

Cycling infrastructure more economic than for other transport

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Cycling investment has long term health benefits for Auckland, according to a recent study.

The research is a world first in systematically exploring the future effects of realistic [policy options](#) to increase cycling.

The study, just published in the journal *Environmental Health Perspectives* demonstrates the clear long term benefits to Auckland's health of making the right kind of investment for cycling.

The research, undertaken at the University of Auckland's School of Population Health, is the culmination of a four year project funded by the Health Research Council and NZTA to understand commuting and health in Auckland.

The work brought together international evidence about cycling to work and its positive and negative effects on health, household costs and the environment.

"We know already that shifting to walking and cycling for the trip to work can create a lot of benefits for health and the economy, as well as making for a fairer society," says lead author Dr Alex Macmillan. "We also know that in cities like Auckland, where motor vehicles dominate, fear of traffic numbers and speeds is uppermost in preventing people from taking up cycling.

Dr Macmillan says researchers were interested in uncovering the complex factors shaping trends over time in cycle commuting. "We wanted to use this understanding to find the best policy options for Auckland and other similar cities where cycling levels are very low".

The authors compared a range of options for turning around the declining trend in cycling to work and achieving the city's strategic goals. They found that the best kinds of policies involve investing in specific road changes that effectively improve cycling safety while also helping a wide range of people feel safe while riding.

"Keeping cyclists visible to drivers is also vital for safety and attracting new people to cycling for transport," says Dr Macmillan.

"We found that for main roads, investing in high quality on-road lanes with physical barriers, along with proven intersection changes, were the most effective at attracting new cyclists and keeping them safe. On the other hand, re-creating local streets as places for shared walking, cycling and driving at low speeds were also helpful", she says.

Effects on road traffic injury, reduced emissions, the gains in [health](#) resulting from exercise and savings from lower fuel bills were all weighed up against the costs of road improvements.

By far the largest benefits come from reducing deaths related to lack of exercise – a spend of \$600 million on the right kind of cycling infrastructure yields savings from increased exercise in the tens of billions of dollars.

"This is the first comprehensive assessment of future costs and benefits to society of specific active transport policies," says Dr Macmillan. "It demonstrates that, far from being expensive, high quality changes to main roads and local streets across the region are extremely cost

effective, bringing more than \$20 in benefit to society for every dollar spent over the next 40 years", she says.

"This is in stark contrast to typical benefit cost comparisons for other kinds of large scale transport investment. For example, the Roads of National Significance have been variously reported as having benefit to cost ratios of 0.1 to 5 (in other words, returning between 10c and \$5 for every dollar spent)."

Insights from the research have relevance to other New Zealand and international cities that are considering strategic investment in [cycling](#).

More information: Macmillan A, Connor J, Witten K, Kearns R, Rees D, Woodward A. "The Societal Costs and Benefits of Commuter Bicycling: Simulating the Effects of Specific Policies Using System Dynamics Modeling," *Environmental Health Perspectives* 2014.

Provided by University of Auckland

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