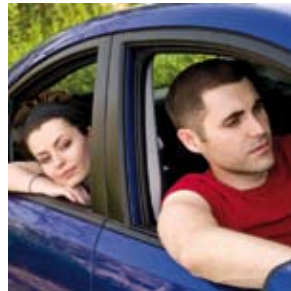


Greater Christchurch **Urban
Development
Strategy**

Greater Christchurch Travel Demand Management Strategy and Action Plan



smart choices
– travel your way



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1. Executive Summary

We need to take smarter choices about how, where and when we travel so that we make the most of our existing road network.

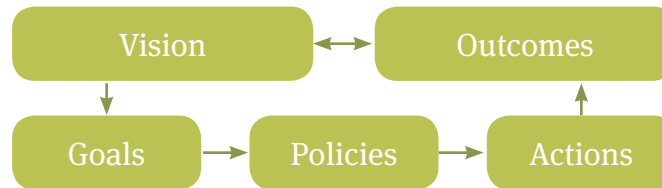
People in Christchurch, Selwyn and Waimakariri love using cars. Eighty-five percent of all trips are made in private cars and 19 out of 20 cars travelling to work have only a single occupant. Car travel is growing at about 2.5% per annum, while road-based freight is growing at 3.5% per annum. With the expected population growth, traffic volumes are expected to have increased by 27% by 2026; road-based freight is expected to double by 2040. These increases in traffic volumes and road-based freight will mean that there will be more congestion, longer and more unreliable travelling times, greater travel costs, increased dependency on non-renewable fuels and reduced road safety.

We can all help reduce traffic growth. One fewer trip by car, each week, per household, is enough to stop traffic growth. If we travel differently – walking, cycling, public transport, car pooling, combining trips, shortening vehicle journeys or travelling outside of peak hours - our roads will not be as congested, and we can reduce the environmental and health impacts of motorised travel.

Nationally, the government is committed to ensuring there are more transport choices. It also aims to reduce severe congestion, make better use of the existing transport system, and ensure land transport networks contribute to positive health outcomes and reduced adverse environmental effects.

A key approach for transport in the Greater Christchurch Urban Development Strategy (UDS), adopted by UDS partners in May 2007,¹ was for a Greater Christchurch Travel Demand Management Strategy and Action Plan (GC TDMS) to be developed. The GC TDMS sets a travel demand management (TDM) policy direction, targets and actions to achieve a more sustainable transport system in the UDS area.

The strategy framework:



The strategy’s vision is that by 2026, people will choose the most efficient and sustainable way to travel and move freight.

Travel demand management contributes to the following outcomes:

- Greater community well-being through improved public health and road safety
- Increased use of public transport, cycling, and walking modes of travel
- Reduced transport-related greenhouse emissions and non-renewable energy use
- 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.

The GC TDMS sets four goals:

1. A reduction in the current number of motor vehicle trips made, particularly by private car
2. An increase in proportion of trips made using sustainable travel options
3. A reduction in the distance travelled for regular and local trips
4. A change in the time of travel from peak periods to off-peak periods.



UDS partners need to incorporate six travel demand management policies into their own organisations' strategic and operational planning and service provision:

1. Awareness and positive perceptions

UDS partners will increase awareness and positive perception of sustainable travel choices by promoting their environmental, economic, health, and social benefits, using co-ordinated and consistent messages.

2. Information

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

3. Integration

UDS partners will integrate transport and land use planning so that the distance between origin and destination of trips is smaller, public transport and active travel options are given priority, and these options are made accessible and convenient in new and re-developed areas.

4. Supply linkages

UDS partners will ensure travel demand management is incorporated with any changes to transport infrastructure.

5. Collaboration

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

6. Walk the talk

UDS partners will provide walking, cycling, and public transport networks that are safe, accessible, convenient, connected, attractive and cater for all people.

Travel options, other than the private car, need to be easy, safe, attractive and affordable. The design of our communities must encourage people to travel locally and to use sustainable modes – like walking, biking and using public transport. It will take time to re-balance the transport network to allow efficient public transport and safe, accessible walking and cycling networks.

This Strategy has been developed by a joint project team of UDS partners – Christchurch City Council, Environment Canterbury, New Zealand Transport Agency, Selwyn District Council, and Waimakariri District Council. The UDS Transport Group will oversee the delivery of the Strategy’s Action Plan. The Transport Group will provide regular reporting on the Action Plan to the UDS Implementation Committee.

It is recognised that this Strategy is about achieving behaviour change over time and implementation will need to occur over a sustained period. Implementation commences in the 2009/2010 year. The Action Plan will be reviewed and updated regularly to coincide with the timing of government and local authorities’ LTCCP and annual planning and funding cycles. Action Plan projects will be funded by UDS partners’ existing operational budgets, LTCCPs, and the New Zealand Transport Agency. The Action Plan will ensure a co-ordinated approach to linking travel demand management projects with key infrastructure programmes.

2. Understanding Travel Demand Management (TDM)

2.1 What is TDM?

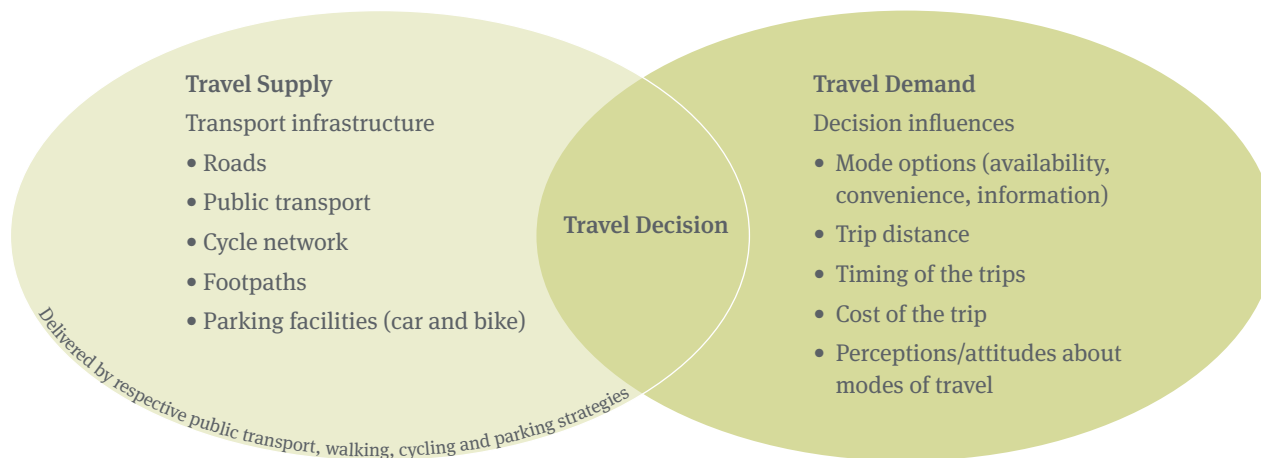
Travel demand management encompasses a range of methods and programmes that change travel behaviour (how, when and where people travel). Key travel demand management methods include increased use of sustainable travel modes (walk, cycle, use public transport) and more efficient car use (car pool, combining trips, reducing trip distances). Travel demand management does not require people to completely stop using their cars or vehicles.

2.2 What is Sustainable Travel?

Sustainable travel is getting from A to B by walking, cycling, taking public transport, sharing a car, choosing to combine the trip with another one, or choosing a closer destination - without lifestyle loss. Sustainable travel can make better use of the existing transport system, can reduce the cost of travel, and can greatly reduce the adverse effect on health and natural environments.

Though this Strategy focuses on travel demand, linkages with travel supply are essential in order to create an environment that can enable people to either walk, cycle, or use public transport. Transport supply and demand elements need to work together, and be developed together, in order to influence people's travel choice. The diagram below illustrates how the elements of travel supply and demand need to converge to enable smart, sustainable choices.

Travel Supply & Travel Demand = Travel Decision (smart choices)





2.3 Why is a TDM Strategy needed?

The existing transport network favours people who drive cars. The car is perceived as the easiest, most convenient way to travel. Today 85% of all our trips are by car and our demand for car-based travel is growing. It is no longer cost-effective to keep building new roads to provide for increasing demand for car-based travel.

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 and services (roads and public transport). Increased use of motor vehicles increases emissions into the natural environment which impacts on human health.

Travel demand management helps achieve an effective and affordable transport system which is vital to sustaining communities and facilitating economic growth. Changing our travel behaviour, integrating public passenger transport routes and infrastructure, along with providing walking and cycling infrastructure in all new developments were identified as key approaches to implementing the UDS. Sustainable travel enables increased road capacity through greater use of public transport, shared car travel, walking and cycling, and for people to consider travel outside of peak time or use more locally-based services.

Increasing fuel costs are making road vehicles more costly to run, however, it is unlikely² that a sufficient degree of behaviour change towards use of more sustainable travel modes can be achieved by relying completely on petrol (and diesel) price increases.

Past land use policy has allowed the urban footprint of Christchurch's residential and commercial areas to spread, with little consideration of transport effects. Dispersed land use patterns result in high car dependency due to the length of travel distance between destinations. A more compact urban form, including mixed land use developments, can lead to shorter car trips and lower car use.³ The Canterbury Regional Policy Statement⁴ and the UDS, which provide a clear direction for future development, will lead to reduced distances people need to travel.

The movement of freight plays a vital role in sustaining and supporting economic development. The freight sector supports producers, manufactures, retailers and households. To trade competitively domestically and overseas there must be efficient movement of freight. Nationally the freight sector accounts for 43% of energy consumed by the transport sector.⁵ Freight volumes are expected to more than double by 2040, with the road sector having to move more than 1.6 times more freight than now.⁶ With growing numbers of larger vehicles on roads the cost of road maintenance and need for improvements is increasing. Increased road freight contributes to congestion and reduces real and perceived safety in the road network by other road users, including pedestrians.

2.4 Our travel today

The way we travel is affecting our quality of life, infrastructure costs, and the environment.

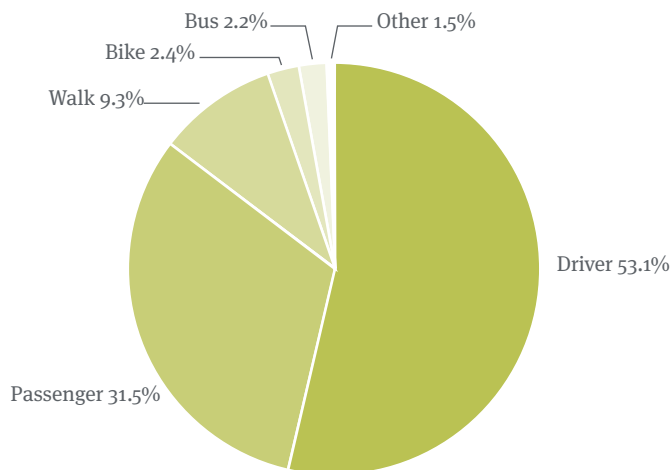
Travel trends snapshot

- 34% of morning peak time travel is education-related, with over half the children at primary school being driven by car; with similar numbers being driven or driving to secondary school.
- 96% of cars travelling to work have a single occupant.
- 60% of Christchurch residents drive to work compared to 40% in Wellington.
- Car travel is growing at 2.5% per annum - traffic volumes are expected to have increased by 27% by 2026.
- 39% of people in Canterbury reported that they could replace car trips by walking and cycling on at least two days most weeks.

Car travel

- The car is used for 85% of all daily trips in the Greater Christchurch area.⁷ Cars enable and encourage people to travel further, faster, and more frequently than ever before. Cars are now comparatively easy to buy with easier access to loans with minimal deposit, and low-priced imports. They are perceived to be convenient, allow increased freedom for most people, and have low operating costs. Free parking within walking distance of central business districts or suburban employment areas contributes to this perception of low costs.

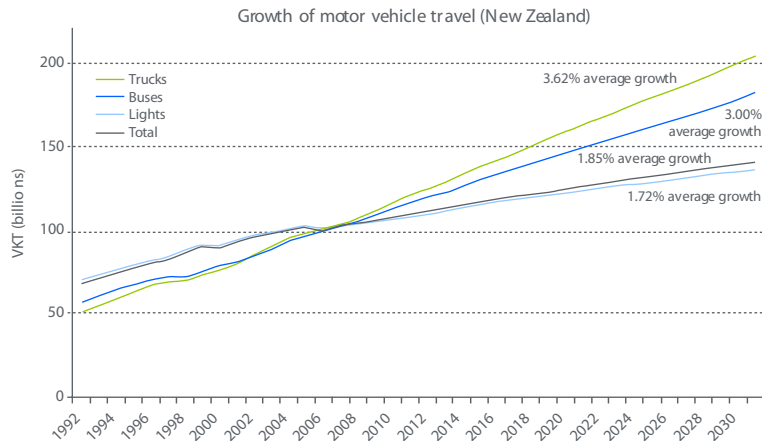
Mode share for all trips (Greater Christchurch, 2006)



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

- Levels of vehicle ownership in New Zealand are high – 700 cars per 1,000 persons. In 2005, New Zealand had the fifth highest rate of vehicle ownership amongst the OECD countries.⁸ In Christchurch, vehicle ownership is slightly higher than the national figure - 709 cars per 1,000 of population in 2006.⁹ There is also an increasing number of households with two or three cars.¹⁰
- 60% of Christchurch residents drive to work. This is slightly more than Auckland where 57% drive to work and much more than Wellington where 40% drive to work.¹¹ 96% of those cars driven to work by Christchurch residents have a single occupant.¹²
- Road traffic is at its highest during morning and evening periods on weekdays and in the middle of the day during weekends.¹³
- In the Greater Christchurch area car travel is growing at about 2.5% per annum, while road-based freight is growing at 3.5% per annum. With the expected population growth, traffic volumes are expected to have increased by 27% by 2026; road-based freight is expected to double by 2040. The movement of freight within the urban areas is heavily road-based and existing road space is nearing capacity. These increases in traffic volumes and road-based freight will mean more congestion, longer and more unreliable travelling times, greater travel costs, increased dependency on non-renewable fuels, and reduced road safety.

The graph below shows predicted growth in motor vehicle use if the current trend is continued.



Source Ministry of Transport
(presented at the New Zealand
TDM Conference 2007)

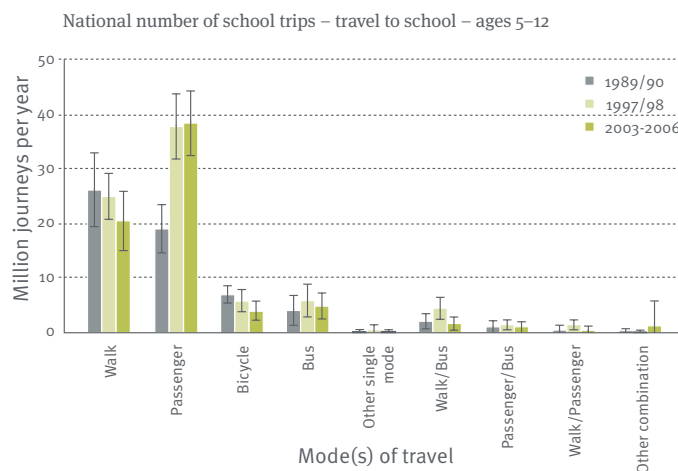
Travel to work

- Travel to work is the most common trip made from home (15 %).¹⁴
- Christchurch’s Central City (inside the four avenues) accommodates 30% of total city employment (52,000 people).¹⁵ In 2006, of the people working in the Central City, 1602 people commuted from the Selwyn District and 2031 people commuted from the Waimakariri District.¹⁶
- The number of people travelling from the Waimakariri and Selwyn Districts to work in Christchurch City is increasing, as shown in the table below.¹⁷

Usual Residence	Commuting Destination					
	Waimakariri District		Christchurch City		Selwyn District	
	2006	1996	2006	1996	2006	1996
Waimakariri District	9,033	7,398	8,931	6,579	126	99
Christchurch City	1,413	966	146,910	130,209	2,433	1,995
Selwyn District	75	39	7,767	4,833	7,968	6,474

Travel for education

- 34% of morning peak travel (all modes) is education-related, of which two-thirds go by car.¹⁸
- Well over half of children in Greater Christchurch currently travel by car to primary school, even though 85% of primary school children live within two km of their school.¹⁹ Nationally, the number of children aged five to 12 years walking to school has declined from 26.1% in 1990 to 20.5% in 2006.²⁰



Source Ministry of Transport (2007) – *New Zealand household travel survey*

Walking

- Walking is used for 9.3% of all daily trips (second to car use) in the Greater Christchurch area. However, 5% of Christchurch residents walk to work. This is slightly less than Auckland where 7% walk to work, and much less than Wellington where 15% of residents walk to work.²¹
- *Nationally, 31% of people are thinking seriously about walking or trying it occasionally as an active transport mode to get to work, education, or for recreation purposes.*²²

Cycling

- The cycle is used for 2.4% of all daily trips²³ and is the third most common means of travelling to work in Christchurch. Though people who cycle to work have declined from 9% in 1991 to 5% in 2006,²⁴ this is greater than Auckland where 1% cycle to work, and greater than Wellington where 2% cycle to work.²⁵ In Christchurch the number of cyclists commuting to work and school is declining.²⁶ However, recent traffic counts in Christchurch indicate that commuter cycling increased by 20% between 2007 and 2008 – possibly as a consequence of higher fuel prices.²⁷
- *Nationally, 25.5% of people are thinking seriously about cycling or trying it occasionally as an active transport mode to get to work, education, or for recreation purposes.*²⁸

In Canterbury, 39% of people have reported that they could replace car trips by walking and cycling on at least two days most weeks.²⁹

Public Transport

- The bus is used for 2.2% of all daily trips.³⁰ In 1993 a low of 7.1 million trips was reached, but since then trip numbers have increased to the 2008 figure of 16.5 million trips.³¹ Although bus patronage numbers have increased significantly, the percentage of people travelling to work by bus in Christchurch is 4%. This is lower than Auckland where 7% travel by bus to work, and much lower than Wellington where 14% travel to work by bus. Of those people travelling to work outside Christchurch City, less than 1% travel by bus.³²

The spread of low density housing and wide dispersal of work destinations has meant many people now travel further to places of work, to see friends, to shop, and for recreation purposes. The longer distance to and between travel destinations has resulted in greater dependency on the car. Sixty eight percent of all our trips are over five kilometres long and many people rely on the car or public transport to make these trips.

Travel needs and choices vary hugely between different parts of the Greater Christchurch area. Many urban Christchurch City residents have easy access to the public transport network, cycle lanes, footpaths and walkways, and live within short commuting distance of shops, recreation areas, and schools. Those living in rural areas of Selwyn and Waimakariri have fewer choices and often face much longer distances to commute to work, school and for recreation purposes.

Want to know more?

Check out:

The Demographic Trends section

The Negative Impacts of the way we are travelling today section



2.5 Current TDM initiatives

Travel behaviour change programmes around the world and at home are changing the way people travel and delivering benefits for communities and the environment.

Overseas examples:

- In Portland, Oregon, travel demand management programmes, transport infrastructure improvement and land use policies have resulted in 20% fewer miles being travelled and the increased use of active and shared travel modes. Outcomes include consumer cost savings, economic development, reduced air pollution, and liveable urban neighbourhoods.³³
- In Perth, a travel demand management programme that encouraged people to think about their car journeys contributed towards a 10% reduction in car use (achieved in 18 months) by shifting travellers to public transport and cycling.³⁴

Greater Christchurch examples:

- The introduction of a Council-supported Waimairi school travel plan has led to a 20% reduction in car travel to the school. Nearly twice as many children walk or scoot to Waimairi school compared to other Christchurch schools.³⁵
- University of Canterbury has experienced an increase in the number of students who cycle to University from 12% in 2004 to 20% in 2008. Over a period of 10 years the University has been improving facilities for cyclists. These include covered secure cycle stands in convenient locations, path improvements, free basic bike checks, air pumps and puncture repair kits and training courses. The University also allows cyclists to travel freely within the campus and has built a shared pathway connecting the Ilam Rd and Dovedale Ave parts of the campus. Over this period, the Christchurch City Council has supported students and staff to cycle to the University with on-road cycle lanes on several of the neighbouring roads.³⁶



- Walk or Wheel Wednesday (now re-named as Feet First to link in with the new national campaign) was created in 2004, on average 70% of children actively travel to participating schools each Wednesday.
- A ride-share trial programme in the Waimakariri community reported savings of \$22 per week / per person travelling to and from work in Christchurch. Success of such schemes depends on finding a good ride match. Wide dispersal of households and the disparate number of work places in Christchurch City make ride-sharing challenging (this project was outside the current UDS boundary).
- Selwyn District Council has created a number of sustainable travel initiatives, including school travel plans and walking school bus programme to encourage active travel.
- There is a range of promotional campaigns to encourage active and shared travel in the Greater Christchurch area. The majority are led by the local councils and are generally school-based programmes. The New Zealand Transport Agency (NZTA), health-orientated organisations or lobby groups lead other programmes. Existing promotional campaigns and programmes are neither co-ordinated nor linked to infrastructure improvements and many have small budgets and audiences. Working alone, these initiatives are unable to make a big difference to the way people travel. The GC TDMS aims to bring together programmes, promotions and linking with key infrastructure improvements to optimise travel behaviour change.

The range of safe, accessible, convenient, connected and attractive walking, cycling and public transport options are not currently equally available to all people in the Greater Christchurch area. However, our transport system is changing.

- The Bus Priority programme; a better Central City Transport Interchange; suburban interchanges and bus shelters; and bus service improvements will improve the public transport network.
- The Central City Transport Concept (under development) aims to make it easier and more appealing to walk, cycle or take public transport in the Central City.
- Area or Structure Plans for South West, Belfast, Kaiapoi, Rangiora, Woodend, Lincoln, Rolleston and Prebbleton - plan to make it easier to walk, cycle, or take public transport and access services locally.
- Park and Rides which are being explored for the Selwyn and Waimakariri District.
- Neighbourhood Accessibility Plans (NAPS) that identify walking, cycling, and public transport access issues and actions are being delivered or planned for Kaiapoi, Rolleston and Prebbleton.

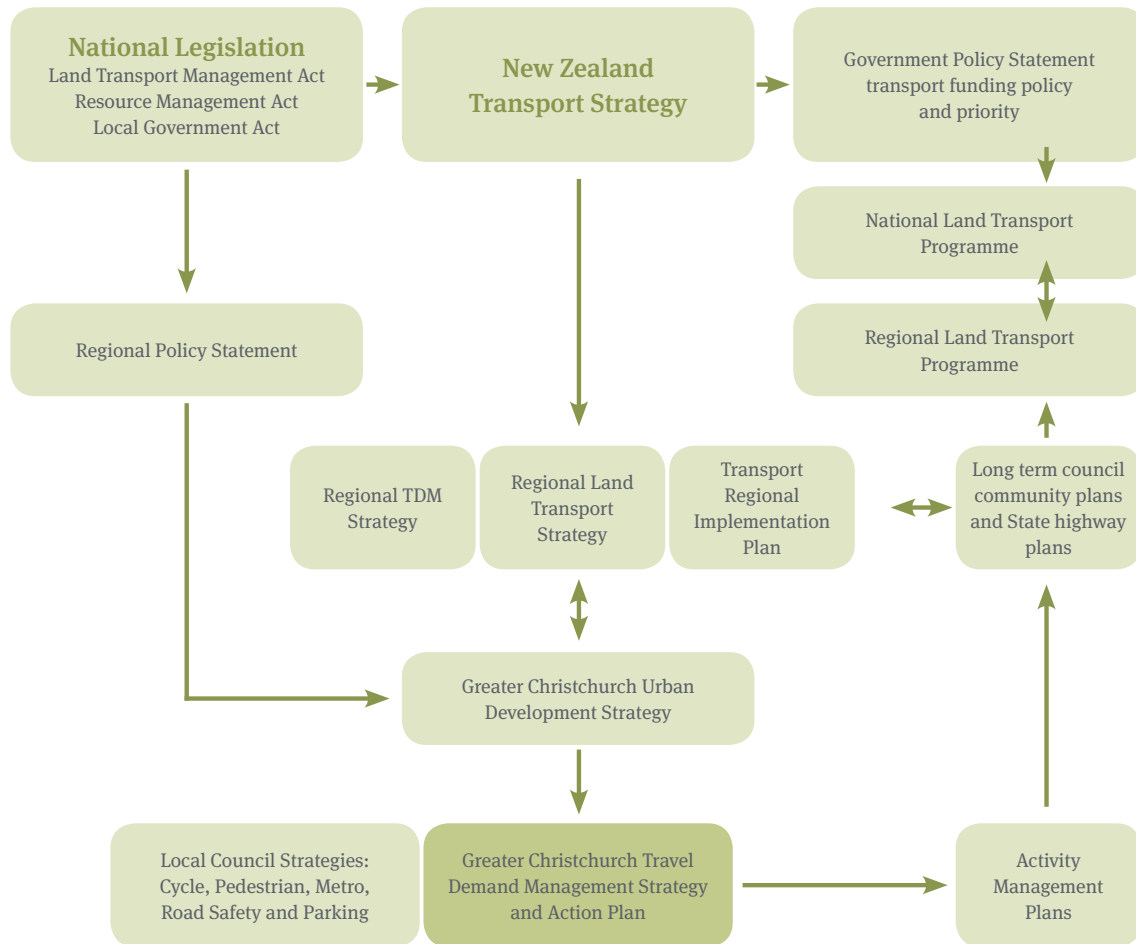
According to the World Health Organisation, a total of 30 minutes brisk walking and cycling on most days of the week, even if carried out in 10-15 minute bouts, can reduce the risk of heart disease and help control obesity.³⁷

3. Strategic context

The planning and implementation of the Greater Christchurch transport system is guided by the New Zealand Transport Strategy 2008 (NZTS), Government Policy Statement, the Canterbury Regional Land Transport Strategy (RLTS), the Greater Christchurch Urban Development Strategy and Action Plan (UDS), and individual transport strategies of the UDS partner agencies.

These strategies recognise the need for an affordable, integrated, sustainable, safe, and responsive transport system that enables a balanced use of travel modes. The diagram below sets out the transport planning framework in which the Greater Christchurch Travel Demand Management Strategy sits.

Transport planning framework



3.1 National Strategy

The NZTS provides a high level, government direction for the whole of the transport sector. It sets long-term targets for transport, including active and shared travel. It is a requirement that other transportation-related strategies are aligned with this government strategy to help ensure best use is made of Central government funding.

While the NZTS has a long-term outlook, the Government Policy Statement 2009/10-2018/19 translates these into shorter-term impacts, and focuses on providing direction for the allocation of land transport funding that will best support the government's strategy. The NZTS 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 promoting public health.

Its targets are:

- Reduce kilometres travelled by single occupant vehicles in major urban areas on weekdays, by 10% per capita by 2015 compared to 2007
- Halve per capita greenhouse gas emissions from domestic transport by 2040
- Increase use of public transport to 7% of all trips by 2040
- Increase walking, cycling, and other active travel modes to 30% of total trips in urban areas by 2040
- Increase coastal shipping's share of inter-regional freight to 30% of tonne-kilometres by 2040
- 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 1,500 per annum by 2040
- For identified critical routes: improve reliability of journey times and reduce average journey times
- Reduce the number of people exposed to health endangering noise levels from transport
- Reduce the number of people exposed to health endangering concentrations of air pollution in locations where the impact of transport emissions is significant.

The Government's Policy Statement on Land Transport Funding 2009/10 - 2018/19 identifies "impacts" to be achieved through its allocation of the National Land Transport Fund. The GC TDMS will contribute to three of these:

- Easing of severe congestion
- Better use of existing transport capacity
- More efficient freight supply chain.

Others include:

- More transport choices, particularly for those with limited access to a car
- Reduction in adverse environmental effects from land transport use
- Contribution to positive health outcomes for residents.

3.2 Local Strategy

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 provides the greatest opportunity to stem the rising tide of congestion. They 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.” (UDS Section 3.6).

The Canterbury Regional Land Transport Strategy 2008-2018 (RLTS) sets the direction for land transport in the region over the next ten years. It identifies transport needs, the roles of all land transport modes, and the methods needed for the sustainable movement of people and freight. It also balances economic, social and environmental considerations. The vision and goals of the RLTS are consistent with the New Zealand Transport Strategy. The RLTS’s policies, methods and activities fall into 5 key results areas:

- Providing transport options
- Roads: safety, public health, environmental sustainability and infrastructure
- Demand management
- Land use
- Freight.³⁸

Key documents that contribute to the RLTS include:

- Cycling in Canterbury Strategy (2005)
- Canterbury Regional Land Transport Freight Action Plan (2005)
- Canterbury Regional Passenger Transport Plan (2006)
- Canterbury Transport Regional Implementation Plan (2008-2038) (TRIP) TRIP has been developed specifically to ensure there is a co-ordinated approach to delivering the RLTS.
- Canterbury Regional Travel Demand Management Strategy (CR TDM) (2008)

The CR TDMS outlines targets and timetables for the implementation of travel demand management programmes and tools in the region. Its focus is on the main urban areas of Canterbury. The strategy aims to achieve voluntary changes in travel behaviour through promotion and education activities, parking strategies, and road pricing initiatives. One such programme target is the development and implementation of a Greater Christchurch Travel Demand Management Strategy and Action Plan for the Greater Christchurch area.³⁹



4 Our Travel Tomorrow

4.1 Vision

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

4.2 Outcomes

- Greater community well-being through improved public health and road safety
- Increased use of public transport, cycling, and walking modes of travel
- Reduced transport-related greenhouse emissions and non-renewable energy use
- 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.

4.3 Goals

TDM Goal	Consider..
<ul style="list-style-type: none"> • A reduction in the number of trips made, by private car. • An increase in proportion of trips made using sustainable travel options. • A reduction in the distance travelled for regular and local trips. • A change in the time of travel. 	<ul style="list-style-type: none"> • Is this trip essential – can it be combined with another trip? • What travel choice best fits the situation? (walk, cycle, public transport, drive) • Is there a closer destination or option? • When is the best time to travel?

4.4 Policies

Travel demand management is about to making the most of the existing transport network through greater use of sustainable travel. To achieve the strategy’s desired outcomes, travel demand management policies need to be incorporated into UDS partners’ respective strategic and operational planning and funding. They complement existing transport, land use strategies and area plans (alignment with these strategies is indicated in the Action Plan), UDS-driven intensification and activity centre development. Understanding the particular needs of different communities in the Greater Christchurch area is essential to appropriately apply the policies and mix of actions – right policy, right action, right place.

1. Awareness and Positive Perceptions

UDS partners will increase awareness and positive perception of sustainable travel choices by promoting their environmental, economic, health, and social benefits, using coordinated and consistent messages.

2. Information

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

3. Integration

UDS partners will integrate transport and land-use planning so that the distance between origin and destination of trips is smaller, public transport and active travel options are given priority, and these options are made accessible and convenient in new and re-developed areas.

4. Supply Linkages

UDS partners will ensure travel demand management is incorporated with any changes to transport infrastructure.

5. Collaboration

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

6. Walk the Talk

UDS partners will provide walking, cycling, and public transport networks that are safe, accessible, convenient, connected, attractive and cater for all people.

5 Actions

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

5.1 Influencing travel choices

Improved information about sustainable travel choices and travel plans

People need to know what travel options 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 options. Currently, dissemination of information about travel options is not cohesive. There are numerous marketing campaigns for individual authorities' strategies and campaigns, but these lack co-ordinated messaging.

Though awareness and education about travel options alone have little known effect on changing travel behaviour,⁴⁰ they are a necessary precursor to travel behaviour change. Once initial awareness is raised, travellers can make informed choices and plan trips using techniques such as travel plans.

Travel plans

A travel plan is a package of measures tailored to particular sites (e.g. a work place), to enable and encourage active and sustainable travel choices. Travel plans raise awareness and increase knowledge of travel options and encourage greater use of 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 may be required to support a travel plan.

School, work place, community, and personal travel plans can reduce the proportion of car trips. Positive outcomes include reduced car parking pressure, cost savings, improved accessibility and the promotion of a healthier workforce. Personal travel plans are ideally suited to areas where there are good travel options (walking, cycling and public transport) available.

School

Children who develop a walking and cycling habit early in life, are more likely to continue this healthy practice in later life. School travel plans provide a framework to co-ordinate a package of actions designed to overcome real and perceived barriers to active travel e.g. safety improvements and programmes that encourage a walking and cycling habit such as walking school buses, cycle safety training, walking and cycling challenges. Several schools in Greater Christchurch have already implemented successful travel plans and have a range of programmes in place. Delivery of school travel plans on a wider scale will require an increase of resources, including the ability to implement safety improvements in a timely way.



Work and campus

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

Travel to work is one of the largest and most predictable of all journey types. Christchurch's Central City is a target for introducing more work place travel plans as it currently provides a reasonable level of walking, cycling and public transport infrastructure. Several large organisations in Christchurch already have travel plans. Some of these travel plans require rejuvenation however, and there is excellent potential to enhance and extend the number of travel plans.

Community/personal

Community and personal travel plans are being used increasingly and successfully to influence how people travel to work, shop and play. (Personal travel plans are ideally suited to areas where there are good travel choices options available.) In Australia, TravelSmart personal travel planning programmes achieved 14% reduction in car use.⁴¹ Personal travel plans also have been successfully introduced when people relocate residence, typically a time when lifestyle and travel habits are reconsidered and altered.⁴²

Parking policies and price mechanisms

Parking policies and price mechanisms can be used to reduce demand for car use and increase demand for sustainable travel. They can initiate rapid changes in travel behaviour, but wider effects are complex and must be carefully considered. Financial disincentives can reduce demand for car travel, whereas financial incentives can be used to increase the demand for sustainable travel. Financial disincentives may involve raising the price for motor vehicle use (e.g. cost of parking). This may encourage people to consider other travel options in certain circumstances or times.⁴³

Road tolling is another example of financial disincentive for motor vehicle use. Legislation currently only permits tolling where an alternative route exists and does not permit cordon/congestion charging. Tolling is generally regarded as primarily a revenue-raising tool to fund new infrastructure, and not a travel demand management measure. The Canterbury Regional Land Transport Strategy notes that further investigation into these measures might be appropriate in the future.⁴⁴ However, there is likely to be public unease at any proposed road pricing until there are improved travel choices to ensure equitable access.

Car parking policies, as financial disincentives, can reduce vehicle trips by 10-30%.⁴⁵ It is recognised, however, that it will not be simple to change the behaviour of 52,000 workers who commute to Christchurch's Central City each day, including those from the Waimakariri and Selwyn districts. These commuters are important to the Central City's workforce and economic vitality. Any deterrent to attracting them is a risk that will need to be mitigated by practical travel/parking alternatives and would need to be compatible with the Christchurch City Council's Central City Revitalisation Strategy.⁴⁶ Consideration of implications across the Greater Christchurch area will be an important part of any parking proposals.

Visitors to the Central City are also crucial contributors to its retail, cultural and tourist success. The potential effects of any parking mechanisms need to be complementary to, and not at the expense of, any initiatives in the Central City.

Price incentives may increase the demand for sustainable travel. For example, in Boulder, Colorado, an annual bus pass programme implemented as part of a wider transport policy initiative (unlimited access ride-share programme) saw an increase of 2-10% annually.⁴⁷ Incentives, such as reducing costs for ride-share car parking can stimulate demand for this travel option, though it requires good marketing to succeed. A 5-10% reduction in vehicle trips can result from such incentives.⁴⁸ Ride share initiatives can be implemented alongside a combination of actions as part of work place travel plans. Any investigation into parking policies and price mechanisms will need to be guided by managing demand, balanced by wider policy objective considerations (e.g. Central City Revitalisation). Staging would need to coincide with key public transport, walking and cycling improvements. Any potential price signal proposals should be evaluated by taking into account their likely effectiveness, costs and benefits.

5.2 Reducing the need to travel by car

The way our communities are designed and where they are located in relation to work, education, health, leisure and community facilities can influence the way people travel. The further the distance, the greater the car dependency and energy consumption. Large but compact metropolitan settlements are associated with low travel distance and low transport energy consumption. The proximity to main transport networks also influences travel patterns. Areas not in close proximity to transport corridors are associated with longer travel distances and higher proportion of car journeys. Another factor affecting the way people travel is the availability of residential car parking – more parking, more car journeys made.⁴⁹

Good urban design promotes the integration of active travel and public transport modes into urban areas. It enables people to live closer to places of work, shops, schools or where they play, and be connected with attractive, convenient, and safe walking, cycling and public transport networks. Pedestrian-friendly environments can encourage people to shop locally, which has the added benefit of creating strong community centres. A study in Melbourne found more than 50% of expenditure at the Acland Street Precinct was from local walkers, and, based on average annual expenditure, walkers spent double that of car travellers.⁵⁰

Examples of some urban design principles which support commuter walking and cycling environment include:⁵¹

- Provision of off-road cycling and walking paths along road reserves, rivers, or railways
- Establishment of convenient, connected, and safe on-road network of cycling routes
- Traffic calming mechanisms that slow vehicle traffic to encourage a walking and cycling environment, particularly in town centres
- Zoning changes to allow the development of local markets and food stores.⁵²

The establishment of new urban areas and redevelopment of existing areas needs to consider the co-location and mix of residential, business, education and recreation activities. Building communities that are supported and serviced by sustainable transport infrastructure (e.g. walkways, cycleways, and public transport) is also important. Population density affects modal choice: the proportion of trips made by car decreases with increasing population density whilst the proportion of trips by public transport and foot both increase.



5.3 Support the efficient movement of freight

Nationally road-based freight is growing by 3.5% per annum.⁵³ With a 21% population growth projected by 2026, freight travel is expected to double nationally by 2040. The challenge for the UDS partners is to manage the projected demand and ensure the most efficient use of the existing road space to move freight – whilst being cost effective for businesses and customers.

Improving the on-going efficiency of moving freight will require sectors to work together - this will involve the freight agencies, retail and councils. This will be co-ordinated by the Freight and Network Efficiency Working Group.



6 Implementation

6.1 Timing and Funding

Implementation of the Greater Christchurch Travel Demand Management Strategy commences in the 2009/2010 year. The strategy has identified projects for either short-term (2009/12) or medium-term (2012/15) implementation and completion. The Action Plan will be reviewed and updated regularly, to coincide with the timing of government policy reviews and local authorities' LTCCP and annual planning and funding cycles. Therefore, the Action Plan will next be updated in 2011. A monitoring report will be published toward the end of each funding cycle, with quarterly progress reports to the UDS Transport Group.

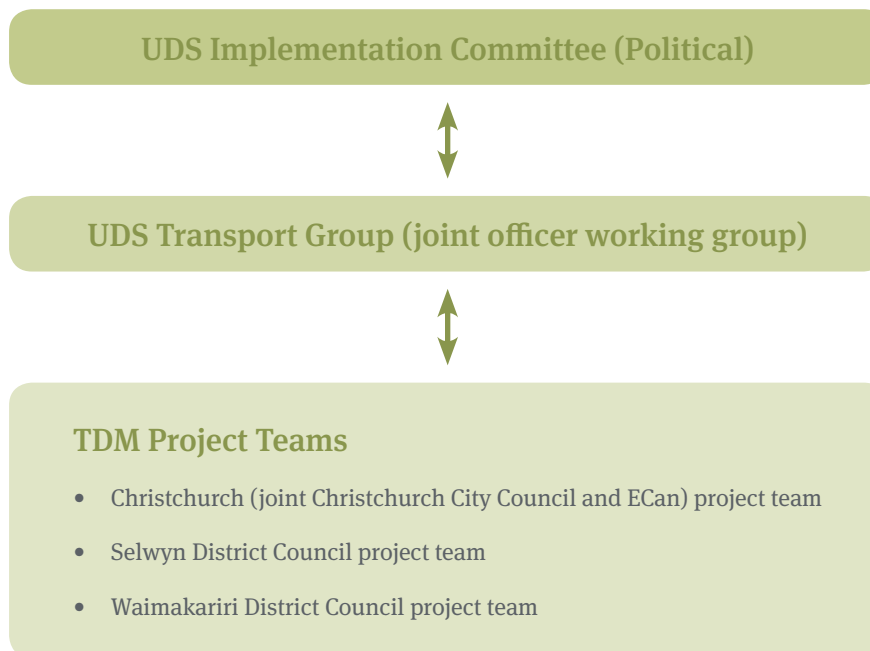
Projects identified in the Action Plan will be funded through UDS partners' LTCCPs, with funding assistance from the New Zealand Transport Agency. It should be emphasised that respective UDS partners' operational budgets already incorporate travel demand management projects. The implementation of the Action Plan will help link these travel demand-focused projects with key supply-focused infrastructure programmes.

The Transport Regional Implementation Plan 2009-2019 (TRIP) outlines a funding commitment for travel demand management. Initial discussions have been undertaken with respective local authorities and funders so that the 2009/2012 LTCCP's and the Canterbury Regional Land Transport programme reflect the GC TDMS's needs.

Continued collaboration between UDS partners is essential for the successful implementation of the strategy. Given the strategy's emphasis on achieving widespread behaviour change, building understanding and collaboration with other key stakeholder agencies is very important; notably with the education, health, business and active transport sectors.

6.2 Responsibilities

The UDS Transport Group is responsible for overseeing the overall delivery of the Strategy's Action Plan. Each Council is responsible for the delivery of actions in their area, and to ensure actions are resourced and targets are met. Coordination, collaboration, and sharing of expertise in the delivery of the actions is required to best utilise resources and optimise results. Particular actions will require more collaboration than others, such as marketing sustainable travel choices, monitoring travel plans, and in some cases the joint delivery of travel plans. The structure below will co-ordination implementation.





6.3 Monitoring

The UDS Transport Group will:

- manage and co-ordinate the delivery of the Action Plan, including securing funding;
- monitor the effectiveness of the Action Plan's implementation against agreed targets;
- report on implementation progress to the UDS Implementation Manager (three monthly); and
- report to the UDS Implementation Committee (annually).

Additionally, the UDS Implementation Management Group will receive six monthly reports from the UDS Transport Group. Targets will be set locally, within the context of nationally set targets 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 in the Action Plan. Wider monitoring tools such as Ministry of Transport Household Survey, New Zealand Census, traffic counts within the Greater Christchurch area, and other data will be broader indicators of travel behaviour and the degree of change.

An initial baseline survey will measure awareness and perception levels of sustainable travel in the Greater Christchurch. This survey will precede the commencement of the overarching travel demand management marketing initiatives. Subsequently there will be an annual measurement of changes in awareness and perceptions levels. Changes in travel behaviour as a result of the roll-out of travel demand management programmes, such as travel plans and travel pricing incentives/disincentives, will be monitored regularly.



7 Appendices – want to know more?

7.1 Strategy principles

The Greater Christchurch Travel Demand Management Strategy’s principles are directed by the New Zealand Transport Strategy, 2008⁵⁴. This Strategy challenges communities 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.”⁵⁵

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 transport infrastructure is dependent on close alignment with regional and local land use planning.

SAFETY

Travel demand management can reduce the risks and social costs of crashes by lowering the number of vehicles on the road.

RESPONSIVENESS AND COLLABORATION

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

7.2 Demographic trends

Demographic factors of population growth, household structure and age affect how many trips households make, how they are taken and where they go.⁵⁶

Population growth

The population in the Greater Christchurch UDS area is projected to increase by 87,800 people between 2006 and 2026, and a further 47,200 people between 2026 and 2041 (medium to high growth).⁵⁷

The populations of the UDS areas of 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 almost double over the next 40 years. The Waimakariri UDS area population is forecast to increase from 35,222 (i.e. 13,600 households) in 2006 to 53,545 (i.e. 23,450 households) by 2041. The Selwyn UDS area population is forecast to increase from 19,974 (i.e. 7,700 households) in 2006 to 45,016 (i.e. 19,490 households) by 2041.⁵⁸

Such growth will put increased demand on key routes, especially those into the Christchurch City area. The UDS recommends managing the population growth through the intensification growth in the Central City, elsewhere as identified, and increased densities around existing towns to promote consolidation.





Household size

Households are getting smaller. The average number of persons per household in the Greater Christchurch area will decline from 2.4 (2006) to a projected 2.36 by 2041. Each household typically generates between eight and 10 trips per day (5 from and 5 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 health services' prioritisation of 'ageing in place' mean more older people will continue to live in their own homes for longer. Often, older age sees a decrease in access to a private motor vehicle. This reduction in vehicle – and often physical - mobility can contribute to increased social isolation, which can be compounded by the dissection of local communities by increasingly busy roads that reduce easy neighbourhood interaction and support. The travel needs of older people will therefore be more dependent on the provision of good public transport and accessible, safe walkways and footpaths.

7.3 Negative impacts 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 predominance and over-reliance on car-based travel that has adverse social, health and environmental effects.

CO₂ emissions

The New Zealand 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.⁵⁹ As a result of reliance on the car as the primary method of transportation, CO₂ emissions per capita are one of the highest internationally, with 18% of New Zealand's greenhouse gases coming from the transport sector.⁶⁰ Transport greenhouse gas emissions are projected to increase by 40% if people continue to travel predominantly by car.⁶¹

Traffic growth

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, work places and schools. Travel demand is predicted to grow dramatically as a result of household growth, caused by the population increase and decrease in household size. 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 reduction in car usage. One fewer trip by car each week, per household, is enough to restrict traffic growth.

Pollution

By-products emitted into the air from vehicles include toxic oxides of nitrogen and sulphur, carbon monoxide, carbon dioxide, and fine particulate matter (PM₁₀). PM₁₀ 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 each year 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.⁶²

Inactivity and obesity

The prevalence of overweight and obese people has increased rapidly over the past two decades. There is a link between obesity and inactivity.⁶³ 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. Opportunities for spontaneous play and mobility independence are restricted through high car-use.⁶⁴ Described as an epidemic, obesity is a risk factor for major diseases such as type-2 diabetes, ischaemic heart disease, ischaemic stroke and several common cancers.⁶⁵

Social cost of road casualties

In Christchurch City the social costs⁶⁶ 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 (e.g. loss of output due to temporary incapacitation, medical costs and legal costs) making up the remaining 4%.



Community severance

Large roads running through communities can reduce people's social interaction within a community and their sense of belonging. Heavy traffic volumes on roads form a barrier and restricts access especially for children, the elderly and less mobile people.

Social inequality

While people with higher incomes may be able to better afford to live away from main transport routes, 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 can be greater than in urban areas (due to longer travel distances).

7.4 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 behalf of the Urban Development Strategy Transportation Group to developing the Strategy.

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 the 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 with partner organisations' colleagues and key external sector stakeholders has been an integral part of the development process and has informed consideration of the key approaches to be taken. There was wide engagement during the community consultation period.

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 (e.g. possible increases in parking prices and potential road pricing).
4. Need for common prioritisation from UDS partners and external funding agencies to maximise the effectiveness of work programmes.



Health Impact Assessment

A Health Impact Assessment (HIA), 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 was carried out.

A so-called rapid HIA was undertaken, 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.

7.5 Wider consultation

Community consultation was undertaken from 16 February to 13 March 2009. Information on the draft strategy was made available at respective Council offices, libraries and service centres and on local Councils websites. Information was directly sent to 244 stakeholder groups/individuals, and community boards or advisory boards. 63 responses were received from 18 organisations and 45 individuals. All responses were considered by the UDS Implementation Committee Hearings Panel. In addition they heard presentations from five submitters on 27 April 2007.

What did the people say?

Many of the responses from the consultation process were concerned about the lack of safe and convenient travel options other than the car. Many raised this as a significant issue for the GC TDMS to achieve its goals and outcomes.

Comments by respondents included:

- It needs to be convenient and safe for people, particularly children and the elderly, to walk and cycle to destinations.
- Cyclists need off-road paths especially on major vehicle routes.
- The implementation of school travel plans requires safe walking and cycling environments. There needs to be more assurance that this can be delivered as part of the travel plan process.
- There is a lack of public transport direct services. People are travelling twice the distance to transfer from the bus exchange.
- Public transport needs to be more accessible for people with disability as many are wholly reliant on public transport.
- Community groups/organisations would like to work with Councils and identify local solutions to local issues. Therefore they would like to be part of the implementation process.
- The action plan requires more detail to ensure there is clarity of tasks and timing. There needs to be more assurance that the action plan is delivered.

What changes have been made based on these comments?

The following amendments have been made to strengthen the linkages with walking, cycling, and public transport:

- Policy 6 was reworded to say: “UDS partners will lead by example and provide walking, cycling and public transport networks that are; safe, accessible, convenient, connected, attractive and cater for all people.”
- An additional task has been included to investigate and implement tools to ensure walking, cycling, and public transport networks are safe, accessible, convenient, connected, attractive, and cater for all people.
- Task 4 was reworded to say: “school travel plan delivery combined with infrastructure improvements are in activity management/ work plans and LTCCP’s. Monitoring of school travel plans will involve checking if timely infrastructure improvements are implemented.”

The following amendments have been made to ensure that community organisations and/or groups are part of the implementation process.

- “Community groups/organisations have been included as support partners alongside the delivery actions.
- Information will be shared with these groups throughout the implementation which could identify further opportunities of partnership.”

The following amendments have been made to increase the level of assurance in the delivery of the Action Plan.

- More detail on how the Action Plan is to be co-ordinated and monitored has been included.

7.6 List of submitters

The following individuals and organisations provided feedback during the wider consultation process:

S. Jarvis, D. Sutherland, S. James, S. Muir, K. Turner, M. Penrice, J. Adamson, A. Holland, S. Smith, G. Hamilton, C. Dally, G. Burrow, K. Sampson, D. Fulton, C. Tabak, S. Rendall, J. McLeod, M. Dale, E. Pawson, N. Berry, Y. Evans, A. Airey, M. Davill, E. Cruickshank, S. Bonnemann, M. Mcleod, B. Meder, R. Mackintosh, G. Willams, R. Verity, C. Conveney, A. Preston, P.Strang, V. Henderson, C. Duke, E. Dommissie, S. Atkinson, A. Tapper, D. Welch, K. Livingston, M. Lukes, D. Phillips, Kendal School, Age Concern Canterbury, NextBike Ltd, Laura Fergusson Trust, Waimairi School, Laura Fergusson Trust and Amputee Society, Disabled Person Assembly, Canterbury District Health Board, Living Streets Canterbury, Federated Farmers of New Zealand, University of Canterbury, Spokes Canterbury, Christchurch Combined Residents Association, Governors Bay Community Association, Riccarton/Wigram Community Board, Sustainable Otautahi Christchurch Inc, Association of Blind Citizens - Canterbury

7.7 Glossary of terms

There are many terms used to describe aspects of travel and the transportation methods and systems used. 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, such as bus lanes or responsive traffic lights, that give priority to buses over other road users.

Capacity – The theoretical maximum number of vehicles (vehicular capacity) or persons (person capacity) that can pass over a specific 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 transport 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 stretches beyond the existing city boundaries to include towns such 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 New Zealand Transport Agency 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 provide 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 – The 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) – The 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 and van pools.

Sustainable transport system – An interconnected system to provide access for people and the transport 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, how, when, 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.

7.8 Footnotes

¹ Urban Development Strategy Forum (2007). The Greater Christchurch Urban Development Strategy. Christchurch, Urban Development Strategy Forum.

² 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.itsa.govt.nz/research/reports/331.pdf> (retrieved October 2008).

³ 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).

⁴ Environment Canterbury (2008). Canterbury regional policy statement 2008. available at <http://www.ecan.govt.nz/NR/rdonlyres/7C612189-CE48-45C9-8614-4AB0C6B01752/0/RSPProposedChangeNo1FINAL2Notified28July2007.pdf> (retrieved October 2008).

⁵ 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).

⁶ Ministry of Transport (2008). New Zealand Transport Strategy. Available at <http://www.transport.govt.nz/new-zealand-transport-strategy-2/> (retrieved October 2008).

⁷ Christchurch Transport Model. Household interview survey reports (2006). [Unpublished].

⁸ Ministry for the Environment (2007). Environment New Zealand 2007: Chapter 4 Transport. Available at <http://www.mfe.govt.nz/publications/ser/enzo7-deco7/html/index.html>.

⁹ Land Transport Association (2007). Statistics New Zealand Sub-national Population Estimates; Statistics New Zealand Census of Population and Dwellings (unpublished data compiled by Christchurch City Council).

¹⁰ Statistics New Zealand Census of Population and Dwellings. Percentage of households in Christchurch that have access to a motor vehicle. Available at http://www.ccc.govt.nz/cityplan/cityplanmonitoring/transport/07_aer4_1716_%20of%20households%20with%20access%20to%20motor%20vehicles.pdf.

¹¹ Statistics New Zealand Census of Population and Dwellings. Means of Travel to Work, for the Employed Census Usually Resident Population Count Aged 15 and Over, 2006.

¹² Ibid.

¹³ Ministry of Transport (2008). New Zealand household travel survey. Available at www.transport.govt.nz/assets/NewPDFs/Driversfinalv1.2.pdf (retrieved October 2008).

¹⁴ Ibid.

¹⁵ The Longitudinal Business Frame (LBF), contains data from two main sources: Statistics New Zealand's Business Frame (BF), and payroll tax records drawn from the Linked Employer-Employee Database (LEED). Available at <http://www.ccc.govt.nz/Christchurch/FactsStatsAndFigures/CentralCity/WorkForce-EmployeeCountByANZSIC.pdf> (retrieved January 2009).

¹⁶ Statistics New Zealand Census of Population and Dwellings. Note: These figures include all people who specified a workplace address. Between 12 and 21 percent of the employed population in these areas are excluded, either because they had no fixed abode, did not list a workplace address, or the address was not of sufficient quality to be coded accurately to a territorial authority.

¹⁷ 40.5% (8,931) of Waimakariri's resident labour force work in Christchurch City (this is a 19.7% (1,515) increase in the number of people commuting between 2001-2006, as a result of population growth), and 40% (7,767) of Selwyn's resident workforce work in Christchurch City (this is a 42% increase in the number of people commuting (2,304) between 2001 and 2006).

¹⁸ Christchurch Transport Model. Op cit.

- ¹⁹ Rice, Bill (2008). How we got to school – A study of travel choices of Christchurch primary school pupils. [unpublished thesis]. A survey of 20 schools in Christchurch.
- ²⁰ 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). Raising the profile of walking and cycling in New Zealand: a guide for decision-makers Available at [Raising The Profile Of Walking And Cycling In New Zealand](#) (retrieved December 2008).
- ²¹ Statistics New Zealand Census of Population and Dwellings. Means of Travel to Work, for the Employed Census Usually Resident Population Count Aged 15 and Over, 2006.
- ²² Charles, C. O'Fallon (2006). Increasing cycling and walking: an analysis of readiness to change, Land Transport New Zealand, Report 294. Note data used from 2003, 'Obstacles to Action' containing responses from over 8000 people aged 16 or over.
- ²³ Christchurch transport model. Household interview survey reports (2006). [Unpublished].
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- ²⁵ Statistics New Zealand (2007). Op cit.
- ²⁶ 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).
- ²⁷ Christchurch City Council (2007, 2008). Cycle counts, 2007, 2008 [Unpublished.].
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- ²⁹ Charles, C. O'Fallon (2006). Increasing cycling and walking: an analysis of readiness to change. Land Transport New Zealand, Report 294. Note data used from 2003, 'Obstacles to Action' containing responses from over 8000 people aged 16 or over.
- ³⁰ Christchurch transport model. Household interview survey reports (2006). [Unpublished].
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Links to existing websites on ways to travel smarter today

Public transport

<http://www.metroinfo.org.nz/>

Cycling

<http://www.ccc.govt.nz/cycling/>

Smarter car use

<http://www.fuelsaver.govt.nz/>

<http://www.rightcar.govt.nz/ratings/fueleconomy.html>

