

Developing Strategic Cycling Principles for Regional Land Transport Strategies

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Abstract

Recent transport policies and legislation by central government now impose an obligation on regional councils to consider how best to provide for and encourage cycling within their Regional Land Transport Strategies (RLTS). Environment Canterbury has already undertaken a number of initiatives in this area to date. A model cycling strategy was produced to provide constituent local authorities with a template for developing their own strategies. A strategy for the development of a regional network of cycle routes was developed identifying long-distance cycling issues across the region. Finally, as part of the update of the current RLTS, key principles for developing cycling within the region have been produced for inclusion in the Strategy to further guide implementation of the policy. This paper discusses the work involved in undertaking these initiatives and the key concepts and issues for cycling identified.

Introduction

Cycling has historically been an important mode of transport in Canterbury, a region that is particularly well suited to cycling given the generally dry climate and flat terrain. According to the 2001 Census, 6.1% of people in the region travelled to work by cycle, the highest proportion for any region in New Zealand (CAN 2004).

Although many people attribute this ranking solely to the popularity of cycling in Christchurch city (where 7.2% of workers travelled by cycle in 2001), relatively high levels of cycling are also evident in Mackenzie (5.9%), Ashburton (5.2%), and Timaru (5.0%) districts as well. Closer inspection reveals that most urban areas in the region (such as Rangiora and Geraldine) are home to a considerable amount of cycling.

However what is also evident has been the steady decline in cycling over the past two decades, as factors such as increasing traffic volumes and non-inclusive road planning/design have taken their toll. At the 1986 Census, for example, the Canterbury region boasted 10.2% of its workforce cycling to work.

Recent transport policies and legislation by central government (NZ Govt 2002, 2003; MoT 2003) now impose an obligation on regional councils to consider how best to provide for and encourage cycling within their Regional Land Transport Strategies (RLTS). This statutory document sets out a strategic direction and policies that local Road Controlling Authorities must take into account when preparing their Land Transport Programmes.

While many regional councils are still coming to terms with how to support cycling, Environment Canterbury (ECan) has already undertaken a number of innovative initiatives in this area to date. These were prompted by the adoption of the 2002-07 Canterbury RLTS (ECan 2002), which aimed to promote cycling as a viable and safe travel option. This paper discusses the work involved in conducting these initiatives and the key concepts and issues for cycling identified through their development.

Model Cycling Strategy

At the local council level, one of the first actions usually required to successfully implement cycling provision is to develop a cycling strategy. Impetus for developing such strategies has been enhanced by Transfund now requiring one before subsidising cycling activities from cycling and walking activity class. There are currently no national guidelines as to what key elements should make up such a strategy, although the *Cycle Network and Route Planning Guide* (LTSA 2004) provides some guidance and further work is underway at present for Transfund NZ (MWH 2004).

In Canterbury, only Christchurch City had already developed a local cycling strategy (CCC 2000). Therefore, one of the first actions ECan undertook was to prepare a model strategy, to provide a template for other local authorities to use when developing their own strategies. MWH (NZ) Ltd was commissioned in mid-2002 to develop the model strategy.

A key element in the development of the model strategy was the formation of a “regional cycling working group” of key stakeholders. This group included local council staff, cycling advocates, expert cycle planners and other road user group representatives, and provided strategic feedback to the consultant as drafts were developed. This process was seen as essential to develop a quality product and achieve “buy-in” from both local councils and cyclists.

The structure and content of the model strategy document was generally based on the Christchurch City 2000 Cycle Strategy for a number of reasons:

- Considerable time and effort was put into the development of that strategy, firstly in 1996 and then when reviewed in 2000;
- The Christchurch strategy is well supported both by staff responsible for cycling in the city and by other organisations, including local and national cycling groups;
- Subsequent annual cycling reports have confirmed the original thrust of the strategy; and
- The Christchurch strategy will not be inconsistent with other cycling strategies in Canterbury if they follow this model.

The template document is formatted in two columns. The left column provides explanatory text for those preparing cycling strategies for district councils (this can be removed from the final cycling strategy and replaced with graphics or other presentation material). The right column provides the draft content for the local strategy. It refers to a mythical Canterbury district called “Ourplace District”. This material can be modified as necessary so that it becomes a strategy tailored to the needs of the individual council. The model strategy document also provides some guidelines on the tasks required to develop such a strategy locally (e.g. data collection, consultation). Appendix A of this paper gives a sample section of the model strategy to illustrate how it works.

The resulting model strategy (ECan 2003a) was lauded by the (then) Transport Minister Paul Swain, and also used as a starting point for other cycling strategies around the country (e.g. Dunedin City Council’s). More recently Waimakariri and Timaru District Councils have started to develop cycle strategies, but other local councils in Canterbury have still yet to investigate cycling issues at a strategic level.

Draft strategy for the development of a regional network of cycle routes

The situation outlined above, of councils with a more rural or smaller urban focus having not developed cycling strategies is fairly typical throughout New Zealand. As well as potentially denying adequate provision for cycling in their urban settlements, these councils may also be missing out on possibilities for cycle tourism and recreation and the associated benefits that these activities can bring. In Canterbury the Inland Scenic Route (Route 72) is being strongly promoted as a cycle touring route, and currently there is a lot of work being done to develop a “Christchurch to Little River Rail Trail”. The lack of cycle planning at a local level does not help support such initiatives.

While it is accepted that smaller councils have to make each ratepayer dollar go even further, there may be opportunities for neighbouring councils to band together for a joint strategy (particularly given the inter-district nature of many touring routes). The alternative, as has been done by ECan, is for regional councils to take up the baton and develop a region-wide strategy for long-distance networks with the aim of creating effective inter-district connections.

Begun in early 2003, a regional cycling planning framework was developed to identify long-distance cycling issues across the Canterbury region (ECan 2003b). The process has deliberately avoided considering urban cycling needs, on the assumption that the respective local council is best placed to address these. Instead, it has concentrated on what kind of network is needed to provide for inter-urban and rural touring cycle trips. Of note is the fact that Transit NZ plays a much greater

role when considering such routes, so they have been an important participant in the development process.

Again, a regional stakeholder group has been used to guide the preparation of the document. However, considerable data collection has also been undertaken to identify major desire-lines and to seek feedback on experiences of cycling around the region. For example, a survey was widely distributed and published on ECan's website, to obtain information from anyone who had recently made long-distance trips in Canterbury by bike. This survey attracted 453 responses.

Having gathered further supporting information, the planning framework has been further developed into a draft strategy for the development of a regional network of cycle routes. This strategy has been included as a component of the Canterbury Regional Land Transport Strategy for public consultation in 2004 (ECan 2004).

In its current form the strategy enables all relevant parties to identify the key issues for cyclists and barriers to cycling at a regional level. This strategy will be developed further as appropriate routes and policy for developing the network are identified. A planning map of regional cycling routes will be developed through this process. Further data collection and analysis (including on-road cycle counts) will assist the development of the network. This will ensure a coordinated approach by all agencies when planning future works. The strategy will subsequently be reviewed on a regular basis.

RLTS Guiding Principles for Cycling

In the past it has been relatively difficult at the regional level to provide strong direction to local authorities on how to implement their transportation programmes. Previously the relevant legislation only required activities to be "not inconsistent with" the RLTS.

The new Land Transport Management Act (NZ Govt 2003) now requires councils to "take into account" the RLTS, which places a more positive spin on their obligations. This provides an opportunity for regional councils to be a bit more prescriptive with regards to policies such as encouragement for cycling. Therefore, as part of the renewal of the current Canterbury RLTS (scheduled for adoption in 2005), guiding principles for developing cycling within the region have been produced for inclusion in the RLTS.

These "guiding principles" provide some direction for those promoting cycling, providing cycle facilities and undertaking land-use developments. The principles form a core element of the cycling section of the RLTS. The principles are given weight by being referred to as a requirement in one of the RLTS's stated policies. The policy requires those responsible for its implementation to "*Support greater use of cycling, ensuring the Guiding Principles for Cycling are applied*". A similar approach has been taken in promoting walking in the region, with guiding principles for developing walking strategies also produced (Tolley 2004).

In developing the guiding principles, it was identified that planning for cycling can be seen as falling into three categories:

- cycling within major urban areas;
- cycling within districts including between towns and small settlements; and
- regional and inter-district cycling.

Although there are specific differences in the nature of the respective environments (e.g. traffic volumes and speeds), during their development it was noted that generally the underlying principles when providing for cyclists are similar in all cases. Different solutions may be required, however.

The ten guiding principles that were produced are summarised below (these are explained in more detail in the Appendix):

- *Cycling is an integral part of the land transport system*
- *Land-use planning should facilitate cycling, especially for short trips*
- *Each of the following methods will need to be used to achieve an increase in levels of cycling: engineering, education, enforcement, and encouragement.*
- *Cycle routes should be coherent, direct, attractive, safe and comfortable*
- *To improve the land transport system for cyclists follow the five-step approach to identify the most appropriate measure:*
 1. *Reduce traffic volumes*
 2. *Reduce traffic speeds*
 3. *Intersection treatment and traffic management*
 4. *Reallocation of carriageway space*
 5. *Specific cycle facilities*
- *All cycling needs to be catered for, both ‘cycle-only journeys’ and those that link with other modes such as urban buses, coaches, trains, planes and ferries*
- *The whole road network can be used by cyclists, therefore area-based treatments are just as important to cyclists as site or route-based treatments*
- *Non-roading corridors form important elements of cycle route networks (e.g. alleyways, parks and reserves, shared walkways, rail corridors, closed roads)*
- *Cyclists with varying levels of experience and confidence have different needs*
- *A range of policies and programmes should be used to promote cycling (e.g. Land use planning, public health programmes, travel demand management, parking management, secure cycle parking or tourism promotion)*

These principles provide a set of values to help position the role of cycling within the whole transport system. By positioning the role of cycling in this manner, cycling can be given appropriate attention.

This list of guiding principles is supported with explanatory text in an Appendix within the RLTS. The explanatory text identifies how the guiding principles should be applied (see Appendix B to this paper).

Other Initiatives

As hinted at in the above guiding principles, providing for and encouraging cycling involves more than just cycle-specific policies and activities. Therefore ECan has also adopted a number of other policies and actions in its updated RLTS that tend to apply to sustainable transport in general. These include encouragement of sustainable land-use planning, development of travel behaviour programmes, and transport planning that provides options to travel using a variety of modes. Implementation of these policies by local authorities is also likely to increase take-up in cycling across Canterbury.

Another scheme that ECan has been trialling for the past couple of years are business and community travel plans, aimed at reducing motor vehicle use by increasing efficiency of vehicle use and using alternative modes. The “Go Smarter” programme is modelled on other overseas travel behaviour programmes. Supporting information is available on the website <http://www.gosmarter.org.nz>. Three trial business plans in Christchurch saw cycling use by staff increase by 23% overall, while a trial community programme saw a 20% increase in cycle trips by residents (Blyleven 2003).

Conclusions

All of the initiatives outlined above should help (for the foreseeable future) to maintain the Canterbury region as the “cycling capital” of the country. There is no reason however why other regional councils can’t follow suit and develop similar policies, documents and programmes; already Auckland and Wellington have produced regional cycling strategies (ARC 2002, GWRC 2004). In this way, all of New Zealand’s regions can help to provide for and encourage more cycling.

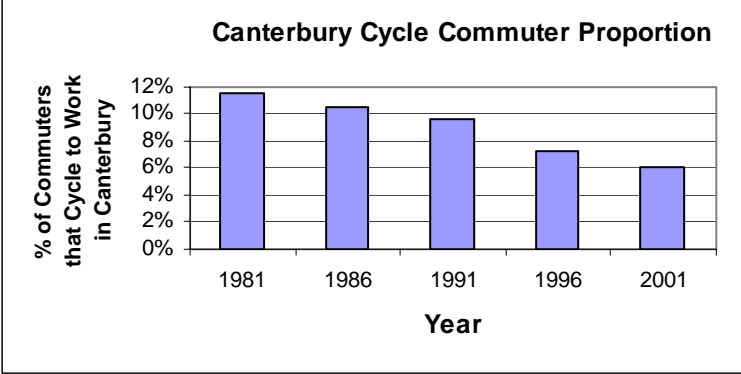
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Acknowledgement

The authors would like to acknowledge the support of their employers, Environment Canterbury and the University of Canterbury, in presenting this paper. They would also like to acknowledge the valuable work undertaken by MWH (NZ) Ltd in preparing the Model Cycling Strategy, and the input from a large range of stakeholders during the development of all the initiatives mentioned.

Appendix A – Sample Pages from Model Cycling Strategy

<p>Discuss other trends in cycling activity within your District from the following sources, where available</p> <ul style="list-style-type: none"> • Census data; • Collision data; • Hospital admissions; • LTSA “New Zealand Travel Survey” data; • Cycling infrastructure; • Bicycle traffic counts; • School bike stand surveys; • Cycling skills training; • Bicycle tourism; and • Opinion surveys of residents and cyclists. <p>(See also Appendix D – Possible Monitoring Activities.)</p> <p>Opinion surveys will be useful to gauge the views of the community, now and for future monitoring. If these surveys are not available, general information from the CCC surveys may be useful.</p> <p>This is a fairly comprehensive set of targets. Districts may wish to change the numerical values of their targets to suit local aspirations and to remove some targets that are not so relevant to them.</p> <p>Census is conducted every five years, so five-year targets are appropriate.</p> <p>Suggest 3-year targets to coincide with the recommended frequency of</p>	<h3>4. Trends and Targets</h3> <h4>4.1 Trends</h4> <p>Many people in Ourplace already enjoy cycling as a mode of transport and for recreational use. Trends emerging from data for Ourplace have been analysed and are shown below. The overall trend in Canterbury from Census statistics shows that over the last twenty years, cycle use for the commute to work has been on the decline.</p>  <p><i>Source: Statistics New Zealand</i></p> <p>Note: In this graph a commuter is someone that travels to work; it does not include those that work from home.</p> <h4>4.2 Targets</h4> <p>From the trends seen above, targets have been set to achieve Ourplace’s goals for cycling. Progress made in meeting the objectives and working towards the vision of this strategy will be measured against these targets:</p> <h5>4.2.1 Cycling Numbers</h5> <p>To increase the proportion of commuter trips made by cycle by 30% by 2006 and by 70% by 2011 compared with the 2001 level (based on Census “Travel to Work” data).</p> <p>To increase the proportion of intermediate and high school students who cycle to school from the 2002 level by 20% by 2005 and 50% by 2008.</p>
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<p>strategy reviews. As these surveys have not yet been done, they need to be referenced to the current (assumed 2002) or a future year. Amend years as appropriate.</p> <p>Collision data are available after the event, so the most recent data are usually from the previous year (shown as 2001 here). Amend years as appropriate. As cycling numbers increase, so may the incidence of accidents. The aim here is to monitor the incidence of accidents in relation to the changing cyclist numbers.</p> <p>The existing level will need to be established by discussion with schools.</p> <p>Some of the following targets depend on opinion surveys being undertaken of the general population and of cyclists. These can be done cost-effectively within other public opinion surveys of council performance. Kilometres suggested here rather than percent increase as some districts will have zero km to start with. Ditto</p>	<p>To increase the percentage of the general population that cycles for recreation, both on and off the road, from <i>the 2002 level</i> by 20% by 2005, and by 50% by 2008.</p> <p>4.2.2 Collisions</p> <p>To reduce the proportion of cyclists injured in crashes between cycles and motor vehicles, as reported to the LTSA, from the 2001 level by 20% in 2004 and by 50% in 2007.</p> <p>To reduce the proportion of cyclists admitted to hospitals from cycling collisions in Ourplace, as reported by the New Zealand Health Information Service, from the 2001 level by 20% in 2004 and by 50% in 2007.</p> <p>4.2.3 Road Skills</p> <p>To provide adequate resources so that the proportion of students who have the opportunity to undertake LTSA-sanctioned cycle training by Year 7 (Form 1) is 100% per annum, by 2005, from the 2002 level.</p> <p>4.2.4 Cycle Facilities</p> <p>To achieve and maintain a level of at least 20% more cyclists who are satisfied with Ourplace’s road and cycle path surfaces from the 2002 level by 2005.</p> <p>To achieve an improvement in the overall quality of cycle facilities available each year.</p> <p>To increase the length of on-street cycle lanes, off-street cycle paths or wide road shoulders with cycle route markings by X km per year.</p> <p>To increase the number of public bicycle parking spaces by Y spaces per year.</p> <p>4.2.5 Perception of Danger</p> <p>To reduce the percentage of cyclists that think cycling on the road is either dangerous or very dangerous from 2002 levels by 20% by 2005.</p> <p>To reduce the percentage of non-cyclists that think cycling is dangerous or very dangerous from 2002 levels by 20% by 2005.</p> <p>4.2.6 Cycle Friendliness</p> <p>To continually improve the image of cycling each year so that 20% more of the general population think Ourplace is a great place to cycle in 2005 relative to 2002.</p>
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Appendix B – Guiding Principles for Cycling

These guiding principles recognise the importance of cycling in a sustainable transport system and give direction for those providing for cyclists. The guiding principles aim to facilitate and support an environment and culture where people choose cycling as a regular means of making local journeys and longer journeys. The guiding principles should be followed whenever decisions affecting cyclists are being made.

(1) Cycling is an integral part of the transport system.

Providing for cycling should not be seen as an “add-on” to traditional roading-based planning. From the start of all new land use and transport developments, consideration needs to be given to how cycling trips can be encouraged. Just as importantly, new developments must not make any existing cycling trips more difficult, e.g. by imposing a new barrier. It is usually more difficult (and more costly) to retrofit cycling provision at a later date, so consideration from the start makes good economic sense.

(2) Land-use planning should facilitate cycling, especially for short trips.

Cycling is very well suited to short journeys up to 5km in length. Therefore land-use developments should be located so that there are small distances between key origins and destinations. For longer trips, “nodal” planning can be used to encourage cycling from locations around public transport nodes. For regional cycling, forward planning can protect corridors to allow for their use by cyclists.

(3) Each of the following methods will need to be used to achieve an increase in levels of cycling: engineering, education, enforcement, and encouragement.

“Providing for cyclists” does not equate to “providing cycle facilities”. Many other non-physical actions are also required to get the most out of the cycle network provided. Some examples include:

- Cycle training for both children and adults
- Road safety promotion campaigns (e.g. sharing the road, cycle light use)
- Cycling promotion activities (e.g. Bike to Work Day, city fun rides)
- Marketing of cycling as an acceptable everyday activity
- Provision of information about cycle routes (e.g. cycle maps, route signage)
- Police enforcement of poor motorist and cyclist behaviour
- Cycle touring promotion and information by tourism agencies
- Provision of high-quality cycle parking at key destinations
- Ongoing cycle counting programmes and public opinion surveys
- Allowing bikes to travel on public transport and park at public transport interchanges.
- Widespread training in cycle planning and design for transport professionals, surveyors and developers.
- Setting up cycling advisory groups and bicycle user groups

(4) Cycle routes should be coherent, direct, attractive, safe and comfortable.

Research has identified five main requirements such that cycling infrastructure or networks should provide:

- **Coherence** – Cycle routes should be continuous, recognisable, and link all potential origins and destinations.
- **Directness** – Cycle routes should offer as direct a route as possible between origins and destinations, so detours and delays are kept to a minimum (including parking location).
- **Attractiveness** – Cycle routes should integrate with and complement their surroundings, enhance public safety and security and contribute to a pleasant cycling experience.
- **Safety** – Cycle routes should provide high levels of safety and personal security (perceived and real), and limit conflict amongst cyclists and others.
- **Comfort** – Cycle routes should be smooth, non-slip, well maintained, free of debris, incorporate mild gradients, avoid complicated manoeuvres, and provide basic facilities at regular intervals along longer distance routes.

While efforts should be made to meet all of these requirements whenever facilities for cyclists are considered, it is not always possible to achieve the most desirable situation. Limitations such as site topography or lack of funding will mean that compromises have to be made. However, it is important that in developing a strategic network of cycling routes the resulting network is at least coherent.

(5) To improve the land transport system for cyclists follow the five-step approach to identify the most appropriate measure.

Provision for cycling may not require specific cycle facilities. Construction of en-route cycle facilities should generally be the last thing considered when trying to provide for cyclists in the transport network. The following "five-step hierarchy" of treatments should be followed when providing for cyclists:

- (i) **Reduce traffic volumes** – Local area traffic management schemes (particularly where cyclists can bypass the restrictions) and off-road shortcuts are some ways of achieving this.
- (ii) **Reduce traffic speeds** – Lower speeds reduce the speed differential between cyclists and motor vehicles and the risk of severe injury (as well as the perceived risk). Some options here include 30-40 km/h speed zones, traffic calming measures, narrowing of very wide carriageways, and deflection at roundabouts.
- (iii) **Intersection treatment and traffic management** – Many of cyclists' biggest impediments are actually relatively small "pinch points", e.g. no waiting space at intersections, narrow bridges, one-way restrictions. These should be identified and addressed.
- (iv) **Reallocation of or additional carriageway space** – Road corridors often have more than enough room to cater for cyclists, particularly if under-used or over-sized traffic/parking lanes are removed, modified or shoulders are extended.
- (v) **Specific cycle facilities** – If the above approaches are not appropriate then specific provision of cycle lanes and paths may be required.

In many respects, the hierarchy is intuitive in terms of why many people say they *don't* cycle. Many of these reasons are dealt with by the first four steps of the hierarchy. It is far less likely for people to not cycle solely because there are no cycle facilities en-route.

The hierarchy also reflects the fact that, even with a comprehensive network of cycle facilities, many cycle trip ends will be on the conventional street network, and much of the cycling is also likely to be away from specific cycle facilities. These trips also need to be catered for and using the hierarchy provides a total network approach.

(6) All cycling needs to be catered for, both ‘cycle-only journeys’ and those that link with other modes such as urban buses, coaches, trains, planes and ferries.

Cycling coupled with public passenger transport (PPT) can provide a powerful alternative to the traditional private motor vehicle trip. The door-to-door capability of cycling can be combined with the long-distance range and speed of public transport (especially where dedicated PT corridors are available). To achieve this, public transport systems need to allow for both good-quality cycle parking at PT stops and stations, and carriage of cycles onboard. Long-distance passenger services also provide a highly desirable service for cycle tourists. All of these linkages need to be strongly promoted to increase awareness and take-up.

(7) Every street is a cycling street; therefore area-based treatments are just as important to cyclists as site or route-based treatments.

Everyone should be able to use the road network to access all of their desired destinations by cycle. Focusing solely on site and route-based cycle provision marginalises those cyclists who have to use other routes (particularly if traffic conditions are continuing to get worse). Therefore, some consideration needs to be given to treatments that ensure adequate cycle provision in non-priority areas. For example, local area traffic management and low-speed residential zones can be used across large areas to make cycling more attractive in those areas.

(8) Non-riding corridors form important elements of cycle route networks.

Cycling is more flexible than motorised modes in that it can make use of a whole range of corridors for journeys. These can include:

- Utility access tracks
- Parks and reserves
- Non-road bridge structures (rail, pedestrian, pipelines)
- Disused or existing rail corridors
- Shared walkways, paths and tracks
- Riverbanks and foreshores
- Closed or “paper” roads
- Alleyways between streets

These alternative facilities generally have the advantage of being away from motor vehicles, and often provide more direct routes through more attractive environments. It is important therefore that all potential possibilities are identified and appropriate actions taken to secure their availability and to ensure that cyclists can use them safely. Discussion with a number of non-traditional stakeholders may be necessary to achieve this.

(9) Cyclists with varying levels of experience and confidence have different needs.

Cyclists are a very diverse group of road users. They have varying levels of skill and experience that require different needs with respect to programmes and facilities. They also, like all mode users, have varying trip purposes, which may dictate choices of route selection (e.g. most attractive versus most direct). It is therefore important to cater for a wide range of potential user groups, which may involve different types of cycle facilities (e.g. on-road and off-road) and alternative routes (e.g. quiet winding back streets and direct busy streets). Sometimes parallel facilities will be required, to cater for the different groups.

Different types of cyclists will also require different approaches to cycling education and promotion. For example, while many cycling programmes can be readily taken into schools, it may be more difficult to provide similar initiatives to adults in the wider community. A variety of methods and media may be necessary to reach all cyclists.

(10) A range of policies and programmes should be used to promote cycling.

Cycling strategies do not exist in isolation from other policies and actions. The success of cycling strategies is greatly influenced by what is done elsewhere; other policies and programmes must be consistent with promotion of cycling. This integrated approach also helps to emphasise the fact that the cycling strategy is not just an "add-on", but an integral part of the activities of councils and other agencies. Therefore, councils need to review and implement other pro-cycling policies. These include:

- *Land Use and Development Planning*; such as mixed-use zoning, minimum cycle parking requirements, high-density developments, constrained urban areas
- *Speed Limits*; such as greater use of 30-40 km/h zones, local area traffic calming, and part-time school speed limits
- *General Road Construction and Maintenance*; such as cycle design training for staff, incorporation of cycle facilities into other projects, path/shoulder sweeping, and consideration in temporary traffic management
- *Parks & Reserves Planning/Management*; such as path design and access control, staff training in cycle planning, purchase of reserves and corridors, and links with the on-road cycle network
- *Travel Demand/Behaviour Programmes*; such as employer/institution travel plans, safe routes to schools, "buddy" systems, and incentives for new/existing cyclists
- *Public Health & Recreation Programmes*; such as "green prescriptions", organised rides, and cycle riding/maintenance training programmes
- *Road Network Planning*; such as limited construction of new links, corridor capacity reductions, and congestion pricing
- *Parking Management*; such as kerbside prioritisation for cyclists, on-street parking controls, parking pricing, and parking supply restrictions
- *Tourism Promotion*; such as cycle touring maps, city cycle hires, provision of facilities for cycle tourists at regular intervals along tourist routes, and reporting/feedback systems.