

Technical Report Number 6

**CHRISTCHURCH SOUTHERN MOTORWAY
CSM2 and MSRFL
URBAN and LANDSCAPE DESIGN FRAMEWORK**

January 2013

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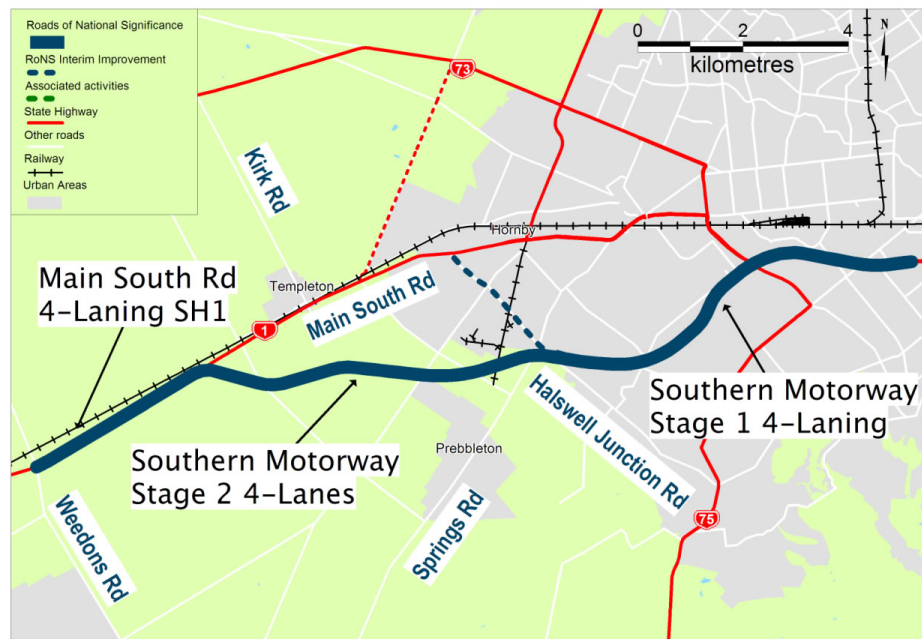


Figure 01: Christchurch Southern Corridor showing CSM1 and CSM2 project context.

1.1 Purpose of the ULDF

The purpose of the Urban and Landscape Design Framework (ULDF) is to describe the urban and landscape design principles and concepts for the project. The document is intended to act as a guide for designers, engineers and constructors so that they are aware of the design principles.

The ULDF will assist the New Zealand Transport Agency in the identification and evaluation of urban design and landscape issues for the project at an early stage of scheme development. This is to allow NZTA to consider the scope and funding needs for the project more accurately whilst also meeting on its commitment as a signatory to the New Zealand Urban Design Protocol (NZUDP). The NZUDP is recognised as core policy in the NZTA's Urban Design Policy (UDP).

Through the ULDF images have been used to assist to communicate the design. It is noted that these are typically diagrammatic or conceptual when associated with text pages.

1.2 ULDF Relationship to Consent Documentation

The Framework describes the design principles and concepts for CSM2 complementing the Technical Reports and Design Philosophy Statements. The Framework provides vision for the road in a series of design principles and concepts. In order to implement the vision the ULDF will be used to inform the construction contract documents for the CSM2 and MSRFL Project.

1.3 Structure of the ULDF

The ULDF is structured in the following sections:

Introduction:	CSM2 and MSRFL project and background.
Policy Context:	National, regional and local policy context relevant to the urban design of the CSM2 and MSRFL project
Physical Context:	A description of the existing environment
Methodology :	Design methodology used in the Project
Corridor Design:	Urban design and landscape objectives and principles
Sector Design:	Framework Plans to show context analysis and urban design issues followed by detailed discussion and concept designs for each of the four sectors along the route
Conclusion	ULDF Summary

1.4 Project Overview

The NZTA is improving access to and from the south of Christchurch via State Highway 1 (SH1) to the Christchurch City Centre and Lyttelton, by improving the capacity, safety and alignment of the Christchurch Southern Corridor.

The roads into Christchurch from the south currently reach capacity during peak-hour travel times, leading to frustrating delays for motorists travelling to and from the Christchurch City Centre, Lyttelton Port and industrial areas in the south and east of the city. Traffic volumes and congestion are likely to

worsen over the next decade without significant infrastructure improvements, due to growth in the south and southwest of Greater Christchurch.

The proposal is for the construction, operation and maintenance of the Christchurch Southern Motorway Stage 2 (CSM2), a four-lane median separated motorway. The proposal also includes the widening and upgrading of Main South Road to provide for a four-lane median separated expressway along this existing arterial route (MSRFL).

CSM2 will link into Christchurch Southern Motorway Stage 1 (CSM1), which is currently under construction. CSM1 connects the Brougham Street Arterial (SH73) in the east with Halswell Junction Road and is due to be completed in early 2013.

The government has identified CSM1, CSM2 and MSRFL as roads of national significance (RoNS). These roads are critical for supporting economic growth, reducing congestion and improving safety in the region.

1.5 Project Objectives

The Requiring Authority objectives for the CSM2/MSRFL Project are:

- To contribute to the region's critical transport infrastructure and its land use and transport strategies by providing more predictable travel times and connections between the first stage of the Christchurch Southern Motorway and Rolleston for people and freight.
- To improve accessibility from Christchurch and the Port of Lyttelton to the south and west for individuals and businesses while improving local access to work, shops and social amenity in Templeton and Hornby.
- To align traffic types and movements with the most appropriate routes by separating through traffic from local traffic to the south west of Christchurch as well as improving the efficiency of Passenger Transport.
- To improve network resilience and safety by providing a route with enhanced safety standards and capacity.
- To manage the social, cultural, land use and other environmental impacts of the project in the project area and its communities by so far as practicable avoiding, remedying or mitigating any such effects through route and alignment selection, design and conditions.

1.0 INTRODUCTION

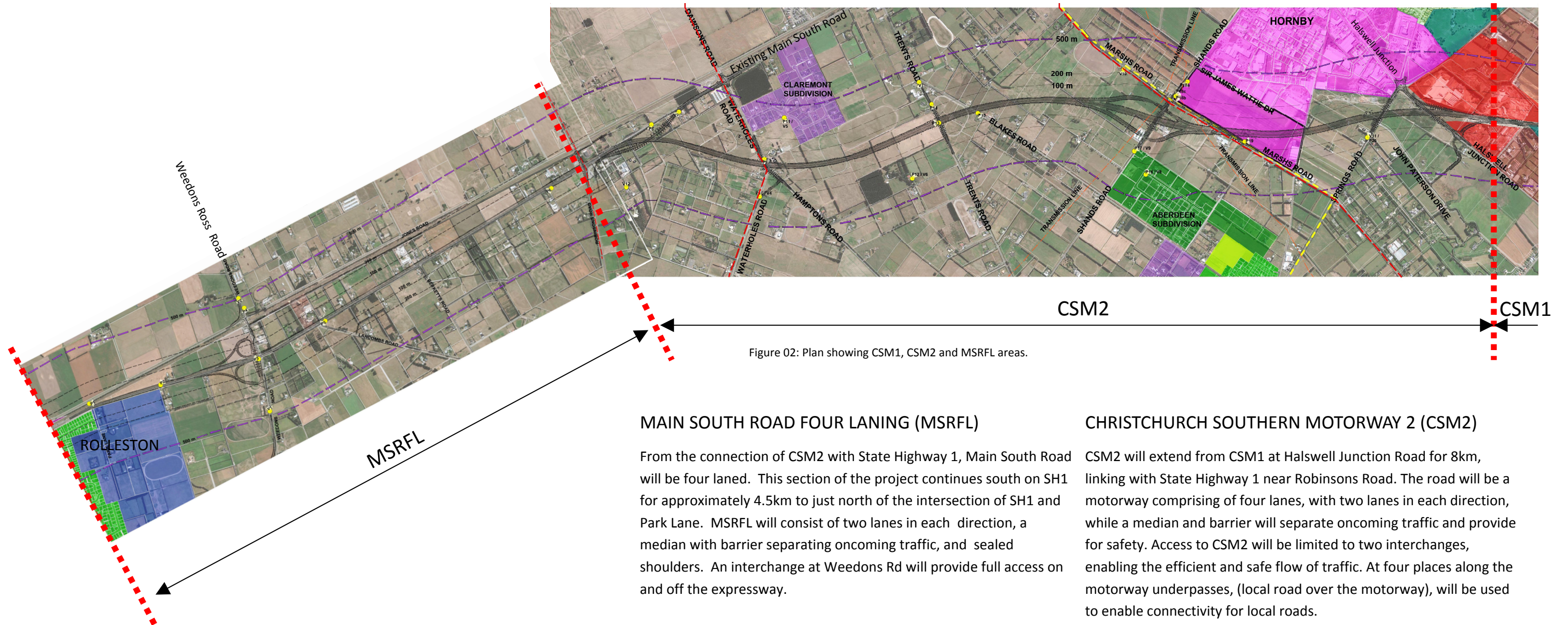


Figure 02: Plan showing CSM1, CSM2 and MSRFL areas.

MAIN SOUTH ROAD FOUR LANING (MSRFL)

From the connection of CSM2 with State Highway 1, Main South Road will be four laned. This section of the project continues south on SH1 for approximately 4.5km to just north of the intersection of SH1 and Park Lane. MSRFL will consist of two lanes in each direction, a median with barrier separating oncoming traffic, and sealed shoulders. An interchange at Weedons Rd will provide full access on and off the expressway.

CHRISTCHURCH SOUTHERN MOTORWAY 2 (CSM2)

CSM2 will extend from CSM1 at Halswell Junction Road for 8km, linking with State Highway 1 near Robinsons Road. The road will be a motorway comprising of four lanes, with two lanes in each direction, while a median and barrier will separate oncoming traffic and provide for safety. Access to CSM2 will be limited to two interchanges, enabling the efficient and safe flow of traffic. At four places along the motorway underpasses, (local road over the motorway), will be used to enable connectivity for local roads.

The connection of CSM2 with Main South Road will be in the form of the motorway crossing State Highway One which continues on its current alignment towards Templeton.

The road will largely be constructed at grade, with a number of elevated structures providing overpasses for intersecting roads.

2.0 POLICY CONTEXT

2.1 Policy Introduction

Highway infrastructure, including the road itself, its location and all associated structures such as bridges and highway furniture, has a major influence on the current and future form, function and character of our urban and rural environments. All these elements are parts of the urban design remit.

As an organization the NZTA is responsible for planning land transport networks, investing in land transport, building and managing the state highway network and providing access to and use of the land transport system. In undertaking any of these activities, the NZTA influences the shape of urban and rural environments. The Agency and its service providers need to consider the broad environments that are affected by transport infrastructure and how the infrastructure contributes to the future character and functioning of these environments.

The suite of policy documents which underpin matters identified in this ULDF and urban design generally within the NZTA, aims to ensure that transport projects contribute positively to the environments they sit in. These documents are outlined below.

2.2 Land Transport Management Act

The legal foundation for all social and environmental policies and requirements within the NZTA is the Land Transport Management Act. The Act establishes the NZTA and states that the objective of the Agency is to undertake its functions in a way that contributes to an affordable, integrated, safe, responsive and sustainable land transport system.

The Act contains operating principles for the Agency. These specify that in meeting its objectives and undertaking its functions, the Agency must;

- Exhibit a sense of social and environmental responsibility,
- Avoiding, to the extent reasonable in the circumstances, adverse effects on the environment, and
- Take into account the views of affected communities.

2.3 Resource Management Act 1991 (RMA)

The RMA promotes the sustainable management of natural and physical resources. The state highway network and the various environments it traverses are resources that fall within the remit of the RMA and need to be sustainably

manages. The RMA has a particular focus on ensuring that the adverse environmental effects of activities are avoided, remedied or mitigated.

The RMA does not specifically refer to urban design nor does it currently focus on the urban environment. Nevertheless, urban design is implied in its requirements of Part 2 of the RMA (Purpose and Principles) as follows;

- The overarching consideration of people and communities providing for their social, economic, and cultural well being and for their health and safety whilst sustaining resources, safeguarding life supporting elements, and avoiding, remedying or mitigating effects (section 5),
- Efficient use and development of resources (Section 7(b)),
- Amenity values (Section 7(c)) defined as the qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence and cultural and recreational attributes,
- The quality of the environment (Section 7(f))

Urban design is also required in addressing the 4th Schedule of the RMA (Assessment of Effects on the Environment) which sets out matters that should be considered when preparing an assessment of effects on the environment;

- a) Any effect on those in the neighbourhood and, where relevant, the wider community including any socio-economic and cultural effects:
- b) Any physical effect on the locality, including and landscape and visual effects.

The assessment of the environmental effects (AEE) for this project, including urban design effects and landscape and visual effects, and the Project design philosophy give effect to this ULDF.

2.4 NZ Urban Design Protocol 2005 (Non-Statutory)

At a national level, the primary guiding document promoting good urban design is the New Zealand Urban Design Protocol (MfE 2005). The Protocol aims to ensure New Zealand's towns and cities are successful places for people, as explained below;

"The design of our towns and cities affects almost every aspect of our lives—we all live and work in buildings, and use streets, public spaces, transport systems and other infrastructure. We need to ensure that what we design meets people's needs and aspirations, and that people want to live there. We need to

2.0 POLICY CONTEXT

ensure our towns and cities are successful places that contribute positively to our identity as a nation.”

The Urban Design Protocol is a voluntary commitment by central and local government, property developers and investors, design professionals, educational institutes and other groups to undertake specific urban design initiatives. The Protocol has been a powerful tool in drawing attention to the importance of good urban design to the quality of life in New Zealand’s towns and cities.

In recognising the impact the transport network has on our urban and rural environments, the NZTA (then Transit) was amongst the first group of organizations to become signatories of the Protocol in 2005. Further to this commitment, the Agency has established an urban design team and adopted a number of internal policies to implement its commitment. The development of ULDF’s such as this are one way the NZTA gives effect to the Protocol.

2.5 NZTA Environmental and Social Responsibility (ESR) Policy (2011)

The NZTA is committed to acting in an environmentally and socially responsible manner. The Agency’s Statement of Intent sets out an approach and course of action that will contribute to the delivery of the government’s land transport objectives and wider transport vision. It includes performance measures and details of what it expected to be accomplished. The Statement of Intents is a statutory compliance document and houses the NZTA’s Environmental and Social Responsibility Policy.

The Policy is a commitment by the NZTA to promote an accessible and safe transport system that contributes positively to New Zealand’s economic, social and environmental welfare; and to act in an environmentally and socially responsible manner by;

- Protecting and enhancing the natural, cultural and built environment,
- Enhancing the quality of life for New Zealanders by improving community liveability including land transport safety,
- Taking appropriate account of the principles of the Treaty of Wai-tangi,
- Providing meaningful and transparent engagement with stakeholders, customers and the general public

- Providing customer focused services that are fair, trusted and efficient.

The Policy commits the Agency to a number of actions one of which is to “integrate good urban design into all our activities”.

2.6 Getting There - On Foot, By Cycle 2005 (Non-Statutory)

Getting There - On Foot, By Cycle is a national strategy to advance walking and cycling in New Zealand transport. It’s vision is “a New Zealand where people from all sectors of the community walk and cycle for transport and enjoyment”.

Walking and cycling provision is included on all new bridges in CSM2 even where there are no existing footpaths on rural local roads. New walking and cycling links are included in the Marshs Road area as agreed with Christchurch City Council.

2.7 ECAN Regional Policy Statement (RPS)

In specific relation to this Project, Proposed Plan Change 1 (PC1) to the RPS covers the development of Greater Christchurch and to implement the Greater Christchurch Urban Development Strategy. PC1 is subject to appeals to the Environment Court and once operative will become part of the RPS. Issue 6 of PC1 is titled Amenities. It currently reads;

“Development within Greenfields Areas or as part of residential intensification, if poorly designed, can adversely affect urban amenity values; rural amenity values; heritage; health and safety; access to community, educational, social and commercial facilities, and overall liveability. “

This is relevant to development in the greenfield business areas alongside CSM2.

Policy 7 of PC1 covers Development Form and Design. It requires the NZ Urban Design Protocol be used to assess development to ensure best practice urban design. Points A, C, E, G, I, K and L have relevance to the CSM2/MSRFL project.

Figure 05 on page 9 depicts approved greenfield expansion areas with the light green fill showing business greenfield sites, and the CSM2 alignment crossing these areas between Marshs and Halswell Junction Roads. The blue hatching has been added to this map to show the area of land covered by Plan Change 54 which straddles the CSM2 alignment. At the time Plan Change 54

2.0 POLICY CONTEXT

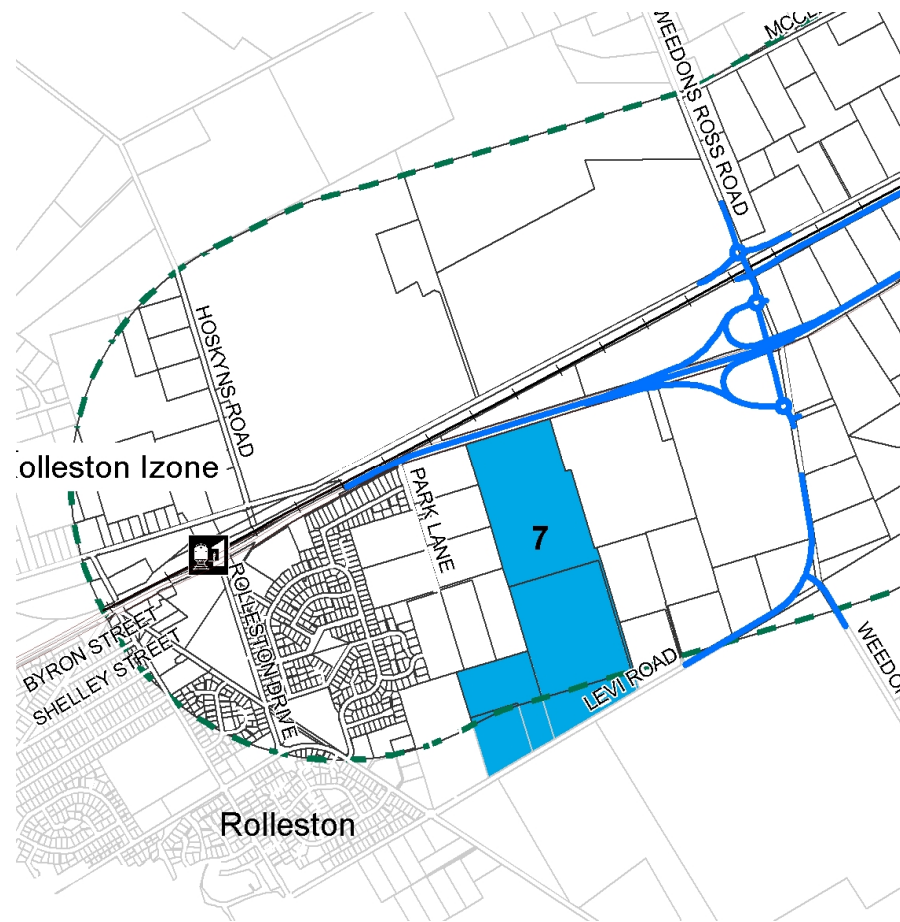


Figure 03a: Plan showing Plan Change 7 location on the northern outskirts of Rolleston.

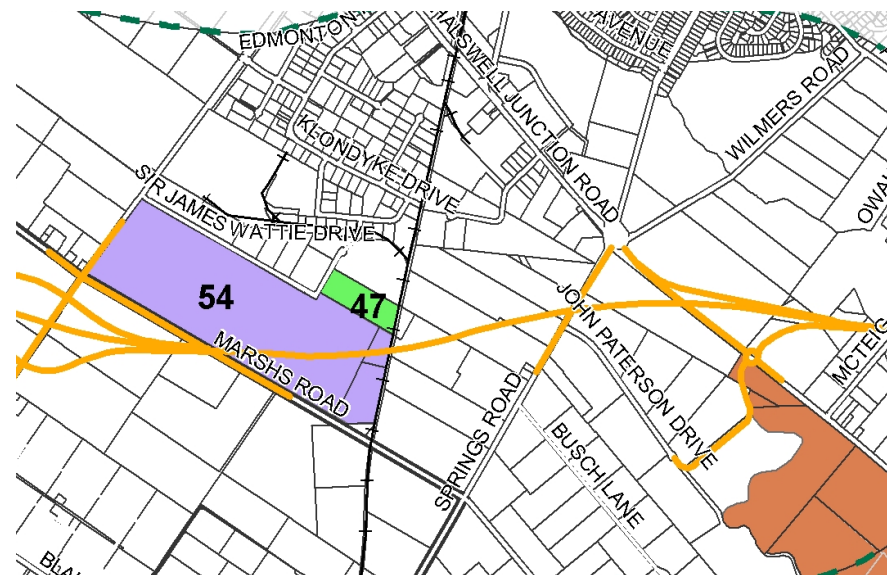


Figure 03b: Plan showing Plan Change 47 and Plan Change 54 locations on the northern

was heard and approved by CCC in early 2012, Chapter 12A was operative and therefore the plan on page 9, which shows the CSM2 alignment applied. Chapter 12A has subsequently been revoked as a result of a successful judicial review of the Minister for Earthquake Recovery's decision (released on 24 July 2012).

2.8 Selwyn District Council District Plan:

Figure 3a on page 7 shows where the CSM2 and MSRFL alignment passes through the Inner Plains zone and adjacent to the existing Development Area zone (Claremont subdivision), Living 2 zone (Aberdeen subdivision) and a Living 1 zone north of Rolleston. There are effects issues to consider for these residential zones.

Figure 3a shows Proposed Plan Change 7 north of Rolleston. This has Outline Plan Requirements including a 40 metre setback from MSRFL and acoustic insulation requirements for houses that are 40 to 100 metres from the expressway. Therefore there are no effects for the project to mitigate in respect of PC7.

The Prebbleton Structure Plan (PSP) seeks to maintain a 'green belt' between Christchurch City and Prebbleton to maintain the town's rural character. The CSM2 alignment passes through this area in the vicinity of Marshs Road and Shands Road interchange. The alignment is consistent with the PSP and the landscape proposals for the at-grade sections will not be highly visible from Prebbleton. The two bridge approaches on Shands Road and Marshs Road are extensively planted and will not be visible given the existing and proposed planting.

2.9 Christchurch City Council District Plan:

Figure 3b shows the existing zoning adjacent to the proposed motorway. Marshs Road is the boundary between the Christchurch City Council and Selwyn District Council areas. The proposed alignment passes through Business 5 and Business 7 (Wilmers Road Special Provisions) and Rural 2 zones in the Christchurch City Council area. Plan Changes 47 & 54 proposed rezoning land beside the CSM2 alignment from Rural to Business 5.

Business 5 Zone

This is titled as 'General Industrial' in Section 1.13 of the Christchurch City Council's District Plan. It is characterised by a wide range of both light and heavy industry, processing and warehousing. The District Plan anticipates a lower level of environmental outcomes in response to its location and charac-

ter. Point (e) of the anticipated environmental outcomes reads

"A distinctly "industrial" visual environment, dominated by buildings and storage, but with provision to gradually improve and enhance street scene character upon development or redevelopment, with frontage landscaping to mitigate building scale and storage areas."

This shows that there is little amenity requirements for the zone and that landscape mitigation is only envisaged on street frontages.

Business 7

This is a zone specific to an area used for gravel extraction, waste disposal and more recently mushroom farming. The interface is mainly in the CSM1 area and the Halswell Junction Road so there are no urban design issues relevant to the Project.

2.10 CSM1 Urban Design and Landscape Framework

Section 1.1 from the CSM1 ULDF contains a design statement intended for use over the entire Christchurch Southern Corridor projects. The design vision is to provide an environment that supports the green, leafy "Garden City" image that Christchurch City Council aspires to. This concept has legacy in mind.

The long-term vision is a grand parkway with road and cycleways passing through stands of mature canopy trees that display seasonal change and offer a scale that can be enjoyed by all modes of travel.

2.11 South West Area Plan

The South West Area Plan is a Structure Plan developed by Christchurch City Council to guide development on the southwestern rural edge of Christchurch. Plans for residential development in the Knights Stream area, business greenfield development in Marshs Road, improved cycle and pedestrian linkages and a proposed gateway area all have relevance for the CSM2 project.

The two part plans on page 28 show landuse changes and cycling/walking linkages proposed by the south west area structure plan. The SWAP proposes a Gateway to mark the rural/urban interface and a southern entry into Christchurch City at Halswell Junction Road interchange. A decision on the exact location is yet to be made by CCC but the Project design does not preclude any of the three potential sites (Carr's Road in CSM1, Halswell Junction and Shands Road).

2.0 POLICY CONTEXT

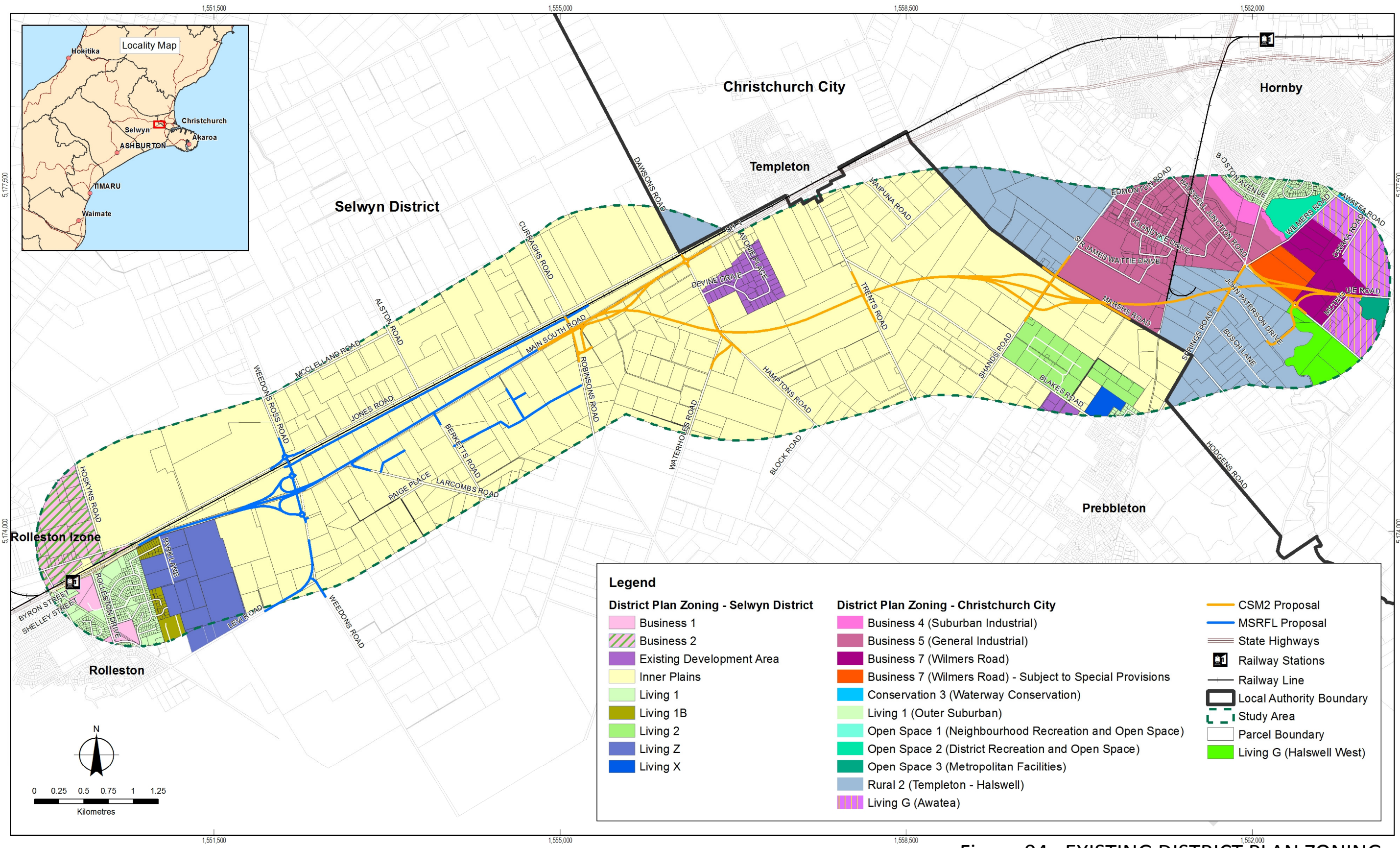


Figure 04 : EXISTING DISTRICT PLAN ZONING

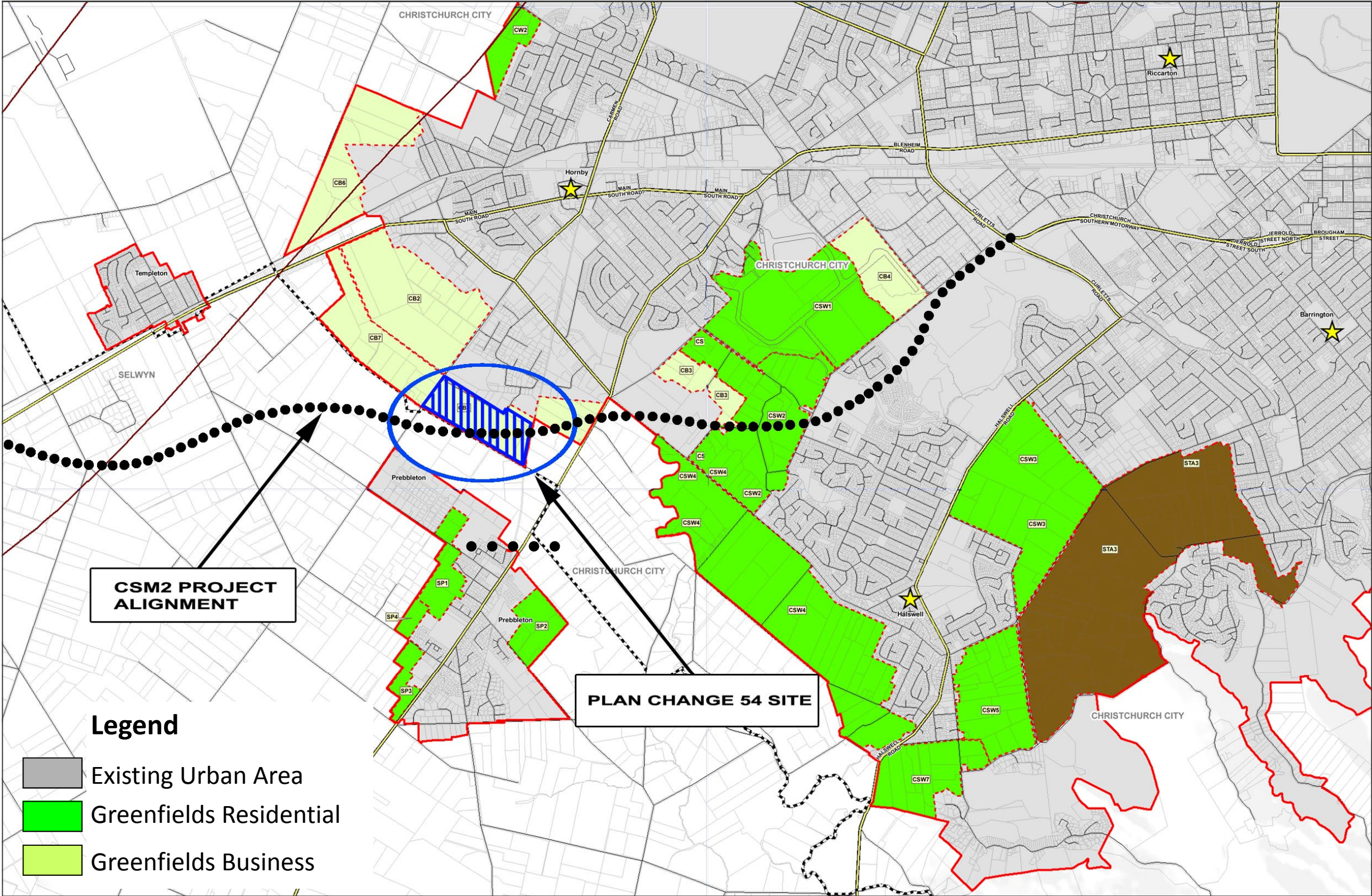


FIGURE 05 : Showing PC54 straddling the CSM2 alignment. Based on Part of Map 1 PC1 Chapter 12A Regional Policy Statement (as applied 17 October 2011 to 24 July 2012)

3.0 PHYSICAL CONTEXT

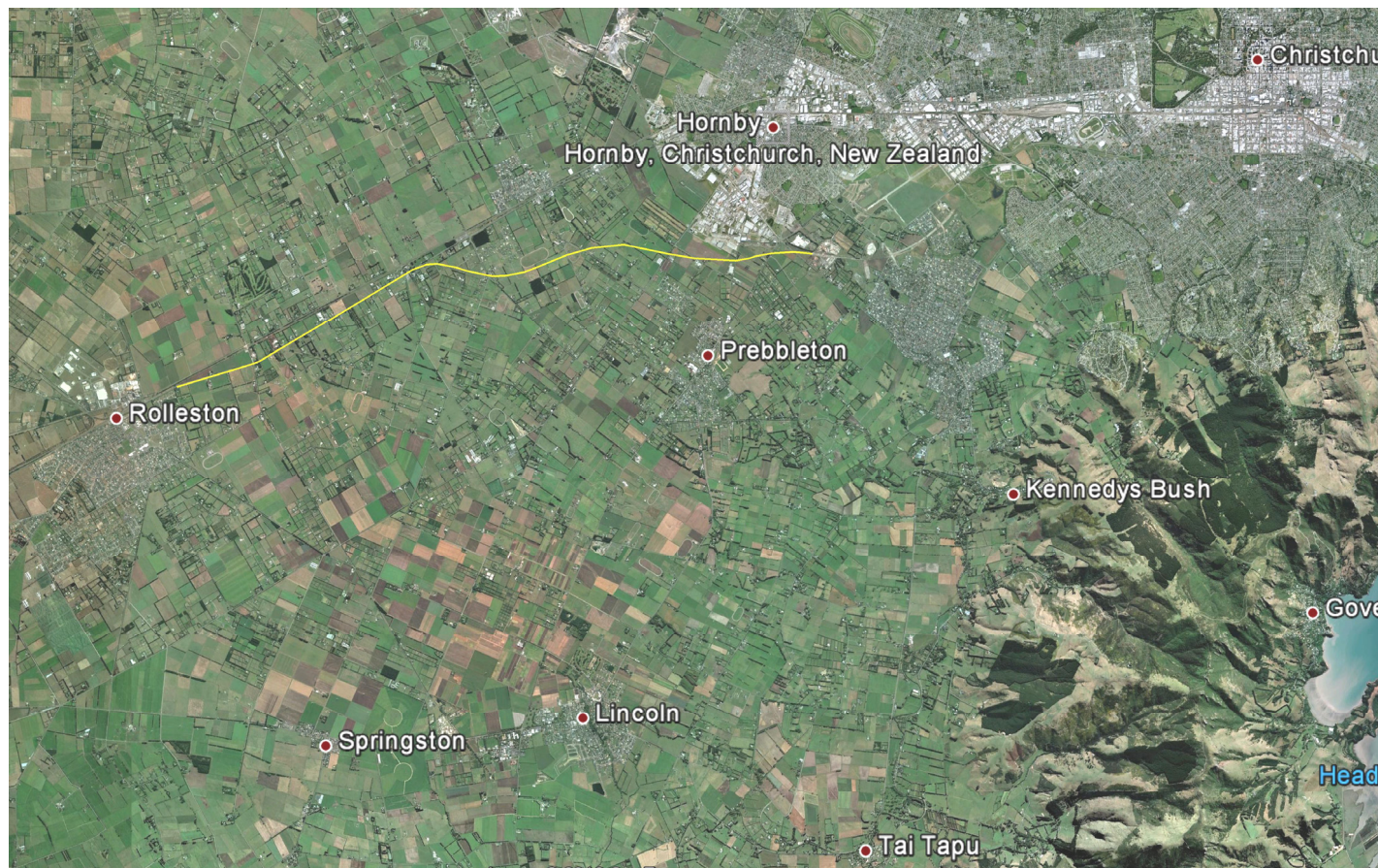


Figure 06: Google Earth view of the Project Area and Port Hills. The yellow line shows the CSM2 and MSRFL alignment.



Figure 07: View showing flat topography. Looking south over Halswell Junction Road roundabout with Springs Road in middle left.

3.1 Context Introduction

Section 3.1 examines overall context issues with subsequent sections divided into character sections set by landuse and natural character along the Project alignment.

Landform

The flat topography of the plains contributes most to the natural character of the environment in the Project vicinity. The plains landscape generally has an open, expansive character dominated by an agricultural land use. The flat landform allows an efficient and regimented agricultural layout and results in a compartmentalised landscape created by land parcels divided into rectilinear paddocks typically surrounded by shelterbelts, fencing, roads, farm tracks, and woodlots.

When travelling along local roads the landscape is currently experienced as a series of open and closed vignettes afforded by the spatial arrangement of shelterbelts and amenity planting. These elements are important features of the visual landscape. Views of the Port Hills and the foothills of the Southern Alps are afforded from certain locations within the landscape and the presence of these landforms provides a backdrop and importantly, a sense of orientation.

Due to the low profile, and predominantly flat landform, it is the land cover and land use patterns that dominate this landscape, resulting in a rural character.

Geology

The Plains landscape immediately west of Christchurch are described as outwash shingle fans from the Waimakariri and Rakaia rivers. There are no specific geological drivers of note that inform the CSM2 design.

Hydrology

There are no natural streams crossing the project alignment.

Ecology and Vegetation

There are no significant ecological or areas of vegetation in the Project Area.

Built Heritage

The only scheduled built heritage in the Project area is Trents Chicory Kiln on Trents Road Templeton. It is a Category 2 on the Historic Places Trust Register. The Kiln is located on Trent's Vineyard and the existing planting provides a buffer to CSM2 (refer Viewpoint 6 page 13).

Cultural Heritage

No cultural reference points have been identified to date within the Project Corridor (refer chapter 23 of AEE).

Character Assessment Areas (refer page 11)

The context analysis is split into four sections reflecting different landuse and natural character;

- Character Area 1: The greenfields business boundary on Marshs Road forms the southern edge of an urban section.
- Character Area 2: The new motorway section from Waterholes Road to Marshs Road forms a Rural New Road section.
- Character Area 3: The new motorway section from Robinsons Road to Waterholes Road forms a Rural New Road section.
- Character Area 4: Widening of existing SH1 on the Main South Road is a Rural Existing Road section.

3.0 PHYSICAL CONTEXT

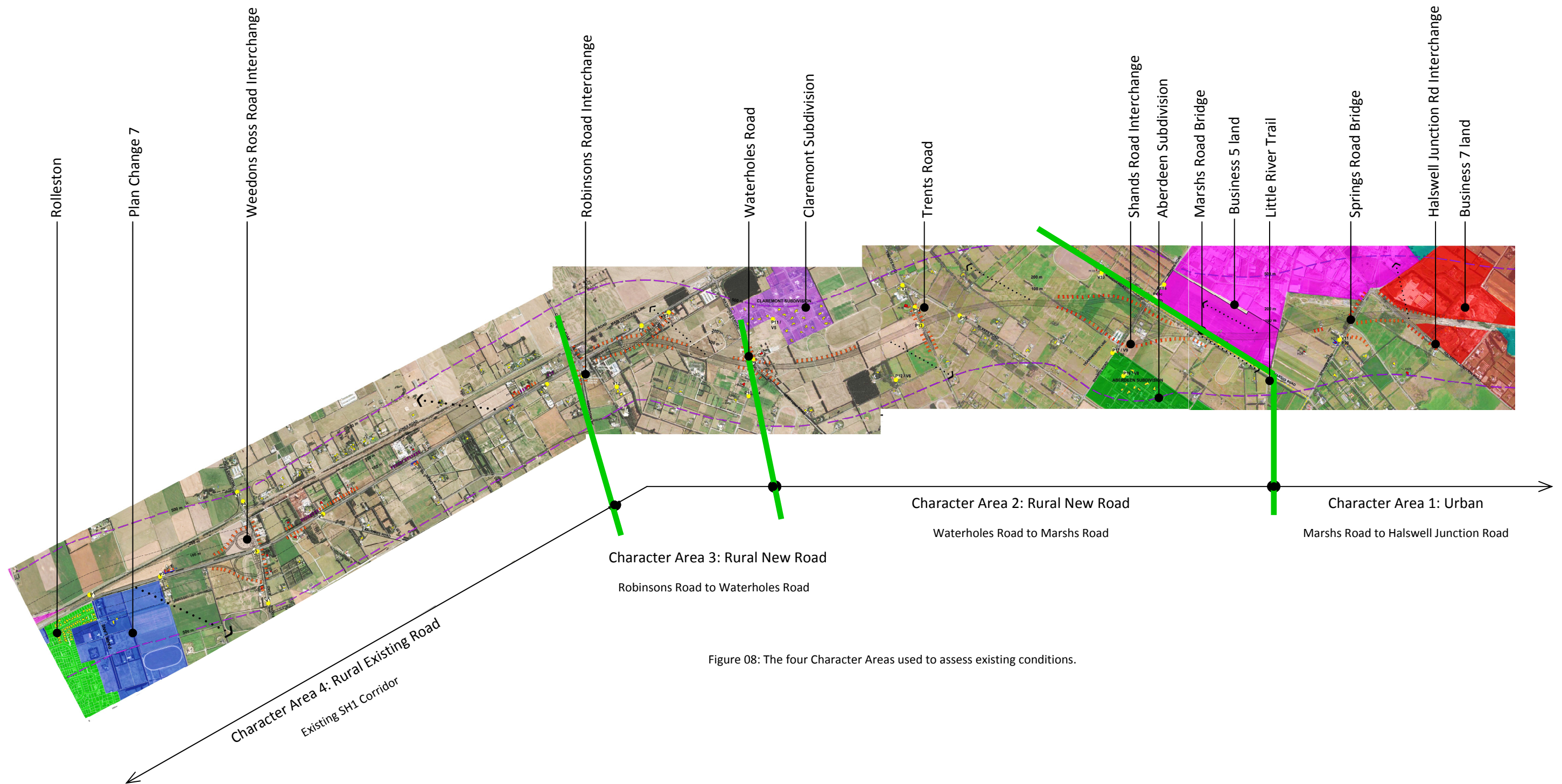


Figure 08: The four Character Areas used to assess existing conditions.

3.0 PHYSICAL CONTEXT



Viewpoint 1: Marshs Road approximately 100 metres south of proposed CSM2 and looking east along alignment toward Springs Road



Viewpoint 2: Shands Road looking northeast toward southern Hornby industrial area, approximately 100 metres north of the Shands Road interchange



Viewpoint 2a: Halswell Junction Road streetscape looking northwest over the railway.

3.2 Character Area 1 - Halswell Junction to Marshs Road

The CSM2 alignment lies south of the industrial area of Hornby between Marshs Road and the intersection with CSM1. The industrial area is characterised by the presence of irregularly distributed factories and large-format industrial buildings, with few landscape features (refer to Viewpoints 1 and 2). The Project alignment land is still predominantly rural as shown in Viewpoint 2, but the industrial buildings are very prominent and partially diminish the open pastoral views characteristic of a rural farmed landscape.

In Hornby streetscapes are typical of industrial areas with wide driveways for truck access and few street trees. Recent large scale developments include landscaping in their front yards but the overall appearance is typical of industrial areas and low in amenity.

The motorway corridor lies north of several agricultural businesses including; Prebble Seeds, Texture Plants and Tegel Foods Ltd. The presence of these businesses, as well as the existence of the transmission line pylons (ref Viewpoint 3) further characterise this area as a highly modified semi-rural setting.

Furthermore although the land between the proposed CSM2 alignment and Sir James Wattie Drive is currently rural, Plan Changes (PC 47 and 54) have resulted in this land being rezoned to Business 5 and used for general industrial activities. The industrial activity as decided by PC 47 and 54 will extend between Marshs and Shands Roads with a 40 m wide landscape buffer alongside Marshs Road (Figure 18). However the character and amenity currently experienced within this rural environment will be compromised to the extent that it changes to an industrial character.

Essentially the motorway can create a well-defined edge to this anticipated industrial zone and also to the urban edge of southern Christchurch.

3.0 PHYSICAL CONTEXT



Viewpoint 3: Shands Road looking southeast toward the CSM2 proposal, approximately 100 metres north of the Shands Road interchange



Viewpoint 4: Within Aberdeen subdivision looking northwest toward the CSM2 proposal approximately 500 metres south of the Shands Road interchange



Viewpoint 5: Looking southeast along Blakes Road where the CSM2 proposal crosses and Blakes Road is to become two cul-de-sac roads



Viewpoint 6: Looking northeast from Trents Road where the CSM2 proposal will cross.

3.3 Character Area 2 - Marshs to Waterholes Road

The open semi-rural or peri-urban land between Marshs Road and Waterholes Road is essentially flat. The predominant land uses are rural activities and rural-residential development. The pastoral character is open and expansive for the most part, with some land divided into small holdings by shelterbelts of mainly willow, poplar, macrocarpa and pine trees.

A number of horse training tracks have been established in this area, and this is quite typical of the surrounding environs. Unlike the built form of the agricultural businesses in the aforementioned section, horse racing tracks retain an open character typical of a rural environment. There are two transmission line in this landscape character unit (refer to Viewpoint 3).

A number of lifestyle blocks, as well as the two subdivisions, Claremont and Aberdeen, are located in close proximity to the CSM2 alignment. These two subdivisions are the only instances where higher density residential development occurs amongst the scattered lifestyle blocks that are more typical of this area. The subdivision sections typically range between 2000 m² up to 10,000 m². The Aberdeen subdivision is an extension of residential growth from the township of Prebbleton (refer to Viewpoint 4). Aberdeen lies directly south of the proposed motorway alignment, with the northernmost property located approximately 200 m away from the ramp of the Shands Road interchange.

The Claremont subdivision is an extension of residential growth from the Templeton Township although separated by the SH1 (Main South Road). Claremont lies near the intersection of SH 1 and Waterholes/Dawsons Road and north of the motorway alignment. The closest Claremont property on the southernmost boundary of the subdivision is located approximately 180 m away from the proposed motorway (refer to Viewpoint 7).

The open expanses of rural land in this area afford panoramic views to the Port Hills and Canterbury Foothills from several locations.

This character area displays the typical pastoral land cover and land use patterns characteristic of a rural landscape. The built structures are generally associated with rural activities, except for those within the Aberdeen and Claremont subdivisions. Even so, the presence of built structures does not detract from the 'ruralness' of the landscape and the predominance of open green space and views.

3.0 PHYSICAL CONTEXT



Viewpoint 7: Within Claremont subdivision looking south towards the CSM2 proposal from a distance of approximately 250 metres.

3.4 Character Area 3 - Waterholes to Robinsons Road

This area is characterised by rural-residential and agricultural land use and is in close proximity to the connection between the CSM2 and SH1. The landscape character largely arises from the dominant rural land use, as well as the presence of horticultural and agricultural businesses associated with rural activities. These include the plant nurseries Southern Woods, Kiwiflora and Evergreen Garden Centre, Knitworks and Murrays Implements (refer to Viewpoint 8).



Viewpoint 8: Robinsons Road looking northeast at Evergreen Garden Centre, adjacent to where the proposed CSM2 will join SH1.

3.0 PHYSICAL CONTEXT



Viewpoint 9: Looking southwest along SH1 approximately 350 metres from the Robinsons Road overpass of the MSRFL proposal.



Viewpoint 10: Corner of SH1 and Larcombs Road looking southwest at South-Hort along the MSRFL proposal.



Viewpoint 11: SH1 looking southwest from the corner of Weedons Road along the MSRFL proposal (existing oak trees deemed worthy of retention).



Viewpoint 12: SH1 looking northeast along the MSRFL proposal).

3.5 Character Area 4 - Existing SH1 Corridor

This section of SH1 has a specific character of its own and is differentiated by a repeating rhythm of enclosure and openness experienced along the highway corridor. The land use is rural, surrounding the residential properties and businesses along SH1 (refer to Viewpoint 10). Clusters of agricultural businesses, horticultural businesses, and a motel, are predominantly located on the northern side of the highway. Residential properties are also located in groups, at intervals, along both sides of the highway.

Dense vegetation affords screening to most properties fronting the SH1. This largely consists of shelterbelts, of predominantly mature exotic conifers, gorse hedges, small groupings of exotic trees and amenity planting in association with dwellings and businesses (refer to Viewpoint 12). The notable landscape feature is a semi-mature row of oak trees that line the southern side of the SH1 from Weedons Road to Rolleston (refer to Viewpoint 11).

The land to either side of SH1 is predominately flat, the exception being a 2 m high grassed bund which starts at the corner of Larcombs Road and continues south along SH1 for approximately 120 m.

Glimpses of the Port Hills and the Canterbury Foothills can be seen from the SH1 where either a gap in the vegetation occurs or low vegetation affords a view to the landscape beyond. For the most part, views are obscured and a corridor effect is created by the numerous shelterbelts (Viewpoint 9).

The ULDF contains recommendations from a number of disciplines. The preparation of the ULDF included;

4.1 Project Document Review

The project documents were reviewed prior to the site visit. This included the options assessment for the alignment near the Marshs Road, the engineering design and Landscape and Visual Effects AEE.

4.2 Site Visit/Landscape Architect Discussions

A site visit was completed on September 28, 2011 which followed the route alignment with closer inspections where it crossed existing roads and the houses which require noise walls on the Main South Road. Templeton, Prebleton, Claremont and Aberdeen were visited to understand their urban character and visual connection to the alignment.

A meeting was held with the landscape architect to review his completed design and its response to Rough and Milne's Landscape Visual Effects Assessment.

After the site visit I telephoned the landscape architect from Rough and Milne to review their existing character assessment and mitigation plans.

4.3 Council Consultation

Selwyn District Council

A meeting was held with planning and urban design officers from Selwyn District Council during the site visit. Selwyn District Council officers confirmed they did not have any plans for rezoning in the project area other than exist-

ing plan changes. Access issues for properties on the Main South Road was the main topic of discussion with Council supporting the inclusion of a new access road alongside the railway if funded by NZTA. Although there are a number of commercial properties along the Main South Road they did not want to encourage this activity so did not see any need for rezoning in this area.

Christchurch City Council

Urban design issues for the CSM2 interface were discussed with Christchurch City Council officers by telephone during the design process and as part of the Technical Report reviews.

4.4 Design Methodology

The existing landscape assessment, mitigation plan and landscape design have been used as the basis for the ULDF in the rural sections south of Marshs Road.

Ensuring synergy with the landuse changes decided by the Regional Policy Statement and amenity consideration arising from the South West Area Plan has been the urban design focus .

5.0 CORRIDOR DESIGN



Coloured concrete panels on CSM1 abutment to represent an aerial view of the Canterbury Plains

5.1 Urban and Landscape Design Concept

The concept underpinning the urban and landscape design of the CSM2 project is to build on the key urban design objectives from the CSM1 project to ensure visual and thematic continuity along this section of the SH1 network. The key urban design objective from the CSM1 Framework is;

“The long-term vision is a grand parkway with road and cycle-ways passing through stands of mature canopy trees that display seasonal change and offer a scale that can be enjoyed by all modes of travel.”

Extending the parkway aesthetic inside the city boundary is consistent with Christchurch City Council’s ‘green leafy Garden City’ aspiration. It is also consistent with Selwyn District Council’s concern with maintaining rural character especially in the ‘green belt’ between Prebbleton and Marshs Road.

There are changes with cycle paths not being required in the rural section and a preference for natives as opposed to exotic trees, however these changes do not undermine the ‘parkway aesthetic’.

5.2 General Cross Sectional Design

There is little variation in the land form along CSM2 therefore generic cross sections apply to most of the route as shown in Figure 09. The key design considerations include;

- The function of the motorway and expressway as a safe and efficient route.
- To maintain local road crossings with grade separated bridges as much as practicable.
- The provision of a consistent driver experience for the user.

The proposed generic design features include;

- Connectivity with the Little River Trail and new shared

paths to be consistent with surrounding cycle facilities.

- A grassed or low planted centre median with wire rope barrier and minimizing the concrete barriers to bridge piers and abutments.
- Swales to each side of the carriageway forming part of the clearway run-off zone.
- Hedgerows planted along the side boundaries to compartmentalize sections of the Project and dramatise view shafts to the Port Hills and Southern Alps where they are possible.
- Extension of existing shelter belts into the highway corridor berms to further compartmentalize sections of the Project.
- Retention of open wire fencing in the rural sections to maintain views and an open rural character.
- Plant the bridge approach embankments and include open spill through to match the CSM1 parkway aesthetic.
- Keep noise fences on MSRFL to 1.8 metres high so that they visually match existing fences
- Retain the oak trees north of Rolleston as a design feature and a buffer to the proposed rural residential lots.

5.0 CORRIDOR DESIGN

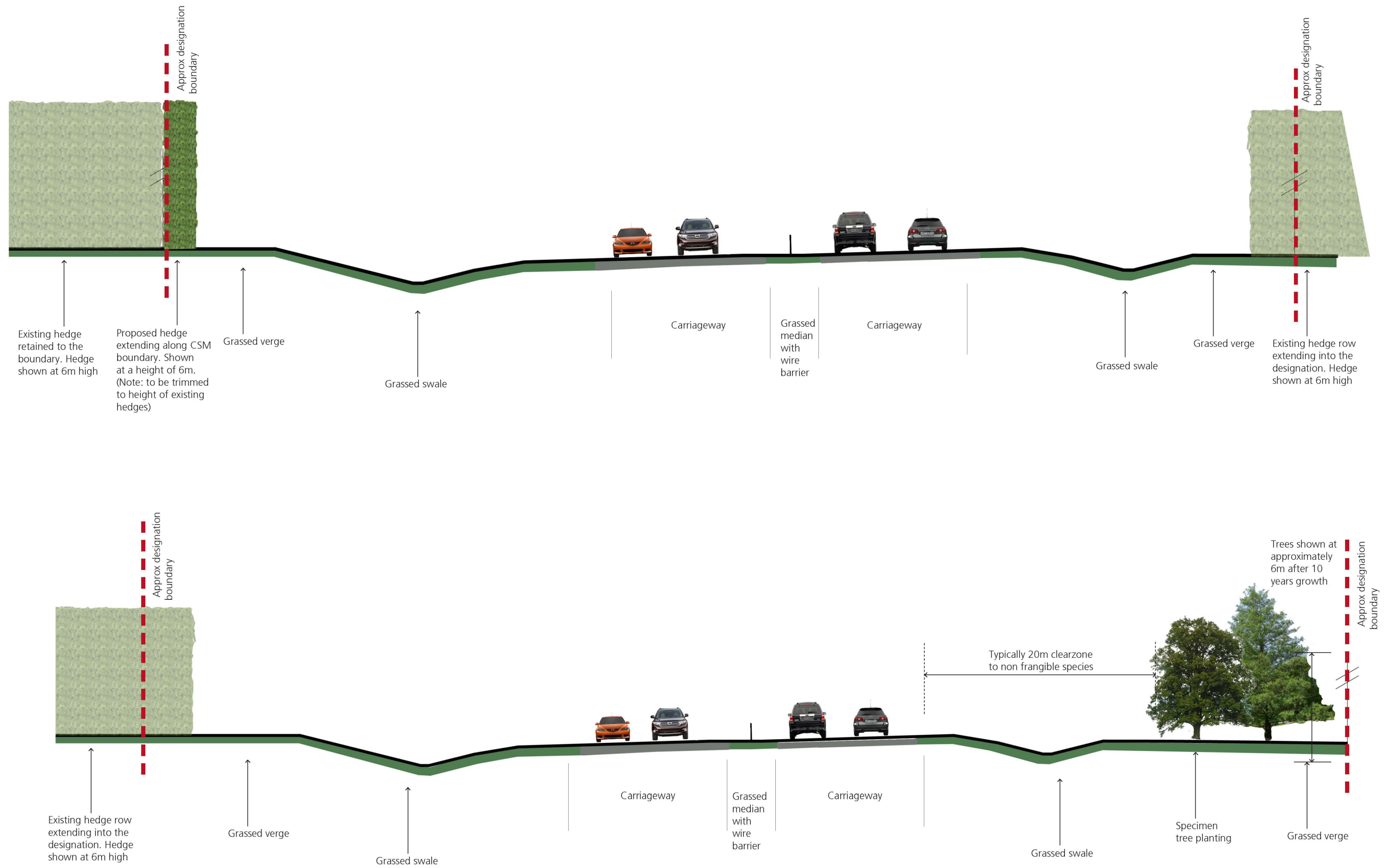


Figure 09; Generic cross section integrating landscape and engineering design

5.3 Landscape Concept Design

Introduction

The long term vision for the landscape design is to establish an open 'rural parkland' along the route that incorporates the surrounding rural landscape features and allows open views across the plains to both the Port Hills and the Southern Alps. Planting will be featured at key node points with the establishment of native tree copses, native embankment planting, and specimen tree planting and planting associated with proposed landscape mitigation measures.

The design principles also reflect the NZTA Manual SP/M/020 Guidelines for Highway Landscaping version 2. This manual along with the Urban Design Policy will be considered at all project stages.

Views

As for the CSM 1 project CSM2 and MSRFL section has both open views and channelled views of the Port Hills and the Southern Alps. The Port Hills in particular will act as a navigation marker for travellers entering Christchurch while the Southern Alps form a more distant view for those travelling west. The views to both the Port Hills and Southern Alps will be heightened when viewed from the proposed overpasses along the route.

Along the MSRFL section of the project the views afforded include glimpses of both the Port Hills and Southern Alps through gaps in hedgerows and amenity planting that is located on the boundaries of most rural residential properties that front the motorway. This planting pattern typifies the landscape character of this section of the motorway and is anticipated to be largely retained as part of the MSRFL section of the project also.

Key Design Principles

The key design principles that underpin the design rationale and the subsequent landscape design are:

- Underlying landscape character – retention of the existing rural pastoral character by introducing planting that represents the existing cultural planting patterns and historic planting fabric of the plains landscape.
- Integration with CSM 1 planting – adopt similar landscape design principles as used on CSM1 to integrate the planting designs, target plants best suited for the receiving environment and consider the planting that best suits the transition between urban, peri-urban and rural landscape character.
- Continue the curvilinear road that is well integrated with the CSM1 motorway alignment and provides a strong contrast to the straight roads and patchwork land pattern associated with the plains landscape.
- Views - Maintain areas along the alignment with open views to the Port Hills and Southern Alps and contained enclosed views to the immediate rural surroundings.
- Nodes – include more detail at key nodes (intersections/ interchanges) through planting and material selection to provide a change in the visual environment at these driver decision points. Develop native tree copses that represent historic vegetation patterns and that are best suited to the soil and environmental conditions.
- Existing vegetation – where possible, retain existing vegetation within the motorway designation to retain the existing landscape character. Of particular importance is the retention of shelterbelt lines that bisect the motorway alignment and existing mature trees species found along the motorway alignment.
- Landscape mitigation planting – integrate informal woodland cluster planting and shelterbelt planting

into the motorway alignment to avoid, reduce or mitigate any visual effects associated with the motorway.

- Cycleway/walkway connectivity – provide cycleway and walkway links that are aligned with those outlined in the South West Area Plan and linked to the existing cycle rail trail. The alignment of the cycleway/walkway across the motorway alignment will allow for safety sightlines, setbacks and consider CPTED (Crime Prevention through Environmental Design) provisions as part of future design phases.
- Ecological planting – incorporate planting to accommodate identified fauna habitat through both CSM 2 and MSRFL.

Planting Concept

The landscape design will continue the planting pattern currently being established in the CSM1 project which focuses landscape treatment primarily on interchange embankment planting, specimen tree (amenity planting), visual mitigation planting and any planting associated with storm water treatment systems. As a contrast to CSM 1, the specimen tree planting associated with the CSM 2 planting will have a large proportion of native specimen trees to exotic specimen trees.

The grassed or low planted median will remain a consistent element throughout both the CSM2 and MSRFL and join the CSM1 median near the Halswell Junction Road underpass.

Roundabout planting within CSM2 will comprise massed low level native grasses to maintain low levels of maintenance and open sightlines for motorway users. Roundabouts associated with MSRFL will be grass cover allowing for open sightlines and contextual fit with the surrounding rural and rural residential landscape character. The concrete curtain and splitter islands will be consistent with CSM1.



Figure 10: Artist's impression of Curletts Road Bridge in CSM1 showing abutment slope finish. Image courtesy Fulton Hogan and Jasmax

5.4 Bridge Design Principles

The following principles will be encouraged for the design of the bridges;

1. Bridges design should be consistent with the CSM1 Design Vision for a grand parkway. Simple structures integrated with the existing and project landscaping also supports the parkway vision. The CSM2 bridges are designed to generally match the CSM1 bridges .
2. Open or spill through abutments are preferred to closed abutments to support a parkway style design. The coloured precast panels used on the abutment slopes in CSM1 shall be retained for CSM2. The design is inspired by the colours and geometry of the Canterbury Plains (Figure 10). Where context or legibility reasons require a variation, alternative abutment treatments that are in keeping with the CSM1 concepts will be considered. Where closed abutments are proposed at Robinsons Road a high quality finish shall be used due to the close proximity of the local road.
3. Slender superstructures visually integrated with the piers and headstock beams is encouraged. Eliminating the headstock beam with wall type piers is encouraged. Recessing the headstock beams behind the edge barriers is also encouraged so that they are shaded and make the bridge more slender in appearance.
4. Ensure the soffit of the superstructure is visually appealing especially where the highway passes over a local road.
5. Maintain concrete safety barriers between footpaths and roads on overbridges to allow open balustrades on the footpath edge of the superstructure. This allows the bridge appearance to be as slender as possible. This is included on all of the designs except for one side of the SH1 Southbound Onramp and one side of the Halswell Junction Road bridges where there is no footpath.
6. Consider the landscape views made possible by the increased height of new bridges.
7. Conceal stormwater pipes, or visually integrate them with the edge barriers, soffit and piers.
8. Integrate the lighting on the bridge structure. Add-on corbels outside the barriers are not preferred.
9. Use textured finishes on bridge structures, retaining walls and abutments—avoid printed forms. The concrete safety barriers will retain the CSM1 design with a recessed centre section and a textured pattern (Figure 11).
10. The bridge designs should be consistent in form to present a coordinated set of roadscape elements and support the parkway vision. Refer to the NZTA Urban Design Principles; Road Design Bridges and the RTA Bridge Aesthetics for additional design guidelines.

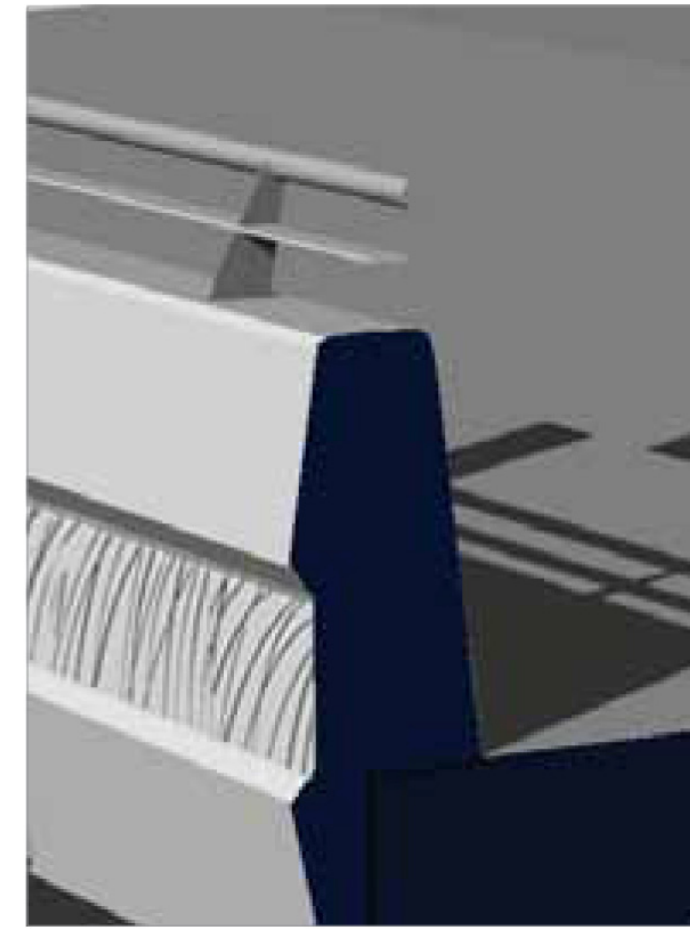


Figure 11: CSM1 safety barrier design. Courtesy of Fulton Hogan and Jasmax.



Figure 12a: Artist's impression of Trents Road Bridge showing open steel balustrade to footpath edge and concrete safety barrier between footpath and local road.



Figure 12b: View from CSM2 southbound carriage way showing super tee structure, open spill through and abutment slope treatment.

5.5 Specimen Bridge Designs

The specimen bridge design provides a concept of what is possible for consenting and costing purposes. Through the detailed design phase of the Project the form of construction could be adjusted within the consented envelope. Any changes to the form or construction should where practicable maintain a visual family of bridge structures along CSM and MSRFL which complement each other and provide for visual and thematic consistency.

Weedons, Waterholes, Springs and Halswell Junction Road Bridges

The Weedons Road Bridge (refer Figure 12a above), Waterholes Road Bridge, Springs Road Bridge and Halswell

Junction Road Bridge all have spill through abutments and a steel pedestrian balustrade with the concrete barrier between the footpath and carriageway on the overbridge. The bridge deck is constructed from 900mm deep DHC planks. The spill through abutments and simple concrete construction are consistent with the open vistas and CSM1 parkway concept.

Trents and Shands Road Bridges

The Trents Road and Shands Road Bridges have open spill through abutments and consistent pier designs but change to a super tee deck structure. However this change remains visually consistent with the DHC plank bridges.

5.0 CORRIDOR DESIGN



Robinsons Road Bridge

The Robinsons Road Bridge has closed abutments with concrete facing panels to mechanically stabilised earth (MSE) walls. The closed abutment were preferred to reduce the span of SH1 (Main South Road) passing over the local road. An open abutment could be considered in the detailed design phase, or facing panels with textures or colour to improve their appearance

Main South and Marshs Road Bridges

The Main South Road southbound and Marshs Road over bridges have open spill through abutments and pedestrian/traffic barriers that are consistent with other bridges. However the deck structure changes to steel beams due to the long spans over CSM2 at the centreline piers. This introduces another deck soffit and the change with concrete beams at the outside piers results in a different bridge type.

Barriers and abutment treatment on these bridges will be consistent with the Project's visual and thematic design concepts.

Figure 13: Design images of Barrington Street Overpass (local road under) from CSM1 showing precast MSE panels with textured finish and photograph of MSE panels under construction. The Robinsons Road overpass matches these design features. Images courtesy Fulton Hogan and Jasmx (left)

Artist's impression of SH1 Southbound Onramp bridge looking from southbound CSM2 carriageway. Open spill through, abutment treatment and concrete safety barrier with recessed central texture shown in view (right) This is the bridge with the steel girder structure.

5.0 CORRIDOR DESIGN



Figure 14: CSM1 shared path looking east from Aidanfield Drive. The CSM2 shared path between Halswell Junction Road and the Little River Trail will be similar in appearance to this view where it passes below the Springs Road bridge. Image courtesy of Fulton Hogan and Jasmx.

5.6 Pedestrian Cycle Shared Path

A shared cycle path along the CSM2 carriageway is included between the Marshs Road and Halswell Junction Road area as shown on page 26 . The Marshs Road bridge will be integrated with the existing Little River Rail Trail shared path on the southern side of Marshs Road. The new route will integrate with the existing network and proposed future networks to encourage walking and cycling activity. All Project bridges have footpaths and cycling provisions even where there are no footpaths on existing local roads. This should where practicable be maintained to future proof the design.

Design Principles

1. Recognise and provide for the connections to the existing and planned cycle and walking network in the positioning of the cycle and walking path
2. Provide for grades that allow use by a full range of mobility ranges - generally less than 10%
3. Provide a formed and surfaced path of 3m width minimum.
4. Provide low level lighting at the locations where the path intersects with local roads and integrate lighting with the local road interface design



Figure 15: CSM1 Bridges

5.7 Road Furniture Design

Road furniture is the set of elements that are required for the safe functioning of the expressway. The elements include barriers, lights, signs and messaging systems. These elements need to function to provide the desired safety outcomes but can also be scaled, positioned, and selected to contribute positively to the driver's visual experience and to fit with the local environment.

Design Concept

To integrate all road furniture within the local environment sensitively and to enhance the driver experience by planning and designing the furniture purposefully from the outset.

Design Principles

Side Barriers

Provide runoff areas beyond road carriageway shoulders as a preference, to avoid the need for side barriers

Where side barriers are required for safety reasons:

- Keep height of all barriers to a minimum to retain views beyond the carriageway.
- Avoid short sections of steel barrier where possible - landform bunds are the preferred option.
- Match barriers on both sides of the carriageway where possible.
- Design the transition of bridge barriers back to the landscape - emphasise the impression of the bridge ending from external view points .
- Avoid surface motif patterns to concrete barriers - texture and natural colours may be used as part of the concrete surface treatment
- Use steel (w-section and/or thrie-beam) barriers at culverts and minimise their extent

Median Barriers

- A wire rope barrier with a concrete mowing strip is preferred (refer to landscape planting design)

Lighting Columns

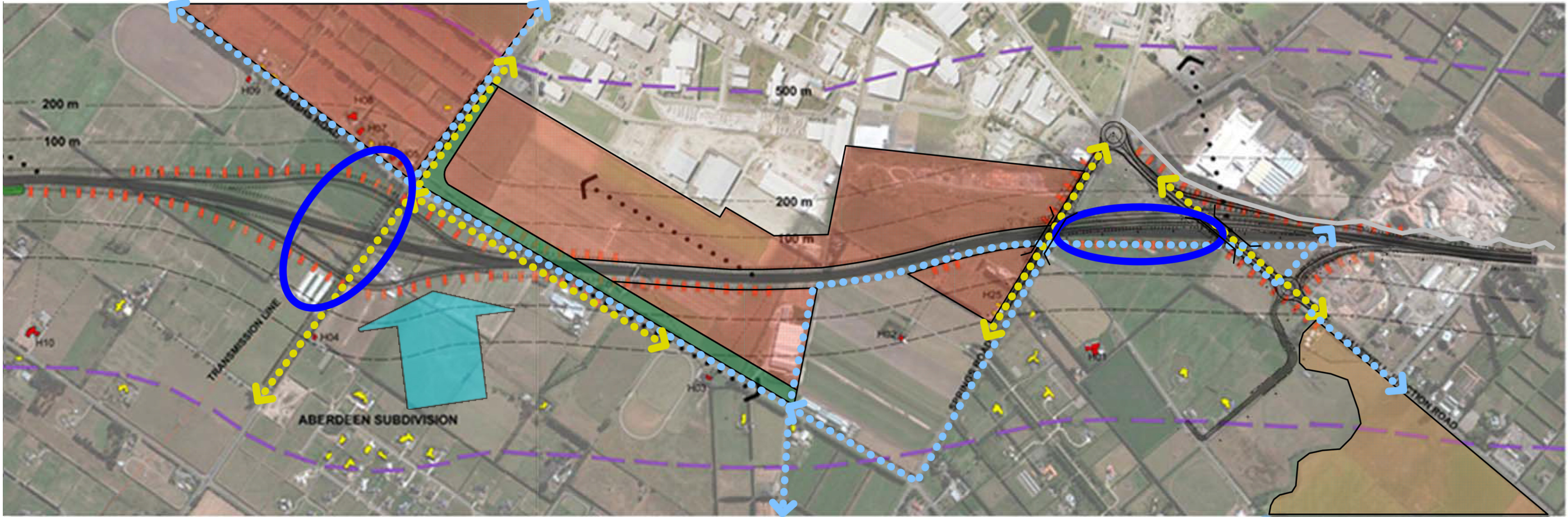
- Keep lighting along the motorway to a minimum and locate lights at on and off ramps only

- Use steel light standards with a plain galvanised finish and have a defined acute angle between the pole and arm.
- Use consistent heights within each group of light standards (for instance within each interchange)
- Utilise the same pole to attach lights and any other furniture such as CCTV cameras
- Place light poles and other furniture to avoid the need for additional barrier protection at the base

Sign Gantries and Signage Posts

- Design gantries so that beams and pillars join at right angles. Preference is for square box section, I beams and flat steel components
- Design pillars to prevent unauthorised access without the need for such secondary fittings such as barbed wire
- Use simpler steel circular section for smaller signs installed adjacent to highway
- Paint gantries a metallic colour that complements weathered galvanised steel
- Where possible, signage should be visually contained within the depth of the spanning girder, through integrated design of girders and signage panels
- Signage for road users should be avoided on overbridges
- Whilst retaining visibility, signage on local roads directing users to the motorway should be minimised and integrated with other furniture to both minimise visual clutter and the number of support posts at ground level
- Support posts for signs on local road should be located off footpaths and in places where they do not obstruct the passage of walkers and cyclists
- Avoid the use of overhead gantries on the local road to support signs.

6.0 SECTOR DESIGN: Character Area 1

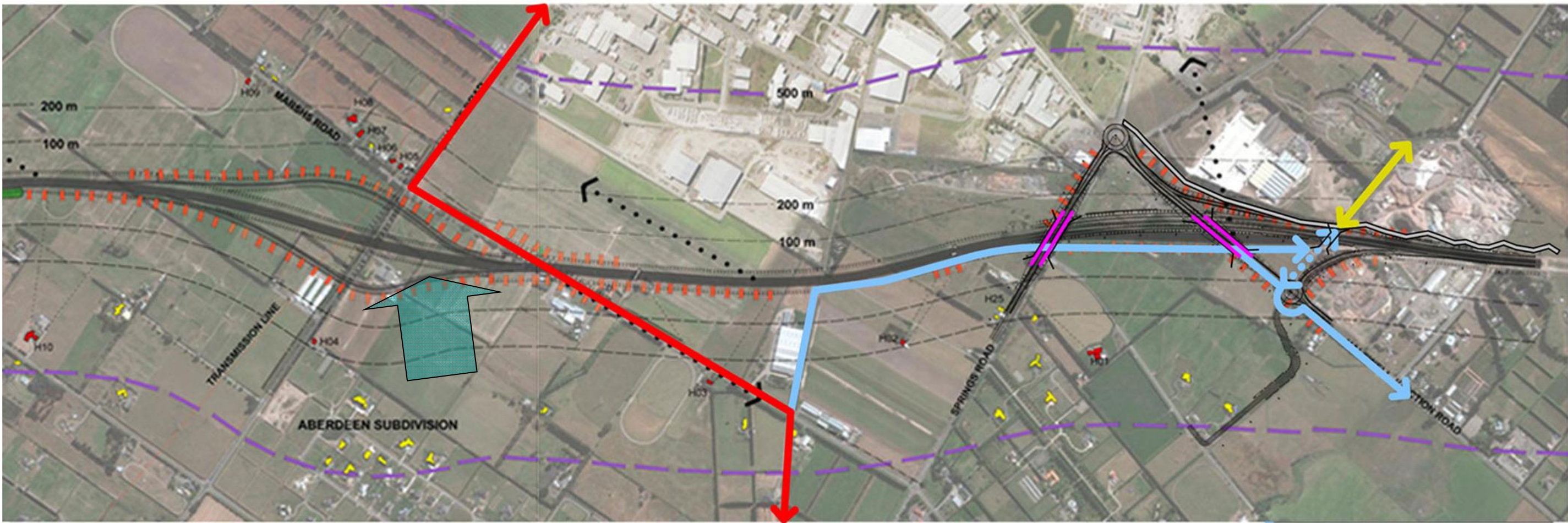


LEGEND

H17	Effected dwellings requiring visual mitigation	Dwellings to be removed or relocated
	Dwellings within 500 metres of motorway not requiring mitigation	Areas requiring landscape mitigation as experienced by motorway
	Areas requiring landscape mitigation screening required for views onto motorway	Views to Port Hills and Southern Alps
	New Business zoning	Pedestrian-cycle connections (not project specific)
	Green buffer to Industrial develop-	Street connections
	Future residential	Potential future Gateway location options
		Areas requiring visual mitigation

Figure 16: 5.1 Character Area 1 Framework Plan

6.0 SECTOR DESIGN: Character Area 1



NOTE: Arrows extend past extent of physical work to show linkages to the wider network







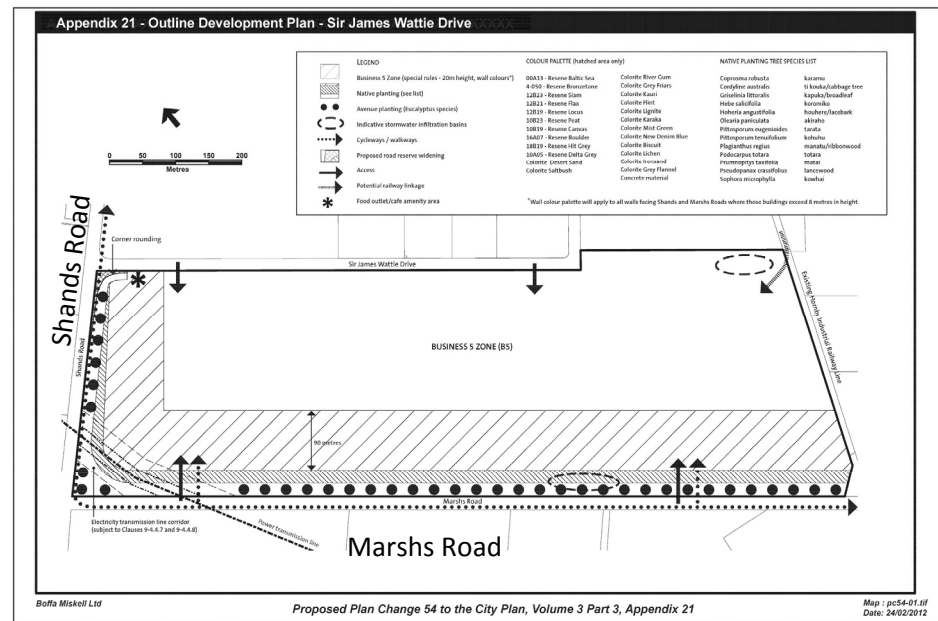
-  3.0m WIDE ASPHALTIC CONCRETE CYCLE PATH
-  LINK BUILT BY CHRISTCHURCH CITY COUNCIL
-  CSM1 COMBINED FOOTPATH & CYCLE PATH
-  ON-ROAD CYCLE LANE/SHOULDER
-  CYCLE ROUTE (FUNDED BY OTHERS)
-  EXISTING RAIL TRAIL/LITTLE RIVER RAIL TRAIL (COMBINED FOOTPATH & CYCLEPATH)

Figure 17: 5.1 Character Area 1 Cycle Network

6.0 SECTOR DESIGN: Character Area 1



6.2 Urban Boundary

Marshs Road is the Christchurch City Council and Selwyn District Council boundary. The future urban form is an important factor to consider as the greenfield business expansion land shown on page 9 will significantly alter the area's appearance.

6.3 PC54 Landscape Buffers

Plan Change 54 (refer Figure 3b for location) was confirmed during the preliminary design phase for CSM2 and is now part of the Christchurch City Council District Plan. The Outline Development Plan (left top) does not show the CSM2 designation and the only setback requirement within the industrial zone is a minimum 1.5 metre yard.

Given that warehousing is likely to be the dominant building type there is an urban design concern that the subdivision rules do not prevent a largely continuous line of blank rear walls from facing toward CSM2.

This is not an effect caused by the CSM2 project and the notified designation width and landscaping is comparable to most urban motorway projects. Therefore this effect is outside the designation 'scope' but the visual effect remains for the southern entry to Christchurch City.

6.4 South West Area Plan (SWAP)

The SWAP is a Structure Plan to guide future development in the Christchurch City Council area. A Landuse Scenario 2041 and a Landscape Features and Character are shown on page 30.

Plan Figure 5 in Figure 21 shows a proposed residential growth area to the east of the project area on Halswell Junction Road. The residential area is sufficiently separate from the proposed motorway to avoid visual effects.

Plan 3 shows a proposed 'indigenous tree corridor' integrated with shared paths alongside part of the CSM2 alignment, however the proposed CSM2 alignment is further south than that shown on the SWAP. NZTA and CCC have agreed to provide a shared path along CSM2 from Halswell Junction Road to the Little River Tail (as shown on page 26) integrated with the proposed landscaping in the CSM2 designation.

6.5 Gateway Location

The SWAP shows a proposed Gateway feature located in the Halswell Junction Road interchange. The Gateway is a CCC project and will not form part of the CSM2 Project, but the design of the Project should not preclude any of the location options.

CCC officers were not able to confirm Council's preferred location for the gateway at this time. The interchange designs do not preclude a gateway element being added at either Halswell Junction Road interchange, Shands Road interchange or Carr's Road Bridge in CSM1 if CCC want to pursue their concept in the future.

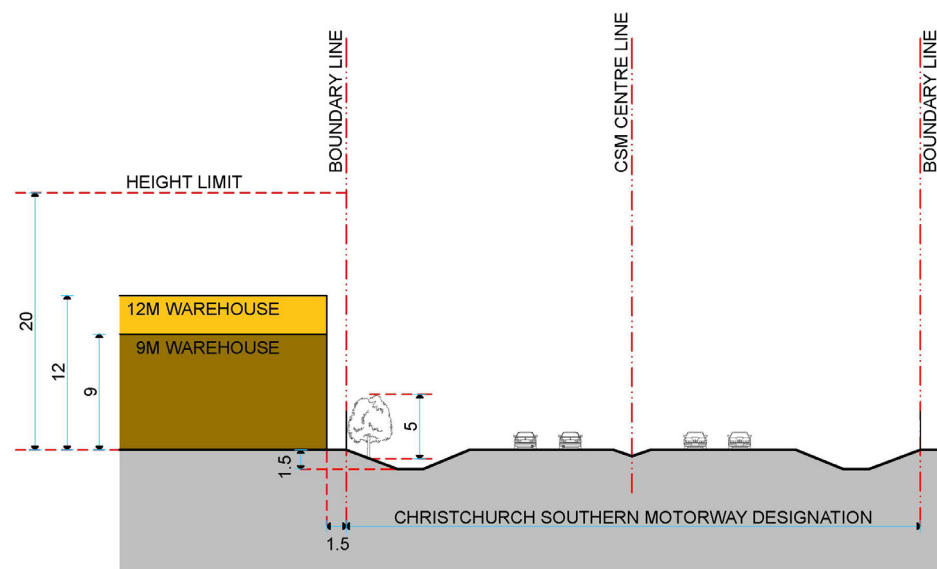


Figure 18: PC54 Outline Development Plan (top), PC54 Marshs Road landscape buffer (top) and CSM2/PC54 section (bottom)

6.0 SECTOR DESIGN: Character Area 1




Please note: - The boundary (urban limit) to the area of land identified on 'RPS chapter 12A, map 1 - greenfield business area' (Greater Christchurch Urban Development Strategy) has been added to this photomontage, and is shown with this graphic: 

Figure 19: Shands Road Interchange

6.0 SECTOR DESIGN: Character Area 1




Please note: - The boundary (urban limit) to the area of land identified on 'RPS chapter 12A, map 1 - greenfield business area' (Greater Christchurch Urban Development Strategy) has been added to this photomontage, and is shown with this graphic: 

Figure 20: Springs Road Overbridge

6.0 SECTOR DESIGN: Character Area 1

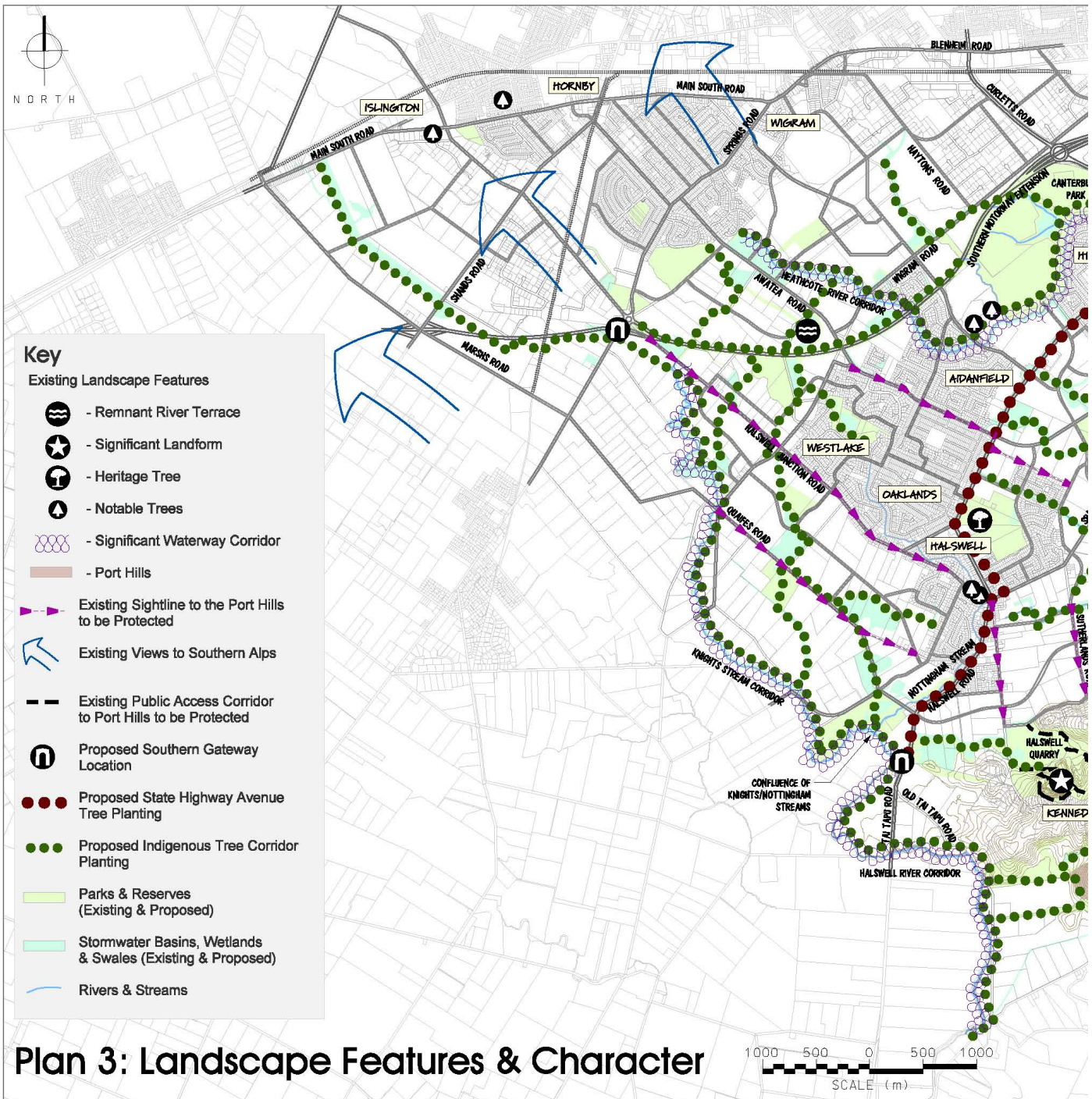
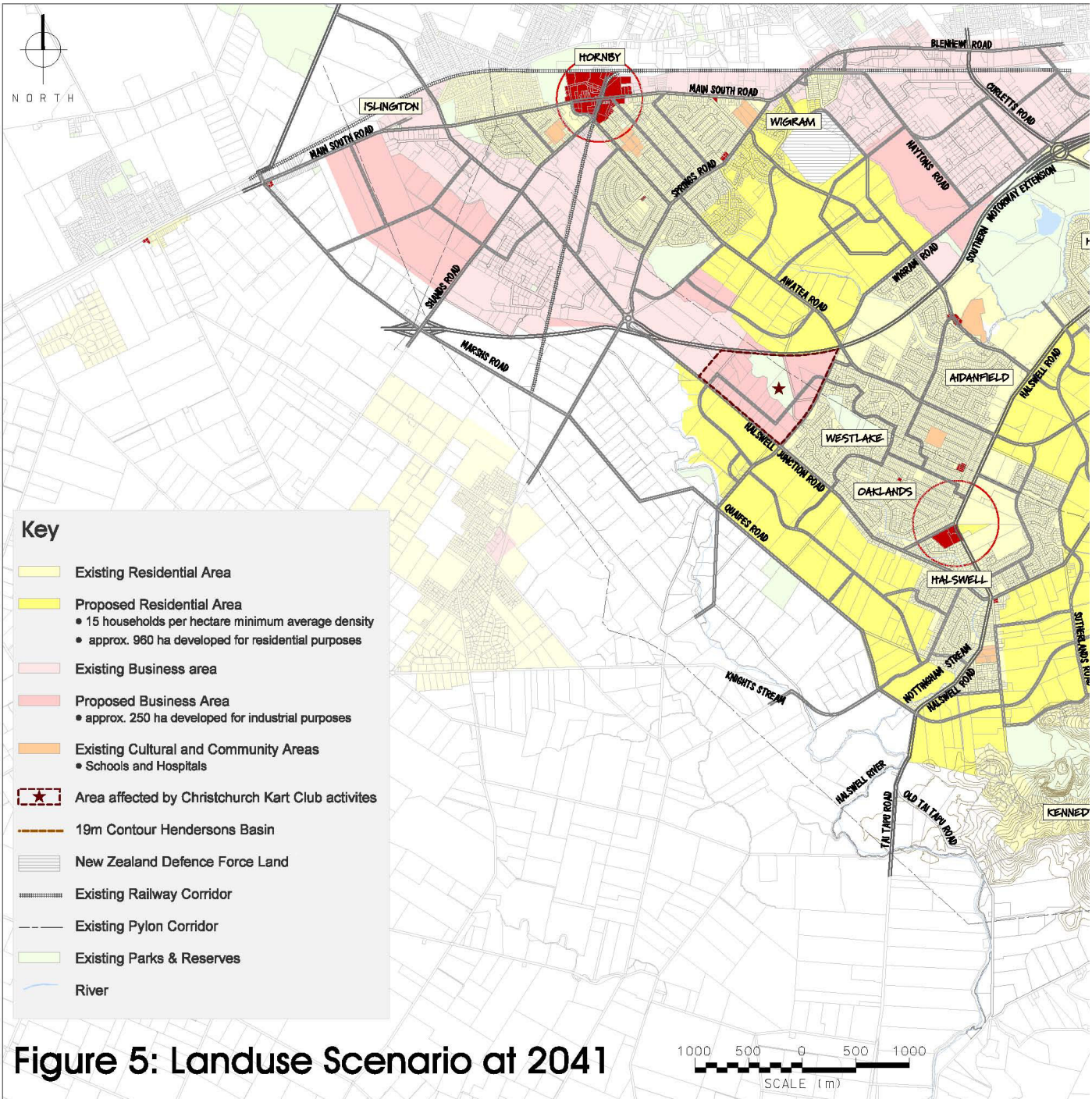


Figure 21: South West Area Plans
 NB: The CSM2 alignment shown on these plans is incorrect.

6.0 SECTOR DESIGN: Character Area 1

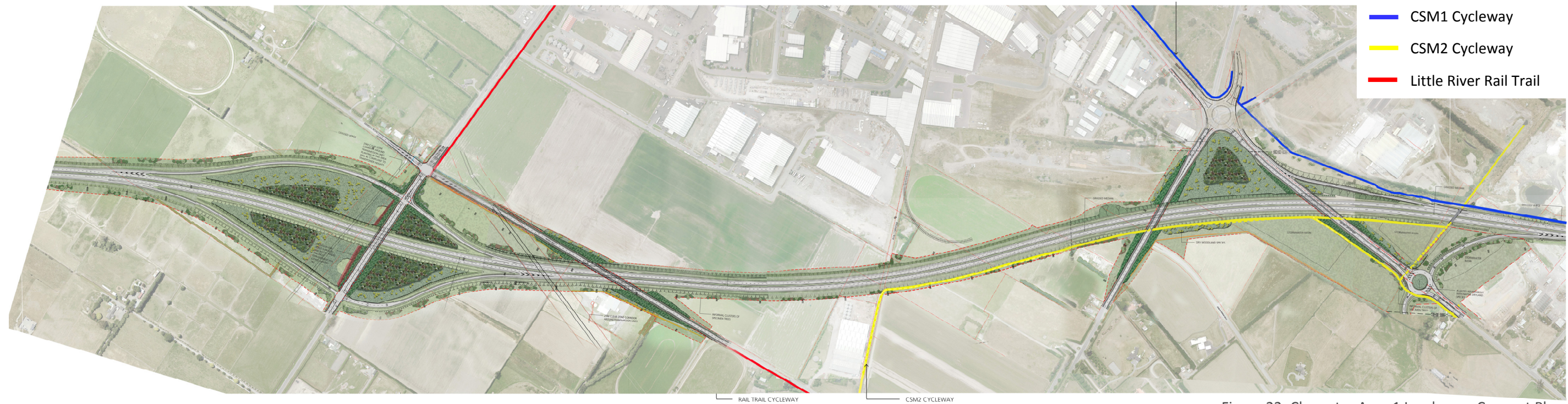


Figure 22: Character Area 1 Landscape Concept Plan

6.6 Character Area 1

Landscape Concept Plans

Halswell Junction Road/ Springs Road

This area forms the transition from CSM1 to CSM2 and the landscape design in this area seeks to achieve the following:

- Integration of the CSM 2 landscape design with that being implemented on the CSM 1 project through a mix of exotic and native specimen tree clusters, native re-vegetation planting and open grass areas that integrate with the surrounding pastoral and rural residential landscape.
- Development of a native tree copse within the geometry of the Springs Road overpass and CSM 2 motorway alignment. The tree copse could be established through a native nursery crop to establish quick vegetation cover and increase the survival chances of emergent canopy trees species. This planting methodology could apply to all tree copses

referred to in this design report.

- Retention (where possible) of open views to the Port Hills.
- Embankment planting incorporating a mix of native species on steep slopes and retention of grass cover on slopes deemed mow-able. Lower margins of the embankments to incorporate prostrate native species and boulder/rock fields to accommodate lizard habitat.
- Informal woodland tree planting (mix of exotic and native) associated with proposed landscape mitigation.
- Roundabout planting of low native grasses to integrate with CSM 1 roundabout landscape treatment. This treatment also maintains low levels of maintenance and maintains open sightlines for motorway users.

Springs Road to Marshs Road

This area retains a relatively open aspect to the surround-

ing rural landscape and the landscape approach seeks to achieve the following:

- Informal woodland tree planting (mix of exotic and native) associated with proposed landscape mitigation. The planting provides additional landscape (screen) mitigation to adjacent residents and land-uses.
- Retention of view gaps to the rural surrounding and the Port Hills.
- Integration of the cycleway/ walkway extending along the northern boundary to the proposed industrial area (Plan Change 54) and passes over the motorway alignment via the Marshs Road over bridge.

Shands Road/ Marshs Road Interchange

This area features significant landscape treatment that aims to integrate the Marshs Road over-bridge and the Shands Road interchange with the surrounding environment. The landscape design seeks to achieve the following:

- Development of two native tree copses within the geometry of the Shands Road interchange.
- Low native grassland planting aligned under the existing power transmission lines to comply with the Transpower clear zone and setback requirements.
- Embankment planting incorporating a mix of native species on steep slopes and retention of grass cover on slopes deemed mow-able. Lower margins of the embankments, low native planting and grass verge areas to incorporate prostrate native species and boulder/rock fields to accommodate lizard habitat.
- Informal woodland tree planting (mix of exotic and native) and hedgerow planting associated with proposed landscape mitigation. The planting provides additional landscape mitigation to adjacent residents including the Aberdeen rural residential subdivision located south of the motorway alignment. Where hedgerows are shown the intent is, where possible, tie into existing hedgerows that run generally perpendicular with the motorway alignment.

6.0 SECTOR DESIGN: Character Areas 2 & 3

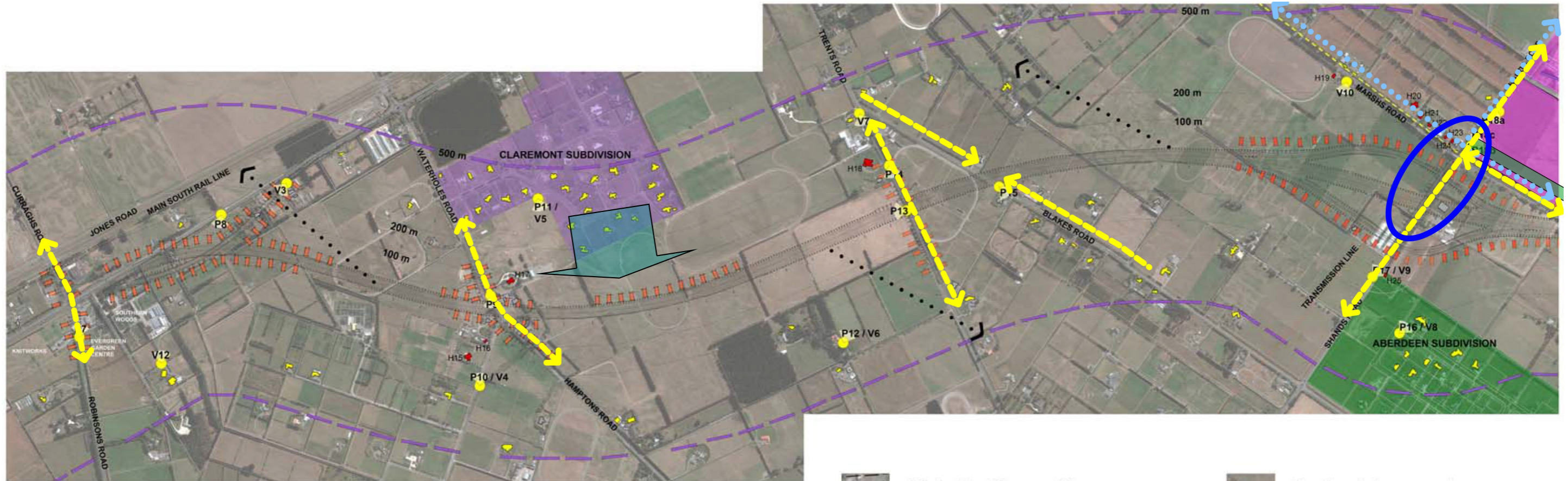
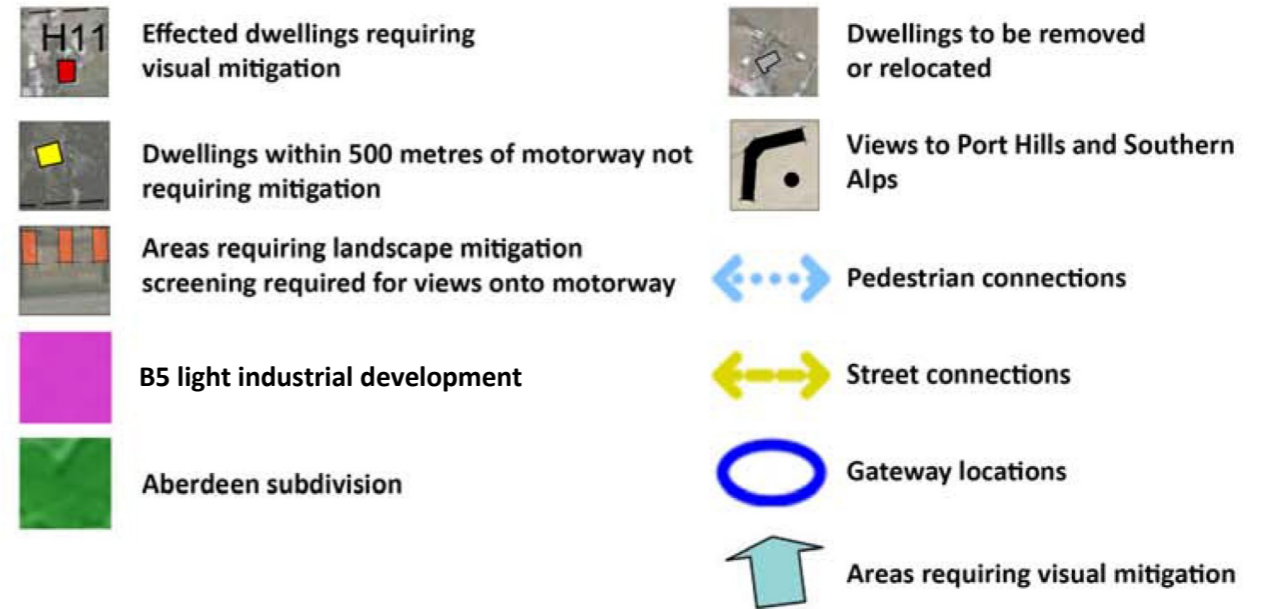


Figure 23: Character Area 2 & 3 Framework Plan



6.7 Character Areas 2 & 3 Framework Plan

Main features include;

- Blakes Road is the only severed road in this area.
- Landscape mitigation planting required for Claremont subdivision
- Local road overbridges and the abutments will be large elements in the flat landscape so they require extensive planting.
- Vistas to Port Hills and Southern Alps.

6.0 SECTOR DESIGN: Character Areas 2 & 3



Figure 24: Trents Road Overbridge (looking north)

6.0 SECTOR DESIGN: Character Areas 2 & 3



Figure 25: Waterholes Road Overbridge (looking north)

6.0 SECTOR DESIGN: Character Areas 2 & 3



Figure 26: CSM2 and MSRFL Interchange

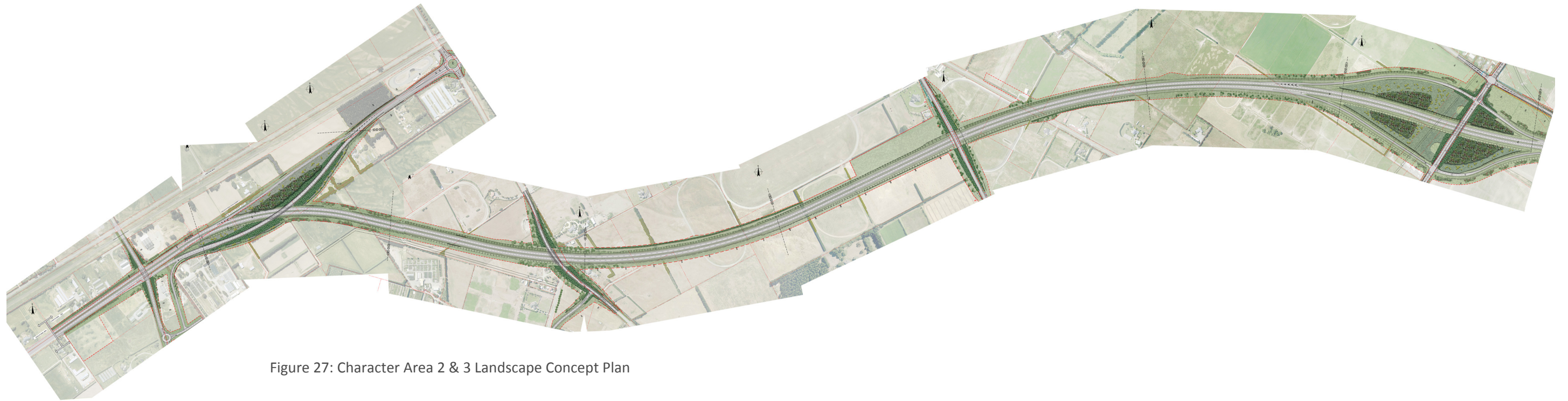


Figure 27: Character Area 2 & 3 Landscape Concept Plan

6.8 Character Areas 2 & 3 Landscape Concept Plans

Shands Road to Trents Road

This area, like Springs Road to Marshs Road, retains a relatively open aspect to the surrounding rural landscape. The landscape design seeks to achieve the following:

Informal woodland tree planting (mix of exotic and native) and hedgerow planting associated with proposed landscape mitigation. The planting provides additional landscape mitigation to adjacent residents and land-uses.

Embankments planting on the Trents Road overpass incorporating a mix of native species on steep slopes and retention of grass cover on slopes deemed mow-able. Specimen tree planting is incorporated at the base of the slope and arranged in informal clusters/groups alongside Trents Road.

A mixture of trees and hedgerow are incorporated at both termination points on Blakes Road. A cluster of trees are incorporated on the north side of the motorway to provide a visual barrier and a means to reduce the risk of headlight glare from Blakes Road onto the Motorway. A section of hedgerow will be aligned on the south side of the motorway and extend approximately 400 metres from Blakes Road towards the Shands Road interchange. This section of hedgerow will provide landscape screen mitigation to the adjacent rural residence. A cluster of trees will be incorporated on the south side of the hedgerow to improve the amenity associated with the termination point of Blakes Road.

Retention of view gaps to the rural surrounding, the Port Hills and distant views to the Southern Alps.

Where practical, retain existing shelterbelt/hedgerow lines within the designation but clear of the required

minimum clear zone setback, services and storm water swales, culverts and the like. Maintenance of safe sight lines shall also be considered.

Trents Road to SH1

This area continues a similar character to that of the area between Shands Road and Trents Road with a combination of open aspect to the surrounding rural landscape with more intense landscape treatment at the Hamptons Road overpass. The landscape design seeks to achieve the following:

A hedgerow is proposed along the designation boundary associated with proposed landscape mitigation. The intention is for the hedgerow to tie into the ends of existing hedgerows bisected by the motorway designation. The planting provides additional landscape mitigation to adjacent residents including the Claremont rural residential subdivision located north of the motorway alignment.

Embankments planting at the Hamptons Road overpass incorporating a mix of native species on steep slopes and retention of grass cover on slopes deemed mow-able. Specimen tree planting is incorporated at the base of the slope and arranged in informal clusters/groups alongside Waterholes and Hamptons Road. Lower margins of the embankments, low native planting and grass basin areas to incorporate prostrate native species and boulder/rock fields to accommodate lizard habitat.

Retention of view gaps to the rural surrounding, the Port Hills and distant views to the Southern Alps.

Where practical, retain existing shelterbelt/hedgerow lines within the designation but clear of the required minimum clear zone setback, services and storm water swales, culverts and the like. Maintenance of safe sight lines shall also be considered.

6.0 SECTOR DESIGN: Character Area 4

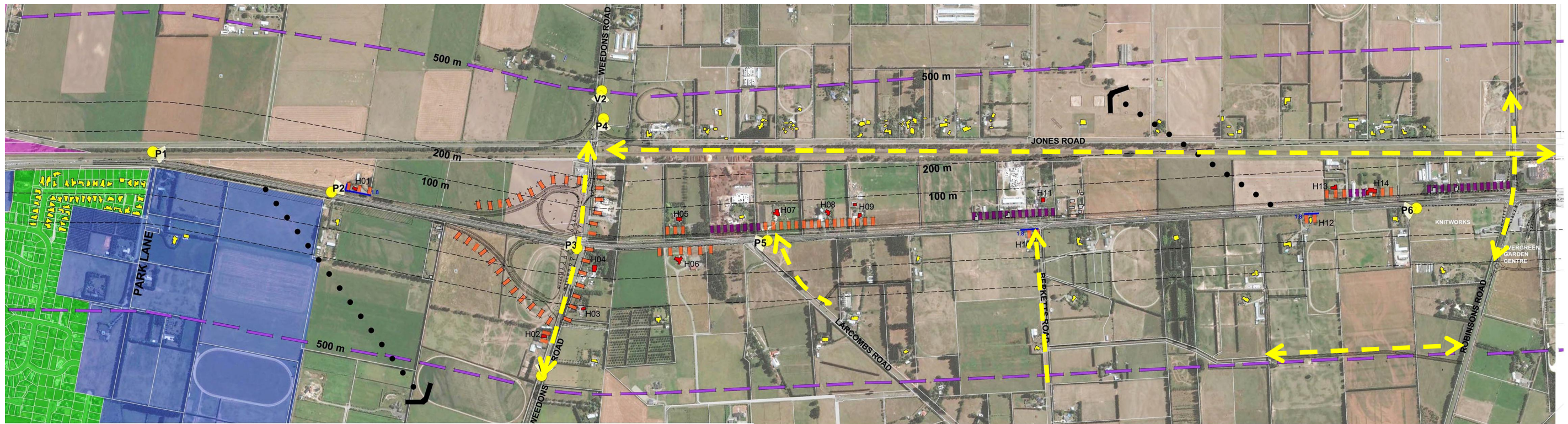


Figure 28: Character Area 4 Framework Plan

LEGEND

 H17	Effected dwellings requiring visual mitigation		Dwellings to be removed or relocated
	Dwellings within 500 metres of motorway not requiring mitigation		Areas which require landscape mitigation - as experienced by motorway users
	Areas which require landscape mitigation - screening required for views on to motorway		Views to Port Hills and Southern Alps
	Plan Change 7		

6.9 Character Area 4 Framework Plan

Main features include;

- The orange pattern indicates where views from existing properties to MSRFL carriageway or over bridges require mitigation.
- The purple pattern indicates where views from MSRFL to properties require mitigation.
- The black dotted lines indicate vistas to Port Hills and the Southern Alps.
- All road connections are maintained although Larcombs is left entry only and Berketts Road become left in/left out only.

6.0 SECTOR DESIGN: Character Area 4



Figure 29: Weedons Road Interchange



Figure 30: Character Area 4 Landscape Concept Plan

6.10 Character Area 4 Landscape Concept Plans

SH1 to Weedons Road

This area forms a key node point where the CSM 2 alignment joins SH1 and the four laning continues through to the existing area of four laning near Weedons Road. The landscape treatment in this area varies to that of the CSM2 section and responds to the existing state highway corridor landscape character. The landscape design seeks to achieve the following:

Development of native tree copses within the geometry of the SH1 and Weedons Road interchanges.

Embankment planting at the SH1 and Weedons Road interchanges and Robinsons Road overpass will incorporate a mix of native species on steep slopes and retention of grass cover on slopes deemed mow-able. Lower margins

of the embankments to incorporate prostrate native species and areas of scree and rock to accommodate lizard habitat.

Additional amenity specimen tree planting will feature along this section with particular emphasis on treatment where local roads intersect with SH1.

Where practical, retain existing shelterbelt/hedgerow lines and amenity planting within the designation but clear of the minimum clear zone setback, services and storm water swales, culverts and the like. Maintenance of safe sight lines from intersections and private residents serviced off the state highway (if any) shall also be considered.

The development of site specific landscape treatment to compliment any noise mitigation recommendations and any amenity planting associated with noise mitigation

initiatives shall consider both the residents and the motorway users.

Ecological planting will be incorporated with the drain diversion proposed along a section of MSRFL on the south side of the road. Drain planting will include native species that provide suitable water habitat and shade conditions for the native fish species identified in the ecological assessment. Should this drain be piped, the planting shall be used for offset ecological mitigation planting in areas yet to be determined.

A majority of the existing oak trees north of Rolleston will be retained behind the proposed road barrier through this section of motorway. Some oak trees will be removed to allow the formation of the Weedons interchange south bound on ramp

7.0 CONCLUSION

The CSM2 and MSRFL are stages 2 and 3 of the Christchurch Southern Motorway project. The Christchurch South West Area Plan (SWAP) includes CSM2 and provides a landuse framework for this part of the project area. The project is consistent with the Regional Policy Statement Plan Change 1 (RPS PC1) and the SWAP. The project provides for growth as outlined in the RPS PC1 and SWAP.

The curved alignment, grass or low planted central median and landscaping creates the parkway desired in the Environmental, Urban Design and Landscape Masterplan from CSM1. The landscape concept plan considers possible vistas of the Port Hills and Southern Alps. The parkway concept also provides for the 'green belt' between Prebbleton and Marshs Road as outlined in the Prebbleton Structure Plan.

There are nine bridges contained within the project with the result that Blakes Road is the only severed local road in the Project. This is a good result for local trip connectivity across the CSM2/MSRFL corridor. Cycling in the Christchurch City Council area has been accommodated in the Project as shown on page 26. In other areas although there are no existing footpaths all bridges have footpaths and lanes sufficient for casual cycling. The bridge designs shall be consistent in visual appearance from an urban design perspective and contribute to a 'parkway' appearance.

1.8 metre high close board fences where required for noise mitigation are acceptable along the Main South Road given the narrower corridor and that they match existing fences.

The project will have off-corridor benefits by removing through traffic and heavy traffic from unsuitable local roads with local community benefits especially in Templeton.

The ULDF outlines areas where the current proposal is consistent with the parkway vision and those areas which can be considered in more detail in the detailed design and construction stages of the project.

GLOSSARY

CCC	Christchurch City Council
CSM1	Christchurch Southern Motorway Stage 2
CSM2	Christchurch Southern Motorway Stage 2
DP	District Plan
ECAN	Environment Canterbury
MSRFL	Main South Road Four Laning
NZTA	New Zealand Transport Agency
PC	Plan Change
RLTS	Regional Land Transport Strategy
RPS	Regional Policy Statement
SDC	Selwyn District Council
SWAP	South West Area Plan