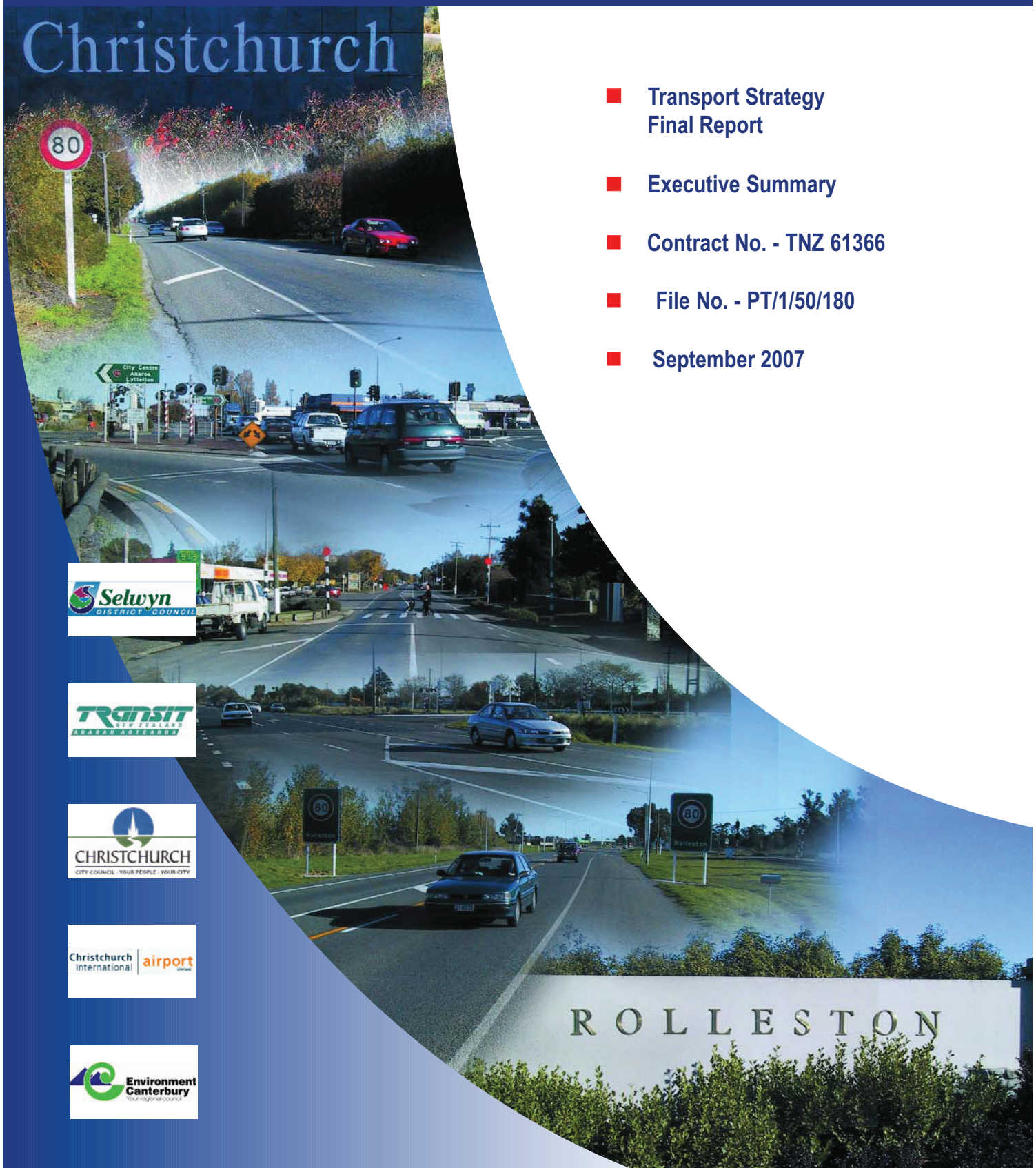
CHRISTCHURCH, ROLLESTON AND ENVIRONS TRANSPORTATION STUDY



- Transport Strategy
  Final Report
- Executive Summary
- Contract No. - TNZ 61366
- File No. - PT/1/50/180
- September 2007

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Christchurch, Rolleston and Environs Transportation Study

Transport Strategy
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3	28/09/07	Final Report	TLM	MDF/RJC		

1. Introduction

1.1 Introduction

The Christchurch, Rolleston & Environs Transportation Study (CRETS) began in early 2002. The study has been undertaken by Connell Wagner (the Consultant), on behalf of the Study Partners, comprising (in no particular order):

- Transit New Zealand – Road Controlling Authority for State Highways,
- Selwyn District Council – Road Controlling Authority for roads in Selwyn District excluding State Highways,
- Christchurch City Council – Road Controlling Authority for roads in Christchurch City excluding State Highways,
- Environment Canterbury – Responsible for Public Transport and managing the Regional Land Transport Strategy,
- Christchurch International Airport Ltd – Responsible for Airport Operations and most roads on the Airport Campus.

Other interested groups in this study have been identified as but not limited to (in no particular order):

- Land Transport New Zealand (previously Land Transport Safety Authority and Transfund New Zealand),
- New Zealand Police,
- Road Transport Forum,
- Automobile Association,
- Public Transport Operators,
- Cycling Advocate Networks / Spokes,
- Ngai Tahu.

In the Terms of Reference for the study, the Objective is:

> *'The study of transportation requirements in the Christchurch to Rolleston broad area is seen as a key component in the planning for the development of the roading network to the west and south of Christchurch for the ensuing 25 year period.*
>
> *The key output of the study is the identification, justification and reporting of a strategy that details the most appropriate stages for the progression of improvement projects that will achieve an ideal roading network to satisfy projected demands."*

This study focuses on identifying shortcomings in the strategic transport network to the southwest and south of Christchurch and developing and assessing various options to find a strategy to counter the shortcomings identified. The area includes the Selwyn towns of Rolleston, Lincoln, Springston, West Melton, Tai Tapu, Templeton and Prebbleton; the south western suburbs of Christchurch generally including Hornby, Sockburn, Wigram and Halswell; and the Christchurch International Airport. The study area within the context of greater Christchurch has been included as Figure 1.

With the introduction of the NZ Transport Strategy 2002 and the Land Transport Management Act (LTMA) in 2003, the study now takes into account the relevant sections of the LTMA which requires solutions to contribute to an integrated, safe, responsive and sustainable land transport system. As a result, the study not only considers improvements to the roading network, but also includes other transport mode opportunities, including passenger services (both road and rail) and cycling and walking

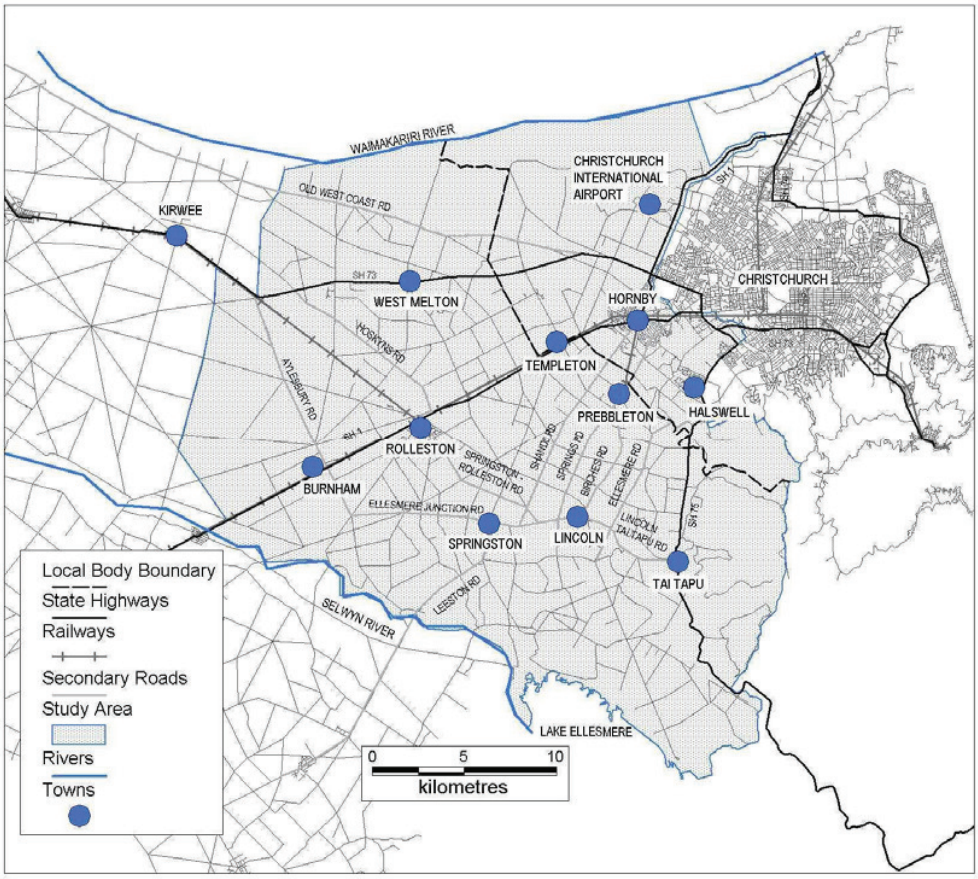

Figure 1
Study Area

1.2 Study Process

The study process has been set up in ten consecutive steps, including:

1. Identification, Review of, and Consultation on Issues,
2. Review of Data,
3. Data Collection,
4. Traffic Model Preparation,
5. Deficiency Analysis,
6. Identification of Project Options and Potential Strategies,
7. Analysis and Assessment of Project Options and Potential Strategies,
8. Detailed Analysis and Assessment to form a Draft (Consultation) Transport Strategy,
9. Public Consultation on the Draft Transport Strategy,
10. Final Report.

Each step of the study process contributes to the inferred objectives for the study as follows:

1. Identification, Review of, and Consultation on Issues
   A comprehensive list of initial, mainly technical Study Partner issues were provided in the Scope for Services for assessment by the study. These issues were used to provide structure to ensuing analysis and have been discussed, assessed and revised throughout the study as new information has become available.

Initial consultation with the stakeholders and public was carried out to identify issues of concern to the community. Some of the community issues were in line with the initial issues raised in the Scope of Services, however, additional issues were raised by the community and added to the issues to be considered in this study. The initial consultation data has been collated and reported on in the Stage 1 Consultation Report – July 2002, Revision 1.

2&3 Review of Data and Data Collection

A review of the available data indicated the need for additional data. The data required consisted of traffic count data (both links and intersection turning movements) and travel speed surveys for use in validating the CRETS traffic models. The additional traffic count and speed survey data was collated and reported in the Traffic Data Report – March 2003, Revision 0.

4. Traffic Model Preparation

The Christchurch Transportation Study (CTS) base year traffic models were updated from 1996 to 2001 census data as part of the CRETS study. The models have been extended and refined to a level of detail, especially in the study area, to meet the purposes of this study. This involved increasing the detail in the modelled zone structure and roading network. Other improvements made to the models include modifying the travel pattern methodology for Burnham Military Camp, Lincoln University and the trips from outside the study area. Detail of the formation of the 2001 CRETS models is included in the Model Validation Report – April 2005, Revision 12.

The Christchurch International Airport is a unique traffic generator in terms of traffic generation, timing and directionality of trips. For these reasons and given the potential changes in land use patterns, a project model (modified version of the CRETS models) and a sub model for the Airport were developed. Detail of the Airport project and submodel models development is included in the Christchurch International Airport Model Validation and Identification of Potential Problem Areas Report – August 2005 – Version 2.

5. Deficiency Analysis

The 2021 CTS model has been extended and refined the same way as the 2001 CTS models to form the 2021 CRETS models. The 2021 land uses for the CRETS models are based on medium growth projections from Statistics New Zealand which has been used to predict the 2021 vehicle travel demand. A Do Minimum Network was formed using the currently planned improvements in the ten year plans from each of the Road Controlling Authorities (RCA). By applying the 2021 traffic demand to the 2011 Do Minimum Network, areas of the network that are likely to be under pressure in 2021 were identified. Details of the formation of the 2021 CRETS models, the Do Minimum Network and the areas of the network that are likely to be under pressure in 2021, are included in the Identification of Potential Problem Areas Report – April 2005, Revision 10.

As specific models have been developed for the Christchurch International Airport, the process used to identify areas of the network that are likely to be under pressure in 2021 for the CRETS models, has been applied to the Airport models. Details of the formation of the 2021 Airport project and submodel models, the Airport Do Minimum Network and the areas of the road network that are likely to be under pressure in 2021, are included in the Christchurch International Airport Model Validation and Identification of Potential Problem Areas Report – August 2005 – Version 2.

6. Identification of Project Options and Potential Strategies

This step of the study process involved bringing together, summarising and grouping the issues to be considered in this study and identifying options that may potentially address the issues. The issues were grouped as general issues applying to the whole of the study area and specific issues applying to specific locations or routes in the study area. Using these issues, Project Options were identified to potentially address the issues. Detail of this step of the study is included in the Issues and Options Identification Report – April 2005, Revision 9.

7. Analysis and Assessment of Project Option and Potential Strategies

This step of the study process looked in detail at the way in which some 47 different roading improvement proposals would address the issues identified earlier in the study. The viable project options were then grouped into packages of options and the way in which packages of improvements would work together, or not, were analysed. A set of proposals was prepared, which, subject to changes as a result of consultation, forms the basis of the consultants' recommendations to the study partners. Detail of this step of the study is included in the Options Analysis Report – December 2005, Revision 4.

8. Detailed Analysis and Assessment of Consultation Project Options to form a Draft Transport Strategy
   The Draft Transport Strategy took the initial packages of options identified in the Options Analysis Report and subjected them to a more detailed analysis, including intersection analysis, link travel time analysis, staging analysis and risk analysis. The Draft Transport Strategy, including the Executive Summary, formed the basis of the 2006 public consultation documents.

9. Public Consultation
   Public consultation on the Draft Transport Strategy was undertaken between 29 September 2006 and 17 November 2006. The public consultation process and outcomes are reported on in the report titled *'Consultation Report 2007, Christchurch, Rolleston and Environs Transportation Study'*.

10. Final Report
    This final report titled *'Christchurch, Rolleston and Environs Transportation Study, Transport Strategy Final Report, September 2007'* sets out the Transport Strategy prepared following, and taking into account feedback from stakeholders and public consultation. During the course of the study the Greater Christchurch Urban Development Strategy (UDS) has been developed. Final sensitivity testing of this transport strategy included traffic forecasts using the latest UDS land use projections and higher levels of public transport usage.

    Each of the reports mentioned above are available from the Project Managers of the Study Partners mentioned in Section 1.1.

2 Study Aim and Key Transport Issues

The Christchurch Rolleston and Environs Transportation Study focuses on identifying the future transportation needs to the southwest and south of Christchurch. The study area includes:

- The towns of Rolleston, Lincoln, Springston, West Melton, Tai Tapu, Templeton and Prebbleton,
- Christchurch south-western suburbs of Hornby, Wigram and Halswell,
- The Christchurch International Airport.

The Christchurch to Rolleston area is seen as a key component in the planning for the development of Canterbury's transport system and roading network to the southwest and south of Christchurch. The aim of the study is to produce a Transport Strategy that is robust and flexible to accommodate a number of future urban growth possibilities in the study area. For example, where existing towns like Rolleston and Lincoln are expected to grow significantly, the study looks at how to meet the transportation needs resulting from this growth and the connectivity between Christchurch City. This Transport Strategy is a vision for the future transport needs of the study area to around the year 2021. It also considers in detail a range of public passenger transport and cycle opportunities within the area and how these contribute to an integrated, safe, responsive and sustainable land transport system in the future as required by the Land Transport Management Act 2003.

Consultants, Connell Wagner have conducted the study on behalf of Transit New Zealand (Transit), Selwyn District Council (SDC), Christchurch City Council (CCC), Environment Canterbury (ECan), and Christchurch International Airport Limited (CIAL).

Public consultation, technical analysis and consideration of social and environmental impacts have been major inputs in developing the Transport Strategy.

The key transport issues addressed in the study area are identified as:

- Land use development in Rolleston, Lincoln, Prebbleton, south-west Christchurch, and around Christchurch International Airport,
- Increasing traffic flows from beyond and within the study area,
- Road network capacity constraints especially through Sockburn and along parts of the State Highway network,
- Road safety concerns and access issues onto arterial roads, particularly at Christchurch International Airport and Rolleston,
- Social and environmental issues through townships on busy arterial roads, especially Templeton, Lincoln and Prebbleton,
- The lack of clear roading hierarchy, including supporting district planning controls,
- Accessibility for cyclists and pedestrians,
- Consideration of public transport options.

A number of options and alternatives were developed and tested in order to arrive at the Transport Strategy that best addresses these issues.

3. Transport Strategy Development /Road Network Hierarchy

The Christchurch Rolleston and Environs Transportation Study proposes a Transport Strategy to address the transportation issues of the southwest and south Christchurch area up to around the year 2021. This was based on medium growth projections from Statistics New Zealand which has been used to predict the 2021 vehicle travel demand. The strategy reinforces the use of main roads and the redirection of traffic onto alternative routes and transport modes, both new and existing, to minimise the effects of traffic through the townships of Templeton, Lincoln and Prebbleton. The suggested improvements will provide improved travel time reliability along key corridors to provide an integrated, safe, responsive and sustainable land transport system.

A rail corridor predominantly used for freight is in place within the study area between Rolleston, Templeton, Hornby and Christchurch Central. The use of rail for freight should be encouraged in the future, predominantly for key industrial generators such as those at the Rolleston Industrial Park. However, due to the low population living close to the rail and that the rail has one inflexible route, rail is not a viable commuter option in the foreseeable future.

It has therefore been concluded that bus based public transport will be more cost effective in the short to medium term. As travel demand for public transport increases, other modes could be explored in the near future, such as larger buses or bus rapid transit.

With the promotion of bus passenger transport, park and ride facilities are promoted for Rolleston and Lincoln. The main public transport corridors for Selwyn are set out in Figure 2.

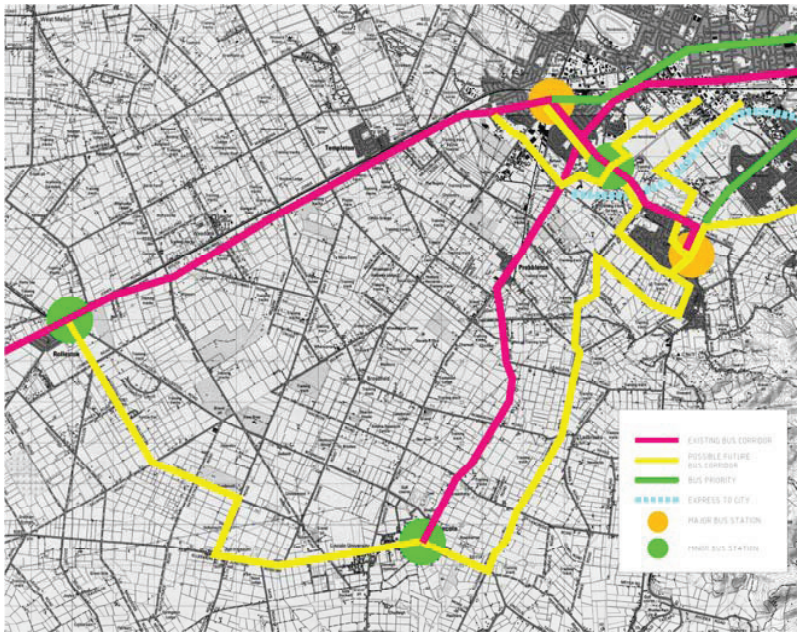

Figure 2
Main Public Transport Corridors for Selwyn

Roads can be classified based upon their function. The main road network is made up of roads that are expected to move large volumes of traffic (trucks, cars, buses and cycles). Figure 3 below classifies the main roads in the study area.

Key

- Red: (national arterial). These roads are major through roads for traffic moving long distances (ie south to north or north to south) or to a port or airport, and are normally state highways. Direct property and side road access to arterial roads is limited to ensure that 'mobility' is maintained.
- Dark blue: (regional arterial). These are roads that traffic is encouraged to use to get to key destinations not served by the national arterials. Direct property access will also be restricted, but generally to a lesser extent than for national arterials.
- Light blue: (district arterial). These roads are used by traffic to get to and around parts of the district or city. Some feed into the city and some make connections between national, regional and district arterials.
- Green: (collector/distributor). These 'collect' traffic from local roads and 'distribute' them to arterial roads. Collector roads provide a mix of local access and limited through traffic function.
- Local roads and streets (not highlighted on the diagram) provide access to individual properties, businesses and community facilities.

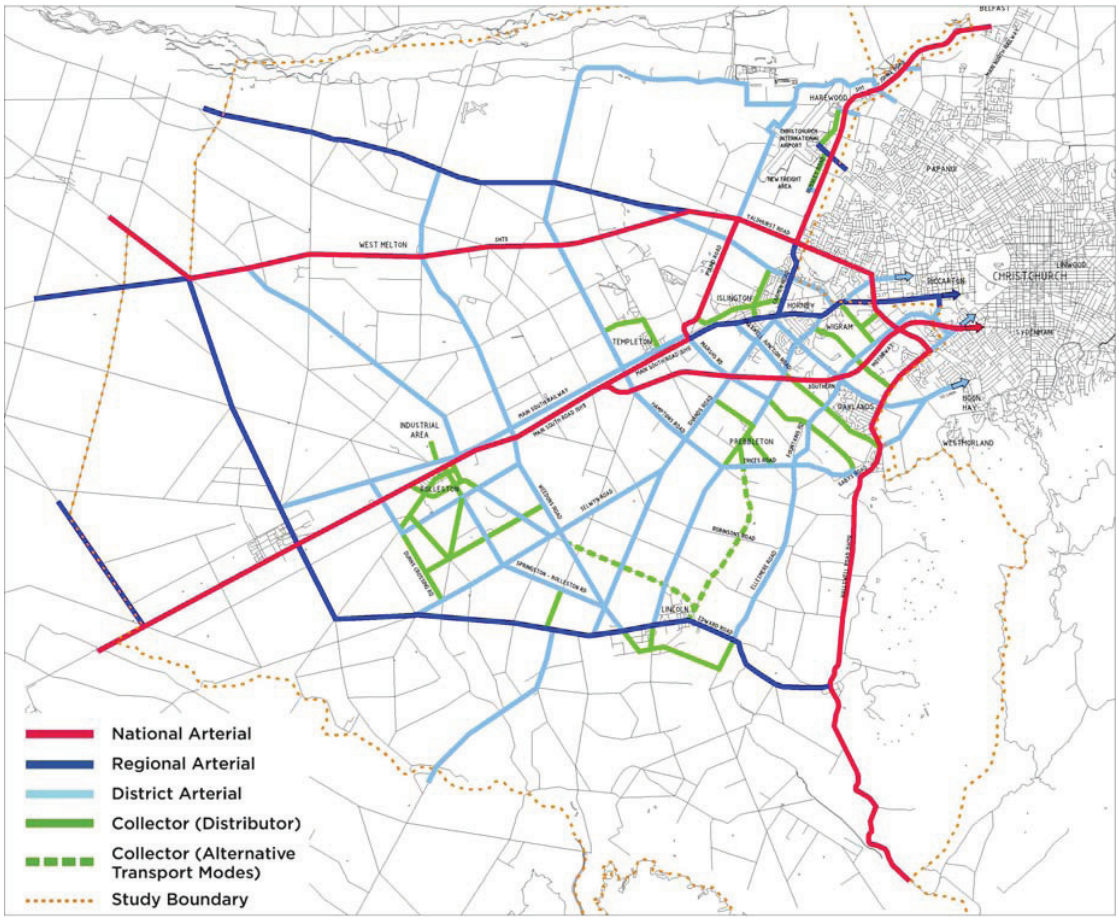

Figure 3.
Transport Strategy Road Network Hierarchy