



**Central Otago District Council**

## **Walking and Cycling Strategy**

**August 2004**



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# Central Otago District Council

## Walking and Cycling Strategy

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## Foreword

Central Otago is a great place to walk and cycle. Our spectacular landscape, gentle topography and low rainfall make walking and cycling, whether to work, school or the shops, or for recreation or tourism, an enjoyable activity. Quality of life is important to us and the many visitors who come to Central – and the ability to walk and cycle easily and safely are important components of this.

Walking and cycling are good for us as individuals and for the environment and are supported by the Central Otago District Council.

Our Otago Central Rail Trail is a focus for recreational walking and cycling and brings benefits to the whole region, but there are many other opportunities for walking and cycling that can be promoted and developed.

This strategy is intended to be a guiding document for the Central Otago District Council and other interested organisations to make the region more walking and cycling friendly. It is also intended to provide a common direction and to improve co-ordination of everyone's efforts to make walking and cycling in Central Otago even more enjoyable.

I thank the Central Otago Walking and Cycling Working Group and the many individuals and organisations who have contributed to the development of this strategy.

**Tony Lepper**

Deputy Mayor and Chair, Operations Committee

May 2004



## Summary

The core of this walking and cycling strategy is its vision and three objectives, and the policies, actions and targets they generate. Network plans and annual implementation programmes help to put the strategy into practice. Supporting data are contained in a series of background chapters.

The strategy applies to all walking and cycling with a predominantly transportation focus. The strategy includes all roads in the CODC area, including state highways. The strategy covers both urban and rural areas.

The strategy covers more than just infrastructure. Getting the physical environment right to support walking and cycling and make them safe modes of travel are only part of the solution. A co-ordinated approach to road safety education for cyclists, pedestrians and motorists is an essential component of any strategy to support cycling and walking.

Encouraging people to walk and cycle more is important to ensure that people translate their generally positive attitudes about the merits of walking and cycling into action. Promotion and publicity about new facilities and education and safety initiatives is also included.

The strategy will be reviewed in annually for the first three years and at this time Council progress on the Physical Activity/Recreation Plan will be reviewed to determine if progress can be made on providing an addendum to this document which includes walking and cycling for recreation and tourism.

Subsequent reviews will be three yearly.

## 1 Introduction



Central government now requires walking and cycling to be given more importance at the regional and local level than previously, as articulated in the National Land Transport Strategy (2002) and the Land Transport Management Act (2003). The government's draft walking and cycling strategy "Getting there – on foot, by cycle" (October 2003) reinforces the importance central government now places on these modes of travel.

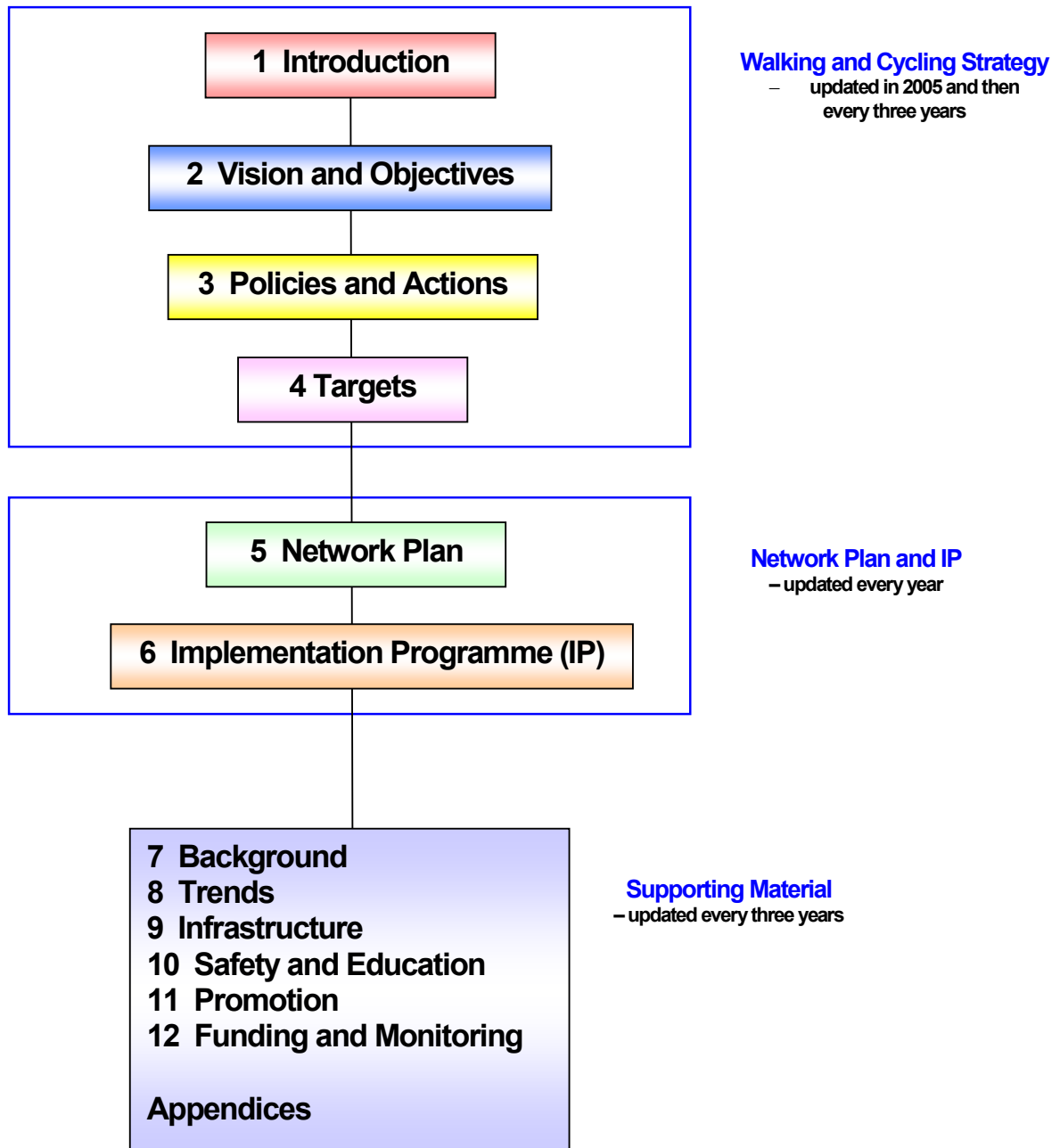
Government financial support through Transfund New Zealand (Transfund) for individual walking and cycling projects is tied to the presence of walking and cycling strategies.

This draft strategy was released for public consultation and submissions in June 2004. Feedback has been incorporated, and the strategy adopted by the Central Otago District Council on 11 August 2004.

The strategy comprises a vision, three objectives and associated methods for achieving the objectives. It also contains a series of targets and approximately 40 policies and actions. A series of plans show walking and cycling networks and an annual implementation programme for the 2004 – 05 year is also included. This material is concentrated at the beginning of the document, making it relatively easy to read.

A further 20 pages of supporting material are contained in appendices to the strategy. They include discussion of data trends and various important components of the strategy, such as promotion, infrastructure, safety and education and funding and monitoring. The structure of the strategy is explained in Figure 1: Structure of Walking and Cycling Strategy overleaf.

*Figure 1: Structure of Walking and Cycling Strategy*



## 2 Vision and Objectives

### 2.1 Vision

The long-term vision of this walking and cycling strategy is that:

**Vision: Central Otago is a safe, pleasant and comfortable place for walking and cycling, where people of all ages choose to walk and cycle for transportation, tourism, sport and recreation.**

### 2.2 Objectives

#### Objective 1: To maximise the role of walking and cycling as transport

- Developing and maintaining a walking and cycling strategy;
- Encouraging people to walk and cycle instead of using other forms of private transport for utilitarian trips, tourism and recreation;
- Improving the image and social acceptability of walking and cycling;
- Providing safety, education and enforcement programmes for pedestrians, cyclists and motorists to support walking and cycling; and
- Monitoring walking and cycling activity levels and other key variables relating to walking and cycling.



#### Objective 2: To develop a safe, convenient and attractive transport infrastructure which encourages and facilitates walking and cycling

- Making new and existing roads and footpaths more compatible with the needs of pedestrians and cyclists;
- Developing a pedestrian and cycle network plan showing existing and proposed walking and cycling facilities;
- Increasing the quality and quantity of walking and cycling facilities that correspond with the needs of different types of pedestrians and cyclists;
- Ensuring that developers of new subdivisions provide convenient and attractive linkages for pedestrians and cyclists through and between subdivisions where practicable; and
- Providing pedestrians and cyclists with good connections within the district and to surrounding districts.



#### Objective 3: To ensure that Central Otago District Council strategies, policies, plans and practices support walking and cycling

- Reviewing CODC district plans, LTCCPs, long-term financial strategies and other key CODC documents in the course of their normal development or review processes for consistency with this strategy, and responding appropriately where changes are needed; and
- Reviewing relevant external documents (such as national policy documents, the RLTS, and walking and cycling strategies of neighbouring districts) and responding appropriately where changes are considered desirable.
- Encouraging the Otago Regional Council to develop a regional walking and cycling strategy.

### 3 Policies and Actions

The policies and actions are grouped according to the objectives to which they most closely relate.

#### Objective 1: To maximise the role of walking and cycling as transport

- 1.1 Create and maintain a Walking and Cycling Working Group to assist in the development and periodic review of the Walking and Cycling Strategy
- 1.2 Update this strategy in one year and thereafter review it every three years.
- 1.3 Develop an annual walking and cycling implementation programme each year.
- 1.4 Monitor activity levels, collisions and trends for walking and cycling.
- 1.5 Support the development of road-user behaviour education for school pupils and investigate and implement where appropriate, road user education aimed at pedestrians, cyclists and motorists. Potential partners include:
  - Sports Central
  - BikeWise
  - Police education officers
  - LTSA training staff and road safety advisors
- 1.6 Support the development of appropriate promotion programmes to encourage walking and cycling, to improve the image of pedestrians and cyclists and to raise awareness of the vulnerability of pedestrians and cyclists.
- 1.7 Find out the views of pedestrians, cyclists and motorists with respect to walking and cycling through Council's annual Resident Survey.
- 1.8 Monitor and review the responses to, and impact of, walking and cycling safety, education and promotion programmes.
- 1.9 Promote walking and cycling through the District's normal publicity and promotion of Central Otago as a tourist destination.
- 1.10 Facilitate safety, education and promotion efforts for walking and cycling through any relevant local or regional strategies and plans.
- 1.11 Support and/or initiate efforts to get greater encouragement of walking and cycling and less dependence on the use of motor vehicles in local and national policies.
- 1.12 Support the development and delivery of safety, enforcement and education programmes to improve the behaviour of pedestrians, cyclists and motorists that affect walking and cycling safety and convenience.
- 1.13 Support walking and cycling events (including the development of event traffic management plans) and promotional programmes; and
- 1.14 Develop a rational method of determining the proportion of the Council budget that should be spent on walking and cycling and ensure that appropriate funding is provided in the Long Term Council Community Plan (LTCCP.)



**Objective 2: To develop a safe, convenient and attractive transport infrastructure which encourages and facilitates walking and cycling**

- 2.1 Ensure that all road works, new developments and changes consider the needs of pedestrians and cyclists, and are made as pedestrian- and cycle-friendly as possible.
- 2.2 Ensure that all new urban roads are built with footpaths.
- 2.3 Ensure that developers of new subdivisions provide safe, convenient and attractive linkages for pedestrians and cyclists through and between subdivisions
- 2.4 Develop, publicise and include within the District Plan a walking and cycling network plan showing existing and proposed facilities which is responsive to the needs of the walking and cycling community.
- 2.5 Work with publishers of recreation and tourism maps to show walking and cycling facilities on these maps.
- 2.6 Develop routes and facilities in accordance with the network plan and on a location-by-location basis where safety or access issues justify them.
- 2.7 Work with neighbouring councils (Queenstown Lakes District, Southland District, Clutha District, Dunedin City, Waitaki District), Otago Region and Transit New Zealand (Transit) to facilitate seamless provision for walking and cycling across boundaries.
- 2.8 Undertake community consultation as a part of any walking and cycling infrastructure improvements, and ensure that project budgets and timeframes reflect the need for this.
- 2.9 Adopt best practice standards for walking and cycling facilities.
- 2.10 Provide and improve facilities for cycle parking at key locations.
- 2.11 Develop monitoring and auditing processes so that the quality and quantity of pedestrian and cycle facilities can be measured and the need for improvements can be assessed.
- 2.12 Maintain pedestrian and cycle facilities to a high standard and establish an inspection programme to indicate the need for maintenance before safety or access difficulties occur.
- 2.13 Encourage development of easy transfers between modes, such as “cycle-and-ride” for transfers between bus and cycle.
- 2.14 Provide adequate funding to support walking and cycling.



**Objective 3: To ensure that Central Otago District Council strategies, policies, plans and practices support walking and cycling**

- 3.1 Ensure traffic calming schemes support walking and cycling, where appropriate giving bicycles and pedestrians preference over motor vehicles.
- 3.2 Ensure that any relevant safety management systems developed in the region include the needs of pedestrians and cyclists.
- 3.3 Contribute to the District Plan process so that rules reflect the need to protect pedestrian and cycle facilities and routes from excessive cross movements or locations of concentrated traffic growth or parking.
- 3.4 Support and/or initiate efforts to change appropriate laws and regulations to benefit pedestrians and cyclists, either on their own merits or relative to motorists.
- 3.5 Introduce requirements for developers so that pedestrian and cycle links are provided in new subdivisions and between subdivisions and existing facilities for pedestrians and cyclists.
- 3.6 Use the provisions of the CODC's "Gates and Cattlestops on Public Roads" policy to ensure that walking and cycling access exists on paper roads where practicable.
- 3.7 Support efforts to develop motor vehicle emission controls and improve air quality locally, regionally and nationally.

## 4 Targets

Progress made in meeting the objectives and working towards the vision of this strategy will be measured against these targets:



1. To maintain the proportion of commuter trips made by walking and cycling at 18% in 2006 (same as 2001 level) and to increase this proportion to 25% by 2011 (based on Census “Travel to Work” data).
2. To maintain the proportions of trips to and from school made by walking (20%) and cycling (17%) in 2006 (same as 2004 levels) and to increase the proportion walking and cycling (combined) to at least 50% by 2011.
3. To maintain the proportion of pedestrians and cyclists injured in crashes with motor vehicles, as reported to the Land Transport Safety Authority (LTSA), at or below the level achieved between 1998 and 2002 (2.3% of all casualties) over the 2003 to 2007 period.
4. 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 2006.
5. To achieve and maintain a level of at least 20% more cyclists who are satisfied with Central Otago’s road and cycle path surfaces from the 2004 level by 2007.
6. To achieve an improvement in the overall quality of cycle facilities available each year.
7. To increase the length of on-street cycle lanes, off-street cycle paths or wide road shoulders by 10 km per year (for example, cycle lanes on both sides of a 5 km stretch of road).
8. To increase the number of public bicycle parking spaces by 10 spaces per year.
9. To reduce the percentage of cyclists that think cycling on the road is either dangerous or very dangerous from 2004 levels by 20% by 2007.
10. To reduce the percentage of non-cyclists that think cycling is dangerous or very dangerous from 2004 levels by 20% by 2007.
11. To continually improve the image of walking and cycling each year so that 20% more of the general population think Central Otago is a great place to walk and cycle in 2007 relative to 2004.
12. To improve the behaviour of motorists so that 20% more pedestrians and cyclists believe that motorists are considerate of the needs of pedestrians and cyclists by the year 2007, relative to 2004 levels.
13. To improve the behaviour of pedestrians and cyclists so that 20% more motorists believe that pedestrians and cyclists are considerate of motorists’ needs by the year 2007, relative to 2004 levels.

## **5 Walking and Cycling Network Plan**

A network plan is to be prepared and will be included in Appendix A: Walking and Cycling Network Plan. This will be reviewed and updated periodically. It will show existing facilities for pedestrians and cyclists (except footpaths), proposed facilities in the Implementation Programme and favourable or challenging roads for pedestrians or cyclists. The plan will also show potential projects that have been identified through the working group and public feedback.

This plan will be updated regularly, and the latest version will be available on Council's web site ([www.codc.govt.nz](http://www.codc.govt.nz)).

## **6 Implementation Programme**

The implementation programme is included in this edition of the Walking and Cycling Strategy as Appendix B: 2004/05 Implementation Programme.

This programme will be updated regularly, and the latest version will be available on Council's web site ([www.codc.govt.nz](http://www.codc.govt.nz)).

## 7 Background

### 7.1 Scope

The core of this walking and cycling strategy is its vision and three objectives, and the policies and actions they generate. The network plan and annual implementation programmes help to put the strategy into practice.

The strategy applies to all walking and cycling in CODC with a predominantly transportation focus. The strategy includes all roads in the CODC area, including state highways. Transit is a participant in the working group (see Section 7.6 Walking and Cycling Working Group) and supports the policy at an officer level. The strategy covers both urban and rural areas.

While the Otago Central Rail Trail (OCRT) may be used by some walkers and cyclists as an alternative to travel on roads, thus reducing conflicts between motorists and these vulnerable road users, it would be hard to argue that it has a predominately transportation focus. Consequently, the OCRT is not included in this strategy. Planning for this facility should continue to be undertaken by DOC and the OCRT Trust.

Tracks used for mountain-biking or tramping are not covered, as these serve a predominantly recreational need.

Access points and crossing points between roads and tracks or trails are included in the strategy, as they have road safety implications.

Cycle parking and footpaths, either generally or at specific locations, are included.

The strategy covers more than just infrastructure. Getting the physical environment right to support walking and cycling and make them safe modes of travel will only be part of the solution. A co-ordinated approach to road safety education for cyclists, pedestrians and motorists is an essential component of any strategy to support cycling and walking.

Encouraging people to walk and cycle more is important to ensure that people translate their generally positive attitudes about the merits of walking and cycling into action. Publicity about new facilities, and education and safety initiatives, are also included.

The strategy addresses issues of policies, procedures, funding and monitoring, to ensure that it results in appropriate actions.

## 7.2 Purpose

This is a comprehensive walking and cycling strategy which attempts to do the following::

- Promote walking and cycling as legitimate and beneficial forms of transportation;
- Provide networks of walking and cycling facilities passing through interesting and enjoyable surroundings in a manner safe for walkers and cyclists;
- Improve walking and cycling conditions on the general road network;
- Improve the relationship between pedestrians and cyclists and other road users;
- Provide opportunities for tourism and employment development;
- Promote outdoor recreation for health and well-being;
- Provide opportunities for environmental enhancement and education; and
- Help reduce air pollution, greenhouse gas emissions, road congestion and energy use.

For clarification of the meaning of various terms in this document, please see Appendix C – Glossary of Terms.

Of Central Otago's 14,500 residents (Census 2001), 65% live in the district's more urban areas. Statistics New Zealand identifies Alexandra, Clyde, Cromwell, Naseby, Ranfurly and Roxborough as relatively tight concentrations of population, whereas Dunstan, Maniototo and Teviot are much larger and more obviously rural.

Walking and cycling offer a quality of recreational and travel experience highly valued by many locals and visitors alike.

With this strategy it is anticipated that the CODC's efforts to improve walking and cycling in the district will advance with new vigour. We hope that there will be an increase in pedestrians and cyclists and people supporting walking and cycling. Those involved in walking and cycling in Central Otago will be able to work better together to improve things for us all, whether we are walking and cycling or travelling by other modes of transport.

This strategy is a "living document", reviewed and updated to take account of current trends and changes in Central Otago. It is recommended that this document be reviewed and re-published one year after publication and thereafter, every three years.

The strategy includes a preliminary walking and cycling network plan and recommends the establishment of annual implementation programmes.

This walking and cycling strategy was developed from a generic model cycling strategy prepared by Environment Canterbury with assistance from its district councils and local cycling groups for use by its constituent districts in 2002. The assistance of Environment Canterbury in making its document available is acknowledged with gratitude.

## **7.3 Policy Context**

### **7.3.1 National**

New Zealand's transport system is expected to pay increasing attention to pedestrians and cyclists under the New Zealand Transport Strategy (December 2002), which has as one of its objectives "to ensure environmental sustainability". Walking and cycling are the two most environmentally sustainable modes of transportation.

The Government ratified the Kyoto Protocol in December 2002. The Government's goal is that New Zealand should have made significant greenhouse gas reductions on "business as usual" and be set towards a permanent downward path for total emissions by 2012.

Increased levels of cycling and walking will help New Zealand meet its obligations under the Kyoto Protocol, resulting in more sustainable communities and improving the quality of life, particularly in our towns and cities. Cycling and walking are practical forms of transport that encourage healthier lifestyles.

The Honourable Mark Gosche, Minister of Transport, announced on 28 February 2002 that:

"The government wants a transport system that is affordable, integrated, safe, responsive and sustainable. We want integrated policies that link social, environmental and economic outcomes.

"The existing funding framework focuses heavily on roads. Public transport, rail, walking and cycling are all under-resourced as a result.

"Roading will remain a key area of land transport funding but the government is widening the focus to put greater emphasis on public transport, rail, the needs of pedestrians and cyclists, road safety and regional development."

Subsequent announcements have emphasised the need for educational and promotion campaigns to help influence people's choice of travel mode for their trips.

The draft NZ Walking and Cycling Strategy "Getting there – on foot, by cycle" (Ministry of Transport, October 2003) provides substantial support for walking and cycling. As noted in the foreword by the Honourable Paul Swain, Minister for Transport, the document "sets out a strategy to encourage more people to walk and cycle more often as part of their transport mix".

### **7.3.2 Regional**

The Otago Regional Land Transport Strategy (RLTS) does not specifically support walking and cycling and this is being addressed at a staff level for inclusion in the next edition of the RLTS.

### **7.3.3 Local/district policies and initiatives**

The Central Otago District Plan, Central Prospects and Long Term Council Community Plan (LTCCP) will be reviewed to identify issues and projects important to walking and cycling.

## **7.4 Challenges**

Many people do not cycle. There are likely to be many reasons given for this. Some examples are: the distances are too great; a car is needed because other people or goods have to be transported; the weather or hills are a concern; helmets interfere with hair styles; or dress standards do not allow cycling.

Yet in Central Otago, there are still many people who do cycle despite these apparent reasons for not doing so. For them, the challenges of cycling concern not the weather or other reasons, but the existing traffic conditions they experience every day on the roads.

Similarly, many people walk very rarely, other than to access their cars. The reasons for not walking may be as spurious as they are for not cycling.

This walking and cycling strategy aims to help overcome these challenges so that walking and cycling experience a resurgence in popularity and acceptance.

## **7.5 Opportunities for Walking and Cycling**

### **7.5.1 Individual Benefits**

Individuals derive benefits from walking and cycling in many ways:

- Convenient door to door access without parking hassles,
- Improved mental and physical health and fitness – evidence suggests that the health benefits of cycling outweigh the associated risks;
- Increased independence, particularly for school children;
- Access to transportation which is much cheaper to own and operate than a car; and
- Increased opportunities to observe, experience and enjoy the scenery and environment.

### **7.5.2 Transportation System Benefits**

Walking and cycling have many advantages for our transportation system:

- They can reduce costs for construction and maintenance of roads;
- They can reduce costs for provision of parking facilities;
- They can reduce the number of trips made by cars, thereby reducing congestion and freeing up road space for essential motor vehicle trips;
- Cycles can move large numbers of people relatively quickly and conveniently over moderate distances; and
- Because our population is spread over a wide geographical area, public transport is unlikely to be a significant transportation option, leaving opportunities for walking and cycling to fill this void.

### **7.5.3 Economic Benefits**

Walking and cycling contribute to the local economy in a number of ways. In particular, they attract both local residents and visitors with money to spend on food, refreshments, entertainment and accommodation. Equipment retailers also benefit from the presence of walkers and cyclists.

Tourists have even more to offer, typically spending more per person per day than local people. Cycle tourists (who often travel only as far in a day as motorists do in an hour) are simply around longer and have more time to spend their money in our community. Pedestrians (walking the Otago Central Rail Trail, for example) can spend even longer in our communities.

Walking and cycling events can bring in significant revenue to the community. These events can be assisted by a comprehensive walking and cycling strategy (including the identification and development of specific facilities) that helps organisers plan and manage their events.

### **7.5.4 Community Benefits**

The presence of pedestrians and cyclists within an area can contribute to community well-being in a number of ways:

- Greater social interaction amongst neighbours is likely to occur;
- Personal security and crime prevention are enhanced with more “eyes on the street”;
- Provision of improved facilities for cyclists can also improve the amenities available to local residents for walking (such as paths through parks);
- Provision of walking and cycling facilities can reduce traffic speeds and volumes in urban areas, improving the quality of life in our towns;
- Walking and cycling can reduce the amount of space we devote to roads and car parking thereby enabling the enhancement of the urban amenity; and
- Provision of walking and cycling facilities promotes civic pride.

### **7.5.5 Environmental Benefits**

Walking and cycling improves the quality of our natural environment and minimises environmental impacts:

- Pedestrians have minimal demands on our environment and resources;
- Cycles are the most energy efficient land transport vehicles;
- Up to 100 times less material is needed to manufacture a cycle than a car;
- Cycles have no effect on our fossil fuel reserves;
- Cycles emit no air pollution, noise pollution or greenhouse gases; and
- Promoting walking and cycling as a means of travel helps to achieve New Zealand’s Kyoto Protocol obligations.

## 7.6 Walking and Cycling Working Group

This draft strategy has been developed with the assistance of a Walking and Cycling Working Group established for this purpose by Central Otago District Council. Composition of the group was as follows:

Jonathan Casbolt	CODC Reserves & Recreation Manager
Bill Godsall	Sports Central
Jo Forsyth	Dunstan High School
Tony Lepper	CODC Deputy Mayor
Andrew Macbeth	MWH New Zealand Ltd (facilitator)
Julie Muir	CODC Rooding Manager
Kristy Rusher	Tourism Central Otago
Jill Scott	Alexandra Harrier and Walkers Club
Matthew Sole	Department of Conservation
Phil Trochon	Opus International (state highway network consultant)
Simon Underwood	Transit New Zealand
Liz Williamson	Wakatipu Cycling Club

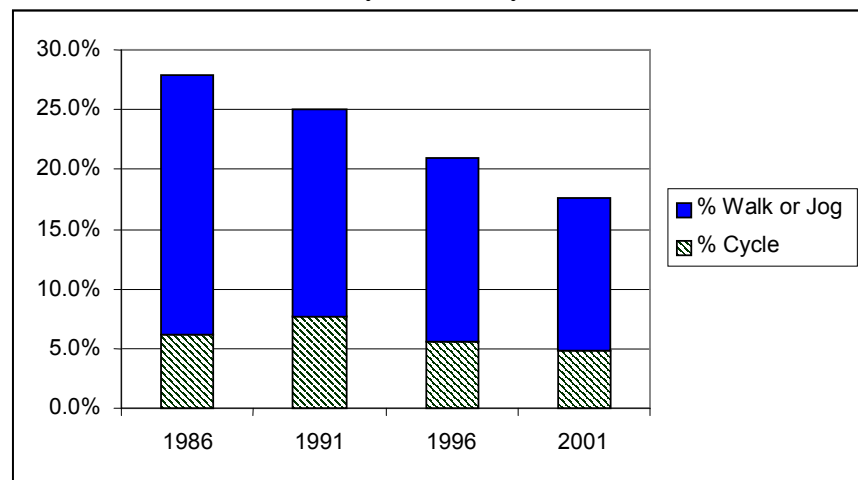
A number of other people have provided assistance and reviewed drafts of the strategy during its preparation, including representatives of the Land Transport Safety Authority, New Zealand Police and Public Health South.

## 8 Trends

### 8.1 Census Data

Trends emerging from data for Central Otago have been analysed and are shown below. The overall trend in Central Otago from Census statistics shows that since 1986, walking and cycling to work have been steadily declining. Combined travel to work by these modes has declined from 28% to 18%. These data are illustrated in Chart 1 below.

**Chart 1: Travel to Work Trends by Walk and Cycle 1986 – 2001**



*Source: Statistics New Zealand*

Note: In this graph a commuter is someone that travels to work; it does not include those that work from home.

We know that 4968 people travelled to work in Central Otago on Census day in 2001. The Census recorded 873 people who walked or cycled to work, a significant proportion (nearly 18%) of all those who travelled to work. As noted above, however, this figure has fallen from nearly 28% in 1986.

For Central Otago's more urban residents, walking and cycling are more common than for rural residents, as might be expected. Relevant Census New Zealand data from 2001 are shown in Table 1 below:

**Table 1: Urban and Rural Trips to Work by Walk and Cycle**

	<b>Work-force</b>	<b>Walk</b>	<b>Cycle</b>	<b>Com-bined</b>
<b>Mostly urban areas</b> (Alexandra, Clyde, Cromwell, Naseby, Ranfurly and Roxborough)	4422 (60%)	504 (80%)	201 (84%)	705 (81%)
<b>Mostly rural areas</b> (Dunstan, Maniototo and Teviot)	2934 (40%)	129 (20%)	39 (16%)	168 (19%)
<b>Total</b>	<b>7356*</b>	<b>633</b>	<b>240</b>	<b>873</b>

\* Of the 7356 in the workforce, 4968 travelled to work on Census Day 2001

The urban areas have 60% of Central Otago's workforce but 81% of the people who walk or cycle to work.

No data currently exist on the numbers of recreational walking and cycling trips.

## 8.2 School Data

Schools have been surveyed by Sport Central to record how many students arrive at school by walking and cycling. Approximately 20% arrive by walking and 17% by cycle. Results are as recorded in Appendix D: School Walking and Cycling Data.

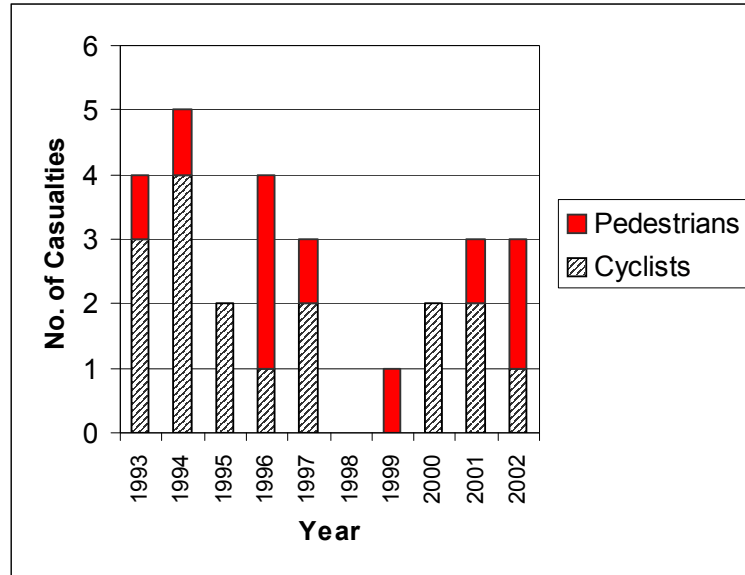
## 8.3 Collision Data

Collisions on roads resulting in injury, where motor vehicles are involved, are required to be reported to the Police. These data are analysed and monitored by the LTSA and are used by road controlling authorities to improve road safety. Collisions involving pedestrians and cyclists have been declining (both numerically and in terms of the proportion of all traffic casualties) in Central Otago over the last ten years. The data are somewhat erratic, but this variation from year to year is typical of small numbers. The data for both pedestrians and cyclists, in the context of overall casualty trends in Central Otago, are illustrated in Chart 2 below.

<b>Year</b>	<b>Total Casualties</b>	<b>Pedestrians</b>	<b>Cyclists</b>	<b>% Pedestrians and Cyclists</b>
1993	81	1	3	4.9%
1994	53	1	4	9.4%
1995	81	0	2	2.5%
1996	87	3	1	4.6%
1997	42	1	2	7.1%
1998	54	0	0	0.0%
1999	58	1	0	1.7%
2000	80	0	2	2.5%
2001	104	1	2	2.9%
2002	103	2	1	2.9%
<b>Total</b>	<b>743</b>	<b>10</b>	<b>17</b>	<b>3.6%</b>

During the first five years of this review (1993 to 1997 inclusive) 5.2% of all traffic casualties were pedestrians and cyclists. In the following five years (1998 to 2002), this figure dropped to 2.3%. The numbers of pedestrians and cyclists injured dropped from 18 to 9 between these two periods. The biggest change between the two five-year periods was a drop in the number of cyclists injured from 12 to 5.

**Chart 2: Pedestrian and Cyclist Casualties by Year 1993 – 2002**

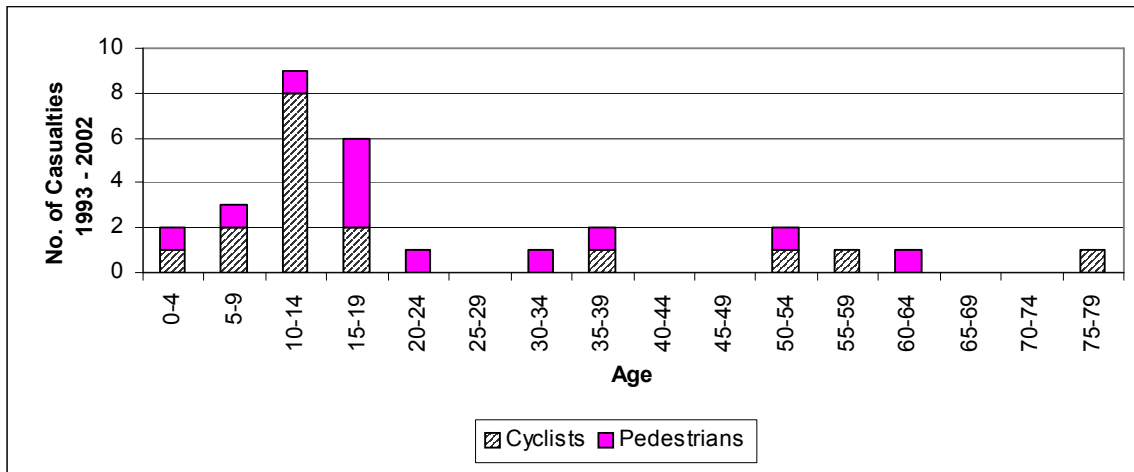


*Source: LTSA*

The numbers of pedestrians and cyclist casualties is generally declining, possibly just in proportion to the overall decline of cycling illustrated above in the trip to work data.

Of the 17 cyclists injured during the ten year analysis period, 8 were on the state highway network and 9 were on CODC roads. For pedestrians, 7 of the total of 12 were on the state highway network while 5 were on CODC roads.

The numbers of pedestrians and cyclists injured on our roads is closely related to age, as shown in Chart 3 below. Some 69% of injured pedestrians and cyclists (20 out of 29) between 1993 and 2002 were under the age of 20.

**Chart 3: Pedestrian and Cyclist Casualties by Age Group 1993 – 2002**


Source: LTSA

## 9 Infrastructure

### 9.1 The Walking and Cycling Network

Both local and international experience indicates that developing connected facilities in a walking and cycling network better serves the needs of pedestrians and cyclists than isolated facilities.

A walking and cycling network might include:

- Footpaths for pedestrians
- Safe crossing facilities for pedestrians and cyclists
- Cycle lanes marked on roads;
- Allocated cycle space at intersections;
- Off-street cycle paths (often dual-use with pedestrians);
- Cycle routes on local roads chosen for the low traffic environment (sign-posted but not marked with cycle lanes); and
- Wide paved shoulders for cyclists on more heavily-travelled rural roads and State Highways.
- Off-road paths in rural areas that traverse areas of natural and heritage value or provide linkages between roads suitable for cycle touring and walking.

A published network map (possibly a separate document or cycling and walking routes provided on general tourist maps) also encourages walking and cycling. Cycle routes, in particular, need to be continuous and should go where cyclists want to ride, such as town centres, shops, schools, and tourist or recreational destinations. The needs of pedestrians and cyclists and the desires of the walking and cycling community should drive the development of the network. Recreation and tourism maps of Central Otago or smaller geographic areas can also be used to publicise walking and cycling facilities.

European research<sup>1</sup> that is equally applicable in New Zealand has identified **five main requirements for cycling infrastructure**:

- “Coherence – The cycling infrastructure should form a coherent entity, linking all trip origins and destinations; routes should be continuous and consistent in standard.
- “Directness – Routes should be as direct as possible, based on desire lines, since detours and delays will deter use.
- “Attractiveness – Routes must be attractive to cyclists on subjective as well as objective criteria. Lighting, personal safety, aesthetics, noise and integration with the surrounding area are important.
- “Safety – Designs should minimise casualties and perceived danger for cyclists and other road users.
- “Comfort – Cyclists need smooth, well-maintained surfaces, regular sweeping and gentle gradients. Routes must be convenient to use and avoid complicated manoeuvres and interruptions.”

<sup>1</sup> Sign up for the bike – Design manual for a cycle-friendly infrastructure C.R.O.W. 1993

When considering roads that may be suitable for inclusion in a walking and cycling network the following attributes should be reviewed:

**Engineering**

- Carriageway width
- Presence and width of footpaths
- Intersection control
- Centre and edge marking
- Shoulder width
- Road surface
- Road gradient
- Traffic volumes
- Traffic speed
- Traffic composition (i.e. % of truck traffic)

**Planning**

- Road hierarchy
- Land use
- Origins and destinations
- Connectivity
- Integration with passenger transport interchanges
- Spacing of facilities, toilets/rest areas, water, food, accommodation
- Aesthetics

The plan shown in Appendix A: Walking and Cycling Network Plan shows the District walking and cycling network, identifying existing and proposed facilities.

The **types of pedestrians and cyclists** using each route or location are important in the design of walking and cycling facilities. For example, competent and confident adult cyclists will behave quite differently (and have different needs) from young, less experienced cyclists. Local walkers may have different needs than overseas long-distance walkers. The facilities along a route or outside schools or recreational facilities need to be appropriate to the existing or anticipated users. Both on- and off-street facilities may need to be provided in some locations.

Facilities should be developed to “**best practice**” standards. An attempt should be made to provide consistent design standards with those used by neighbouring road controlling authorities, including Transit New Zealand. Technical advice on design issues should be sought from acknowledged walking and cycling experts. Even apparently simple decisions such as whether to provide cycle lanes or an off-road cycle path are not trivial, and acquiring expert advice is strongly advised. Some suggested reference material regarding standards and technical guidelines for walking and cycling facilities and general roading matters that affect pedestrians and cyclists are listed in Appendix E – Design of Walking and Cycling Facilities.

In general, provision of **off-street cycling facilities** parallel to roads (such as shared footpaths/cycle paths) needs to be carefully considered. Motor vehicle drivers do not expect cyclists in these locations and can collide with them when exiting driveways, for example. Either wide shoulders or cycle lanes on both sides of a road are often preferable solutions.

In many locations, the opportunity will exist to **provide a walking and cycling facility isolated from other similar facilities** as part of some other infrastructure initiative, rather than one which is part of an overall walking and cycling network. These opportunities should be taken when available. As the walking and cycling network evolves over time, isolated facilities can be integrated into the network to improve its connectivity.

A road or pathway will be far less user-friendly and effective for walking and cycling if the **surface** is uneven or broken. Issues include maintaining clear riding surfaces, repair and upgrading of damaged facilities, upkeep of lighting, trimming of hedges and vegetation and maintenance of clear signage.

To ensure that elements of the walking and cycling network continue to offer good service to cyclists, it is necessary to both **audit the facilities and carry out regular maintenance** checks. A route audit will ensure that the facilities remain appropriate to modern standards, continue to offer safety benefits and take account of the changing road and/or traffic environments. A regular maintenance programme will ensure a facility is offering the high level of service for which it was originally designed.

The provision of end-of-journey facilities, for example, secure cycle storage, lockers and changing facilities, also encourages people to walk and cycle more.

## 9.2 Every Road is a Cycling Road

Most cycling in Central Otago is done on district roads and the State Highway network, rather than on special cycling facilities. Cyclists travel on practically every road in the District. Consequently, an important function of this strategy is to ensure that the basic road network is safe and attractive for cycling.

Most collisions involving cyclists occur at intersections. Careful intersection design, including the choice of intersection control, can improve cyclist safety considerably.

Many of our roads were created and designed using different standards and different understandings of cyclists' needs, from those that exist today. Gradual improvements to our roads can (and should) be made to facilitate walking and cycling. In road design, cycles should be considered as much as other road users, and design for "cycle-friendliness" should be an integral part of all proposed road improvements.

On some roads (both urban and rural), it may be feasible to reduce the speed differential between cyclists and motor vehicles. Consideration should be given to implementing threshold treatments at urban/ rural interfaces and traffic calming in towns.

Reducing motor vehicle speeds improves the safety of not only motorists but also cyclists (and pedestrians) in a number of ways. Motorists get more time to notice and react to these road users; they can decelerate more quickly if needed to avoid a collision; and injuries resulting from impacts between motor vehicles and vulnerable road users are significantly less severe at lower speeds. Lower speeds in general reduce injury rates and the severity of injuries and help meet other road safety objectives.

Some roads will be safer for cycling than others, perhaps because of traffic volumes or speeds, the proportion of heavy vehicles, topography, or seal or bridge widths. For example, many roads in Central Otago have such low motor vehicle traffic volumes and numbers of pedestrians and cyclists that the chance of two motor vehicles passing each other at the same time as a pedestrian or cyclist is nearby is very small. Narrower roads may be acceptable in these circumstances. Especially favourable or challenging roads for pedestrians or cyclists are shown on the network plan.

## 10 Safety and Education

The most at-risk group of cyclists are aged between 10 and 19 years old inclusive, as noted in Chart 3: Pedestrian and Cyclist Casualties by Age Group 1993 – 2002. Concerns also exist for the safety of younger children on bikes. Accordingly, safety efforts are focused on school pupils.

The aim of cycling education for new cyclists is to build competence and confidence so they can cope successfully with any potential hazards they encounter. Without such skills they are more likely to feel vulnerable and may not continue to cycle. Research indicates that education programmes that teach new cyclists how to ride safely on the road are effective in reducing their involvement in traffic crashes as both children and adults.

Cycling safety instruction for Year 6 (Standard 4) to Year 8 (Form 2) school students to standards agreed with the LTSA should be made available to all schools in the district with pupils of this age. Programmes in primary schools will also be run wherever practicable.

Safety promotions should go beyond visibility and cycle helmet issues to how to ride safely in traffic, both in rural and urban situations.

Safety promotions should also be aimed at motorists to demonstrate how to share the common road space, including indicating turns, and how to behave next to cycle lanes and at intersections. Illustrations of cyclist speeds and likely manoeuvres should form part of the package.

There are many billboards in the district that could be used for communicating safety messages for cyclists (and pedestrians). For example, Waimakariri District ran an award-winning campaign (“Don’t Burst Their Bubble”) featuring a cyclist on a road surrounded by a large bubble to indicate to drivers how much space they should be giving cyclists as they pass them.

Enforcement to improve the safety of walking and cycling should be focused equally on aggressive behaviour by motorists and unsafe pedestrian and cyclist behaviour, such as walking and cycling at night without lights or reflectors.

In safety, education and enforcement matters, it is important to co-ordinate efforts with the Police, the LTSA, other District Councils, educational organisations and Road Safety Co-ordinators.

## 11 Promotion

While there is some room for improvement in public attitudes towards **cyclists** (partially as a result of the irresponsible behaviour of a minority of cyclists), the attitude towards **walking and cycling** is generally supportive.

Nevertheless, many people do not walk (other than to access their cars) or cycle. Reasons given vary from individual to individual, but fulfilment of the vision and objectives of this strategy will depend on getting many more people to walk and cycle than currently do so, even if only for a small proportion of their trips.

Translation of the positive attitude of walking and cycling by many non-walkers and non-cyclists into a change of behaviour so that they undertake some trips on foot or by cycle is the big challenge. Provision of a safe infrastructure for walking and cycling and improved safety and education programmes need to be complemented by comprehensive marketing and promotion campaigns aimed at changing the behaviour of many motorists for some trips.

Walking and cycling are normal, environmentally and socially responsible modes of travel for a wide variety of age groups, income levels and trip purposes. Accordingly, promotion campaigns should identify pedestrians and cyclists as typical Central Otago citizens who enjoy walking and cycling and care about our community by actively doing something to help maintain and enhance our environmentally pristine image. Promotion should also point out the benefits identified in Section 7.5 Opportunities for Walking and Cycling.

Identifying key factors to make walking and cycling "cool" for school students is needed, as are approaches to encourage work places to promote walking and cycling amongst their staff. Schools should also be contacted to determine whether they are actively supporting or discouraging walking and cycling.

CODC will encourage participation in national programmes to support walking and cycling such as the BikeWise's Bike Week and the BikeWise Business Battle, Push Play and various road safety campaigns which can be focused on these modes.

## 12 Funding and Monitoring

There are a number of funding mechanisms for support of walking and cycling programmes. These include a mix of ratepayer funding, government funding through Transfund New Zealand and Transit New Zealand, LTSA, Public Health, Police, private developers, and voluntary community organisations.

Council works with each of these organisations to promote road safety and provide support for walking and cycling projects and programmes.

Within the LTCCP funding for walking and cycling is provided within the following budget areas:

- District road maintenance– improvements to roads through routine maintenance activities.
- Minor Safety Works – provides for capital projects across the District which provide safety improvements to the road network. Projects are prioritised and considered by Council.
- Unsubsidised Rooding – each ward provides annual budgets for maintenance of pedestrian facilities and a capital works budget for upgrading and construction of new facilities within that ward. A programme of capital work is approved by each Community Board within the allocated budget.
- Road Safety – Council employs a Community Road Safety Co-ordinator with Clutha and Queenstown Lakes District Council's.
- Recreation – Council contributes to Sports Central and recreation initiatives across the district.

Conventional road funding sources can be used for a range of improvements which have multiple advantages. For example, rural road shoulder widening treatments not only improve the safety and convenience of cyclists, they also protect the road structure from edge damage by heavy commercial vehicles and improve safety for motor vehicle traffic in general by providing a safety margin during overtaking manoeuvres.

Additional funding is available from Transfund for walking and cycling projects and programmes that are consistent with district and regional walking and cycling strategies. These projects are considered at a nationwide level by Transfund, and are prioritised in terms of benefit versus cost.

Transfund's Project Evaluation Manual allows existing and/or anticipated pedestrian and bicycle traffic volumes to be quantified and given economic value in cost-benefit analyses.

The LTSA provides funding for community based road safety programmes. This funding is administered by the Community Road Safety Co-ordinator, and is available to members of the community who identify a road safety problem or issue and come up with a local solution to these.

Funding is also available to run community road safety programmes endorsed by the LTSA, and there is specific funding for improving pedestrian and cyclist safety.

Regular meetings are held of the Road Safety Committee, which includes representatives from ACC, Public Health South, Council, Transit, Police, LTSA, Community groups, Councillors, and the Road Safety Co-ordinator. Opportunities for partnerships, projects, and funding are discussed at these meetings.

It is important with any strategy to monitor its effectiveness and to assess whether or not the targets are being met. The trends and targets set out above have been established from known data about walking and cycling. Central Otago District Council undertakes an annual ratepayer survey. Monitoring of targets will be included in this survey. Sports Central will continue to monitor numbers of pedestrians and cyclists at schools. Some potential types of monitoring activity are described in Appendix F: Possible Monitoring Activities.

## **Appendices**

## **Appendix A – Walking and Cycling Network Plan**

## Appendix B – 2004/05 Implementation Programme

The following projects have been requested by the working group or members of the public. They are not listed in priority order, and no commitment has been made to undertake any of the projects listed. Projects identified for 2004/05 will be investigated further by Transit New Zealand, Council, Community Boards, and the Road Safety Committee, with a view to implementation within the 2004/05 financial year.

This programme will be updated regularly, and the latest version will be available on Council's web site ([www.codc.govt.nz](http://www.codc.govt.nz)).

Item	Status
<b>Facilities on State Highways</b>	
<b>Urban State Highways</b>	
1. Investigate safe crossing points on State Highways at the following locations: SH 8 Alexandra at Boundary Road	
SH 8 Alexandra between Matau St and Brandon St near New World	
2. SH 8 Alexandra Bridge – investigate shared pedestrian/cycle facility signage	2004/05
3. SH 8 Alexandra Bridge – investigate improvements to barrier between cars and pedestrians/cyclists	2004/05
4. SH 8 / SH 85 intersection – investigate improvements for cyclists and pedestrians at the monument intersection (Centennial Av/Tarbert St)	
5. SH 8 Alexandra – investigate cycle lane on Centennial Ave between Boundary Road monument intersection	
6. SH 85 Alexandra – investigate cycle lane on Tarbert Street/ Manuherikia Road between monument intersection and 70 km/h speed zone on Manuherikia Road	
<b>Rural State Highways</b>	
7. Investigate safe crossing points on State Highways at the following locations: SH 8 Clyde between Springvale Road and Sunderland Street	2004/05
SH 8b Cromwell West of Alpha Street near Picnic Area	2004/05
SH 8b Between Barry Ave and Shortcut Road where footpath meets SH	2004/05
8. SH 8b Cromwell – investigate speed limit and seal width	2004/05
9. SH 8 Cromwell Gorge safety improvements, or an alternative off road route.	
10. SH 8 Signs for the Cromwell Gorge identifying as not suitable for cyclists	
11. SH 8 Maintenance of edgebreak	
12. SH 8 Extension to cycleway/walkway between Roxburgh and Roxburgh Hydro	
13. SH 85 Path/widening between Alexandra and Galloway	2004/05
<b>Facilities on CODC Roads</b>	
<b>District Wide</b>	
1. Review of Street Lighting	Underway
2. Street lighting improvements	2004/05
3. One footpath on all urban streets.	
4. Footpaths on both sides of all urban State Highways	
5. New paths to make paths continuous where they swap sides of the street	
6. Auditing footpath kerb crossing points and constructing dropped crossings at all intersections.	2004/05
7. Rail Trail Crossing signage	
8. Check design of existing barriers on paths to stop motorbikes – also stop mobility scooters, pushchairs and cyclists	2004/05
9. Traffic calming facilities to comply with cycling design guides	Underway
10. Include maintenance in routine inspections of cycle paths through threshold treatments (road narrowings)	Underway
11. Provision of bike parking and cycling facilities in all urban areas	2004/05
12. Monitor height of vegetation planted on central traffic islands	Underway

<b>Cromwell</b>		
13. Banning heavy vehicles on Barry Avenue		
14. Constructing footpaths in Bannockburn		2004/05
15. Check kerb protrusions in Cromwell at pedestrian crossings and gardens for compliance with design guidelines for cycling		Underway
16. Cycle lane on Barry Avenue		
<b>Alexandra</b>		
17. Constructing a footpath on Russell Street & Boundary Road		2004/05
18. Eliminate angle parking		
19. Investigate linkages from Molyneux Park sports facilities onto the rail trail		
20. Move 70 km/h speed zone on Dunstan Road out further		
21. Cycle pedestrian route across Molyneux park from back of Terrace School		
22. Footpath adjacent to the carpark from the rear of the Terrace School to Russell Street		
<b>Earnsclough/Manuherikia</b>		
23. Identify link between Clyde –Alexandra River Track and Rail Trail through Clyde		Underway
24. Improve access for bikes from road onto Clyde Bridge walkway		2004/05
25. Earnsclough Road – from Alexandra to Conroys Road intersection		2004/05
26. Letts Gully Road – width an issue for cyclists		
27. Footpath from Clyde up to Clyde Dam		
28. Maintenance of gravel paths		
29. Develop the linkage from Omakau via Thomson Gorge to Tarras, Wanaka and Cromwell for biking		
<b>Roxburgh</b>		
30. Promote Millennium Track/Teviot Road as an alternative cycle route to State Highway		2004/05
31. Investigate biking/walking track over the Knobbies to Roxburgh, linking the rail trail and the Beaumont Millenium Track		
<b>Maniototo</b>		
32. Traffic calming, Patearoa		2004/05
33. Patearoa footpath extension		
34. Naseby Road – from Wet Gully Road into Naseby		
<b>Rail Trail</b>		
35. Improved signage warning of road crossings		
36. Improved visibility/regular maintenance of vegetation at road crossings		
37. Signage to Oturohua & other towns		
38. Improve Chatto Creek – SH 85 crossing		
<b>Road Safety/Education/Promotion</b>		
39. Share the Road – Road safety banners to be erected periodically on SH Road Safety message poles		2004/05
40. Investigate LTSA Safer Routes Project further		2004/05
41. Code of practice for shared use of tracks (cyclists and pedestrians)		
42. Mapping of routes – Tourism/Recreational/Roading		
43. Promotion of use of high visibility vests and cycle lights		
44. Participate in BikeWise week		
45. Reduce speeding vehicles through Tarras		
46. Reduce speeding vehicles on Sunderland Street, Clyde		
47. Promote secure cycle storage areas at schools		

## Appendix C – Glossary of Terms

<b>Bicycle</b>	A cycle with two wheels (see cycle).
<b>Cycle</b>	A vehicle designed to be propelled solely by the muscular energy of its driver(s) through pedalling.
<b>Cycle facility</b>	A facility especially constructed for cyclists.
<b>Cycle lane</b>	Part of a roadway allocated specifically for cycle use but which may occasionally be used by motor vehicles for turning at intersections or driveways or manoeuvring into parking spaces.
<b>Cycle path</b>	A physically separated path for cycles to which motor vehicles do not have access, where they are shared paths pedestrians may also use them.
<b>Cycle route</b>	A recommended route for cyclists comprising cycle lanes, cycle paths, signposting, pavement markings or other walking and cycling facilities.
<b>Cycle network</b>	A network of cycle routes represented on a publicly available plan.
<b>Cyclist</b>	A person riding a cycle.
<b>Footpath</b>	A path for use by pedestrians and others (see “pedestrian”).
<b>Implementation programme</b>	Programme of proposed walking and cycling projects and activities for implementation during the 2004/05 year
<b>LTCCP</b>	Long term council community plan, plan of council activities mandated by the Local Government Act
<b>LTSA</b>	Land Transport Safety Authority, agency with prime responsibility for road safety in New Zealand
<b>Network plan</b>	Plan of existing and proposed walking and cycling facilities
<b>OCRT</b>	The Otago Central Rail Trail, administered by DOC and the OCRT Trust.
<b>Transit</b>	Transit New Zealand, agency responsible for New Zealand’s state highway network.
<b>Transfund</b>	Transfund New Zealand, agency responsible for funding support for New Zealand’s land transportation system.
<b>Pedestrian</b>	A person walking or running. In general, facilities for pedestrians are available for use by users of small motorised mobility devices for the elderly or disabled.
<b>Shared path</b>	A physically separated path for pedestrians and cyclists to which motor vehicles do not have access.
<b>Track</b>	An off-road path used by pedestrians and/or cyclists but not motor vehicles.
<b>Walkway</b>	An off-road path exclusively for pedestrians.

## Appendix D – School Walking and Cycling Data

School	Town	Roll	% Walk	% Cycle	Comment
1. Alexandra Primary	Alexandra	210		20 – 25	25 – 30% bus, rest walk or dropped off
2. Clyde Primary	Clyde	125	24	15 – 20	25% bus; rest dropped off by car
3. Cromwell Primary	Cromwell	206	25	30	15 – 20% bus; 30% by car dropped off by parents
4. Dunstan High	Alexandra	560		15	don't own a bike, cycling uncool, bus or dropped off
5. Goldfields Primary	Cromwell	96		20	bus, scooters
6. Maniototo Primary	Ranfurlly	183	50	5	70% bus, not allowed to cycle
7. Millers Flat Primary	Millers Flat	52	2		distance too far, all bus
8. Omakau Primary	Omakau	55	30	16	bus, business of main road
9. Patearoa Primary	Patearoa	11	9	9	bus as a rural area
10. Poolburn Primary	Poolburn	33	0	0	bus, distance and safety
11. Roxburgh Area School	Roxburgh	181		10	bus, don't have a bike or helmet
12. St Gerards Primary	Alexandra	124	20		bus, bike or car
13. St Johns Primary	Ranfurlly	42	10	12	bus
14. Tarras Primary	Tarras	14		0	bus, too dangerous on main road
15. The Terrace Primary	Alexandra	320	20	33	bus, parents drop off
<b>Total</b>		<b>2212</b>	<b>20%</b>	<b>17%</b>	
Note: Where walking data are missing, the percent walking is assumed to be the same as the percent cycling.					

Data collected by Bill Godsall, Sport Central, April 2004.

## Appendix E – Design of Walking and Cycling Facilities

Geometric design guidelines for walking and cycling facilities can be obtained from a variety of sources. The following are recommended:

1. *Pedestrian guidelines* – TRAFINZ 2001
2. *Guide to Traffic Engineering Practice – Part 14 Bicycles* Austroads, Second Edition 1999
3. *Cycling Design Guide Supplement to Austroads Part 14* – available from Transit NZ June 2004
4. *Sign up for the bike, Design manual for a cycle-friendly infrastructure*, C.R.O.W. The Netherlands (in English)
5. *Cycle-friendly Infrastructure, Guidelines for Planning and Design*, Department of Transport
6. *14 Key Cycling Issues for Local Authorities* CAN, Cycling Advocates' Network
7. Also recommended to consult for further guidelines and standards
  - Transit New Zealand
  - Christchurch City Council
  - LTSA

## Appendix F – Possible Monitoring Activities

### Data Set

### Comments

Census journey to work (Statistics New Zealand)	Good long-term data series of trends for walking and cycle commuting (“main means of travel to work”) but does not capture school or recreational traffic. Disadvantages are that the data are collected only once every five years, and may be weather-dependant on any particular Census day.
Collision statistics (LTSA)	Walking and cycling collisions tend to be statistically rare events. This means that potentially dangerous locations are unlikely to be identified by conventional “black spot” collision analysis, and also that locations with one collision (or more) may not be any more dangerous than other locations. Overall trends in walking and cycling crash numbers, however, are useful indicators of walking and cycling safety, and should be monitored routinely.
Walking and cycling infrastructure	An inventory should be established and maintained of public walking and cycling facilities, including footpaths, cycle lanes (on-street), cycle paths (off-street, usually available to pedestrians and possibly horse traffic), wide shoulders on rural roads marked as cycle routes and bicycle parking facilities. A component of this inventory should be walking and cycle network plans.
Funding and staffing	Funding and staff resources will be needed to develop, implement and maintain the walking and cycling strategy. Tracking these items will demonstrate the CODC’s commitment to walking and cycling.
Automatic traffic counts	Routine classified traffic counts identify the proportion of traffic of each vehicular mode (including cars and many different classes of truck and bus). With little extra effort or cost, traffic counters can count bicycle traffic too. No data have been collected yet in Central Otago, but routine counts will collect bicycle traffic in a sample of future automatic traffic counts.
Manual traffic counts	Manual surveys are needed to count pedestrians and help distinguish between school and other types of cyclists. They tend to be more expensive than automatic counts and consequently may be carried out less frequently and for shorter intervals.
Special pedestrian and bicycle counts	Some data may need to be collected for special locations as necessary.
School bike stand surveys	Cycling to school gives an indication of the use of cycles by younger residents of the community. If this number declines then future numbers of cyclists may decline. Bike stand surveys do not quantify pedestrian trips so student surveys are preferable.
Bicycle tourism	Numbers of visitor nights of cyclists on organised cycle tours in the district.
Walking and cycling events	Number of walking and cycling events held in the District such as Bike Week promotion, fun rides, road or off-road races.
Opinion survey of pedestrians cyclists	Attitudes of existing pedestrians and cyclists toward walking and cycling facilities can be documented.
Opinion survey of residents	Attitudes toward walking and cycling in general can be documented to ascertain what would be needed to encourage people to walk and cycle more.