

INTO THE MAINSTREAM

NEW ZEALAND CYCLING STRATEGY FOUNDATION DOCUMENT MAIN REPORT

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Author's Foreword to the Final Edition

My career as a professional planner stretches back to the late 1970s oil shocks. My first work on cycling was in 1982. Public and governments started thinking about cycling at this time – yet realising its potential has always been just around the corner. Why?

Partly I think because we don't see cycling in professional terms. We tend to either enthuse about it, or dismiss it as for greenies or children. We rarely look with serious scrutiny and a cool head.

In this project I have tried to encourage dialogue between diverse perspectives, especially government professionals and cycling advocates. Visits and interviews played a large part in my research. The title comes from the fact that there is a well-developed body of expertise on cycle planning and engineering, but it tends to be hidden in publications and conference networks most of us rarely encounter. It should surely be a challenge to us professionals that lay cycling advocates are often better versed in best practice, including professional sources, than we are. We professionals can contribute a broader view, and maybe a 'reality check' – but it must always be earthed in the other 'reality check' of what works for cycle users.

Shortly after I started the project in late 1999, a new government was elected and signalled a shift towards alternative transport modes. Just before I received the good news of my Study Award, an informal enquiry received a polite "Not interested" on the question of whether Government would consider preparing a National Cycling Strategy ("even", I asked, choosing careful words, "if much of the groundwork were done outside Government"). Within a few months the Ministry of Transport was openly asking for help.

Starting in mid 2000 I was approached to speak to conferences, write journal articles, and make presentations to Parliamentary Select Committees – at the same time as having a project to finish! A variety of government agencies have been taking steps to address my recommendations. This partly accounts for the two-year delay in getting the final documentation out, for which I apologise; it seemed more important to help those who already were making things happen.

Substantial progress is being made on most of my recommendations, except in the area of road safety, on which I have been unable to elicit an official response. It would have been helpful if my 'Interim Position Statement' – and a 'Bicycle Crashes' study by Kerry Wood – could have contributed to the formulation of the Draft Road Safety Strategy 2010, issued about eight months later. Much time has been lost, but the finalised Road Safety Strategy 2010 now signals particular attention to cycling. Hopefully a start can now be made on the issues Kerry and I have raised.

In other areas, progress by Government agencies is commendable, but is only the beginning. There is never an easy, 'magic bullet' solution to safety, engineering, road funding, project evaluation, integrated transport and cross-government policy integration issues. We have a far longer road to travel than that on which we have started.

Finally let me thank the IPENZ Transportation Group for the original \$5,000 partial grant, individuals and agencies who have given time and warm welcomes, billeted and fed me, and set up the July 2000 'Making Cycling Viable' conference; and especially Hamilton City Council staff, who allowed me unpaid leave, met some of my speaking costs, let me use their office facilities and helped in other practical ways. Without these, this project would not have been possible.

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Supplementary Reports

S1: Process	<i>separately available</i>
S2: Consultation	<i>separately available</i>
S3: Interim Position Statement	<i>separately available</i>

Summary

This project was substantially undertaken from September 1999 to October 2000 with a \$5,000 grant from the IPENZ (Institution of Professional Engineers New Zealand) Transportation Group. Further assistance in kind was provided by Hamilton City Council and EECA (the Energy Efficiency and Conservation Authority). Completion took place during 2001/02.

Project Documentation, Process and Publication

Beginning with a literature search and study tour of seven New Zealand cities, an *'Interim Position Statement'* summarised issues, historical background and leading stakeholders perspectives. Consultation based on this document was undertaken during March – May 2000. The main stakeholders were consulted through a *'simplified Delphi'* process, ranged from roading authorities and other official agencies, to cycling advocacy groups.

The *Making Cycling Viable* Second New Zealand Cycling Symposium, a successful event in its own right, was conceived as this project's final consultation phase. A paper on initial project recommendations was presented, and comments gathered via a plenary workshop and informally. *Into The Mainstream* was drafted and published in low-cost, simple *'Provisional Edition'* form in October 2000, comprising the recommendations and supporting text. A *Summary* was added, and copy by the IPENZ Transportation Group to its members during 2001. The *Summary* and a *Bibliography and Research Guide* were added to the *Provisional Edition* text and the *Summary*, to form the *Final Edition* in October 2002.

The *Into The Mainstream* report, and supplementary reports on *Process*, and *Consultation*, are available on the IPENZ Transportation website. The *Consultation* report includes the verbatim (anonymous) comments of participants in the *simplified Delphi* process, and comprises a useful 'reflection' source in its own right.

Recommendations

Below the *Into The Mainstream* recommendations are reproduced, under their category headings, followed by summaries of the supporting arguments.

ISSUE AREA: POLICY AND STRATEGY

Recommendation 1: That a New Zealand Cycling Strategy be prepared, paying attention to integration with respective relevant public policy portfolio areas (e.g. transport, energy, health, education, environment)

Recommendation 2: That a New Zealand Cycling Forum representing cycling stakeholders and official organisations be convened under the auspices of the Ministry of Transport. This Forum would have the function of:

- ***overseeing preparation of the New Zealand Cycling Strategy***

- *overseeing implementation of the New Zealand Cycling Strategy*
- *acting as a `reference group` on cycling implications of ongoing public policy issues*
- *reviewing the New Zealand Cycling Strategy as determined appropriate under the Strategy itself*

Recommendation 3: That a support staff function for the New Zealand Cycling Strategy be created within the Ministry of Transport, to progress and monitor cycling policy and strategy development

A disadvantage of a separate *New Zealand Cycling Strategy* is that it might perpetuate the tendency for cycling to be seen as an `add-on` to mainstream policy. It could also be argued that any cycling strategy should be a `subset` of the Ministry of Transport's forthcoming *New Zealand Transport Strategy*.

However, a separate *New Zealand Cycling Strategy* should be prepared, because of the very strong tendency for cycling to be `forgotten`, if it is not consciously addressed.

Another reason is that public policy areas beyond `transport` would be involved (e.g. preventive health). In some cases, the approaches taken to cycling by different arms of government contrast or conflict with each other (e.g. `road safety` compared to `health`). An inter-Ministries approach is needed, led by the Ministry of Transport.

A *New Zealand Cycling Forum* would bring together government policy agencies (e.g. Ministries, Crown Agencies), local stakeholder bodies (e.g. the *Road Controlling Authorities' Forum*), and non-governmental representatives (e.g. cycling industry and advocates). It would act as a `reference group` along the lines of the Australian *State Bicycle Councils* and the *Austrroads-affiliated, Trans-Tasman Australian Bicycle Council*.

ISSUE AREA: ENGINEERING DESIGN

Recommendation 4: That a `Cycling Engineering Research Programme` be set up and funded within the work programme of the Land Transport Safety Authority (LTSA), the results to be used as a basis for issuing official advice on `best practice` for the guidance of Road Controlling Authorities. Road Controlling Authorities (RCAs) wishing to participate in this programme should be granted-aided by Transfund NZ.

Recommendation 5: That the `Cycling Engineering Research Programme` (Recommendation 4 above) be integrated into the Ministry of Transport's (MoT's) proposed `Safety Management System`, taking into account the needs identified and the programme outline proposed to address those needs.

New Zealand cycle engineering best practice is in a badly ill-defined state. Official guidance is not comprehensive, and basic elements such as the circular, blue-backed cycle logo road sign are described ambiguously (in

MOTSAM, the Transit NZ/LTSA *Manual of Traffic Signs and Markings*) or incorrectly (in the *NZ Road Code*). Often guidance is sought from overseas sources.

Some authorities (most notably Christchurch) have established research programmes on cycling facility design, but these are outside the LTSA's official trial and validation process. At time of writing, there was only one case in the country of a new cycling facility design being trialled through this (Hamilton's Advanced Stop Lines).

Part 14 (*Bicycles*) of the *Austroads* engineering guide was reviewed in 1998, but LTSA did not participate in the (substantial, Christchurch-led) New Zealand input to the review, nor endorse the guide's contents.

This project recommends a *Cycling Engineering Research Programme*, incorporating existing research. Authorities should be invited to apply for Transfund-administered grant funding, possibly using the dedicated 'cycling fund' mooted by the Ministry of Transport in its recent reform discussions.

Safety Management Systems cannot wait for the *Cycling Engineering Research Programme* (which could take some years, and then be ongoing). *Safety Management Systems* aim to codify 'best practice' standards as a basis for greater roading authority responsibility for local road safety, and cannot at present easily address cycling, because of the current state of cycling engineering best practice. *Safety Management Systems* should be refined progressively, by incorporating cycling engineering research findings, as should LTSA's work towards a *Traffic Control Devices Rule*.

ISSUE AREA: ROAD TRAFFIC LAW AND LAW ENFORCEMENT

Recommendation 6: That a review be undertaken of the legal status of cycling facilities and their signage, and legislative changes be introduced as appropriate, through work the LTSA is embarking on towards a 'Traffic Control Devices Rule'.

Recommendation 7: That traffic law be reviewed with respect to cyclists, and changes made as appropriate, to reflect the finding that, in some cases, cyclists' motivation in disobeying traffic law is to protect their own safety.

Recommendation 8: That law enforcement in respect to cycling be targeted at both motorists and cyclists in accordance with the other recommendations in this report.

The legal status of cycling signs (notably the circular blue-backed one referred to above) and road markings, is unclear: they are said to be regulatory, but lack regulatory force. Terms in common usage (e.g. 'cycleway', 'cycle track', 'cycle lanes' and 'cycle routes') are mostly not defined at all.

Cyclists sometimes break traffic law to protect themselves, raising the serious issue that a law intended to **protect** safety may actually be working **against** it. This could be addressed through attention to the way the law is framed (including through LTSA's *Traffic Control Devices Rule*); exemptions to the general law; or simply by the authorities 'turning a blind eye'. All these options have their disadvantages, and in some cases could cause other problems (e.g. legalising footpath cycling could threaten pedestrian safety).

Law enforcement for cyclists' safety needs to target not only cyclists' conformity with the law, but also common motorist violations which affect cyclists' safety (e.g. speed limit violation, squeezing a cyclist on overtaking).

ISSUE AREA: ROAD FUND ADMINISTRATION AND PROJECT EVALUATION

Recommendation 9: That it be explicitly recognised that the issue of taxation and charging to provide for transport and road use is separate from funding allocation to provide for transport and roading. This reflects the fact that arguments about the former generally relate to costs imposed and benefits received by particular road user categories, whereas the latter relates to costs outlain by and benefits received by the nation. The issue is important to this project because of the (usually sub-explicit) argument that cyclists 'do not pay' towards roading, and so 'should not receive' anything of substance from roading funds (and in other ways).

Recommendation 10: That cyclists' common law 'right to pass and repass' be safeguarded, through defined engineering criteria, as a requirement of all projects considered for funding, notably Transfund subsidy.

Recommendation 11: That a research programme be initiated to quantify the benefits stemming from cycling and currently under-developed in project evaluation methodology, and project evaluation methodology be amended accordingly.

Recommendation 12: That national policy – in the transport area and beyond the transport area – be incorporated into project evaluation methodology as criteria on which transport and road funding takes place.

Recommendation 13: Pending a more sophisticated basis for providing funding which would encourage cycling in line with its benefits to the nation, that government allocate a dedicated amount of funding specifically to cycling as a transport mode.

The argument that cyclists 'do not pay' towards roading and therefore 'should not receive' much roading investment, is fallacious. The 'right to pass and repass' – by whichever transport mode – is enshrined in common law, and so

should not be governed by arguments about 'costs and benefits' to particular road user groups.

Roading funds draw on taxes from motorised users, yet Transfund NZ is required to administer those funds by reference to costs and benefits to **the nation** as a whole. Road user taxation is a separate issue from costs and benefits of roading projects to the nation.

Cyclists' 'right to pass and repass' should be safeguarded in all roading projects. Examples of where particular attention is needed include fast-flow, high-volume roundabouts.

Some costs and benefits to the nation are very precisely quantified in decision-making methodology – for example, journey time and crash savings. Others are missed altogether – most notably preventive health benefits, though there are others.

Whereas preventive health benefits (to the nation, e.g. saved health service costs) have been quantified, other require further research to establish their significance.

Other factors do not lend themselves to economic benefit/ cost analysis, and would be better covered by a strategic policy context, which until now has been missing, but which now looks set to be filled by the forthcoming *New Zealand Transport Strategy* and strategies in other government policy areas. 'Strategic policy' up until now, has tended by default to equate to 'more of the same' (e.g. reserving extra land for future road widening which might be forecasted as needed at some unspecified time in the future).

Pending this work, a dedicated 'cycling fund' is recommended, building on the example of the Ministry of Transport's dedicated funding for public transport. The 'cycling fund's' level could be set by reference to mode usage figures (e.g. census).

Recommendation 14: That the contrasting messages about cycling from road safety and health agencies be integrated so as to form a unified coherent message.

Recommendation 15: Recognising the now-established clear outweighing of cyclist safety risk by accruing preventive health benefits, that cyclist crash and injury reduction strategies be set within the context of a holistic strategy to encourage an increase in cycling levels.

Recommendation 16: That deficiencies in cyclist crash data recording and analysis in official data sources (notably those of Police and Land Transport Safety Authority (LTSA)) be rectified.

Recommendation 17: That the Ministry of Transport (MoT), in conjunction with Land Transport Safety Authority's (LTSA's) three-year review of Land Transport Rules currently in progress, specifically

evaluate the impact current and future rules may have on cycling, and make recommendations accordingly. This responds in particular to concerns cycling interests have expressed regarding the impact Land Transport Rule No 32012 (Glazing, Windscreen Wipe and Wash Mirrors 1999) will have on their safety, concerns which have been acknowledged by LTSA itself as being valid.

Government policies on road safety and health are at variance with each other concerning cycling – the former stressing the danger, and the latter the positive health benefits. Reputable studies have now estimated years added to a person's life through regular cycling to outweigh years lost through crash risk by a factor of 20:1.

The measuring of 'danger' by reference to crash data is misleading. It can even be inferred that a road highly dangerous for pedestrians and cyclists is in fact safe, from a low crash record resulting from cyclists and pedestrians being too afraid to use it!

Furthermore, there is international and New Zealand evidence that the more cyclists, the lower the crash rate (relative to user number). This can, in simple terms, be referred to as a 'safety in numbers' phenomenon.

The conclusion of this is that the overall objective of policy – taking both health and safety factors into account – should be for increased cycling numbers, and then attention to reducing crash and injury numbers.

There are problems in the way cyclist crashes are recorded and analysed. For example, cyclist single-vehicle injury crashes are not even included in LTSA's database (whereas motorist single-vehicle crashes are included). LTSA crash coding does not account for common factors affecting cyclists (e.g. there is no code for the common 'squeezing' crash cause, or opening car doors). Police record crash factors under pressure and in the absence of training in driver psychology (e.g. a motorist reporting that (s)he 'did not see' the cyclist can be recorded as 'lack of conspicuity' on the cyclist's part).

The MoT/ LTSA 'Glazing Rule' enacted in 1999 destroyed in many cyclists' eyes any credibility that the LTSA could be concerned for cyclists' safety. LTSA had accepted cyclists' submissions on the rule proposal (to allow the tinting of car side windows) that vitally important peripheral vision detecting cyclists through side windows, could be lost. LTSA cite no substantial safety benefits from the new rule. Their statement in writing that they felt they had "*struck a reasonable balance between the interests of those who would like to tint their side windows and those who might be killed or injured as a result*", is telling.

Accordingly, all Land Transport Rules (including the 'Glazing Rule') should be 'audited' regarding their effect on cyclists, and changed/ repealed if costs to the nation of any particular Rule are found to outweigh its benefits.

ISSUE AREA: PROMOTION AND EDUCATION

Recommendation 18: That cyclist education be co-ordinated, expanded and refocused so as to be incorporated comprehensively in school curricula as a 'basic life skill'; given a greater element of on-road coaching; be provided for 'adults' (used here to mean all those of driving age) through on-road cycling instruction agencies; with a monitoring and regulatory function being provided through an appropriate safety agency such as the Land Transport Safety Authority (LTSA). Current initiatives on bicycle maintenance should be continued.

Recommendation 19: That the 'Road Code' be revised so as to incorporate adequate instruction for cyclists on how to negotiate particular road traffic situations; adequate instruction for motorists on how to safely and correctly interact with cyclists (i.e. 'share the road'); and to avoid the 'Road Code's current perception that its overwhelming function is to assist in driver education.

Recommendation 20: That learner driver training be revised to incorporate advice and training on how cyclists can be expected to manoeuvre in traffic situations, and how motorists should respond to them.

Recommendation 21: That the role of helmet wearing within road safety strategies be reviewed, to assess its relative importance compared to other elements of a strategy, and the message conveyed by the marketing of helmets, the whole to be assessed against overall cycling strategy objectives. This review could usefully include a review of the compulsory helmet law itself, whilst recognising that the legislative situation may well be less important than other aspects of the review, and should not distract from issues more crucial to cyclist safety (notably driver and cyclist behaviour).

Recommendation 22: That promotion of cycling – for preventive health or wider reasons – be embedded in lifestyles, for effective long-term take-up, covering the frequently insufficiently-recognised or actually downplayed practical feasibility of cycling for a very high proportion of journey needs.

Role models are lacking today of an adult cycling for everyday transport. Cycling tends to be seen as a 'children's activity', and the driver's licence as an adulthood 'rite of passage'. Cyclist education is unco-ordinated, and often relies on voluntary dedication. It overwhelmingly takes place in schools, thus further re-enforcing the 'for children' impression.

Cyclist education should be taught in schools as a 'basic life skills' in the same way that swimming is, but just like with driver education, necessary skills will only be acquired through on-road coaching.

The LTSA's *Safe Cycling Book* is welcome, but its targeting at children deters adults from reading it. It also fails to teach cyclists how to exercise right of

way (essential and common in any journey, e.g. responding to a motorist backing out of a driveway). The *Book's* encouragement for new cyclists to 'take an adult with them' the first few times is unrealistic, since adults are likely to lack necessary cycling skills themselves.

Licensing of cyclists is not recommended, because it would be difficult to administer, and the objective of safe cycling behaviour could be better achieved by this project's other recommendations.

The *NZ Road Code* is only published with a driver licence guide, which will not encourage motorists to read it once they have acquired their licence, and will not encourage cyclists to read it at all. The small amount of cyclist education in the *Road Code* only covers preparation to go on the road, and so will not teach road manoeuvring skills. None of the *Road Code* illustrations show a cyclist (except once as a 'hazard' for the following motorist-reader to avoid). [Note: The January 2001 edition of the *NZ Road Code*, published after the completion of this report, now shows a cyclist exercising right of way in two of the manoeuvring diagrams].

Manoeuvres which a cyclist will frequently need to exercise (e.g. occupying the centre of a lane to avoid being 'cut up' by left-turning traffic) are not pointed out to the *Road Code's* readers. Some situations (e.g. high speed merging) are impossible for a cyclist to negotiate, while others (e.g. 'get off and walk') are impractical or in some situations more dangerous than behaving like a car.

Helmet wearing and the compulsory helmet law appeal because they seem 'instantly effective', yet the counter arguments are rarely given serious consideration. Helmets may give a false sense of security (especially if marketed too forcefully), or reinforce the impression that 'cycling is dangerous' (which it is not if health benefits, or the effect on others, are taken into account). The compulsory helmet law was introduced in a climate of public emotionalism, and emotionalism continues to obscure reasoning by sharply polarised positions. The way helmets are marketed, and their often central place in road safety education, should be reviewed, in comparison with the greater importance of road manoeuvring skills education.

Marketing of cycling needs to 'embed' it in everyday lifestyles, rather than portraying it as a leisure, sport or fitness activity. Negative stereotypes implying cycling as 'impractical' for everyday transport needs abound and need to be countered. Examples include luggage capacity (no less that for public transport) hills (cycling levels are high in Alpine countries) weather (waterproof coats) dress codes (change at work), distance (the bulk of trips are short), passengers (most trips are single-occupant), pollution (motor vehicle occupants are affected to a greater extent).

ISSUE AREA: CITY/ REGIONAL INTEGRATED TRANSPORT POLICY

Recommendation 23: That in conjunction with work on the New Zealand Transport Strategy, the Ministry of Transport facilitate a project on the

development of 'best practice' to guide integrated transport strategies, focusing in particular on the larger urban areas (e.g. cities and conurbations). This work should take as its starting point robust analysis of the strengths, weaknesses, opportunities and threats of the respective modal transport options, as well as integration with urban form and other policy areas (e.g. energy usage). This work should also include, as a pre-requisite to it, scoping exploration of modal permutations and combinations which could be considered for further analysis. The project would conclude with findings which would then be used to contribute to the wider New Zealand Transport Strategy, setting a framework for transport policy developments at a more localised level, and as part of this an evaluation of 'integrated transport' planning exercises which have already taken place to date in New Zealand.

Recommendation 24: That a New Zealand Pedestrian Strategy Foundation Project, along similar lines to this current project, be set up taking into account the recommendations of the 1999/ 2000 National Pedestrian Project, with a view to a New Zealand Pedestrian Strategy being formulated, along similar lines to the New Zealand Cycling Strategy suggested under Recommendation 1 above.

'Integrated transport planning', relatively new in New Zealand but more developed overseas where congestion pressures are greater, relates to integration between transport and land use, or between different transport modes, sometimes also embracing other issues such as energy usage. However, in practice, it tends to focus around the car and public transport, thus missing cycling, walking and other modal possibilities out of consideration.

The Ministry of Transport's forthcoming *New Zealand Transport Strategy* provides the opportunity to address this. The variegated transport modal possibilities need to be identified, and a rigorous analysis of their strengths and weaknesses needs to be undertaken, to form the basis of strategy.

The omission or downplaying of cycling and walking is strikingly illogical when compared with the available relevant usage data. Cycling and walking are often just as significant as public transport in usage terms, and in one medium-sized NZ city each **three times** as significant as public transport. In spite of this, public consultation exercises (including both the NZ examples encountered by this study) tend to only offer the public a choice between the car and public transport.

Use of the term '*private transport*' as a euphemism for the car also disenfranchises cycling and walking. These modes share the car's inherent advantages of ready availability and route flexibility, yet are excluded from consideration by terminology (e.g. reference to a shift '*from private to public transport*').

The reasons seem to stem at least partly from the way transport has traditionally been defined and analysed. From the classic 1960s studies

onwards (e.g. Buchanan's *Traffic in Towns*), transport planning has focused on medium/ longer distance trips, mass volume 'corridors', clustered trip destinations, the journey to work and peak travelling time. All of these tendencies mitigate against walking and cycling being given serious consideration.

Social values, lifestyles and travel patterns have changed vastly since the 1960s. Greater complexity of lifestyles, times of travel, journey nature and purpose, and geographical pattern, all lend justification to academics and motoring interests who question the realistic potential of public transport to match the car in meeting users' needs. Correspondingly, the 'private' transport modes (e.g. car, cycling and walking) are at a greater advantage than often recognised in 'integrated transport' discussions.

Another problem is that, organisationally, 'integrated transport planning' exercises may be led by a collaboration between traditional roading bodies (e.g. territorial authorities) and bodies responsible for supporting public transport (e.g. regional councils). There are cases of cycling and walking interests being deliberately excluded from consultation, to make processes 'tidier'. These studies may in practice amount to agglomerations of roading and public transport projects, with little theoretical basis (ironically, sometimes alongside pro-active cycling strategies).

Other neglected modal possibilities include taxis and shuttles, ultra-light rail (e.g. Maglev, Parry), bike parking at stations and bikes on buses.

Walking would merit a study similar to this present project. This would build on the work of the *New Zealand Pedestrian Project*, which recommended that the Ministry of Transport lead policy and strategy development, but did not explore particular issues in the way this project has done. Walking suffers from lacking cycling's 'green icon' perception. It is much more common than cycling, yet few people identify themselves as 'pedestrians'. The needs of the two modes may also differ markedly, so discussion of solutions should not 'lump them together' (e.g. cyclists need to move along a road, pedestrians need to cross it).

ISSUE AREA: INFORMATION EXCHANGE AND PROFESSIONAL DEVELOPMENT

Recommendation 25: That appropriate agencies facilitate information exchange and development of 'best practice' advice in cycle planning and engineering, with a particular focus on local practice.

Recommendation 26: 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'.

Recommendation 27: That support be provided to enable the two New Zealand Cycling Symposia which have already taken place to develop

into an ongoing conference network similar to (and in communication with) other international cycling conference networks. These conference networks include VeloCity (Europe), ProBike (North America), VelOZity (Australia) and VeloMondial (VeloCity and ProBike collaboration).

Recommendation 28: That appropriate agencies, as outlined in recommendation 27 above, provide financial and other practical support to the Cycling Advocates' Network's Annual Meetings – of which the 'CAN Do' attached to the 'Making Cycling Viable' symposium was the first – on condition that (except for a confidential 'business meeting' component) they be open for wider attendance.

Recommendation 29: That cycling practitioners be encouraged to form into a 'Cycling Practitioners' Network', meeting annually for information exchange as described below, with financial and practical support provided by the organisations suggested under recommendation 27 above.

Cycling initiatives have generally come from the 'bottom up', not only in New Zealand (e.g. Christchurch's early initiatives forming the basis for the first government material), but also Australia (building on Victoria's *Geelong Bike Plan*), and the Netherlands and UK.

Putting specialists in touch with each other would greatly help advance best practice in engineering and general policy development. Channels which have done this (e.g. the *IPENZ Transportation Group Traffic Management Workshop* and various reports, newsletters and email networks) have shown strong support not only from existing cycling specialists, but also from non-specialists who want to learn.

'Cycling Officers' are a positive and key role, but worryingly often come under intense personal discouragement and pressure under perceptions of being a 'cycle lobbyists' mole', or conversely a 'tool of the establishment', or both at once. They are generally of low status and have no career structure, and their skills (beyond basic professional training) are often acquired 'on the job'. Raising their status through the information exchange suggested would not only raise their skills further, but may also ease the pressures under which they work and help retain their skills.

Training courses are also needed to give generalist professionals a basic grounding in cycling planning and engineering. Even this is omitted from existing mainstream courses, and discussions could usefully take place with academic institutions, professional bodies, and accreditation agencies, including definition of such training as '*Continuing Professional Development*'.

The two New Zealand Cycling Symposia should be developed further, and be placed into communication with the other main international cycling conference networks, with grants from a range of bodies continuing. The New

Zealand Symposia to date encouragingly mirror the beginnings of the now well-established networks in other parts of the world in previous years.

The annual gatherings of the Cycling Advocates' Network (CAN) could usefully be grant-aided, and opened to wider professional and government participation. `Cycling practitioners' could usefully join together in a series of annual day gatherings (hosted by different cities), for which the highly successful UK *Local Authorities Cycle Planning Group* forms a useful model.

ISSUE AREA: NON-GOVERNMENTAL ORGANISATION SUPPORT AND DEVELOPMENT

Recommendation 30: That cycle users be represented on the National Road Safety Advisory Group (NRSAG)

Recommendation 31: That the Cycling Advocates' Network (CAN) be granted a full-time, professionally paid Development Officer/Administrator to enable CAN representatives – who are reliant on their `spare time' and members' subscription finance – to perform their current effective function of `professional advice' to government and other official agencies.

Recommendation 32: That the Bicycle Industries Association New Zealand (BIANZ) set up a `Bicycle Development Fund' similar to that set up within the last two years by the Australian Bicycle Industries and Traders Association (BITA).

Cycle user organisations need to be involved in consultation as other road user groups are (e.g. the AA), so that the cycling perspective is not overlooked. Cycle user organisations should be paid when their work extends beyond consultation to, in effect, giving specialist professional advice which mainstream agencies lack. There is commonality of interest between cycling user bodies and the cycling industry, and an industry fund as suggested could sponsor joint research to support advocacy.

ISSUE AREA: TOURISM AND INTER-URBAN MOVEMENT

Recommendation 33: That the role and potential of `cycle touring' be further explored, subject matter for such exploration including inter-urban State highway issues (such as the recent trials of thermoplastic markings); the potential development of off-road trails and their contribution to national policy objectives (using the Otago Rail Trail as an example); on-road cycle tourism initiatives (such as the Marlborough Wineries Network); bike carriage on inter-urban public transport; and overseas models for national cycle networks.

Inter-urban cycling, whether for utility or leisure purposes, must be provided for. New Zealand has relatively little `side road' networks, and the State highway network is often the only option for inter-urban travel. Road width

and surface quality need to be addressed, including roadside shoulder cycling provision.

Cycle tourism should be embraced by Transit New Zealand, in the same way that motor-borne tourism is. Tranzrail and ferries need to take cycling into account as an option in its statistical user surveys and planning (it has been omitted from questionnaire options), and cycle carriage charging needs to be sensitive, especially for multi-stage journeys. Local cycle tourism initiatives need to be built on and incorporated in a national strategy.

'Getting There – Dropping the Foundation'

This brief section outlines a possible process, giving expression to *Recommendations 1 – 3* above, including the work being overseen by an *Inter-Ministries' Group* chaired by the Ministry of Transport and reporting to Cabinet.

1. Documentation Structure

Note: This is the Project's `Provisional Edition'. The bibliography, illustrations to this Main Report, and Supplementary Report 4: Photographic Record, are not as yet available.

This `Provisional Edition' is published in October 2000, while discussions take place on resources by which the Full Edition, including the above, can be published.

1.1 This is the Project's **Main Report** – read it if you want the `meat' of the project, including the *Recommendations* that flow from it.

1.2 **Supplementary Report 1: Process** sets out in `blow by blow' form the application, planning carrying out of the project.

1.3 **Supplementary Report 2: Consultation** gives the feedback to the consultation undertaken throughout the project. This includes feedback before and at the Second New Zealand Cycling Symposium *Making Cycling Viable*. This report stands well on its own as a thought-provoker.

1.4 The main basis for consultation was the **Interim Position Statement**, produced half-way through the project (February 2000) and now reproduced as **Supplementary Report 3**. This gathered together material from the Study Tour and Literature Search as an introductory background followed by issue discussion and the posing of questions. It concludes with samples of `the proof of the pudding' – cycling facilities and other engineering `on the ground' which have resulted from the current `state' of cycling policy and engineering. Read it if you want a basic introduction to relevant issues.

1.5 More photographs are contained in **Supplementary Report 4: Photographic Record**. All the *Interim Position Statement* photos are in here, together with others. I've always thought that this type of thing could be called `the good, the bad and the ugly'. They are all honest attempts to provide for cycling – some work well, others less so, and some fail. See them as a `barometer' of the policy and decision-making context which has given rise to them.

1.6 This *Main Report* also has an **Appendix** containing a **Select Bibliography**. It is impossible in a project with resources as limited as this one to comprehensively list all written sources that are of value on the subject. The *Appendix* lists those which have been found of particular value, as a `pointer' to further research. Some well-known `mainstream' resources have not been listed – it being assumed that they are already well-known to a technical audience; the stress is placed instead on `specialist' material from often lesser-known sources.

2. Project Outline

2.1 The *New Zealand Cycling Strategy Foundation Project* is funded by the *Institution of Professional Engineers New Zealand (IPENZ) Transportation Group*, with support in kind from Hamilton City Council.

2.2 It responds to the question – being asked in many quarters – as to whether New Zealand should have a National Cycling Strategy, and the issues needing consideration in cycling strategy development (whether through a separate strategy or not). This interest has been heightened by the adoption of the *Australia Cycling 1999 - 2004 National Strategy* in February 1999.

2.3 The project also comes at the time of a new government – elected after the project had started – which has committed itself to preparation of a *New Zealand Transport Strategy* including greater emphasis on alternatives to car use. This adds topicality to the project, but as a professionally-funded exercise, the project does not venture into participation in government policy formulation, nor into cycling advocacy.

2.4 The project does not seek to draft a New Zealand Cycling Strategy. The range of perspectives on the background issues are so broad, and the communication between them so underdeveloped, that significant ‘foundational’ work is first needed in the form of identification of issues and actions on them.

2.5 The *recommendations* which follow are cast in general terms, and could be taken forward into a more structured cycling strategy development should the appropriate agencies (most notably, government) decide this were appropriate. Nothing would be gained from ‘plagiarising’ overseas strategies (e.g. those of Australia, the Netherlands, Britain), useful though these would be as ‘benchmarks’ if the project were taken further. It is considered that a New Zealand strategy should be based on the working through of issues by New Zealanders, and only after this benchmarked against overseas practice.

2.6 To date the project’s work has comprised:

- a study tour of seven New Zealand cities (November – December 1999)
- a literature search (November 1999 – January 2000)
- production and dissemination of an *Interim Position Statement* summarising research findings, consultation, perspectives on issues, raising questions and inviting comments (February – March 2000)
- collation of comment extracts from ‘primary stakeholders’ for further consultation in a ‘simplified delphi’ process (April – May 2000).
- drafting recommendations for individual detail-specific informal consultation (May – June 2000)
- preparation of a paper for general consultation through *Making Cycling Viable* and directly with individual stakeholders (June – July 2000)

- collation of results of consultation on recommendations and the *Making Cycling Viable* paper (July – August 2000)
- preparation of output documents for outline presentation of the project at the IPENZ Transportation Group's (annual) Traffic Management Workshop (August 2000)
- production of output documents (October 2000)

3. Issue Areas and Recommendations

3.1 *The recommendations which follow are based around 'issue areas'. Rather than get into matters of detail (for example, model designs for cycling facilities), the focus is on the underlying issues on which progress in more detailed areas crucially depends. Action on these would tackle the one issue which, above all others, has thwarted attempts to effectively tackle cycling needs over the years – the exclusion of cycling from mainstream policy and practice – and this is the reason for the project's title.*

3.2 *The short explanatory text under each recommendation gives some reasoning as to why the recommendation is considered important. A fuller outline of some underlying issues is given in the 'Interim Position Statement' (Supplementary Report 3), and reflections on them by various parties in Supplementary Report 2 'Consultation'.*

ISSUE AREA: POLICY AND STRATEGY

Recommendation 1: That a New Zealand Cycling Strategy be prepared, paying attention to integration with respectively relevant public policy portfolio areas (e.g. transport, energy, health, education, environment).

R1.1 Notwithstanding the widespread interest in a national cycling strategy – the prompt for this project – there are actually **disadvantages** of having a *New Zealand Cycling Strategy*. It is more important to consider firstly how cycling should be treated in public policy. The question of whether this is best achieved through a separate *New Zealand Cycling Strategy* comes afterwards.

R1.2 A separate cycling strategy runs the risk of being marginalised. This tendency has bedevilled cycling policy throughout its 20 – 30 year history. Cycling policies and strategies have often said 'all the right things', but have suffered from being seen as somehow 'extra' to the rest of policy – and consequently not consulted except by 'cycling specialists'.

R1.3 Another aspect is that the relationship between an otherwise good 'cycling policy' and the rest of policy is neglected. Where there are tensions, and 'trade-offs' are required between conflicting policy objectives (itself a sign of a lack of policy rigour), it is generally the cycling that is required to 'give way' (whether consciously or not).

R1.4 This 'separateness' problem has translated into the outflow actions of policy. One example of this is the tendency to see 'engineering for cycling' as

`designing cycling facilities'. Another is the general tendency of cycling-oriented road safety work covering cyclist behaviour, but not the motorist behaviour which is such a large part of the threat to cyclists' safety.

R1.5 It could also be argued that, since the government intends that a *New Zealand Transport Strategy* be prepared, a *New Zealand Cycling Strategy* should be a `subset' of that work. On the other hand, strategy work on cycling serves other public policy areas as well (e.g. energy, health, environment, education).

R1.6 However, the government's proposed *New Zealand Transport Strategy* is to be underpinned – explicitly, in Ministry of Transport statements – by considerations of economic, environmental and social sustainability. The location therefore of *New Zealand Cycling Strategy* work within the Ministry of Transport would therefore not neglect integration with the rest of the totality of government policy. And the Ministry of Transport would be the logical place for such work, because cycling's essential purpose is – quite obviously – as a means of transport.

R1.7 Whilst integration of policy across the totality of public policy areas is beyond this project's scope, some of the *recommendations* that follow bring this need into focus. For example, cycling is currently treated in the `road safety' and `health' policy areas in sharply contrasting ways. The criteria used in project evaluation, as a basis for allocation of national roading funds, are drawn fairly narrowly, omitting aspects such as the national preventive health and environmental benefits which are demonstrably known to stem from increased cycling. So-called `integrated transport policy' in cities often fails to look beyond public transport as a car-alternative mode (even, ironically, where the local body responsible also has a progressive cycling policy!). These examples – and others – underline the importance for cycling policy to be integrated with wider public policy areas, including transport and beyond transport.

R1.8 If integration with wider policy is addressed, a strong argument in favour of a separate *New Zealand Cycling Strategy* is the specialised nature of the expertise involved. It is clear that expertise exists, to a high level of sophistication, but there is a major problem of the expertise failing to be acknowledged by `mainstream' professionals.

R1.9 A separate *New Zealand Cycling Strategy*, led by the Ministry of Transport, would ensure specialist cycling expertise is tapped. Work on such a strategy would need to keep in continual dialogue with the work on the *New Zealand Transport Strategy*, as well as strategies in other government policy areas.

R1.10 It is suggested that the following *recommendations* could form the `raw material' for work on a *New Zealand Cycling Strategy*. As part of such work, they would be scrutinised, evaluated, refined and structured, with more consideration being given also to the agencies and processes through which

implementation would take place. A suggested process by which this could be done is outlined in section 4. *Getting There!*.

Recommendation 2: That a New Zealand Cycling Forum representing cycling stakeholders and official organisations be convened under the auspices of the Ministry of Transport. This Forum would have the functions of:

- ***overseeing preparation of the New Zealand Cycling Strategy***
- ***overseeing implementation of the New Zealand Cycling Strategy***
- ***acting as a 'reference group' on cycling implications of ongoing public policy issues***
- ***reviewing the New Zealand Cycling Strategy as determined appropriate under the Strategy itself***

R2.1 Section 4 *Getting There!* suggests an organisational structure by which work on a *New Zealand Cycling Strategy* could be progressed. Central to this is a *New Zealand Cycling Forum*.

R2.2 Full consideration of cycling within public policy is under-developed. A 'reference group' to facilitate dialogue with users is needed in any policy area, but all the more so in the case of cycling, where its lack of integration 'into the mainstream' has been so apparent.

R2.3 A *New Zealand Cycling Forum* would bring together representatives 'horizontally' across the spectrum of government policy, as well as 'vertically' from cycle users and industry.

R2.4 Apart from central government agencies, local Road Controlling Authorities (RCA) would be represented. Because cycling tends to be seen as 'local' in its focus, much policy development and strategic action has taken place at the local level. RCA representation could be through the *RCA's Forum*, or alternately through the 'Cycling Practitioners Network' suggested under *Recommendation 29*.

R2.5 The two main New Zealand national cycling organisations are the *Cycling Advocates' Network (CAN)* and *Cycling Support New Zealand (CSNZ)*. The former represents, and actively advocates for, urban 'transport' cyclists and cycle tourists, whereas the latter comprises a broader coalition including sport and recreational bodies as well as industry. Both bodies started independently of each other in 1996, though with broadly common objectives. Whilst *CAN* is a constituent member of *CSNZ*, it has a pro-active advocacy role in its own right.

R2.6 At the time of writing, *CAN* and *CSNZ* have (since the July 2000 *Making Cycling Viable* symposium) engaged in renewed dialogue to clarify their respective roles. The situation between them is somewhat fluid, but it does seem clear that each has their own valuable perspective to give, and therefore it is suggested that they both be represented on the *New Zealand Cycling Forum*.

R2.7 The *Bicycle Industry Association of New Zealand (BIANZ)* although an affiliate member of CSNZ, should have its own *Cycling Forum* representative, regardless of the outcomes of CAN/ CSNZ discussions. BIANZ has a specialist industry perspective, which neither CAN nor CSNZ could realistically be expected to speak for.

R2.8 The suggested *New Zealand Cycling Forum* would be based (subject to further consideration) on this project's '*Primary Stakeholders*' (see *Process and Consultation Supplementary Reports*). It would be (co-incidentally) not unlike the *Bicycle Councils* existing in each Australian state/ territory, and the *Australian Bicycle Council* itself (New Zealand is a full member of the latter by virtue of Transit New Zealand's membership of the inter-state *Austroads* liaison body, of which the *Australian Bicycle Council* is the '*Reference Group*' on '*Bicycles*').

Recommendation 3: That a support staff function for the New Zealand Cycling Strategy be created within the Ministry of Transport, to progress and monitor cycling policy and strategy development.

R3.1 The reason for the suggestion of a staffing function for the *New Zealand Cycling Strategy* is a simple one: someone needs to drive the work, and be the '*first point of contact*' for liaison in connection with it.

R3.2 The size and responsibilities of the staffing function are beyond this project to determine. Current governmental structure suggests that many, perhaps most, of the *recommendations* that follow would be addressed by a multiplicity of agencies, including government departments, Crown-owned agencies, other statutory bodies, the local government and non-governmental sectors, specialist consultancies and various grant-making research bodies, rather than the Ministry of Transport directly. Precise organisational responsibilities are to be determined, and a starting point towards this is given in section 4 *Getting There!* The staffing function suggested here is to start addressing this – not so much **direct** implementation of the *New Zealand Cycling Strategy*, but rather leading the work of determining how and by whom it is to be implemented. The staffing function would remain in order to ensure co-ordination and smooth progression of the work, and in due course the periodic monitoring and review of the *Strategy*.

R3.3 Again co-incidentally, this suggestion has parallel in the Australian situation. State and territory governments typically have a *Bicycle Unit* (or staff by some other name devoted to cycling strategy progression), whose representatives (and others) meet together as the *Australian Bicycle Council (ABC)*. The author of this project represents New Zealand on this (Austroads-affiliated) body.

ISSUE AREA: ENGINEERING DESIGN

Recommendation 4: That a 'Cycling Engineering Research Programme' be set up and funded within the work programme of the Land Transport

Safety Authority (LTSA), the results to be used as a basis for issuing official advice on 'best practice' for the guidance of Road Controlling Authorities. Road Controlling Authorities (RCAs) wishing to participate in this programme should be grant-aided by Transfund NZ

R4.1 Currently, official government cycling engineering advice is under-developed, to the extent that some official guidance is contradictory; some is non-existent in areas where it is needed; and it fails to take into account the sometimes considerably more advanced state of cycling engineering in some overseas countries.

R4.2 It should not therefore seem surprising that local RCAs who wish to address the needs of cycling, look overseas for their 'best practice' model examples. Also very telling is that, with only one exception, all trials of new cycling designs currently underway in New Zealand take place outside the auspice of the LTSA (the body officially responsible for official road design advice).

R4.3 It is difficult to see how the Ministry of Transport (MoT)'s proposed *Safety Management System (SMS)* could work effectively, so far as cycling is concerned, in this situation. The *SMS* relies on codifying engineering best practice – but if (in the cycling area) the state of 'best practice' is in the current parlous state, the foundations for codification will not be there.

R4.4 Currently, the main official source of advice (i.e. advice with any statutory status) is that contained in the Transit New Zealand/ Land Transport Safety Authority (LTSA) *Manual of Traffic Signs and Markings* ('*MOTSAM*') (1997/ 98). As a manual on just this – traffic signs and markings – the advice does not cover issues of design (e.g. it guides the signs and markings to be used, but not how to arrive at the road design that would require them to be used).

R4.5 Further official advice is contained in the earlier (former) National Roads Board/ Urban Transport Council *Guide to Cycling Facilities* (1985). Although the cycling content of *MOTSAM* was based on this, the earlier guide has been not totally superseded by *MOTSAM*, in that it (rather than *MOTSAM*) is recognised as a criterion document by Transfund NZ.

R4.6 There is ambiguity among even this limited material. The most common cycle sign – a white cycle symbol on a blue circular background – is described in the *Guide to Cycling Facilities* as referring to 'advisory routes' as well as 'cycle lanes'. This description indicates a part-information, but also part-regulatory function, and the sign is categorised under 'Information Signs' in the *Guide to Cycling Facilities*. However, with a similar description, the same sign is categorised under *Regulatory Signs* in *MOTSAM*. It is unlike other *MOTSAM Regulatory Signs* in that it has no actual regulatory function.

R4.7 Even more significantly, in the *Road Code* – the only material lay roads users have any likelihood of reading – the same sign is plainly misleadingly referred to as an example of 'Signs Which Tell You What You Must Do', as

referring to a 'Cycle Lane'. Although no doubt a well-meant rendering of MOTSAM's technical terms into lay English, the description is clearly not accurate for this particular sign, because of the ambiguity referred to above. An example of the impact of this is the sign's commonly usage (quite correctly, according to MOTSAM) in Christchurch to indicate that city's extensive network of advisory 'side road' cycle routes, which have few or no cycling facilities at all. Because of the confusion surrounding the meaning of this sign, Christchurch have indicated they no longer intend to use it.

R4.8 Cycling infrastructure design and engineering (which is much wider than 'cycling facilities', let alone 'signs and markings') has been in a state of evolution over about the past 20 years in New Zealand, accelerating over the last 5 – 10 years. Overseas, the 'state of the art' has been more sophisticated. Closest to home, and with which New Zealand has strong roading authority ties, is 'Austroads', the inter-state roading authorities liaison body of which Transit New Zealand is a full member. Austroads has (over several years) produced a *Guide to Traffic Engineering Practice* in the form of several manuals covering specific areas. *Part 14* of the *Guide* is a manual referring to *Bicycles*.

R4.9 *Austroads Part 14* was revised over 1996 – 98 and republished in 1999. New Zealand's input to this revision was co-ordinated by Christchurch City Council. Considerable numbers of cycling specialists from RCAs, consultancies and the cycling advocacy sector, participated in this work (often unpaid), and the resulting input to the *Guide's* revision was valued by Austroads. The LTSA, however, although invited, did not play a part in the work at central level, citing lack of staff resources.

R4.10 This in itself probably highlights another problem – LTSA's doubtful ability, in its current staffing responsibilities, to lead the *Cycling Engineering Research Programme* which it appears is needed. Currently, the most substantial cycling engineering research programme takes place in Christchurch, outside LTSA's management. Other trials take place elsewhere in New Zealand but, except for Hamilton's Advanced Stop Line Trials, these too are outside LTSA's management. In theory, one could suggest that all these trials be brought under LTSA's management – except, going by LTSA's limited involvement in the *Austroads Part 14* revision, the organisation is not currently in a position to lead this work.

R4.11 This in turn brings into question the basis on which LTSA's work priorities are set. These are based on the *Safety Directions* methodology. Although largely outside the scope of this project, *Recommendation 15* below discusses further this methodology with respect to its crash-data basis for the definition and measurement of 'safety' (which causes problems so far as cycling is concerned in areas other than engineering). It does seem that perhaps the *Safety Directions* methodology itself needs revisiting, but rather than venture into what is in itself a complex area requiring detailed consideration, this project will conclude by saying that the *Cycling Engineering Research Programme* suggested above is very much needed, and it is

important that – on whatever basis – it should be worked into LTSA’s work programming.

R4.12 The contents and priorities of the *Cycling Engineering Research Programme* obviously need considerable thought, but the following illustrates the state of the problem.

R4.13 Apart from the rigorous Christchurch cycling design research programme, the LTSA-managed Hamilton Advanced Stop Line trials, and some others, cycling facilities are often designed by a combination of pragmatism, hunch, ‘suck it and see’, and ‘ask the local cyclists – they’ll know’ (which is about on a level with asking the local AA branch to design a motorway). If this seems too harsh a judgment, some of the photographic examples in *Supplementary Report 4: Photographic Record* (and already published in *Supplementary Report 3: Interim Position Statement*) support such a judgment. The local RCAs responsible (which have been kept anonymous so far as possible, their identity being considered irrelevant to this project) should not be blamed too much – much of the fault lies with the current state of definition of cycle engineering best practice, and the priority accorded cycling in road safety and funding methodologies.

R4.14 There is even one place where different cycle lane designs exist within the same city. Here, Transit NZ has used the *MOTSAM* cycle lane design – cross-hatching with bike logos – on one of its state highways, while the local RCA is trialling coloured surfaces with bike logos for cycle lanes on its own roads.

R4.15 Then there is the argument over the colour of cycle lane surfacing. Christchurch used red, Hamilton and Auckland green. An informal meeting of interested delegates at the 1999 IPENZ Transportation Group Traffic Management Workshop resolved that green surfacing should be used, but the way this decision was reached – a straw poll of those who happened to be at a conference and were interested – says a lot about the lack of procedural development. This decision, although unofficial, was respected throughout the country for a year, added to by Transit NZ’s decision in the second half of 2000 to use green. However, soon afterwards, Christchurch councillors resolved that they would continue to use red – perhaps prompted by Christchurch’s self-conscious perception of being New Zealand’s ‘leading cycling city’. The fact that green and red are colours associated respectively with the Waikato and Canterbury rugby teams appears to be entirely coincidental!

R4.16 It is understood that LTSA have been unhappy at some of Christchurch’s innovations, whilst accepting that most of this work has been of value, and that it is this which has held up *Austroads Part 14* being accorded official endorsement; these particular issues need to be talked through and resolved. Recognition also needs to be given to the statutory and cultural difference between Australia and New Zealand in application of the *Austroads Guide*. It is understood that LTSA are to commission a *Users’ Guide* for

Austrroads Part 14 in New Zealand, which is to be welcomed and will go a significant way towards resolving these concerns.

R4.17 Manuals besides *Austrroads Part 14* are little known in New Zealand, but are used occasionally. Prime among these are the Dutch *Sign Up For The Bike* Manual (published in English by the Dutch government agency CROW) and the UK's *Sustrans National Cycle Network Design Guidelines* (published by consultants Ove Arup for the unofficially planned, but officially endorsed, *National Cycle Network*). The *Sustrans* guide has been used in some arterial road feasibility study work for Wellington City Council. It might be useful for the *Cycling Engineering Research Programme* to trial some of these designs too, drawing particularly on the experiences of the RCAs and consultancies who have used, sought to use, or trialled them.

R4.18 However, whatever disagreements on cycling engineering design, it is abundantly clear that the bulk of current research work carried on outside LTSA management and is of value. This project therefore suggests that the *Cycling Engineering Research Programme* should be based on a dialogue built up between LTSA, Christchurch and other cities pioneering new designs – and definitely not set up somehow ‘in competition with’ them. The Christchurch and other unofficial RCA trials (including those by Transit NZ, which has no more status legally than any other RCA on this matter) must be integrated with a renewed ‘push’ on the subject from within LTSA, embracing LTSA’s Hamilton Advanced Stop Line trials in the process.

R4.19 To date, cycling engineering research has ‘just happened’, led by RCAs with a particular wish to provide for cycling. Further encouragement than this is needed – since a significant acceleration in the rate of research is needed – and as an incentive it would be appropriate for Transfund NZ to give grant assistance to RCAs wishing to participate in trials. The dedicated cycling Transfund budget recently suggested as a possibility by MoT (see *recommendation 15*) is a possible source of funding.

R4.20 The *IPENZ Transportation Group Traffic Management Workshop 1999* resulted in a decision for a *Cycling Issues Working Party* to be set up, convened by Christchurch City Council Cycle Planning Officer Alix Newman. As part of this project, discussions confirmed that this working party would mainly focus on engineering issues. Bearing this in mind, combined with Christchurch’s strong competency and track record in cycling engineering innovation, it would seem sensible for this *Cycling Issues Working Party* (which has not as yet been convened) to be brought into the *Cycling Engineering Research Programme* suggested here.

R4.21 A further development, through which the above recommendation could fully or in part be addressed, is the LTSA’s intention that a technical working party will be formed to advise on the formulation of the forthcoming *Traffic Control Devices Rule*. Whilst this is not cycling specific, it should be co-ordinated with the *Cycling Engineering Research Programme*. The author has been asked to represent cycling perspectives on this working party.

Recommendation 5: That the `Cycling Engineering Research Programme' (Recommendation 4 above) be integrated into the Ministry of Transport's (MoT's) proposed `Safety Management System', taking into account the needs identified and the programme outline proposed to address those needs.

R5.1 The MoT's *Safety Management System* will codify and define engineering best practice, with the intention that responsibility for ensuring a `safe roads' environment (as distinct from `safe people' and `safe vehicles' factors in crashes) should be passed to RCAs. RCAs' exercise of their new responsibilities would be defined and measured by reference to the extent to which the roads for which they are responsible conform (or not) to the standards set out in the *Safety Management System*. This is analogous to systems currently governing other transport modes (e.g. rail, sea, air).

R5.2 Allowance needs to be made for the ill-defined nature of best practice in the cycling engineering area. Clearly progress towards a *Safety Management System* cannot await the outcomes of the *Cycling Engineering Research Programme*, especially since the latter would no doubt take several years and could thereafter be ongoing. However, the *Research Programme* could early on identify where the `gaps' lay – i.e. areas where attention needed to be directed. This in turn could (and this project suggests should) be specifically highlighted in the *Safety Management System*. In areas thus identified, allowance for deficiencies in `best practice' definition would be made in the monitoring of RCAs' exercise of their responsibilities. On the assumption that the *Safety Management System* would be a `living document', specific cases of refinement of best practice could be incorporated in the *Safety Management System* as research was brought to a state sufficient for best practice official advice to be issued. However, the advent of the *Safety Management System* does highlight the urgency of setting in place and progressing the *Cycling Engineering Research Programme*.

ISSUE AREA: ROAD TRAFFIC LAW AND LAW ENFORCEMENT

Recommendation 6: That a review be undertaken of the legal status of cycling facilities and their signage, and legislative changes be introduced as appropriate, through work the LTSA is embarking on towards a `Traffic Control Devices Rule'.

R6.1 The current situation regarding the signage of cycling facilities is ill-defined, meaning that the legal status of even those cycling facilities with `official' status (i.e. those contained in *MOTSAM*) is ambiguous.

R6.2 The text under *Recommendation 4* outlines the problems, but this review could be undertaken regardless of any action is taken to address *Recommendation 4*. In addition, legislative implications of any changes

stemming from *Recommendation 4* would need to be integrated with the review suggested here.

R6.3 The LTSA is starting work towards a *Traffic Control Devices Rule*. This is a wide-ranging exercise, and not cycling-specific, but would provide the appropriate vehicle for the review now suggested. As mentioned above, the author is to represent a cycling perspective on the *Rule's* Technical Advisory Group.

R6.4 Apart from the *MOTSAM* cycle sign (white cycle symbol on a blue circular background, *MOTSAM* reference RG 26), *MOTSAM's* white-painted road marking symbol is the other main *MOTSAM* example of ambiguity. This is generally used to mark cycle lanes or paths (on or off the road carriageway), and to supplement sign RG 26.

R6.5 The white painted road marking has no regulatory function. It does not prohibit motor vehicles from driving or parking on a cycle lane marked with it, although the *Road Code* tells drivers not to do so. To ban cars, separate regulatory provisions are required (e.g. 'Clearway'), which is confusing, cumbersome, and sometimes missed by Road Controlling Authorities (RCAs).

R6.6 The legal definitions of terms referring to cycling facilities are also confused. The terms 'cycleways', 'cycle tracks', 'cycle lanes', and 'cycle routes' are referred to in statutes and manuals, but only 'cycle tracks' are defined anywhere – i.e. in the Local government Act, under which an RCA can create them. A 'cycle track' can be any part of a legal road (i.e. on or off the carriageway) that the RCA chooses to so declare, and although it precludes use by motor vehicles, there is no prescribed signage to indicate this.

R6.7 The legislative procedures required to create an off-carriageway shared pedestrian path within the boundary of the 'road' (i.e. property boundary to property boundary) are cumbersome. Although a simple piece of engineering, and often part of a larger roading project, cyclists are not permitted to use such a path unless separate legal procedures are promulgated (e.g. a Territorial Local Authority bylaw).

R6.8 Cyclists are also legally prohibited from using 'accessways', which in many instances can be important links for cycling accessibility routes. There is a need to be able to vest land in subdivisions as an 'accessway' that is able to be used by cyclists.

Recommendation 7: That traffic law be reviewed with respect to cyclists, and changes made as appropriate, to reflect the finding that, in some cases, cyclists' motivation in disobeying traffic law is to protect their own safety

R7.1 **This project in no way condones irresponsible cyclist behaviour**, but there are cases where cyclists break traffic law to protect their own safety. This general issue was the subject of a paper by Kerry Wood at the July 2000

Palmerston North symposium, and raises fundamental questions about the law itself. There must be something wrong if a law intended to **promote** safety actually works **against** safety for some users.

R7.2 Road design and general traffic behaviour patterns often render official behaviour advice (notably in the *Road Code*) impractical for cyclists. Cyclists sometimes respond by making illegal manoeuvres. Common examples include:

- Proceeding straight ahead from a left-only lane at a multi-lane intersection;
- Positioning in front of the stop line at a combined left-turn/ straight-ahead lane at an intersection to avoid being 'cut up' by traffic turning left;
- Using the 'wrong' lane in a multi-lane roundabout to minimise risk of conflict caused by the speed differential with other traffic;
- Cycling on the footpath to avoid a dangerous fast-flow complex traffic situation;
- Cycling up a one-way street for the same reason.

These are a few obvious examples; there will no doubt be more.

R7.3 Any exceptions to traffic law for a particular user group must only be made with great caution, since to do so might cause confusion, and thus uncertain traffic manoeuvres posing more of a threat to safety than did the original situation. It also sets a precedent which could then be used to condone behaviour that truly is irresponsible. However, equally problematical is the alternative – to condone illegal behaviour for the sake of safety.

R7.4 Another factor is disbenefits to other user groups who may encounter even greater problems of this kind than do cyclists. Pedestrians are a case in point. Calls to legalise roadside footpath cycling are sometimes heard, either generally or for specific situations. Here, the costs to pedestrians' safety or freedom of movement need to be very carefully considered. It also needs to be asked whether a more appropriate alternative is re-engineering the carriageway so that cyclists can exercise their rights in relation to motor traffic. This could be technically or politically more difficult, and could require road user education, but the question must be considered.

R7.5 An example of problems that can arise is the exception to the nationwide *Australian Road Rules*, promulgated last year, allowing cyclists to go against the lane markings on multi-lane roundabouts. This has caused a great amount of contentious debate, including the claim that this well-meant exception has in fact diminished cyclists' rights as equal road users. This is a salutary lesson that general traffic law regarding a particular user group should not be 'tampered with' lightly – although this is not a reason for not considering doing so.

Recommendation 8: Law enforcement in respect to cycling should be targeted at both motorists and cyclists in accordance with the other recommendations of this report.

R8.1 Traffic law enforcement with the objective of 'cyclist safety' is currently often taken to mean 'traffic law enforcement directed at cyclists'. Whilst this

will be needed, often more significant is the crucial effect of motorist behaviour on cycle safety.

R8.2 Some motorist irresponsible behaviour, and actual offences, which significantly affect cyclists, are endemic and often very casually regarded. Examples include speed limit violation, mobile phone use while driving, and 'squeezing' a cyclist into the kerb. It is also appears to be generally unknown that it is illegal to overtake a cyclist (as any other vehicle) whilst traversing an intersection.

R8.3 Some of the problem appears to be the paucity of advice on how cyclists should behave on the road, and how motorists should behave in relation to them (highlighted elsewhere in this report), and this will take some time to be clarified for the guidance of motorists, cyclists and Police. Some impacts are known now (for example, the examples cited above), and so a start can be made in the short term.

R8.4 Pending the addressing of *recommendation 7* above, Police in their enforcement also need to take into account cyclists' motivation in breaking traffic law, if their motivation appears to be to protect their own safety whilst posing little or no threat to others.

ISSUE AREA: ROAD FUND ADMINISTRATION AND PROJECT EVALUATION

Recommendation 9: That it be explicitly recognised that the issue of taxation and charging to provide for transport and road use is separate from funding allocation to provide for transport and roading. This reflects the fact that arguments about the former generally relate to costs imposed and benefits received by particular road user categories, whereas the latter relates to costs outlain by and benefits received by the nation. The issue is important to this project because of the (usually sub-explicit) argument that cyclists 'do not pay' towards roading, and so 'should not receive' anything of substance from roading funds (and in other ways).

R9.1 The 'right to pass and repass' on the 'Queen's highway' derives from Common Law, and as such is not explicitly stated in legislation. It applies to all road users, and its impact is that the Crown is committed in law to safeguarding the ability of all road users groups to 'pass and repass'.

R9.2 Road taxation and charges are a different question altogether. In some cases they bear no relation to road usage (e.g. local authority rates), in

others no relation to the **amount** of road usage (e.g. driver licence charges). In some cases they respond to the costs perceived to be imposed on the road fabric by particular road user categories (e.g. petrol taxes, or road user charges for heavy vehicles).

R9.3 This has a strong historical precedent. An early example is 'Turnpike Trust' charges on 'carriages' for repairs to damage caused by 'carriages'. A more recent one is taxes imposed on motor vehicle use (e.g. petrol) in response to damage caused when motor vehicles were first introduced. These also echo the logic behind *the Resource Management Act* principle that those who impose an '*adverse environmental effect*' should be those who pay to '*avoid, remedy or mitigate*' that effect.

R9.4 Arguments about taxation for particular road user categories generally relate to costs imposed compared to benefits received by that category (e.g. often heard in relation to motorists, comparing money raised by motorist-related taxes and charges, with the level of investment in the roads). In fact, neither motorists nor cyclists pay for the **right to use** the road (this being guaranteed in common law), nor even – logically speaking – for the **benefits they receive** from their use of the road. The reason cyclists (and indeed pedestrians) pay 'nothing' in direct cyclist-related charges is that they (so it is argued) cause no (or insignificant) adverse effects.

R9.5 Just as motoring interests have argued that motorists pay 'more than their fair share' relative to benefits received, so some cycling advocate-commissioned studies have argued that the same applies to cyclists, and to an even greater extent (i.e. the contrary to the common argument that cyclists are 'free-loaders' on the roads). Costs and benefits taken into account in such studies include the following:

- the (generally un-counted and un-charged) costs motor vehicles impose on the environment;
- the similarly uncounted benefits from cycling (see *recommendation 11* below);
- local authority rates, paid equally by cyclists even though they may impose far less costs on the roads;
- the very low level of roading funds (e.g. Transfund subsidy) devoted to cycling projects (far lower than cycling's modal share);
- the fixed motoring costs (e.g. driver licence charges, motoring insurance) paid by the majority of cyclists who are motorists also.

R9.6 Taxation and charging regimes need review. One example of a problem is that much charging derives from a tax on petrol, and increasingly fuel-efficient engines (not to mention alternative fuels) are lowering the amount of revenue per vehicle, at a time when traffic (and thus argued roading need) is increasing. Another is the perception that governments use petrol taxes as a convenient 'cash cow' because it is relatively inelastic.

R9.7 The relevance of this issue to this project is that the 'cyclists don't pay and so should not receive' argument is quite strongly held in some quarters, and needs to be challenged. It underlies many of the arguments surrounding

not only of funding, but sometimes other areas, such as the safeguarding of cyclists' rights on the road through road user education and enforcement.

Recommendation 10: cyclists' common law 'right to pass and repass' should be safeguarded, through defined engineering criteria, as a requirement of all projects considered for funding, notably Transfund subsidy.

R10.1 The ill-defined state of cycle engineering best practice has been outlined under *Recommendation 4* above. Even before this is addressed, though, there are examples of roading projects where cyclists have their fundamental 'right to pass and repass' effectively obstructed. Under common law, the Crown is committed to safeguard cyclists' (as all road users') 'right to pass and repass'.

R10.2 Perhaps the clearest example is of a large high-volume, fast flow roundabout, which even the most experienced and safety-conscious cyclist (or indeed pedestrian) has little or no chance of being able to negotiate. Often, cyclists have no alternative provision, or if any is made (e.g. an unassisted crossing with signs telling cyclists to 'cross with care' and motorists to 'watch for cyclists') it is effectively unusable. An adequate alternative to counter this (e.g. underpasses) may be expensive, and therefore may be omitted in order to give the project the best chance of attaining a 'fundable' benefit cost ratio (BCR). Its omission is generally justified on the grounds that cyclist numbers are not great (although often no quantified assessment of cyclist numbers is made, let alone of any 'suppressed demand').

R10.3 The impact of projects such as large high-volume, high-flow roundabouts – individually or cumulatively – on cycling accessibility is huge. Roundabouts are highly efficient in terms of throughput of motorised traffic, and have a generally good safety record (if measured by crash data), both deriving from the crucial principle of all traffic being able to interact at broadly the same speed. For a cyclist or pedestrian, however, installation of such features without adequate alternative facility provision may effectively close off the road to their use (and, being at intersections, the impact is greater in network terms than is a single discrete closure). Progressive introduction of such roundabouts across a road network over time has the effect of steadily 'freezing' a substantial proportion of cycle movement across the network as a whole, thus effectively negating any local or national policy initiatives in support of greater cycling use.

R10.4 High-speed, high-flow roundabouts are only the most obvious and extreme example of this problem. With less extreme cases, the question of whether, or the extent to which, cyclists' 'right to pass and repass' is violated, is more debatable – there is room for disagreement on this.

R10.5 Here there would appear to be a role for Transfund's Safety Audit function, in conjunction with the Land Transport Safety Authority, to define in practical engineering terms, criteria which would then be used to 'filter out'

engineering designs which would not be entertained for evaluation for possible Transfund subsidy.

R10.6 The 'low cyclist numbers' argument is not relevant in this case. At issue is not the safety or convenience cyclists (and pedestrians) experience in negotiating the road, but their very ability to negotiate it at all. A parallel can be drawn with provision for people with disAbilities: there is generally no consideration of the numbers who would use such provision, since the basis for provision is one of equal rights and equity.

R10.7 There is overseas precedent for determining criteria in engineering terms. The Dutch national cycling strategy, through its design manual, sets out a matrix by which requirements for cycling facilities (and the broad type of provision) is determined according to a road's traffic flow numbers and speed.

R10.8 There is clear overlap between this *recommendation* and the Ministry of Transport's proposed *Safety Management System*; both have the purpose of defining in engineering terms a 'safe system' serving the needs of road users. Like the engineering suggestions under *recommendations 4 and 5* above, this work should be integrated with the *Safety Management System* work.

Recommendation 11: a research programme be initiated to quantify the benefits stemming from cycling and currently under-developed in project evaluation methodology, and project evaluation methodology be amended accordingly.

R11.1 Integration of benefits from more cycling into project evaluation is quite a different issue from consideration of 'cycling facilities'. Cycling facilities are **one** means of achieving safe cycling accessibility – but this depends on much more than the presence of 'cycling facilities'.

R11.2 Some types of road (notable examples being low-volume, low-speed local roads) may be readily negotiable by bicycle without any need for cycling facilities. In other cases explicit provision for cycling may be vital, but this may not necessarily be by means of 'cycling facilities'; measures not involving cycling facilities may be equally or more effective (e.g. traffic calming; small roundabout remodelling; attention to adequacy of kerbside lane width).

R11.3 There is also the factor that the advantages stemming from 'cycling facilities' in one location may be negated by other road projects elsewhere on the network (and some roundabouts have already been mentioned as an example of this). An example was encountered in one of the project's subject cities of a 'flagship' cycle route, currently being developed under a 'cycling facilities' programme, under threat of being severed by a roundabout forming part of a separately-proposed arterial roading project (without alternative cyclist/ pedestrian provision at the roundabout). Such cases do not appear atypical. From this can be seen the importance of focusing on project evaluation of roading projects as a whole – not only of 'cycling facilities'.

R11.4 Currently, potential transport projects are evaluated by Transfund NZ according to complex formulae measuring 'benefits' and 'costs', so far as possible in monetary terms. The essential criterion of relevance of a cost or benefit must be that it relates to 'the nation' as a whole – costs or benefits relating only to individuals or geographic areas (including prosperity transferred from one area to another, or one road user group to another) are excluded.

R11.5 Some factors, such as journey time savings and crash savings, have been refined to a sophisticated extent. Others, such as the preventive health benefits of cycling, are absent altogether. In some cases, the costs and benefits are argued to be 'intangible', meaning they cannot readily be quantified for inclusion in the monetary-based benefit-cost ratio (BCR) calculations. By default of this, the so-called 'intangibles' tend to be given relatively less weight than the 'quantifiable' factors.

R11.6 However, even the 'quantifiable' factors are based on subjective estimation of the values placed on them by the public (e.g. hypothetical 'willingness to pay' surveys). Currently, the ironic situation exists of the economic, health, pollution and environmental benefits of cycling (to the nation as a whole, not just to cyclists) being very widely recognised by politicians, policy makers and the public, and yet being conspicuous by their absence from the project evaluation procedures on which the nation's transport funding decisions are based.

R11.7 In simple terms, the problem is not that the benefits associated with more cycling are 'intangible', but rather than the direction of research into 'making the intangibles tangible' has focused on certain areas (e.g. journey time savings, crash savings) and have not touched on others. In fact (and the preventive health area is perhaps the most obvious) quantification of the benefits stemming from more cycling **has** advanced to quite a sophisticated level of rigour in some areas – but in professional circles other than those with which road funding professionals are in touch.

R11.8 It has sometimes been argued that preventive health belongs to a different government portfolio area, and so roading funds should not be used to this end. This appears fallacious when the benefits under consideration are **national** benefits, to the nation **as a whole**. This is illustrated by the commonly-used factor of crash costs, where a significant proportion of the counted 'national benefits' are savings in health service costs; exactly the same applies to preventive health cost savings.

R11.9 The *Interim Position Statement (Supplementary Report 3)* outlined a number of possible areas beyond preventive health that could theoretically be considered. Consultation based on the *IPS* elicited comments (reproduced in the *Consultation Report (Supplementary Report 2)*) to the effect that some of these were highly questionable and brought the arguments on benefits from more cycling into disrepute. This is accepted; the areas outlined in the *IPS* were those which **in theory** could be considered, but **in practice** some of them could prove fallacious. One example is reduced road maintenance

costs from a modal transfer from car to bike. In actual fact, the overwhelming bulk of roading maintenance requirements derives from heavy vehicles, not cars, and even a significant modal transfer from car to bike may produce negligible savings to road maintenance costs (there quite clearly is little potential for modal shift from heavy vehicles to bike!). Maintenance costs also derive from factors other than road use (e.g. weather factors).

R11.10 This makes it all the more important that rigorous and careful research should take place before incorporating into project evaluation costings representing the argued benefits stemming from more cycling. In some areas (preventive health being perhaps the most obvious) much research has already been carried out, and the benefits could be incorporated in the methodology fairly quickly. In others, it may take longer for benefits to be established and costed or (as in the case cited above) they may prove fallacious.

R11.12 However, since costings are subjectively set anyway, indicative costings should be incorporate early on and refined later, perhaps being set on the conservative side to start with, rather than delaying changes until a high level of confidence is achieved. In the words of one 'primary stakeholder' professional engineer consulted over the course of the project, "*Better to take a conservative figure you are unsure of, than the figure zero which you **know** is wrong*".

R11.13 Some of the argued theoretical benefits suggested in the *IPS* merge into matters of policy, not lending themselves into the economics-based methodology of project evaluation. One example of this is the 'urban sprawl' line suggested in the *IPS* – i.e. that easier road access produces a pressure for development to spread outwards in low-density form from journey destinations, thus dampening or cancelling the argued 'journey time' savings (as well as leading to other adverse effects, such as more profligate energy use). It is for this reason that the *recommendation* below is made.

Recommendation 12: That national policy – in the transport area and beyond the transport area – be incorporated into project evaluation methodology as criteria on which transport and road funding take place

R12.1 'National policy' in this context means government policy expressed holistically. The forthcoming *New Zealand Transport Strategy* is the most obviously relevant government policy document, but policies in the health, energy efficiency, environmental effects and urban form policy are also highly relevant.

R12.2 At present, project evaluation methodology operates largely on the basis of economic quantification and comparison. The policy context is weak and not explicit. The result is that, in effect, a policy of 'status quo continuation' operates.

R12.3 Transfund's *Project Evaluation Manual* has a relatively small component relating to 'Strategic Policy'. This operates as the foreseeing of

future needs and anticipation of responses to them, a typical example being the reserving of extra land in case a proposed two-lane road should merit the addition of extra lanes stemming from rising usage demand forecasts. This cannot really be seen as 'strategic policy' – it simply means anticipating future needs on the basis of present practice.

R12.4 For a national policy to have effect in the area of transport funding, it needs to be recognised as a fundamental part of project evaluation. By this approach, an economic comparison of costs and benefits would continue, **but only as one factor** – and a subservient one – in funding decision-making. Of over-riding importance would be the extent to which specific government policy objectives were being met. Questions would be asked as to whether a particular proposal assisted, or detracted from, the achievement of those objectives. Indications to date are that government policy (in a number of portfolio areas) is more than likely to favour an increase in cycling.

Recommendation 13: Pending a more sophisticated basis for providing funding which would encourage cycling in line with its benefits to the nation, government allocate a dedicated amount of funding specifically to cycling as a transport mode

R13.1 A start has been made in the direction of encouragement of alternatives to individual motorised transport, through Transfund's *Alternatives to Rooding* methodology (under the previous government) and *Patronage Funding* (this year). Transfund has signalled its intention that these new initiatives will be refined and extended further.

R13.2 This project suggests that cycling has a very much under-rated contribution to make to meeting transport need, and that so-called 'integrated transport planning' has almost entirely excluded cycling from serious consideration through an implicit focus on public transport as the main potential alternative to car use, especially in cities. Cycling levels typically as high as or higher than public transport use – even with all the discouragements to cycle use – give the lie to the suggestion that cycling has an insignificant role to play.

R13.3 Just as increased public transport use has been recognised as so clearly beneficial to the nation that procedures have been set up outside the methodology of the *Project Evaluation Manual*, so there appears a strong case for this to be done for cycling. In theory *Alternatives to Rooding (ATR)* could be used to fund cycling initiatives, although in practice *ATR's* processes are set up with public transport in mind, so this is very difficult. *Patronage Funding* explicitly excludes cycling from consideration altogether.

R13.4 A dedicated fund for cycling could be seen as a first step towards rectifying or balancing this omission. If the **principle** of such a fund is accepted, then further consideration would be needed as to **how** the funding amount is set, leading on to determination of the **amount** and **criteria** for the distribution of such a fund. One basis which could be used – in the interim, pending development of a more sophisticated basis – is cycling usage figures

(which usually exists, albeit with the limitation of `journey to work' being used as a proxy for all trips). Beyond this, there are theoretical models which estimate cycling's potential if certain measures are taken (for example in the UK Cyclists Touring Club's *More Bikes: Policy Into Best Practice* study).

ISSUE AREA: HEALTH AND ROAD SAFETY POLICY

Recommendation 14: The contrasting messages about cycling from road safety and health agencies should be integrated so as to form a unified coherent message.

R14.1 There is a dichotomy between the messages of cycling from road safety agencies and health professionals. The former emphasises the danger, and the latter the benefits. These two approaches need to be brought into consistency with each other.

R14.2 Comparisons between `years added' to a life by cycling's preventive health benefits, and statistical `years lost' through crash risk, have shown conclusively that the former outweighs the latter. This was estimated by a factor of 20:1 by Mayer Hillman (in 1992), author of the British Medical Association's seminal *Cycling Towards Health and Safety* study, and keynote speaker at the July 2000 Palmerston North *Making Cycling Viable* Symposium. Hillman pointed out at the Symposium that the 20:1 figure referred to road situations as they then currently existed, and that the ratio could be improved still further if more action was taken to reduce the danger to which cyclists were exposed (i.e. rather than simply reduce crashes or injuries). This implies that a consistent health and safety strategy should encourage more people to cycle, and that any crash or injury reduction strategy should take place within this.

R14.3 The *Recommendation 18* below suggests ways by which health promotional strategies should change so that cycling becomes `embedded' in lifestyles, rather than seen as a discrete (often recreational/ leisure) activity, for maximum long-term take-up. The *recommendation* immediately below suggests the implications an integrated health and safety policy approach would have for road safety strategies.

Recommendation 15: Recognising the now-established clear outweighing of cyclist safety risk by accruing preventive health benefits, cyclist crash and injury reduction strategies should be set in within the context of a holistic strategy to encourage an increase in cycling levels.

R15.1 Currently, road safety strategic planning (e.g. the LTSA *Safety Directions* processes) is based largely on monetarised crash data analysis. However, since for cyclists the (real or perceived) danger from motor traffic significantly deters people from cycling, crash data is not a reliable measure of the danger to which cyclists are exposed. The same applies to pedestrians.

R15.2 There is a significant debate in some countries (e.g. Britain with its *Road Danger Reduction Forum*) over the issue of the appropriateness of crash data as a barometer of road safety in relation to pedestrians and cyclists. The argument is that crash data measures just that – crashes – not **safety** in a real sense.

R15.3 The logical conclusion to this is worrying. If a road situation becomes more dangerous for cyclists, fewer people will cycle, and so there may well be fewer crashes. The reduction in cycling levels which has contributed to the reduction in crash numbers would not be a concern in terms of road safety strategy, and could even be seen as a benefit, since crash data is the criterion on which the policy is judged.

R15.4 For a similar reason, the criteria on which road safety policy is determined and assessed gives no incentive to increase cycling levels. In fact, it could encourage resistance to initiatives in this direction, if it is considered that this could be accompanied by an increase in cyclist crashes.

R15.5 Whether intentionally or not, it can be argued that some road safety campaigns actually discourage cycling by implying that cycling is 'dangerous'. Whilst it cannot be denied that that cyclists, proportionate to the time they spend exposed to the dangers, are more likely to be involved in crashes than are motor vehicle occupants, this takes no account of the preventive health benefits, nor that – especially compared to motor vehicle use – cycling imposes very little danger on others.

R15.6 Research has been carried out to a sophisticated degree to quantify health benefits from more cycling, as referred to under the *recommendations 11 and 14* above, it having been established that health benefits far outweigh crash risk. However, another factor is that it is now well established that the relationship between cyclist **user** numbers and cyclist **crash** numbers is not linear. The crash figure proportionately decreases as cyclist user numbers increase. This has been established internationally by comparison between different countries, and within New Zealand by Kerry Wood in comparing data for a number of different cities.

R15.7 This phenomenon has been described in simple terms as 'safety in numbers'. One possible explanation is that more cyclists means motorists are more experienced in responding to their presence, thus accounting for less crashes. Another is that a 'motoring culture' safer for cycling means people are less deterred from cycling. Although the precise causality relationships may not be clear, the statistical correlation does seem to be.

R15.8 It can be inferred from this that increasing overall cycling **user numbers** tends to effectively reduce cyclist **crash numbers** in proportionate terms – meaning that even in addition to the health benefit comparison and cycling's `benign' nature in terms of danger imposed on others, more cycling is a clear benefit in road safety terms.

Recommendation 16; Deficiencies in cyclist crash data recording and analysis in official data sources (notably those of Police and Land Transport Safety Authority (LTSA)) should be rectified.

R16.1 However, even the cycling crash data itself is unreliable in some respects. There is a high rate of under-reporting (especially for `minor injury' crashes). LTSA's crash factor codes (the basis for analysing causes of crashes) are devised mainly by reference to common motor vehicle manoeuvring, and miss or downplay the somewhat different manoeuvring issues that affect cyclists. This is seen by some types of crashes common for cyclists but not for general traffic (such as `squeezing') not being included in the LTSA's crash factor codes used for crash analysis. Some standard listed factors could also easily be interpreted in a misleading way (e.g. the high incidence of a cyclist hitting a `stationary car' could at first sight seem to indicate inattentiveness by the cyclist, whereas the incident could have involved a car door being opened in his/her path).

R16.2 In some cases, it is even LTSA policy not to record the crash, a case in point being single-vehicle crashes involving a cycle, whereas single-vehicle crashes involving a car are recorded.

R16.3 However, before LTSA even begin their analysis – flawed though it appears to be in the ways outlined above – the raw data comes largely from standard reports compiled by Police attending the crash scene. With all due respect to their skills, Police are quite obviously under intense immediate pressures connected with the crash's victims, damage and disruption, and are also not trained in some aspects of driver psychology or crash factor analysis. As a neglected area, they are even less likely to be trained in the specific aspects of crash causality affecting cyclists. The result may be inadequacies, misleading by implication, in the data supplied to LTSA in the first place.

R16.4 Examples typically cited include a motorist reporting that he/she `did not see' the cyclist. This can readily be recorded on the basic crash data as `lack of conspicuity' on the cyclist's part, whereas psychological factors could have led to a cyclist's presence not being registered. It is certainly a common finding of driver psychology that, with a large number of stimuli, multiplied by the travelling speed, a driver will `filter out' from attention those elements which are either small, or on the edge of the field of vision (this problem becoming worse as the travelling speed rises). There are even known cases of brightly-clad experienced cyclists being in the centre of a motorists' field of vision and yet `not being seen' because of the speed the motorist is travelling at.

Recommendation 17: That the Ministry of Transport (MoT), in conjunction with Land Transport Safety Authority's (LTSA's) its three-year review of Land Transport Rules currently in progress, specifically evaluate the impact current and future Rules may have on cycling, and make recommendations accordingly. This responds in particular to concerns cycling interests have expressed regarding the impact Land Transport Rule No 32012 (Glazing, Windscreen Wipe and Wash and Mirrors 1999) will have on their safety, concerns which have been acknowledged by LTSA itself as being valid.

R17.1 The MoT have recently indicated their intention to have more involvement in the authorisation of 'Land Transport Rules', up until now largely determined by the LTSA. This comes as the LTSA are currently conducting a three-yearly review of Land Transport Rules.

R17.2 In other policy areas covered by this project, it does appear that the needs of cyclists can very easily be overlooked. This could well apply to Land Transport Rules.

R17.3 It is therefore suggested that (in conjunction with the current review) all Land Transport Rules be 'audited' to specifically assess their impacts of the safety and accessibility of cycling. This is particularly important if, as suggested in *recommendation 15* above, road safety strategies are set within a broader policy objective of encouraging an increase in cycling levels (e.g. a Rule which inadvertently has the effect of discouraging cycling, let alone one which may adversely affect the safety of cyclists, may need addressing).

R17.4 One particular Rule has concerned the cycling sector during 1999 and 2000. Rule No 32012 (Glazing, Windscreen Wipe and Wash and Mirrors), brought into effect in the latter part of 1999, allows tinting of side windows to a greater degree than has previously been the case in New Zealand.

R17.5 The *Cycling Advocates Network (CAN)* made a submission against the Rule at draft stage. Their arguments related (amongst others) to the particular importance of visibility at the edge of a motorist's field of vision, which is particularly important with respect to cyclists.

R17.6 The problem of cyclists 'not being seen' has already been discussed above under *recommendation 16*. Together with their small size, cyclists' common situation of being at the edge of motorists' field of vision is one of the most significant factors of the problem. On these grounds alone, it would seem surprising that the tinting of side windows could even be contemplated as part of a Rule aimed at encouraging the safety of road users. It should be noted that other LTSA road safety advice encourages motorists to keep their car windows clean for the sake of visibility of other road users.

R17.7 Another problem cited by *CAN* (and, so it is claimed, not mentioned in the discussion document on the draft Rule) is the use of side windows to look in side mirrors, important in detecting cyclists whilst executing turning/ pulling-out manoeuvres, and opening car doors. Again, in other literature (*Road*

Safety News NZ, late 2000) LTSA highlight the problem of opening car doors being a particular problem for cyclists.

R17.8 A third area of concern of CAN is the need for cyclists to make eye contact with the driver in order to ascertain their intentions. This is particularly important on roundabouts (where motorists' failure to give way on entry is well-documented as a significant factor in crashes involving cyclists), and will obviously be more difficult through a tinted window.

R17.9 CAN heard indirectly that the Rule had been brought into effect through seeing a newspaper article, showing a glazier at work whose firm had geared up for extra business likely to arise as a result of the Rule. Apart from raising issues concerning procedure, CAN asked a number of questions, including what were the safety **benefits** which had influenced LTSA to make the decision to introduce the Rule. LTSA replied that they "accepted the validity" of CAN's arguments, and cited safety benefits as "a reduction in UV radiation and a reduction in temperature gain in the passenger compartment of vehicles". LTSA concluded that they considered their decision had "**struck a reasonable balance between the interests of those who would like to tint their front side windows and those who might be killed or injured as a result**".

R17.10 This decision has very badly damaged the confidence of the cycling sector in the seriousness of the LTSA's concerns regarding their safety. It is difficult to appreciate how lower UV radiation and temperature within cars can be seen to as more important than cyclist deaths and injuries – which LTSA's response above acknowledges are possible – especially since the simple acts of opening the windows and applying sun block and glasses can easily achieve the argued "safety benefits" without any risk whatsoever to cyclists' safety. CAN have also questioned the relevance of LTSA's citing of Australian jurisdictions having introduced similar legislation, to a decision-making process which should have at its heart a concern for the safety of road users, rather than whether New Zealand is 'out of step with Australia'.

ISSUE AREA: PROMOTION AND EDUCATION

Recommendation 18: Cyclist education be co-ordinated, expanded and refocused so as to be incorporated comprehensively in school curricula as a 'basic life skill'; given a greater element of on-road coaching; be provided for 'adults' (used here to mean all those of driving age) through on-road cycling instruction agencies; with a monitoring and regulatory function being provided through an appropriate safety agency such as the Land Transport Safety Authority (LTSA). Current initiatives on bicycle maintenance should be continued.

R18.1 In past generations, child cyclists learnt cycling from their parents, who tended to cycle for their own transport needs. This meant that the learner child cyclist was able to be coached, incrementally and progressively, in necessary skills for interaction with other traffic. They were also provided with

an adult role model conveying the impression that cycling is a practical life skill, and not just something you do as a child.

R18.2 Now, most of this has gone – but what has replaced it does not meet needs in the same way. Parents are unlikely to be everyday cyclists able to coach their children, and the results of research into why adults do not cycle suggests many would be afraid themselves of negotiating everyday traffic situations. The adult role model has gone as well, with a strong perception embedded in social attitudes that cycling is linked with childhood, with the driver's licence being a 'rite of passage' to adulthood.

R18.3 Child cyclist education, done well, has been shown to be effective, and the three main sources of such education in New Zealand – The LTSA's *Street Sense*, Cycling New Zealand's *Kiwi Cycling*, and the Police's *Out and About* – do good work. However, there is little co-ordination between them, and the subtle differences in emphasis between them may not be readily apparent to teachers. As a result, teachers are often very unclear as to which will best meet their children's needs.

R18.4 Even if these problems could be overcome, the three sources together would not provide comprehensive school coverage. They also sometimes rely on the voluntary dedication of those who lead them, rather than being seen as an essential part of the school curriculum. There is no one body taking responsibility for ensuring schools have a co-ordinated and comprehensive coverage of school cyclist education.

R18.5 However, whilst cyclist education for children is important, the fact that cyclist education is virtually unknown for adults probably derives from – and re-inforces – a deep-seated social perception that cycling is essentially a 'children's activity'.

R18.6 In August 2000 LTSA published a revision of the *Bike Code*, titled *The Safe Cycling Book*. Its visual appeal certainly seems commendable in encouraging it to be read, but it is unashamedly targeted at children, such as likely to deter it being read by adults. The revision is welcome however, since the *Bike Code* was old, and some changes had taken place in the meantime (notably compulsory helmet wearing).

R18.7 The *Safe Cycling Book* starts by covering helmets, conspicuity, ergonomics, cycle maintenance and 'fitness for purpose', and basic cycle handling skills. Some of the basic handling skills are described by reference to road situations, but readers are encouraged to learn them in off-road situations. Encouragement is given to look out for common dangers caused by driver behaviour (e.g. opening car doors). Useful advice follows on hand signals, traffic lane choice, the meaning of traffic lights and traffic signs, give-way requirements in a selection of 10 situations, railway level crossings, common hazards (e.g. broken glass, drain grates) and pedestrian crossings.

R18.8 However, the *Safe Cycling Book* can be faulted because of:

- Its overwhelming child focus (which will not meet adults cyclists' needs; issue covered above)
- All 10 of the illustrations covering the crucial area of vehicle-to-vehicle interaction are examples of where the cyclist needs to give way. This is one-sided: a cyclist also needs to be taught how to **exercise** right-of-way – including anticipating and if necessary responding to the other vehicle not respecting the cyclist's right of way. Such situations are extremely common, obvious ones being cars leaving driveways, turning across a straight-ahead cyclist, as well as more complex situations such as the 'give way to the right' rule. Failure to give guidance on where or how a cyclist should exercise right of way means that the *Safe Cycling Book* does not cover a basic aspect of virtually any possible cycling journey.
- Its advice on on-road coaching is far less than is needed to produce competency in a cyclist. It advises a cyclist to go out with an adult for the first few journeys if they are new to cycling. Again, the issue of the absence of adult role models and adults' lack of confidence (and skill) on the road have been covered above.
- The lack of integration with the *Road Code*, which is covered under *recommendation 19* below.

R18.9 Some of these problems (though not the second 'give way' point) are beyond the *Safe Cycling Book*, and stem from the deeper perceptions outlined earlier. Only when these perceptions change will cyclist education be able to play a part, not only in teaching basic skills, but encouraging it to be seen as an everyday, adult activity, meeting basic transport needs in practical terms.

R18.10As mentioned above, cyclist **education** (as distinct from the **written** guidance of the *Safe Cycling Book*) is currently overwhelmingly directed at children, and overwhelmingly takes place in simulated, off-road situations (e.g. school playgrounds). Whilst such education is important, and it is much easier practically to organise playground-based than road-based education, road-based education is the only real way vehicle to vehicle interaction skills will be built up.

R18.11An argument often used in support of the 'child-based' focus is that teaching children cycling skills at a 'pre-driving' age will give them skills which will make them better drivers (and drivers more sensitive to the needs of cyclists) as adults – the idea of 'catching them young'. This may be true, but this is unlikely to meet the needs of adults, let alone encourage more adult cycling, which this project suggests should (for reasons outlined under the various *recommendations*) be an objective of wider policy.

R18.12Even for child-based cyclist training, the very scant on-road element – if any – mitigates against the training being effective. Teaching the 'techniques' – e.g. balancing, signalling, manouvring in a simulated situation, helmet fitting and wearing, not carrying excessive loads – is essentially a **pre-requisite** for road user education as a cyclist – not the education itself.

R18.13A parallel can be drawn with driver instruction. After some basic and theoretical 'pre-requisite' driver instruction, the bulk of driver training takes place in the form of on-road coaching. No one would dream of suggesting that car drivers should be instructed mainly off-road – yet that is effectively the form that cyclist education generally takes.

R18.14The effective skills necessary to a road user – motorist or cyclist – are those of interacting with other road users. These can only be built up cumulatively, over time, by an instructor accompanying the 'learner', monitoring their behaviour, and giving advice as necessary to correct wrong behaviour, and commend good behaviour, so that positive habits are built up steadily to an increasing level of sophistication. This process rarely takes place in cyclist education.

R18.15School cyclist education does not compensate for these deficiencies in child cyclist education, but some progress could be made. A comparison can be made with swimming. Swimming is frequently taught in schools to all children on the grounds of being a 'basic life skill'. It could be argued that cycling is far more fundamental to a child's everyday lifestyle than is swimming, and so should be taught at least as comprehensively. Yet its content is generally sparse, fractured and under-resourced, as outlined in paragraphs R18.3 – R18.5 above.

R18.16Suggestions have also sometimes been made that driver training could be incorporated in school curricula as a 'basic life skill'. The case seems even stronger for cycling, since cycling is more accessible to adolescents (not only by age, but also by income and cycle/car ownership). If both eventuated (and this project will not comment either way on this), then the two programmes could usefully be combined as generic 'road user training'.

R18.17There is still a need, however, for the training of cyclists who are of an age where driving is an option (referred to here for convenience as 'adults'). This will need to be outside the school setting, for obvious reasons. There is also a need for adolescents as well as adults to have a strong element of on-road cycle coaching, since this is where the bulk of the necessary skills are learnt.

R18.18This project recommends cyclist training to be offered in a similar way to driver training, i.e. through on-road coaching by recognised and licenced instructors. It is likely that the expertise could readily be found from among experienced cyclists. Clearly, it would be impractical in many road situations for an instructor to be physically positioned alongside the 'learner' cyclist, as is the case for driver instruction, but radio inter-com equipment can enable a cycle 'instructor' to ride behind a 'learner' and still give instruction without in any way jeopardising visibility or safety. It would also be sensible for some statutorily authorised signage to be displayed (e.g. on an over-vest) to indicate that 'cyclist instruction' is taking place, in the same way as exists for learner motorcyclists.

R18.19 Since there is nothing of this kind of instruction at present, it will take time, other resources, and further planning work, but the objective should be for an official agency (most logically, the LTSA) equipped to accredit instruction agencies – so that learners know they are receiving proficient instruction – who then provide graduated courses to adults who would wish to learn how practically to cycle in relation to traffic.

R18.20 It would not be unfair – and no doubt would not be disputed by them – to say that the LTSA lacks the full skills to perform this role at present. Before this initiative could be taken, appropriate curriculum elements need to be planned and determined, along with a methodology for accrediting and monitoring cyclist instruction agencies. Published sound advice from experienced cyclists does exist (such as *Vehicular Cycling* by John Forrester (USA) and *Cyclecraft* by John Franklin (UK)), but such expertise is little known even among cyclists. This could with advantage be promulgated more widely, and there is a precedent for this in the re-publication of *Cyclecraft* by the UK Government under its *National Cycling Strategy*.

R18.21 Adult cyclist instruction would probably not be economically viable in the way that driver instruction is, without significant subsidy. Public subsidy could however be justified on the basis of benefits accruing to the nation, As outlined in this project (e.g. *Recommendation 11*), the various benefits from more cycling do appear to be very significant.

R18.22 It is sometimes suggested that cyclists should be licenced, in the same way a drivers, and not allowed to cycle on the road until they show competence sufficient to attain a licence. This project does **not** suggest cyclist licencing, for a number of reasons.

R18.23 Firstly, as already mentioned the safety agencies are not **technically** equipped to undertake the task. Secondly, it is unlikely that the safety agencies would be **administratively** equipped to undertake the task – there being potentially as many cyclists to ‘monitor’ as there are motorists, or even more. Thirdly, such a scheme would be virtually unenforceable. Fourthly, licencing would probably be a net deterrent to cycling among competent cyclists, thus acting against any policy presumption in favour of more cycling. However, perhaps the most important reason is a fifth one, that the objective behind the licencing suggestion – to ensure that cyclists act competently on the road – would be met by the other suggestions of this *recommendation* as described above.

R18.24 This project has relatively few suggestions to make on bicycle maintenance work, on the understanding that it is proceeding well. Sometimes Road Safety Co-ordinators organise maintenance checks leading to a (mock) ‘warrant of fitness’. Another initiative is ‘Dr Bike’, involving a safety checker, often in a public place (e.g. a shopping street) mimicking a medical doctor (e.g. in ‘costume’) and giving a bicycle a ‘health check-up’, leading to a ‘prescription’ (if necessary) to be taken to a local bicycle shop.

R18.25 Both these initiatives are valuable and could usefully be replicated. The latter may be preferable, because its 'gimmick appeal' could encourage take-up, and the mock 'warrant of fitness' could confuse (since a real 'warrant of fitness' is not required for a bicycle) and possibly again deter take-up by the implied 'regulation'. This project does not recommend real 'warrants of fitness' for bicycles for a similar reason to that given above under cyclist licencing, i.e. it would be cumbersome to administer, could deter responsible cyclists from cycling, and the objective could be achieved by this *recommendation* without regulation.

Recommendation 19: The 'Road Code' be revised so as to incorporate adequate instruction for cyclists on how to negotiate particular road traffic situations; adequate instruction for motorists on how to safely and correctly interact with cyclists (i.e. 'share the road'); and to avoid the 'Road Code's' current perception that its overwhelming function is to assist in driver education.

R19.1 The *New Zealand Road Code* is the official guide for safe behaviour by all road users. It has, however, several shortcomings so far as guidance for and concerning cyclists is concerned.

R19.2 It is only published (in several respective versions) in combination with a guide on how to acquire a particular category of driver's licence. This will create the impression that assistance with acquiring a licence is the overwhelming function of the *Road Code*, and this is likely to be counter-productive for road safety for two reasons.

R19.3 Firstly, it will encourage motorists to only read the *Road Code* to help them acquire their respective licence, and then not to consult the *Code* after that. This is a problem LTSA have themselves identified and sought to partially address through their *Code Red* programme.

R19.4 Secondly, it will also discourage cyclists from reading the *Road Code* at all.

R19.5 The shortcomings of the *Safe Cycling Book*, especially for adult cyclists, have already been outlined above (*recommendation 18*). The *Safe Cycling Book* is also far more rudimentary in its coverage of the vehicle-to-vehicle interaction skills it covers than the *Road Code* is, in addition to the particular deficiency outlined on the 'give way' requirement.

R19.6 Another problem is that *Road Code* is very limited in its coverage of cycling. This causes problems in two areas: instruction **of cyclists**, and instruction **of motorists in relation to cyclists**.

R19.7 The small amount of cycling-specific *Road Code* content – useful though it is – is almost entirely **incidental to** on-road behaviour (e.g. use of helmets, lights, clothing, bike maintenance) or **attitudes** (e.g. what cyclists and motorists wish each other would know) or highly generalised (e.g. 'take care', 'watch for bikes').

R19.8 A bicycle in law is a vehicle, yet is not shown in any of the *Road Code's* many vehicle manoeuvring illustrations (except once as a hazard which the following motorist should avoid). The *Road Code* gives a false impression of on-road situations consisting of **motor vehicle to motor vehicle** interaction, which is likely to be detrimental to safe cyclist/ motorist road-sharing. Cyclists are not given any guidance on how to manoeuvre, and motorists are not taught where to expect them to be, or how to expect them to behave.

R19.9 The *Road Code's* one illustration of a cyclist (repeated twice in the context of a 'test' for motorists on the 'most significant hazard to avoid' in the picture – the cyclist being the 'hazard') shows a cyclist pulling out from around a parked car. It is not even clear who has the right of way (the cyclist, as being in front? or the motorist, as being in the main traffic flow?) and hardly encourages a perception of cyclists as equal road users.

R19.10 It has already been mentioned (under *Recommendation 4* above) that of MOTSAM's two cycling facility elements – the circular white-on-blue post-mounted cycle sign, and the road surface white painted cycle logo – the first is misleadingly described in the *Road Code*, and the second is not mentioned at all.

R19.11 Very basic elements, like how a cyclist is to negotiate an intersection, or how far from the kerb to position one-self, are lacking from the *Road Code* (although the latter is given in the *Safe Cycling Book* as 1 metre out). Since a bicycle is in law a 'vehicle', in the absence of cyclist-specific instruction, it must by default be inferred that a cyclist is to behave in the same way as any other vehicle, as shown in the *Road Code's* manoeuvring diagrams.

R19.12 This implies a cyclist occupying a central position in the traffic lane. Sometimes this is the safest way, indeed practically the only safe way, to negotiate some situations (e.g. proceeding straight-ahead from a shared straight-ahead/left-turn lane), but even in these situations, motorists are not informed of this and will often perceive the cyclist as acting irresponsibly or 'cheekily'; harassment or even 'road rage' may be the result. In other situations, the safest place practically for the cyclist to be is towards the nearside, but the *Road Code* gives no advice as to where; it may be in the cyclist's interest to be some way away from the kerb to avoid being harassed into the gutter, especially when the car may immediately follow this by a left turn. None of this is likely to encourage motorist/ cyclist mutual respect, let alone either group knowing how to handle practical situations.

R19.13 In many instances, the *Road Code's* advice to general traffic is practically impossible for a cyclist to execute safely. Particularly clear examples are the advice on how to negotiate multi-lane roundabouts, or 'merging like a zip' in high-speed situations. The cyclist frequently cannot narrow the speed differential on which safe negotiation of such situations depends.

R19.14 In cases of difficulty such as this the *Road Code* (and, typically, other road safety material) advises the cyclist that if not confident they can 'get off and walk'. The assumption is that the cyclist is safer on foot than mounted, but in fact **the opposite** may well be the case.

R19.15 Dismounted, the speed differential between the cyclist and motor traffic is even greater than when mounted, and (typically on a roadside footpath) the cyclist is further towards the edge of the motorists' field of vision, and so less likely to be 'seen' (i.e. perceived; see *recommendation 16* above) by the motorist. It also entails delay and inconvenience and further reinforces the perception of a cyclist as a 'less than legitimate' road user.

R19.16 These problems cannot be tackled by the *Safe Cycling Book* (even with revisions) – welcome though this is – because motorists as well as cyclists themselves need to appreciate how cyclists should, and are likely to behave. Clearly, motorists are unlikely to read a *Safe Cycling Book* for their own instruction. Only incorporation of the appropriate advice in the *Road Code* itself will meet this need.

R19.17 Apart from cyclist education curriculum material (and even this has been criticised as dangerous by some accident investigation professionals on the basis of vehicular tracking curves), the fact that the guidance to and concerning cyclists often simply does not exist at present, means that it may be some time before these problems can be rectified. Detailed discussion is needed in order to define how cyclists and motorists should behave in relation to each other.

R19.18 A welcome development is the growth of *Share the Road* campaigns, pioneered in Queensland and South Australia and now in some New Zealand cities. However, these are only 'scratching the surface' of the problem. The lack of a clear understanding defining appropriate behaviour by cyclists and motorists in relation to each other means that such campaigns, even well-executed (and recognising that the New Zealand campaigns often are that) can frequently go little further than the generalised advice for motorists to 'watch for bikes' or for cyclists to 'take care'.

Recommendation 20: Learner driver training should be revised to incorporate advice and training on how cyclists can be expected to manoeuvre in traffic situations, and how motorists should respond to them.

R20.1 Little will be said here about learner driver training, because it only reflects the lack of road user guidance both **for** and **in relation to** cyclists as outlined under *Recommendations 18 and 19* above. However, driver training must be refocused in conjunction with those recommendations, as they are progressively addressed over time.

R20.2 In the meantime, more rudimentary action can be taken to ensure learner drivers are taught to be properly sensitive to cyclists' presence on the road. Quite worrying anecdotal learner driver experiences have been

encountered of a lack of instruction on how drivers should, for example, overtake a cyclist, or anticipate the possibility of a cyclists' presence when coming over the brow of a hill on a post-marked road at moderate speed.

R20.3 One suggestion that is sometimes made (most notably by cycling advocates) is that driver training and licencing should require drivers to spend some time in on-road cycling instruction, in order to appreciate the needs of cyclists in terms of road behaviour. This would undoubtedly be useful, but this project does not recommend it as a **requirement**. The reason is practical: as outlined under *Recommendations 18* above, on-road cyclist education is in such a state of under-development that the expertise is unlikely to be readily available on a comprehensive basis. Given an addressing of *Recommendation 18* above, it could become available, but this is not an immediate prospect and so cycling experience as a mandatory part of driver education cannot be currently recommended.

Recommendation 21: That the role of helmet wearing within road safety strategies be reviewed, to assess its relative importance compared to other elements of a strategy, and the message conveyed by the marketing of helmets, the whole to be assessed against overall cycling strategy objectives. This review could usefully include a review of the compulsory helmet law itself, whilst recognising that the legislative situation may well be less important than other aspects of the review, and should not distract from issues more crucial to cyclist safety (notably driver and cyclist behaviour).

R21.1 Helmet-wearing and the compulsory helmet-wearing law are perhaps the most emotionally-charged of the whole debate concerning cyclist safety. The great advantage of helmet-wearing is that its results are instantly recognisable as beneficial: i.e. that whatever other factors may contribute to cyclist safety, it is obvious that a cyclist wearing a helmet is likely to suffer less injury than one without.

R21.2 Less immediately obvious are the counter-arguments. These include the following (**being listed here does not imply that this project either agrees or disagrees with them**):

- helmets are designed to protect against falls (being tested by being dropped onto a hard surface), yet their marketing gives the impression (whether intended or not) that they will effectively protect against a crash involving a motor vehicle; this can give the cyclist a false sense of security and thus induce 'risk compensation' (i.e. the cyclist compensating for their perceived protection by taking risks they would not otherwise have taken). Some theorists argue that this may actually **increase** cyclist injuries in net terms.
- Motorists, for similar reasons, may take more risks with cyclists, if they perceive them to be better protected through wearing a helmet.
- Helmet promotion gives an impression that 'cycling is dangerous', which may deter people from cycling, who thus miss out of the much more significant health benefits of cycling.

- Crash data analysis which is used to argue the benefits of increased helmet wearing rates (and/ or a compulsory wearing law) may well ignore drops in cyclist **user** numbers (which might have wholly or partly accounted for any drop in cyclist **injury** numbers) and other possible factors which could have led to a cyclist injury drop (e.g. motorist drink/ drive and/or excessive speed campaigns co-inciding with the helmet law's introduction).
- Helmet-wearing promotion unfairly puts the onus on the vulnerable cyclist to protect themselves against a problem largely caused by others (i.e. motorist behaviour).
- Compulsory helmet wearing laws for motor vehicle occupants, and for pedestrians, would each result in the saving of more lives than such a law for cyclists (because of these respective groups' greater numbers), yet such laws are not countenanced (albeit noting that the Australian Federal Office for Road Safety (FORS) has suggested the possibility of such a law for motor vehicle occupants).

R21.3 This project has tried to find pro-helmet arguments which seriously consider these concerns and offer counter-arguments to them, but (albeit with limited project resources) has not found any (except in the area of 'risk compensation'). All the project can therefore conclude is that there is a lack of dialogue between sharply polarised positions on the subject.

R21.4 The compulsory cycle helmet law was introduced amidst tense emotion in the public realm surrounding a specific injury case. The immediacy of helmet protection might have contributed to a neglect of consideration of helmet promotion's (and the compulsory law's) place in wider cyclist safety strategies. This may have led to it being pursued to some extent in isolation from other important cycling safety strategy elements, such as safe cyclist and safe driver behaviour. The major neglect of these latter elements has been outlined under *Recommendations 18 - 20* above, whereas it is apparent that helmet promotion plays a significant part in cyclist safety strategies.

R21.5 This project has found a general consensus among experienced cycling advocates that cycle helmet wearing is an obviously sensible safety precaution, but that a wearing law has been of doubtful benefit, since it has distracted attention from more important issues, notably driver and cyclist behaviour. A small minority of cycling advocates refuse to wear a helmet to back their own particular strong opposition to a helmet law. The *Cycling Advocates' Network (CAN)* hold a neutral position on the helmet law, whilst calling for a 'review' of the law.

R21.6 However, just as introduction of the law could have distracted attention from more important issues, so raising the prospect of the law's repeal could do the same. It should also be recognised that the law has indeed led to a very marked increase in helmet wearing, with at least some obviously likely saving in cyclist injury.

R21.7 This project therefore suggests a review, in the main, of the **marketing** of cycle helmet wearing, rather than **legislation** on helmet wearing. The aim

should be to get the 'best of both worlds' in terms of encouraging an increase in helmet wearing, without implying 'cycling is dangerous' such as to deter use, nor for helmet wearing to occupy a **central** place in the overall balance of cyclist safety strategies. This needs very careful consideration (especially bearing in mind the emotionalism which has surrounded the subject up until now – on both sides of the argument). In short, whilst facilitating a currently missing dialogue, 'troubled water must be calmed' in a highly emotionally-charged subject area.

R21.8 Without jumping to hasty recommendations, the *Annabel on Top* cartoon of Christchurch City Council may offer a useful model for the sort of approach needed. Whilst not restricted to cyclist safety, this cycle promotional tool aims to inculcate its message more by 'getting the public used to' it, than by explicitly 'preaching' it. While cycling, of course, the *Annabel* character is always wearing her helmet. And it must again be stressed that, whilst suggesting a review, **this project is suggesting neither a repeal nor a retention of the compulsory cyclist helmet wearing law.**

Recommendation 22: Promotion of cycling – for preventive health or wider reasons – should be embedded in lifestyles, for effective long-term take-up, conveying the frequently insufficiently-recognised or actually-downplayed practical feasibility of cycling for a very high proportion of journey needs

R22.1 The shift in recent years in preventive health promotion to more gentle and regular forms – such as *Green Prescriptions* and *Push Play Get Active* – includes cycling, and health research has shown it is only matched by swimming for the combination of the 'three S's' – strength, suppleness and stamina. Research has also shown that the forms of preventive health which are carried on in the longer term – after the 'burst in enthusiasm' has worn off – are those that become embedded in everyday lifestyles.

R22.2 However, cycling is typically portrayed in preventive health promotional campaigns as a discrete, stand-alone activity, rather than a practical part of everyday lifestyle. It is common to find suggestions to cycle as an individual or family leisure activity, yet the greatest potential for long-term cycling take-up would appear to lie in the incorporation of cycling into travel behaviour to meet everyday needs.

R22.3 The reasons for this are not clear. Perhaps prominent among them is that the responsible agencies (e.g. the Hillary Commission) have historically focused on sport – which are 'discrete' rather than 'embedded lifestyle' activities – and have only relatively recently branched out into the 'active living' area. Also significant may be the strong deterrents to cycling outlined under various *recommendations* above, and the 'stereotyping' of cycling as the province of children, the poor, eccentrics and in general something other than what 'normal' people do.

R22.4 However, it is likely that a number of erroneous stereotypes concerning cycling play a significant part – generally conveying the impression that cycling is impractical for meeting everyday transport needs.

R22.5 Cycling is more practical than often perceived by non-cyclists. The shallowness, in the face of data, of some of the established stereotypes are referred to under *Recommendation 23* below on integrated transport planning, but there is a vast largely unexplored promotional area, giving opportunities to convey the message that cycling is an eminently practical and feasible choice for meeting a high proportion of everyday transport needs. Action in this area would have prospect for countering some of the deeper stereotypical problems. Much can be learnt from the deliberate strategy, in the Hillary Commission's *Push Play Get Active* programme, of projecting images of very 'ordinary' people as role models for the rest of the public to follow.

R22.6 Lay non-cyclists – including transport professionals – are very aware of the road dangers of cycling. The deterrents in the 'road safety' area preventing widespread cycling take-up are very strong, and have been outlined under various *recommendations* above. It is difficult to see how any cycling promotional strategy could have significant prospect for success without the above *recommendations* being pursued, most notably cyclist and motorist education including on-road cyclist coaching for adults.

R22.7 However, if these road safety strategy problems are tackled, cycling becomes a practical choice for a high proportion of journey needs.

R22.8 The contentions, sometimes heard, that cycling is of limited use because of an inability to carry luggage, or because it has only a short journey range, are generally made on the basis of no rational research, and do not stand serious scrutiny. A bicycle has as much luggage-carrying potential as, or more than, local bus or rail (and the 'luggage' problem is curiously rarely mentioned in relation to these modes). Also, the majority of all journeys, by all modes, are within a typical 'easy cycling distance' (something like three-quarters of trips, varying according to definitions). Cycling has even greater potential if combined with public transport, as is suggested could be done under *Recommendation 23* below.

R22.9 Another objection sometimes heard is that cyclists cannot carry passengers. This ignores car occupancy data showing most car trips have no passengers, plus the obvious fact that the 'passengers' may be riding their own bikes!

R22.10 Other common objections are weather (notably rain, and perspiration from heat), hills, and the health risks posed by motor vehicle exhausts in traffic. For a non-cyclist, these do indeed seem deterrents, but again closer examination shows these to be insubstantial.

R22.11 The likelihood of being affected by rain over an average cycle journey (and there are quantified studies showing this) is extremely low, and adequate

rain protection can be obtained by the simple expedient of carrying waterproof clothing.

R22.12 Hills have been shown to influence cycle usage rates to some extent, but not nearly as much as is often supposed. In any case, urban settlement even in hilly situations tends to concentrate on flatter ground, and bicycle gears will tackle most hills. It is interesting to note that some extremely mountainous countries (e.g. Switzerland, Austria and Sweden) have markedly high cycling levels.

R22.13 Exhaust fumes will affect cyclists positioned above car exhausts in traffic queues, but the general case is the **opposite** of the stereotype. Cyclists, being higher off the ground than car occupants, are less affected than motorists by sinking gases (notably lead), and open air disperses pollutants quickly. Also, by exercising, cyclists are expelling the pollution-borne impurities from their bodies more quickly than are car occupants. However, the most notable finding (now well-established, and potentially worrying for motor vehicle occupants) is that **harmful pollutants affect car occupants more than they affect cyclists** through the polluted air being enclosed within the car.

R22.14 The need for showers and changing facilities at journey destinations (notably workplaces, where dress codes may also be a factor) is often argued (including by cycling advocates) but may be overstated as an obstacle preventing greater cycling take-up. The obviously-present toilets are often all that is needed for privacy in changing, with a wash-basin to wash if necessary. Mayer Hillman at the July 2000 Palmerston North *Making Cycling Viable* symposium maintained that cyclists' perspiration level was in any case largely an unjustifiable stereotype, based on a misguided idea that cycling requires an excessive amount of physical exertion. 'Dress code' clothes can be usually be kept at the place of work.

R22.15 Particularly crucially and generally ignored in so-called 'integrated' transport planning (see *Recommendation x* below), cycling shares the availability and flexibility advantages that the car has, which are inherent to both as 'private' means of transport, and are not shared by public transport (which is hindered by such factors as routes, timetables, and numbers for financial viability). Three examples have even been encountered in the course of this project of cycling households who have not felt it necessary to own **any** car (let alone a 'second' car) to meet their everyday transport needs (one is a family with young children in a medium-sized city, another a rural-living sales representative).

R22.16 The journey to work and journey to school perhaps offer the greatest potential for cycling promotion. Even bearing in mind the short distance range of cycling and other problems besides road safety (e.g. lack of destination cycle parking, dress codes), the problems do not seem insurmountable. Some of the obstacles would be tackled by other *recommendations* of this project, and in other cases, all that is needed is some original lifestyle

planning and 'imagination' (again suggesting a role for promotional strategies).

R22.17 The lack of secure destination cycle parking does appear to be a significant need, and frequently an obstacle. For a regular cyclist especially who relies on the bicycle as their means of transport, this is very important, and if secure (i.e. individualised lockable) cycle parking is not provided, the cycle commuters will often go to significant lengths to protect their cycle from theft (typically, for example, taking it inside their workplace building). This highlights the crucial, and probably under-rated, importance of secure cycle parking.

R22.18 Shopping is often seen as impractical by bicycle – with the car being seen as an essential 'mobile shopping trolley'. The problems are not nearly as great as is often assumed, and no more of a problem than shopping by bus. In (albeit rare) innovative cases, cyclist shoppers have equipped themselves with cycle-towed trailers, and internet shopping may also be working against any residual cyclist 'luggage' problem that exists. Home deliveries, sometimes suggested for environmental reasons (e.g. to avoid the 'need' for a car trip) can help the situation still further, and there is some (albeit limited) evidence that some retailers are seeing this as a possible customer-focused marketing opportunity.

R22.19 The public image of cycling leaves a great many people unwilling to consider cycling. Even 'positive' values associated with cycling, such as health and environmental responsibility, are often distorted in the public's perception (e.g. in these cases, as a 'fitness freak' or 'evangelistic greenie'). The dominant public images associated with cycling remain, on balance, negative ones that many people will want to dissociate themselves with – e.g. poverty, eccentricity, retention of child status.

R22.20 A lot can be done to counter these stereotypes by marketing strategies aimed at dispelling the misconceptions outlined above. As the public come to perceive cycling as a lot more practical for everyday transport needs than the stereotypes imply, cycling's 'public image' may start to be 'normalised' as a greater proportion of people – 'ordinary people' in the public's perception – take it up. Echoing a suggestion under *Recommendation 21* above, perhaps the subtlety of Christchurch's *Annabel on Top* would be needed, but any marketing strategy needs skillful professional consideration.

ISSUE AREA: CITY/ REGIONAL INTEGRATED TRANSPORT POLICY

Recommendation 23: That in conjunction with work on the New Zealand Transport Strategy, the Ministry of Transport facilitate a project on the development of 'best practice' to guide integrated transport strategies, focusing in particular on the larger urban areas (e.g. cities and conurbations). This work should take as its starting point robust analysis of the strengths, weaknesses, opportunities and threats of the

respective modal transport options, as well as integration with urban form and other policy areas (e.g. energy usage). This work should also include, as a pre-requisite to it, scoping exploration of modal permutations and combinations which could be considered for further analysis. The project would conclude with findings which would then be used to contribute to the wider New Zealand Transport Strategy, setting a framework for transport policy developments at a more localised level, and as part of this an evaluation of 'integrated transport' planning exercises which have already taken place to date in New Zealand.

R23.1 This *recommendation* might seem at first sight to be beyond the scope of this problem, in that it does not relate to cycling directly. It is, however, crucially important.

R23.2 'Integrated transport planning' is at a relatively early stage of development in New Zealand. The terms has been variously defined, but is generally taken to refer to:

- an integration between transport planning and planning in other areas (land use planning being the most commonly cited, but also applicable to other areas, e.g. energy use, social policy);
- integration between the multiplicity of transport modes (usually car use and public transport).

A reason why only a few areas (invariably predominantly urban) have pioneered this approach in New Zealand, in contrast to overseas, seems to be that it is overseas that pressures suggesting the need for a new approach have been encountered earlier, and to a greater degree. For example, whilst Aucklanders may be conscious of congestion, this is far from the much more highly pressured situations of some European and North American cities. Compared to other 'developed' nations, New Zealand transport is among the most closely based around private car use, shown by modal split levels and car use growth rates and forecasts.

R23.3 The pressures for a more broadly-based approach are – compared to these countries – only just starting to be felt in the bigger conurbations, like Auckland and Wellington, and have still not been felt in medium-sized and smaller cities. However, car growth has been steadily rising over several years, suggesting the pressures will 'hit' in quite a pronounced (if incremental) way within current planning horizons of 10 – 20 years – suggesting it would be appropriate to address the issues now.

R23.4 The *New Zealand Transport Strategy* provides an opportunity to do that, and in fact the *Strategy* would seem likely to be incomplete without doing so. It has not substantially been started, but its terms of reference have been set. It is an initiative of the government elected in late 1999, and although building on previous Ministry of Transport work, is broader than much of this. For example, the previous *Land Transport Pricing Study* only considered land transport, and the *Roading Advisory Group Report* and *Better Transport Better Roads* only road transport. The *New Zealand Transport Strategy* will in contrast be holistic in its scope.

R23.5 'Integrated transport planning' as practiced to date (both in New Zealand and overseas) can be criticised for its general omission of cycling and walking, which is not justified by rigorous analysis.

R23.6 'Integrated transport' planning studies, policies and strategies, are typically very complex technical exercises. However, some evaluations of such exercises have found that methodologically their preparation has been strongly influenced by inter-corporate pragmatism, and as such lack a sound, objective analysis of the strengths and weaknesses of modal options and possibilities. They have also been found to reflect some of the misconceptions outlined under *recommendation 22* above.

R23.7 Such exercises have sometimes attempted to define an appropriate role for roading (i.e. generally more narrow than simply providing to meet all forecast demand) as compared to public transport. Moves towards public transport and away from a roads-based approach have been seen as a move towards more responsible use of resources, thus appropriately addressing the issues identified (e.g. congestion, pollution). This is true to some extent, but generally two aspects are missing from such studies:

- analysis of the weaknesses of public transport as compared to 'private transport'.
- inclusion of cycling and walking within the definition of 'private transport'.
- any analysis at all (at least, beyond unsupported stereotypical statements) of the strengths and potential of cycling and walking.

The term 'private transport' is generally used in such exercises as a euphemism for car use, and a shift 'from private to public transport' is heralded as a laudable objective. This ignores the fact that cycling and walking share with car use all the advantages inherent in being 'private', but with much less environmental cost than either car use or public transport.

R23.8 There may be a number of reasons for the (when looked at with rigour) breathtakingly 'blind' omission of cycling and walking. One may derive from values which have underlain transport planning since the classic foundational exercises of the 1960s (e.g. UK's *Buchanan Report/ Traffic in Towns*). These have included the tendencies to:

- focus on medium and longer-distance trips (e.g. to not include trips below a certain length in travel statistics);
- see transport in terms of 'corridors', between discrete 'zones', rather than diffused across areas (e.g. network-based trip modelling);
- see trip origins and destinations as clustered (e.g. town centres for employment or shopping);
- focus largely on the journey to work (e.g. this is still the main basis on which many statistics are available, and on which analysis takes place) as more 'productive' economically than other journeys;
- focus on peak time travelling (when numbers of people travelling are at their greatest at the same time).

Thought about in respective detail, **all** these factors are likely to encourage a focus on public transport, rather than cycling and walking, as alternatives to car use. Looking at its inherent strengths, public transport (as compared with cycling and walking) is seen to quite clearly have its greatest potential for:

- mass volumes of people,
- concentrated in the same corridor,
- making the same journey
- at the same time
- to the same place
- over medium to long distances.

The first five of the above mitigate in favour of economic viability, which is a major inherent obstacle to public transport's potential, enabling not only frequent services but also a potential-reinforcing relatively high levels of comfort. The last factor augments the inherent tendency towards journey time advantage of public transport over cycling and walking (which – again shown by objective data – do not tend to exist in practice for the bulk of journeys which take place over short to medium distances).

R23.9 However, both values and societal lifestyles have changed since the classic transport policy exercises of the 1960s when (at least in theory) a breadwinning father commuted to 'work' while his wife cared for the children at home, included shopping and schooling locally. Transport planning tended to focus on the male breadwinner employment commute, as that element of total travel which was 'economically productive', and the most likely (cumulatively with others of the same) to lead to congestion pressures. The wife's and children's journeys were not defined as 'economically productive', were assumed to take place locally, over short distance, outside the congestion 'pressure points', and were in effect assumed to 'take care of themselves' (with the wife not generally being a car user).

R23.10 Societal values regarding lifestyles have changed, as those lifestyles themselves have, dramatically over the last few decades. Most of the factors outlined in the last paragraph no longer hold true. As a result, travel is nowadays substantially more varied, both in time, spatially, and as to purpose (including often being multi-purposed).

R23.11 This major change in the nature of total travel characteristics all tend to mitigate against the realistic potential of public transport. The failure of the relatively newer 'integrated transport planning' exercises to address this point leaves them vulnerable – apparently with some justification – to criticism for having unrealistic expectations as to public transport's potential within an 'integrated' approach. Such criticisms typically come from motoring interests (e.g. the Automobile Association) and some academics (e.g. Sandra Rosenblum), usually drawing the conclusion that modern travel characteristics mitigate against a shift away from car use. However, the same arguments could equally be used to support the view that cycling and walking have relatively more potential and public transport relatively less than is generally assumed to be the case in the modern 'integrated transport planning' exercises. This is because cycling and walking share with car the advantages inherent in being 'private' (as distinct from public) transport.

R23.12 Another factor is the organisational context within which the modern 'integrated transport' planning exercises take place. They are generally initiated locally, and are managed by a collaboration of the respective local

statutory bodies responsible for transport planning. In New Zealand, this generally means a roading authority (e.g. a City Council) and a Regional Council with an explicit role to regulate (and by implication promote) use of public transport. In fact, in some overseas studies, there are examples of local advocates for cycling and walking interests being deliberately excluded from such exercises so as to make the management of such projects 'tidier' in organisational terms.

R23.13 These background factors, combined with the stereotypes outlined under *Recommendation 22* above, mean that perhaps it should not be too surprising that cycling and walking have been so breathtakingly neglected in such exercises. One European example of a major conurbation study devoted **one sentence** (and no statistics) to cycling in the whole of its quite weighty documentation, alongside very exhaustive evaluation of the potential of light and heavy rail, even though this conurbation's journey to work figures were about the same for 'cycling' and 'local rail'. Ironically, in this particular example the City Council leading the project had been commended in a national survey for its pro-active cycling policy and proposals.

R23.14 In cases where cycling **is** considered in 'integrated transport planning' exercises, coverage may comprise no more than listing existing initiatives. In fact, some such studies represent more an agglomeration of roading and public passenger transport investment projects, than any substantial underpinning in terms of policy analysis.

R23.15 So far as cycling is concerned, it is common for its potential to be downplayed even in the face of readily-available statistics indicating strong potential. In New Zealand nationally, journey to work figures for cycling are about the same as for public transport. The same holds true for Auckland. In one medium-sized city, where cycling journey to work figures were **three time** that for public transport, cycling is referred to in the local 'integrated transport strategy' as having little potential because of its limitations of distance and inability to carry passengers or luggage. The realistic validity of these factors is considered under *recommendation 22* above, but the car occupancy and trip length figures readily available to any professional consultant give the lie to two of these factors.

R23.16 Public preferences as reported in the outcomes of public consultation, undertaken as part of such exercises, are typically biased by the 'circular argument' process of asking the public to choose only between 'car' and 'public transport'; options concerning cycling and walking not even being offered as possibilities. Two examples of public consultation exercises as part of 'integrated transport' exercises were found in this project's work, and **both** failed to offer cycling and walking to the public as an option alongside 'public transport' and 'car'. In one of these cases, public submissions pointing this out led to the authority leading the project to employ a specialist consultant to rectify the omission!

R23.17 This project suggests that 'integrated transport strategies' should start from a consideration of the inherent strengths and weaknesses of the

respective modes – using sound reasoning from available factual data – and then proceed to consider the natures and sizes of the roles the respective transport modes could most usefully play in the totality of travel in the geographical area under study.

R23.18 However, ‘integrated transport planning’ should go beyond broadening from a ‘car/ public transport’ paradigm to a ‘car/ public transport/ bicycle/ foot’ one. Modal possibilities are far more complex than these ‘discrete’ categories. There are innovations in forms of transport – responding to the greater complexity of total travel characteristics outlined above – which would be equally worthy of consideration as the ‘conventional’ modal categories listed at the beginning of this paragraph. Relatively under-explored to date are the varied opportunities to combine or ‘blur’ the characteristics of different modes, with the aim of combining the strengths of the respective factors to meet particular varied forms of transport need within the varied whole. Examples of this – picked from a very wide range of possibilities – include:

- taxi shuttles (combining the strengths of private car and public transport);
- low-speed, mass-usage, short-distance ‘ultra-light-rail’ such as Parry People Movers or Maglev (combining the strengths of foot and rail);
- attention to the quality of the walking experience to access, and wait at, a public transport station;
- cycling access to, and secure parking at, stations;
- cycle carriage on public transport.

R23.19 It may also be of some encouragement that the respective strengths and weaknesses of the ‘green modes’ of cycling and walking on the one hand, and public passenger transport (as conventionally defined) on the other hand, appear to ‘dovetail’ to each other (i.e. where one is strong, the other is weak, and vice versa). For example, as already mentioned, public transport has particularly strong potential for mass volume ‘corridor’ flows over medium-to-long distance, whereas cycling and walking are particularly suited to localised movement taking place in a ‘fine-grain’ diffused pattern.

R23.20 The area of integrated transport policy theory is large and complex, and the text above has only been able to highlight some of the factors in current approaches which mitigate against a rational appraisal of the potential of cycling. The same could be said for other under-recognised modes of transport. Whilst it is beyond this project’s scope to consider these, a *recommendation* is included below in relation to walking, because:

- walking is often considered together with cycling in policy terms;
- walking is so obviously ubiquitous;
- the *National Pedestrian Project*, undertaken during 1999 and concluding in 2000, has laid a foundation of theoretical work which could usefully be taken further.

Recommendation 24: A New Zealand Pedestrian Strategy Foundation Project, along similar lines to this current project, be set up taking into account the recommendations of the 1999/ 2000 National Pedestrian Project, with a view to a New Zealand Pedestrian Strategy being

formulated, along similar lines to the New Zealand Cycling Strategy suggested under Recommendation 1 above

R24.1 The *National Pedestrian Project (NPP)* was funded by the Road Safety Trust and carried out during 1999 and 2000. The author of this current project attempted to keep in contact with the *NPP* throughout its course, hoping that the two projects could learn from each other.

R24.2 The *NPP* progress was delayed (beyond its official end date of December 1999), but its concluding *Way Forward* paper was produced in May 2000.

R24.3 The *Way Forward* paper compared different possible models by which progress could be made, and concluded by recommending that the Ministry of Transport take a lead in development of national pedestrian policy and strategy. This is very similar to this current project's recommendations regarding a *New Zealand Cycling Strategy*, although the author of this current project only learnt of the *NPP*'s suggestion at the July 2000 Palmerston North *Making Cycling Viable* symposium.

R24.4 The *NPP*'s *Way Forward* paper does not however specify issues and courses of action. A 'foundation project' similar to this current project would therefore be a very useful next step to explore the strategy action that might be require.

R24.5 Other possible *Way Forward* models explored by the *NPP* included a national pedestrian organisation, and a collaboration of stakeholders (the former comprising non-governmental pedestrian groups, but the latter also including governmental stakeholders). The *NPP* concluded that, although advantageous, these models could not be pursued at the present time, because a sufficient 'constituency' did not exist to support them.

R24.6 A major problem affecting walking – and encountered by the *NPP* – is that whereas cycling has a conscious public perception as a 'green icon', walking has no such perception, even though being just as 'green' in its impacts. Also, whereas there are established cycling advocacy, industry, sport and leisure groups, few people tend to identify themselves as pedestrians, and there are few pedestrian advocacy groups.

R24.7 There is, nevertheless, a great deal of useful findings that can be built on in the *NPP*'s *Way Forward* report. The *NPP*'s mooted 'stakeholders partnership' model (even though less preferred in comparison with a Ministry of Transport lead role) bears a striking similarity to this current project's suggestion of a *New Zealand Cycling Forum*. The building up and wider dissemination of specialist expertise is also a strong theme running through both projects.

R24.8 It seems therefore that a *New Zealand Pedestrian Strategy Foundation Project*, similar to this current project (and given the *NPP*'s suggested backing

from the Ministry of Transport), could foster the development of further courses of action in the area of pedestrian strategy development.

R24.9 It is also important to appreciate that, although cycling and walking have much in common in their characteristics, they also strongly contrast with each other in some ways. Care must therefore be taken to ensure that common 'solutions' are not inappropriately prescribed for both. An example of the contrasts is that for pedestrians one of the main obstacles is ability to **cross** a road carriageway from footpath to footpath, whereas for cyclists a major problem is negotiating ability to move **along** road carriageways and to turn at intersections.

R24.10 It must also be recognised that walking, like cycling, is generally short distance, diffused throughout a road network, and often combined with trips by other modes (e.g. the walk from/ to the car park or bus stop). It is particularly important to avoid the stereotype that its needs can be met by limited and discrete 'walkways' – which will in fact meet the needs for a very small proportion of the total walking need.

ISSUE AREA: INFORMATION EXCHANGE AND PROFESSIONAL DEVELOPMENT

Recommendation 25: Appropriate agencies facilitate information exchange and development of 'best practice' advice in cycle planning and engineering, with a particular focus on local practice.

R25.1 Most cycling initiatives in New Zealand – and elsewhere – have tended to focus on local practice. This is to be expected, since cycling is a short distance transport mode, at its strongest **within** urban areas rather than between them.

R25.2 In terms of government, it is common for cycling initiatives to be developed in a 'bottom-up' fashion. In New Zealand, Christchurch was traditionally the originator of 'best practice' models which were subsequently taken into policy and practice at national level for national application. The National Roads Board/ Urban Transport Council 'Guide to Cycling Facilities' (1985) is an early example of this.

R25.3 Overseas, the same applies. In Australia, Victoria's *Geelong Bike Plan* for a local area of Melbourne became the model for cycle planning for Melbourne, Victoria, and eventually Australia nationally. The Australian Bicycle Council is different from other Austroads 'Reference Groups' in that it functions (and prepared the *Australia Cycling Strategy* in this way) as a collaboration between states/ territories; and in fact it is only in the last two years that the Federal Government has been involved in its affairs.

R25.4 Elsewhere, both the Dutch *Cycling Master Plan* and the UK *Cycle Routes Demonstration Programme* took the form of central government facilitating a series of local trial initiatives. The more recent UK *National*

Cycling Strategy was led by central government, but again was strongly based on local initiatives.

R25.5 In New Zealand currently, local cycling initiatives have grown in number, but there is little in processes to encourage wider dissemination and learning from these. In practice, some local Councils take the initiative to develop cycling policies, cycling facilities and route networks, and local advocacy liaison, and others learn from them in an informal fashion. There is no process by which 'best practice' can be validated for wider use.

R25.6 The state of cycling engineering best practice (see *recommendation 4* above) shows this clearly. In this and other areas, an unmet need can be seen for wider dissemination of experience; testing and critical discussion of that experience; and validation for wider adoption.

R25.7 This process does not need to be 'official' in the sense of statutory. It could take place through professional bodies, or through looser groupings of interested theorists and practitioners. The main thing is that new ideas need to be open to the rigour of evaluation by others with similar experience and expertise, and that some validation takes place by a collaboration of those active in the field, which can command broad respect from those practitioners.

R25.8 The unmet need can be seen in the way that those channels which do exist for information exchange are in strong demand. Examples include:

- the *IPENZ Transportation Group Traffic Management Workshop* in the last few years has been the forum for vigorous debate between different cycling facility design practitioners.
- EECA's *Sustainable Transport Newsletter* (not only cycling) has a steadily rising subscribers list.
- The *Cycling Advocates Network (CAN)*'s *Chainlinks* newsletter.
- The author's *State of the Nation* reports to the Australian Bicycle Council are in demand as an information source from within New Zealand.
- The July 2000 Palmerston North *Making Cycling Viable* symposium was praised by wider professionals who felt they were being introduced to a field new to them.

R25.9 Clearly, there is strong localised interest. What is lacking is sufficiently strong processes by which mutual learning can be facilitated.

R25.10 Organisations that could play a variety of 'link' roles in this include the following:

- the Ministry of Transport
- the *IPENZ Transportation Group*
- *CAN* and *Cycling Support New Zealand (CSNZ)*
- an informal 'Cycling Practitioners' Network' suggested below (*recommendation 29*)
- statutory bodies for their respective fields (e.g. Land Transport Safety Authority (LTSA) for engineering standards, see *recommendation 4* above)
- specialist consultancies
- bodies of various kinds giving grants for research

- conference organisers (e.g. EECA has played a strong role to date, including leading the organisation of *Making Cycling Viable*)

R25.11 Local authority cycling initiatives have typically to date included:

- local 'Cycling Policies' (typically based around the traditional 'Four E's' of Engineering, Encouragement, Education and Enforcement)
- local 'Cycle Route Network' theoretical templates and planning processes
- local 'Cycling Facility Provision' budgets and programmes
- local cycle safety initiatives
- local cycling promotional campaigns
- supports to local cycling advocacy groups
- appointment of local authority 'Cycling Officers'
- a national project, undertaken by Francis and Cambridge consultants with Transfund subsidy, for application of overseas 'Cycle Audit and Cycle Review' to New Zealand, suggesting those local bodies considering adopting such practices (so far, Christchurch and Hamilton) work together to develop 'best practice' (exactly the approach suggested by this current project).

R25.12 'Cycling officers' (a term used here for convenience to mean any cycling specialist) come under particular pressures. They often have to battle against portrayal as 'cyclists' moles' from within their organisations, and as 'tools of the establishment' from cycling advocates, and sometimes both stereotypes at once. Out of five examples of this type of role encountered in New Zealand during this project, two were under strong pressures of this nature – from whichever side – which is a worryingly high occurrence in such a small sample.

R25.13 'Cycling officers' are hailed as being a very positive move, but realistically they are very much undervalued. They are often of junior status, have no career structure, and little real recognition for their work. The essential qualifications required are often unclear, but generally include some basic professional training (e.g. as a planner or engineer) combined with practical experience of cycling for transport purposes. However, their job skills are more than likely to have been built up 'on the job', from whatever limited information exchange channels (of the kind referred to above) they have been fortunate enough to be able to draw on. Their lack of career structure and professional encouragement means that their skills are as likely as not to be lost when, as is likely, they leave 'cycling officer' work for more generalist fields where promotion and salary prospects are greater.

R25.14 Strengthening of 'best practice' development channels as suggested by this *recommendation* would do much to raise the respect of 'cycling officers' in the eyes of colleagues, and their status and job satisfaction. This in turn may help to retain their skills to progressively pass on to others.

R25.15 There is not a problem of a lack of expertise in cycle planning and engineering – but rather in the dissemination of the expertise that exists. There is a major problem that cycling expertise tends to circulate among specialists only – so that, for example, cycling conferences tend to 'preach to

the converted'. There is also widespread ignorance of even the basic principles of cycle planning and engineering among 'mainstream' professionals and decision-makers (a result of its general omission from professional training, as outlined under *recommendation 26* below).

Recommendation 26: Specialist cycling expertise, at a basic level, be disseminated to wider professionals through basic training and (as required by their own professional needs) 'continuing professional development'.

R26.1 Cycle planning and engineering cannot be left to 'cycling officers'. Such staff are important, but their role must be to co-ordinate and facilitate action to address cycling needs on a wide range of fronts. It is obvious that many of the areas of concern addressed under these *recommendations* are far beyond the scope of even the most skilled and well-resourced 'cycling officer' or specialist. It is important that generalist professionals, too, address the issues, and for this they need at least a basic-level cycling perspective to their generalist professional training.

R26.2 Generalist professionals do not need **in depth** knowledge of the cycle planning and engineering field – cycling specialists can provide that – but do need sufficient **basic** grounding in it to appreciate its implications for their wider work. This project has found a minimal coverage of this material from 'fundamentals' courses, and this finding has not been controverted although comment has been sought on it from the training providers.

R26.3 Consequently, a serious problem exists of otherwise highly competent 'mainstream' professionals lacking even a fundamental understanding of the context for cycling policy planning and engineering – and this is amply illustrated by the findings outlined under many of the *recommendations* above.

R26.4 It is integration with mainstream education that is needed, rather than production of new material – the material already exists to quite a high level of sophistication, and the need is for it to be identified and brought '*into the mainstream*'.

R26.5 The need relates to a number of professional areas, including planning, engineering, leisure planning and management, and road safety. The precise courses and curricula into which cycling expertise would need to be integrated is beyond the scope of this project, but the essential need is clear. It is, however, encouraging that the cycling specialist professional practitioners generally do exist in New Zealand able to provide this type of input.

R26.6 Progress has been made in some countries, such as the UK through discussions between cycling academics and training providers, with 'mainstream' professional educational providers and qualifications authorities, with assistance of professional bodies. The same could usefully happen in New Zealand.

R26.7 Usefully, a focus could be on mid-career stand-alone courses, and 'module' elements of further and higher education course, since this would give the flexibility required for the integration to readily take place. For more in-depth expertise, professional practitioners (and here it is primarily **non-cycling** specialists who are envisaged) could usefully participate in the 'information exchange' channels suggested under the *recommendations* of this Issue Area.

Recommendation 27: Support be provided to enable the two New Zealand Cycling Symposia which have already taken place to develop into an ongoing conference network similar to (and in communication with) other international cycling conference networks. These conference networks include VeloCity (Europe), ProBike (North America), VeLOZity (Australia) and VeloMondial (VeloCity and ProBike collaboration).

R27.1 The July 2000 Palmerston North *Making Cycling Viable* Symposium, followed the small but highly successful 1997 Hamilton Symposium *Planning for and Promoting Cycling in Urban Areas*. This first symposium owed its existence to the tireless efforts of one man – local engineer and cycling advocate Paul Ryan – who assembled sponsorship from a wide range of professional and local body sources in conjunction with the local university's Continuing Education Department.

R27.2 The second symposium, whilst prompted by this project as its final consultation phase, was the initiative of the Energy Efficiency and Conservation Authority (EECA), who assembled an Organising Committee, who in turn attracted sponsorship from a number of professional and governmental sources.

R27.3 A third symposium is programmed for September 2001 in Christchurch, for the present under-written by Christchurch City Council, though with the possibility again of attracting wider sponsorship.

R27.4 This is very similar to the way the world's major cycling conference networks were initiated in the late 1970s/ early 1980s (or, in Australia, 1990s): one person or agency took a lead, and attracted a range of other sponsors and supporters. Although the older such conferences are now permanent organisations with full-time staff, they have always relied on support from a wide range of sources.

R27.5 *VeloCity* (Europe) and *Pro-Bike* (North America) began about 1980. Australia held a few one-off conferences in the 1980s and 1990s. The 1999 Australian *VeLOZity* conference expressed the intention to develop into a two-yearly cycle, although plans for this are currently shelved. *VeLOZity* had corresponded and co-ordinated with *VeloCity* and *ProBike*, which in turn collaborated in 2000 (as they had also done in 1992) to hold global *VeloMondial* conferences (1992 North America, 2000 Europe). A further *VeloMondial* is tentatively planned for (possibly) China in about 2005.

R27.6 Integrating these networks is a major challenge, especially considering travel requirements. *Making Cycling Viable's* innovative use of interactive video (for two British keynote speakers, during their evening/ the New Zealand morning) shows New Zealand leading the way in tackling this problem. Interactive video is surprisingly under-used, but has great potential as demonstratively 'sustainable' in energy and natural resource use terms. It also enables the greater participation of world-class speakers, especially beneficial to a relatively remote part of the world as New Zealand is.

R27.7 It is not clear how a New Zealand Cycling Symposium series could be put on a financially sustainable basis, but this would appear likely to be beneficial to a wide range of players. Those who have played a role in the past in supporting and helping lead such symposia to date should be encouraged to progress this work further, in an entrepreneurial way taking into account the benefits that can be projected to those who might be invited to contribute support.

Recommendation 28: Appropriate agencies, as outlined in recommendation 28 above, provide financial and other practical support to the Cycling Advocates' Network's Annual Meetings – of which the 'CAN Do' attached to the 'Making Cycling Viable' symposium was the first (except for a confidential 'business meeting' component) they be open for wider attendance

R28.1 *The Cycling Advocates' Network (CAN)* has no resources beyond the subscriptions and 'spare time' of its members, yet is a valuable source of expertise for professionals and decision-makers. Their Annual Meetings would therefore be a valuable resource for a wider audience, especially by virtue of the 'cycle user' perspective gained. CAN are fully supportive that (with the exception of 'formal business') other interested professionals join them to contribute to and learn from the discussions. Grant support would therefore be justifiable and beneficial, from the possibly appropriate agencies suggested under previous *recommendations* above.

R28.2 There is obvious scope for the linking, complementarity or combining of CAN's Annual Meetings and the symposium series suggested under *recommendation 27* above. In this report, they are envisaged as different – the symposia more global, theoretical and professional, CAN's meetings more local, 'hands-on' and practical – but the relationship between the two forms of information exchange could usefully be explored further.

Recommendation 29: Cycling practitioners be encouraged to form into a 'Cycling Practitioners' Network', meeting annually for information exchange as described below, with financial and practical support provided by the organisations suggested under recommendation 27 above.

R29.1 Building on the suggestions of *Recommendation 25* above, it is suggested that it would be useful for practitioners to form together into a formal network. This could also take place in conjunction with the

suggestions of *recommendations 27 and 28* regarding the symposium series and *Cycling Advocates Network (CAN)* meetings.

R29.2 Information exchange on a small scale already takes place between local council 'cycling specialists'. Engineers, planners, leisure managers, landscape architects, road safety co-ordinators and policy analysts, would benefit from regular meetings and other communication to learn from each other. The 'cross-fertilisation' between the diversity of professional perspectives would also be beneficial. Meetings hosted by particular local Councils could be used for 'marketing' achievements and fostering links with local cycling advocates. The meetings could also be used for updates, or possibly assistance in steering, the Engineering Research Programme recommended under *Recommendation 4*. Support would come from the bodies suggested as possibly appropriate under *recommendation 27* above.

R29.3 A useful model is the UK *Local Authority Cycle Planning Group*, which runs six-monthly low-cost day conferences, each hosted by a different local Council; typical content includes updates from government and others on national advice and developments; local guest speakers; a tour by cycles or coach of local facilities; and discussions/ workshops.

ISSUE ORGANISATION DEVELOPMENT	AREA:	NON-GOVERNMENTAL SUPPORT AND
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Recommendation 30: That cycle users be represented on the National Road Safety Advisory Group (NRSAG)

R30.1 The *NRSAG* consults on road safety matters at a high-order, national level. It comprises officials of different statutory agencies, and has not tended to see its role as including representatives of specific transport modes. However, the *Automobile Association (AA)* is a member, and as such is likely to be seen as (by default) representing road users as a whole. It is clear from this project that the cycling perspective tends to be neglected unless specific steps are taken to guard against this. It is therefore recommended that cycle users be represented on the *NRSAG* on the same basis as the *AA*'s membership.

R30.2 The *NRSAG* has already invited *Cycling Support New Zealand* to meet with it to explain concerns. Formal cycle user representation on the *NRSAG* would simply be an extension and formalisation of these moves.

Recommendation 31: That the Cycling Advocates' Network (CAN) be granted a full-time, professionally paid Development Officer/Administrator to enable CAN representatives – who are reliant on their 'spare time' and members' subscription finance – to perform their current effective function of 'professional advice' to government and other official agencies.

R31.1 Public funding would be justifiable for such a position, since the *Cycling Advocates' Network (CAN)* already effectively provides professional advice which official agencies tend to lack 'in-house'. It would not be reasonable for this to be provided free, since in many cases it clearly extends beyond 'consultation' to the supplying of specialist expertise, which in any other professional context would attract a professional fee. Funding could possibly come from the agencies suggested under *recommendation 27* above, or the *Cycling Development Fund* recommended under *Recommendation 32* below.

Recommendation 32: That the Bicycle Industry Association New Zealand (BIANZ) set up a 'Bicycle Development Fund' similar to that set up within the last two years by the Australian Bicycle Industries and Traders Association (BITA).

R32.1 *BITA's Bicycle Development Fund* is a recent development, but not without precedent. In other countries, cycling manufacturers and traders have recognised their vested interest in promoting more cycling, and in this a communality of interest with cycle user advocacy groups. The UK *Bicycle Association* has co-published studies, and joined forces in advocacy with, cycling advocacy groups (e.g. through the *Cyclists' Public Affairs Group*). *Sustrans*, developers of the UK's *National Cycle Network*, have set up a broadly similar funding mechanism.

R32.2 In New Zealand, the communality of interest of all cycling interests – industry, users, sport, recreation – in cycling promotion, was the motivation behind the formation of *Cycling Support New Zealand* in 1996. The *Bicycle Industry Association New Zealand (BIANZ)* approved the principle of setting up a fund on the basis suggested here at their Annual General Meeting at the July 2000 *Making Cycling Viable* Symposium.

ISSUE AREA: TOURISM AND INTER-URBAN MOVEMENT

Recommendation 33: The role and potential of 'cycle touring' be further explored, subject matter for such exploration including inter-urban state highway issues (such as the recent trials of thermoplastic markings); the potential development of off-road trails and their contribution to national policy objectives (using the Otago Rail Trail as an example); on-road cycle tourism initiatives (such as the Marlborough Wineries Network); bike carriage on inter-urban public transport; and overseas models for national cycle networks

R33.1 New Zealand is a major tourist destination, tourism is important to the national economy, and cycle tourism fits well with the 'clean and green' image New Zealand wishes to convey to the wider world.

R33.2 'Cycle touring' (used here to mean inter-urban utility cycling as well as cycling for leisure) relies largely on the state highway network, or carriage of

bicycles on public transport (notably trains and coaches). Whereas some countries have opportunities for cycle touring off the main roads (such as Britain, with its dense network of country lanes, and closed rail lines converted in some cases to non-motorised paths), New Zealand has relatively little in the way of rural 'back routes'.

R33.3 The issue of cycling on state highways (between urban areas) needs to be addressed. The issue of thermoplastic markings has been raised and researched exhaustively and so will not be explored further here, but Transit New Zealand need to ensure that the needs of inter-urban cyclists are met (in the same way they address the needs of other inter-urban road users). In some cases, this may require shoulder use rather than new cycle lanes, but engineering standards will be crucial determinants, with particular attention being paid to lateral space separation for the road's speed, and surface slope/quality.

R33.4 Cycle touring appears anecdotally to be well established in significant numbers on trains and coaches, but the needs of cyclists must be considered in the provision strategies of the operators of these services.

R33.5 One worrying example of cycling's omission was encountered during the course of this project in the form of a TranzRail customer survey ('*We'd Like To Hear From You*', July 2000) which asked the following questions:

"Q 20: *If today's journey is part of a return trip, which mode of transport did you (or will you) use for the other leg of your trip: train, private/ company car, rental car, plane, bus.*

"Q 38: *(For overseas visitors only) During your stay in New Zealand, what other types of transport have you used, or intend to use: private car, rental car, van or campervan, ferry, bus or coach, another train, plane*".

It cannot be claimed that cycling is 'insignificant' compared to the other listed alternatives, since plainly some of the categories listed would have very low usage numbers indeed. This seems to echo the striking omission of cycling in public survey work cited under *Recommendation 23* above on integrated transport planning. Cycle tourists had simply no way to answer these questions (not even an 'other' mode category was offered as an option) and so it is hardly likely that their needs would be recognised, let alone addressed in service provision. The issues has also been raised by some cycling advocates of the discouraging charging regime of cycle carriage of trains, especially on ferries and insofar as it affects multi-leg trips.

R33.6 For the reason stated, the *Sustrans* UK model of a *National Cycle Network* (which evoked a great deal of interest at the July 2000 Palmerston North *Making Cycling Viable* symposium) might have limited transferability to New Zealand, but is nevertheless worth considering. More applicable might be plans which are fairly well advanced for an Australian National Cycle Network, since Australia has more similarities to New Zealand in its inter-urban roading characteristics.

R33.7 The Otago Rail Trail (off road), Marlborough Wineries Cycle Route Network (on road) and overseas inter-urban cycle route network initiatives

suggest that cycle tourists can have a significant positive impact on local economies, especially in remote areas they pass through. They have been shown to spend a significant amount locally for their everyday needs (e.g. food) in comparison with motor vehicle tourists who bring more with them.

R33.8 Tourism is certainly a factor in the planning criteria of Transit New Zealand and regional tourism agencies, but cycle tourism does not tend to figure. This tendency for omission does not seem to be justifiable, with cycling appearing to have significant potential for rural economic regeneration strategies, quite apart from its tourism potential per se.

4. Getting There!

4.1 The prospects for the development of cycle planning expertise in New Zealand are good.

4.2 Indications in response to this project are that there is a strong unmet demand for further cycling strategy development. The *Making Cycling Viable* Symposium, itself originating as a stage in this project's process, was immensely successful. The government – at Ministerial level – has indicated that cycling will form a part in its own policy development.

4.3 This project ends with this report to the main sponsors, the *Institution of Professional Engineers New Zealand Transportation Group*. Hopefully, however, it will provide a foundation – as its title implies – enabling cycling to be brought 'into the mainstream' of national strategy development.

Dropping the 'Foundation'

4.4 Below is set out a suggestion for how the work of the project could be continued into government strategy and its implementation. Whilst beyond the project's strict scope, it is hoped that what follows might provide the 'missing link' between the *New Zealand Cycling Strategy Foundation Project* and a *New Zealand Cycling Strategy Project*.

Formulation Process

- 1) Publication of *New Zealand Cycling Strategy Foundation Document* and distribution to its *Primary Stakeholders* (and others)
- 2) Commitment sought from government (i.e. Ministries and Cabinet) for the *Foundation Document* to be a starting point to the **concept** of a *New Zealand Cycling Strategy* (whilst reserving judgment on the *Document's* specific **contents**). Cross-party support would be helpful to ensure long-term support, and could well be feasible on an issue like this.
- 3) *Ministries' Steering Group* convened by Ministry of Transport, comprising representation from (at least) Ministries of:
 - Transport
 - Health
 - Environment
 - Energy
 - Education
- 4) *New Zealand Cycling Strategy* staffing function (Ministry of Transport) to work with *Ministries' Steering Group* to refine the *Foundation Document*

into a series of draft *Strategy Actions*, with responsibilities provisionally allocated amongst respective ministry portfolio areas. Approval sought for resulting broad allocation of responsibilities from Ministers and thence Cabinet.

- 5) *New Zealand Cycling Forum* convened (membership derived from *Foundation Document Primary Stakeholders* as a starting point, after consideration and amendment as necessary by *Ministries Steering Group*).
- 6) *New Zealand Cycling Strategy* staffing function work with *New Zealand Cycling Forum* to refine *Strategy Actions* further, this time with responsibilities allocated among *Forum* members (i.e. Ministries, Crown-owned agencies, other statutory agencies, and non-governmental organisations), and responsibility and reporting linkages made explicit.
- 7) *New Zealand Cycling Strategy* staffing function work with *Forum* to develop funding implications, these to be added to *Cycling Strategy Actions*. Approval sought for all resulting documentation from *Ministries Steering Group* and Cabinet.
- 8) *New Zealand Cycling Strategy* staffing function develop work programmes, timelines, funding bids, frequency of formal *Cycling Strategy* review, indicators for monitoring, and further refinement as funding bid outcomes are known. This will include explicit explanation of relationship between the *Cycling Strategy* and 'parent' documents (i.e. *New Zealand Transport Strategy* and strategies in other government portfolio areas).
- 9) Implementation of *Cycling Strategy* begins, by various respective responsible agencies.
- 10) *Cycling Forum*, assisted by *Cycling Strategy* staffing function, reviews *Cycling Strategy* implementation at pre-determined periodic intervals.
- 11) *Cycling Forum* oversees formal *Cycling Strategy* review at frequency determined in the *Cycling Strategy* itself, entailing repetition of above steps.

Disclaimer

Nothing in any of this project's documentation should be taken as reflecting in any way the policies or stances of the sponsors (Institution of Professional Engineers New Zealand Transportation Group) or further supporters (Hamilton City Council and the Energy Efficiency and Conservation Authority)

Research Guide and Select Bibliography

Introduction

The field of cycle planning and engineering is 'young' and evolving rapidly. For this reason, and because inevitably the subject matter cannot be divorced from a number of much wider bodies of knowledge and policy areas, this Research Guide and Select Bibliography must of necessity be highly selective.

Another major change in recent years is advent of the internet. This has vastly increased the resources available, along with making selection more complex. Partly for this reason, this section is more of a 'Research Guide' than a 'Bibliography'. Often a website is listed, rather than publications which may be listed on or downloadable from it.

There is a relatively small number of seminal texts, often ones which have originated widely influential ideas subsequently developed by other, or cited as authoritative (sometimes many years after original publication). These are marked with two asterisks **.

Other texts (or websites) considered to be of particular value are marked with a single asterisk *.

Where considered a help, a brief note is added *in italics* on the text's perspective, context or particular insights.

Generally, broader fields (e.g health, inter-modal transport planning, engineering) have not been entered into. In some cases a single text has been listed which will give a good outline of basic ideas, which can be followed up by further research by particularly interested readers. Often these texts will have their own bibliographies, or the same authors will have written further in the same field. 'Cycling' texts well-referenced in mainstream fields are not listed, since they are assumed to be already well-known to people working in the respective fields (e.g. *Part 14 Bicycles* of the *Austroroads* design guide among roading engineers).

In a few cases an acknowledgedly-controversial text has been listed. Endorsement of the ideas should not be assumed, but reading 'counter-views' is considered of particular value in subjecting more 'orthodox' views to scrutiny, and prompting reflective thought. Examples are Randall O'Toole's *Vanishing Automobile* transport planning study, and Mayer Hillman's *For and Against* text on cycle helmets.

It will be noticed that cycling advocacy websites are prominent, especially in the *Cycling General* category. This is not to endorse any position taken by these bodies, but simply in recognition that much of the expertise, in this new and evolving field, has been developed and is still being developed by those who 'advocate' for cycling interests.

Specialist cycling conferences are a major source for cycling expertise. If a reader can go no further, consulting papers of the main international conference streams will suffice for breadth of coverage. These are rare concentrated forums bringing together advocates, specialist professionals and governments.

The three New Zealand cycling conferences held to date are considered particularly important, not because the papers are of any particularly high 'quality' but because of this project's new Zealand-specific topic, and the relative dearth of New Zealand-specific material. For this reason many of the individual papers have been listed (a practice not generally followed for conferences), with the conference titles abbreviated as follows:

PFPCUA 1997: "Planning for and Promoting Cycling in Urban Areas" Symposium, University of Waikato, NZ, 1997

MCV 2000: "Making Cycling Viable", Massey University, Palmerston North 2000

CTFL 2001: "Cycling: Transport for Living" Conference, Chateau-in-the-Park, Christchurch, 2001

Generally titles of individual conference papers are not listed along with the conference title.

The author's British background will have inevitably have given this listing a British bias, but this is not considered to have detracted from its value. Other sources have been listed as well, the listing is meant to be a 'sampler' rather than authoritative, and others will vouch that the UK's material and National Cycling Strategy and Network developments have been significant on an international scale. Decisions to give ** and * suffixes are inevitably subjective.

Advocacy and Process

www.australianbicyclelobby.com News and resources for cycling advocates
Stephen Knight, Kurt Brehmer and Pieter Watson: at PFPCUA 1997 on Auckland

www.can.org.nz Cycling Advocates Network are the national NZ advocacy body, and hold a significant volume of resources on their website, including a library.

www.ctc.org.uk The old-established 'Cyclists' Touring Club' (now just 'CTC') branched back into advocacy in the 1980s. Source of significant resources, including several leading policy studies.

UK Cycle Campaign Network. National body linking local cycling advocacy groups.

UK Cyclists' Public Affairs Group *Coalition of CTC, Cycle Campaign Network, Bicycle Association (industry), and as such the lead agency in liaison with Government.*

Robert Hynson and Paul Ryan: at *VeloAustralis International Bicycle Conference*, Fremantle, Western Australia 1996, Western Australian Government. *On Hamilton*

Jane Dawson: at PFPCUA 1997; CTFL 2001

Christine Cheyne: at MCV 2000

Eion Harwood: at MCV 2000

Elisabeth Mikkelsen: at MCV 2000

Ruth Dyson MP: at CTFL 2001

Roger Boulter: at CTFL 2001 *on Hamilton*

Cycling Support New Zealand has produced a cycling promotional leaflet *The Sense and Cents of Cycling*. Available from Paul Doherty, CSNZ Executive Director, P O Box 3064, Whangerei, tel 09 436 2640, fax 09 436 2600, email pd@cycling-support.org.nz.

Audit and Review

Cycle Audit and Cycle Review, *Institution of Highways and Transportation*, 1998

Susan Cambridge: at MCV 2000

Andrew MacBeth and Simon Underwood: at CTFL 2001

Behaviour and Road User Law

Kerry Wood: at MCV 2000 *Of interest to understand why cyclists sometimes break traffic law not out of irresponsibility, but because it may be safer to break the law than to obey it.*

Benefit/ Cost Comparison

Andy Rowell and Malcolm Fergusson: *Bikes Not Fumes**, 1991, Cyclists' Touring Club.

Mark Shayler et al: *Costing The Benefits: The Value of Cycling***, 1993, Cyclists' Touring Club (UK)

Capacity Building

The building up of community-based initiatives by agencies external to but assisting those initiatives

Colin Graham: at VA 1996

Bronwen Thornton: at MCV 2000

'Community' or 'Green Bike Schemes'

Going by various names, these generally allow a pool of cycles to be picked up, used and left through a city centre, for accessibility and/or job creation/training purposes.

Richard Lee: at PFPCUA 1997 *on Palmerston North*

John Hornblow: at MCV 2000 *on Palmerston North*

Conferences

Velo-City* – European Cycling Federation, c/o 31, Arodene Road, London, SW2 2BQ, UK, www.ecf.com (Oliver Hatch, Director) oh@velo-city.org

Normally two-yearly in a European city, although there have been exceptions (e.g. VeloAustralia, Fremantle, Western Australia, 1996). Websites are set up for individual conferences

Pro-Bike Pro-Walk*, www.bikewalk.org

Normally two-yearly in a different North American city. Has diversified to embrace walking in recent years.

VeloMondial*

Global focus, based around collaboration of the Velo-City and Pro-Bike Pro-Walk Conferences.

www.decc.nl/host/velo/velomondial2000/Html/PROCEED/TINDEX.HTM

contains the 2000 VeloMondial papers.

Australian Series

No continuing existence as yet. Individual conferences hosted by various bodies include BikeSafe (Melbourne, 1986[check]), AusBike (Melbourne, 1992), VeloAustralis (Fremantle, WA, 1996, in conjunction with Velo-City), VeloZity* (Adelaide, 1999), Safe Cycling Conference (Brisbane, 2000, Queensland State Cycling Unit). Contact BFA, BIA and State/ Territory Governments for information.*

New Zealand Series*

No continuing existence as yet. The paucity of published sources specifically on NZ make the papers of these symposia particularly valuable. Symposia to date are listed below.

“Planning for and Promoting Cycling in Urban Areas”, NZ Cycling Symposium, October 1997, University of Waikato. Conference Papers published by University of Waikato Centre for Continuing Education.*

“Making Cycling Viable”, Second NZ Cycling Symposium, Massey University, Palmerston North, July 2000. Conference Papers published by the NZ Energy Efficiency and Conservation Authority (EECA).*

“Cycling: Transport for Living” NZ Cycling Conference, The Chateau-on-the-Park, Christchurch, September 2001. Conference Papers published by Christchurch City Council and on www.ccc.govt.nz/recreation/cycling/conference/2001.*

Planning for a fourth symposium has just started, to take place in North Shore, Auckland. Contact Paul Doherty, Cycling Support New Zealand (see above for details).

Cycling General

CTC Cycle Digest, www.ctc.org.uk *The old-established ‘Cyclists Touring Club’ (now just CTC) is a major source of resources, including several leading policy studies*

*Don Mathew: More Bikes: Policy into Best Practice**, 1995, CTC. *Analysis of policy mix which leads to increases in cycling in developed cities/ countries, with case examples.*

www.bikereader.com/BikeReader/BikeReader.html *Described as a ‘Rider’s Digest’*

www.can.org.nz New Zealand Cycling Advocates' Network. See also *advocacy and process*

FABIO, the First African Bicycle Information Office, website www.connect-uganda.net/fabiobspw.htm. Based in Jinja, Uganda; hosted Pan-African Bicycle Conference, November 2001.

Interface for Cycling Expertise (I-ce), Predikherenstraat 17, 3512 TL Utrecht, The Netherlands, fax +31 30 231 23 84, email l-ce@cyclinq.nl, website www.cyclinq.nl/start.htm

PedBikeNews, the e-newsletter of PedBikeTrans, the Pedestrian and Bicycle Transportation Institute of Australasia; to subscribe, contact matt.burke@uq.edu.au

www.australianbicyclelobby.com Australian cycling advocates and industry

www.bikewalk.org Washington-based USA National Center for Bicycling and Walking; also runs the 'Centerlines' e-newsletter

www.cyclingpromotion.com The Cycling Promotion Fund, set up by the Australian bicycle industry; this fund sponsored two prizes for papers at the 'Cycling: Transport for Living' Conference, Christchurch, NZ, September 2001

Hugh McClintock *Planning for the Bicycle: Current Issues and Future Challenges* in *Municipal Engineer* journal, no 145, Issue 1, March 2001. Good general summary of issues by a leading theorist from Nottingham, UK.

European Cycling Federation has a monthly-updated *Bicycle Research Report*, available on subscription from www.ecf.com/publications/index.htm

www.nybc.net New York Bicycling Coalition website contains manual 'Improving Bicycling and Pedestrian Safety'

Pedestrian and Bicycle Institute of Australasia is a membership network which operates a free e-newsletter. Contact matt.burke@uq.edu.au

www.transalt.org Transportation Alternatives, a New York advocacy group

www.transport.wa.gov.au/metro/gettingthere/cycling/ Western Australian Government.

www.travelsmart.transport.wa.gov.au/ Western Australian Government programme to encourage car-alternatives; this type of initiative is not generally covered by this bibliography, but is included because of its particularly significant cycling component

Cyclist Education

John Franklin: *Cyclecraft: Skilled Cycling Techniques for Adults***, Unwin Paperbacks, 1988. Leading UK text on cycling skills in interaction with motorised traffic, since republished as part of the 1996 National Cycling Strategy..

John Forester: *Effective Cycling***, MIT Press, Cambridge, Mass, USA, 1993. There may be subsequent editions (this is the 6th edition). A practical handbook, long at 599 pages, but the classic text on the school of thought, also shared by the UK's John Franklin, that cyclist road behaviour in relation to traffic is the determinant of cyclist safety rather than provision of cycling engineering facilities.

www.johnforester.com Forester is a leading advocate of cycling skills in interaction with motorized skills. He has published a wealth of material in addition to 'Effective Cycling'

Michael Cummins: at PFPCUA 1997, MCV 2000 (with Tim Hughes), CTFL 2001

Lee Kelly: at MCV 2000

Glenys Shepherd: at MCV 2000

Marilyn Northcote: at CTFL 2001

Engineering/ Physical Infrastructure Planning

Alix Newman: *Cycle Lane Delineation Treatments*, Christchurch City Council, June 2002 (summary and full reports)

Alix Newman: *The Marking of Advanced Cycle Lanes and Advanced Stop Boxes at Signalised Intersections*, Christchurch City Council, May 2002 (summary and full reports)

These two Alix Newman texts bring together a great deal of research led by Newman over the last few years. It is probably the most comprehensive coverage of these aspects of cycle engineering yet produced in New Zealand, encompassing the Victorian work led by Alistair Cummins (see below) and the UK-style advanced stop lines trialled in Hamilton, NZ. A large part of its value is in the wide range of design options embraced.

Alistair Cumming: *A leader in Australian cycle facility engineering, his 'model' facility designs for mid-block and intersection situations are expounded in publications of the Victorian Government and Australian cycling conferences.*

Allott and Lomax Consulting Engineers for Cyclists' Touring Club (UK): *Cyclists and Roundabouts: A Review of Literature***, 1991

J M Morgan: *Roundabouts in Continental Europe Designed with Cycle Facilities or 'Cycle Thinking'*, UK Transport Research Laboratory, TRL Report 302

Johanna Cleary: *Cyclists and Traffic Calming*, 1993, CTC. *Now old and may be overtaken by subsequent material, but still a timely reminder of how traffic calming can paradoxically pose dangers to cyclists through ignorance or neglect of their needs*

UK Traffic Advisory Leaflets, available on Department for Transport website www.roads.dft.gov.uk clear, concise and free

UK Transport Research Laboratory, www.trl.co.uk extensive research

Victorian Government: *Cycle Notes* series, from VicRoads Bookshop, tel +61 3 9854 2782, further information on www.vicroads.vic.gov.au

Alix Newman: at PFPCUA 1997; ERS 2000; CTFL 2001

Amy Buckley: at MCV 2000

Jon Donbavand and Diana Munster: at MCV 2000 *on thermoplastic markings*

Axel Wilke: at CTFL 2001

Warren Lloyd: at CTFL 2001

See also proceedings of established engineering conferences, notably the IPENZ Transportation Group's annual Traffic Management Workshop

Institution of Highways and Transportation et al: *Cycle-Friendly Infrastructure: Guidelines for Planning and Design*, 1996*

John Forrester *Bicycle Transportation: A Handbook for Cycling Transportation Engineers*, MIT Press, 1994

Facility Projects

Warren Lloyd: at MCV 2000 *on Papanui Railway Cycleway, Christchurch, NZ*

General/ Broad Policy

Campaign for Better Transport is an Auckland-based advocacy network, on www.getmoving.org.nz
EECA Sustainable Transport Newsletter, NZ Energy Efficiency and Conservation Authority. To get on the mailing list for this free e-newsletter, contact Philip.Watson@eeca.govt.nz. All issues archived on www.eeca.govt.nz/transport/network
Rodney Tolley *The Greening of Urban Transport**, Belhaven Press, 1997
Hugh McLintock *The Bicycle and City Traffic*, Belhaven Press, 1991
Mayer Hillman: at MCV 2000*
Alan Parker: at CTFL 2001
John Whitelegg (Ed) *World Transport Policy and Practice* e-journal on www.ecoplan.org/wtpp.
T&E Bulletin, by the European Federation for Transport and Environment, is on www.t-e.eu/Publications/Bulletin/T&Ebul.pdf
Victoria Transport Policy Institute**. *Issues an e-newsletter covering documents and reports downloadable from its website, as well as news, and has issued an 'Online TDM Encyclopedia' on Travel Demand Management.*
Contact Todd Litman, Director, email litman@vtpi.org, website www.vtpi.org
www.transportconnect.net Transport Connect website has news, journals (including a search engine), online bookstore and practitioner resources (including a link to the major KonSULT Knowledgebase operated by the Institute for Transport Studies, Leeds University, UK.
http://safety.fhwa.dot.gov/programs/ped_bike.htm USA Federal Highways Administration
www.fhwa.dot.gov/tfhrc/safety/pbs.htm USA Federal Highways Administration research, including downloadable.
Transp-tdm@cutrlist.eng.usf.edu to subscribe to e-newsletter provided by www.nctr.usf.edu/clearinghouse part of the National Center for Transit Research located at the Center for Urban Transportation Research at the University of South Florida; on 'travel demand management' and other 'car-alternative' transport planning.

Health

British Medical Association: *Cycling Towards Health and Safety***, 1992 *Still considered by many the leading authoritative international text on the subject.*
Mayer Hillman: *Cycling and the Promotion of Health*, Proceedings of the PTRC Conference, 1992*. *Significant because it is in this paper that Hillman (substantive author of the BMA reference immediately above) published his finding that years added (from cycling's preventive health benefits) outweighed years lost (from crash risk) by a factor of 20:1, a figure which has been widely cited since.*
Ian Roberts et al: *Pedalling Health: Health Benefits of a Modal Transport Shift*, 1996, published by the authors. *Australian text by medics/ cycling advocates.*
LM Pearce et al: *Cycling for a Healthier Nation*, UK Transport Research Laboratory, TRL Report 346
Boyd Swinburn: at PFPCUA 1997

Ashley Bloomfield: at MCV 2000

Walk and Roll Canadian study Details under National and Overseas Cycling Strategies.

History of Transport Planning Theory

Sir Colin Buchanan *Traffic in Towns*** , 1963, HMSO (UK Government Printers) and 1964 Penguin (popular edition)

Classic text addressing the rise in car travel demand and how to protect residential areas from degradation arising from it (and as such a useful comparison with Engwicht's contrasting and more recent approach to the same problem, see 'Trans-Modal Transport Planning' category). Expounds the 'corridors and rooms' and road hierarchy concept, with practical UK application examples.

*Geelong Bike Plan*** , Victoria (Australia) Government, 1977

Originates classic foundational concepts which dominated cycle planning internationally, until major changes in theory took hold in mid-late 1990s. Still very influential through introducing the 'cycle route network' theory and the '4 e's' (Engineering, Education, Enforcement and Encouragement) approach.

Local Authority Cycling Policies/ Strategies (New Zealand)

Contact individual local authorities for details. Also conference papers, as listed, at New Zealand Cycling Symposia 1997 (PFPCUA), 2000 (MCV), 2001 (CTFL), and 1996 VeloAustralis (VA).

Christchurch

Cycling in Christchurch 1980; Cycling Policy 1996; Cycling Policy 1998; Cycle Route Network planning methodology document 2000.*

Alix Newman: at VA 1996, PFPCUA 1997, MCV 2000.

Ministry of Transport: A study of adult bicycle use in Christchurch and Palmerston North, 1987. Valuable because of the general paucity of cycle usage data

Auckland

Cycling Policy 1980; Cycling Policy 1996

Catherine Wilson and Pravin Dayaram: at PFPCUA 1997

Stephen Knight, Kurt Brehmer and Pieter Watson: PFPCUA 1997

Nadine Ord: at CTFL 2001.

Hamilton

Cycling Policy 1988; "Cycling in Hamilton 1995" policy; "Cycling in Hamilton 2000" Strategy

Norman Robins: at PFPCUA 1997

Roger Boulter: at MCV 2000, CTFL 2001

Palmerston North

"Palmerston North Bike Plan" 1999

Rebecca Blyth: at MCV 2000, ERS 2000

Ministry of Transport: A study of adult bicycle use in Christchurch and Palmerston North, 1987. Valuable because of the general paucity of cycling usage data

Tauranga

"Tauranga Cycling and Walking Strategy" draft, 2000

Matthew Grainger: at MCV 2000

Hastings

Cycling Policy 2001

Nelson

Cycling Policy 1997

New Plymouth

No formal policy as such, but comprehensive cycle route network implemented 1997, and later supplemented

Mark Georgeson and John Sutton: at PFPCUA 1997

Long-Distance/ Rural/ Off-Road Paths

This title is meant to embrace cycle routes which tend to be 'icons', valuable for building a positive public image and raised profile as much as for meeting practical transport or leisure needs. This tends to be associated with longer-distances, off-road facilities and rural areas, but this is not always the case (e.g. the UK Sustrans network passes through heavily urbanised areas, and uses 'country lanes' shared with general traffic; the NZ Marlborough Wineries Network is on-road).

Sustrans*, 35 King Street, Bristol, BS1 4DZ, UK, tel +44 117 926 8893, fax +44 117 929 4173, website www.sustrans.org.uk

Extensive information source on UK National Cycle Network, and international European networks (e.g. North Sea, Atlantic Arc). UK NCN is not to be confused with UK National Cycling Strategy; NCN is literally a network of routes on restored railway formations, canal towpaths, country lanes and other links.

John Grimshaw: at MCV 2000 on UK National Cycle Network

Matthew Sole: at MCV 2000 on NZ Otago Central Rail Trail

Dean Blackwell: at CTFL 2001 on Otago Central Rail Trail

Jean-Paul Thull and Paul de Spa: at CTFL 2001 on Canterbury Off-Road Trail

Michael Oxe: at CTFL 2001 on Australia

Modelling

Rosemary Sharples: *Cycle Modelling: An Overview*, Traffic Engineering and Control, April 1999. *Whilst numerically complex modelling of motorised traffic network behaviour patterns forms the basis for much planning for motorised traffic, it is very rare in relation to cyclist movement patterns. Rosemary Sharples is one of the few who have pioneered in this field.*

Rosemary Sharples: *The use of main roads by utility cyclists in urban areas*, Traffic Engineering and Control, January 1999.

Motorist Education/ Roadsharing

UK Automobile Association Public Policy Department *Cycling Motorists: How To Encourage Them**, 1993 also on modal shift potential

Chrissie Williams: at MCV 2000 on opening car doors

Tom McBrearty: at CTFL 2001

National and Overseas Cycling Strategies

Commonwealth of Australia Department of Transport and Regional Services, *Australia Cycling: The National Strategy 1999 – 2004*, 1999.

Australian National Bicycle Council, website www.dotars.gov.au/abc

Netherlands Directorate-General for Passenger Transport: *The Dutch Bicycle Master Plan*, 1999. Obtainable (free, possibly with postage charge) from: Mr A G Welleman, Ministry of Transport, Postbus 20901, 2500-EX Den Haag, Netherlands, tel 00 31 70 351 6269

Netherlands Ministry of Transport, Public Works and Water Management: *Cities Make Room for Cyclists*, 1995. *Specific urban cycling strategies from various parts of Continental Europe.*

United Kingdom Department of the Environment Transport and the Regions: *National Cycling Strategy and National Cycling Strategy: Appendix: Topic Papers and Other Support Material*, 1996.
www.nationalcyclingstrategy.org.uk

David Davies: *Bikeframe*, CTC, 1997. *Model cycling policy by a UK leader in local authority cycling policy research, with Appendices giving good practice examples, free from CTC (see above for contact details)..*

United States of America:

No strategy specifically on cycling, but the federal Transport Equity Act for the 21st Century (TEA-21) requires states to embrace multi-modal issues in transport policy.

New Zealand:

Ministry of Transport Land Safety Division: *A National Cycling Strategy for New Zealand*, Internal Draft, 1993. *Never reached ministerial authorisation, but substantially complete, and a precedent.*

National Cycling and Walking Strategy intention announced February 2002, in preparation at time of writing.

Canadian Council for Health and Active Living at Work: Walk and Roll, 1998, *Canadian Safety Council*, tel 00 1 613 739 1535, fax 00 1 613 739 1566 csc@safety-council. Also on skating/ small-wheeled transport.

On-Road Cycle Touring/ State Highways

These two are grouped together because (inter-urban) cycle touring usually necessitates state highway use. Urban State highway issues are generally similar to those affecting 'local' (i.e. non-State highway) roads.

This category is separate from the Long-distance/ Rural/ Off-Road category because of the distinction in terms of policy agencies and activities required to address them. It is recognised that cycle tourists will often fail to make this distinction in practice, and the references listed will also 'overlap' in some cases.

David Young: at MCV

Glen Koorey: at CTFL

Michelle McCormick: at CTFL

Kerry Wood: at CTFL

Perceptions/ Promotion/ Marketing of Cycling

D G Davies et al: *Attitudes to cycling: A Qualitative Study and Conceptual Framework**, UK Transport Research Laboratory, TRL Report 266

D G Davies et al: *A Quantitative Study of the attitudes of individuals to cycling*, UK Transport Research Laboratory, TRL Report 481, 2001

D G Davies and E Hartley: *New Cycle Owners: Expectations and Experiences**, UK Transport Research Laboratory, TRL Report 369
H Finch and J M Morgan: *Attitudes to Cycling*, Transport and Road Research Laboratory, RR14, 1985. *Old now, but classic text still cited.*
Hides Consulting Group for *BikeWest* (West Australian Government: *A Report on Attitudes Towards and Participation in Cycling, Wave 5*, March 2001.
Alix Newman*: at MCV 2000
Michael Oxe: at MCV 2000
Pippa Pettigrew*: at CTFL 2001 *Particularly valuable because rarely studied by a member of the adolescent category under study; also because recent and with an NZ-specific context.*
Felicity Close: at CTFL 2001
Bernadine Walsh: at CTFL 2001

Professional Development

Hugh McClintock and Derek Palmer: *Planning for Cycling and Walking – Improving Professional Development in Highways and Transportation* journal of the Institution of Highways and Transportation (UK), March 1999. *This and the following article should be read together. Although hindered by UK context, material on addressing incorporation of cycling into mainstream professional development are rare, and the three authors are leaders in cycling theory, mainstream professional bodies and the VeloCity conferences respectively.*

Oliver Hatch: *Improving Careers for Bicycle Professionals in Highways and Transportation* journal of Institution of highways and Transportation (UK), November 1999. *See comments after item immediately above.*

Axel Wilke, Glenn Koorey and Kerry Wood *Keeping Cyclists in Mind* training course. *Although still in formulation, listed here because the only NZ material linking cycling into mainstream professional courses; engineering-based with some planning content.*

Route Network Planning

Carmen Hass-Klau and Graham Crampton: *Cycle Safety: A Comparison Between British and (West) German Cities*, PTRC Conference, September 1990.

John Franklin: *Two Decades of the Redway cycle paths in Milton Keynes*, Traffic Engineering and Control, July/ August 1999. *Interesting because the Milton Keynes Redways are one of the most comprehensive off-road path networks anywhere in the world, and John Franklin, a leader of the Milton Keynes Cycle Users Group, is one of their fiercest critics, on the grounds of substandard design, limited range of destinations served, and diminution of cyclists' rights on the road. Franklin argues that they are actually more dangerous than the road system, for which they are meant to be a 'safe' alternative.*

Roger Boulter: at PFPCUA 1997

Alix Newman: at VeloAustralis International Bicycle Conference, Fremantle, Western Australia, 1996*, Western Australia Government, and at MCV 2000* *Both on Christchurch*

Paul Ryan: at MCV 2000

Jason McGregor: at CTFL 2001 *on Panmure, Auckland*
See also local authority strategies

'Safe Routes to School'

These have as their motive encouragement of more cycling or walking, instead of car use, to school. Schemes typically comprise road engineering, driver education, and/or child pedestrian education.

Paul Ryan: at PFPCUA 1997

Sustrans, 35 King Street, Bristol, BS1 4DZ, UK, tel +64 117 926 8893, fax +64 117 929 4173, website www.sustrans.org

Victoria State Government has pioneered this concept in Australia

City of Melville, Western Australia, paper at *VeloAustralis International Bicycle Conference*, Fremantle, Western Australia, 1996, Western Australian Government.

Safety Policy/ Crash Data Analysis/ Injury Analysis

Kerry Wood: at PFPCUA 1997

Kerry Wood: *Bicycle Crashes in New Zealand*** Masters Thesis, Lincoln University, 1999 *The only comprehensive study of NZ cyclist crash recording and analysis, their shortcomings, and issues raised by this.*

Kypros Kypri and Craig Wright: at MCV 2000

Martin Small: at MCV 2000, CTFL 2001

Diana Munster: at CTFL 2001

Mayer Hillman: *Cycle Helmets: The Case for and Against*, 1993, Policy Studies Institute, London, UK*. *More the case against.*

L Povey, W J Frith, and P G Graham: *Cycle Helmet Effectiveness in New Zealand* in *Accident Analysis and Prevention*, 1999, no 31, pages 763 – 770. *Highly numerate comparison between head injuries and limb injuries to draw conclusions on the effectiveness of helmet wearing in reducing injury rates. Does not attempt to evaluate effect of helmets or helmet on cycle usage, risk compensation, or other helmets/ helmet law counter-arguments.*

Dorothy Robinson on helmets at VA 1996 *Useful for benefit/ cost comparison between helmet promotion and other crash/ injury reduction strategies (e.g. speed reduction). Robinson is published similarly in other journals, e.g. those of ARRB.*

Trans-Modal Transport Planning

Birmingham City Council: *Birmingham Integrated Transport Study*, 1989. *Has now been followed by many others in UK and elsewhere, but a 'trailblazer' as the first, and much-studied as such. Devotes a single sentence to cycling (see this project's 'Interim Position Statement', page 24).*

Mayer Hillman and Roger Higman: *Curbing Shorter Car Journeys: Prioritising the Alternatives*, 1998, Friends of the Earth, UK.

www.carfree.com/cft/i022.html USA, runs 'Car Free Times', news, notes and comment.

David Engwicht: *Towards and Eco-City**, 1992, re-published as *Reclaiming The Streets**, 1996. *Engwicht rose to 'fame' as resident leader of opposition*

to major road-building in Brisbane; stresses the role and importance of foot-based interaction to a city's life and the need to safeguard this in transport planning. Website www.lesstraffic.com/

Randall O'Toole: *The Vanishing Automobile and Other Urban Myths*, 2001, Thoreau Institute, Portland, Oregon, USA www.ti.org *Leading exponent of the libertarian position on car-based movement as a fundamental right; a sceptic on public transport and other 'green alternative' transport approaches to provide a sufficiently attractive to car movement.*

Sandra Rosenblum: at Trafinz (Local Authorities' Traffic Institute of New Zealand) Conference, Wellington, 1998*. *Usefully illustrates lifestyle, land use and travel pattern changes since the 1960s, and the consequent difficulty of meeting current transport needs by public transport; useful to read in conjunction with Randall O'Toole reference immediately above.*

Roger Boulter: at PFPCUA 1997

Auckland Regional Council: *Auckland Regional Land Transport Strategy*: draft 1998, Final 1999. *comparison of cycling's treatment in each interesting; see this project's 'Interim Position Statement' page 24-25.*

Peter Newman, Jeff Kenworthy and Mark Bachels: *Indicators of Urban Traffic Efficiency in New Zealand's main cities: an International Comparison of Transport, Land Use and Economic Indicators*, Institute for Science and Technology Policy, Murdoch University, 1999. *Newman and Kenworthy have written extensively on international comparisons of correlations between urban population density, energy usage and transport modal choice. Bachels is one of the few New Zealanders working in this field. This is one of the more recent of many publications in this vein, and unusually has a New Zealand focus.*

Sir Peter Hall: F J Osborn Memorial Lecture, Royal Society of Arts, February 1999, London. *On urban form from an extensively-writing leading geographer in this field.*

www.bikestation.org *Three Californian case examples of the growing interest in integrating cycling and public transport through innovations to make bike parking at rail stations attractive and safe. Part of the wider www.city-wheels.com which also covers electric car and bike sharing.*

Usage/ Use of Usage Data

Don McKenzie and Liam Ryan: at CTFL 2001

Weather Effects on Cycling

Paul Bruce: at MCV 2000