abley
transportation consultants

GF

Area Plan Transport Assessment

Selwyn District Council

Selwyn
DISTRICT COUNCIL

Area Plan Transport Assessment

Ellesmere and Malvern Wards

Selwyn District Council

Quality Assurance Information

Prepared for: Selwyn District Council

Job Number: 4600

Prepared by: Aimee Dunne, Senior Transportation Engineer

Reviewed by: Jeanette Ward, Associate

Date issued	Status	Approved by
22 May 2015	DRAFT	Jeanette Ward
6 July 2015	FINAL DRAFT	Jeanette Ward
17 July 2015	FINAL DRAFT (2)	Jeanette Ward
20 November 2015	FINAL	Jeanette Ward

T +64 9 974 9820 (Akld)
T +64 3 377 4703 (Chch)
F +64 3 377 4700
E office@abley.com

Auckland
Level 8, 57 Fort Street
PO Box 911336
Auckland 1142
New Zealand

Christchurch
30a Carlyle Street
PO Box 25350
Christchurch 8144
New Zealand

www.abley.com

ConnectBetter

Executive Summary

A transport assessment for the Malvern and Ellesmere Wards of the Selwyn District was carried out to inform the development of the Area Plans for both of these Wards. The assessment focused on the townships in the Malvern and Ellesmere Wards and the interconnections and sought to identify existing or future potential network issues, future opportunities and constraints.

As the Selwyn District continues to grow, this places increased demand and pressure on the transportation network. Generally roads and intersections in the Malvern and Ellesmere Wards are well below their ultimate capacities and unlikely to meet or exceed those capacities by 2031. However, certain points on the network may experience pressure in meeting demand and sustaining acceptable levels of service due to growth in and around these areas.

Key factors influencing the transport network in both Wards include the increasing volume of vehicles on the network as the population and industry grows. Council envisages that all new urban development will occur in or adjacent to existing townships, whereby a consolidated growth pattern will promote the efficient and effective provision of infrastructure including transport. Increasing volumes of heavy vehicles on the network will also have implications in terms of maintenance and upgrade works being required. A significant portion of the roading network in Malvern and Ellesmere comprises unsealed roads, many of which are also designated High Productivity Motor Vehicle (HPMV) routes. Providing an effective and accessible transport network is essential to support the strong economic activity in the District. There are also an increasing number of farms being converted to dairy throughout the district consequently increasing the number of heavy vehicles, such as tankers, using the roads.

Within the Malvern Ward, the majority of the growth in population is forecast to occur in the Darfield and Kirwee townships with limited growth expected in the remaining townships. Further residential development in Darfield will be an opportunity to provide integrated and connected transport connections in the township. Similar opportunities exist with the future residential growth in the Kirwee township, although this will need to occur in a way which does not adversely affect the existing primary school. The planned cycleway between Coalgate and Glentunnel will enhance the pedestrian and cyclist links between the two townships. The existing transport provisions in the townships of Hororata, Whitecliffs, Arthurs Pass, Lake Coleridge, Springfield, Waddington, Sheffield and Castle Hill are largely considered to be adequate for the existing and future level of demand.

Within the Ellesmere Ward, the Leeston township is expected to accommodate much of the future growth and the creation of the Leeston to Doyleston cycleway will improve connectivity between these two townships, but there may also be additional opportunities to improve links within Leeston. The development of the Dunsandel Community Centre is an opportunity to improve pedestrian and cyclist connections between the northern and southern areas of the township which are currently segregated by the state highway. The existing transport provisions in the Doyleston, Southbridge, Rakaia Huts and Taumutu are largely considered to be adequate for the existing and future level of demand.

A summary of the strengths, issues and opportunities for townships in each of the Wards can be found in the following table.

Area / Township	Strengths	Issues	Opportunities
Overall Network	**Consolidated growth –** The strategic direction for the District is for growth to occur in and around existing townships allowing for a more efficient and effective transport system to be provided. **Resilience** – The transport network is generally resilient to incidents which may block the network, there are usually good alternative links to use. **Safety –**Road Safety Strategy developed in 2014 that aims to 'Progressively Reduce the Number and Severity of Road Crashes in the Selwyn District'. An example of action to date has been the review of speed limits across the district and where appropriate changes have been made.	**Population Growth –** The forecast population increase will also increase traffic volumes on the network and may put additional pressure on certain parts of the network, particularly at intersections. **Unsealed Roads** – A significant portion of the transport network comprises unsealed roads. With the projected increase in heavy vehicle traffic this may give rise to more dust and maintenance issues. **Public Transport** – If demand for public transport increases, wider community consultation would be required to determine if communities are willing to support new services through their rates, as 25% of the costs of public transport services comes from local rates. Approval from NZTA would also be required as they also provide funding.	**Resilience** – The Utilities Response Plan provides a proactive basis for maintaining the resilience of the transport network. **Safety –** Potential for further speed limits to be reviewed and changed over time as development occurs in the townships. **Safety** – Improving intersection safety on high speed rural roads. **Safety -** The urban/rural speed limit thresholds treatments are consistent throughout the District making it clear to motorists when they are entering / leaving urban areas.
Malvern Ward			
Darfield	**Public Transport Links –** There is an existing user funded bus commuter service available for Darfield residents travelling to Christchurch. **Consolidated business zone –** The existing business zone is easily accessed off the state highway which runs through the town centre and industrial zone is located away from the state highway. **Pedestrian links across SH73** – there are five pedestrian refuges on SH73 through the township within a wide flush median which is considered to provide a good level of service for pedestrians.	**Parking –** Concerns have been raised by the local community regarding parking particularly outside the bakery. The implementation of signage and marking should improve the efficient movement of vehicles through this area. Informational / directional signage could also be provided directing people unfamiliar with the town to where other areas of off-street parking is available. **Railway level crossings –** There are four railway level crossings in the township, three of which have warning systems in place for motorists to alert them to approaching trains. However, anecdotally there have been a number of near miss incidents. Further investigation could be carried out to determine if additional safety precautions could be carried out particularly as traffic volumes through these crossings are likely to increase over the coming years.	**Future population growth** – the township population is expected to increase significantly out to 2031. With the additional residential development in the Living zones, is the potential to create walking and cycling connections. **Truck stops –** With the substantial volume of heavy vehicles passing through the town, investigation could be carried out into the viability of providing truck stops in the town along SH73. **Business zone –** Future growth in the business zone could occur to the east of the town and enable business activity to be consolidated in this area and allow shared benefits between businesses.

Area / Township	Strengths	Issues	Opportunities
Kirwee	**Access to SH 73** – The township has direct access to SH73 providing a good links through to Christchurch particularly for commuters, Old West Coast also provides a link to Christchurch. **Public Transport Service** – The existing Darfield commuter bus service also serves the Kirwee township providing a link for workers into Christchurch. **School Lane –** The school is located on School Lane which is a narrow, no-exit street with low traffic volumes.	**Future development of living zone land south of Hoskyns Road** – If access to future residential development is gained from School Lane then this may exacerbate parking demand around the school and may also increase traffic volumes on School Lane, this would require mitigation. **SH73 and Railway** – Any further development south of SH73 and the railway would be discouraged as this creates a barrier to movement between the south of the township and the main township centre.	**Existing footpath connections** – Future development could easily connect into the existing footpaths on Courtney Road and Hoskyns Road providing good connections for pedestrians.
Hororata	**Pedestrian links** - There is good provision for pedestrians in the township with most roads having a footpath on at least one side.	No existing transport related issues identified.	Current transport provisions in the township are considered adequate for the level of demand in the township.
Coalgate	**Cycleway –** The Coalgate to Glentunnel cycleway will be built in 2015/16 this will encourage walking and cycling between the two townships, particularly for school children attending Glentunnel primary school.	**SH 77**- SH used by forestry and diary heavy vehicles.	Current transport provisions in the township are considered adequate for the level of demand in the township.
Glentunnel	**Cycleway –** The Coalgate to Glentunnel cycleway will be built in 2015/16 which will encourage walking and cycling between the two townships, particularly for school children attending Glentunnel primary school.	**School parking** – concerns have been raised by the community regarding the current parking arrangement in front of the school given this is located on a SH. However, visibility is good at this location and the 40km/hr speed limit is in force when children are present.	Current transport provisions in the township are considered adequate for the level of demand in the township.
Whitecliffs	**Low traffic volumes** – Whitecliffs Road has low traffic volumes with approximately 300 veh/day.	**Forestry** – Increased forestry logging in the area in the future may increase the volume of heavy vehicles and subsequent damage to the road pavement.	Current transport provisions in the township are considered adequate for the level of demand in the township. It is noted that use of Riversleigh Road for forestry avoids travelling through the township.
Arthurs Pass	**Access to SH73** – Arthur's Pass lies directly on the main strategic route between the west and east coast. **SH73 realignment –** There were previously safety issues with the layout and alignment of	No existing transport related issues identified.	Current transport provisions in the township are considered adequate for the level of demand in the township.

Area / Township	Strengths	Issues	Opportunities
	SH73 in the vicinity of Arthurs Pass. The current Mingha Buff to Rough Creek realignment works being carried out by the NZ Transport Agency will improve safety for all road users.		
Lake Coleridge	**Low traffic volumes** – Coleridge Road has low traffic volumes being in the region of 300 veh/day.	**Snow** – Snow has been identified as a potential issue as this may result in isolated areas such as Lake Coleridge being cut off from the rest of the network.	Current transport provisions in the township are considered adequate for the level of demand in the township.
Springfield	**Links to SH73 –** Springfield is located directly on SH73 which provides a strategic link between the east and west coast. **Parking –** The recently upgraded parking facilities outside the hall and public toilets provide longer spaces to accommodate trucks and towing vehicles.	No existing transport related issues identified.	Current transport provisions in the township are considered adequate for the level of demand in the township.
Waddington	**Links to SH73 –** Waddington is located directly on SH73 which provides a strategic link between the east and west coast. Old West Coast Road intersects with SH73 at Waddington and provides an alternative route to Christchurch. Access to the Waimakariri Gorge bridge on SH72 is via Waddington.	No existing transport related issues identified.	Current transport provisions in the township are considered adequate for the level of demand in the township.
Sheffield	**Links to SH73 –** Sheffield is located directly on SH73 which provides a strategic link between the east and west coast.	**Development of Living 1 zone** – If residential development occurs in the Living zone 1A land yet to be developed, the access arrangements to this site should not compromise the operation or efficiency of the state highway through the township.	**Future development** - Minor upgrades or improvements may be needed on the local roads and/or intersections with the SH73 if the Living zone 1A land is developed with residential activity.
Castle Hill	**Links to SH73 –** Castle Hill is located directly on SH73 which provides a strategic link between the east and west coast.	**Land uses either side of the SH** – There may be potential cross traffic issues, including pedestrians, with the development of a holiday park and golf course to the east of the State Highway.	Current transport provisions in the township are considered adequate for the level of demand in the township.

Area / Township	Strengths	Issues	Opportunities
Ellesmere Ward			
Leeston	**Heavy vehicle by-pass** – The existing heavy vehicle by-pass reduces the volume of heavy vehicles through the centre of the township. **Leeston to Doyleston Cycleway** – This cycleway is to be constructed in 2016/2017 and will improve links for pedestrian and cyclists between the two townships. **Community led shuttle service** – This service allows people an option to travel to Christchurch.	**Parking -** Provision of parking facilities for any additional business development in the township centre is limited due to the historical nature of development whereby most shops are built right up to the road boundary. However, there appears to be sufficient on-street capacity for the existing activity on-street and on adjoining residential streets. **Public Transport** – Currently no service to Christchurch.	**Pedestrian link -** A new easement will be created adjacent to the hospital which could be formalised to provide a pedestrian link from the growing residential area around Manse Road through to the township centre. **Public Transport** – Opportunity to access the possible future Park and Ride facility in Lincoln. Red Bus are currently determining the level of demand for a potential Leeston to Christchurch service.
Dunsandel	**Desirable for commuters** – With the impending construction of Christchurch Southern Motorway (Stage 2), Dunsandel is likely to become a more desirable place to live with reduced commute times for people into the central city.	**Development south of SH1** - Future development south of the State Highway is likely to put additional pressure on the Browns Road / State Highway 1 intersection. **Pedestrian / cyclist connections** – There are limited pedestrian or cyclist connections across the state highway **Railway crossing –** Anecdotally there have been a number of near miss incidents at the railway crossing on Browns Road although the crash records do not indicate specific safety issues. Increased traffic volumes could exacerbate safety issues at the crossing.	**Community Centre Footpath** – A new footpath is to be constructed as part of the new Dunsandel Community Centre Development which would create a complete pedestrian link from south of the township to the businesses on the northern side of State Highway 1. **Public Transport** – Opportunity to access the possible future Park and Ride facility in Rolleston.
Doyleston	**Leeston to Doyleston Cycleway** – This cycleway to be constructed in 2016/2017 will improve the link between Leeston and Doyleston for pedestrians and cyclists.	No current or future issues have been identified.	**Public Transport –** As the adjoining Leeston township grows and demand for a commuter public transport service increase, Doyleston could also be served by the commuter service.
Southbridge	**Low traffic volumes** – High Street has low traffic volumes being in the region of 1,300 veh/day which creates a pleasant pedestrian environment. Traffic volumes are generally low in the township.	No existing transport related issues identified.	Current transport provisions in the township are considered adequate for the level of demand in the township.
Rakaia Huts	**Low volume roads** – Traffic volumes are low through the township.	**One access in / out** – The township can only be accessed via one route, Pacific Drive. This leaves the township vulnerable to being cut off if there is an incident blocking this route.	Current transport provisions in the township are considered adequate for the level of demand in the township.

Area / Township	Strengths	Issues	Opportunities
	Access to boat ramp – Good access is provided for not only the township but the wider community to recreational activities at the boat ramp.		
Taumutu	**Access –** Current arrangements appropriate for existing population.	**Future Access** - The existing narrow sealed and unsealed roads in this area may not be able to provide a satisfactory level of service for any additional residential development in this location. The area is also situated in an isolated part of Ellesmere and may be vulnerable to being cut off from the rest of the network in the event of natural disasters.	Given the potential scale of development in Taumutu there may be potential for some localised improvements / upgrades on the road network such as seal widening and sealing sections of unsealed road in the area to provide for the future level of demand in the area. It would also be desirable for there to be more than one main access route into and out of the development area. This should be easily achievable as there are at least two existing roads providing access to the area. To ensure development occurs in an integrated manner, it could be useful to explore the option of an Outline Development Plan for any future development in this location.

ConnectBetter

Contents

1. Introduction

Abley Transportation Consultants were commissioned by Selwyn District Council (Council) to prepare a Transport Assessment of the Malvern and Ellesmere Wards which will be used to inform the development of the Area Plans for both of these Wards. The Malvern and Ellesmere Wards account for two out of the four Wards in the Selwyn District. Council has prepared and adopted Selwyn 2031 District Development Strategy (Selwyn 2031) which is a strategic document that includes an overarching strategic framework for achieving sustainable growth across the District out to 2031.

While the eastern parts of the District are already subject to a growth strategy, one of the actions from Selwyn 2031 is the preparation of Area Plans for the Malvern and Ellesmere Wards of the District to guide the sustainable management of the townships for the next 15 years. The Area Plans will identify appropriate zones where shops, businesses and local facilities could be located in the future which will in turn help to manage the growth needs for the settlements (referred to as townships throughout this report). The overall vision of Selwyn 2031 is;

"To grow and consolidate Selwyn District as one of the most liveable, attractive and prosperous places in New Zealand for residents, businesses and visitors."

With consideration of this vision, a review has been carried out of the existing Council plans and strategies (as listed in Section 6 - References) as they relate to the transport network within the Malvern and Ellesmere Wards and in particular the transportation networks within the townships. The key documents reviewed were:

- Selwyn 2031 District Development Strategy
- Walking and Cycling Strategy 2009
- Transport Activity Management Plan 2015
- Long Term Plan 2015/2025
- Annual Plan 2014/15
- Selwyn Road Safety Strategy 2014
- District Plan and relevant Plan Changes

The review seeks to identify existing or future potential network issues, future opportunities and constraints for each area. When assessing the townships in both Wards, specific consideration has been given to the following:

- The effectiveness of the transport network in allowing people to reach places of education, business/shopping, employment and recreation;
- The appropriateness of business developments along key transport corridors;
- The segregation of developments over strategic corridors (e.g. developing on both sides of a state highway);
- The provision of suitable cycling and walking ways and the location of public transport infrastructure (e.g. areas where population is most concentrated); and
- Car parking requirements.

The overall findings will assist in identifying the form and function of land uses and the supporting infrastructure that will be needed as the areas grow. It will also help to develop an integrated vision of how the townships within the Malvern and Ellesmere Wards could look and function in the future, while supporting Selwyn 2031's vision.

2. Impact of Future Demand

The Selwyn District is a fast growing district due to its proximity to Christchurch city which enables people to gain employment within a comfortable commuting distance of Christchurch, or to gain employment within the district and at the same time enjoy the lifestyle the district provides. The Selwyn District has become New Zealand's fastest growing district with an increase in population of 4.5% from July 2012 to June 2013 to 44,595 people.

The future population projections indicate that this growth is set to continue with an increase of almost 30,000 people bringing the District's population to over 74,000 by 2031. While much of this growth will be concentrated in the Selwyn Central and Springs Wards, the Malvern and Ellesmere Wards are also anticipating growth and increased demands on the transport network.

Along with population growth the amount of vehicle kilometres travelled (VKT)[1] between 2001 and 2013 has increased by 80%. VKT growth is occurring faster than population growth - 5% per year (8 million VKT). These trends will result in the need to develop new assets, as well as affecting the timing of renewals and the level of on-going maintenance and operating costs.

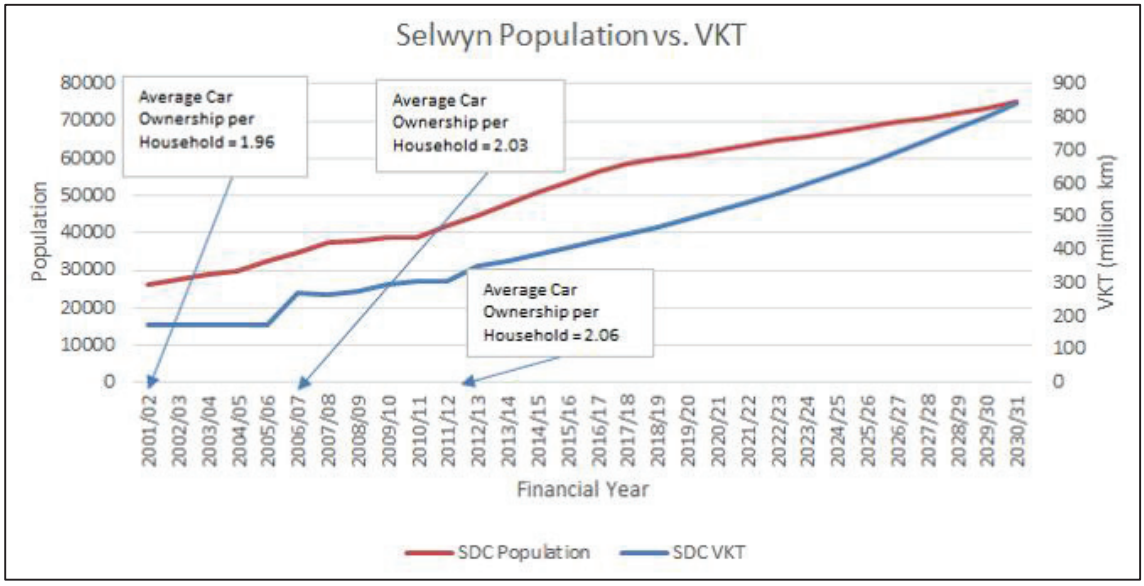


Figure 2.1 *Vehicle kilometres travelled and population growth (AMP Part 2, Fig 7.8)*

2.1 Network Capacity

Currently, the roads and intersections in the Malvern and Ellesmere Wards are generally well below their ultimate capacities particularly in the more rural areas of the Wards and are unlikely to reach or exceed those capacities by 2031. A typical two lane road on the network can be expected to carry up to 4,800 vehicles/day while still maintaining a satisfactory level of service. However, there are some points on the network, particularly where there is a state highway traversing a township, which may experience pressure in meeting demand and sustaining acceptable levels of service due to growth in and around those areas or on key local, arterial or main routes. This is discussed in further detail in the relevant township sections.

[1] VKT is the distance travelled on our roads - it is a good proxy for the pressure road transport puts on the environment. This measure is widely used internationally and domestically to assess the magnitude of the pressure and how it is changing over time (Ministry for the Environment)

2.2 Road Hierarchy

The Selwyn District roading network has two hierarchies that classify roads within the network. These are the hierarchy outlined in the District Plan and the One Network Road Classification (ONRC).

The District Plan hierarchy helps to manage the effects of land use on roads and of roads on land use, under the Resource Management Act 1991. An example is the stipulation of access controls to adjoining land, based on road hierarchy, to protect the long term efficiency and safety of important streets, roads and transport routes. It also aids the Council in managing its network, and in particular in establishing relevant standards, monitoring activities and in setting priorities. An important change made in 2010 (Plan Change 12) to the classification system was the replacement of the category of 'Strategic' roads with 'State Highway' as this is a more accurate description of those roads and routes that are the responsibility of the NZ Transport Agency. All other 'local' roads are the responsibility of Council.

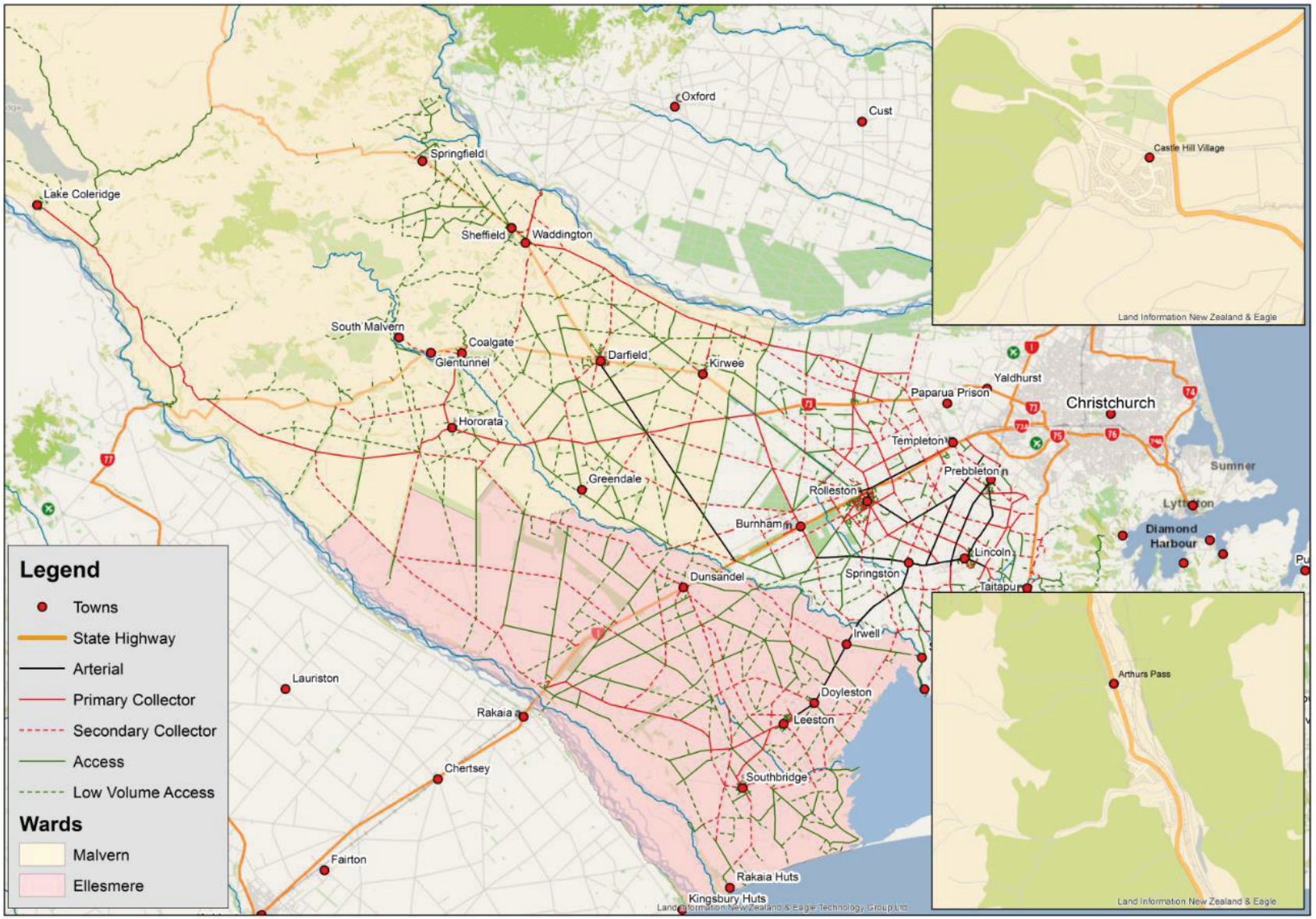
The One Network Road Classification (ONRC) involves categorising roads based on the functions they perform as part of an integrated national network. The classification aims to help local government and the Transport Agency to plan, invest in, maintain and operate the road network in a more strategic, consistent and affordable way throughout the country. The NZ Transport Agency requires ONRC to be fully embedded into all Council roading, planning and operational delivery procedures by 2018 this includes the Activity Management Plan (AMP), Regional Land Transport Plan (RLTP) and National Land Transport Programme (NLTP).

Customer levels of service are assigned to each of the classifications to reflect the experience a road user should have, over time, on a particular category of road. In many cases this will be the same as the experience currently offered on these roads. However, in some cases there may be a gap between what is experienced and what should be experienced or is 'fit for purpose' (either more or less). When working out the customer levels of service associated with each category of road, a range of variables need to be considered including road function, traffic movement, the expectations of users, user mode share, safety and speed needs as well as funding opportunities available for investment in the network.

Selwyn District Council have classified their roading network in line with the ONRC as shown in **Figure 2.2** and this has been confirmed by the Transport Agency. The three highest classifications relevant to the Selwyn network are described below, all other roads are local and access roads.

- **Arterial:** These roads make a significant contribution to social and economic wellbeing, link regionally significant places, industries, ports or airports and may be the only route available to some places within the region (i.e. they may perform a significant lifeline function). In urban areas they may have significant passenger transport movements and numbers of cyclists and pedestrians using the road.
- **Primary Collector**: These are locally important roads that provide a primary distributor/collector function, linking significant local economic areas or areas of population. They may be the only route available to some places within the region and in urban areas they may have moderate passenger transport movements and numbers of cyclists and pedestrians using the road.
- **Secondary Collector**: These are roads that provide a secondary distributor/collector function, linking local areas of population and economic sites and may be the only route available to some places within this local area.

Figure 2.2 Selwyn District Council ONRC Map

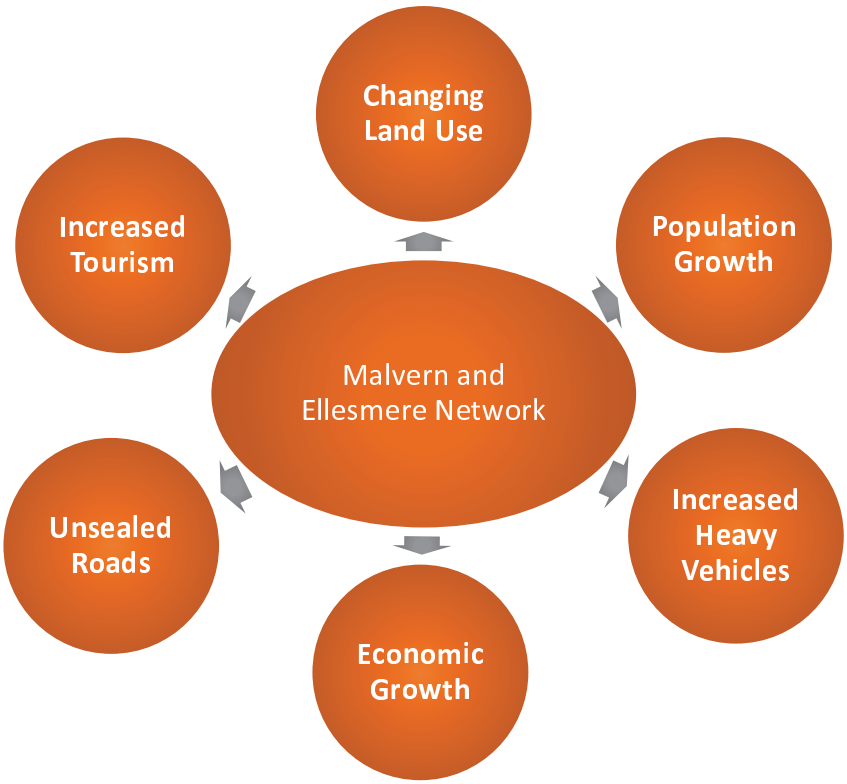


2.3 Key Factors Impacting the Transport Network

There are a number of factors which influence demand and issues which need to be considered in relation to the transport network. In addition to the increasing growth in population in the Malvern and Ellesmere Wards and the subsequent demand that places on the transport network, there are additional demands being placed on the transport network from other activities and external forces

The key challenges affecting the overall roading network in both the Malvern and Ellesmere Wards are summarised below in **Figure 2.3** and discussed further in the following sections. It is acknowledged that there are other issues that relate to the ward areas given their predominately rural nature but these are managed sufficiently. For example, stock droving which is permitted on some of the District roads but is subject to the Selwyn District Council Stock Droving Bylaw 2008.

Figure 2.3 Key factors impacting the Transport Network



The key document that references these issues, provides context, and offers ways to manage the issues is the **Transport Activity Management Plan** (Transport AMP). The purpose of a Transport AMP is to outline and to summarise in one place, Councils' strategic and management long term approach for the provision, administration and maintenance of the Council provided transport network.

Council's Land Transport Activity Goals, set out in the Transport AMP, are *"To maintain, operate and if necessary, improve the road network and other transport activities to achieve a range of facilities that provide for the safe and efficient movement of people and goods to a standard that is both acceptable and sustainable*". Council's aims are;

- Short term: To look after what we have and better understand emerging issues
- Medium term: Implement what is needed with increased confidence
- Long term: A resilient transport network that supports the district's development.

Population Growth

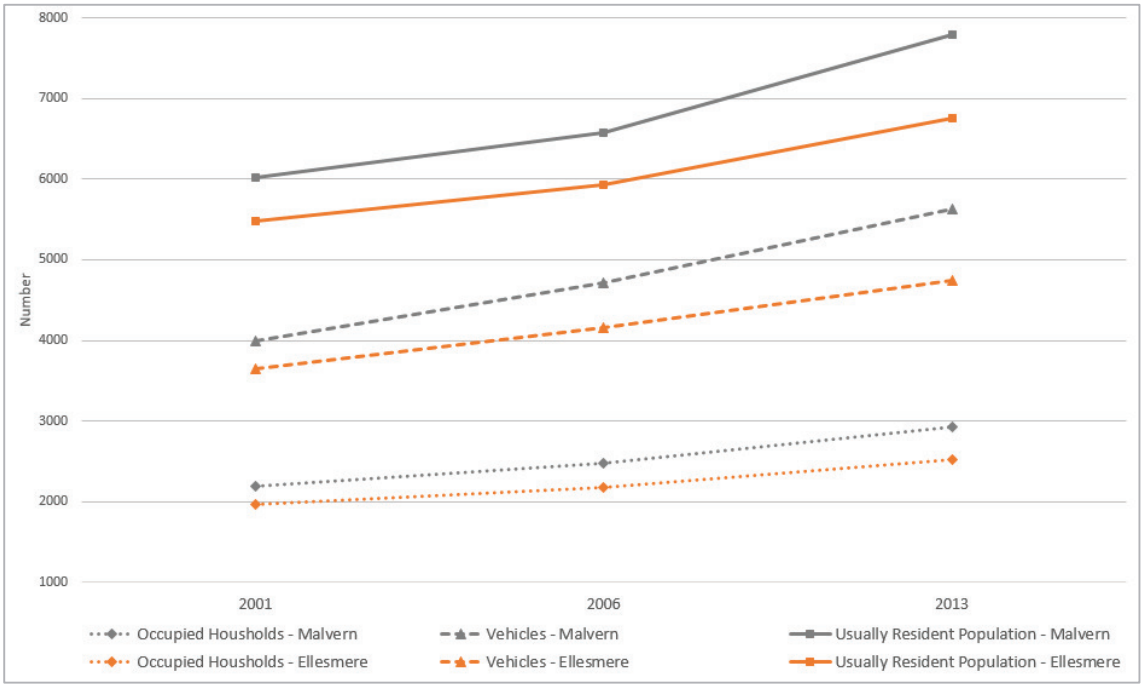
As the population grows so generally does the volume of motor vehicles using the roading network. In Malvern and Ellesmere, 27% and 24% respectively of households have access to three or more motor vehicles, compared with 16% of all households in New Zealand. Selwyn District Council have estimated the District population for 2014/15 and out to 2030/31 and this is shown along with the estimated populations for the townships in the Malvern and Ellesmere Wards in **Table 2.1**.

Table 2.1 *Estimated Resident Population to 2031*

	Estimated Resident Population[2]	
Location	**2014 / 15**	**2030 / 31**
Malvern Ward Townships	6,419	8,456
Ellesmere Ward Townships	3,975	5,465
Total District	51,047	74,366

Figure 2.4 shows the growth in population, occupied dwellings and motor vehicles between 2001 and 2013 (using Census data). The impact of the 2010 and 2011 Christchurch earthquakes has resulted in steeper growth rate between the 2006 Census and 2013 Census than previous five year periods. The red zoning of land (land that cannot be rebuilt on) in Christchurch meant that many people needed to find other housing options, available land in the Selwyn and Waimakariri Districts resulted in the shift of many households to these neighbouring districts.

Figure 2.4 *Growth population, occupied dwellings and motor vehicles 2001-2013*



There is a clear strategic direction set out in the District Development Strategy for future urban growth in the district to be consolidated in and around existing townships, rather than creating new or isolated townships. The Selwyn District already has 21 townships, the majority of which are not large enough to

[2] Selwyn District Council Transportation Activity Management Plan 2015; Population Forecasts (Note: Figures not available for Arthurs Pass, Castle Hill, Lake Coleridge or Rakaia Huts)

supply employment for residents and many do not have sufficient population to sustain basic business services and community facilities.

There are also a number of isolated pockets of rural-residential development (identified as Existing Development Areas in the District Plan) and clusters of small titles throughout the rural area which are a result of historical zoning. Council does not wish to see this dispersed township pattern being duplicated or expanded in the future. Rather, it is envisaged that all new urban development (including rural-residential) will occur in or adjacent to existing townships. A consolidated growth pattern will promote the efficient and effective provision of both service and social infrastructure and maintain an urban/rural contrast to protect the interests of both urban and rural communities.

Consideration also needs to be given to energy efficiency and the consumption of fossil fuels, particularly where there is already a dispersed settlement pattern established. Access to public transport, or conversely, a greater ability to live, work and play within the same township (which reduces travel demand), will be enhanced through the consolidation of existing townships and the provision of internal cycle and walking linkages[3].

Heavy Vehicle Traffic

Freight volumes in the Selwyn District are forecast to double over the next 30 years. One of the factors influencing this growth are the increased productivity that will result from the Central Plains Water Scheme in the Malvern Ward. More heavy vehicles will be using the roading network, including milk tankers, trucks transporting materials for subdivision construction and vehicles accessing new business areas. The key activities that generate heavy vehicle traffic within the district are the Fonterra plant near Darfield, the Synlait plant near Dunsandel, the Westland Milk plant, the Rolleston Industrial Zone and the inland ports in Rolleston.

This increase in heavy vehicle traffic will put significant pressure on the roading network resulting in a need for substantial investment over the next decade to upgrade the network in eastern parts of the district. This is in addition to the routine maintenance work needed to prevent roads from deteriorating through wear and tear caused by increasing traffic, including heavy vehicles. In response to this issue, Council is planning to increase expenditure on road maintenance and renewals[4].

Selected routes in the Selwyn District are designated as High-Productivity Motor Vehicle (HPMV) routes. An HPMV is a class of heavy vehicle that is allowed to exceed standard length and mass limits. These vehicles require permits, which may specify restrictions to the mass of the load that may be carried and/or routes on which the vehicle may operate.

There are three types of HPMV:

- overlength but not higher mass
- higher mass but not overlength, and
- both overlength and higher mass.

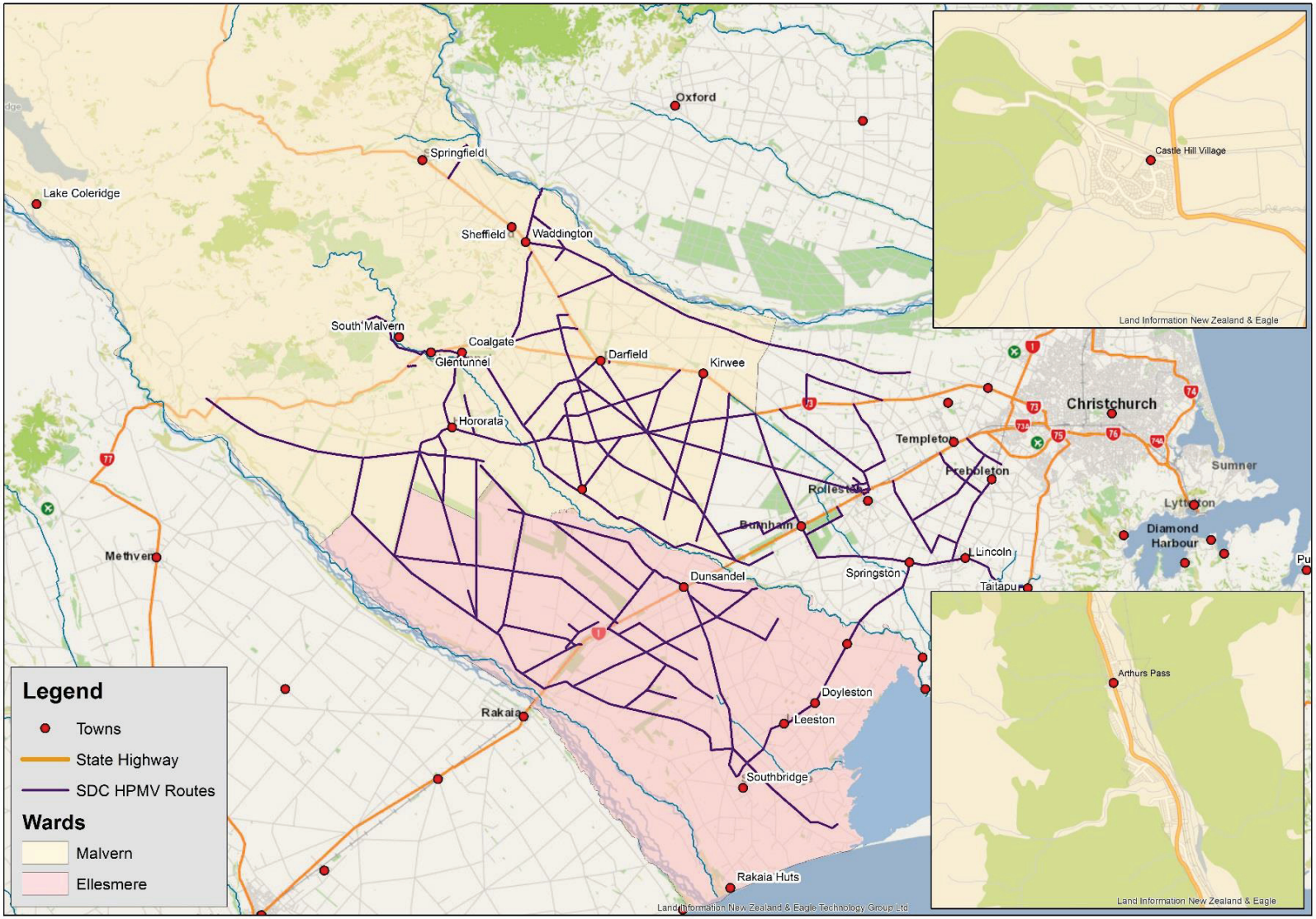
The rationale behind the development of the class of HPMVs is to increase the amount of freight that may be safely carried on New Zealand roads while at the same time reducing as far as possible the number of vehicles used to carry that freight[5]. The designated HPMV routes in the Selwyn district are shown in **Figure 2.5**, also note that State Highway 1 is a HPMV route. Where the HPMV routes terminate in rural areas appear largely to be near large farms or other agricultural activity.

The forestry industry in the District also impacts on the transportation network with the heavy vehicles associated with forest harvesting damaging pavements that were not designed for such use. These

[3] Selwyn District Council (2014) Selwyn 2031: District Development Strategy; Background Information; Chapter 6 Infrastructural Factors
[4] Selwyn District Council (2015) Towards '25; Long Term Plan 2015 -2025; Consultation Document
[5] New Zealand Transport Agency (2015) Draft HPMV Manual; http://www.nzta.govt.nz/vehicle/your/hpmv/draft-manual.html

demands on road pavements can be high but are usually for a short duration corresponding to forestry logging practices. Forestry traffic growth is especially an issue in the foothills areas of the District, such as Whitecliffs and Malvern Hills, and will require monitoring of heavy vehicles, such as logging trucks, travelling on District roads and of the effects of this travel on the network.

Figure 2.5 Selwyn District HPMV Routes



Unsealed Roads

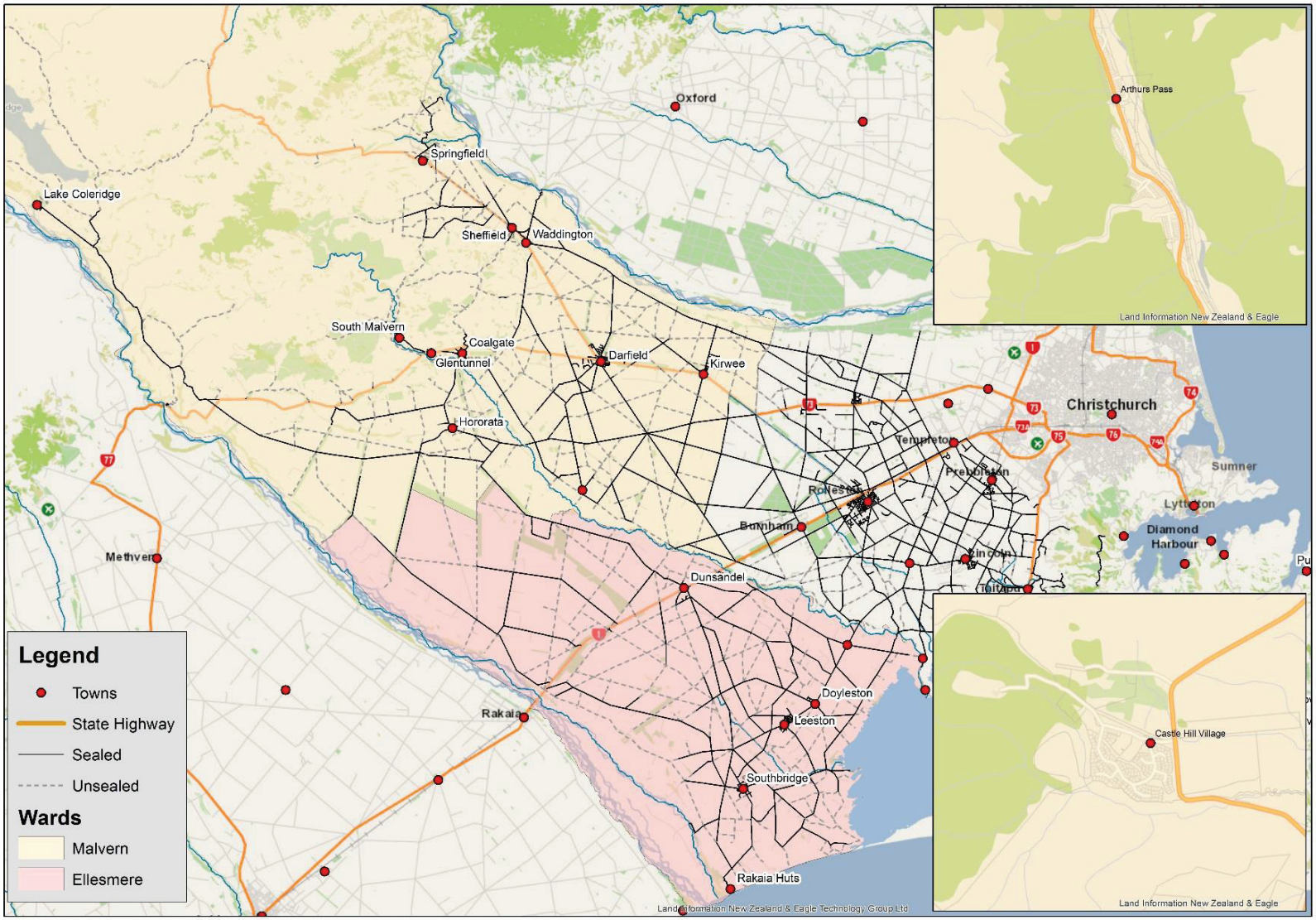
Selwyn Districts' road network covers over 24,400km including 1,410km of sealed roads, 1,030km of unsealed roads, 140 bridges and 200 kilometres of footpaths[3] and 950km of unformed paper roads. The location of the sealed and unsealed roads in the district are shown in **Figure 2.6**. Councils current approach to unsealed roads is that these will still be maintained, although there will be less allocation of resources to this part of the network which experiences low traffic volumes. Instead more of an emphasis is being placed on addressing the mounting issues and costs on highly trafficked arterial and freight routes. This will be further reinforced through the One Network Road Classification[6].

The changes occurring to land use in the Selwyn District, including activities such as horticulture and conversions to dairy farms, will result in a change in transport demand and may lead to pressure to reduce dust levels by sealing unsealed roads particularly on the Canterbury Plains.

The Selwyn Road Safety Strategy recognises many of the low volume unsealed rural roads originated as simple tracks across the Plains and while these have been significantly improved over time, they now have to cater for fast and/or heavy vehicles well beyond what they were originally intended for. Consequently, they are at risk of introducing safety risks, for example where large vehicles on narrow rural roads[7]. Comparing the HPMV routes as shown in **Figure 2.5** with the unsealed routes in **Figure 2.6** indicate that a significant portion of the HPMV routes are located on unsealed roads as these are the only way to access some of the farms within the district.

[6] Selwyn District Council (2015) Transportation Activity Management Plan 2015 - 2025
[7] Selwyn District Council (2014) Selwyn Road Safety Strategy to 2020

Figure 2.6 Sealed and Unsealed Roads



Economic Growth

The Selwyn District has experienced the strongest economic growth of all Districts in New Zealand for the past two years. Rural communities in Selwyn have also experienced growth and further economic growth is expected to be associated with the development of the Central Plains Water scheme, which will irrigate a large part of the Malvern plains area. Providing an effective and accessible transport system is essential to supporting this growing economic activity in the District. The main economic drivers in the Malvern and Ellesmere Wards are discussed below along with their implications on the transport network.

Central Plains Water Limited Scheme

The Central Plains Water Limited (CPWL) scheme involves an extensive programme of work to improve irrigation of 60,000 hectares of farmland in the Canterbury Plains. The scheme will be carried out in three stages with the first stage scheduled for completion in September 2015 and stages two and three anticipated to be completed by 2016 and 2018 respectively.

The scheme involves the construction of three public road bridges and numerous other road crossings, this will impact the transport network in terms of the physical works required. The CPWL scheme is forecast to increase regional agricultural output and will have an impact on the transportation network as a result of the additional 1,130 jobs created by the scheme. Some of these jobs will be created directly from the expansion in farm outputs and other jobs indirectly from processing, transport and related off-farm activity[8].

Synlait

The Synlait factory is located outside Dunsandel and has been in operation since 2008, employing over 250 people. The factory processes more than 550 million litres of milk a year and almost all of the factory suppliers are located within an 80km radius of Synlait. The Dunsandel factory exports milk powder products and the factory's inwards and outwards goods are transported by road. The close proximity of the factory to State Highway 1 limits the effects of outwards goods on the District's roading network, but inwards goods (raw milk from farms) are expected to have a noticeable effect on some routes. Synlait continue to 'sign up' suppliers and expansion of the factory continues.

Fonterra

The Fonterra plant is situated of State Highway 73, just west of Darfield and has been in operation since 2010. The transportation impacts of the plant are mainly on the State Highway network but there are also impacts on the HPMV routes in the district with an Average Daily Traffic (ADT) in the region of 550 tankers with approximately 85% of these trips travelling through the Darfield township. The volume of heavy vehicles through the Darfield township has been raised as an issue by the community there. A new rail link that connects Fonterra's Darfield's distribution centre to the rail line through to Lyttleton Ports of Christchurch has been established, this will reduce the number of trucks on the roading network.

Rolleston Industrial Zone and Inland Ports in Rolleston

The Rolleston Industrial Zone (RIZ) (eventually covering 180 hectares) and two Inland Ports are located in Rolleston. Although outside of both the Malvern and Ellesmere Wards the park and inland ports will be destinations for goods from within the wards. Westland Milk Products for example have a plant at RIZ so will be accessed from the Malvern and Ellesmere wards. It is understood that concern has been raised regarding access to these destinations from Ellesmere when the Southern Motorway is completed.

[8] Canterbury Plains Water Limited (2015) http://www.cpwl.co.nz/

Changing Land Use

The rural sector of the district is continuing to change with increasing numbers of dairy farms. This increases the number of heavy vehicles using the roads, particularly milk tankers but also other service and delivery vehicles and as shown in **Figure 2.5**, many of the roads servicing these areas are unsealed. This changing land use is having an impact on pavement maintenance demands due to increased loading and insufficient width.

Council are already addressing these issues on parts of the network through seal widening programmes. Increasing seal width also improves safety by providing sufficient road space for heavy vehicles to pass in opposing directions. Tankers and other heavy vehicles also create problems on unsealed roads, requiring increased maintenance and grading and generating more dust than most other vehicles.

Tourism

Tourism plays a major role in the Selwyn District and tourist numbers have continued to grow both nationally and within the Canterbury region and this is set to continue over the coming years. The main impacts of tourism in the Malvern and Ellesmere wards tend to be on the inter-district routes, particularly those used as alternatives to the State Highway network. On major tourist routes traffic volumes are expected to increase with projected traffic volumes varying from 4% to 8% or more per annum[6].

Route 72 (The Inland Scenic Route) provides an inter-district connection for tourism and recreational facilities between Selwyn and the adjoining Ashburton and Waimakariri Districts and further afield to the Mackenzie Basin, Mt Cook, Hanmer Springs and Kaikoura. Rather than using State Highway 1, Route 72 can be a more attractive and sometimes more direct route for tourists

Arthur's Pass, Rakaia, Castle Hill, Lake Coleridge, Darfield and Springfield are popular destinations for holidaymakers particularly during the summer and winter seasons given their proximity to the Cragieburn Basin, Arthur's Pass National Park, Lake Coleridge and the Rakaia Basin, and Mt Hutt. It is understood that the Lyndon Road / Coleridge Road / Zig Zag Road is often used a 'short cut' between SH77 (Rakaia/Lake Coleridge) and SH73 (Porters Pass) however these are not all- weather roads and therefore could be used inappropriately. Zig Zag Road is used by trucks but also tourists to circumvent using SH77 to Windwhistle, however this is an unsealed and steep road (closer to the Gorge). In the past the local community have asked that the road be sealed however this would be costly and may encourage further use of a road with poor horizontal and vertical alignments.

Arthurs Pass, Darfield and Springfield are also important for servicing long-distance traffic and providing tourist facilities on the main tourist routes.

The capacity of the roading network will not be adversely affected by the increase in tourism, however it may increase the desire by tourists for the sealing of unsealed roads[6], improvement in some way finding signage, information on tourism sites, a "no-surprises" driver environment and signs to remind drivers to stay on the right-hand side of the road.

There is also an increasing number of cycling tourists which can be in conflict with the increase in traffic and heavy vehicles on main routes and some narrower high speed rural roads. High speed traffic environments combined with insufficient sealed shoulder width creates an uncomfortable and potentially unsafe situation for these cyclists. There are also some constraints on the network such as narrow bridges, for example the Selwyn River Bridge on Leeston Road which is a main link to Leeston and has no walking or cycling facilities.

2.4 Inter-connections

The vehicle kilometres travelled has increased by 60% to just under 350 million trips over the last 10 years[7] and most trends tend to indicate that traffic growth will continue with expected future growth rates of 3% per annum for total traffic and 4-5% per annum for heavy vehicle traffic[6].

The increase in the volume of light vehicles can be attributed largely to the population growth. The number of people now commuting for work from Selwyn to work in Christchurch has increased significantly by 44% between 2006 and 2013[4]. The Census 2013 'Journey to Work' data was obtained for the area units within the Malvern and Ellesmere Wards. The area units are shown in **Figure 2.7** and the trips data is presented in **Table 2.2**. The trips undertaken on the day of the census and the proportion these make-up overall are shown in the table.

The populations are shown at each meshblock level in **Figure 2.7**. The Malvern area unit comprises the Malvern Ward excluding the Darfield and Kirwee area units which are shown separately. The Ellesmere area unit comprises the Ellesmere Ward excluding the Dunsandel, Leeston and Southbridge area units which are shown separately. The 'Journey to Work' data indicates that the greatest volume of trips in the Malvern and Ellesmere Wards are as follows;

- Trips from Kirwee to Waimakariri, Christchurch and the eastern parts of the Selwyn District (11.9%)
- Trips from Selwyn – Rakaia to Waimakariri, Christchurch and the eastern parts of the Selwyn District (9.1%)
- Trips within the Selwyn – Rakaia area (7.9%)
- Trips within the Malvern area (6.2%)
- Trips from Malvern to Waimakariri, Christchurch and the eastern parts of the Selwyn District (5.3%)
- Trips from Darfield to Waimakariri, Christchurch and the eastern parts of the Selwyn District (5.0%)
- Trips from Leeston to Waimakariri, Christchurch and the eastern parts of the Selwyn District (5.0%)

Figure 2.7 Malvern and Ellesmere Area Units

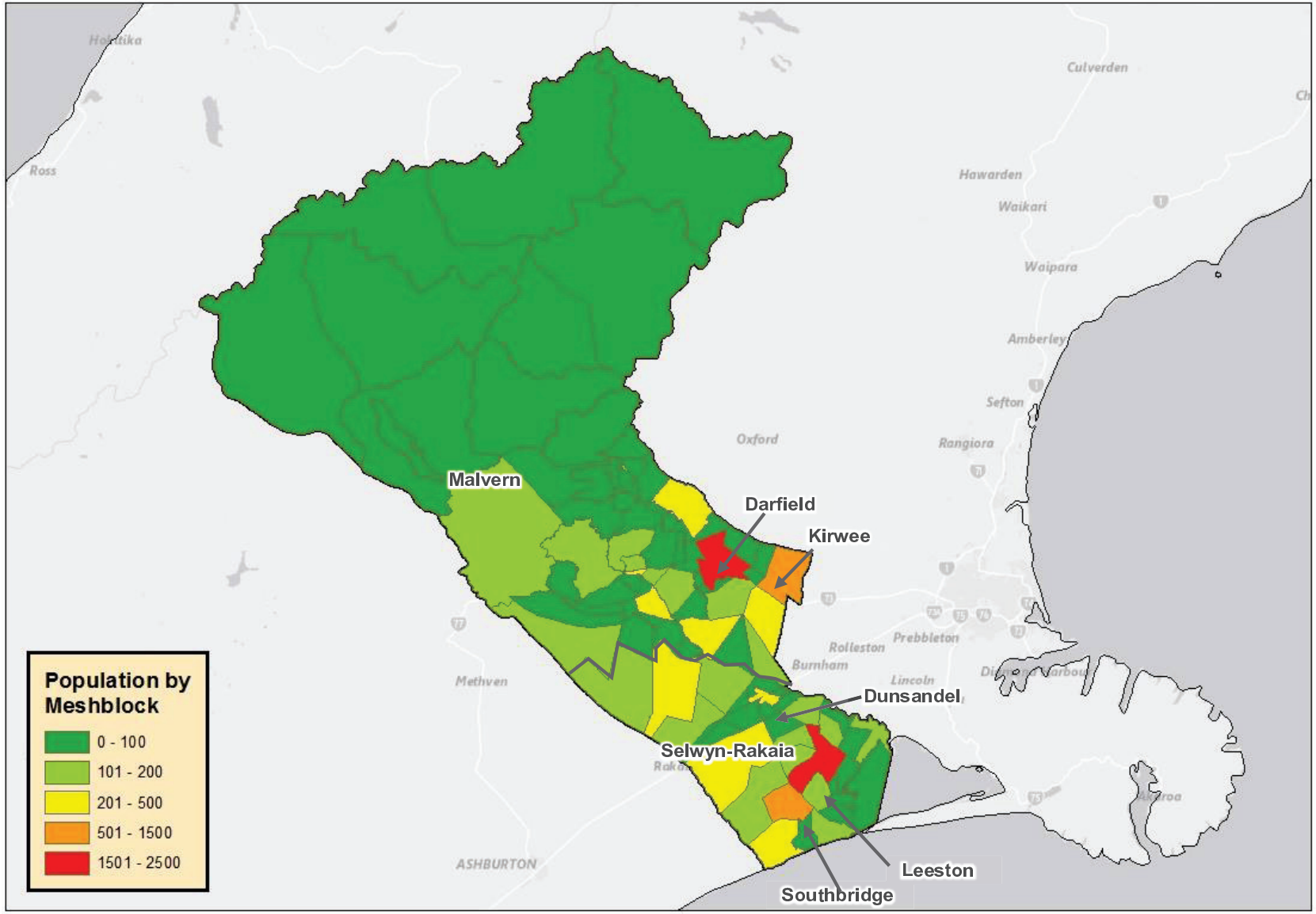


Table 2.2 Trips to Work by Area Unit (Source: Statistics New Zealand)

Area Unit	Waimakariri / Christchurch / Rest of Selwyn to	Leeston to	Southbridge to	Dunsandel to	Selwyn – Rakaia to	Darfield to	Kirwee to	Malvern to	Ashbuton / Timaru to
Waimakariri / Christchurch / Rest of Selwyn		312 (5.0%)	201 (3.2%)	96 (1.5%)	570 (9.1%)	312 (5.0%)	747 (11.9%)	333 (5.3%)	
Leeston	117 (1.9%)	144 (2.3%)	39 (0.6%)	3 (0.0%)	120 (1.9%)	0 (0.0%)	6 (0.1%)	3 (0.0%)	9 (0.1%)
Southbridge	39 (0.6%)	6 (0.1%)	51 (0.8%)	0 (0.0%)	18 (0.3%)	0 (0.0%)	3 (0.0%)	0 (0.0%)	3 (0.0%)
Dunsandel	27 (0.4%)	6 (0.1%)	3 (0.0%)	30 (0.5%)	12 (0.2%)	0 (0.0%)	6 (0.1%)	3 (0.0%)	12 (0.2%)
Selwyn – Rakaia	240 (3.8%)	48 (0.8%)	30 (0.5%)	12 (0.2%)	498 (7.9%)	6 (0.1%)	12 (0.2%)	15 (0.2%)	99 (1.6%)
Darfield	204 (3.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (0.0%)	231 (3.7%)	126 (2.0%)	111 (1.8%)	21 (0.3%)
Kirwee	258 (4.1%)	0 (0.0%)	3 (0.0%)	6 (0.1%)	9 (0.1%)	69 (1.1%)	273 (4.3%)	45 (0.7%)	21 (0.3%)
Malvern	72 (1.1%)	0 (0.0%)	0 (0.0%)	3 (0.0%)	12 (0.2%)	33 (0.5%)	39 (0.6%)	390 (6.2%)	42 (0.7%)
Ashburton / Timaru		21 (0.3%)	9 (0.1%)	6 (0.1%)	60 (1.0%)	12 (0.2%)	12 (0.2%)	9 (0.1%)	

A significant proportion of trips (1,392) from the Malvern Ward are to workplaces in Waimakariri District / Christchurch / eastern parts of the Selwyn District and it is assumed that the majority of these trips are likely to be undertaken via the state highway network.

Likewise for the Ellesmere Ward, the majority of trips (1,179) are to workplaces in the Waimakariri District / Christchurch / eastern parts of the Selwyn District. The Leeston and Southbridge townships are not located in close proximity to the state highway and therefore many of the trips originating from here are likely to be on the local road network particularly via Leeston Road which is an Arterial Road and capable of accommodating this volume of trips.

The Selwyn – Rakaia area has a very high number of associated trips from outside and within the area. While there appears to be more dispersed lifestyle blocks in the Selwyn - Rakaia area compared with the other area units, this area also contains the Synlait factory which as stated previously employs 250 people so this may account for a large proportion of trips attracted to this area. The Synlait factory is located off State Highway 1, so it is assumed that the majority of the trips to / from the site from outside of the Selwyn - Rakaia area will be via the State Highway network. Whereas the trips within the Selwyn - Rakaia area are more likely to be via the local road network given the dispersed nature of residential development in the area.

Similarly there are a large number of trips from both outside and within the Darfield area. As stated previously the Fonterra plant is situated off SH73 just west of Darfield and this may account for many of these trips. However, the trip data reflects the fact that the agricultural sector in the Darfield area provides significant levels of employment.

2.5 Traffic distribution

While road network within the Malvern and Ellesmere Wards comprises predominantly of Low Volume Access, Access and Secondary Collector roads. Routes such as Old West Coast Road provide a vital support function to both the local road network and the state highway by offering an alternative route to SH73. This route offers a slightly more direct route between Christchurch and the West Coast, avoiding the townships. Old West Coast Road is classified as a Primary Collector under the ONRC and has an ADT in the region of 1,700 veh/day. By comparison, SH73 carries an ADT in the region of 5,000 veh/day (east of Darfield) and 3,700 veh/day (west of Darfield).

2.6 Walking and Cycling

Council have a Walking and Cycling Strategy (2009) and this is currently being updated. The Strategy provides an over-arching framework for walking and cycling in the Selwyn district. It also puts in place a considered long term outcome and direction for the development of walking and cycling, as means of transport, and supports the recreational opportunities they provide in the district. Broadly speaking it sets out the Selwyn District Council's intentions on walking and cycling.

The outcome sought from the strategy is that "A Selwyn where more people walk and cycle safely for transportation and enjoyment". A Walking and Cycling Action Plan has been developed as part of the strategy. It includes projects that give effect to the broader outcome established by the Strategy. The Plan is subject to the Council's planning and budgetary processes and cycles. Projects will be included in the Council's Transport Activity Management Plan and Long Term Council Community Plans (LTCCPs) and their associated Annual Plans.

Any projects identified within the Malvern and Ellesmere wards will be outlined in Sections 3 and 4 of this report.

2.7 Public Transport

Currently within the Selwyn District there are three public transport services provided as part the Metro bus system provided by Environment Canterbury and subsidised by NZ Transport Agency. These services are; the Yellow Line that travels from Rolleston through Templeton and the city on to New Brighton, the No. 80 Lincoln – Parklands that travels from Lincoln University and Township through Prebbleton and the city onto Parklands and the No.820 Burnham – Lincoln via Rolleston that connects Burnham, Rolleston, Springston and Lincoln together. None of these services travel within the Malvern or Ellesmere wards.

A Darfield service is provided by Red Bus, this is fully funded by passengers and not part of the Metro system. There are also community run shuttle services for Darfield and Leeston to Christchurch. These are outlined further in Sections 3 and 4 of this report. Red Bus have also recently indicated that they are considering the introduction of a user funded service between Leeston and Christchurch city bus exchange.

ECan currently supports Community Vehicle Trusts[9] in Malvern and Ellesmere which are based in Darfield and Leeston respectively. ECan does not currently have any plans or budget to introduce regular public bus services to Malvern or Ellesmere so it will be very difficult to offer modal choice to additional commuters who move to these areas. If community demand for public transport grows through this development, ECan would have to work with the relevant communities to determine whether they would be willing to support a new service through their rates as 25% of the cost of public transport services comes from local rates. Another 25% comes from central government (through NZTA) so Ecan would also need their approval to introduce a new service.

The NZ railway line runs parallel to SH73. The TranzAlpine passenger train service operates daily between Christchurch and Greymouth. There are no other passenger rail services to and from Christchurch. The community regularly question why services can't be provided to either support, or enable townships to grow further by having a connection to Christchurch using rail. It is understood that previous investigations have found these types of services are not economically justifiable.

2.8 Road safety

The Selwyn Road Safety Strategy to 2020 has an overall goal to "Progressively Reduce the Number and Severity of Road Crashes in the Selwyn District"[7]. It also recognises that as the townships grow and expand so does the need to update the speed limit bylaw to reflect in the new and amended speed limits on the new subdivision roads and also sections of existing roads that are transformed from 100km/h rural roads to urban roads with property access, footpaths etc.

The Strategy also recognises that "*in urban areas, speed management is critical for encouraging more of the community to walk and cycle, because it makes sharing the roads safer and less stressful. Slower urban areas also encourage better community cohesions. Council has introduced new types of residential road classifications and standards into its District Plan to enable designers to use street designs and treatments that encourage slower speeds that are more self-regulating*".

Urban KiwiRAP Risk Mapping carried out for Selwyn District, referred to as SafetyNet[10] in 2013 identified the highest risk intersections and corridors in the Selwyn District (including State Highways). The risk assessment processes utilise information about the physical and operating characteristics of intersections and corridors, as well as crash history. Out of the intersections and corridors in the District which meet the

[9] ECan provides annual funding grants to a number of community trusts so they can provide transport in areas that are not serviced with a public bus system.

[10] Abley Transportation Consultants (2014) Selwyn Urban KiwiRAP Risk Mapping.

High Risk Intersections Guide and High Risk Rural Roads Guide definitions of being high-risk, there were 3 in the Malvern Ward and 3 in Ellesmere Ward.

2.9 Network resilience

Overall, the network has good resilience in terms of how it can cope with incidents on the network. Generally, there are alternative routes motorists can use if incidents occur which block the network unexpectedly resulting in diversions onto other routes.

However, incidents which occur on the state highway network can result in diversions onto local roads which are not necessarily suitable for these volumes of traffic or axle loads. This could ultimately result in these sections of road deteriorating, if they are subjected to these additional volumes and loads on a regular basis. The 2015 Transportation Activity Management Plan states that these risks are managed through a State Highway Detour Policy, which is a combined project with NZ Transport Agency.

There are some isolated township areas which are vulnerable to the impact of natural hazards such as snow or earthquakes, for example Lake Coleridge and Rakaia Huts which are accessed primarily by one road which if this becomes blocked or damaged leaves residents with no alternative route. Another example are high country farms that rely on roading access that include bridges, natural hazards can impact on these structures.

Flooding is another natural hazard which has the potential to affect a number of the low lying township areas in both Wards. In the event of flooding, damage to the network could be widespread making local roads impassable and increasing reliance on the state highway network. Flooding is more prevalent in the Ellesmere Ward due to increased lake levels preventing land upstream from draining. Road side drains also fill up and flood across the road when they cannot drain. There are several fords that can close roads when river levels rise.

Council has produced the Utilities Lifeline Response Plan which is currently being updated. This plan sets out the procedures that are in place to manage assets, including roads and bridges, which are significant community lifelines in response to a disaster event. There are a number of townships in the Malvern and Ellesmere Wards which have State Highways and/or railways passing through them. These townships are potentially vulnerable to transportation disasters as these roads / railways often carry hazardous chemicals as well as passengers. The Utilities Lifeline Response Plan addresses these potential hazards in detail.

The Waimakariri Gorge Bridge is jointly owned by Selwyn District Council and Waimakariri District Council. The bridge carries a significant proportion of heavy vehicle traffic associated with the Fonterra plant in Darfield travelling north. Any incidents occurring on this bridge, which damage or obstruct the bridge, would make it impassable and result in lengthy detours for motorists. Selwyn District Council and Waimakariri District Council continue to work collaboratively in relation to the maintenance and management of the bridge. The Selwyn and Ashburton Districts are joined by bridges at SH77, at the Rakaia Gorge and SH1 at Rakaia. Both of these bridges are managed and operated by NZ Transport Agency. A similar situation exists here whereby if either of these bridges are damaged or obstructed then this will result in significant detours onto the local road network for motorists.

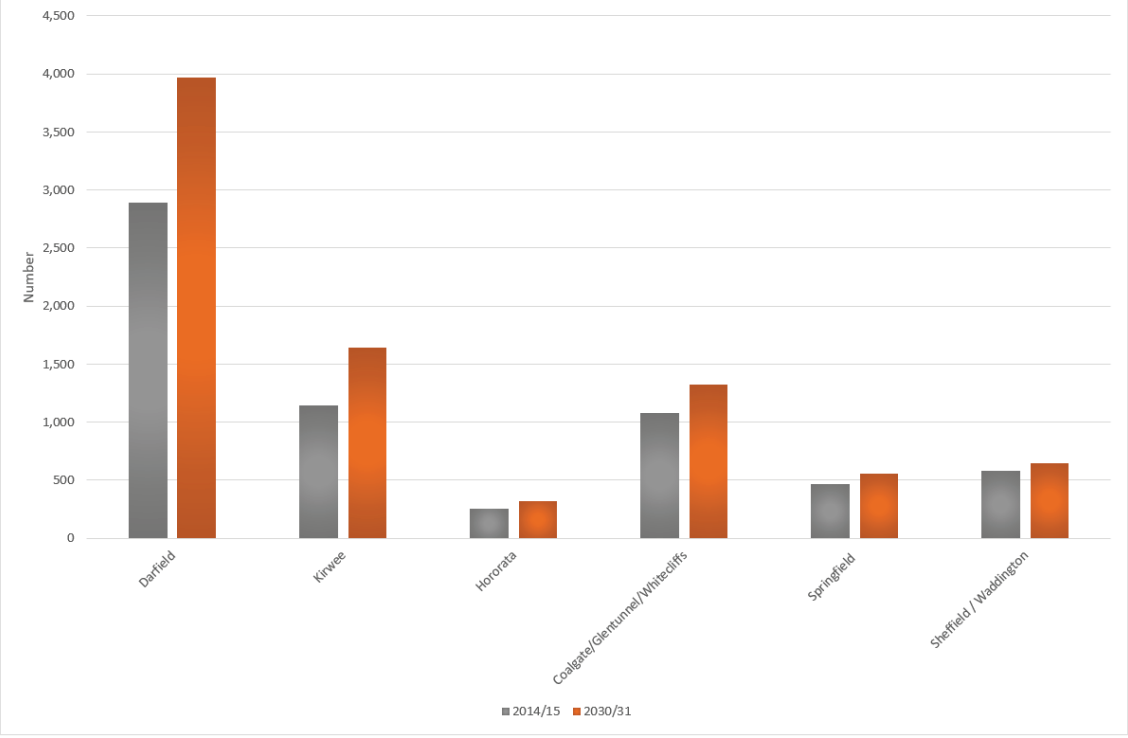
3. Malvern Ward

3.1 Area Overview

The Malvern Ward is the largest of the four Wards in the Selwyn District and comprises two very distinct regions, the plains and the high country. The plains region is an expanse of low-lying, flat and comparatively dry grassland. In the Selwyn District the vast majority of the population live on the plains. In contrast the high country, which lies to the west of the Malvern Ward, consists mainly of hill and mountain ranges as well as both the Craigieburn Forest Park and Arthur's Pass National Park and is a very sparsely populated area of the district. The area includes ski fields, high country farms and is often used for car rallies (Malvern Hills and Coleridge). The Mt Olympus ski area generates traffic and expectations about needing to maintain access into this area via Coleridge, Homestead and Harper Roads. There are gates that close Lyndon Rd to SH73 at Porters Pass in adverse weather (snow/frost heave etc), these are located just beyond the turn off to Harper Rd.

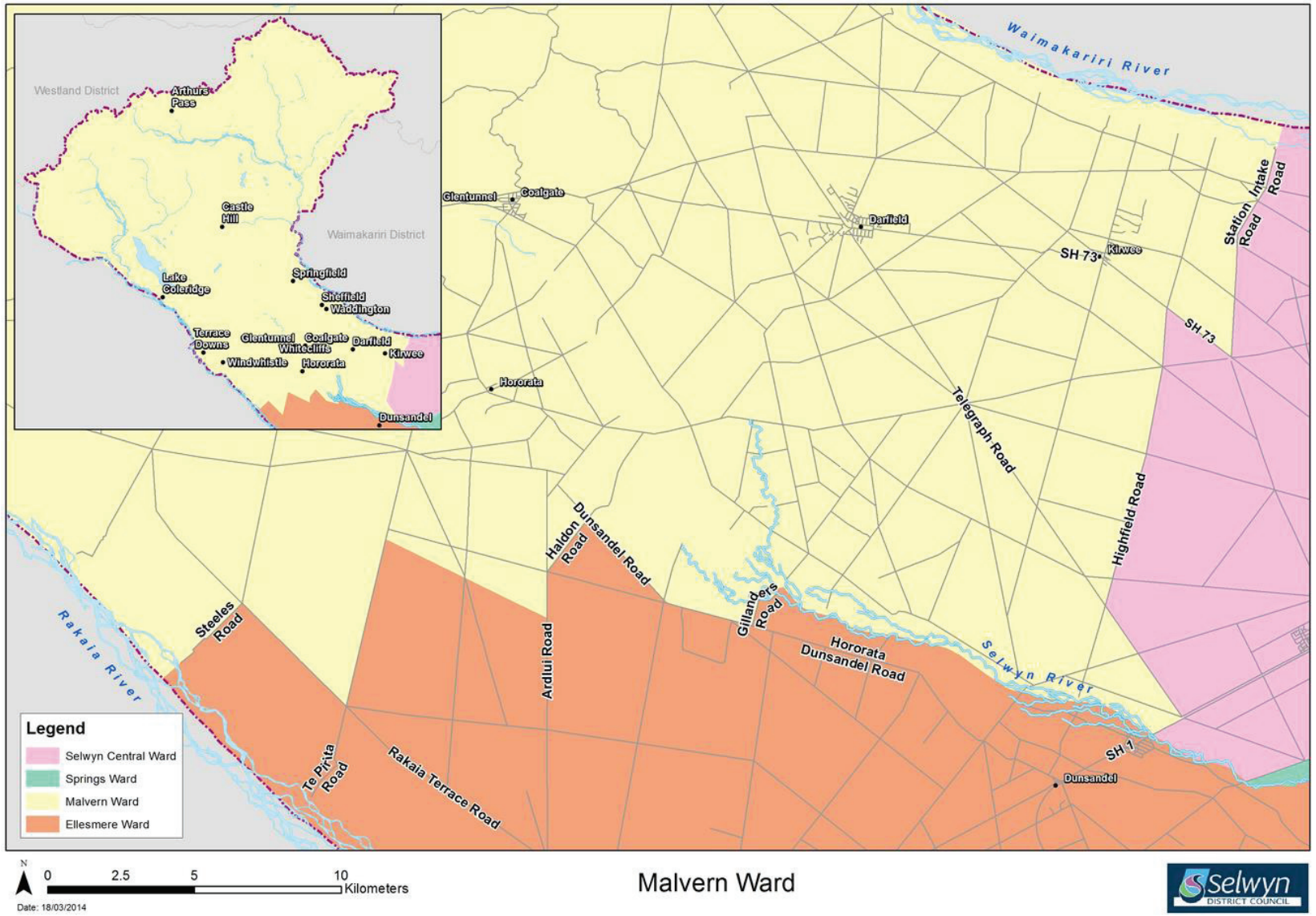
The future population projections of Darfield, Kirwee, Horoata, Coalgate / Glenntunnel / Whitecliffs, Springfield and Sheffield / Waddington are shown in **Figure 3.8**. Within the Malvern Ward, the majority of population growth out to 2031 is forecast to occur in the Darfield township with an additional 1,000 residents bringing the population to almost 4,000 people. Kirwee is also forecast to experience substantial growth increasing by almost 50% with a projected population of 1,600 by 2031. The remaining townships are much smaller than Darfield and Kirwee and are not expected to see significant growth in population numbers.

***Figure 3.8** Future population projections for Malvern townships*



Population forecasts for the townships of Arthur's Pass, Lake Coleridge and Castle Hill are not currently available, however it is assumed that there will be very little change from the existing low population numbers in these areas. The extents of the Malvern Ward are shown in **Figure 3.9**.

Figure 3.9 Malvern Ward Area Map



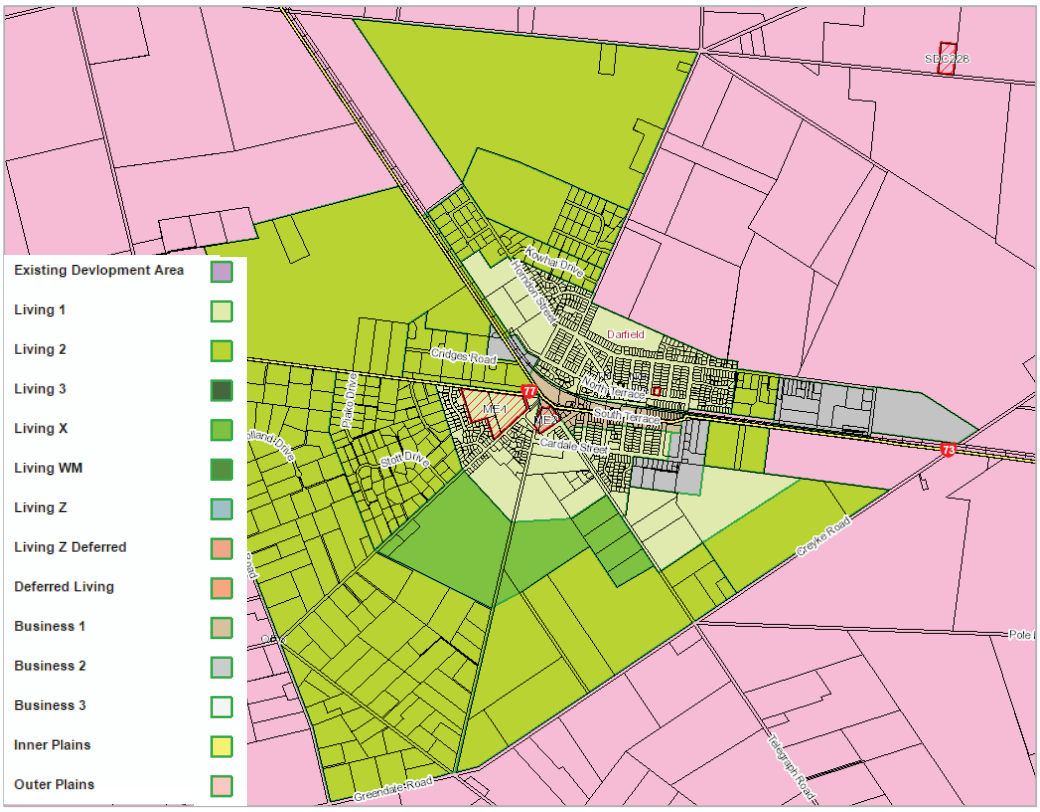
3.2 Darfield

Darfield township is situated approximately 25km northwest of Rolleston and 45km west of Christchurch. Darfield is the main town between Christchurch and the West Coast, sitting at the junction of six roads and the Midland Railway Line. Due to its' central location, Darfield has been categorised as a 'Service Township' whose function is "*based on providing a high amenity residential environment and primary services to Rural Townships and surrounding rural area*"[3].

Darfield serves the Malvern Wards agricultural industry. Within the town there are farming suppliers, a primary and high school, numerous shops and cafés, a library, hospital, a volunteer fire brigade and hotel / motel accommodation. Darfield's dramatic population growth over the last few years can be attributed to a number of factors including the growing dairy industry on the Canterbury plains, more lifestyle blocks and people moving out from Christchurch to the new subdivisions. However, the predominant reason for the significant increase in population is Fonterra's milk processing plant near Racecourse Hill that produces milk powder for export and which has attracted workers to settle in Darfield.

The population in Darfield township is predicted to experience the largest amount of growth in the Malvern Ward out to 2031 with an increase in population from 2,890 people (2014/15) to 3,965 people (2030/31). This is reflected in the Selwyn District Plan zoning for the township whereby large parcels of land have been zoned as Living 1, Living 2 and Living X (some of which has been deferred) as shown in **Figure 3.10**.

Figure 3.10
Darfield zoning



State Highway 73 runs through the township and intersects with State Highway 77 to the west of the town centre. SH73 has an AADT of 5,000 vehicles reflecting the fact that Darfield lies on the through route between Christchurch and the West Coast. The traffic volumes on the intersecting roads off SH73 are significantly less, with the collector roads in the region of 600 AADT and the local roads less than this still.

Telegraph Road and McLaughlin's Road are designated HPMV routes. The speed limit on SH73 is 50km/h through the township centre.

The general cross section of SH73 through the centre of Darfield comprises 3.5 metre wide traffic lanes in both directions with a wide flush median of between 3 – 4 metres in width. There are shoulders on both sides of the road between the traffic lanes and parking lanes approximately 2 metres wide. There is on-street parking on both sides of SH73 through the town centre. As well as footpaths on each side of the road, there are five pedestrian refuges on SH73 through the township, spaced between 130 – 200 metres apart. This provides a good level of service for pedestrians crossing the state highway.

The general layout of SH73 through the town centre is illustrated in **Figure 3.11** and **Figure 3.12**.

Figure 3.11
General road layout through Darfield

Figure 3.12
General road layout through Darfield

Speed

Fonterra have funded the installation of electronic speed indicator devices at Darfield, these are on the main road approaches. The signs can be rotated to other Malvern townships as requested. Council has purchased a further four devices that are rotated throughout the district.

Public Transport

Red Bus Ltd operate a fully user funded weekday morning and afternoon commuter service between Darfield and Christchurch central. The eastbound morning service departs Darfield Railway Station at 7:15am and the westbound evening return service arrives at the Railway Station at 6:30pm. Atomic Shuttles also currently operate a daily service between the West Coast (Greymouth) and Christchurch which makes on-demand stops in Darfield in the eastbound direction at 4:35pm and in the westbound direction at 8:10am. The Malvern Community Hub provide a pre-booked bus service between Darfield and Westfield Riccarton / Northlands shopping centres in Christchurch which operates four times a month departing from the Darfield Library. ECan currently supports community vehicle trusts in Malvern which are based in Darfield.

Rail

The NZ railway line runs parallel to SH73. The railway tracks create a barrier to movement between the northern and southern areas of Darfield, particularly for road connections. The railway intersects with four roads in the township all of which have alarm bells in place, but no barrier arms, which warn of approaching trains apart from the unsignalised railway level crossing at the SH73 / Hordon Street intersection. The TranzAlpine train service operates daily between Christchurch and Greymouth. The westbound service stops in Darfield at 8:53am and the eastbound service stops in Darfield at 5:29pm. A passenger rail service to and from Christchurch is not available.

Planned projects

McHughs Forest Park

McHughs Forest Park is a 43 hectare park situated to the west of the Darfield Township. Part of the park is being developed as a forest park to be used for walking and mountain biking, picnicking and education while continuing to operate as a production forest. The forest lies beside the railway line to the west and the entrance to the walking and biking track is beside the car park located on Horndon Street. The installation of educational signage, development of a pump track and picnic tables are other actions planned to be completed by 2017[11].

People travelling from the south of Darfield or from the east are likely to access the forest park by driving north on SH73 through Darfield and turning right onto Horndon Street about one kilometre outside the township. Alternatively, Darfield residents to the north of State Highway 73 may be more likely to use Horndon Street to access the forest park. The Draft Long Term Plan (LTP) proposes to develop sports facilities at Darfield Domain including a new netball court in 2015/16.

Road Network Improvements

The maintenance and renewal works continue for Telegraph Road. Recent changes to speed limits have also been approved which introduce a 70km/hr speed limit on Kimberley Road and extends the 50km/hr urban traffic area to include all of the Buttle subdivision. Minor works continue regularly relating to safety. There is a programme to replace restricted bridges, three of which have been replaced on Malvern Hills Road. Council have adopted a $60 targeted rate over the district to fund additional roading repairs, reseals and road reconstructions beyond what is able to be provided by way of NZ Transport Agency

[11] Selwyn District Council (2014) Media Release; McHughs Forest Park Plan adopted

subsidy of the Councils main roads programme. Works are identified and prioritised over the district on an annual basis originating from this funding and advised to the public.

Proposed developments

Plan Change 24

Private Plan Change 24 (PPC24) was made operative on 24 June 2013 and rezoned Living 2A (Deferred) land in eastern Darfield to a mix of Living 1 and Living 2A zones. The site is boarded by Creyke, Telegraph and West Coast Roads with access also from Cardale Street. The Outline Development Plan (ODP) for PPC24 is shown in **Figure 3.13**.

The number of households which will be constructed in the Living 1 and Living 2A zones of PPC24 is anticipated to be in the region of 450. PPC24 will create new vehicular links from the site onto Telegraph Road, Creyke Road and Cardale Street. The Transportation Assessment Report[12] for PPC24 states that the roads within the Plan Change site are expected to allow for footpaths on at least one side, providing good access for pedestrians and the proposed roadway width will provide sufficient space for cyclists to share the carriageway with motorised vehicles.

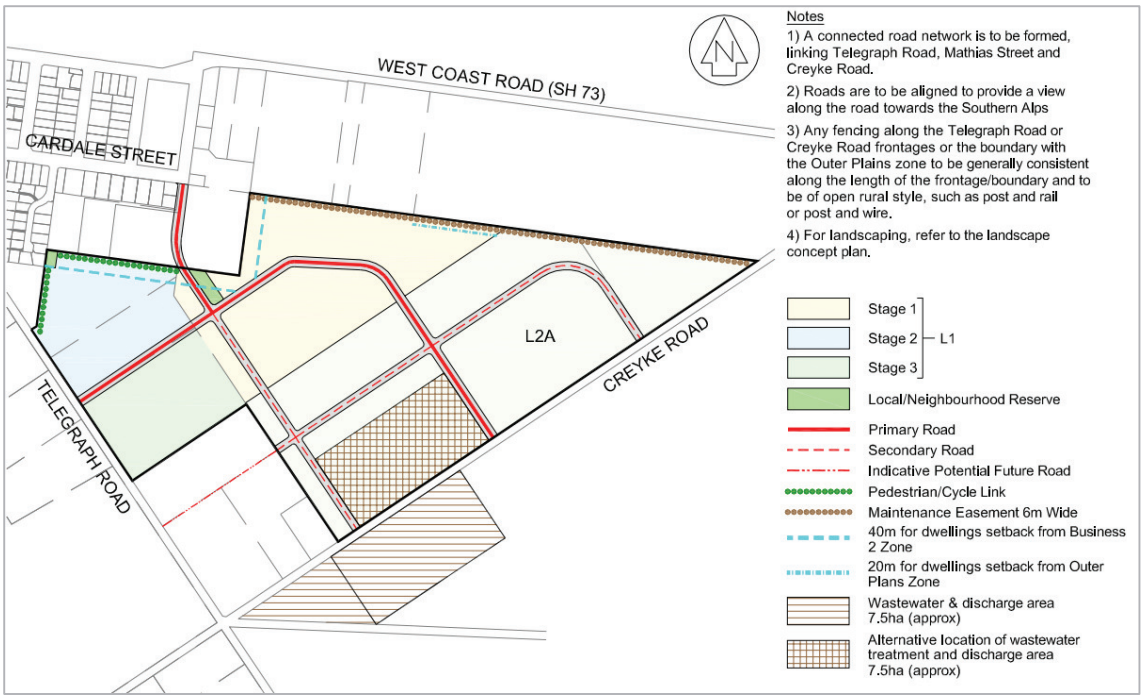


***Figure 3.13** ODP for Plan Change 24*

[12] Traffic Design Group (2010) Silver Stream Estates Limited, Private Plan Change Request, Darfield, Transportation Assessment Report

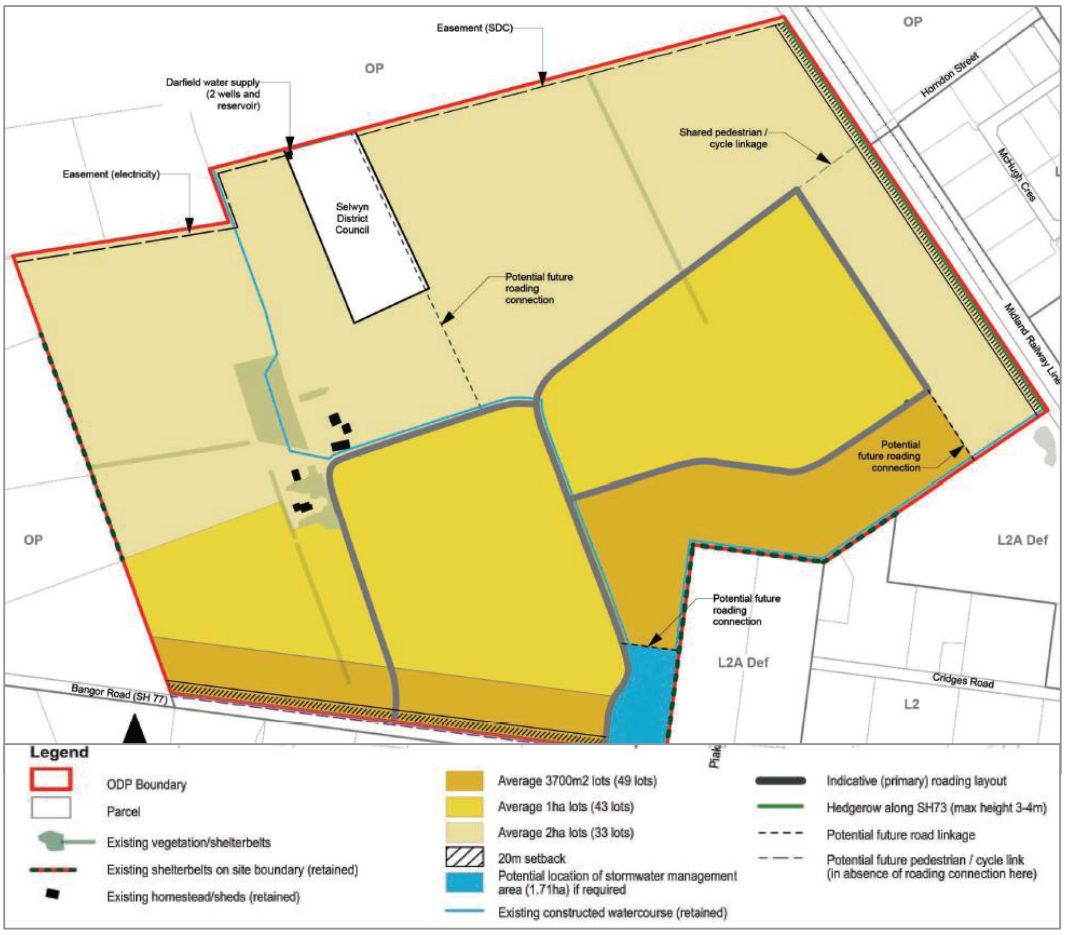
Proposed Private Plan Change 46

Proposed Private Plan Change 46 (PPC46) has recently been lodged with Council proposing a change to the Selwyn District Plan to lift the deferred status over approximately 130.39 hectares of land Located at 160 Bangor Road Darfield from Living 2A (Deferred) to Living 2A. The proposed Outline Development Plan (ODP) for PPC46 is shown in **Figure 3.14**.

PPC46 would allow for the creation of approximately 125 sites and proposes new vehicular and pedestrian links to State Highway 77 and a shared pedestrian / cycle link to Hordon Street across State Highway 73. This new connection proposed to SH73 will provide a future link for cyclists and pedestrians to access the wider township area on the northern side of SH73[13].

Two new road links to SH77 are also proposed, the main link at Piako Drive and a second link some 400 metres to the west. The PPC46 ITA states that the new main link will form a cross roads with Piako Drive and the second link on SH77 will be a Tee intersection. The roads within the proposed development will be minor local roads with sealed carriageway between 6.0 and 6.5 metres wide. The ITA also states that "*limited use of footpaths is intended with pedestrians generally walking on the road or the unsealed shoulder. The low speed environment will ensure this activity can be carried out safely. There will be no specific cyclist infrastructure*".

Figure 3.14
Proposed ODP for Plan Change 46



[13] Avanzar Consulting Limited (2015) Private Plan Change Request, 160 Bangor Road, Darfield

Current network issues

Concerns have been raised by the Darfield Business Association regarding the temporary repairs which they state are required to the road network and regularly chipped / broken windscreens as a result of the heavy vehicles through the town. The suggestion of a Darfield heavy vehicle bypass is something which has been raised by the community as a means of reducing the volume of heavy vehicles through the town.

While there is a substantial volume of heavy vehicles passing through the township, SH73 has ample capacity and is capable of accommodating heavy vehicles. The implementation of a Darfield heavy vehicle bypass would likely require physical upgrades to other roads to withstand the volume of heavy vehicles diverted from SH73 through the town. There appear to be no categorical safety or efficiency issues due to the volume of heavy vehicles travelling through the township centre which warrant the considerable financial implications of implementing a heavy vehicle bypass.

There are four railway level crossings in Darfield, three of which have warning systems in place to alert drivers on approaching trains. A number of crashes and near miss incidents have occurred at these railway level crossings over the last number of years. Safety at these level crossing will be need to be key consideration for Council and KiwiRail as traffic volumes through these crossings increase with the growing population in Darfield over the coming years.

Parking issues

Parking is generally permitted along both sides of the State Highway and angled on-street parking is provided along a number of the intersecting local roads. The existing wide shoulders on either side of the State Highway provide good separation between the parked vehicles and through traffic, thus limiting the effects of side friction[14] on the function of the state highway and minimising risk to people getting in and out of cars. Trucks wishing to access the town centre facilities can parallel park on-street and would be required to use several car park spaces where they are marked. The parallel parking several blocks west of the main shops is not marked as individual parking spaces and appear to have a lower demand, this area is better suited to trucks parking on-street and is located near public toilets. Some of this on-street parking could be made available as dedicated truck stops on SH73 if the demand was sufficient. No parking surveys appear to be available to inform this matter.

Car parking at and around the Darfield Bakery has been identified as an issue by the Darfield Business Association, although it is unclear what the precise issue is i.e. whether it is the parking supply, safety, layout, or a lack of parking for larger vehicles.

Currently, parallel car parks are provided along the frontage of shops located on the northern side of SH73 to the east of McMillan Street, set back a distance of approximately 11 metres from the edge of the traffic lane. Another row of on-street parallel parking is provided along the state highway.

An aerial view of the current car parking arrangement is shown in **Figure 3.15** along with directional arrows indicating the general flow of traffic in / out of the car parking area, although this is not marked or signed. A view of the car park area looking east is shown in **Figure 3.16**.

[14] Side friction is the result of activity, such as vehicles moving into / out of on-street parking, impacting on traffic performance on a road segment

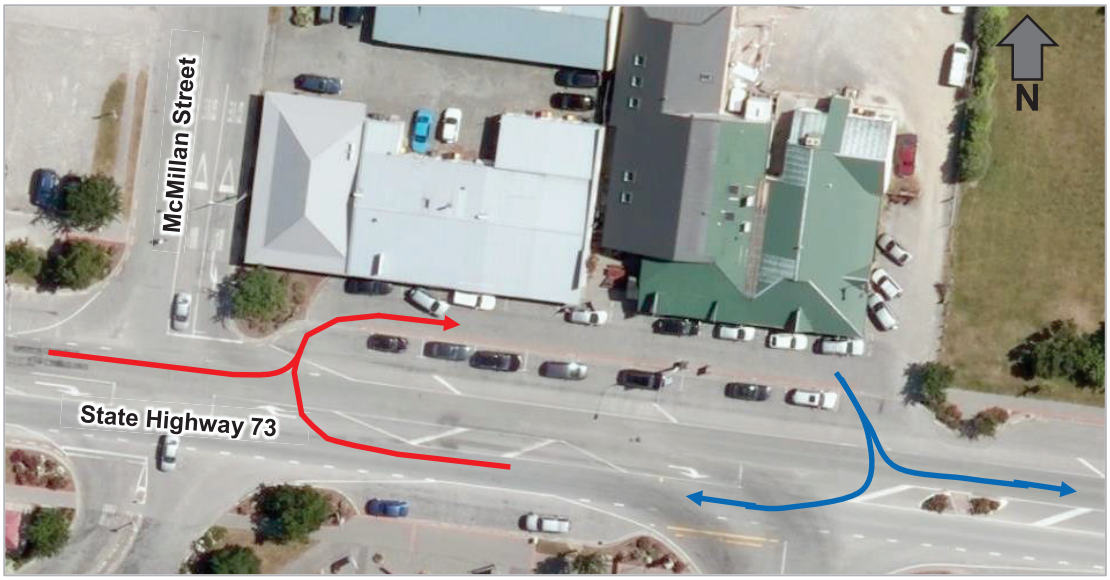


Figure 3.15 *Aerial view of current car parking layout*

Figure 3.16 *View of car park looking east*

The activities to the east of the bakery, such as the Physio & Gym, Val Briggs and the VET-ENT, all appear to have sufficient off-street car parking at the rear of the buildings to accommodate the parking demand generated by these activities. The Four Square, to the west of the bakery, has a similar type of car parking layout to the front of the shop but also has a large car park located to the rear of the shop.

A preliminary investigation has previously been carried out to determine if additional car parks could be accommodated by rearranging the current car parking layout. Currently there are 10 parallel spaces provided along the front of the shops and a further 9 spaces along the road frontage (total 19). Two alternative layouts include;

- **Option 1** - 45° angle parking with 2.6m wide stalls and an approximate 8.1m manoeuvring space clear of the traffic lane edgeline. This would enable 17 spaces to be accommodated.
- **Option 2** - 90° parking with 3.0m wide stalls and approximately 8.3m manoeuvring space clear of the traffic lane edgeline. This would enable 21 spaces to be accommodated.

Angle parking may be a more logical layout which people would find easier to use, although it would require potential reverse manoeuvring onto the state highway. It may also result in undesirable manoeuvres such as U-turns and instead of westbound motorists turning right at one point (as is currently the situation) they would likely turn right at various points in the median to access a particular space. Both options would require the reconstruction of the parking areas and SH frontage to accommodate a new parking layout at considerable cost.

Observations on-site indicate that the turnover of these car parks is fairly high and while the current layout is somewhat unconventional, there have been no reported safety incidents as a result of the layout or vehicles turning into or out of the parking area. Altering the layout to either 45º or 90° parking will result in roughly the same number of car parks as what is currently provided, so there is negligible benefit in terms of increasing supply and it does not address the issue of supply for larger vehicles such as trucks, campervans, caravans etc.

Council have already advised that the appropriate signage and road markings be implemented at the entry / exit points to reinforce the one way movement through the car park area. This is likely to improve the efficient operation of the car park area, particularly for motorists passing through the town who wish to stop off and are unfamiliar with how the parking works in this area. Encouraging more people to use the parking spaces either on the intersecting streets, or the public car park to the west may also assist. This could be done with the use of signage to make it more apparent as to where there are other available car parks if the spaces in front of the bakery are full.

As the layout in front of the Four Square supermarket is similar to that in front of the bakery, it would make sense that if any changes were to be made to the bakery parking, then the parking to the front of the Four Square should also be changed for consistency. Interestingly, issues or concerns relating to the car parking in front of the Four Square do not appear to have not been raised, despite the similar arrangement to that in front of the bakery.

Following consideration of the above, it is concluded that there is very limited benefit from rearranging the car parking layout to either 45° or 90° angle parks and may have more adverse implications on the safety and operation of the State Highway network compared with the existing layout. It is also noted that the NZ Transport Agency may not approve any such changes or agree to fund it.

Potential future issues

The community has identified that as business growth occurs in the area this will also result in the growth of traffic. Specific concerns regarding this are related to parking, truck stops, making it easy for the public to stop and utilise the businesses in Darfield without creating a parking / traffic hazard.

An investigation was carried out into the transport considerations for the future growth of the township as part of Proposed Plan Change 31 (PPC31) which was ultimately withdrawn. PPC31 explored ways to manage the growth of Darfield through the development of six Outline Development Plans (ODPs) which were combined to form the **Darfield Integration Plan** (DIP). The DIP determined that the deferred areas were capable of accommodating up to some 2,000 new households in the event that all of the deferred zones and existing already zoned sections were fully developed in accordance with the average lot sizes of the relevant zones.

These ODPs were designed to provide a number of road, cycle and walkway connections across the land to be developed for residential activity. SH73 and the railway run through the centre of the town and create a barrier for movement between the north and south. To prevent further segregation of the town, the DIP required new roads "*to provide for better through journeys as well as for journeys originating within these areas*". The ODPs developed as part of PPC31 provided this integrated approach for vehicles, pedestrians and cyclists. If development occurs which is not in keeping with this approach then this could ultimately result in further segregation between the north and south of the township and loss of connectivity for residents. Key walking and cycling connections need to be integrated to access the primary and secondary schools within Darfield.

As **Figure 3.10** shows the majority of residential development is zoned to occur to the south of SH73 and SH77. The extent of the existing business zone to the east of the town is anticipated to facilitate the majority of any additional business development. The business zone is accessed from Horndon Street via SH73 and Mathis Road, both roads feature level rail crossings. The preference would be to consolidate business activity in the existing business zone where there is capacity to do so. This would allow for shared benefits between businesses.

Opportunities

Parking demand in the town centre can be quite high at times due to the high volume of state highway traffic stopping in the town although there is generally sufficient parking to meet this demand. Future growth in the Business zones may justify further increases in on-street parking. Potentially this could be met by additional angled parking provision along the local roads most of which have wide road reserves. It would however be generally undesirable for angle parking to extend too far into the residential areas which could start to impact on the residential character of these roads. Further investigation would be required to determine if truck stops are required and where these could be located without adversely impacting the efficiency of the state highway.

The Transport Activity Management Plan states that "*more localised township walkways and cycleways will come about through new subdivisions provided by developers that need to follow agreed plans and layouts as part of their approval process*". As the living zones continue to be developed in Darfield this should improve the transport links throughout the town and result in a connected network for motorists, pedestrians and cyclists.

It is understood that the community has suggested the creation of a railtrail connecting Darfield and Springfield which would be just over 20km in length. The overall cost of a project is likely to be high and demand for such a facility is unclear although this could be carried out in stages.

3.3 Kirwee

The township of Kirwee is situated approximately 8km east of the township of Darfield and 36km west of Christchurch with State Highway 73 and the Midland Line Railway passing through the town. The township includes the Kirwee Tavern and a service station along with various sports clubs, the local domain and a primary school.

The population of Kirwee has grown more than nineteen per cent over the past ten years making it one of the fastest growing townships in Malvern. The population of Kirwee is forecast to experience a growth in population from 1,143 (2014/15) up to 1,640 (2030/31). Under the District Development Strategy, Kirwee is classified as a 'Rural Township' whose function is "*based on village characteristics with some services offered to the surrounding rural area*"[3]. The current zoning of Kirwee is shown in **Figure 3.17**.

Figure 3.17
Kirwee zoning

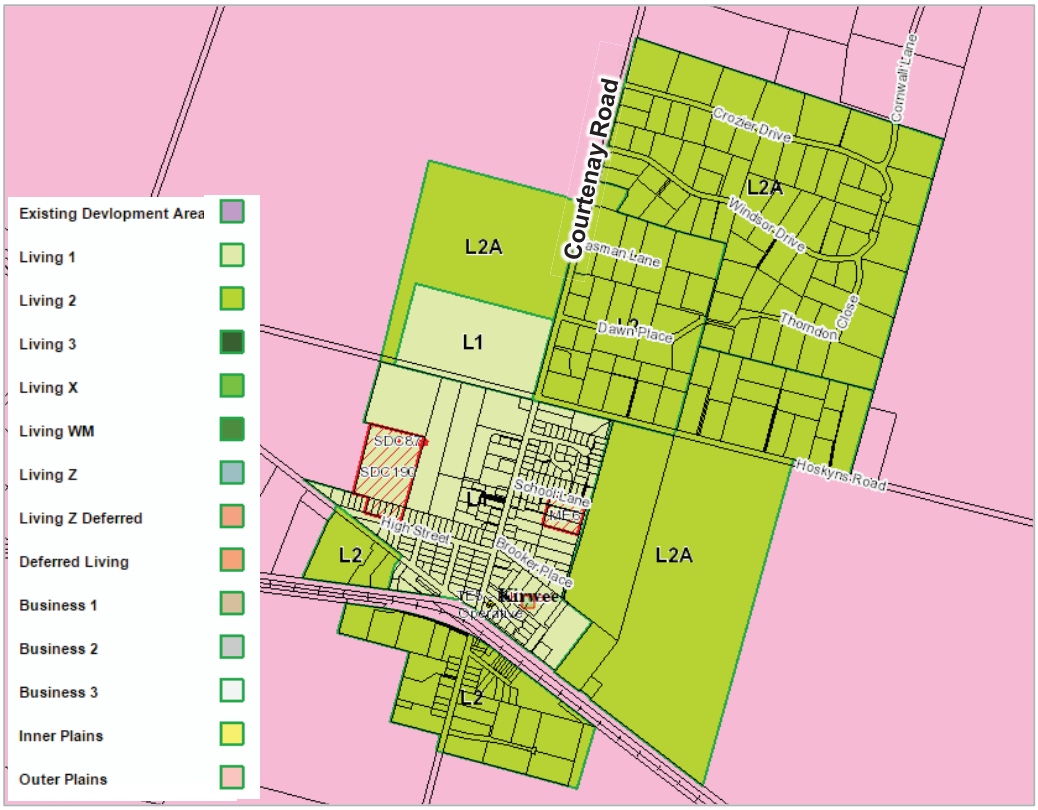


Figure 3.17 shows that there are living zones to the east and northwest of the town centre which are yet to be developed. The railway line runs parallel alongside State Highway 73 which traverses the southern part of the township creating a barrier between movement from the main town centre and the living zone south of the railway line.

Courtenay Road between Kirwee and Old West Coast Road classified as a secondary collector and runs through the township in a north south direction. This road provides an urban collector function within the Kirwee Township to the south, plus a wider network connection from Old West Coast Road to SH73[6]. It also has a footpath on the east side of the road connecting the rural residential subdivision to the facilities at the southern end of the township. The speed limit on State Highway 73 is 70km/h through the township and the speed limit on Courtenay Road is 50km/h. The layout of the Courtenay Road / State Highway 73 intersection is shown in **Figure 3.18**.

Figure 3.18 View of SH77 / Courtenay Road Intersection Looking East on SH73

The Courtenay Road / State Highway 73 intersection provides the only vehicular connection point between the north and south of the township. An uncontrolled pedestrian crossing is provided across State Highway 73 adjacent to the intersection as shown in **Figure 3.19**.

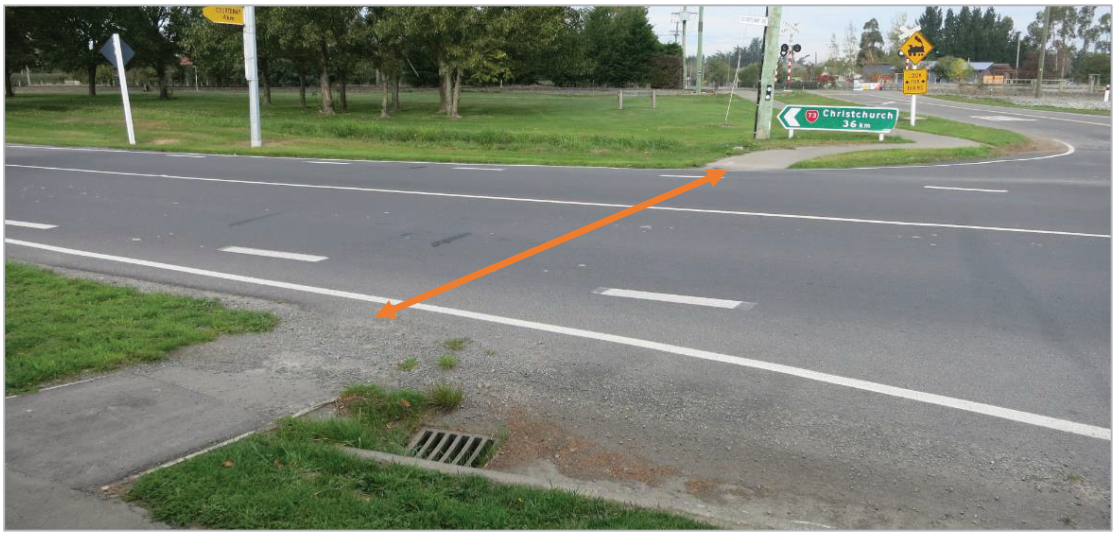


Figure 3.19 View of Uncontrolled Pedestrian Crossing on SH73

The service station is located on the northern side of State Highway 73 on the approach into the town centre and the Kirwee Tavern is located on the northwest corner of the State Highway 73 / Courtenay Road intersection. Kirwee Model School and swimming pool is situated at the end of School Lane which experiences low traffic volumes. The general road layout of School Lane is shown in **Figure 3.20**.

Figure 3.20 Cross Section of Street on Approach to Kirwee Model School

The user funded commuter bus service between Darfield and Christchurch Central operated by Red Bus Ltd also has a scheduled stop at Kirwee. The eastbound morning service departs Kirwee at 7:25am and the westbound evening return service arrives at Kirwee at 6:20pm.

Planned projects

The LTP 2015 2025 proposes to develop land for sports use at Kirwee Domain (2022 – 2024).

Proposed developments

It is understood that there is will be residential development in the Living 2A zone south of Hoskyns Road as shown in Figure 3.21.

Figure 3.21 Future residential development south of Hoskyns Road

Current network issues

On-street parking on School Lane can be in high demand, particularly during school drop-off and pick-up times. No existing car parking issues have been identified in the remainder of the township. The other highest trip generating activities are likely to be the Kirwee Tavern and Kirwee Domain. In the vicinity of these activities there appears to be sufficient on-street parking or private off-street parking available.

Some of the more recent residential development in Kirwee have been constructed to include wide roads with grass berms or swales on either side. This reflects the rural nature of the community and appropriate level of service which is provided in these locations in terms of specific pedestrian / cycling infrastructure. These wide roads through the new subdivisions are low volume and allow people to walk / cycle on the road or the berm and are considered appropriate for the environment and level of demand in the area.

Requests are regularly received to seal 6.5km of Hoskyns Road through to SH73 as an alternative route to SH73 to access northern development areas of Kirwee. However Council have report this would be a comparatively high cost for the low use and is not economically viable.

Figure 3.22 Road Layout through Courtenay Estate

Potential future issues

Any further development south of the railway line and State Highway 73 would be discouraged from a transport perspective. This is due to the severance issue caused by the railway line and State Highway 73 and the fact that all of the business and educational activity is located to the north of State Highway 73. Requiring any further development occurs north on State Highway 73 is likely to reduce the need for people to cross over State Highway 73 and the railway line to access the school, Kirwee domain etc.

Connectivity for all modes is an important consideration for the future development of the L2A zone south of Hoskyns Road. A connection point from this area through to School Lane, which currently terminates at the boundary of the L2A zone, is something which has been raised as a potential issue. Traffic on this section of School Lane is in the order of 300 veh/day, which is understandable given the location of the Kirwee Model School on a no-exit road. Any connection through to School Lane would result in an increase in traffic flows and potential traffic speeds that will need to be managed. The main vehicular access for the development site is from Hoskyns Road which will reduce the impact of the development on School Lane. Pedestrian / cycle links from the development to School Lane would be encouraged.

Opportunities

There is already an existing sealed footpath along the eastern side of Courtenay Road, as shown **Figure 3.23**, and the southern side of Hoskyns Road (to the east of Courtenay Road), ensuring any further developments link into this would be encouraged.

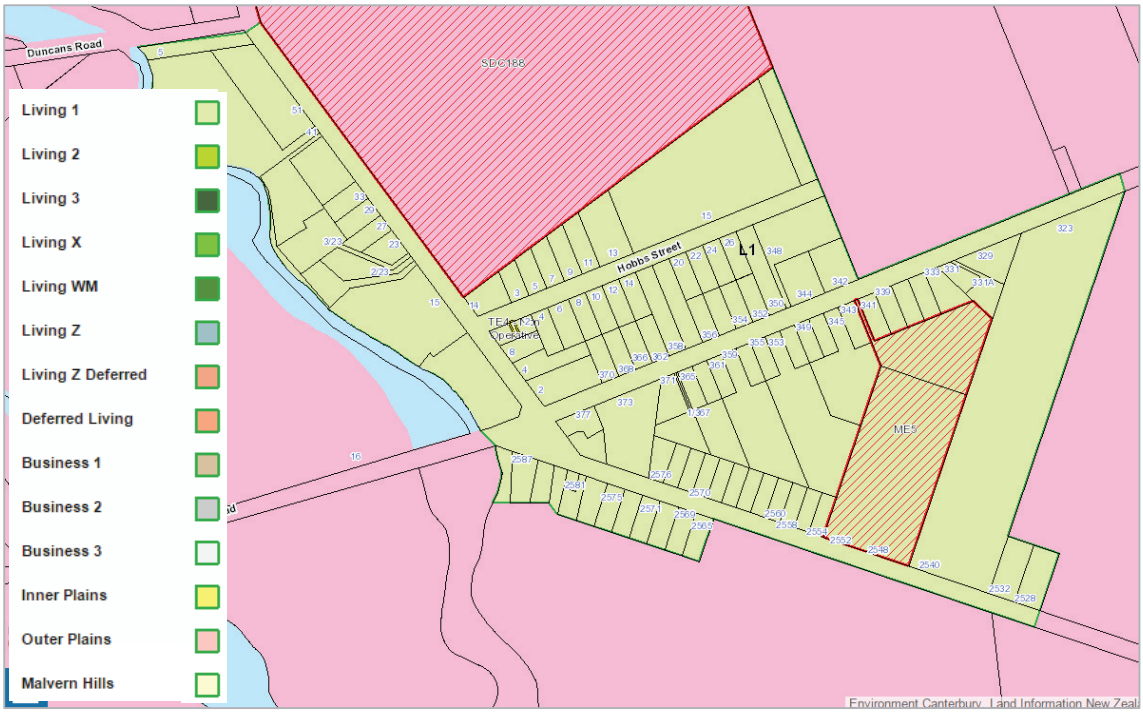
Figure 3.23
Existing footpath along east side of Courtenay Road

3.4 Hororata

The township of Hororata is located approximately 17km to the southwest of Darfield and 60km west of Christchurch. Under the District Development Strategy, Hororata is classified as a Rural Township. The Hororata township stretches around the base of Hororata Downs. Situated on the most direct route to the ski fields south of the Rakaia River, Hororata is a popular stopping place in the ski season for Christchurch bound ski-traffic and also hosts the annual Highland Games in the domain. There is a primary school, service station and food outlets located within the township.

The future projections for population in Hororata indicate a slight increase from 257 people (2014/15) to 324 people (2030/31). The existing zoning in Hororata is shown in **Figure 3.24**.

Figure 3.24
Horarata zoning



Hororata is situated 8km south of State Highway 77, connected by Homebush Road, Hororata Road and Bridge Street. The speed limit through the Hororata township is 50km/hr. The general cross section of Bealey Street through the township is shown in **Figure 3.25**.

Figure 3.25 *Cross Section of Bealey Road*

A large portion of the residential development in Hororata is located off Hawkins Road. The general cross section of Hawkins Road is shown in **Figure 3.26**. There are good pedestrian links through the township with most roads having a footpath provided on at least one side.

Figure 3.26 Cross Section of Hawkins Road

Planned projects

There are no planned projects for the Hororata township.

Proposed developments

There are no developments proposed in the Hororata township.

Current network issues

There appear to be no existing road safety, parking or other transport related issues within the Hororata township.

Potential future issues

There are no potential traffic or transport related issues identified for the township.

Opportunities

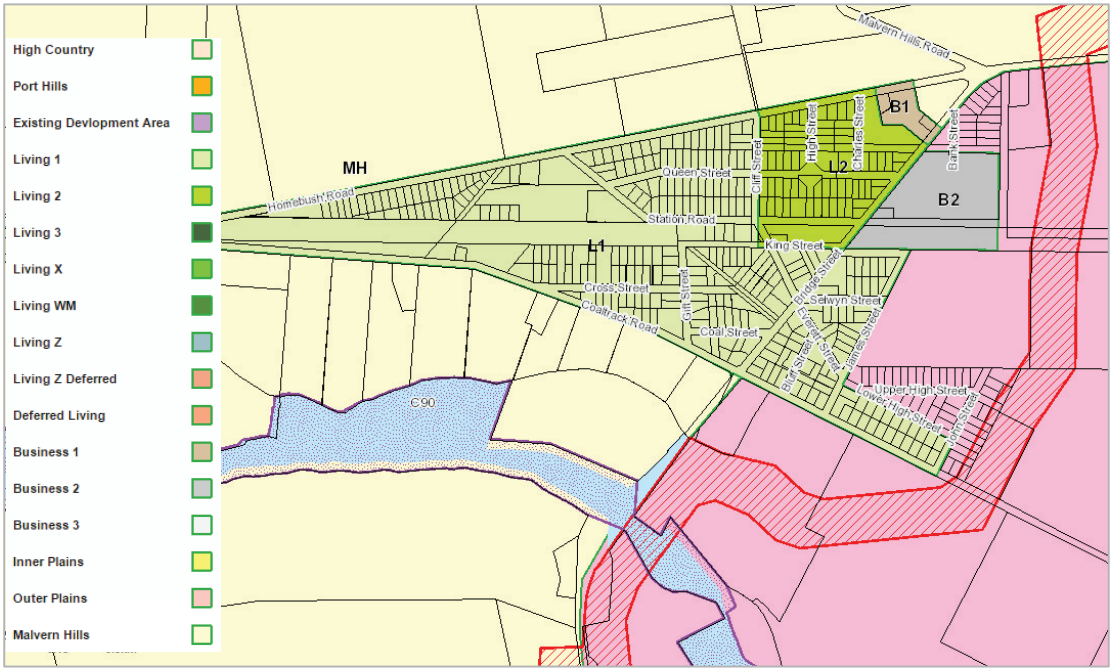
Given the existing scale of development in Hororata and the limited extent of future potential development, either business or residential, the existing transport network provisions are considered to be adequate for the level of demand in the township.

3.5 Coalgate

Coalgate is another of the districts` Rural Townships and is situated approximately 12km west of Darfield and 54km west of Christchurch. In close proximity to the Coalgate township are the townships of Glentunnel and Whitecliffs located 2.5km and 6km to the west respectively. The township is home to many sporting facilities such as a bowling club and indoor cricket centre. Also nearby are the Mt Olympus, Porters, Mt Cheeseman, Broken River, Craigieburn / Temple Basina and Mt Hutt ski fields. Services including a car garage, the Local Coalgate Tavern and Doppelmayer Lifts and the Transform Mineral Factory are situated in Coalgate.

The collective population of Coalgate / Glenntunnel / Whitecliffs is forecast to increase from 1,083 (2014/15) to 1,328 (2030/31). The current zoning of Coalgate is shown in **Figure 3.27**.

Figure 3.27 *Coalgate zoning*



The majority of the town is bound by Homebush Road (inland scenic SH 72), Coalgate Road and Bridge Street, with the remainder located east of Bridge Street. The SH is used by heavy vehicles associated with forestry and diary.

The extent of commercial or business development in Coalgate is very limited. There is the garage and small dairy located just north of the Bridge Street / Coaltrack Road and the Coalgate Tavern located 200m south of the Bridge Street / Homebush Road. There is sufficient on-street parking in this location to accommodate the parking demand generated by these activities as shown below in **Figure 3.28**.

Figure 3.28 *Layout of Bridge Street*

Planned Projects

The Coalgate to Glentunnel cycleway project is 2.6km in length and has a budget of $216,000. This project is programmed to be constructed in 2015/16. The primary users of the cycleway will be school students travelling from Coalgate through to the school at Glentunnel.

Proposed developments

There appear to be no developments proposed in the Coalgate township.

Current network issues

The safety of pedestrians and cyclists along the SH accessing Glentunnel will be improved with the cycleway project referred to above. there appear to be no other existing road safety, parking or other transport related issues within the Coalgate township.

Potential future issues

Given the scale of existing development, the dispersed nature of the residential activity and the relatively low increase in population forecast, the existing transport network provisions are considered to be adequate for the level of demand in the township.

Opportunities

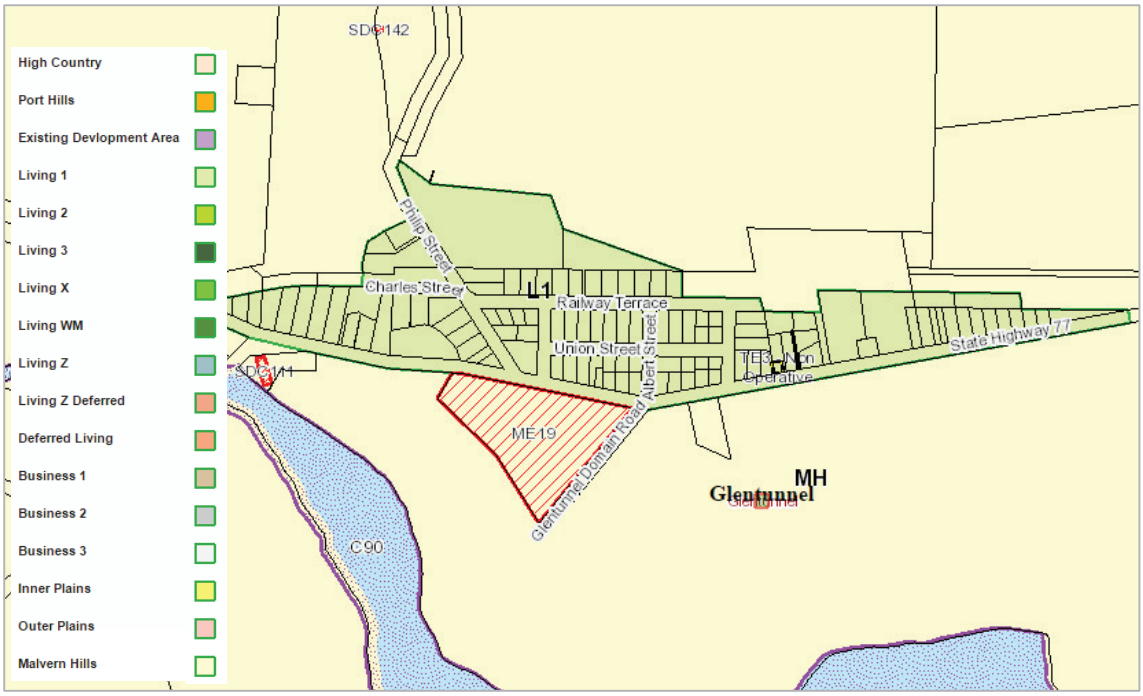
It is understood that the community has previously suggested connections through from Coalgate to walkways which are located off Hororata Road to the south of the township, although the current demand for such a facility is currently unclear.

3.6 Glentunnel

Glentunnel is situated 15km west of Darfield, 57km west of Christchurch and is classified as a Rural Township under the District Development Strategy. The township contains the Glentunnel Museum and Library, a dairy, primary school, golf course, church and café. The Glentunnel Walkway was established to mark the turn of the millennium and is accessible from Philip Street.

Homebush Road (State Highway 77) is the main route through the township and links Glentunnel to Coalgate. The current zoning provision for Glentunnel are shown in **Figure 3.29**. Much of the existing living zone in Glentunnel is already developed and there is limited potential for increased residential development in the township.

Figure 3.29 *Glentunnel zoning*



The cross section of Homebush Road entering Glentunnel is shown in **Figure 3.30**. The proposed Coalgate to Glentunnel cycleway will be constructed along the southern side of Homebush Road (to the left of the photo in **Figure 3.30**). The school is located directly off SH77 in the town centre and there is some on-street parking available on both sides of the road as shown in **Figure 3.31**.

Figure 3.30 *View Entering Glentunnel on Homebush Road*

Figure 3.31 View of the Centre of Glentunnel (School on the left)

Planned projects

As discussed previously, the Coalgate to Glentunnel off-road cycleway will provide a link for pedestrians and cyclists between the two townships and is programmed for construction in 2015/16. The cycleway will be approximately 2.6km in length.

Other planned projects identified in the Draft LTP include an upgrade of the wastewater system at Glenntunnel Holiday Park and provision of additional public toilets in Glentunnel in 2015/16.

Proposed developments

There are no significant developments proposed for the Glentunnel Township.

Current network issues

Concerns have been raised in relation to parking outside the school due to its location directly off the state highway. There are no marked car parking bays under the current arrangement, so vehicles can be parked at either a 90° or 45° angle to the state highway as shown in **Figure 3.32**. As there is limited space between the parked cars and the edge of the traffic lane, this results in vehicles reversing out onto the state highway when exiting.

Figure 3.32
Current parking arrangement outside Glentunnel Primary School

While the speed limit through the township is 60km/hr, there are signs in place advising motorist that the speed limit is 40km/hr on approach to the school when there are children present. Visibility is good for both approaching drivers and drivers exiting from the car parking in front of the school. The current arrangement is therefore considered appropriate.

Potential future issues

For the smaller rural townships such as Glentunnel an appropriate level of service, such as footpaths on only one side of the road or a few roads, is provided given the rural environment of the township and low population numbers of these townships. As the population of Glentunnel is not anticipated to increase significantly, it is considered that the current transport network provisions will be satisfactory to accommodate what limited growth may occur.

Opportunities

It is expected that the Coalgate – Glentunnel cycleway will encourage people to walk and cycle between the townships, particularly schoolchildren travelling from Coalgate to the Glentunnel primary school. This in turn may help to alleviate some of the car parking issues raised previously as there are likely to be fewer car trips for dropping-off / picking-up children at the school.

3.7 Whitecliffs

Whitecliffs is a small Rural Township which was previously significantly larger than it is today as it was home to industrial activities such as pottery and brick making as well as coal and sand mining. The population of the township started to decline about 40 years ago when the railway freight line closed. The township has a museum at Homestead which is classified as a Category One by the New Zealand Historic Places Trust.

Whitecliffs is located 2.5km west of Glentunnel. Whitecliffs Road is the main route through the township with a small number of cul-de-sacs off Whitecliffs Road serving residential properties. The current zoning for Whitecliffs is shown in **Figure 3.33**.

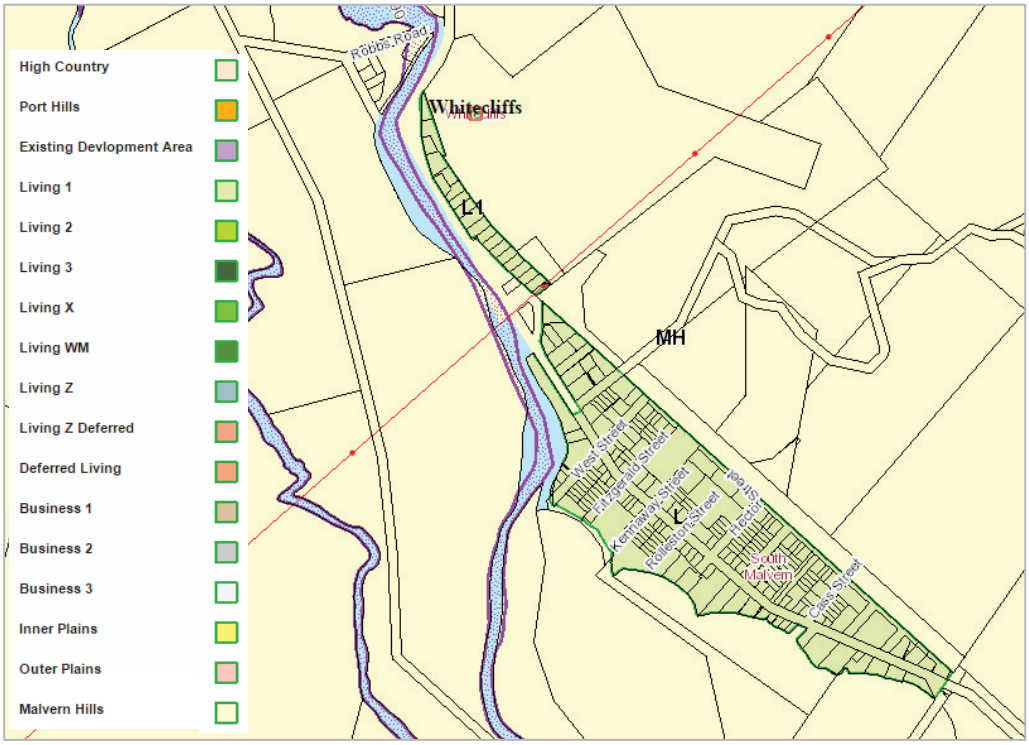


Figure 3.33
Current Whitecliffs zoning

The general road layout through Whitecliffs is shown in **Figure 3.34**. Traffic volumes on Whitecliffs Road are low being in the order of 300 veh/day. For the smaller rural townships such as Whitecliffs, a lower level of service is provided given the rural environment of the township and low population number. As the population of Whitecliffs is not anticipated to increase significantly, it is considered that the current transport network provisions will be satisfactory to accommodate what limited growth may occur.

Figure 3.34 Layout of Whitecliffs Road

Planned Projects

There are currently no planned projects for the Whitecliffs township.

Proposed developments

There appear to be no future developments proposed for the Whitecliffs township.

Current network issues

Traffic volumes along Whitecliffs Road can increase over summer holidays as there is a camp ground alongside the Selwyn River to the north of the township. The occurrence of pedestrians walking along Whitecliffs Road also increases as campers walk to from Glentunnel. Council has mown a portion of the grass berm alongside the road to make space for walking off the road. There appear to be no other existing road safety, parking or other transport related issues within the Whitecliffs township.

Potential Future Issues

The impact of heavy vehicles associated with forestry in the Whitecliffs area may increase the damage to the pavements which were not designed to accommodate such heavy loads. The demands on the pavement can be high but for a short duration corresponding to the forestry logging practices. Forestry growth is an issue in the general foothills areas of the District including Whitecliffs and will require monitoring of heavy vehicles and the effects of this on the network. Resource Consent Traffic Management Plans for forestry activities refer to the requirement where possible that trucks use Riverleigh Road to connect to SH73 to avoid travelling through the townships.

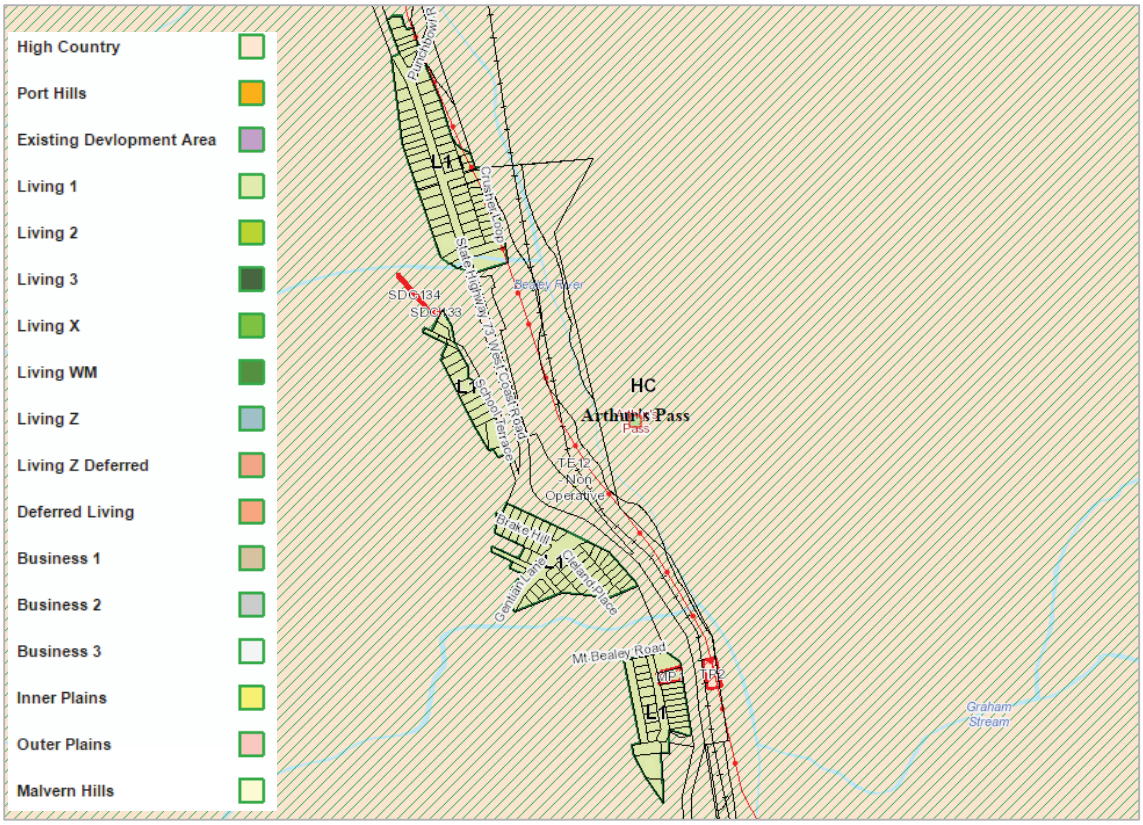
Opportunities

Given the existing scale of development in Whitecliffs and the limited extent of future potential development, either business or residential, the existing transport network provisions are considered to be adequate for the level of demand in the township.

3.8 Arthur's Pass

Arthur's Pass is located 150km west of Christchurch and 737m above sea level. There are only 30 permanent residents at Arthur's Pass during the winter. The township attracts a large number of visitors throughout the year and given its' location on State Highway 73, services long distance traffic and provides tourist facilities for people en-route to the West Coast / Christchurch. The current zoning for Arthurs Pass is shown in **Figure 3.35**.

Figure 3.35
Current Arthur's Pass Zoning



Planned projects

In May 2015, the NZ Transport Agency began realigning a section of State Highway 73 within Arthurs Pass National Park. The section of highway, between Mingha Bluff and Rough Creek, is narrow at many points and has tight corners leading to poor visibility. A range of safety issues and concerns had been identified including the curvature of the highway, highway widths and the highway's crash history along here[15]. **Figure 3.36** shows the extent of the realignment works.

[15] NZ Transport Agency (2015) SH73 Arthurs Pass (Mingha Bluff Realignment); http://www.nzta.govt.nz/network/projects/sh73-arthurs-pass-mingha-bluff-realignment/

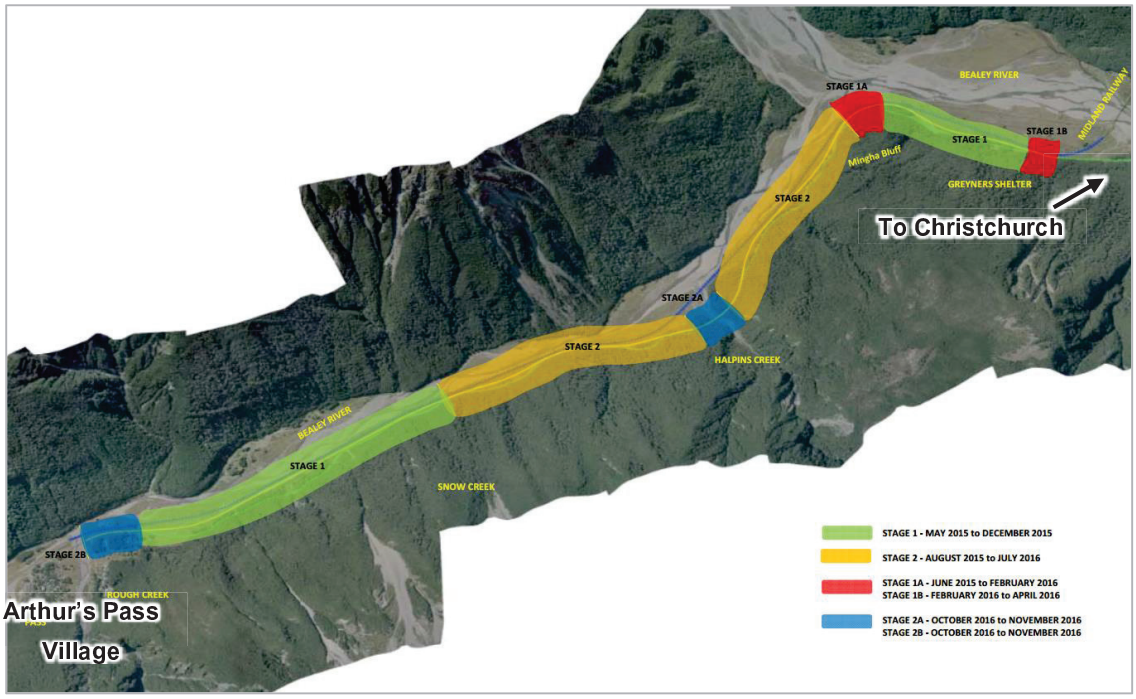


Figure 3.36 *Extent of realignment works on SH73 at Arthur's Pass*

The realignment project aims to improve safety and reliability while minimising environmental impacts on Arthurs Pass National Park. The design will result in a carriageway width of 9m, remove substandard curves and alignments throughout the project and return surplus highway not required to the National Park.

Proposed developments

There appear to be no developments proposed for the Arthur's Pass township area.

Current network issues

Apart from the network issues identified as part of the NZ Transport Agency realignment project of SH73, there appear to be no current transport related issues through the Arthur's Pass township.

Potential future issues

Given the existing scale of development in Arthur's Pass and the limited extent of future potential development, either business or residential, the existing transport network provisions are considered to be adequate for the township.

Opportunities

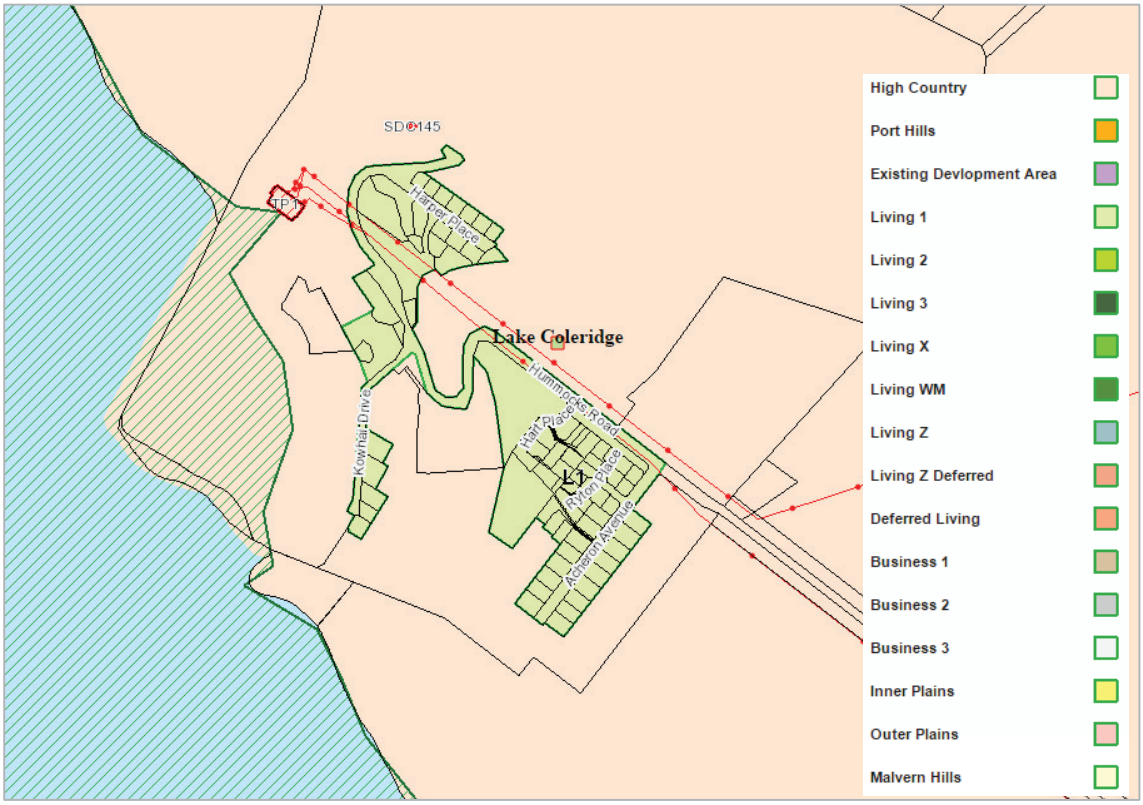
The improvements in the realignment of SH73 just outside Arthur's Pass village will improve the safety of the road for all users including cyclists and pedestrians due to the increase in road width and the provision of a shoulder. The highway improvements will also increase opportunities for visitors to see and experience the dramatic scenery in the National Park.

3.9 Lake Coleridge

Lake Coleridge village lies inland from State Highway 72, sitting beside the Rakaia River. Its' existence is attributed to the hydropower station which opened in 1914. The station is now automated. The village is popular with holidaymakers who enjoy a variety of recreational activities such as walking, tramping, fishing, boating and golf at Terrace Downs and skiing at the Mt Olympus club.

Access to Lake Coleridge village is via Coleridge Road, located approximately 23km from the intersection of Rakaia Gorge Road (SH72) / Windwhistle Road (SH77). Traffic volumes on Coleridge Road are low, being in the region of 300 veh/day. The current zoning of Lake Coleridge village is shown in **Figure 3.37**.

Figure 3.37
Current Lake Coleridge Zoning



Planned projects

There appear to be no planned projects in the Lake Coleridge township.

Proposed developments

There appear to be no developments proposed in the Lake Coleridge township.

Current network issues

There appear to be no existing road safety, parking or other transport related issues within the Lake Coleridge township.

Potential future issues

Snow has been identified as a potential issue on certain parts of the key local road network in the Selwyn District. Coleridge Road and Homestead Road are two roads that have been identified as being potentially affected by snow. The Transport Activity Management Plan states that arrangements are in place to work in combination with the State Highway managers to undertake combined snow clearing as appropriate to avoid isolated residences at Lake Coleridge and the hydro station from being cut off.

The Lake Coleridge power station is an important regional infrastructural asset that is dependent on access from Coleridge Rd. The station is fully automated, however if access via Coleridge Rd is hindered in some way then access to the Power station is also effected. Harper Road provides access to the Lake Coleridge head works, in particular there is a need for heavy equipment access to allow the head works to remain operational. There are a few constraints along the route such as the Ryton River Bridge which is weight restricted and thus heavy vehicles have to ford the river.

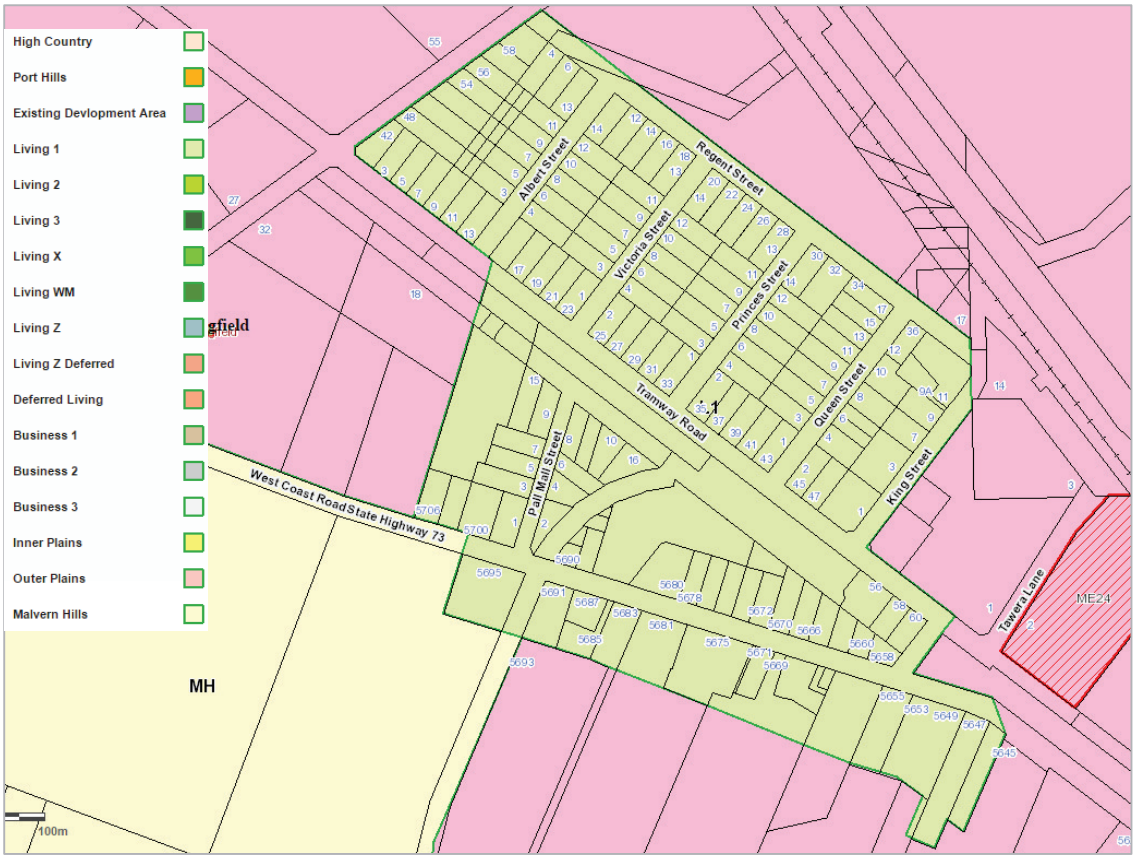
Opportunities

No further transport related opportunities have been identified for the Lake Coleridge township.

3.10 Springfield

Springfield is situated 23km northwest of Darfield and 63km west of Christchurch and lies 384m above sea level. The town contains a café, railway station for the TranzApline service, visitor centre, hotel, store, service station, accommodation, primary school and a domain. Springfield has a high volume of travellers passing through the township on State Highway 73 either en-route to the West Coast or Christchurch. The current zoning of Springfield is shown in **Figure 3.38**.

Figure 3.38
Current Springfield zoning



The majority of the Living zone in Springfield is already developed, therefor the potential for additional growth in the township is limited. This is also reflected in the forecast population numbers for Springfield which are only expected to increase by 87 people from 467 people (2014/15) to 554 people (2030/31).

The general layout of the road through the town is shown in **Figure 3.39** and generally comprises 3.5m wide traffic lanes in both directions, on-street parking and footpaths on both sides of the road. The speed limit through the township was recently reduced to 50km/hr.

Figure 3.39 Road layout through Springfield

The car park outside the hall and the public toilets was recently upgraded and has long spaces to accommodate trucks and towing vehicles.

Planned projects

There are no planned projects for the Springfield township.

Proposed developments

There appear to be no developments proposed in the Springfield township.

Current network issues

There appear to be no existing network issues for the Springfield township.

Potential future issues

A small reasonably active fault line lies near to Springfield and the Malvern Hills. Earthquakes can cause disruption to the transportation network and plans need to be in place in the event of emergency incidents occurring that may affect the transport network in places such as Springfield.

Opportunities

Given the existing scale of development in Springfield and the limited extent of future potential development, either business or residential, the existing transport network provisions are considered to be adequate for the level of demand in the township.

3.11 Waddington

The townships of Sheffield and Waddington are located just one kilometre apart and were established at the key traffic junction of the old main East/West highway and the inland North / South route now known as the Inland Scenic Route (State Highway 72). The general area is known for it's diversified crops including seed potatoes. Farming and agriculture is an integral part of the communities here and is evident from the popularity of the A&P show held each year at the Sheffield Showground.

The current zoning provisions for Waddington are shown in **Figure 3.40**. The existing living zone in Waddington is almost fully developed with limited potential for future residential growth. This is reflected in the future population projections for the Sheffield / Waddington townships which together are expected to increase by just 66 people from 579 people (2014/15) to 645 people (2030/31).

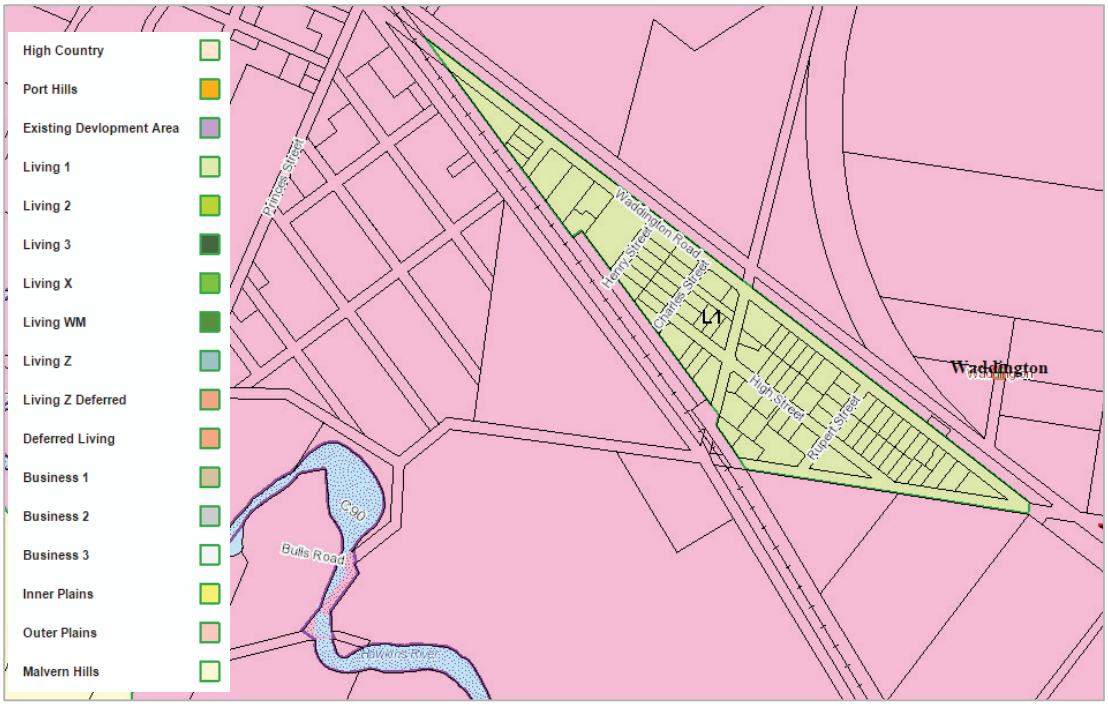


Figure 3.40
Current Waddington zoning

Planned projects

There are no planned projects for the Waddington township.

Proposed developments

There appear to be no developments proposed in the Waddington township.

Current network issues

Waddington is where Old West Coast Road connects to SH73. There is a reasonable amount of turning traffic to and from SH73 to access Old West Coast Road. Waddington is also where SH72 meets SH73, SH72 provides access to the Waimakariri District via the Waimakariri Gorge Road and bridge across the gorge the only river crossing in the area and of strategic importance.

There appear to be no existing road safety, parking or other transport related issues within the Waddington township.

Potential future issues

Given the existing scale of development in Waddington and the limited extent of future potential development, the existing transport network provisions are considered to be adequate for the future level of demand in the township.

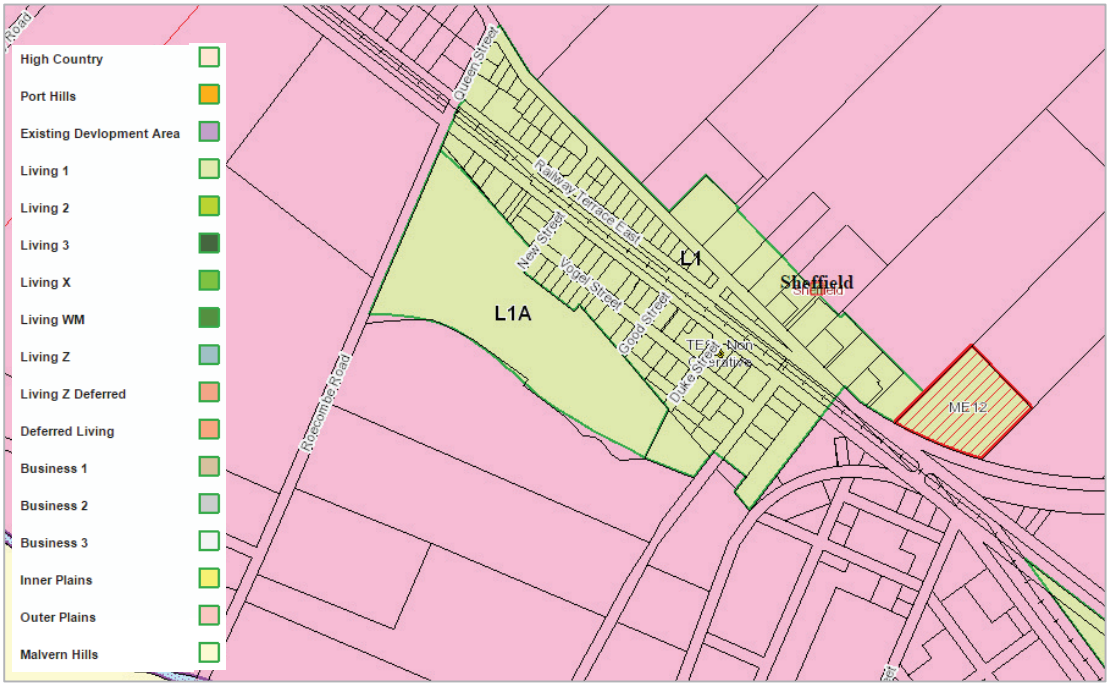
Opportunities

For the smaller townships such as Waddington, an appropriate level of service is provided given the rural environment of the township and low population numbers of these townships. As the population of Waddington is not anticipated to increase significantly, it is considered that the current transport network provisions will be satisfactory to accommodate what limited growth may occur.

3.12 Sheffield

Sheffield is located where the foothills start to rise from the Canterbury Plains. The township is located 13km northwest of Darfield and 55km west of Christchurch. It is a small rural community with a primary school, volunteer fire brigade, hall, hotel, swimming pool, two churches and a domain. The township has a significant volume of through traffic given its` location on State Highway 73. The current zoning provisions for the township are shown in **Figure 3.41**.

Figure 3.41
Current Sheffield zoning



The railway line also runs parallel to State Highway 73 through the township and similar to other townships located on this route, there is a severance issue between the northern and southern parts of the township due to the state highway and railway line. At either end of the townships are vehicular connections across the state highway and railway line at the intersections of SH73 / Roecombe Road / Queen Street and at SH73 / Curve Road.

Planned projects

There are no planned projects for the Sheffield township.

Proposed developments

There appear to be no developments proposed in the Sheffield township.

Current network issues

There appear to be no existing road safety, parking or other transport related issues within the Sheffield township.

Potential future issues

A large area of land south of SH73 is zoning Living 1A and yet to be developed. If residential development is to occur on this area of land then connections through to the local road network will need careful consideration. As shown below, there are a number of potential points where access could be gained from the existing roads of New Street, Good Street and Duke Street as well as Roecombe Road to the western boundary of the site. While connectivity through developments is always encouraged, this needs to be weighed against the resulting impact of increased vehicular movements through these intersections on the operation and efficiency of the state highway.

Figure 3.42
Potential future connection points

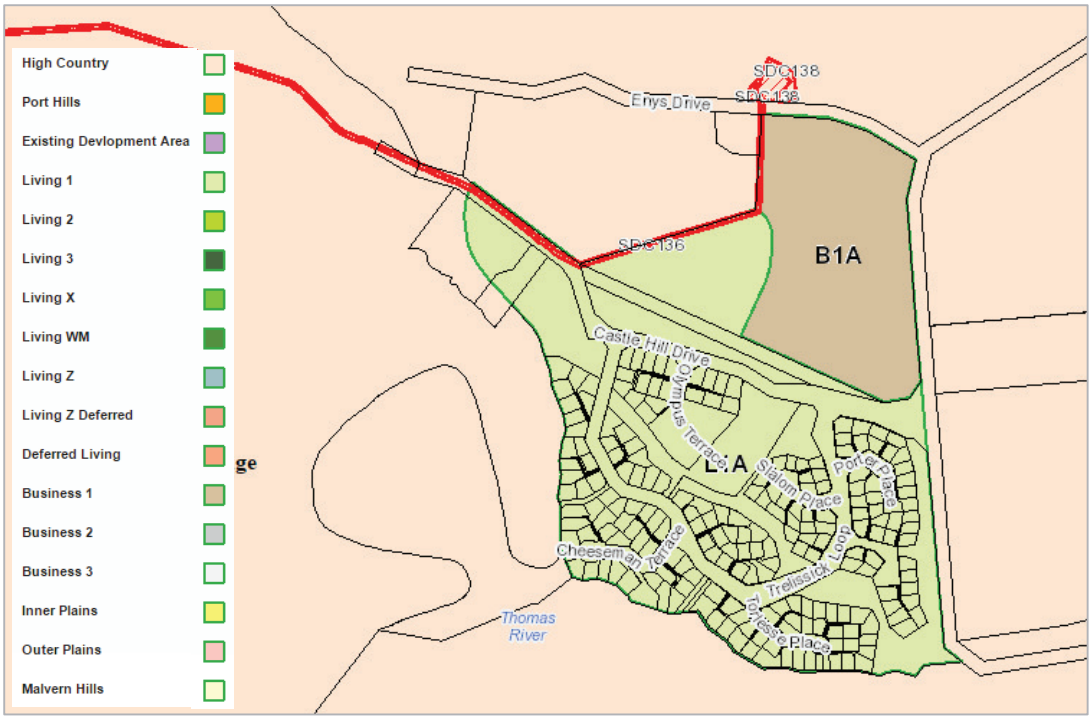
Opportunities

No opportunities have been identified for the Sheffield township.

3.13 Castle Hill

Castle Hill is located just off State Highway 73 approximately 52km northwest of Darfield and 100km west of Christchurch. Castle Hill is a popular place for holiday homes and recreational facilities and the population is made up mainly of seasonal holiday visitors. The township is nestled in the Southern Alps at an altitude of 700m. The township is a good base for various outdoor activities including skiing, hiking, hunting and water sports. The township area of Castle Hill is located to the west of State Highway 73.

Figure 3.43
Current Castle Hill zoning



Planned projects

There are no planned projects which may impact the transport network.

Proposed developments

A holiday park development and a golf course upgrade on the east side of the SH has recently been granted consent. The access will be located opposite Castle Hill Drive. There is likely to be traffic (including pedestrians and cyclists) moving between the village and the holiday park/golf course. However there appeared to be no traffic issues raised during the consent process except for mention that "*The access to the site is located very close to the entrance to Castle Hill Village which may make this intersection considerably busier than it currently is.*"

Current network issues

There appear to be no existing traffic or transportation related issues within the Castle Hill Township.

Potential future issues

For the smaller township areas such as Castle Hill, an appropriate level of service is provided given the rural environment of the township and low population numbers. As the population of Castle Hill is not

anticipated to increase significantly, it is considered that the current transport network provisions will be satisfactory to accommodate what limited growth, if any that may occur. However it is noted that the Village can be cut off and internally effected by snowfall. There are agreements in place with NZ Transport Agency regarding the clearance of snow on the internal roads at the same time as the SH clearance.

Opportunities

Given the existing scale of development in Castle Hill and the limited extent of future potential development, either business or residential, the existing transport network provisions are considered to be adequate for the level of demand in the township.

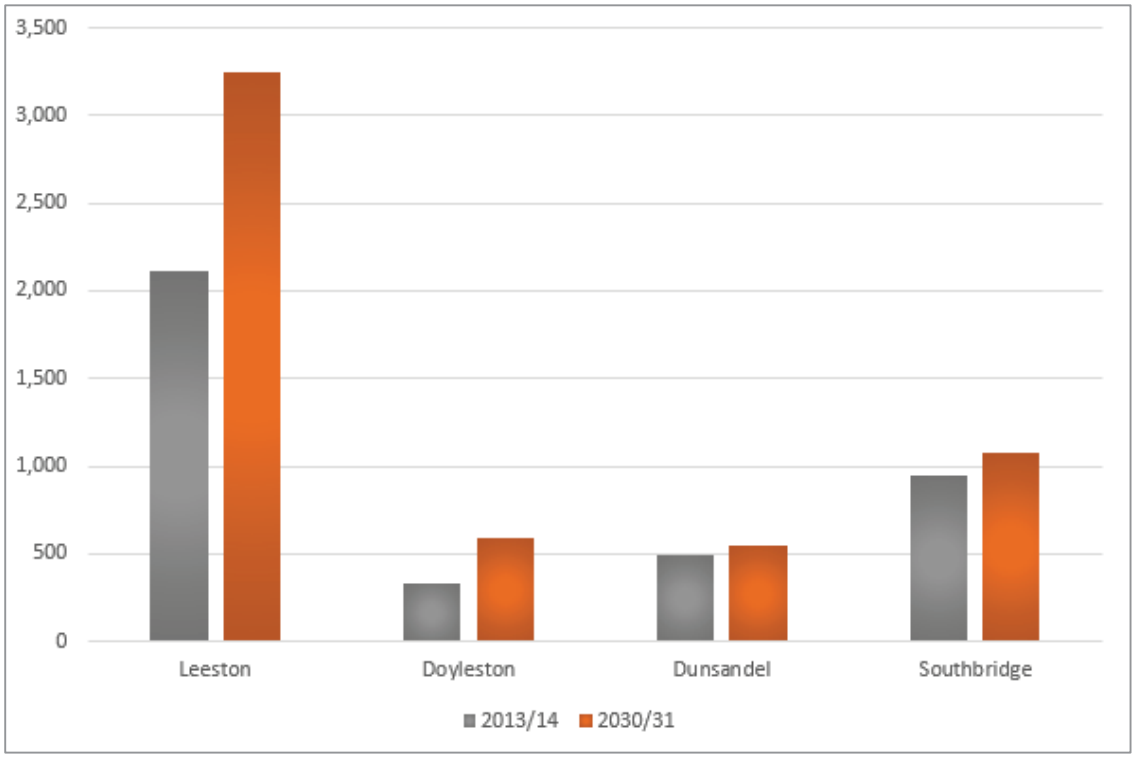
4. Ellesmere Ward

4.1 Area Overview

The Ellesmere Ward is comprised predominantly of the outer Canterbury plains. The plains is an expanse of low-lying, flat and comparatively dry grassland. In the Selwyn District the vast majority of the population live on the plains.

The future population projections for the townships of Leeston, Doyleston, Dunsandel and Southbridge are shown in **Figure 4.44** below. Within the Ellesmere Ward, the majority of population growth out to 2031 is forecast to occur in the Leeston township with an additional 1,000 residents bringing the population to approximately 3,249 people. The remaining townships are significantly smaller than Leeston and are not expected to see significant growth in population numbers.

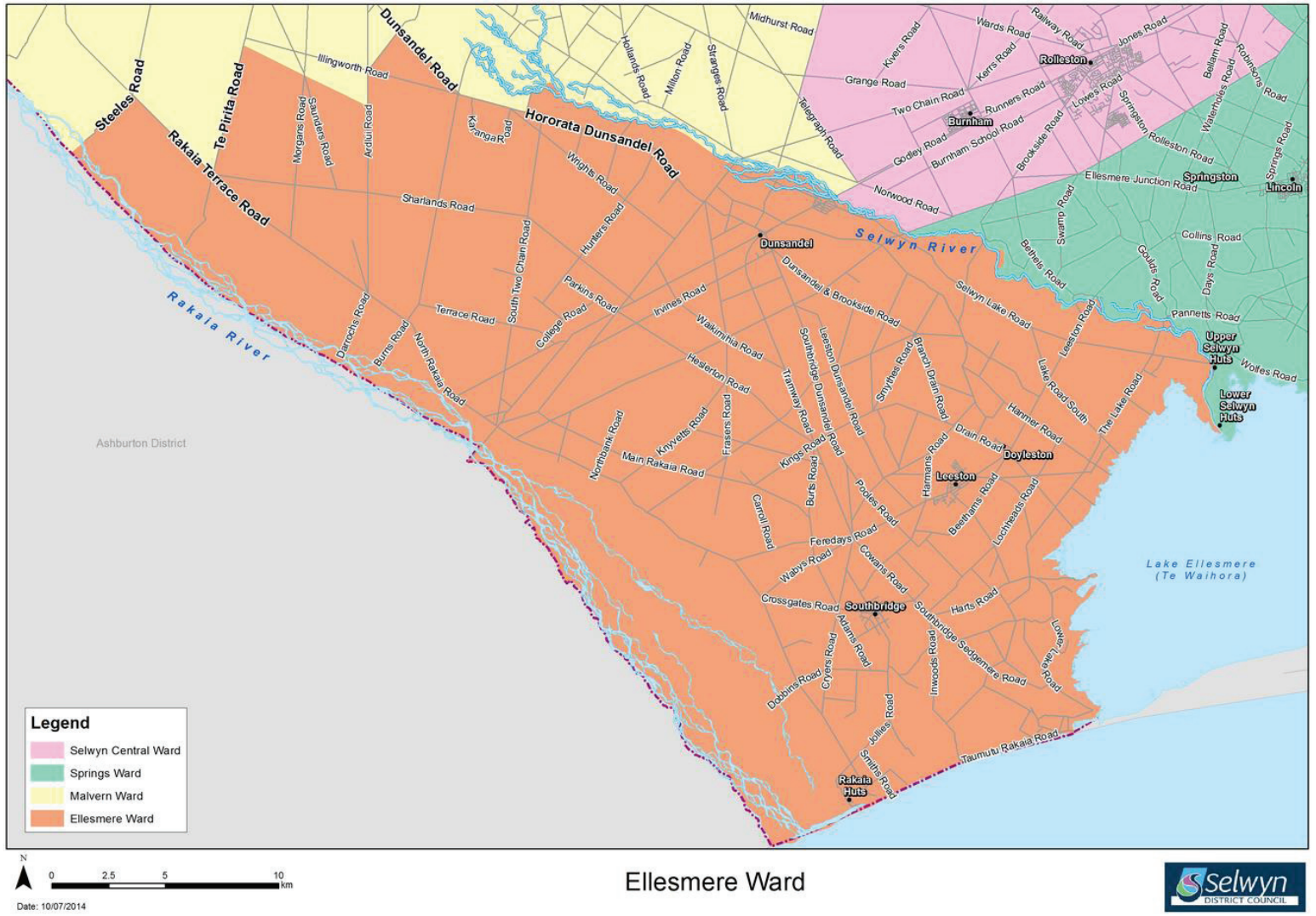
Figure 4.44 Future population projections for Ellesmere townships



Selwyn 2031 has stated that investigations will be carried out into the provision of infrastructure to service any papakāinga housing needs of Te Taumutu Rūnanga to identify what potential opportunities and constraints exist. The implications that this development may have on the transportation network has also been included as part of this assessment.

The extents of the Ellesmere Ward are shown **Figure 4.45**.

Figure 4.45 Ellesmere Ward Area Map



4.2 Leeston

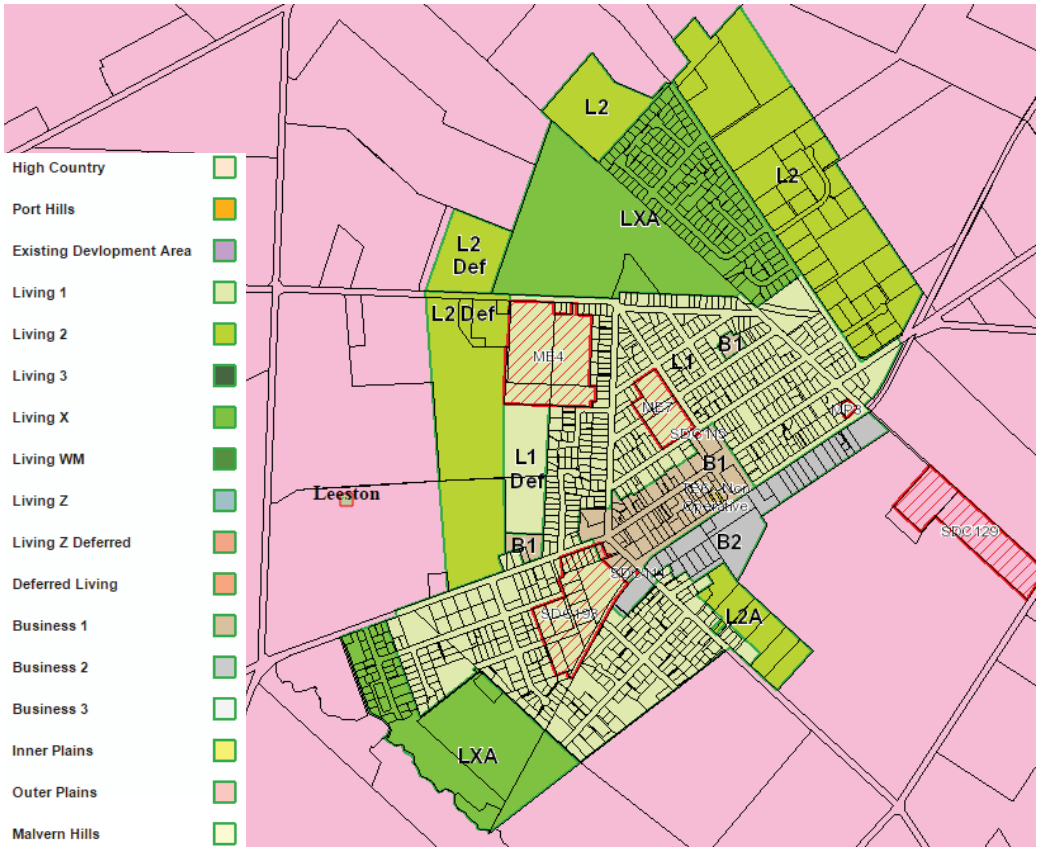
Leeston is situated approximately 25km southwest of Rolleston, 45km southwest of Christchurch and is classified as a Service Township under the District Development Strategy. The township has a selection of shops, schools from preschool to high school, a library, supermarket, service station, churches, old people`s hospital, medical centre, volunteer fire brigade, fitness centre and RSA. There are also a number of sports clubs and facilities available in Leeston. Lake Ellesmere is sited close by to Leeston and is popular for watersports and recreational fishing.

High Street is the main route through the town centre for light vehicles while heavy vehicles are required to use the heavy vehicle by pass and travel via Leeston and Lake Road. High Street, Market Road, Pound Road and Cunningham Street classified as Collector Roads in the District Plan although under the ONRC these are now Access Roads. However, these still continue to provide an inner ring of connecting roads and streets to serve the wider urban area of the township, providing and/or protecting a wider function such as delivering a higher level of service that can cater for all transport modes.

ECan currently supports community vehicle trusts in Ellesmere, which is based in Leeston. This is a local shuttle service run the community that takes people to town for medical appointments etc.

Current zoning provisions for Leeston are for additional residential development around the periphery of the existing residential areas to the north, east and south as shown in **Figure 4.46**.

Figure 4.46
Current Leeston zoning



Planned projects

A new cycleway connecting Leeston and Doyleston is a high priority for Council and is programmed to be constructed in 2016/17. Councils` preference is for the cycleway to be constructed along the old railway line however this may not be possible, so the alternative alignment will be along Leeston Road.

The footpath along Manse Road between Country Lane and Selwyn Street is planned to be extended in 2015/16 and will improve the pedestrian connection into the town centre for the growing number of residents along Manse Road.

Maintenance and renewal work is scheduled for a number of roads in 2015/16.

It is also proposed to extend and develop Leeston Park between 2016 and 2021 as well as resurfacing the courts in 2018/19. Other planned projects include an upgrade / replacement of the toilets at RSA block and stormwater upgrades. The provision of a Community Centre for Leeston is also something which is being considered.

Changes to the speed limit in Leeston have also recently been approved to include Manse Road in the 50km/hr urban traffic area. The 50km/hr has also been extended to include High Street to the new urban-rural threshold[16] constructed west of Clausen Avenue. Station Road between Cunningham Street and Leeston Road has been included in a 70km/hr speed limit.

Proposed developments

The proposed development of the Oakvale subdivision comprises 20.86 hectares of land consented and zoned for residential development into 163 lots, over eight stages. The development provides for vehicular connections onto Leeston Dunsandel Road as well as a connection to Da Vinci Avenue. The subdivision will also include pedestrian / cycle connections, improving links for active modes not only for the subdivision but for adjoining developments as shown in **Figure 4.47**.

[16] Urban – rural Threshold: The location where the speed limit changes when entering / leaving an urban area which may be accompanied by landscaping features

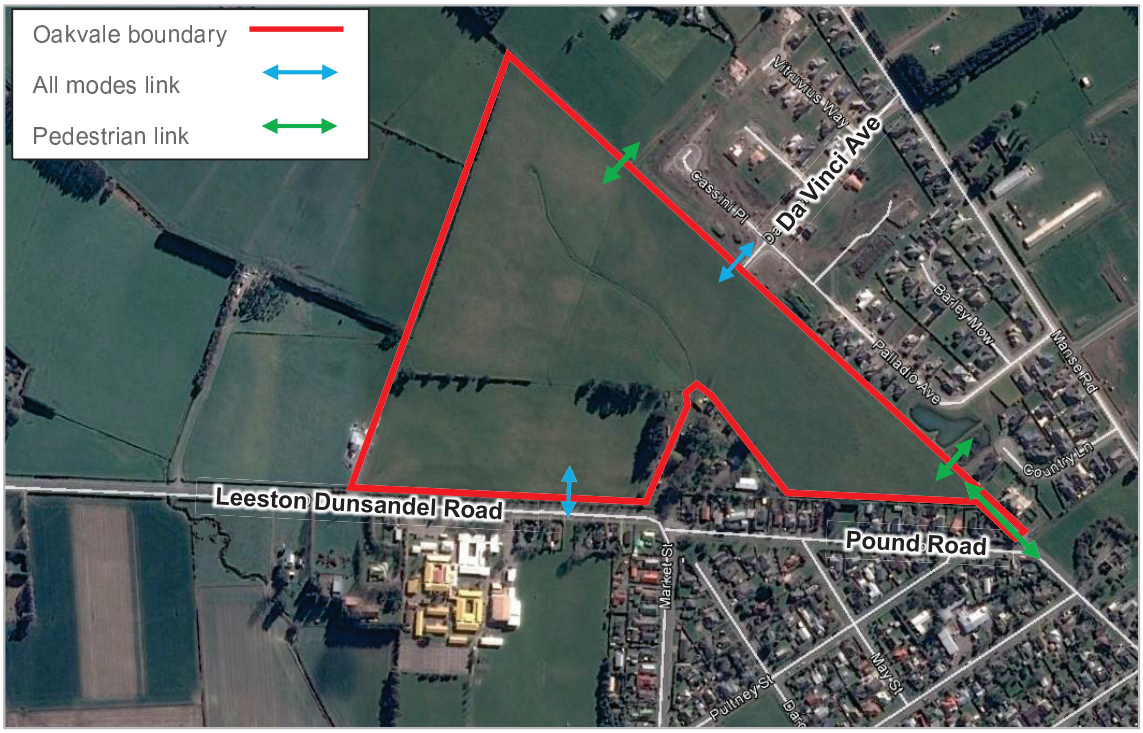


Figure 4.47
Oaklands subdivision connections

Current network issues

Observations indicate that there may be some current issues with pedestrian and cycle links in the residential area. For example, an informal path has been created by people travelling from Country Lane through to Pound Road as shown in **Figure 4.48Error! Reference source not found.**. This is a shorter route for pedestrians to take into the town centre compared to the distance they would have to travel if they kept to the Manse Road – Leeston Road – High Street route.

Figure 4.48
Pedestrian desire line

Parking issues

The Business 1 zone is consolidated on either side of High Street, with the majority of this zone already developed there is limited potential for any further development within the Business 1 zone or on adjoining sections. On-street parking is provided along both sides of High Street and a public parking area is

located on the corner of High Street and Leeston and Lake Road and on-street parking is located on Gallipoli Street.

On-site parking provision in the Business 1 zone is generally very low due the historical nature of development whereby most shops are built right up to the road boundary which limits the ability to provide additional parking on these sites. Council have generally allowed for reduced car parking provision for businesses in this zone through the resource consent process given that there is on-street parking available within the town centre and in close proximity to the business area.

While significant additional development within the Business 1 zone is unlikely, any additional demand on the existing on-street parking may be difficult to accommodate as current demand was observed to be reasonably high.

The Business 2 zone is situated along the southern side of Station Street and comprises mainly light industrial activity. These sites are generally quite large and capable of accommodating on-site parking for their own demand. Overall, there does not appear to be any significant issues in relation to parking that require resolving.

Potential future issues

If future development of the living zones does not occur in an integrated manner providing connections to the existing road network and adjoining development areas then this could result in a disjointed network that does not cater for the needs of all modes of transport.

Opportunities

With the extent of living zone land yet to be developed and the future increase in population forecast for Leeston, there is potentially benefit in exploring the option of developing an ODP for the expansion of the township to ensure that any future growth occurs in a well-connected and integrated manner.

An easement will be created within the near future on the land adjoining the Ellesmere Hospital on Pound Road. This is near the location where there is the existing desire line for pedestrians and cyclists as shown in **Figure 4.47**. Potentially, this new easement could be formalised to provide a link for walking and cycling from Country Lane to Pound Road.

Like many other townships in Selwyn, Leeston has seen an increase in the number of residents living in the town but commuting to Christchurch. Some commuters in the town have expressed a desire for a commuter public transport service, similar to the user funded service operated by Red Bus Ltd serving Darfield commuters into Christchurch. While, there does not appear to be any current confirmed proposals for such a service in Leeston, Red Bus have recently indicated that they are considering the introduction of a user funded service from Leeston to Christchurch and are currently determining the level of demand for such a service. As the area continues to grow and demand for a service increases this may be an opportunity for the community. There may be opportunity for commuters to utilise a potential Park and Ride at Lincoln in the future to access Metro public transport.

A shared path between Southbridge and Leeston has been identified previously and while there may be merit in idea, feedback suggests that there may be limited demand from the Southbridge community for such a facility. So while this may not be an immediate priority for Council, it could be something which is considered at a later stage if it becomes clear that there is a demand for such a facility.

4.3 Dunsandel

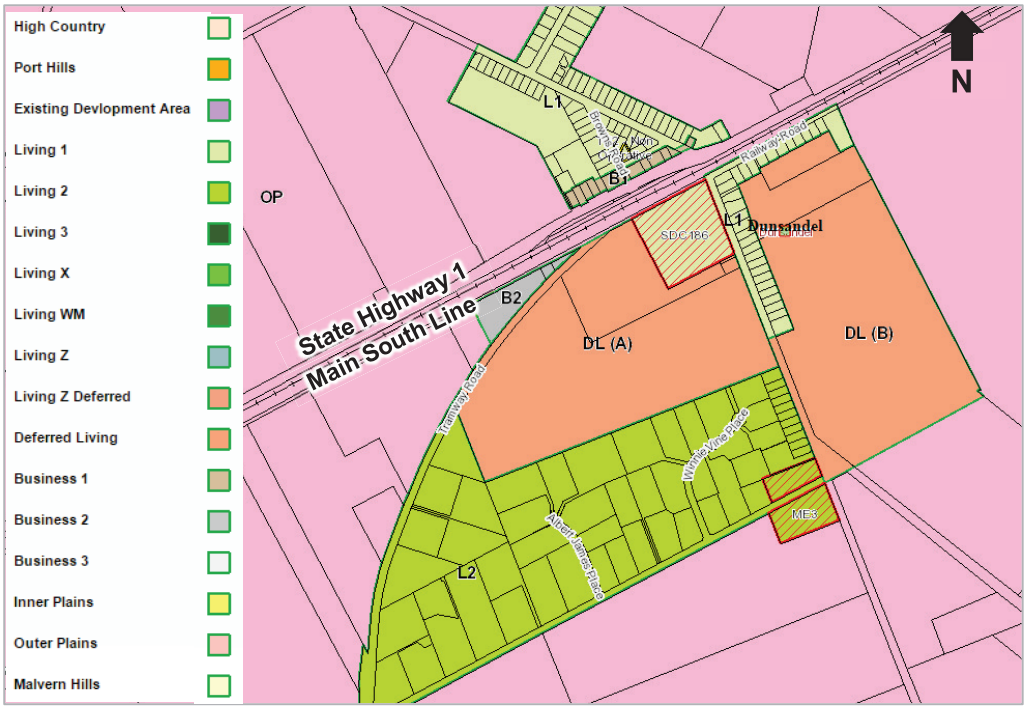
Dunsandel is another of the districts` Rural Townships situated 17km southwest of Rolleston. It is a service town for the local agricultural industry as well as also being a destination for travellers and locals wishing to visit the traditional country store and post office and various cafés and gift shops. Lake Crichton is a purpose built lake situated close to the township and is frequented by watersport enthusiasts.

The Dunsandel township straddles Main South Road (State Highway 1) and the Main South Line railway. The general cross section of Main South Road through Dunsandel includes 3.5m wide traffic lanes in both directions with a flush median approximately 3.5m wide and wide shoulders either side. There is one uncontrolled pedestrian crossing including a pedestrian refuge located 80m east of the SH1/Browns Road intersection. The general cross section and pedestrian crossing on SH1 is shown in **Figure 4.49**.

***Figure 4.49** SH1 Cross Section in Dunsandel*

Following the subdivision of land bordering the township into small lifestyle blocks, the population of Dunsandel has grown significantly over the last few years. These new residential developments have been particularly popular with people who work in the city but wish to live in Dunsandel and commute the 43kms (roughly 40 minutes) into Christchurch. Along with the new subdivision blocks, a number of larger properties have recently been converted into large, efficient and modern dairy farms. The current zoning for Dunsandel is shown in **Figure 4.50**.

Figure 4.50
Current Dunsandel zoning



Planned projects

A new community centre for Dunsandel is proposed to be constructed in 2015/16, sited on the domain and will be accessed off Tramway Road. The proposed facility will provide a social space for the community to gather for educational, sporting, recreational and cultural events.

Located 7km southwest of Dunsandel is the Synlait dairy factory which produces one percent of New Zealand's total milk production and is continuing to 'sign up' suppliers and expand. The factory's inwards and outwards goods are transported by road. The close proximity of the factory to State Highway 1 limits the effects of outwards goods on the District's roading network, but inwards goods (raw milk from farms) are expected to have a noticeable effect on some routes with the majority of suppliers within an 80km radius of the factory.

Proposed developments

There appear to be no business or residential developments proposed in the Dunsandel township.

Current network issues

There have been concerns expressed by the community and school that children have to cross Irvines Road to get to the school sports grounds opposite. Suggestions in the past have included installing a pedestrian underpass. Considering the low traffic volumes supervised crossing of children would seem the most appropriate response.

The railway level crossing at Browns Road has an alarm system to warn motorists of approaching trains. A search of the Crash Analysis System (CAS) database for the past five years does not indicate any safety issues relating specifically to the railway level crossing, although anecdotally there have been a number of near miss incidents involving cars / trucks and trains at this crossing.

Potential future issues

It is already evident to Council that the conversion of land to dairying in Dunsandel is having an effect, with pavement widths, pavement loadings and safety all under pressure. The increased use of roads with an inadequate road seal width by dairy tankers will increase maintenance demands on Council.

If additional residential and/or business activity is to occur to the southern side of SH1, the resulting increase in traffic generated by this activity will put greater pressure on the SH1 / Browns Road intersection. In addition Leeston-Dunsandel Road running through the south of the township provides the connection between Dunsandel and Leeston. As Leeston grows traffic accessing SH1 via Dunsandel will also increase, this will place further demands on the SH1 / Browns Road intersection.

With the impending construction of the Christchurch Southern Motorway Stage 2 (CSM2), Dunsandel will continue to become a more and more desirable place for people to live as travel times into Christchurch will be reduced. Consequently, any future residential development in Dunsandel is likely to be attractive to commuters.

The section of SH1 through Dunsandel has an AADT in the region of 11,000 vehicles and consequently can at times be very busy with delays experienced by right turning traffic from the interesting roads. An increase in right turning traffic at the SH1/Browns Road intersection may increase delays and consequently increase queue lengths. Given the location of the railway level crossing, which is setback 35m from SH1, careful consideration needs to be given to the implications of increased traffic flows through the intersection.

Increased development to the southern side of SH1 may also increase the number of pedestrians /cyclists wishing to cross over the state highway to access the shops and businesses on the northern side of SH1 although the volume / speed of traffic through the town could be a deterrent. Currently, there is only one pedestrian refuge on SH1. Pedestrian / cycle links across the state highway between the northern and southern areas of the township need to be considered if further development is to occur.

Opportunities

The new Dunsandel Community Centre will be constructed on the domain. As part of this development, it would be a good opportunity to improve pedestrian links to the north of the township and help to address some of the issues raised above. A footpath connection constructed between the new Community Centre and the car park (on the south east corner of the SH1 / Browns Road intersection) has previously been envisaged. This would be supported from a transport perspective as pedestrian provisions between the north and south of the township are very limited. As well as being beneficial to the Community Centre development it would have benefits to the wider Dunsandel community also. We understand that the path connection has been confirmed in the community centre plans.

Future development north of SH1 would avoid the need for people travelling east / west to cross over the railway level crossing. This could help alleviate any concerns regarding safety at the railway level crossing. Residential development north of SH1 would mean commuters travelling east could turn left onto the state highway, thus avoiding the need to make a right turn out onto SH1. For the return trip, there are two separate right turn bays on SH1 for right turning vehicles onto Browns Road and Hororata Dunsandel Road.

4.4 Doyleston

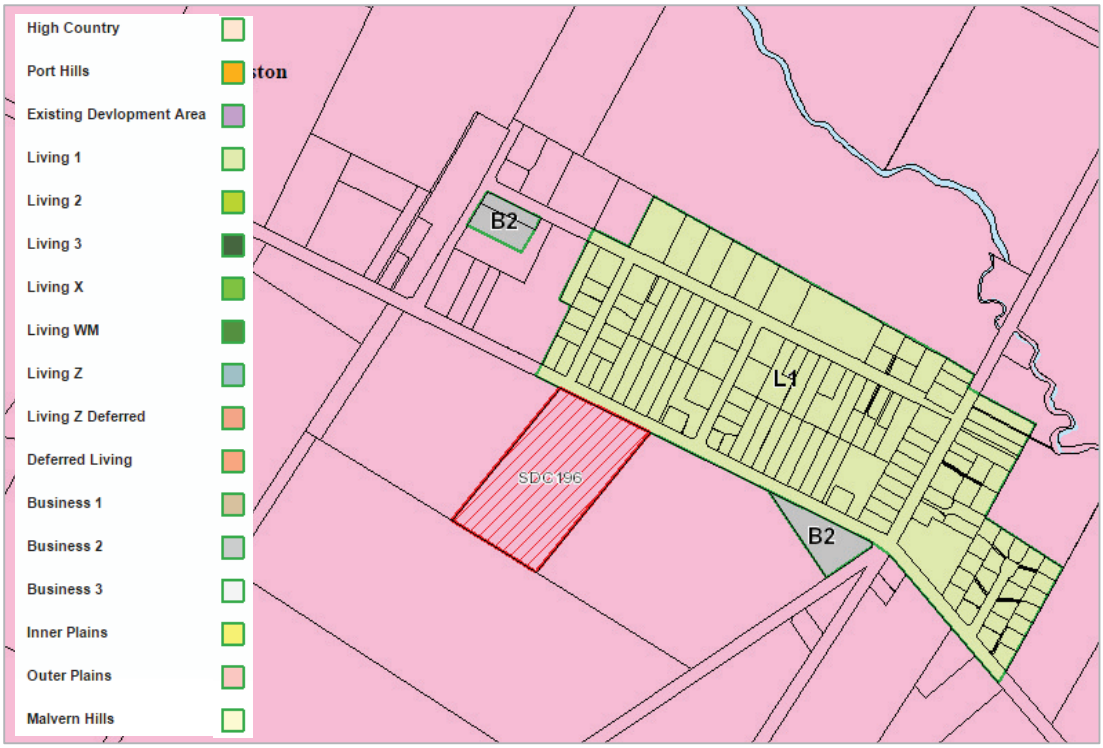
Doyleston is classified as a Rural Township and is situated 3km to the east of Leeston and approximately 36km south west of Christchurch. The population of the township is in the region of 350 people and by 2031 is forecast to experience growth of approximately 268 people up to a total of 588 people.

Leeston Road is the main road through the township and comprises two 3.5m wide traffic lanes with on-street parking and footpaths provided on both sides of the road. The general layout of Leeston Road through the Doyleston township is shown in **Figure 4.51**.

Figure 4.51
General layout of Leeston Road through Doyleston

The majority of development in Doyleston is located to the west of Leeston Road and the bulk of the sections in the living zone have already been developed so the potential for any additional development within the existing living zone in Doyleston is limited. The current zoning provisions for Doyleston are shown in **Figure 4.52**.

Figure 4.52
Current Doyleston zoning



Planned projects

A new cycleway connecting Leeston and Doyleston is a high priority for Council and is programmed to be constructed in 2016/17. Councils` preference is for the cycleway to be constructed along the old railway line however this may not be possible, an alternative alignment is along Leeston Road. This will enhance pedestrian and cycle connections between the two townships.

Proposed developments

There appear to be no developments proposed in the Doyleston township, most of the development in this area will occur in the adjoining township of Leeston.

Current network issues

Safety concerns have previously been raised in relation to the five arm intersection of Leeston Road, Beethams Road and Drain Road. While the layout of the intersection is somewhat unconventional and is situated on a bend where visibility is slightly restricted, in particular to vehicles exiting the local garage. A search of the CAS records for the previous 10 years indicates that three crashes have occurred at the intersection. Of these three crashes one resulted in minor injuries and no injuries were reported for the remaining two crashes.

There are no trends in the crashes to indicate any inherent safety issues with the layout or operation of the intersection. Recent changes to the speed limit in Doyleston have reduced the 70km/hr speed limits to 50km/hr so all of Doyleston is now included in the 50km/hr urban traffic area. Council have no current plans to change the layout.

Potential future issues

Given the forecast growth in the township there are not anticipated to be any significant issues from a traffic and transport perspective.

Opportunities

As mentioned previously, the community in Leeston have previously indicated a desire for a commuter public transport service to Christchurch. If these service were to be implemented then this could also include the Doyleston township.

4.5 Southbridge

Southbridge is located approximately 30km southwest of Rolleston and 50km southwest of Christchurch. The township was once the main centre for Ellesmere when the railway branch line reached to the township. Southbridge now has two pools and a hydroslide, volunteer fire brigade, primary school, playcentre, Plunket rooms, hall, butcher, tavern, service station, church, café and fish and chip shop.

The population of Southbridge is forecast to increase from 951 people (2014/15) to 1,077 people (2030/31). Under the District Development Strategy Southbridge is classified as a Rural Township. The current zoning in the Southbridge township, including the recently rezoned Living 1 land as part of PC34, is shown in **Figure 4.53**. Infills in the remainder of the living zone are anticipated to make up the future growth demand of the township.

Figure 4.53 *Southbridge zoning*

The business activity in the township is mainly located off either side of High Street, with some business activity also accesses from St James Street and St Johns Street. The general layout of High Street through the township is shown in **Figure 4.54**.

Figure 4.54 Layout of High Street through Southbridge

As **Figure 4.54** shows parking is provided on both side of High Street. Traffic volumes through the town are reasonably low with an ADT in the region of 1,300 veh/day. Existing activities have a mix of none to some limited on-site parking, however there appears to be ample capacity for on-street parking for any future development within the existing business zone.

Planned projects

Changes to the speed limits on certain part of the network in the Southbridge township have recently been approved. Broad Street will now be included in the 50km/hr urban traffic area and the 50km/hr urban traffic area will also include the High Street intersection with Brook Street.

Other projects planned for the township include an extension to Southbridge Park to provide additional sports space and relocation of tennis courts (2016-2020), completion of the upgrade work to the changing facilities at Southbridge Pool and an upgrade / replacement of the toilets on Southbridge main street in 2015/16.

Proposed developments

Privately requested Plan Change 34 (PC34) has recently been approved which rezoned 5.93ha of existing Rural (Outer Plains) zone to Living 1, located off High Street. This will enable approximately 56 residential units to be constructed. An internal access road will serve the development and form two intersections with High Street and Brook Street as shown in **Figure 4.55**.

***Figure 4.55** PC34 Outline Development Plan*

It is anticipated that this proposed development will accommodate much of the residential growth forecast to occur in the Southbridge township. Traffic flows on the road network through the township are low and well below the road capacity. As part of the increased development in this area of Southbridge, it is expected that the footpath on High Street which currently terminates at St James Street would be extended to link into the new development and complete the pedestrian link along the western side of High Street to the township centre.

Current network issues

In the past there have been suggestions to improve the High Street/Gordon Street/Taumutu Road/St Johns Street intersection by installing a roundabout but the current performance of the intersection is acceptable based on the relatively low traffic volumes. There appear to be no other existing road safety, parking or other transport related issues within the Southbridge township.

Potential future issues

Given the forecast growth in the township there are not anticipated to be any significant issues from a traffic and transport perspective.

Opportunities

Given the existing scale of development in Southbridge and the limited extent of future potential development, either business or residential, the existing transport network provisions are considered to be adequate for the level of demand in the township.

A shared path between Southbridge and Leeston has been identified previously and while there may be merit in idea, feedback suggests that there may be limited demand from the Southbridge community for such a facility. So while this may not be an immediate priority for Council, it could be something which is considered at a later stage if it becomes clear that there is a demand for such a facility.

4.6 Rakaia Huts

Rakaia Huts is situated 16km south west of Leeston and located at the north side of the Rakaia River mouth. The village has 85 permanent residents which can increase up to 200 during the fishing season. Fishing plays a big role in community life in Rakaia where the Rakaia River Fishing Competition is held each February with approximately 850 people taking part in the competition. The boat ramp located in the village provides access to the lagoon and river mouth. There is also an established camping ground within the village.

Rakaia Huts township is accessed via Jollies Road and Pacific Drive. In the township there are just two roads serving the existing properties, Pacific Drive and Ocean View Place. Pacific Drive and Ocean View Place are two-way roads with 3m wide lanes in both directions. Through the township, there are no footpaths provided although there are wide berms either side. This is in keeping with the rural nature of the township and the lower level of service which is provided for such areas in the district.

The majority of the existing residential development is concentrated around Ocean View Place with a number of properties accessed of the western side of Pacific Drive. The current zoning of Rakaia Huts is shown in **Figure 4.56**. Almost all of the existing Living 1 zone sections are already developed, therefore there is very limited potential for additional development in the current Living 1 zone at Rakaia Huts.

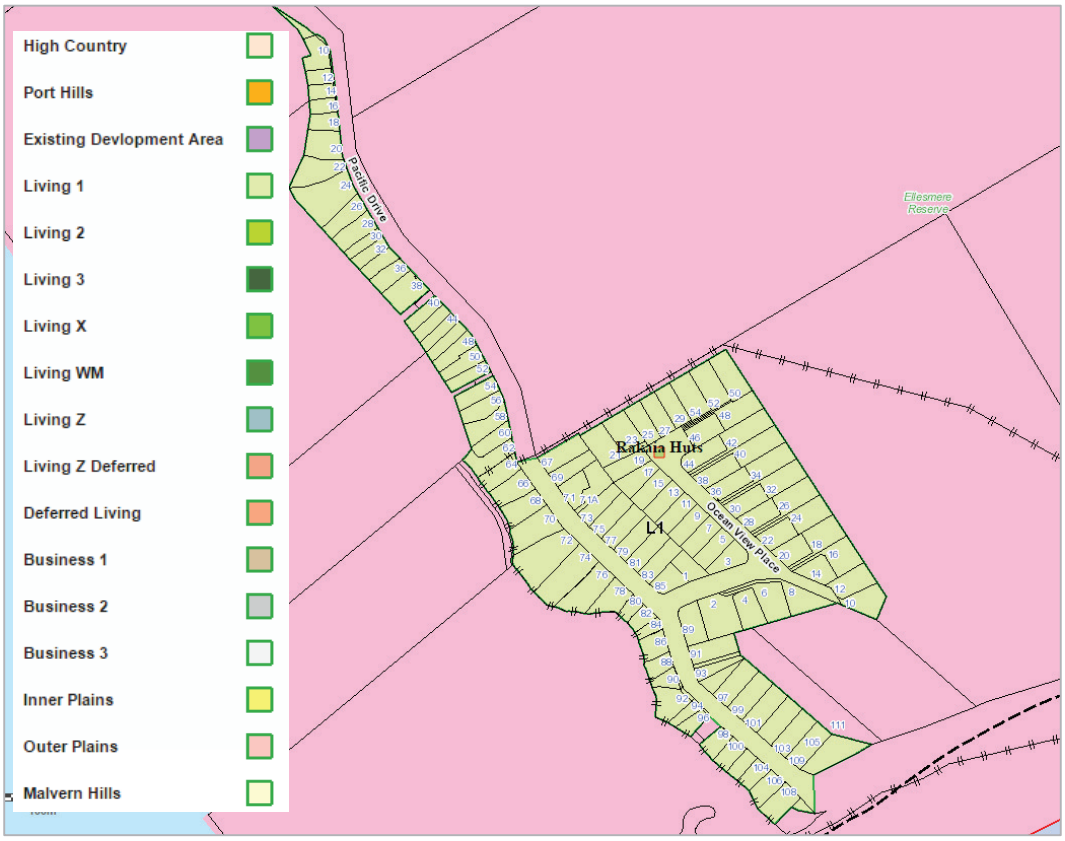


Figure 4.56
Current zoning Rakaia Huts

Planned projects

There are currently no planned projects for the Rakaia Huts township.

Proposed developments

There appear to be no developments proposed for the Rakaia Huts township.

Current network issues

There appear to be no current traffic or transportation related issues in the Rakaia Huts township.

Potential future issues

As there is only one access route in / out of Rakaia Huts, the township may be vulnerable if there was ever an incident which blocked or damaged Pacific Drive. The local community could be cut off, albeit temporarily, from the rest of the network. Resolving this however is likely to be cost prohibitive.

Opportunities

Given the existing scale of development in Rakaia Huts and the limited extent of future potential development, either business or residential, the existing transport network provisions are considered to be adequate for the level of demand in the township.

4.7 Taumutu

Taumutu is situated approximately 10km southeast of Southbridge and 46km southwest of Christchurch. The general area of Taumutu is very sparsely populated and access is via a mix of narrow sealed and unsealed local roads. The location of the Maori Freehold Land in Taumutu in relation to the nearest township of Southbridge is shown in **Figure 4.57**.

Selwyn 2031 has stated that investigations will be carried out into the provision of infrastructure to service any papakāinga housing needs of the Te Taumutu Rūnanga. The main issues facing such development of Taumutu is the ability to appropriately service any development and that there are multiple land owners involved.

Figure 4.57
Location of Taumutu

The level of development which could occur in this area is not yet known although initial estimates are in the region of 50 to 100 household units. The extent of the Maori Freehold Land is shown in more detail in **Figure 4.58**.

Figure 4.58
Taumutu Maori Freehold Land

Planned projects

There are currently no planned projects for Taumutu.

Proposed developments

There appear to be no other developments proposed for Taumutu.

Current network issues

There appear to be no current traffic or transportation related issues in Taumutu for the existing level of development.

Potential future issues

The existing narrow sealed and unsealed roads in this area may not be able to provide a satisfactory level of service for any additional residential development in this location. The area is also situated in an isolated part of Ellesmere and may be vulnerable to being cut off from the rest of the network in the event of natural disasters.

Opportunities

Given the potential scale of development in Taumutu there may be potential for some localised improvements / upgrades on the road network such as seal widening and sealing sections of unsealed road in the area to provide for the future level of demand in the area. It is unlikely that the anticipated level of development would require the provision of footpaths.

It would also be desirable for there to be more than one main access route into and out of the development area. This should be easily achievable as there are at least two existing roads providing access to the area.

To ensure development occurs in an integrated manner, it could be useful to explore the option of an Outline Development Plan for any future development in this location.

5. Overall conclusions

Overall network

As the volume of heavy vehicle traffic is set to double over the next 30 years, Council will need to continue with the ongoing monitoring of heavy vehicles on the network. The HPMV routes will also need to be monitored to ensure their appropriateness for the volumes of heavy vehicles using them. There will also be implications in terms of maintenance and upgrades required to the local network which need to be taken into consideration when planning future works.

While a significant portion of the transport network in Malvern and Ellesmere comprises unsealed roads, Councils' approach is that while these will still be maintained, less allocation of resources will be placed on this part of the network. Instead more of a focus will be placed on the issues and costs associated with the highly trafficked arterial and freight routes, mainly as a result of the ONRC. This is considered appropriate given the relatively low volume of traffic using the unsealed parts of the network.

It will be important that Council have up-to-date procedures in place for emergency incidents or natural disasters which could affect the network. The Utilities Lifeline Response Plan should largely address this issue. However it will be necessary to ensure appropriate consideration has been given to each township in the Malvern and Ellesmere Wards, particularly those which are isolated with limited access options.

There are a number of issues which will require input not only from Council but also from other key stakeholders. Discussions with Kiwirail will be important in order to resolve the potential safety issues at or around railway level crossings. Likewise discussions will be needed with the NZ Transport Agency regarding the implications of development adjacent to state highways. Council will also need to have input into any future changes or updates to the State Highway Detour Policy given that this has significant implications on the local road network.

Ongoing collaboration will be required between Selwyn District Council and NZ Transport Agency regarding SH1 and SH77 inter-district connections with the adjoining Districts of Ashburton and Waimakariri. Council will need to ensure that there are adequate contingency plans in place if these links are damaged and/or impassable.

Malvern Ward

The existing transport provisions in the majority Malvern townships, including Hororata, Coalgate, Glentunnel, Whitecliffs, Arthur's Pass, Lake Coleridge, Springfield, Sheffield, Waddington and Castle Hill are anticipated to be sufficient to accommodate the expected future growth in these areas. However, the townships of Darfield and Kirwee will require careful consideration and planning to ensure that future development in these areas occurs in a manner that provides for an efficient and integrated transport network. The issue of severance, where for example SH73 passes through townships such as Darfield and Sheffield, will also need to be managed.

Ellesmere Ward

Similarly in the Ellesmere Ward, the existing transport provisions in the townships of Doyleston, Southbridge and Rakaia Huts are expected to be sufficient to accommodate the level of future growth expected in these areas. Some consideration regarding the development of an integrated network will be needed for Leeston. Future development in Dunsandel should not compromise the safety or efficiently of the state highway network. The potential severance of Dunsandel due to SH1 passing through the township will also need to be managed. Consideration has also been given to the future potential development of Taumutu. If development occurs in Taumutu, this is likely to require upgrades to the local road network as access is currently via narrow sealed and unsealed roads.

A summary of the strengths, issues and opportunities for the overall network and the townships in both Wards is provided in **Table 5.1**.

Table 5.1 Summary of Malvern and Ellesmere Ward Transport Network Assessment

Area / Township	Strengths	Issues	Opportunities
Overall Network	**Consolidated growth –** The strategic direction for the District is for growth to occur in and around existing townships allowing for a more efficient and effective transport system to be provided. **Resilience** – The transport network is generally resilient to incidents which may block the network, there are usually good alternative links to use. **Safety –**Road Safety Strategy developed in 2014 that aims to 'Progressively Reduce the Number and Severity of Road Crashes in the Selwyn District'. An example of action to date has been the review of speed limits across the district and where appropriate changes have been made.	**Population Growth –** The forecast population increase will also increase traffic volumes on the network and may put additional pressure on certain parts of the network, particularly at intersections. **Unsealed Roads** – A significant portion of the transport network comprises unsealed roads. With the projected increase in heavy vehicle traffic this may give rise to more dust and maintenance issues. **Public Transport** – If demand for public transport increases, wider community consultation would be required to determine if communities are willing to support new services through their rates, as 25% of the costs of public transport services comes from local rates. Approval from NZTA would also be required as they also provide funding.	**Resilience** – The Utilities Response Plan provides a proactive basis for maintaining the resilience of the transport network. **Safety –** Potential for further speed limits to be reviewed and changed over time as development occurs in the townships. **Safety** – Improving intersection safety on high speed rural roads. **Safety -** The urban/rural speed limit thresholds treatments are consistent throughout the District making it clear to motorists when they are entering / leaving urban areas.
Malvern Ward			
Darfield	**Public Transport Links –** There is an existing user funded bus commuter service available for Darfield residents travelling to Christchurch. **Consolidated business zone –** The existing business zone is easily accessed off the state highway which runs through the town centre and industrial zone is located away from the state highway. **Pedestrian links across SH73** – there are five pedestrian refuges on SH73 through the township within a wide flush median which is considered to provide a good level of service for pedestrians.	**Parking –** Concerns have been raised by the local community regarding parking particularly outside the bakery. The implementation of signage and marking should improve the efficient movement of vehicles through this area. Informational / directional signage could also be provided directing people unfamiliar with the town to where other areas of off-street parking is available. **Railway level crossings –** There are four railway level crossings in the township, three of which have warning systems in place for motorists to alert them to approaching trains. However, anecdotally there have been a number of near miss incidents. Further investigation could be carried out to determine if additional safety precautions could be carried out particularly as traffic volumes through these crossings are likely to increase over the coming years.	**Future population growth** – The township population is expected to increase significantly out to 2031. With the additional residential development in the Living zones, is the potential to create walking and cycling connections. **Truck stops –** With the substantial volume of heavy vehicles passing through the town, investigation could be carried out into the viability of providing truck stops in the town along SH73. **Business zone –** Future growth in the business zone could occur to the east of the town and enable business activity to be consolidated in this area and allow shared benefits between businesses.

Area / Township	Strengths	Issues	Opportunities
Kirwee	**Access to SH 73** – The township has direct access to SH73 providing a good links through to Christchurch particularly for commuters, Old West Coast also provides a link to Christchurch. **Public Transport Service** – The existing Darfield commuter bus service also serves the Kirwee township providing a link for workers into Christchurch. **School Lane –** The school is located on School Lane which is a narrow, no-exit street with low traffic volumes.	**Future development of living zone land south of Hoskyns Road** – If access to future residential development is gained from School Lane then this may exacerbate parking demand around the school and may also increase traffic volumes on School Lane, this would require mitigation. **SH73 and Railway** – Any further development south of SH73 and the railway would be discouraged as this creates a barrier to movement between the south of the township and the main township centre.	**Existing footpath connections** – Future development could easily connect into the existing footpaths on Courtney Road and Hoskyns Road providing good connections for pedestrians.
Hororata	**Pedestrian links** - There is good provision for pedestrians in the township with most roads having a footpath on at least one side.	No existing transport related issues identified.	Current transport provisions in the township are considered adequate for the level of demand in the township.
Coalgate	**Cycleway –** The Coalgate to Glentunnel cycleway will be built in 2015/16 this will encourage walking and cycling between the two townships, particularly for school children attending Glentunnel primary school.	**SH 77**- SH used by forestry and diary heavy vehicles.	Current transport provisions in the township are considered adequate for the level of demand in the township.
Glentunnel	**Cycleway –** The Coalgate to Glentunnel cycleway will be built in 2015/16 which will encourage walking and cycling between the two townships, particularly for school children attending Glentunnel primary school.	**School parking** – concerns have been raised by the community regarding the current parking arrangement in front of the school given this is located on a SH. However, visibility is good at this location and the 40km/hr speed limit is in force when children are present.	Current transport provisions in the township are considered adequate for the level of demand in the township.
Whitecliffs	**Low traffic volumes** – Whitecliffs Road has low traffic volumes with approximately 300 veh/day.	**Forestry** – Increased forestry logging in the area in the future may increase the volume of heavy vehicles and subsequent damage to the road pavement.	Current transport provisions in the township are considered adequate for the level of demand in the township. It is noted that use of Riversleigh Road for forestry avoids travelling through the township.
Arthurs Pass	**Access to SH73** – Arthur's Pass lies directly on the main strategic route between the west and east coast. **SH73 realignment –** There were previously safety issues with the layout and alignment of SH73 in the vicinity of Arthurs Pass. The current	No existing transport related issues identified.	Current transport provisions in the township are considered adequate for the level of demand in the township.

Area / Township	Strengths	Issues	Opportunities
	Mingha Buff to Rough Creek realignment works being carried out by the NZ Transport Agency will improve safety for all road users.		
Lake Coleridge	**Low traffic volumes** – Coleridge Road has low traffic low being in the region of 300 veh/day.	**Snow** – Snow has been identified as a potential issue as this may result in isolated areas such as Lake Coleridge being cut off from the rest of the network.	Current transport provisions in the township are considered adequate for the level of demand in the township.
Springfield	**Links to SH73 –** Springfield is located directly on SH73 which provides a strategic link between the east and west coast. **Parking –** The recently upgraded parking facilities outside the hall and public toilets provide longer spaces to accommodate trucks and towing vehicles.	No existing transport related issues identified.	Current transport provisions in the township are considered adequate for the level of demand in the township.
Waddington	**Links to SH73 –** Waddington is located directly on SH73 which provides a strategic link between the east and west coast. Old West Coast Road intersects with SH73 at Waddington and provides an alternative route to Christchurch. Access to the Waimakariri Gorge bridge on SH72 is via Waddington.	No existing transport related issues identified.	Current transport provisions in the township are considered adequate for the level of demand in the township.
Sheffield	**Links to SH73 –** Sheffield is located directly on SH73 which provides a strategic link between the east and west coast.	**Development of Living 1 zone** – If residential development occurs in the Living zone 1A land yet to be developed, the access arrangements to this site should not compromise the operation or efficiency of the state highway through the township.	**Future development** - Minor upgrades or improvements may be needed on the local roads and/or intersections with the SH73 if the Living zone 1A land is developed with residential activity.
Castle Hill	**Links to SH73 –** Castle Hill is located directly on SH73 which provides a strategic link between the east and west coast.	**Land uses either side of the SH** – There may be potential cross traffic issues, including pedestrians, with the development of a holiday park and golf course to the east of the State Highway.	Current transport provisions in the township are considered adequate for the level of demand in the township.
Ellesmere Ward			
Leeston	**Heavy vehicle by-pass** – The existing heavy vehicle by-pass reduces the volume of heavy vehicles through the centre of the township. **Leeston to Doyleston Cycleway** – This cycleway is to be constructed in 2016/2017 and	**Parking -** Provision of parking facilities for any additional business development in the township centre is limited due to the historical nature of development whereby most shops are built right up to the road boundary. However, there appears to be sufficient on-street capacity for the	**Pedestrian link -** A new easement will be created adjacent to the hospital which could be formalised to provide a pedestrian link from the

Area / Township	Strengths	Issues	Opportunities
	will improve links for pedestrian and cyclists between the two townships. **Community led shuttle service** – This service allows people an option to travel to Christchurch.	existing activity on-street and on adjoining residential streets. **Public Transport** – Currently no service to Christchurch.	growing residential area around Manse Road through to the township centre. **Public Transport** – Opportunity to access the possible future Park and Ride facility in Leeston. Red Bus are currently determining the level of demand for a potential Leeston to Christchurch service.
Dunsandel	**Desirable for commuters** – With the impending construction of Christchurch Southern Motorway (Stage 2) Dunsandel is likely to become a more desirable place to live with reduced commute times for people into the central city.	**Development south of SH1** - Future development south of the State Highway is likely to put additional pressure on the Browns Road / State Highway 1 intersection. **Pedestrian / cyclist connections** – There are limited pedestrian or cyclist connections across the state highway **Railway crossing –** Anecdotally there have been a number of near miss incidents at the railway crossing on Browns Road although the crash records do not indicate specific safety issues. Increased traffic volumes could exacerbate safety issues at the crossing.	**Community Centre Footpath** – A new footpath is to be constructed as part of the new Dunsandel Community Centre Development which would create a complete pedestrian link from south of the township to the businesses on the northern side of State Highway 1. **Public Transport** – Opportunity to access the possible future Park and Ride facility in Rolleston.
Doyleston	**Leeston to Doyleston Cycleway** – This cycleway to be constructed in 2016/2017 will improve the link between Leeston and Doyleston for pedestrians and cyclists.	No current or future issues have been identified.	**Public Transport –** As the adjoining Leeston township grows and demand for a commuter public transport service increase, Doyleston could also be served by the commuter service.
Southbridge	**Low traffic volumes** – High Street has low traffic volumes being in the region of 1,300 veh/day which creates a pleasant pedestrian environment. Traffic volumes are generally low in the township.	No existing transport related issues identified.	Current transport provisions in the township are considered adequate for the level of demand in the township.
Rakaia Huts	**Low volume roads** – Traffic volumes are low through the township. **Access to boat ramp** – Good access is provided for not only the township but the wider community to recreational activities at the boat ramp.	**One access in / out** – The township can only be accessed via one route, Pacific Drive. This leaves the township vulnerable to being cut off if there is an incident blocking this route.	Current transport provisions in the township are considered adequate for the level of demand in the township.

Area / Township	Strengths	Issues	Opportunities
Taumutu	**Access –** Current arrangements appropriate for existing population.	**Future Access** - The existing narrow sealed and unsealed roads in this area may not be able to provide a satisfactory level of service for any additional residential development in this location. The area is also situated in an isolated part of Ellesmere and may be vulnerable to being cut off from the rest of the network in the event of natural disasters.	Given the potential scale of development in Taumutu there may be potential for some localised improvements / upgrades on the road network such as seal widening and sealing sections of unsealed road in the area to provide for the future level of demand in the area. It would also be desirable for there to be more than one main access route into and out of the development area. This should be easily achievable as there are at least two existing roads providing access to the area. To ensure development occurs in an integrated manner, it could be useful to explore the option of an Outline Development Plan for any future development in this location.

6. References

Abley Transportation Consultants (2013) Urban KiwiRAP Risk Mapping Selwyn

Avanzar Consulting Ltd (2015) Private Plan Change Request; 160 Bangor Road Darfield; Transportation Assessment Report

New Zealand Transport Agency (2015) Draft HPMV Manual; (http://www.nzta.govt.nz/vehicle/your/hpmv/draft-manual.html)

Traffic Design Group (2012) Roxburgh Property Developers Ltd; Proposed Plan Change, High Street Southbridge

Traffic Design Group (2010) Silver Stream Estates Limited; Private Plan Change Request Darfield; Transportation Assessment Report

Selwyn District Council (2015) Towards '25 Long Term Plan 2015 – 2025 Consultation Document

Selwyn District Council (2015) Transportation Activity Management Plan 2015 - 2025

Selwyn District Council (2014) Annual Plan 2014 / 2015

Selwyn District Council (2014) Selwyn 2031 District Development Strategy

Selwyn District Council (2014) Media Release; McHughs Forest Park Plan adopted

Selwyn District Council (2014) Selwyn Road Safety Strategy to 2020

Selwyn District Council (2009) Walking and Cycling Strategy

Selwyn District Council; Proposed Plan Change 31; Darfield Integration Plan

T +64 9 974 9820 (Akld)
T +64 3 377 4703 (Chch)
F +64 3 377 4700
E office@abley.com

Auckland
Level 8, 57 Fort Street
PO Box 911336
Auckland 1142
New Zealand

Christchurch
30a Carlyle Street
PO Box 25350
Christchurch 8144
New Zealand

www.abley.com