

A systems approach to cycling safety and training

New research has looked at how cycling can be promoted and increased as a sustainable means of transport, especially in urban areas, without causing an attendant increase in accidents and casualties.

The research combined two different, yet complementary pieces of work, relating to key cycle safety interventions and cycling training, both of which will be important elements in any drive to encourage cycling as a desirable transport mode.

The authors of the research report conclude that integrating cycling into New Zealand's transport system will be a 'lengthy journey', and will require 'a multi-faceted programme of work embedded in a safe system approach'.

The two different yet complementary pieces of work covered by the research project will be 'important elements of a proactive and systematic approach to make cycling "safer and more attractive", and provide future direction for an existing positive programme of work that is underway to improve conditions for cycling'.

At present, the NZ Transport Agency's National Cycling Programme is helping deliver on focus areas, target rapid growth, connect and develop regions, and keep people safe.

However, there is a risk that unless a safer system for cyclists is developed, any moves to promote and invest in cycling may also lead to an increase in trauma. If this is the case, then any moves to encourage cycling uptake are unlikely to be fully effective. Although, at present, road trauma for cycling is lower than for other transport modes, when the risk of injury per kilometre travelled is looked at, it still presents a relatively risky means of getting around compared with other modes.

In recent years, there has been a significant amount of local research into the benefits and risks of cycling as a transport mode. As a result, the environmental, health and congestion benefits of encouraging people to travel by bike in our cities and other urban areas are now widely accepted and understood. In addition, there is evidence that there has been a recent increase in cycling in New Zealand, and there has been a 'groundswell of support' for making cycling safer.

The current research considered this represented a 'unique opportunity' for New Zealand to take a proactive approach to prevent future trauma for people who cycle, by taking steps to make the transport network safer for cyclists, and introducing these alongside measures to promote and increase cycling as a transport mode.

Developing a cycling safety system model

The research drew on contemporary incident analysis methods to develop a cycling safety system model and analysis method. Such an approach moves beyond merely estimating cycling risks and describing cycling casualties, to analysing broader events in other domains of the transport system that could have an adverse impact on cycling safety.

Input from expert workshops, fatal crash information, and document reviews were then fed into the model to create 'causation pathway analyses', which showed how aspects of the transport system had failed for each type of crash that was analysed.

The research authors concluded that, with some modification, the method was useful in moving beyond describing the characteristics of crashes, to obtaining a deeper and broader understanding of the causal factors that had led to them. 'Many factors within all levels of the cycling safety system have been identified as problematic by the sector and this information could help prioritise effort,' the authors conclude.

Examples given by the authors of areas where improvement was needed in the system included:

- telling a clearer story about the benefits of cycling in New Zealand's future transport system
- better integrating walking and cycling requirements into speed management initiatives
- building identifiable and user friendly rural cycling routes
- designing infrastructure and training to address cyclist speed
- involving the cycling industry more in cycling safety
- introducing initiatives to address interactions between cyclists and heavy vehicles
- promoting 'standard operating procedures' for motorists and cyclists within an improved cycling skills training system
- addressing road infrastructure that, through its design, may lead to unsafe road user behaviour and cycling crashes.

Preparing New Zealanders for utility cycling

The second part of the research looked at how best to develop a cycle skills training programme that would not only increase the numbers of people of all ages who used cycling for utility purposes (including commuting to school and work), but also helped create 'confident, skilled and courteous bike riders, who know the road rules and use techniques to keep themselves and others safe'.

The research found, based on current literature, there was very limited evidence supporting a causal link between cycle training and improved safety, and the quality of studies in this area was generally low. However, cycle training was useful for increasing people's cycling competence, which could be a barrier to them taking up cycling, and for improving the knowledge of key safety behaviours. It could also be used as a means of promoting the benefits of utility cycling. There was, in fact, some evidence emerging that educational and promotional initiatives might be a necessary part of encouraging greater use of cycling infrastructure, once built.

The research went on to develop a cycling competency system model, which 'presents the development of cycling competencies as a process'.

The model focuses on competency, rather than cycle skills, 'as this more effectively represents the set of knowledge, skills and attitudes required to ride a bike for utility trips'. It describes how traditional cycle training needs to be combined with other educational approaches, such as children going for supervised rides with their parents, for individuals to reach the required level of competence. The model also reflects how any training initiatives may need to be combined with other factors – such as dedicated cycling infrastructure, cycling promotion, spaces to ride and positive community perceptions of cycling – if it is going to be effective in contributing to cycling uptake.

This section of the research concludes by making recommendations on how the cycling competency model could be successfully introduced, to provide a more comprehensive and coordinated approach to cycle training in New Zealand, which is also aligned with local and international good practice.

Since the completion of this research, the Accident Compensation Corporation and the Transport Agency have approved funding to jointly establish a national cycling education system based on the learnings of this research.