

# Cycle Audit and Cycle Review: A Scoping Study

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## Abstract

The aim of this study was to investigate whether the UK process of Cycle Audit and Cycle Review should be introduced in New Zealand.

The researchers interviewed traffic engineers and planners, road safety co-ordinators and cycle officers in nine local authorities, as well as cycle advocates, regional authority staff and Transit staff. They used a standard set of questions as a basis for the interviews..

The results include information on the safety audit processes currently used, how cyclists are considered in the design process, whether cycling is encouraged, whether cyclist safety is provided for, and whether road controlling authorities would be likely to use the process of Cycle Audit and Cycle Review.

The results show that there are gaps in providing for cycling in the current design processes . Recommendations include suggestions for introducing Cycle Audit and Review and improvements to processes for catering for cyclists in road design.

## 1. Introduction

The purpose of this project was to investigate the need for the Cycle Audit and Cycle Review processes in New Zealand. Cycle Audit and Review is a process defined in the Institution of Highways and Transportation Guidelines (IHT 1998) (1).

In the UK, the Cycle Audit and Cycle Review processes are:

- **Cycle Audit:** A separate check process of new road design to ensure that it is good for cyclists (and may even encourage them).
- **Cycle Review:** A systematic method of checking roads to see that they are good for cyclists.

## 2. Project Objectives

The objectives of this project were:

- to gain information on the use of cycle audit and cycle review in Britain,
- to get information from cycle groups and traffic engineers on the current situation and gaps which might be filled,
- to investigate present safety audit processes and their outcomes, and
- to study cycle crash records and see whether road design was a factor.

## 3. Background

The Institution of Highways and Transportation (IHT) in the United Kingdom has published a document "Guidelines for Cycle Audit and Cycle Review" (1998) (1). These guidelines have the following definition of cycle audit:

"Cycle Audit is a systematic process, applied to planned changes to the transport network, which is designed to ensure that opportunities to encourage cycling are considered comprehensively and that cycling conditions are not inadvertently made worse."

The same document says:

"The purpose of cycle audit is, therefore, to review new schemes to determine whether adequate safe and convenient provision has been made for cyclists, taking into account potential demand. As a minimum, cycle audit should ensure that conditions for cyclists are not

made worse by the new scheme; at best, it will examine every reasonable opportunity to improve conditions or cyclists.”

Cycle Review is the process of auditing the existing network in relation to cycling. The definition of cycle review is as follows:

“Cycle Review is a systematic process, applied to existing transport networks, which is designed to identify their positive and negative attributes for cycling, and to assess ways in which those networks could be changed in order to encourage cycling.”

#### **4. The Problem**

In recent years 13-15 cyclists have been killed each year on New Zealand roads, while between 630 and 800 cyclists are injured in reported crashes. The real figure will be much higher than that because research has shown that only about 50% of crashes with motor vehicles, where cyclists receive serious injuries, are reported.

Cyclist casualties have declined in recent years. This is due to a variety of factors including the wearing of cycle helmets and a decline in the numbers of regular cyclists. However there may be gains in cycle safety to be made by improving the roading environment. Some of these improvements will be low cost.

Cycling has been declining in most parts of the country. There are a variety of reasons for this, including the perception that cycling is unsafe, lack of facilities to make cycling trips easy and convenient, and the increasing availability of cheap cars. This decline in cycling comes at a time when local authorities are becoming more aware of the need for sustainable transport and integrated transportation planning, and is therefore of concern to politicians and planners.

The guidelines for safety audits on New Zealand roads, Safety Audit Policy and Procedures (TNZ 1993) (2), include cyclist safety. The question this study asked was whether the audit process as presently used identified the safety needs of cyclists adequately. This project also investigated whether the UK process of Cycle Audit and Cycle Review might provide both increased safety for cyclists and a roading infrastructure which is more convenient for cyclists.

Roading improvements that increase numbers of cyclists may result in changes to safety, environmental effects, travel behaviour and traffic management. Cycle Audit and Cycle Review might be used to take account of these effects.

This project investigated the effects that new roads and roading improvements had on cyclists and whether under the current safety audit system such roads may sometimes result in a situation where conditions were worse for cyclists than they were before the changes.

#### **5. Investigation Method**

A review of some overseas projects was conducted to ascertain reaction to Cycle Audit and Cycle Review and similar schemes.

The researchers also approached cycle planners, cycle advocates, traffic engineers and road safety co-ordinators in Christchurch, Nelson, Wellington, Palmerston North, Hamilton, Tauranga and Auckland and asked them the following questions:

1. Is the road safety audit process (following the TNZ 1993 guidelines or not) used in your area?
2. How are cyclists considered, in the design process?
3. How much cycling is undertaken in your area? Should there be more?
4. What is the reported crash rate for cyclists? Is it good or bad?
5. Is the present design process adequate for ensuring the safety of cyclists?

6. Does the present design process encourage cycling?
7. Does your council want to encourage cycling?
8. Do you think that your council would like to adopt the Cycle Audit and Review process?

The results of these interviews form the basis of this report.

## **6. Results**

### **6.1 Integrated Transport Planning**

In Britain and Europe there is an increasing emphasis on integrated transport planning. Cycling is seen as playing an important part in reducing vehicle use and therefore congestion and pollution. Cycling is a healthy form of transport both for the individual undertaking it, and for the environment. Planning for cyclists, designing roads to encourage cycling and ensuring that cyclists, who are more vulnerable than car drivers, are safe and perceive themselves to be safe, are seen as essential to an efficient sustainable transport system.

In Britain, the development of guidelines for Cycle Audit and Cycle Review is seen as a way of ensuring that cyclists are given their place in the transport system, not as an add on, but as an integral part of transportation planning and design. Cycle Audit and Cycle Review is a way of making sure that new roads, changes to roads, and existing networks identify ways of providing for cycling as a safe efficient transport mode.

In New Zealand road controlling authorities such as Christchurch and Auckland City have acknowledged cycling as a significant transport mode. Christchurch in particular is working towards giving cyclists their share of road space in the city. However, many of the road controlling authorities in the study do not see cycling in this way although local authority transport strategies and Regional Land Transport Strategies identify cycling as having an important role, and suggest that an increase in cyclist numbers should be encouraged.

### **6.2 Safety for Cyclists**

Even at the most basic level of providing safe facilities for those who choose cycling as a transport mode, most road controlling authorities in the study admitted there were deficiencies especially for low cost projects. Peer reviews were often carried out on projects rather than safety audits. A peer review is not the same as a safety audit, and does not use a systematic process to identify problems. Where these reviews are carried out in a group situation, there is the opportunity for one person to be overruled by the group. Organisational, culture and political issues may be allowed to cloud the identification of unsafe features.

In the audit process safety issues are identified and recorded. A decision is then made as to whether the recommendations for change are carried out or overruled by other considerations. Reasons for not addressing the problems are recorded so that the process is transparent.

A modified audit process for use with low cost projects might be a way to provide a systematic process at minimal cost.

Lack of understanding of cyclist needs among auditors and designers and lack of consistency in the use of standards and guidelines for designing for cyclist safety and convenience mean that the present processes for design and safety audit often do not cater for cyclists as well as they might. In addition, the extent to which cyclists are considered at all in the audit and design process varies according to the staff working on each project and varies between different road controlling authorities. The extent to which consultants consider cyclists in the design and audit process is also variable.

Even where auditors identify changes that might make a situation safer for cyclists, compromises may be made when the recommendations are implemented. The extent to which this is done depends on the culture of the client organisation and the priority accorded to cycling.

There are gaps and compromises in relation to providing for cyclist safety in the present design process. Cycling officers in some local authorities are advocates for cyclist issues, but they too may have to make compromises as part of the system.

### **6.3 Standards for design of cycling facilities**

New design guidelines to be published by Transit New Zealand may encourage consideration of cyclist needs, but it is unlikely that they will replace the need for a consistent set of guidelines providing for cyclists in road design.

Lack of resources may lead to cycle facilities that do not comply with standards and may be unsafe. Cycling is sometimes given a lower priority in terms of funding allocation than issues such as parking or traffic flow. The way the benefit/cost process is currently used works against provision for cyclists.

Where cycle advocates have been involved in making submissions or helping with design, changes have sometimes been made to increase safety for cyclists, as in the case of Courtenay Place in Wellington.

Standards and guidelines for the provision of cyclists' needs, and a process for encouraging road controlling authorities to use them appropriately, would improve safe design for cyclists.

### **6.4 Cyclist Crashes**

Cyclist crash numbers are declining but so are the numbers of cyclists. Without good exposure data it is difficult to get a good idea of risk. Cycle crashes are not declining as fast as motor vehicle crashes. Areas with larger numbers of cyclists invariably have a higher number of crashes.

An analysis of cycle crashes (Wood 1999) (3) shows that although road design does not show up often among the factors in crash reports, design factors especially at roundabouts and intersections may have an impact on cycle crashes. There is little information available at present on road design factors in cyclist-only crashes as these crashes are not currently recorded by the Land Transport Safety Authority, although this may change in the future.

### **6.5 Encouraging Cycling**

Most councils in the survey say officially that they wish to encourage cycling, but they are not always willing to contribute the resources to carry out strategies that might do this. Auckland, Hamilton and Christchurch seem to be committed to increasing cycling and willing to fund cycling facilities to encourage cycling.

Cycling is decreasing in most areas. In Christchurch the decrease seems to have levelled off with little change between the last two counts. Few authorities carry out reliable cycle counts. If cycling is to be regarded as a transport mode, cycle counts should have the same status as motor vehicle counts.

Only in Auckland City and Christchurch City do staff and politicians seem to regard cycling as a valid transport option and a way of reducing congestion and contributing to an efficient transport system. In some other places new routes designed to encourage cyclists have not been built because of funding priorities. But there is an emerging realisation of the need to provide for cyclists especially when new roads are being designed. Retrofitting cycle facilities to existing infrastructure is usually more difficult and expensive than building them into the original design.

Considering cyclists in the safety audit process focuses on cyclist safety whereas Cycle Audit and Cycle Review as proposed in the IHT guidelines provides for ways to encourage cycling as well. At present some road controlling authorities are considering specialist cycling routes to encourage cyclists but the degree to which the road network is designed to provide safe and convenient travel for cyclists is limited by lack of resources, lack of motivation and lack of understanding of cyclist needs.

This can be complicated by different groups of cyclists such as school students and commuter cyclists advocating conflicting road provisions.

## **6.6 Cycle Audit and Cycle Review in New Zealand**

It was agreed by most respondents that Cycle Audit and Cycle Review, with some modifications for use in New Zealand, was a positive process that had potential to improve the way cyclists are provided for on our roads. Most respondents also agreed that cycling should be encouraged as a mode of transport, and that the process of Cycle Audit and Cycle Review would help to implement transport strategies which seek to increase numbers of cyclists.

Both Hamilton City and Christchurch City are already investigating the process of Cycle Audit and Cycle Review and would be keen to trial parts of it, or modify it to suit their needs. Most other road controlling authorities were positive about the process, but several were concerned about added cost and suggested that it should be part of the safety audit process. This would mean a continuation of the system where only high cost projects are audited.

Low cost road design changes which currently usually get a peer review at best, might benefit from a simplified safety audit process. A simplified cycle audit could be made part of this process and could include consideration of convenience and ease of travel for cyclists. A documented process would ensure that cyclists were considered in every project.

If the process of Cycle Audit were introduced in New Zealand, the extra cost of carrying out full cycle audits would mean that in most road controlling authorities it would probably not be used for all projects. Road controlling authorities would probably, however, use the full audit for special cycle routes and major projects. A simplified form of cycle audit should be promoted for use in all road design.

Cycle Review would formalise the process of identifying parts of the existing network to be modified to encourage cyclists. This process is already happening in some areas. Its introduction might put pressure on local authorities to provide for cyclists as identified in their plans and strategies.

To make the process work there would need to be adequate training of auditors and modification of the Cycle Audit and Cycle Review guidelines for New Zealand conditions.

Consistent counts of numbers of cyclists are needed to evaluate the effect of cycling strategies and to determine levels of service for cyclists.

## **6.7 Cycling Strategies**

A national cycling strategy would give leadership and encouragement to road controlling authorities in the way they consider cycling. Local cycle strategies focus attention on cyclist needs. The development in the UK of integrated transport strategies and accessibility audits that include pedestrians and public transport as well as cycling may be helpful in New Zealand.

## **7. Recommendations**

### **7.1 Cycle Audit and Cycle Review**

- 1 That those local authorities that have expressed a readiness to take on Cycle Audit and or Cycle Review be included in a national group to write guidelines for using the processes in New Zealand.
- 2 That when guidelines for the use of Cycle Audit and Cycle Review in New Zealand have been developed, the processes be promoted to road controlling authorities as a way of implementing their expressed desire to encourage cycling as a transport mode.
- 3 That the current use of the safety audit process be investigated and a way to apply some form of audit to all projects including low cost projects be developed and promoted.

- 4 That a form of cycle audit be investigated that would be cost effective and likely to be used with all road design projects including low cost projects. This audit should include cycle friendliness as well as safety.
- 5 That the process of audit for accessibility, which is being developed in the UK, and includes cycling, walking and public transport, be considered in New Zealand.
- 6 That training for safety auditors in New Zealand include training in how to provide for the safety and convenience of cyclists.

## **7.2 The Cycling Environment**

- 1 That cycling as a valid mode of transport, with equal importance to other modes, be promoted in transport planning as part of an integrated efficient sustainable transport system.
- 2 That a national cycling strategy be developed, adopted and promoted.
- 3 That local authorities be encouraged to develop cycling strategies and include cycling in their transport plans.
- 4 That the major players in designing for cyclists keep in touch with developments and training overseas so that New Zealand can benefit from the use of best practice. A formal process may be needed to ensure this happens.
- 5 That road controlling authorities be encouraged to increase the priority of providing safe cycling facilities when allocating funding, thus contributing to the health of the community, the health of the environment and the efficiency of the transport system.
- 6 That the decision makers in road controlling authorities be encouraged not to compromise the safety of road users for issues such as parking spaces and traffic flow.
- 7 That standards for providing for cyclists be developed and adopted in New Zealand, and that road controlling authorities be encouraged to use a consistent set of standards.
- 8 That road controlling authorities be helped and encouraged to carry out reliable counts of cyclists on their roads.
- 9 That the investigation of factors in cycle crashes include more analysis of road factors by implementing the relevant recommendations from "Bicycle Crashes in New Zealand" (Wood, 1999) (3).
- 10 That the Land Transport Safety Authority be encouraged to record cyclist-only crashes, and that there be more investigation into the road factors involved in these crashes.
- 11 That the development of integrated transport strategies in New Zealand be encouraged.

## **8. Acknowledgements**

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## **9. References**

- (1) IHT. 1998. *Guidelines for Cycle Audit and Cycle Review*, Institution of Highways and Transportation, UK.
- (2) TNZ. 1993. *Safety Audit Policy and Procedures*. Transit New Zealand.
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