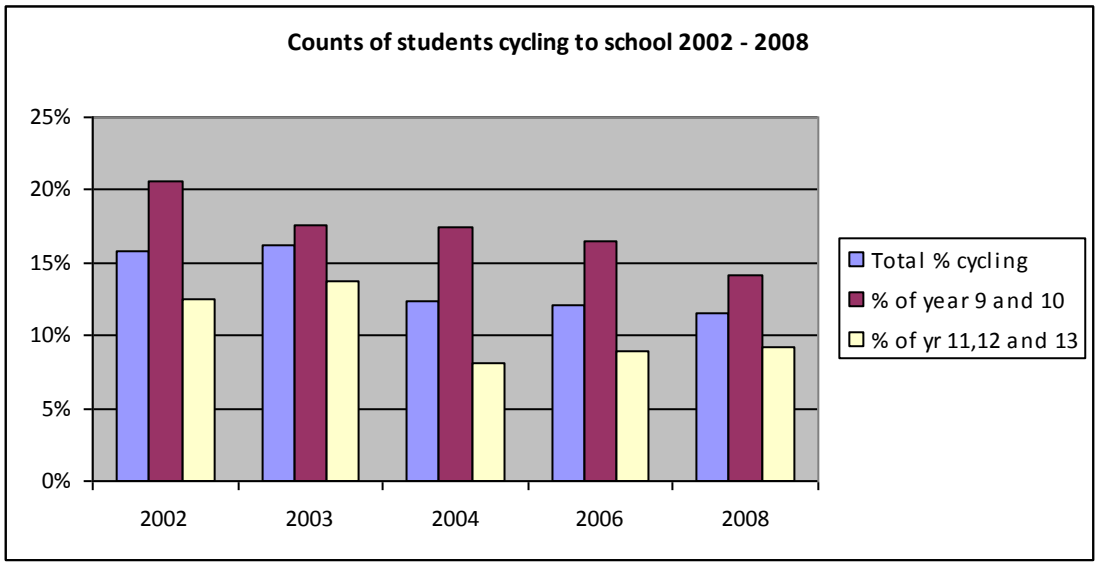


Figure 2 Counts of students cycling to school



Impact on inequalities

Urban areas are generally designed around the needs of an 'average' commuter, rather than the more varied needs of other populations, including people with disabilities, the elderly and the young.[7] People from disadvantaged backgrounds or with limited ability to move around urban areas and who are dependent on non-motorised transport are the most affected by poor roading infrastructure (lack of cycle lanes and paths, footpaths and poor lighting) with high density traffic and high speed.

Busy roads with fast traffic are a disincentive for older people or less confident cyclists to travel by bike.[8] Similarly, children are less likely to cycle to school where the streets have

[7] Public Health Advisory Committee. 2010. Healthy places, healthy lives: urban environments and wellbeing. Wellington: Ministry of Health. http://www.ana.org.nz/documents/urban-environments.pdf Accessed 18.09.12.
[8] Frank, L., Kavage, S., Litman, T. 2006. Promoting public health through Smart Growth: building healthier communities through transportation and land use policies and practices. Vancouver, BC: Smart Growth British Columbia. http://www.smartgrowth.bc.ca/Portals/0/Downloads/SGBC_Health_Report_FINAL.pdf Accessed 18.09.12.

poor connectivity and when their parents have fears about traffic safety and crime.[9] [10] Areas where footpaths are not maintained or have little or no connectivity make it harder for people to choose to walk. Not only does this provide a disincentive for the elderly and the young to cycle or walk in the first place but it makes them more at risk for crashes when they do.

The steady reduction in numbers of children cycling or walking to school contributes to the number of children at risk of obesity from inadequate physical activity.[11] Inactive adults are more at risk from chronic disease, increased morbidity and premature mortality, and absenteeism form work. Schools that are situated on or near major roads with heavy traffic create barriers for children cycling to school. Safety concerns are the most significant for adults, with lack of skills and confidence and poor cycling facilities also contributing.[12]

Environmental factors and overall urban design are a major influence on cycling and walking. For example, dispersed residential development means that distances to the workplace are likely to make cycling or walking to work too impractical.

Lack suitable footpaths has been found in some studies overseas to be inequitably distributed so that those worse off and without private transport have fewer opportunities to walk safely and conveniently. Although the quality of the facilities is variable[13] in Christchurch, streets with footpaths are evenly distributed throughout the city.

Walking for utility journeys (short errands) is an inexpensive and pleasurable way of getting exercise and is accessible to all socioeconomic groups without investing in special training or equipment. Geographic proximity, attractiveness, quality of facilities and connectedness to other resources are important as well as equitable distribution throughout the city and consideration of users with disabilities.[14]

Solutions

New Zealand research has identified that cycling skills training, slower traffic and effective bike storage were consistently identified as priorities. In some cases, stranger danger and access to a bike were important consideration in encouraging cycling among children. In general, intermediate school students (and their parents) preferred to use quiet residential streets, footpaths, short-cuts and reserves to get to school.

Cycling has quantifiable economic benefits in reduced mortality and morbidity, reduced absenteeism, as well as environmental benefits in reduced pollution and traffic congestion. School, workplace, and community travel plans that combine improved cycling infrastructure with a package of incentives and promotion are more likely to increase active transport uptake. The New Zealand Transport Agency has developed methods of assigning dollar values per kilometre cycled that can be used to cost such plans.[15]

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[9] Davison K.K., Lawson, C.T. 2006. Do attributes of the physical environment influence children's physical activity? A review of the literature. *International Journal of Behavioural and Physical Activity* 3(19).
[10] Mackie, H. 2009. I want to ride my bike: overcoming barriers to cycling to intermediate schools. Wellington: New Zealand Transport Agency. http://www.nzta.govt.nz/resources/research/reports/380/docs/380.pdf Accessed 18.09.12.
[11] Ibid.
[12] Bauman, A., Rissel, C., Garrard, J., Ker, I., Speidel, R., Fishman, E. 2008. Cycling: getting Australia moving. Barriers, facilitators and interventions to get more Australians physically active through cycling. Melbourne: Cycling Promotion Fund. http://www.cyclingpromotion.com.au/images/stories/downloads/CPFHlthRpr08V3prf1.pdf Accessed 18.09.12.
[13] Badland, H.M., Keam, R., Witten, K., Kearns, R.A. 2010. Examining public open spaces by walkability and deprivation. *Journal of Physical Activity and Health* 7(6), 818-824.
[14] Witten, K., Hisock, R., Pearce, J., Blakely, T. 2008. Neighbourhood access to open spaces and the physical activity of residents: a national study. *Preventive Medicine* 47, 299-303.
[15] New Zealand Transport Agency. 2010. Economic evaluation manual. Volume 2. Wellington: NZTA. http://www.nzta.govt.nz/resources/economic-evaluation-manual/volume-2/docs/eem2-july-2010.pdf Accessed 18.09.12.

A report from the UK[16] concluded that substantial investment is required to attract new people to cycling rather than just getting existing cyclists to cycle more. Physical structure needs to be supported with training and marketing; equally training and marketing will not deliver benefits unless there are safe and convenient cycle routes.

The full benefits in reducing congestion and pollution can only be achieved within a broader approach of discouraging car use. This kind of substantial investment in cycling infrastructure by Cycling England in partnership with local authorities in six demonstration towns was able to increase cycling by an average 27% across all the towns and had quantifiable health benefits.[17] Based on the success of the demonstration project another eleven towns were included in the project and millions more in investment was made available by the UK Department for Transport.

International and New Zealand research indicates that critical mass of cyclists is a factor in road safety – that is, that more people cycling is negatively correlated to the number of cycle crashes.[18] UK government figures show that cycling levels reached their highest point for 17 years. This is coupled with a record low for road fatalities in the UK. The Department for Transport reports show that cycling increased by 12% (measured in total kilometres cycled) at the same time as a substantial fall in cycling deaths, down from 136 to 115, the second lowest level ever.[19]

Speed reductions are known to reduce road injuries and deaths for all road users. A UK study in London found that 20mph (30kph) speed zones cut road injuries by 40%. In particular the number of children killed or seriously injured has been halved over the past 15 years.[20] The New Zealand Road Code recommends car drivers give cyclists a clearance of a metre and a half at all times and take extra care at intersections and turns.[21] The Road Code also provides recommendations about safety measures for cyclists, including the type and quality of lights for bikes and cyclists out at night.

Christchurch is fortunate in having footpaths on most streets, many with flat paths that allow wheelchair and parents with children in pushchairs to use them. The Council has published an Accessibility Map to assist people with disabilities negotiate the area within the four avenues.[22]

All urban areas need to be designed in ways that promote, rather than impede, road safety for all users. Ensuring the new developments are laid out with permenable streets and walking destinations will encourage walking and cycling. Cycle lanes and or paths and footpaths need to be of adequate width and surface, well maintained and with good lighting.

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[16] McDonald, B. 2007. Valuing the benefits of cycling: a report for Cycling England. London: Department for Transport. http://webarchive.nationalarchives.gov.uk/20110407094607/http:/www.dft.gov.uk/cyclingengland/site/wp-content/uploads/2008/08/valuing-the-benefits-of-cycling-full.pdf Accessed 18.09.12.

[17] Cycling England. 2010. Cycling England mid-term review 2009/2010. London: Cycling England. http://webarchive.nationalarchives.gov.uk/20110407094607/http://www.dft.gov.uk/cyclingengland/site/wp-content/uploads/2010/04/cycling-england-midterm-review-2010_final.pdf Accessed 18.09.12.

[18] Turner, S.A., Roozenburg, A.P., Francis, T. 2006. Predicting accident rates for cyclists and pedestrians. Land Transport New Zealand Research Report 289. Wellington: Land Transport New Zealand. http://www.nzta.govt.nz/resources/research/reports/289/docs/289.pdf Accessed 18.09.12.

[19] UK Department for Transport. 2010. Pedal cyclist casualties in reported road accidents: 2008. Road Accident Statistics Factsheet No. 4-January 2010. London: Department for Transport. http://www.rbkc.gov.uk/planningandconservation/planningpolicy/corestrategyexamination/idoc.ashx?docid=98b67165-c7ce-4e4a-a1d6-582a8f8e15f3&version=-1 Accessed 18.09.12.

[20] Grundy, C., Steinbach, R., Edwards, P., Green, J., Armstrong, B., Wilkinson, P. 2009. Effect of 20 mph traffic speed zones on road injuries in London, 1986-2006: controlled interrupted time series analysis. *BMJ* 339, b4469.

[21] New Zealand Transport Agency. 2010. The Official new Zealand Road Code: sharing the road with cyclists. http://www.nzta.govt.nz/resources/roadcode/about-other-road-users/sharing-road-with-cyclists.html Accessed 18.09.12.

[22] http://resources.ccc.govt.nz/files/CHCHAccessibleMap%20Sept2010.pdf Accessed 18.09.12.

Data limitations

Within the Transport and Greenspace Unit at the Christchurch City Council, the statistics scripts for road length data used in the percentage calculations have been run at different months of the year. For example, statistics scripts were run in September for 1996 and 2000, and in July for 2004. It is noted that the data for 'cycle lanes on-road' is an estimate only. There is currently no formal process available that synthesises or collects the available records on this type of data.

The census data is from 2006 so the percentage of people walking for transport may no longer be accurate.

All collisions on our roads should be reported to the police, who then submit a collision report to the Land Transport Safety Authority (LTSA). It is estimated, however, that only 10 per cent of cycle collisions get reported. Because of such a low reporting rate, it is often difficult to determine if there are particular road design features or cyclist or driver actions that could be modified to help prevent collisions. Christchurch City Council has developed a Cycle Hazard Incident Report card.[23]

Connections with other issues

Activity Levels and Exercise; Open and Green Spaces; Public Transport; Satisfaction with Leisure Time; Social Connectedness.

Impact of the earthquakes

As time passes and these papers are updated the initial sections on the impact of the earthquake are going to be kept as an archive. Updates are provided where possible.

As at June 2013

The Christchurch City Council has placed a new emphasis on active transport in recent months. The Christchurch Transport Strategic Plan (2012) recognised that investment in safe cycling is a priority. The Council through its draft Three Year Plan is proposing to spend nearly $70m on a network of new cycleways across the city and a new $2m walkway around Lyttelton Harbour. In April, the Council called for submissions on the Christchurch Coastal Pathway, a 6.5-kilometre pathway from Scarborough Beach to Ferrymead Bridge. The Council has also released its Christchurch Cycle Design Guidelines.[24] Christchurch Cycle maps have been updated for 2012 to reflect the current cycling lanes and options available to cyclists to allow a safe journey.[25]

Momentum is building for support for more accessible infrastructure and buildings as part of the recovery work. In May, both an active design symposium and a universal design symposium were held and were well attended.

Road works continue to impact road users.

[23] Christchurch City Council. 2010. Collision Report Cards. http://www.ccc.govt.nz/cityleisure/gettingaround/cycling/CollisionReport.aspx Accessed 28.04.10.
[24] http://resources.ccc.govt.nz/files/CityLeisure/gettingaround/cycling/ChristchurchCycleDesignGuidelinesWEB.pdf Accessed 04.06.13.
[25] http://www.transportforchristchurch.govt.nz/travelling-around/cycling/ Accessed 18.09.12.

As at December 2012

VicRoads is currently undertaking research on physical bicycle lane separators at two locations in Christchurch. The City Council are contributing staff time to the research and have installed the devices. The devices are free of charge to Council, who will retain the hardware after the trial and receive the research results.[26]

At any one time there are up to 250 SCIRT (Stronger Christchurch Infrastructure Rebuild Team) projects around Greater Christchurch. "Road Closed" signage is common but there is often (un-signed) through-passage for cyclists and pedestrians. There are not always ramps linking roads to footpaths creating difficulty for people in wheelchairs, prams etc.

The proposed school mergers and closures may impact children's ability to travel to school on foot or by bicycle. This has been highlighted as a risk to the Ministry of Education. The significance of this will be seen in the upcoming years.

As at November 2011

Footpaths and cycle ways, particularly in the eastern suburbs and in the Port Hills, have been damaged by liquefaction, cracks, and instability and subsidence, compromising people's ability to safely use them, especially with regard to danger of rock falls, tripping and falling off one's cycle.

The combination of pot holes, cracks, loose shingle etc and poor or absent street lighting increased the potential for crashes especially where:

- obstructions encroach onto foot paths and cycle lanes, or
- cycle lanes have been taken out completely to give way to semi permanent on-road earthquake-related facilities.

Road rage, exacerbated by stress, street closures, detours and traffic congestion also put pedestrians and cyclists at risk. Inattention by other road users caused by earthquake-related distractions has potentially dire consequences for cyclists and pedestrians.

Whilst the poor state of the roads have deterred some people from walking and cycling, congestion, lack of parking facilities and road blockages or detours have persuaded others that the easiest way to get around is by foot and by cycle.

The Cycle Guide is no longer accurate, with many cycle ways damaged by liquefaction. On road cycle lanes have been taken up with barriers protecting cyclists from falling masonry but putting them in danger of vehicular traffic.

Prepared by Community and Public Health.

[26] Further details on the Vic Roads bike lane separators research project is available from http://viastrada.co.nz/node/1917 Accessed 20.12.12.