

Planning & Engineering for Cyclists – Development of a Technical Training Course

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1 Introduction

A consortium has been formed to develop a technical training course for traffic and roading engineers who want to learn more about how to plan and design for cyclists. A grant application was put to Transfund, the Government funding agency for transport projects, in April 2001. This paper reports on the progress to date.

2 Background

Cycling issues have been given more attention over the last few years within the transportation sector. There seems to be a growing recognition within the profession that cycling could play an important role in the transport mix. Many would readily agree that the decline in cycling over the last few decades was partly caused by the relative inattention that transport professionals paid to this user group.

One of the underlying reasons for this relative inattention is the lack of training of transport professionals with respect to cycling:

- What senior engineers don't know, they can't pass on to their younger peers. And from our work experience, there is often little interest within the more senior engineers for cycling, as they have gone through their professional lives in a very motor vehicle focussed working environment.
- The "traffic and transport planning" undergraduate courses taught by the two NZ civil engineering departments don't even devote a full lecture to cycling issues.
- The 5 day course "Fundamentals of Traffic Engineering", delivered usually once a year to allow new professionals to get a broader understanding of their field, puts cycling, walking and road lighting together into one 45 minute teaching block.

Very little knowledge exists within the profession with regard to cycling. Indications are that interest is increasing, though.

3 Objectives

The proposed training course has the following objectives:

- Introduce transportation professionals to providing for cyclists. This does not necessarily mean designing specifically for cyclists, but having cyclists in mind and being aware of their needs during the design process for any roading project.
- Increase cyclists' safety by professionals better understanding the impacts of their designs.
- By bringing cycling onto a more level playing field with providing for motorised traffic, enabling the profession to better meet government policy outside the transportation sector, namely energy efficiency, general health, and Kyoto Protocol.

It should also be pointed out that no agreed 'best practice' exists in New Zealand. The methodology (see below) aims at getting key industry organisations to define acceptable standards. Hence, a secondary objective is:

- Initiate the development of widely agreed design standards for New Zealand.

4 Course Development Methodology

4.1 Team Members

Four professionals have formed a team for the development of the proposed training course:

- Axel Wilke, Traffic Engineer and Transportation Planner, City Solutions, Christchurch City Council.
- Alix Newman, Cycle Planner, Christchurch City Council.
- Kerry Wood, private consultant for sustainable resources, Wanganui.

- Glen Koorey, Principal Researcher, Traffic and Road Safety, Opus Central Laboratories.

Axel Wilke of City Solutions, the business unit in charge of design for the Christchurch City Council, is formally leading the consortium.

It is proposed to involve the following two professionals in the peer review process:

- Roger Boulter, Cycle Planner, Hamilton City Council.
- Paul Ryan, Senior Planner, Opus Hamilton.

It may be said that these six professionals represent some of the most knowledgeable professionals in terms of designing and planning for cyclists in New Zealand.

The members of the team are well known within the profession and are in constant contact with other professionals from all over New Zealand. As such, they are aware that a high demand for an increase in knowledge exists, as they field regular requests by other professionals for advice.

4.2 Justification for the Proposed Course

Demand Analysis

The team carried out a formal demand analysis in February 2001. A questionnaire was sent to the 320 members of the Transportation Group (the principal interest group for transport and road safety professionals) who have their e-mail addresses listed with their professional body.

An analysis of the 60 responses received within two weeks revealed that:

- There is a strong demand for a short course, with the preference on a one-day course.
- Respondents expressed interest in attending local courses, so that travel requirements can be minimised.
- Some reference was made to the course costs not being a burden; otherwise some companies may be put off from sending their employees to the course.

The organising team had long discussions about the appropriate course length. As said above, the feedback received indicated a preference for a one-day course. The course material that the organisers thought should be taught cannot possibly be delivered within one day, though. A two-day course obviously requires an overnight stay, which may make it less attractive to potential attendees, and would also increase the financial burden. Hence, a balance needed to be found between teaching more thoroughly (i.e. for longer than one day), and accepting that possibly fewer professionals would attend. In the end, the team decided on the development of a one-day course. This kept the option open of developing advanced courses in future, if demand justifies it.

Representative is probably the following feedback that was received: "I'd prefer an emphasis on on-road engineering solutions (intersections, traffic calming etc) and the Transfund-acceptable funding options." Some questionnaire responses asked for site visits to be incorporated into the course outline: "CHCH & Palmy are recognised cycling cities so would have some good examples, while Wgtn is close to home and has some bad examples!"

Many responses made reference to missing industry guidelines that need to be defined, and it was pointed out that the proposed course could act as a catalyst for that. The following response proposes a different approach, though: "I believe we need urgently some agreement within the profession in the form of a guideline document. Following that, the guideline can form the basis of training courses for engineers and a benchmark for ongoing improvement and development. I would suggest that a group of NZ 'cycle experts' formulate a draft guideline as a first step, followed up with training courses."

Lack of Formal Training

The lack of formal training for transport professionals, as outlined in section 2, is also documented in Boulter (2001). Recommendation 26 in that report asks, "that specialist cycling expertise, at the basic level, be disseminated to wider professionals through basic training and (as required by their own professional body) 'continuing professional development'."

Meeting Industry Needs

One of the objectives of the industry survey was to find out about the needs of the industry and the feedback received has already been reflected in a revised outline of the proposed course (Appendix A).

The course contents also need to meet the requirements of the major agencies in the transport sector, namely Transit New Zealand (the road controlling authority for state highways), Transfund, and the Land Transport Safety Authority (responsible for road safety).

These agencies have been invited to:

- Review the course content and make suggestions for amendments or alterations.
- Peer review the course material.
- Attend the proposed pilot course and give further feedback, before the course materials are finalised.

The course will only have an impact if practitioners are being taught what they need to know. It was important that the course did not appear to just provide an opportunity for cycling enthusiasts to promote an unbalanced view. The industry feedback and the involvement of Government agencies will ensure that the course will have a practical and pragmatic approach. Furthermore, the pilot course and the final courses are being subject to extensive feedback by course attendees, with this feedback being used to continually improve the course material and the delivery.

Involvement of Government Agencies

It is extremely important to the course organisers that the proposed course meets the needs of these organisations. Obviously, the course would fail to meet its objectives if major agencies did not allow course attendees to apply what they have been taught during the course.

To this end, the organisers propose that Transit, Transfund and LTSA are involved in the course development as outlined above. A formal endorsement from these organisations will be sought prior to finalising the course material.

Transit, LTSA and Transfund have already given their support:

- LTSA head office has appointed Lyndon Hammond to co-ordinate this agency's involvement.
- The Transit head office contact person is Michelle McCormick.
- Kate Collins from Transfund is to co-ordinate their involvement.

Industry Commitment

The transportation industry shows commitment to this course in many different ways. The above-mentioned Government agencies will make staff time available without charge to attend meetings and for the peer review process. Necessary staff travel will be covered by the agencies themselves. The commitment even extends past this level, though, and is broad based. Several letters of support have been received from major agencies, as summarised below:

Transit New Zealand

Transit confirms that they will send staff from head and regional offices to attend the course. Head office has recently appointed staff in all their offices who are to act as cycle champions, thus these people are likely to attend the course. Transit may also encourage their network consultants and contractors to attend the course.

The Transit initiative would mean an indirect encouragement for consultants to Transit of having attended the proposed course. This in turn could increase demand for the course, making the delivery of the course more viable in more centres, thus decreasing the need to travel to attend the course, making the course as such more attractive to a broader audience within the profession.

Transit has made a cash grant available towards the costs of course development.

Transit has confirmed that their formal endorsement of the proposed training course is anticipated, following the peer review and pilot course procedure.

Land Transport Safety Authority

LTSA will make considerable staff time available for the peer review process. Several LTSA staff are expected to attend either the pilot course or one of the final courses.

IPENZ

The Institution of Professional Engineers NZ has granted formal CPD (Continued Professional Development) endorsement for the proposed course. Members of the Transportation Group have reviewed the proposal for the purpose of the CPD endorsement. The National Committee has written a letter in support of the proposal and offered help in the peer review process.

TRAFINZ

The Trafinz executive has discussed the proposed course and “is highly supportive of this initiative and considers it to be worthy of project funding”.

EECA

The Energy and Efficiency Conservation Authority has made a cash grant available towards the costs of course delivery.

Raising further Interest in the Profession

We propose to keep the profession informed about the upcoming course. This will precede, but not replace, the formal advertising that forms part of the delivery stage. We intend to use the following media to publicise the proposed course:

- Transportation Group – E-mail list and Roundabout (membership magazine).
- IPENZ – eZine (e-mail newsletter) and e.nz (membership magazine).
- Ingenium (formerly ALGENZ) – their quarterly journal.
- Transfund / Transit and LTSA newsletters.
- Road Safety Co-ordinators – their e-mail list.
- Trafinz – information to the executive.

Preaching to the Converted?

Some concern has been raised that the course might ‘preach to the converted’, implying that the investment in the development of the course material is unwise. This is definitely not the case – the investment is a very good one indeed! Two main reasons can be given:

1. We are convinced that even the ‘converted’ will gain significantly from attending the course. To show an interest in the needs of cyclists is not the same as having a sound technical background. We know from the written feedback and from many personal communications that the dissemination of technical information is wanted and needed, even by many so-called enthusiasts.
2. The whole methodology aims at attracting mainstream engineers and planners, rather than just the ‘converted’. The involvement of the Government agencies will ensure that it is desirable to have knowledge of the material that is to be taught. Transit’s involvement in particular will result in many practitioners to attend who may not have a strong background in providing for cyclists.

4.3 Work Programme

Development of Course Material

It is intended that teaching blocks will be assigned to individual consortium members for development according to their area of expertise. It is envisaged that the written material to be handed out to the course attendees is concise, but supported with many illustrations and photos. Good and bad examples will be compiled, for attendees to see what to aim for and what to avoid. Emphasis will be put on the material being as applicable to New Zealand as possible, with the preferred source of photos being from our country.

The supporting material for the course presenters, to be developed in conjunction with the course notes for the attendees, will contain more text and give background information. The aim is to make the delivery of the teaching elements independent from the person who develops the material.

Following the development, the consortium members will peer review each other’s material and revise it accordingly.

Feedback on Course Material and Revision

The course material will then be made available for a peer review outside the consortium. The government agencies will be involved and two professionals with a proven track record in terms of designing and planning for cyclists:

- Lyndon Hammond from LTSA will co-ordinate feedback from head office and regional offices on the material.
- Michelle McCormick from Transit has agreed to fulfil a similar role for this government agency.
- Transfund will be offered to review the material at this stage as well.

- Paul Ryan (OPUS International Consultants) and Roger Boulter (Hamilton City Council) have agreed to formally peer review the material.
- Following this peer review process, the course material will be revised.

Pilot Course and Finalising of Course Material

The team is of the opinion that the quality of the final course would benefit from having a pilot course. It is proposed to teach a one-day course in Christchurch to interested transport professionals and to invite government agencies to attend. A feedback session is proposed for the following morning, allowing Government agencies to further have input into the teaching of the material. It is proposed to invite Roger Boulter and Paul Ryan to attend both the pilot course and the feedback session (both have agreed to attend).

The pilot course would also allow the consortium members to get a feeling for teaching the course material. Following the pilot course and the feedback session, the course material can be finalised.

Timeline

A provisional timeline was included with the application that went to Transfund. This timeline would have seen the first course being taught the day prior to the 2001 Cycle Symposium in Christchurch in September.

5 Course Delivery Methodology

5.1 Courses

It was proposed that the consortium members act as course presenters, with the course administration being handled by NZIHT (New Zealand Institute of Highways and Transportation).

The proposal allowed for five one-day courses at venues in Auckland, Hamilton, Wellington, Christchurch and Dunedin. If the demand required more than five courses to be held, we intended to approach Transfund for additional funding.

5.2 Roles

New Zealand Institute of Highway Technology (NZIHT) will through the course consortium administer and co-ordinate the delivery of the proposed courses. Advertising to the appropriate target audience, course administration, and organising the venues are to be handled by NZIHT.

Teams of two presenters from the consortium will deliver the course at the different venues. Preference will be given for presenters to present locally in order to minimise travel requirements and to save costs.

6 Decision and Outlook

In its July 2001 meeting, the Transfund Board made the decision to reject the proposal. No specific reasons were given, but it is understood that the applications for the 2001/02 training budget far exceeded the available resources. The consortium was encouraged to put the proposal forward again for the 2002/03 financial year.

Whilst this decision is disappointing, there may still be scope to attract alternative funding within the foreseeable future. It is believed that at the time of writing this paper, cabinet is discussing the option of establishing a dedicated fund for cycling and walking, much like the \$53m that was set aside for public transport in late 1999. The lack of formal training in the profession is accepted and much demand and willingness exists to rectify this. As such, the author is hopeful that the proposed course will attract the required funding at some stage.

References

Boulter, R. (2001) *Into the Mainstream: New Zealand Cycling Strategy Foundation Project*. Hamilton, page 10.

Planning & Engineering for Cyclists Outline for a one-day course

Appendix A

It is strongly suggested that all participants should have completed a 10 km on-road cycle trip no more than a month before the course.

8.30 Registration and tea/coffee

9.00 Introduction to cycling:

- Course participant introductions.
- Housekeeping and course outline.
- Taking cycling seriously.
- Cyclist profiles, cycle advantages and limitations.
- Design standards.

10.00 Tea/coffee

10.15 Cyclists' needs and problems:

- The five main requirements—Coherence; Directness; Attractiveness; Safety; Comfort.
- Design envelope, safety clearances and route geometry.
- Common crash types and problems.

Exercise: split into teams and identify problem areas on a plan (scale about 1:500, same for all teams).

11.30 Cycling between junctions:

- Cycles on roads with no specific provision.
- Cycle lanes.
- Cycle tracks segregated and on-road.
- Shared bus/cycle lanes and shared footpath/cycle path.
- Making space for cycle facilities.

12.30 Lunch

13.15 Cycling through junctions:

- The six elements of cycle continuity.
- Uncontrolled junctions.
- Signal-controlled junctions.
- Roundabouts.
- Segregated cycle path crossing roads, cycle by-passes and traffic islands

Exercise: locate a safe route between marked points on an aerial photo.

14.15 Planning for cycling

- Networks or problem-fixing?
- Safe routes to school.
- Data gathering.
- Public consultation and cycle advocates.
- Cycle Audit & Review.

Exercise: A safer route to school.

15.15 Tea/coffee

15.30 Putting it all together

- The five-step hierarchy.
- Continuity for all road users
- Using existing work programs.
- Funding and the PEM (Project Evaluation Manual).

16.00 Bouquets and brickbats, discussion and wrap-up.

16.30 Close.