Draft Greater Christchurch
Travel Demand Management
(TDM) Strategy and Action Plan

Smart choices – travel your way

For approval by the
UDS Implementation Committee
November 2008

Table of Contents

Summary

By 2026, "People choose the most efficient and sustainable way to travel and move freight."

The Urban Development Strategy partners recognise that we need a more sustainable transport system which will help deliver the enriched lifestyle, enhanced environment and prosperous economy desired by residents and businesses.

The Greater Christchurch Travel Demand Management Strategy and Action Plan (GC TDMS) identifies a travel demand management (TDM) policy direction, targets and actions to help achieve a more sustainable transport system in the UDS area.[1]

This strategy has been developed by a joint project team members from all the UDS partners – Christchurch City Council, Environment Canterbury New Zealand Transport Agency, Selwyn District Council and the Waimakiriri District Council. The Transport Group of the UDS has acted as Steering Group for the project and the draft strategy will be approved by the UDS Implementation Committee, prior to wider community consultation taking place in early 2009.

TDM encourages smarter, more sustainable travel (walking, cycling, bus, shared travel, travel planning) and modifying vehicle use by reducing, shortening or combining journeys, or travelling at different times. In different ways TDM can be for everyone in the Greater Christchurch area – urban and rural residents and businesses.

People in Greater Christchurch love their cars. With the highest rate of car ownership in New Zealand, 85% of all trips are made in private cars (19 out of 20 cars travelling to work have only a single occupant). More time is being spent travelling by car and this contributes to our increasingly inactive life-style. Car travel is growing at about 2.5% per annum. Road-based freight is growing at 3.5% per annum and freight travel is expected to double by 2040.

Our population is changing. By 2026 Greater Christchurch is predicted to have a 21% increase in population and a 30% increase in households numbers. Notably our population is ageing. Canterbury's population is ageing at a faster pace than elsewhere in New Zealand. At present, 12% of the population is aged 65+ years; by 2051 this will double to 25%. By 2026 there will be more people aged 65+ years than children.

These changes will affect the way we travel and the number of trips made. If we continue as we are, traffic volumes in Greater Christchurch are predicted to increase by 27% by 2026. This will mean more congestion, longer and more unreliable travelling times, greater travel costs, increased dependency on non-renewable fuels and reduced road safety.

Since our existing transport system is predominately motor vehicle-orientated, increasing traffic congestion threatens its future efficiency.

[1] See map in section 'Demographic trends and travel'.

There are many beneficial outcomes from TDM activities and programmes.
These include:

- increased physical activity through increased cycling and walking;
- reduced traffic growth, congestion and travelling times;
- greater community well-being through improved public health and road safety;
- better community connectedness and access to destinations;
- reduced transport-related greenhouse emissions;
- reduced expenditure by private and commercial vehicle owners on fuel, vehicle maintenance and fleet requirements; and
- improved cost-effectiveness, capacity and efficiency of the transport network.

The GC TDMS sets four goals:

1. A reduction in the number of trips made, especially by private car.
2. An increase in proportion of trips made using sustainable travel options.
3. A reduction in the distance travelled between origin and destination.
4. A change in the time of travel.

Six key policies support the strategy's Vision and Goals, and underpin the Action Plan. These are as follows:

1. Increase awareness and positive perception of sustainable travel choices, by promoting their environmental, economic, health and social benefit, using coordinated and consistent messages.
2. Provide travellers with current information that will assist them in making choices about how and when to travel using sustainable options.
3. Integrate transport and land use planning, so that the distance between origin and destination of trips is closer; and public transport and active travel options are given priority, and made accessible and convenient in new and re-developed areas.
4. Maximise the effectiveness of TDM education and marketing activities by combining them with any changes to transport infrastructure and pricing.
5. UDS partners work collaboratively together, with other stakeholders and the wider community, to co-ordinate travel demand management initiatives; with particular regard to improving affordability and accessibility of sustainable travel options.
6. UDS partners ensure travel demand management principles are reflected in their organisations' transport infrastructure-related supply strategies, policies and operational practices.

The Action Plan has been developed using three key approaches to achieving behaviour change:

- Influencing travel choices
- Reducing the need to travel by car
- Supporting the efficient movement of freight.

The UDS Implementation Committee will be responsible for the overall delivery of the strategy's Action Plan. Implementation commences in the 2009/2010 year. The Action Plan lists projects for either short term (2009/12), medium term (2013/19) or long term (2020/26) implementation. It will be reviewed and updated regularly, to coincide with the timing with government and local authorities' LTCCP and annual planning and funding cycles.

Projects identified in the Action Plan will be funded by:
a) UDS partners' LTCCPs and **existing** operational budgets
b) funding assistance from the New Zealand Transport Agency.

It should be emphasised that respective UDS partners' operational budgets already incorporate TDM projects. The implementation of the Action Plan will help link these travel *demand*-focussed projects with key *supply*-focussed infrastructure programmes.

Understanding TDM

What is sustainable travel?

It's about making smart choices. Getting from A to B by walking, cycling, taking the bus, sharing a car, choosing to combine the trip with another one, or choosing a closer destination - without lifestyle loss - are all examples of sustainable travel.

Choosing a sustainable travel option can greatly reduce the adverse effect on the economic, social and natural environments of present and future generations.

What is TDM?

TDM encourages smarter, more sustainable travel. It encompasses a range of methods and programmes that influence whether we travel, how we travel, when we travel and where we travel. The overall aim is to maximise the efficiency of the land transport system. TDM does not require people to completely stop using their cars or vehicles.

TDM programmes can influence the transport options and choices taken by everyone in the Greater Christchurch area.Though it is recognised that people in peri-urban areas such as Rolleston, Kaiapoi and Rangiora communities often have fewer travel options than their urban neighbours, they can contribute to sustainable vehicle travel by, for example, sharing rides and combining trips when it is practical to do so.

Benefits include:

- Increased use of passenger transport, cycling and walking.
- Reduced traffic growth, congestion and travelling times.
- Greater community well-being through improved public health and road safety.
- Reduced transport-related greenhouse emissions and non-renewable energy use.
- Improved community connectedness.
- Improved access to key destinations via the transport network.
- Reduced expenditure by private and commercial vehicle owners on fuel and vehicle maintenance.
- Improved cost-effectiveness, capacity and efficiency of the transport network.

Why do we need a TDM strategy?

Transport is fundamental to the quality of life in Greater Christchurch. It provides people with access to education, employment, services and recreational facilities, along with enabling the movement of freight which is essential for Greater Christchurch's economic well-being.

The need for a travel demand strategy was identified during the development of the Greater Christchurch Urban Development Strategy and Action Plan 2007 (UDS)[2].

The population in the UDS area is anticipated to grow by 21% over the next 25 years. This will put increased pressure on existing transport infrastructure (roads, public transport services, freight corridors). Rather than relying on building more roads to meet the increasing demand of motor vehicles, the aim of TDM is to reduce motor vehicle demand and increase road-carrying capacity through greater use of sustainable travel. It's about better utilising our existing infrastructure and being more cost-effective.

Travel needs and choices can vary hugely between different parts of the Greater Christchurch area. Many urban Christchurch City residents have easy access to cycle lanes, footpaths and walkways, the bus network, and live within walking or short commuting distance of shops, recreation areas and schools. Those living beyond in peri-urban areas of Selwyn and Waimakariri have fewer choices and often face much longer distances to commute to work, school and sports grounds.

No matter whether one lives or works in an urban, suburban, small town or rural location travel demand management must become part of people's travel planning. This strategy aims to develop a travel demand management-focused Action Plan of integrated, co-ordinated framework of policies and programmes that will support an affordable, safe, sustainable, integrated, responsive transport system.

Want to know more?
The effects of the way we are travelling today *section*
Transport issues influencing travel behaviour *section*

[2] Urban Development Strategy Forum (2007). *The Greater Christchurch Urban Development Strategy*. Christchurch, Urban Development Strategy Forum.

What's happening now?

Around the world travel behaviour change programmes (a component of TDM) are changing the way people travel and delivering benefits for communities and the environment.

In Christchurch: e.g.

- 20% reduction in car travel to Waimairi School through the Council-supported school travel plan. Nearly twice as many children walk or scooter to school compared to other Christchurch schools. [3]
- An increase from 12 to 20% of students cycling to Canterbury University following the implementation of a transport strategy (preliminary results). [4]
- Walk or Wheel Wednesday (now re-named as Feet First to link in with the new national campaign) – on average 70% of children actively travel to participating schools on Wednesday.
- Waimakariri Community ride-share trial programme – fifty people involved with reported savings of up to $22 per day.

Overseas: e.g.

- 20% fewer miles travelled in Portland, Oregon and 100% more use of active and shared travel modes than in comparable cities have been achieved via travel demand programmes, transport infrastructure improvements and land use policies. Outcomes include consumer cost savings, more regional economic development, reduced air pollution and more liveable urban neighbourhoods.
- 10% reduction in car use by shifting travellers to public transport and cycling in Perth, Western Australia.
- 14% reduction in car use following Australia TravelSmart personal travel planning programmes. [5]

Today, the range of safe, affordable and accessible travel options such as bus, walk, and cycle are not equally available to all people in Greater Christchurch. However, our transport system is changing - the UDS partners now have an increasing focus on improving our travel choices to enable us to travel more sustainably. Our travel options can be further increased - especially for more rural communities - with improvements to telecommunications over time: faster internet access can enable more people to work from home and access services from their local communities if they choose.

[3] Rice, Bill (2008). *How we got to school – A study of travel choices of Christchurch primary school pupils. [unpublished thesis].*

[4] University of Canterbury (2008). *Preliminary travel survey results [unpublished].*

[5] Victoria Transport Policy Institute (2007). *Success stories: examples of TDM programs that work*. Available at http://www.vtpi.org/tdm/tdm71.htm (retrieved December 2007).

Key current projects that support TDM include:

- Improving public transport provision with; Bus Priority, Transport Interchange and suburban interchanges and bus shelters, service improvements, new services
- Central City Transport Strategy – making it easier to bus, walk and cycle in the Central City
- Area or Structure Plans for South West, Belfast, Kaiapoi, Rangiora and Woodend – making it easier to walk, cycle and catch the bus and access services locally
- Park n Rides – planned for the Waimakariri District
- Regional Land Transport Programme and LTCCP Transport programme – increased levels of funding and priority given to walking, cycling and public transport provision.

A community based ride-share trial has been operating in the outer area of the Waimakariri District – and success of such schemes depend on finding a good match. Wide dispersal of households and the disparate number of work places in Christchurch City make ride-sharing challenging.

There is a range of promotional campaigns and programmes to encourage active and shared travel in Greater Christchurch. The majority are led by the Councils and are generally school based programmes. Others are led by NZTA (formally Land Transport New Zealand), health - orientated organisations or lobby groups.

Currently, existing promotional campaigns and programmes are not coordinated and or linked to infrastructure improvements – and many with small budgets and audiences. Working alone these initiatives are unable to make a big difference in the way we travel. The GC TDMS aims to bring together programmes, promotions and linking with key infrastructure improvements – to optimise travel behaviour change.

Our travel today

How are we travelling?

- The car is used for 85% of all daily trips in Greater Christchurch.
- Fewer children are walking or cycling to school. 34% of morning peak traffic is education related, and 68% of education-related travel is by car.[6]
- 96% of cars travelling to work have a lone driver.
- Travel to work is the most common trip from home undertaken (15 %).[7]
- Christchurch's Central City accommodates 30% of total city employment (52,000 people).[8]
- More and more people from Kaiapoi, Rangiora and Selwyn travel to work in Christchurch City.[9]

Travel demand is at its highest during morning and evening periods on weekdays and middle parts of the day during weekends. [10]

An effective transport system is vital to sustaining communities and facilitating economic growth. People need to travel affordably, easily and safely between home, work, education, retail and leisure destinations. Businesses require reliable and efficient movement of freight and services for economic viability.

Our existing transport network is predominately motor vehicle-orientated. The car is perceived as the easiest, most convenient way to travel. Today 85% of all our trips are by car.

It is no longer cost-effective to keep building new roads to provide for increasing demand for car - based travel. The most efficient way to use the existing transport network is through sustainable travel. This enables the existing network to increase capacity through public transport, sharing car travel, walking and cycling, and for people to consider travel outside of peak time and use more locally-based services.

Key challenges

Growth in car use

The car encourages people to travel further, faster and more frequently than ever before. Today, cars are easier to buy (easier access to loans with minimal deposit, and low-priced car imports) and are perceived to be convenient, allow increased freedom for most people and have low operating costs. Free or on-street parking within walking distance of central business districts or suburban employment areas contributes to this perception of low costs.

---

[6] Christchurch transport model. *Household interview survey reports* (2006). [Unpublished].
[7] Christchurch Transport Model. Op cit.
[8] *Central City Revitalisation Strategy*. Op cit.
[9] 40.5% (8,931) of Kaiapoi and Rangiora's resident labour force work in Christchurch City (this is a 19.7% (1,515) increase between 2001-2006), and 40% (7,767) of Selwyn's resident workforce work in Christchurch City (this is a 42% increase (2,304) between 2001 and 2006).
[10] Ministry of Transport (2008). *New Zealand household travel survey.* Available at www.transport.govt.nz/assets/NewPDFs/Driversfinalv1.2.pdf (retrieved October 2008).

Increase in vehicle ownership

Car ownership in New Zealand has more than tripled since the 1950s. We now own 700 vehicles per 1000 persons.[11] In Christchurch, vehicle ownership is higher than the national average and there is also an increasing number of households with two or three cars.[12]

Increasing fuel costs

Fuel prices in New Zealand – and elsewhere – have varied and overall increased significantly in recent years. Research indicates that petrol price changes have a significant impact on petrol consumption within a year of the change, with impacts not indiscernible after two years. There is also a notable impact on vehicle traffic, especially highway traffic. However, the connection between petrol price changes and public transport patronage is not as predictable or direct.[13] It is therefore unlikely that a sufficient degree of behaviour change towards use of more sustainable travel modes can be achieved by relying on petrol price increases as the sole trigger.

Walking

Walking is used for 9.3% of all daily trips (second to car use) in Greater Christchurch. Nationally, walking and cycling by children aged 5-14 has decreased from an average of two hours and ten minutes per week in 1989/90, to just under an hour and twenty minutes per week in 2003-06.

Nationally, the number of children aged five to 12 years walking to school has declined from 26.1% in 1990 to 20.5% in 2006.[14] Based on information from 20 schools in Christchurch 85% of primary school children live within 2km of their school.

Encouragingly, walking for leisure is the most popular recreation activity for older adults. [15]

Cycling

Cycling is the third most common means of travelling to work in Christchurch; however cyclist numbers are declining from 9% of residents in 1991 to 5% in 2006.[16] The cycle is used for 2.4% of all daily trips.[17] The number of cyclists commuting to work and school is a declining trend.[18] However, encouragingly recent traffic counts in 2008 indicate that commuter cycling has increased by 20% between 2007 and 2008.

Christchurch recreational cycle numbers experienced a spike in 2005, with 30% of people cycling for recreation.[19]

---

[11] Ministry for the Environment (2007). *Environment New Zealand 2007*. Available at http://www.mfe.govt.nz/publications/ser/enz07-dec07/html/index.html (retrieved October 2008).
[12]: Statistics New Zealand (2007). *New Zealand 2006 Census of Population and Dwellings.* Available at http://www.stats.govt.nz/census/census-outputs/default.htm (retrieved October 2008).
[13] Kennedy, D. and Ian Wallis (2007). *Impacts of fuel price changes on New Zealand. Transport*. Land Transport New Zealand Research Report 331. Available at http://www.ltsa.govt.nz/research/reports/331.pdf (retrieved October 2008).
[14] Ministry of Transport (2008). *New Zealand household travel survey.* Available at http://www.transport.govt.nz/assets/NewPDFs/Comparing-travel-modesv1.4.pdf (retrieved October 2008).
[15] Christchurch City Council (2006). *Christchurch annual residents survey*, 2006. Available at http://www.ccc.govt.nz/ResidentsSurvey/ARS2006ReportPart2.pdf (retrieved October 2008).
[16] Statistics New Zealand (2007). Op cit.
[17] Ibid.
[18] Christchurch City Council (2005). *Cycling strategy for Christchurch: 2005 annual report.* Available at www.ccc.govt.nz/Cycling/Future/AnnualReports/CyclingReport2005.pdf (retrieved October 2008).
[19] Opinions Market Research (2005). *Summary of market research report for: Cycling Monitor 2005*. Available at www.ccc.govt.nz/Cycling/Future/AnnualSurvey/2005SurveySummary.pdf (retrieved October 2008).

Public transport

Since 1993, bus patronage has been increasing. In 1993 a low of 7.1 million trips was reached but since then trip numbers have increased to the 2007 figure of 15.7 million trips.[20]

40% of bus passengers take the bus to work, 31% to get to school and 13% to shop.[21]

Freight movement

The movement of freight plays a vital role in sustaining and supporting economic development. The freight sector supports producers, manufactures, retailers and households. Transport costs are an important issue: an efficient freight sector can provide cost-effective forms of transport in the supply of goods to markets and end users.

Nationally the freight sector accounts for 43% of energy consumed by the transport sector.[22] The freight task is expected to more than double by 2040 with the road sector having to move more than 1.6 times more freight than now. [23] The movement of freight within the urban context is heavily road-based.

Land use planning

The distance to and between our travel destinations is heavily influenced by how our land use has been planned. The urban footprint of Christchurch's suburban and commercial areas has continued to grow and spread. Dispersed land use patterns result in high car dependency whereas more concentrated land use with mixed development can lead to shorter car trips and lower car use. [24] The spread of low density housing has meant that many people are now required to travel further to places of work, see friends, shop and for recreation.

Sixty eight percent of all our trips are over 5 kilometres' distance. Many people rely on the car and public transport to travel to these destinations.

Past land use policy has allowed the residential and commercial sector to develop on the basis that the car is the main mode of transport. Land use and transport have not been integrated, resulting in greater distances to travel to destinations and reliance on the car as means of travel.

The Canterbury Regional Policy Statement and the UDS now provide a clear direction for future development. This aims to reduce the distance people need to travel to destinations by integrating transport and land use planning.

Want to know more?
Demographic trends and travel *section*

[20] Christchurch City Council (2008). *Monitoring Community Outcomes. An attractive and well designed city: transport system*. Available at http://www.ccc.govt.nz/ltccp/communityoutcomes/monitoring/designed/9o_attractivewelldesigned_1332_hl_buspatronage.pdf (retrieved October 2008).

[21] Cited in: Christchurch City Council (2006). *Central City revitalisation strategy: stage 2*. Available at http://www.ccc.govt.nz/CentralCity/CCRPStage2.pdf (retrieved October 2008).

[22] The Ministry of Transport, the Ministry of Economic Development and Land Transport New Zealand (2008). *National freight demands study*. Available at http://www.transport.govt.nz/national-freight-demands-study-1/ (retrieved October 2008).

[23] Ministry of Transport (2008). *New Zealand transport strategy*. Available at http://www.transport.govt.nz/new-zealand-transport-strategy-2/ (retrieved October 2008).

[24] Ward, M, J Dixon, B Sadler and J Wilson (2007). *Integrating land use and transport planning*. Land Transport New Zealand Research Report 333. Available at http://www.landtransport.govt.nz/research/reports/333.pdf (retrieved October 2008).

Strategic context

The delivery of the Greater Christchurch transport system is guided by the *New Zealand transport strategy 2008* (NZTS*)*, the *Canterbury regional land transport strategy* (RLTS*),* the *Greater Christchurch urban development strategy and action plan* (UDS*)*, and individual transport strategies of the partner agencies.

All of these strategies echo the need for a better integrated, sustainable, safe and responsive transport system that enables a balanced mix of modes (walk, bike, bus, car and truck). Currently, there is an impetus from central government for action to change current travel behaviour toward non-car transport modes, resulting in a reduced reliance on the car (particularly as a single occupant vehicle).

Funding applications for more sustainable transport programmes (walking, cycling and public transport) are encouraged by New Zealand Transport Agency (NZTA).

A *Greater Christchurch travel demand management strategy* (GC TDMS) will help achieve new targets set by the NZTS and RLTS. The GC TDMS will take cognisance of both the RLTS and the *Canterbury regional travel demand management strategy* (RTDM).

Nationally

The *New Zealand transport strategy* provides a high level, government direction for the whole of the transport sector. It was recently updated and sets objectives and long-term targets for the period 2008-2040. It has set new targets to re-balance the transport system and encourage more active and shared travel. It is a requirement that other transportation-related strategies are aligned with this government strategy.

While the *New Zealand transport strategy* has a long-term outlook, the *Government policy statement 2009/10-2018/19* translates these targets into shorter-term targets and focuses on providing direction for the allocation of land transport funding that will best support the government's strategy.

The *New Zealand transport strategy's* vision is that: "People and freight in New Zealand have access to an affordable, integrated, safe, responsive and sustainable transport system".

The vision is supported by five transport objectives:

- ensuring environmental sustainability
- assisting economic development
- assisting safety and personal security
- improving access and mobility
- protecting and promotion public health.

Locally

The UDS partners (Christchurch City, Selwyn and Waimakariri Districts, Environment Canterbury and the New Zealand Transport Agency) agree that increasing the use of more sustainable travel options provide the greatest opportunity to stem the rising tide of congestion and are committed to promoting greater use of these options. *"Transport choices, including public passenger transport, walking and cycling will be encouraged to achieve a greater share of trips." (3.6, page 26)*

The method for implementing this initiative is outlined in Chapter 6, Section 26 Transport of the UDS Strategy and Action Plan. The primary action is to: *"Develop and implement a travel demand management strategy and action plan for Greater Christchurch." (6.26.4 Actions, (4), page 120)*

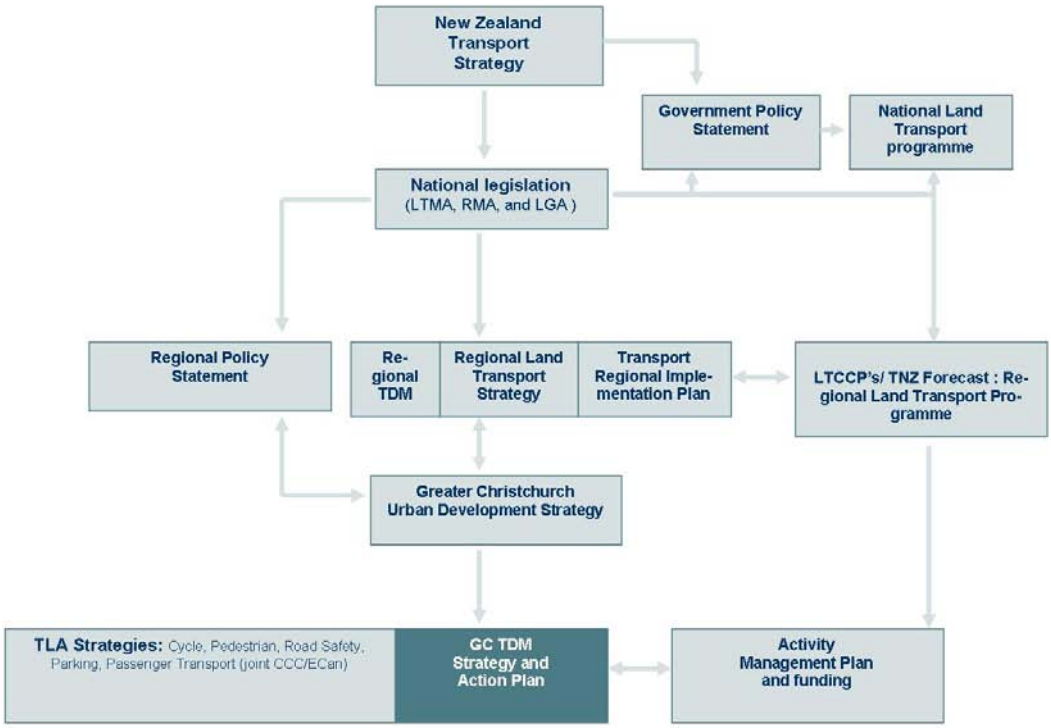
The GC TDMS will complement the suite of local Council's transport strategies; Parking, Pedestrian, Cycling, Road Safety and Passenger Transport, through the development of targeted initiatives that will facilitate increased use of public transport, walking, cycling, or modified travel patterns.

Government targets to encourage more sustainable travel

NZTS Target	Government policy statement targets[25]	Draft regionalised target
Reduce kilometres travelled by single occupant vehicles, in major urban areas on weekdays, by 10% per capita by 2015 compared to 2007	Reduce kilometres travelled by single occupant vehicles, in major urban areas on weekdays, by 10 % per capita by 2015	10% reduction on kilometres per resident per annum by 2015/16
Halve per capita greenhouse has emissions from domestic transport by 2040[26]	Increase patronage on public transport by 3% per year through to 2015	Increase public transport trips per capita by 4% per annum by 2015/16
Increase use of public transport to seven per cent of all trips by 2040		
Increase walking, cycling and other active modes to 30% of total trips in urban areas by 2040	Increase number of people walking and cycling trips by one percent per year through to 2015.[27]	Increase walking and cycling trips per resident per annum by 1% by 2015/16
Increase coastal shipping's share of inter-regional freight to 30% of tonne-kilometres by 2040	Increase the mode share of transporting freight by coastal shipping and rail by 2015	
Increase rail's share of freight to 25% of tonne-kilometres by 2040		
Reduce road deaths to no more than 200 per annum by 2040		
Reduce serious injuries on roads to no more than 1,5000 per annum by 2040	Reduce fatalities and hospitalisations from road crashes by 2015	
Reduce road deaths to no more than 1,500 per annum		
For identified critical routes: - Improve reliability of journey times - Reduce average journey times	No overall deterioration in travel times and reliability on critical routes by 2015	
Reduce the number of people exposed to health endangering noise levels from transport[1]		
Reduce the number of people exposed to health endangering concentrations of air pollution in locations where the impact of transport emissions is significant[1]		

[25] Ministry of Transport (2008). *Government policy statement [GPS] on land transport funding 2009/10-2018/19*. Available at http://www.transport.govt.nz/assets/Images/NewFolder-2/GPS-final-5-August-2008-2.pdf (retrieved November 2008).
[26] Targets within the NZTS that relate to the vehicle fleet have not been included in the GPS, as they are less relevant to land transport planning and funding

Transport strategy framework



The plan for tomorrow

Vision

By 2026, "People choose the most efficient and sustainable way to travel and move freight."

The UDS's vision is that,

"By the year 2041, Greater Christchurch has a vibrant inner city and suburban centres surrounded by thriving rural communities and towns, connected by efficient and sustainable infrastructure."

It is within this umbrella framework that the Greater Christchurch Travel Demand Strategy sets four goals.

Goals

TDM Goal	*Consider…*
1. A reduction in the number of trips made, especially by private car. 2. An increase in proportion of trips made using sustainable travel options. 3. A reduction in the distance travelled between origin and destination. 4. A change in the time of travel.	• *Do you need to make this trip - can you combine it with another trip?* • *How are you going to travel – what best fits the situation?* • *Where are you going to travel – can you make the trip locally?* • *When is the best time to travel – can you be flexible?*

Policies

Six key policies support the strategy's Vision and Goals, drive the Key Approaches and guide the implementation of the Action Plan.

These six policies will provide a TDM focus and direction for UDS partners' respective strategic and operational planning and funding. They complement existing transport and land use strategies and area plans (alignment with these strategies is indicated in the Action Plan) and UDS-driven intensification and activity centre development.

Understanding the particular needs of different communities in the Greater Christchurch area will be essential in order to appropriately apply the policies and mix of actions – right policy, right programme, right place.

1. Increase awareness and positive perception of sustainable travel choices, by promoting their environmental, economic, health and social benefit, using coordinated and consistent messages.

2. Provide travellers with current information that will assist them in making choices about how and when to travel using sustainable options.

3. Integrate transport and land use planning, so that the distance between origin and destination of trips is closer; and public transport and active travel options are given priority, and made accessible and convenient in new and re-developed areas.

4. Maximise the effectiveness of TDM education and marketing activities by incorporating them with any changes to transport infrastructure and pricing.

5. UDS partners work collaboratively together, with other stakeholders and the wider community, to co-ordinate travel demand management initiatives; with particular regard to improving affordability and accessibility of sustainable travel options.

6. UDS partners ensure travel demand management principles[28] are reflected in their organisations' transport infrastructure-related supply strategies, policies and operational practices.

[28] The strategy's principles are included in the 'Want to know more?' section.

Key approaches to implementation

Changing the way people travel in Greater Christchurch is going to take time and will require a number of actions working together. It is crucial that UDS partners are committed to and adopt a sustainable transport ethos and lead by example.

Approach 1: Influencing travel choices

(a) Improved information about sustainable travel choices and travel plans

People need to know what choices are available, and their benefits and costs, in order to make well-informed decisions about the way they travel. Marketing campaigns play an important role in clearly and consistently communicating and encouraging travel choices. Currently, dissemination of information about travel choices is not cohesive. There are numerous marketing campaigns for individual authorities' strategies and campaigns, but these lack co-ordinated messaging.

Though it is noted that awareness and education about travel options alone have little known effect on changing travel behaviour[29], they are a necessary precursor to travel behaviour change. Once initial awareness is raised, travellers are able to make informed choices and plan trips using techniques such as travel plans.

A travel plan is a package of measures tailored to particular sites, to enable and encourage active and sustainable travel choices. They are not one-off events, but are on-going, and will develop and evolve to participants' changing circumstances.

Travel plans raise awareness and increase knowledge of travel choices and encourage changes to sustainable modes. They can bring about a change in travel behaviour of between 10-30% of the affected population. For optimal behaviour change a combination of infrastructure improvements alongside or as part of a travel plan is required.

School, work place, community and personal travel plans can reduce the proportion of trips made by car to work or study, for business-to-business trips, the 'school run' and neighbourhood dash to the shops. Positive outcomes include reduced car parking pressure, cost savings, improved accessibility and promotion of a healthier and more motivated workforce. Personal travel plans are ideally suited to areas where there are good travel choices available and have also been successful when people move house.

School
Travel to school represents 34% of the peak time travel.
The number of children walking or cycling to school has dramatically declined between 1989/90 and 1997/98.[30] Today, well over half of children in Greater Christchurch travel to primary school by car.

[30] Department for Transport (2005). *Making campaigning for smarter choices work: guidance for local authorities*. Available at http://www.dft.gov.uk/pgr/sustainable/smarterchoices/ (retrieved March 2008).

Encouraging and enabling children to actively travel to school or use public transport reduces traffic levels during the morning peak and increases physical activity levels. Children are the next generation commuters. Developing a walking and cycling habit early in life encourages continuation through into later life.

Several schools have already implemented successful travel plans and they now require a plan for long-term support. A walking school bus programme exists but has low coverage and requires resources and model to roll out on a wider scale. The Walk or Wheel Wednesday Challenge term four events successfully encourage school pupils to actively travel to school - school participation grows each year. Cycle Safe programme teaches most Christchurch children in year six to ride safely.

Work and Campus

Work place and campus travel plans aim to reduce the proportion of trips made by car to work (and business to business travel) and tertiary study. Key outcomes include a reduction of car parking pressure, vehicle cost savings, improved accessibility, and promotion of a healthier and more motivated workforce or student population .

Travel to work is one of the most predictable and largest of all journey types. It is likely to be the most replaceable, depending on travel choices available. Christchurch's central business district is a significant destination. It accommodates 30% of total employment, with 52,000 employees coming to the area each day. There is already a reasonable level of walking, cycling and public transport infrastructure.

Education-related travel accounts for 34% of morning peak travel.

- 38,000 (2006) students were enrolled in four key tertiary campuses (College of Education 5,857, Canterbury University 13,732, Christchurch Polytechnic Institute of Technology 15,060 and Lincoln University 3943).
- 69,632 (2006) children were enrolled in schools in Greater Christchurch.

Several large organisations in Christchurch already have travel plans. However, some of these travel plans require rejuvenation and there is excellent potential to enhance and extend the number of travel plans.

Community/personal

The UDS, along with local area and residential intensification plans, support mixed use and medium to high density living - with improved access for walking or cycling to key places close to home.

Community and personal travel plans are being increasingly and successfully used to influence how we travel to work, shop and play. Personal travel plans are ideally suited to areas where there are good travel choices available. Australia TravelSmart personal travel planning programmes achieved 14% reduction in car use.[31] Personal travel plans have also been used successfully when people relocate residence. [32]

---

[31] Australian Government (2005). *Evaluation of Australian TravelSmart projects 2001-2005*. Available at http://www.travelsmart.gov.au/publications/evaluation-2005.html (retrieved December 2007).

[32] Bramberg, S (2006). 'Is relocation a good opportunity to change people's travel behaviour? Results from a theory-driven intervention study', in *Environment and behavior* vol. 38 (no 6), pp 820-840. Available at http://eab.sagepub.com/cgi/content/abstract/38/6/820, (retrieved August 2008).

(b) Travel pricing and parking – incentives and dis-incentives

Travel pricing and parking can be used as mechanisms to shift demand, reduce demand for car use and increase demand for sustainable travel. Incentives and disincentives are successful measures that can be used to initiate rapid changes in travel behaviour.

Road price disincentives can reduce demand for car travel. Road pricing disincentives include congestion pricing, road tolling and fuel charges. This type of travel pricing often provides the necessary jolt for people to consider other travel options. Overseas, this method has proven successful with a 10-30% reduction in vehicle trips.[33]

Regionally, road pricing strategies have not been used yet. The *Canterbury regional travel demand strategy* does not currently recognise a role for road pricing in Canterbury, as legislation only permits tolling and does not permit cordon/congestion charging tools. However, it does not totally discount the concept, noting that further investigation into these measures might be appropriate in the future.[34] There is likely to be public unease at any proposed road pricing, until there are improved travel choices that can ensure social equity of access. Indeed, significant public transport service improvements are underway. Locally, bus priority is being introduced and planning is underway for a new Christchurch transport interchange and new suburban interchanges. Nationally, the government has recently introduced free off-peak travel on bus, rail and ferry for SuperGold cardholders.

Car park pricing disincentives charges drivers for the true cost of parking. This pricing mechanism can be used to reduce the demand for car parking in locations and or times. Cost-based pricing can reduce vehicle trips by 10-30%.[35]

Price incentives can increase demand for sustainable travel. Reducing the price of public transport can stimulate demand – when quality of the service can be maintained – and can be used to break the car habit.[36] For example, an annual bus pass programme in Boulder Colorado (unlimited access ride-share programme) saw an increase of 2-10% annually. [37]

Reduced cost incentives for ride-share car parking can stimulate demand for this travel option, though it requires good marketing to succeed. A five -10% reduction in vehicle trips has been recorded from such incentives.[38]

It must be noted also, that any proposed pricing disincentives applicable in the inner city of Christchurch would need to be compatible with the *Christchurch City Council's Central City revitalisation strategy*. [39]

---

[33] Victoria Transport Policy Institute (2008). Win-win emission reduction strategies: smart transportation strategies can achieve emission reduction targets and provide other important economic, social and environmental benefits. Available at http://www.vtpi.org/wwclimate.pdf (retrieved October 2008).

[34] Environment Canterbury (2008). *Canterbury regional travel demand management strategy 2008*. available at http://www.ecan.govt.nz/Plans+and+Reports/transport/(retrieved October 2008).

[35.] Thorgerson. J and B Moller . *Breaking car-use habits: the effectiveness of economic incentives.* Available at http://www.psychology.nottingham.ac.uk/IAAPdiv13/ICTTP2004papers2/ITS/Thogersen.pdf (retrieved April 2008).

[36] Ibid.
[37] Victoria Transport Policy Institute (2008). Op cit.
[38] Ibid
[39]Christchurch City Council (2006). *Central City revitalisation strategy: stage 2*. Available at http://www.ccc.govt.nz/CentralCity/CCRPStage2.pdf (retrieved October 2008).

Approach 2: Reducing the need to travel by car

When people live closer to places of work, shops, schools or where they play, and have attractive, convenient, safe, well-connected walking, cycling and public transport networks, their travel choices are improved. Also, their social connectedness with the local community can be greatly strengthened.

TDM policies require transport and land use to be integrated. The UDS sets out the desired settlement pattern for future growth. This is based on an underlying intent to reduce the need to travel: mixed use developments and medium or high-density centres using multi-modal transport systems can better connect people to local places.

Approach 3: Support the efficient movement of freight

There is currently a 2.5% per annum increase in car travel and 3.5% increase per annum in road-based freight in Greater Christchurch, with a 21% population growth projected by 2026. Freight travel is expected to double nationally by 2040. The challenge for Greater Christchurch is to manage the projected demand and ensure the most efficient use of the existing road network space to move freight – whilst being cost effective for businesses and their customers.

Improving the on-going efficiency of the freight task will require a partnership approach involving the affected sector groups e.g. freight, retail and Councils (land use zoning and supporting infrastructure).

Timing and funding

The UDS Implementation Committee will be responsible for the overall delivery of the strategy's Action Plan.

Implementation commences in the 2009/2010 year. The strategy has identified projects for either short term (2009/12), medium term (2013/20) or long term (2020/26) implementation.

The Action Plan will be reviewed and updated regularly, to coincide with the timing with government and local authorities' LTCCP and annual planning and funding cycles. A report monitoring the Action Plan will be published toward the end of each funding cycle, with quarterly progress reports to the UDS Transport Group each year.

Projects identified in the Action Plan will be funded by:
a) UDS partners' LTCCPs and **existing** operational budgets
b) funding assistance from the New Zealand Transport Authority.

It should be emphasised that respective UDS partners' operational budgets already incorporate TDM projects. The implementation of the Action Plan will help link these travel *demand*-focussed projects with key *supply*-focussed infrastructure programmes.

A level of funding commitment for TDM has been outlined in the Transport Regional Implementation Plan 2009-2019. The TDM commitment for Greater Christchurch is approximately $14 million over 10 years – with Christchurch City being the main contributor.

In anticipation, initial discussions have been undertaken with respective territorial local authorities and funders so that the 2009/2012 LTCCP and 2009 government funding cycles can reflect the GC TDM's needs.

Continued collaboration with UDS partners is essential for the successful implementation of the strategy.

Given the emphasis in this strategy on achieving widespread behaviour change, building understanding and collaboration with other key stakeholder agencies will also be very important; notably with education, health, business and active transport sectors.

Monitoring

A monitoring programme will be established to measure the effectiveness of the Action Plan's implementation against agreed targets. Targets will be set locally, within the context of nationally set ones in the *New Zealand transport strategy*, and regionally in the *Canterbury regional land transport strategy*, *Canterbury regional travel demand strategy* and the *Canterbury regional land transport freight action plan.*

Indicative monitoring tools are listed alongside in the Action Plan that follows (over page). Wider monitoring tools such as; Ministry of Transport Household Survey, Journey to Work – New Zealand Census, traffic counts with in the Greater Christchurch area and data gathered for the transport model, will be broader indicators of travel behaviour and the degree of change.

An initial baseline survey, measuring awareness and perception levels around TDM, will precede the commencement of the overarching TDM marketing campaign. Subsequently there will be annual measurement of changes in levels of awareness and perceptions.

Changes in travel behaviour as a result of the roll out of TDM programmes such as travel plans and travel pricing incentives/disincentives will be regularly monitored also.

Desired outcomes of the strategy are:

- Greater community well-being through improved public health and road safety
- Increased use of passenger transport, cycling and walking modes of travel
- Reduced transport-related greenhouse emissions and non-renewable energy use
- Foster community connectedness
- Improved access to key destinations via the transport network
- Reduced expenditure by private and commercial vehicle owners on fuel and vehicle maintenance
- Improved cost-effectiveness, capacity and efficiency of the transport network.

Action plan

Approach 1: Influencing travel choices

(a) Improved information about sustainable travel choices and travel plans
The strategy will:

- Develop an overarching targeted marketing plan for sustainable travel choice; and provide information about travel options and efficient times to travel.
- Provide improved real-time traffic and public transport information and signage to encourage road users to plan and manage their travel more efficiently e.g. plan to travel outside peak hours.
- Develop and implement programmes to encourage the up-take of school, work place, campus and personal travel plans.
- Ensure local authority budgets fund infrastructure improvements to enable the timely implementation of designated travel plans.
- Investigate the feasibility of collaborative travel management associations.
- Deliver community/personal travel plans concurrently with new residential or commercial developments, following infrastructure improvements (e.g. bus priority lanes) as part of area and intensification planning and in conjunction with neighbourhood accessibility plans.

(b) Travel pricing and parking – incentives and dis-incentives
The strategy will:

- Investigate how to implement long-stay car parking prices and car park supply reduction along with sustainable travel price incentives in the short-term in the Central City and key activity centres.
- Investigate road pricing as a possible mechanism for the future.

Approach 2: Reducing the need to travel by car

The strategy will:

- Support a reduced need for travel by car and provide access to developments by all transport modes by investigating how TDM policies can be integrated into city or district plans.
- Identify gaps and barriers to sustainable travel in existing areas and/or for specific population groups in order to inform planning for infrastructure improvements.

Approach 3: Support the efficient movement of freight

The strategy will:

- Explore areas where the efficiency of local freight operations could be improved.
- Identify barriers that exist to the promotion of more efficient and sustainable road freight operations.

The Action Plan in detail

1. Influencing travel choices

Activity	Actions and Timing			Output targets	Monitoring	Responsibility	Key links
	2009-12	2013-19	2020-2026				
Improved information about sustainable travel choices	1. Develop and implement an over arching marketing strategy for sustainable travel choice – include real-time traffic information and signage. 2. Develop and implement evaluation process for marketing campaigns.	Likely continued	Likely continued	Identify awareness levels in 2009 and from there increase awareness levels per annum by 10-15% in the initial three years. Identify positive perception levels in 2009 and from there increase levels per annum by 10-15% in the initial three years .	Initiate a base line survey for awareness and perception levels of sustainable travel Annually measure changes of awareness and perception levels	All Councils. Lead agency Christchurch City Council.	•Metro Marketing Strategy •Christchurch Cycling Marketing Strategy, Cycle and Metro Strategies
Travel plans	3. Christchurch City Council) to lead the delivery of travel plans associated programmes (e.g. walking school bus and Feet First) and the marketing programme. 4. Investigate the feasibility of linking travel plans and parking reduction requirement in the Christchurch City Plan. 5. Establish travel plan generic survey tools and marketing tools for school, work place and personal travel plans.	Likely continued	Likely continued	Identify the best delivery modal for the marketing and travel plan programmes by August 2009.	Establish standard evaluation process for travel plans (school, workplace, and campus and personal)	Christchurch City Council	•Walking (Pedestrian), Cycle , Passenger Transport Strategies and City Plan
School travel plans	Deliver school travel plan programme – linked with timely infrastructure improvements . 6. Work collaboratively to deliver school travel plans and associated programmes such as walking school bus, trial a cycle buddy programme and extend the Feet First (primary school Walk or Wheel Challenge)	Likely continued	Likely continued	To reach 20% of student population in first 3 yrs (e.g. 8 schools per year). And 80% of schools by 2019 To reduce car travel to school by 20% by 2018.	Annually monitor how children are travelling to school and specifically schools with travel plans	Christchurch City Council, Environment Canterbury, Selwyn and Waimakariri District Councils. Lead agency Christchurch City Council	•Walking (Pedestrian), Cycle , Public Passenger Transport Strategies

Approach: **1. Influencing travel choices**

Activity	Actions and Timing			Output targets	Monitoring	Responsibility	Key links
	2009-12	2013-19	2020-2026				
Work Place/campus travel plans	Deliver work place and campus travel plan programme. 7. A requirement for TDM partners to have a current travel plan and have a sustainable transport ethos before implementing work-place travel plans. 8. Target large work place or campus sites in the Central City first 9. Establish a support network and generic resources to sustain on-going implementation and to enable smaller enterprises to implement their own travel plan. 10. Set-up an adult commuter cycle training programme.	Likely continued	Likely continued	Travel Plans to reach 20% of employees in the Central City in the first 3 years.). And 80% of City Central Businesses by 2019. All campuses to have travel plan by 2013 Travel plans to achieve between 10-15% reductions in car travel. - Lead agency Christchurch City Council	Annually monitor changes in travel behaviour following workplace or campus travel plans.	Christchurch City Council, Environment Canterbury Selwyn District Councils. Lead agency Christchurch City Council.	•Walking (Pedestrian), Cycle, Public Passenger Transport and Parking Strategies
Community/personal travel planning	Deliver community and personal travel plan programme. 11. Develop and implement persona/community travel plan programme linking in with key infrastructure improvements and to new residential or commercial developments.	Likely continued	Likely continued	Community or personal travel plans to achieve between 10-15% reduction in their usual car travel	Monitor over a three year period changes in travel behaviour following implementation of travel plans.	Selwyn and Waimakariri District Council and Christchurch City Council. Lead agency Christchurch City Council.	•Area, Structure and Intensification Plans, Walking (Pedestrian), Cycle, Public Passenger Transport Strategies
Travel pricing incentives and dis-incentives	12. Investigate how to implement long-stay car parking prices and car park supply reduction, with sustainable travel price incentives in the Central City, and key activity centres.	13. Investigate road pricing jointly with ECan as a possible mechanism for the future		Complete long-stay pricing investigation by 2010 –	Monitor changes in travel behaviour following implementation of travel price incentives and disincentives.	Lead agency Christchurch City Council for Action 12, and ECan Action 13	•Central City Revitalisation Strategy, Parking, Cycle, Public Passenger Transport Strategies

Activity	Actions and Timing			Output targets	Monitoring	Responsibility	Key links
	2009-12	2013-19	2020-2026				
Approach 2: **Support reduced need for travel by car and provide multi-modal access to destinations.**	14. Investigate how TDM policies can be integrated into city and district plans. 15. Identify resources required to develop and implement the policy. 16. Identify the evaluation/monitoring mechanism. 17. Identify gaps and barriers to sustainable travel in existing areas and/or for specific population groups in order to inform planning for infrastructure provision (e.g. neighbourhood accessibility plans)	18. Identify gaps and barriers to sustainable travel		Incorporate TDM Polices; 2, 3, 4 & 6 into District and City Plans by 2012.	Monitor new or re-developments to ensure implementation of TDM policies – following inclusion in the District or City Plans.	Selwyn and Waimakariri District Councils and Christchurch City Council.	•Walking (Pedestrian), Cycle, Parking and Public Passenger Transport Strategies •City and District Plans. •Area, Structure and Intensification Plans • New Zealand Urban Design Protocol.
Approach 3: **Support the efficient movement of freight**	•19. Explore areas where the efficiency of local freight operations could be improved. •20. Identify barriers that exist to the of promotion more efficient and sustainable road freight operations.			Identify key actions in conjunction with the freight sector to improve efficiency of freight.	Monitor traffic flows following implementation of actions under 19 and 20.	Lead agency ECan actions 19 and 20	•Regional Freight Action Plan •Walking (Pedestrian), Cycle, Public Passenger Transport Strategies

Want to know more?

Strategy principles

The GC TDMS is directed in its principles by the New Zealand Transport Strategy, 2008[40]. This challenges us to "improve the way we travel, so we cause as little damage as possible to the environment and minimise harmful effects on others. At the same time, we need a transport system that will assist economic development, be more accessible to all New Zealanders and that remains affordable."[41]

SUSTAINABILITY

Economic: Greater use of travel planning and sustainable travel modes will be affordable, and bring economic advantages to individuals, businesses and the commercial transport sector by improving the efficiency of the existing transport network, reduced travel costs for individuals and cost efficiencies for businesses.
Healthy, social: Greater use of sustainable travel modes will contribute to improved personal and community health and social well-being.
Environmental: Greater use of sustainable travel modes will reduce adverse effects on our physical environment and reduce use of non-renewable fuels.

INTEGRATION

Sustainable, integrated development of the transport infrastructure is dependent on close alignment with local land use planning.

SAFETY

Increased travel demand management can reduce the risks and social costs connected with road travel by lowering the proportion of vehicles on the road to other road users.

RESPONSIVENESS AND COLLABORATION

Information and knowledge help people respond to changing situations. By working in partnership and with their local communities, the collaborating agencies of the Greater Christchurch Urban Development Strategy will be able to collectively promote travel options that meet the changing demographic and diverse needs of their urban and rural communities over time.

[40] New Zealand Government (2008). *The New Zealand Transport Strategy 2008*. Wellington, Ministry of Transport
[41] Ibid, page 2

Demographic trends

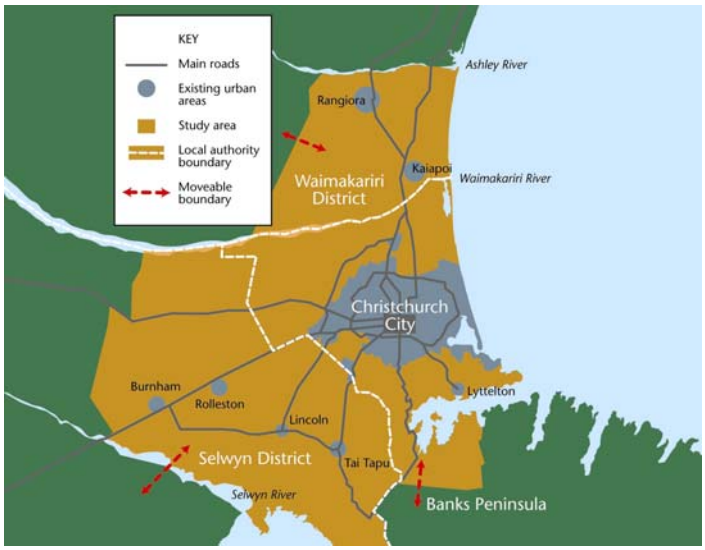
Demographic factors of age, gender, and household structure affect how many trips individuals make, how they get there and where they go.[42]

Population growth

The population in the Greater Christchurch sub-region is projected to increase by 87,800 between 2006-2026 and another 47,000 between 2026-2041 (medium to high growth).The population of Christchurch City, which is where most people live has increased by 26% between 1981 and 2006. The growth rate for Christchurch City (1.57%) is higher than the national average (1.41%).[43]

The populations of both the Waimakariri and Selwyn districts, particularly around the towns of Rangiora, Kaiapoi, Lincoln, Rolleston and including a new town Pegasus (proposed 5,000 houses over next 10 years) are expected to double over the next 40 years (at a higher growth of 3.2%). This will put increased demand on key routes, especially those into the Christchurch City area.

The UDS recommends management of the population growth through the intensification growth in the Central City, elsewhere as identified, and increased densities around existing towns to promote consolidation.



[42] Frank, L. D. and P. O. Engelke, et al. (2003). Health and community design: the impact of the built environment on physical activity. Washington, DC, The Island Press.

[43] Urban Development Strategy Forum (2007). *Greater Christchurch urban development strategy and action plan, 2007*. Available at http://www.greaterchristchurch.org.nz/ (retrieved October 2008).

Household size

Christchurch households are getting smaller, dropping from 2.8 people per household in 1981 to 2.5 in 2006, and projected to decrease further to 2.4 per household by 2021.[44] Each household typically generates about eight trips per day (five from and five to home). An increase in the number of households will increase travel demand.

Ageing population

The ageing of New Zealand's population over the next three decades, increasing life expectancy and current health services' prioritisation of 'ageing in place', mean that there will be significantly more older people continuing to live in their own homes for longer. The reduced mobility that often accompanies ageing can contribute to increased social isolation. A continued dependence on car transport will disadvantage many older people who are no longer capable of or able to afford this mode of transport. The dissection by busy roads in communities can deter vital neighbourhood social contact and support for older people.

[44] Christchurch City Council (2007). *Facts, stats and figures*. Available at http://www.ccc.govt.nz/Christchurch/FactsStatsAndFigures/ (retrieved November 2007).

The effects of the way we are travelling today

Being able to travel freely brings numerous benefits to the individual and the community. The problem is the way we are travelling. The predominance of car-based travel and an over-reliance on the car has adverse social and environmental effects.

CO_2 emissions

The NZ Government's ratification of the Kyoto Protocol requires a reduction in total greenhouse gas emissions to 1990 levels by 2012. This requires a reduction in total greenhouse gas emissions of 21% from 2004 levels. Currently, 44% of New Zealand's energy use comes from the transport sector.[45] As a result of people's reliance on the car, our CO_2 emission per capita is one of the highest internationally, 18% of New Zealand's greenhouse gases come from the transport sector.[46] If we continue to travel the way we do, transport greenhouse gas emissions are projected to increase by 40%.[47]

Traffic growth

As a result of household growth (population increase and decrease in household size), travel demand is predicted to grow dramatically. Traffic volumes are predicted to increase by 40%-50% over the next 20 years and congestion levels are anticipated to triple unless there is a massive shift in car usage. Research has shown that the increasing length of time spent commuting to and from work can be a cause of stress and fatigue. The noise and vibration from traffic build-up can also be a source of stress for people in their homes, workplaces and schools.

Pollution PM^{10}

By-products emitted into the air from vehicles include toxic oxides of nitrogen and sulphur, carbon monoxide, carbon dioxide and fine particulate matter (PM^{10}). PM^{10} is the dominant form of emission that threatens human health. NIWA research in 2002 for the Ministry of Transport found that 41 people die prematurely from respiratory disease in Christchurch because of the effects of emissions from vehicles. Nitrogen dioxide is linked to respiratory problems and 80% of nitrogen dioxide comes from exhaust fumes.[48] Nitrogen dioxide levels effect air quality levels.

[45] NZ Energy Strategy, 2007 www.med.govt.nz/upload/52164/nzes.pdf
[46] Updated NZTS, 2007
[47] NZ Energy Strategy, 2007 NZ Energy Strategy, 2007, G:\Resources\Data and Analysis\2_Environment\Transport\Co2Emissions\VehicleFuelCO21982-2002.xls
[48] Fisher, G., et al (2002). *Health effects due to motor vehicle air pollution In New Zealand*, Report to the Ministry of Transport. Available at http://www.transport.govt.nz/assets/NewPDFs/niwa-report.pdf (retrieved October 2008)

Inactivity and obesity

The prevalence of overweight and obese people has increased rapidly over the past two decades – it is described as epidemic. Obesity is a risk factor for major diseases such as type 2 diabetes, ischaemic heart disease, ischaemic stroke and several common cancers. [49]

There is a link between obesity and inactivity.[50]

Children travelling by car to school contribute to the increasing levels of physical inactivity – well-over half of children travel to primary school by car (GC Household Travel Survey, 2006). Opportunities for spontaneous play and mobility independence are restricted through high car use.[51]

Social cost[52] of road casualties

In Christchurch City the social costs of crashes is estimated to be $237 million per annum. In 2006, loss of life and/or life quality due to permanent impairments accounted for approximately 91% of the total social cost of injury crashes, with property damage accounting for around 5%, and other cost components (loss of output due to temporary incapacitation, medical costs and legal costs) making up the remaining 4%. The total social cost also depends on the level of adjustments (the size and their valuation) required to account for the non-reported cases.

[49] www.moh.govt.nz/moh.nsf/49ba80c00757b8804c256673001d47d0/e967ef8fec435353cc256f62000c96fd?OpenDocument

[50] Obstacles in Action - http://www.sparc.org.nz/filedownload?id=55b7415e-3fd0-4c1c-8a5e-f71728e0c644

[51] O'Brien, K (2007). *Children: a critical link ot changing driving behaviour.* Available at http://www.bikewalk.org/pdfs/childrendrivingbehavior.pdf (retrieved November 2008).

[52] Social cost is defined by the New Zealand Transport Authority as follows: The social costs of a road crash and the associated injuries include a number of different elements. In 2006, loss of life and/or life quality due to permanent impairments accounted for approximately 91% of the total social cost of injury crashes with property damage accounting for around 5% and other cost components (loss of output due to temporary incapacitation, medical costs and legal costs) making up the remaining 4% The total social cost also depends on the level of adjustments (the size and their valuation) required to account for the non-reported cases.

Community severance

Large roads running through communities can cause severance by reducing people's social interaction within a community and their sense of belonging. Heavy traffic volumes roads act as a barrier and restricts access especially for children, older people and those with less mobility.

Social inequality

People with higher incomes can afford to live away from main transport routes and their harmful effects.

Rising travel costs have an unequal effect on lower income households because a higher percentage of their income is spent on travel.

People in rural areas have limited transport choices – and transport costs are greater than in urban areas.

Transport issues influencing travel behaviour

The existing transport network favours people who drive cars and there is a growing demand for car travel. High traffic volumes make use of active and shared transport modes less pleasant, safe and reliable.

It will take time to re-balance the transport network to allow efficient public transport and safe and accessible walking and cycling networks.

Dispersal of urban growth has increased the travel distance between community destinations, with the effect of reducing walking, cycling and passenger transport opportunities. A mainly low-density City, with limited high density developments mean there are many dispersed points to travel between – these land use patterns support car travel.

Increased use of motor vehicles increases emissions into the natural environment which impacts on human health, and also causes community severance.

Freight is being increasingly moved via road. More, larger vehicles on roads increase the cost of road maintenance and reduce real and perceived safety in the road network by other road users and pedestrians. Increased road freight contributes to increased volumes on roads and can threaten efficiency.

Increasing fuel costs are making road vehicles much more costly to run.[53]

[53] Ibid, section 6.26.2, page 118

Process followed

The preparation of the GC TDMS is under the overall management of the UDS Transportation Group who report to the UDS Implementation Management Committee.

A project team of members from all the UDS partners (i.e. Christchurch City Council, Environment Canterbury, New Zealand Transport Agency, Selwyn District Council, Waimakariri District Council) has worked together on its development has worked since November 2007. A finalised project brief was signed off by the Project Management Steering Group (i.e. the UDS Transportation Group) in early 2008. Regular updates have been provided by the project leader to the Project Management Steering Group and the UDS Implementation Committee.

The GC TDMS covers the Greater Christchurch Urban Development Strategy area and aims to:

- Integrate the GC TDMS with the other transport strategies of the partner agencies, and within the greater Christchurch area, and regional and national transport policy directions
- Gain buy-in from partner agencies
- Gain community buy-in and awareness as part of the strategy consultation process
- Provide clear direction for the delivery of TDM programmes with a clear set of measurable targets
- Prioritise options for programmes that will fulfil the strategy's Vision
- Provide an Action Plan of integrated programmes.

Assessment of strategic options
The likely effectiveness of a variety of strategic options and implementation actions were evaluated against agreed criteria. The criteria were as follows (not in any order of priority):

1. Degree to which the action (either individually or as part of a staged package) will contribute to the strategy's outcomes.
2. Degree to which the method/tool:
   a) is cost-effective
   b) complements government and regional behaviour change campaigns or infrastructure improvements *and*
   c) the potential size of affected population.
3. Degree to which the timing and impact of the method/tool is aligned with local or regional land use and transport plans.

Partner and sector engagement
Engagement and discussion with partner organisations' colleagues and key external sector stakeholders has been an integral part of the development process and in particular informed consideration of the key approaches to be taken. Further engagement will continue during the period of wider community consultation.

Risk management
At the outset of the strategy's development, management and mitigation of the following possible process risks were identified.

1. Need for strong collaboration by all the UDS partners in developing the strategy, to ensure consistent approaches, programme and funding prioritisation and buy-in from all organisations.
2. Need for adherence to clearly set timelines for reporting to UDS partners and relevant UDS administrative groups, to ensure timely progression of the draft strategy.
3. Need for provision of aligned transport infrastructure improvements and comprehensive consumer information to accompany any proposed travel demand management restraint measures in the future (such as possible increases in parking prices and potential road pricing), in order to reduce possible community backlash.
4. Need for shared prioritisation from UDS partners and external funding agencies to maximise the effectiveness of available capital programme and operational funding, and work programmes.

Health Impact Assessment
A Health Impact Assessment (HIA) has been included in the strategy's development. This has been a means of methodically predicting the potential effects of the strategy's proposed policies and actions on the health and well-being of affected populations.

A so-called rapid HIA was carried out, partly because of project time constraints but also because of the extent of existing relevant assessment information. These include HIAs already completed on the UDS, *Wellington Regional travel demand strategy,* a social and health impact assessment on the draft *South west area plan* and a HIA concurrently being carried out on the planned Christchurch Transport Interchange project.

Key health determinants affected by the strategy's actions were identified as:

- Accessibility
- Safety
- Social support, cohesion, isolation
- Affordability

Significant affected populations were identified as older people, people with disability and people on lower incomes.

The HIA process and identified determinants will be used as a basis for wider consultation on the draft strategy and subsequently inform the final key approaches and strategy actions taken.

Glossary of terms

There are many and varied terms used to describe aspects of the way we travel and the transportation methods and systems we use.

To support consistent meaning and understanding, this glossary uses definitions from the Canterbury Regional Travel Demand Management Strategy 2008 and the Canterbury Regional Land Transport Strategy 2005-2015.

Accessibility – Access refers to the ability to reach a location or service within an acceptable amount of time, money and effort. Good accessibility depends upon a range of factors such as proximity to desired services or locations, travel alternatives available, speed of travel, cost of travel and so on. It does not equate to mobility, which refers to ease of movement.

Active transport modes – Transport modes that rely on human power, primarily walking and cycling.

Bus priority – Measures that give priority to buses over other road users such as bus lanes or responsive traffic lights.

Capacity – The theoretical maximum number of vehicles (vehicular capacity) or persons (person capacity) that can pass over a given section of road or an intersection during a given period of time, usually expressed as vehicles per hour or persons per hour.

CO2 – Carbon Dioxide.

Coastal shipping – This is the carriage of cargo or passengers along the coast of New Zealand by ship. This does not include international shipping.

Greater Christchurch Urban Development Strategy (UDS) - A long-term planning strategy to prepare a consistent direction and plan for the growth and development of the greater Christchurch area, which encompasses an area beyond the existing city boundaries to include such townships as Rangiora, Woodend, Kaiapoi, and Rolleston. The Christchurch City Council (including the former Banks Peninsula District Council), Selwyn and Waimakariri District Councils, Environment Canterbury (the Regional Council) and Transit New Zealand are partners in the project.

Greenhouse gases – Gases, such as carbon dioxide, methane, water vapour, nitrous oxide, ozone and halocarbons in the atmosphere, that trap heat from the sun and warm the earth.

Infrastructure – All fixed components of a transportation system including roadways and bridges, park-and-ride sites, bus stop shelters and other elements.

Land transport – Means: (a) transport on land by any means, (b) the infrastructure, goods and services facilitating that transport. The definition also includes coastal shipping.

Land transport system – All infrastructure, mechanisms and institutions that contribute to providing for land transport.

LTCCP – Long Term Council Community Plan.

Mode – A categorisation of transport methods, e.g. bus, motor vehicle, single-occupant vehicle, walking, cycling, rail, aeroplane, boat or ferry.

Network – The interconnection of infrastructure used for the transportation of people and goods.

NZTS – New Zealand Transport Strategy.

Public transport – Passenger transportation service, including taxi services, available to the public on a regular basis using vehicles that transport people for a charge, usually but not exclusively over a set route or routes from one fixed point to another.

Regional Land Transport Strategy (RLTS) – A strategy prepared under the requirements of the Land Transport Act 1998.

Regional Passenger Transport Plan (RPTP) – Sets out Environment Canterbury's objectives and policies for delivering public passenger transport in Canterbury.

Regional Policy Statement (RPS) – Is required under the Resource Management Act 1991 and sets out policy for the region.

Ride-sharing – The act of sharing a ride with other people in a private vehicle The term is usually applied to car pools and van pools.

Sustainable transport system – An interconnected system to provide access for people and the transportation of goods without adversely affecting the economic, social and natural environments of present and future generations.

Travel Demand Management (TDM) – A range of methods that influence whether we travel, how we travel, when we travel and where we travel, with the aim of maximising the efficiency of the land transport system by removing the least productive activities or shifting them to times of less demand.

Traffic volume – The number of vehicles on a motorway, roadway or any other transportation facility.

Travel – The act of moving from one place to another.

Unsustainable travel – The use of certain modes in a way, at a place and/or at such time that is either energy inefficient, harmful to the environment or public health, or a contributing factor to the inefficient use of the transport network.

Vehicle occupancy – The number of people in a vehicle.

References and further reading

Australian Government (2005). *Evaluation of Australian TravelSmart projects 2001-2005*. Available at http://www.travelsmart.gov.au/publications/evaluation-2005.html (retrieved December 2007).

Bramberg, S (2006). 'Is relocation a good opportunity to change people's travel behaviour? Results from a theory-driven intervention study', in *Environment and behavior* vol. 38 (no 6), pp 820-840. Available at http://eab.sagepub.com/cgi/content/abstract/38/6/820, (retrieved August 2008).

Canterbury District Health Board (2006). *Health impact assessment: Greater Christchurch urban development strategy options*. Christchurch, Canterbury District Health Board.

Christchurch City Council (2006). *Central City revitalisation strategy: stage 2*. Available at http://www.ccc.govt.nz/CentralCity/CCRPStage2.pdf (retrieved October 2008).

Christchurch City Council (2006). *Christchurch annual residents survey, 2006.* Available at http://www.ccc.govt.nz/ResidentsSurvey/ARS2006ReportPart2.pdf (retrieved October 2008).

Christchurch City Council (2005). *The Christchurch City district plan.* Available at http://www.ccc.govt.nz/CityPlan/ (retrieved October 2008).

Christchurch City Council (2004). *Christchurch cycling strategy.* Available at http://www.ccc.govt.nz/cycling/future/CyclingStrategy.pdf (retrieved October 2008).

Christchurch City Council (2005). *Cycling strategy for Christchurch: 2005 annual report.* Available at www.ccc.govt.nz/Cycling/Future/AnnualReports/CyclingReport2005.pdf (retrieved October 2008).

Christchurch City Council (2007). *Facts, stats and figures*. Available at http://www.ccc.govt.nz/Christchurch/FactsStatsAndFigures/ (retrieved November 2007).

Christchurch City Council (2003). *Metropolitan Christchurch transport statement.* Available at http://www.ccc.govt.nz/reports/2004/metropolitanchristchurchtransportstatement/CompleteDocument.pdf (retrieved October 2008).

Christchurch City Council (2008). *Monitoring Community Outcomes. An attractive and well designed city: transport system*. Available at http://www.ccc.govt.nz/ltccp/communityoutcomes/monitoring/designed/9o_attractivewelldesigned_1332_hl_buspatronage.pdf (retrieved October 2008).

Christchurch City Council (2003). *Parking strategy.* Available at http://www.ccc.govt.nz/ParkingStrategy/ (retrieved October 2008).

Christchurch City Council (2001). *Pedestrian strategy.* Available at http://www.ccc.govt.nz/Publications/PedestrianStrategy/ (retrieved October 2008).

Christchurch City Council (2004). *Road safety strategy*. Available at http://www.ccc.govt.nz/Publications/RoadSafetyStrategy/ (retrieved October 2008).

Christchurch transport model. *Household interview survey reports* (2006). [Unpublished].

Connell Wagner (2007). *Christchurch, Rolleston and environs transportation study*. Available at http://www.ecan.govt.nz/Our+Environment/Transport/plansandreports/Christchurch+Rolleston+Transportation+Study/CretsFinalReport.htm (retrieved October 2008).

Department for Transport (2005). *Making campaigning for smarter choices work: guidance for local authorities*. Available at http://www.dft.gov.uk/pgr/sustainable/smarterchoices/ (retrieved March 2008).

Environment Canterbury (2006). *Canterbury regional passenger transport plan August 2006*. Available at http://www.ecan.govt.nz/Plans+and+Reports/transport/Canterbury+Regional+Passenger+Transport+Plan+2006.htm (retrieved October 2008).

Environment Canterbury (2008). *Canterbury regional land transport strategy (RLTS) 2008-18*. Available at http://www.ecan.govt.nz/Plans+and+Reports/transport/CRLTS0818.htm (retrieved October 2008).

Environment Canterbury (2005). *Canterbury regional land transport freight action plan.* Available at http://www.ecan.govt.nz/Plans+and+Reports/transport/freight-discussion-doc.htm (retrieved October 2008).

Environment Canterbury (2008). *Canterbury regional travel demand management strategy 2008*. available at http://www.ecan.govt.nz/Plans+and+Reports/transport/(retrieved October 2008).

Environment Canterbury and Christchurch City Council (2007). *Metro Strategy 2006-2012*. Available at http://www.metroinfo.org.nz/strategy2007.html (retrieved October 2008).

Environment Canterbury (2007). *Regional policy statement proposed change no 1 chapter 12A, development of Greater Christchurch; and section 32 report.* Available at http://www.ecan.govt.nz/NR/rdonlyres/7C612189-CE48-45C9-8614-4AB0C6B01752/0/RPSProposedChangeNo1FINAL2Notified28July2007.pdf (retrieved October 2008).

Fisher, G., et al (2002). *Health effects due to motor vehicle air pollution In New Zealand*, Report to the Ministry of Transport,. Available at http://www.transport.govt.nz/assets/NewPDFs/niwa-report.pdf (retrieved October 2008)

Frank, L. D. and P. O. Engelke, et al. (2003). *Health and community design: the impact of the built environment on physical activity*. Washington, DC, The Island Press.

Kennedy, D. and Ian Wallis (2007). *Impacts of fuel price changes on New Zealand. Transport*. Land Transport New Zealand Research Report 331. Available at http://www.ltsa.govt.nz/research/reports/331.pdf (retrieved October 2008).

Land Transport New Zealand (2006). *Land transport at a glance: Christchurch City*. Available at www.landtransport.govt.nz/performance/2006/docs/at-a-glance-christchurch-city.pdf (retrieved October 2008).

Land Transport New Zealand (2005). *Road safety issues Christchurch City. July 2005.* Available at www.landtransport.govt.nz/performance/2005/safety-christchurch-city.html (retrieved October 2008).

Ministry of Economic Development (2007). *New Zealand energy strategy to 2050: powering our future.* Available at www.med.govt.nz/upload/52164/nzes.pdf (retrieved October 2008).

Ministry of Health (2004). *Tracking the obesity epidemic*. Public Health Intelligence Occasional Bulletin No 24. Available at www.moh.govt.nz/moh.nsf/49ba80c00757b8804c256673001d47d0/e967ef8fec435353cc256f62000c96fd?OpenDocument (retrieved October 2008).

Ministry of Transport (2008). *Government policy statement on land transport funding 2009/10-2018/19*. Available at http://www.transport.govt.nz/assets/Images/NewFolder-2/GPS-final-5-August-2008-2.pdf (retrieved November 2008).

Ministry of Transport (2008). *New Zealand household travel survey.* Available at http://www.transport.govt.nz/assets/NewPDFs/Comparing-travel-modesv1.4.pdf (retrieved October 2008).

Ministry of Transport (2008). *New Zealand transport strategy*. Available at http://www.transport.govt.nz/new-zealand-transport-strategy-2/ (retrieved October 2008).

Ministry of Transport (2008). *Sea change: transforming coastal shipping in New Zealand*. Available at http://www.transport.govt.nz/seachange/ (retrieved October 2008).

Ministry of Transport (2008). *The social cost of road crashes and injuries, June 2008 update*. Available at http://www.transport.govt.nz/socialcost/ (retrieved October 2008).

The Ministry of Transport, the Ministry of Economic Development and Land Transport New Zealand (2008). *National freight demands study*. Available at http://www.transport.govt.nz/national-freight-demands-study-1/ (retrieved October 2008).

O'Brien, K (2007). *Children: a critical link ot changing driving behaviour.* Available at http://www.bikewalk.org/pdfs/childrendrivingbehavior.pdf (retrieved November 2008).

Opinions Market Research (2008). *Market research report for Pedestrian Monitor 2008*, prepared for Christchurch City Council May 2008. Christchurch. Opinions Market Research Ltd.

Opinions Market Research (2005). *Summary of market research report for: Cycling Monitor 2005*. Available at www.ccc.govt.nz/Cycling/Future/AnnualSurvey/2005SurveySummary.pdf (retrieved October 2008).

Rice, Bill (2008). *How we got to school – A study of travel choices of Christchurch primary school pupils. [unpublished thesis].*

Selwyn District Council. *Public transport in new subdivisions - guidelines for developers*. Available at http://www.selwyn.govt.nz/transport/public%20transport%20provision.pdf (retrieved October 2008).

SPARC (2007). *Obstacles to action: overview report.* Available at http://www.sparc.org.nz/filedownload?id=55b7415e-3fd0-4c1c-8a5e-f71728e0c644 (retrieved October 2008).

Statistics New Zealand (2007). *New Zealand 2006 Census of Population and Dwellings.* Available at http://www.stats.govt.nz/census/census-outputs/default.htm (retrieved October 2008).

Thorgerson. J and B Moller . *Breaking car-use habits: the effectiveness of economic incentives.* Available at http://www.psychology.nottingham.ac.uk/IAAPdiv13/ICTTP2004papers2/ITS/Thogersen.pdf (retrieved April 2008).

Transit New Zealand (2007). *National state highway strategy*. Available at http://www.transit.govt.nz/content_files/news/NSHS-2007.pdf (retrieved October 2008).

Transit New Zealand (2007). *Transit planning policy manual – for integrated planning and development of state highways*. Available at http://www.transit.govt.nz/technical/view_manual.jsp?content_type=manual&=edit&primary_key=46&action=edit (retrieved October 2008).

Urban Development Strategy Forum (2007). *Greater Christchurch urban development strategy and action plan, 2007*. Available at http://www.greaterchristchurch.org.nz/ (retrieved October 2008).

University of Canterbury (2008). *Preliminary travel survey results [unpublished].*

Victoria Transport Policy Institute (2008). *Smart transportation emission reductions*. Available at http://www.vtpi.org/ster.pdf (retrieved October 2008).

Victoria Transport Policy Institute (2007). *Success stories: examples of TDM programs that work*. Available at http://www.vtpi.org/tdm/tdm71.htm (retrieved December 2007).

Victoria Transport Policy Institute (2008). *Win-win emission reduction strategies: smart transportation strategies can achieve emission reduction targets and provide other important economic, social and environmental benefits.* Available at http://www.vtpi.org/wwclimate.pdf (retrieved October 2008).

Ward, M, J Dixon, B Sadler and J Wilson (2007). *Integrating land use and transport planning*. Land Transport New Zealand Research Report 333. Available at http://www.landtransport.govt.nz/research/reports/333.pdf (retrieved October 2008).

(To also include useful links to existing websites to provide information on ways to travel smarter today)