

Technical Report 4 - Landscape and Visual Effects

For the proposed Stage 2 Christchurch Southern Motorway
(CSM2) and Main South Road Four Laning (MSRFL)

Prepared for

NZTA

By

Tony Milne
Rough and Milne Landscape Architects Limited
Level 2, 69 Cambridge Terrace
P.O. Box 3764
CHRISTCHURCH

Tel: 03 366 3268
Email: tony@roughandmilne.co.nz

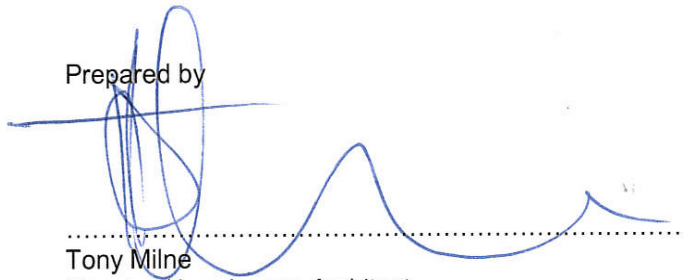
November 2012

Assessment of Landscape and Visual Effects for CSM2 and MSRFL

Rough and Milne Landscape Architects Limited
69 Cambridge Terrace
PO Box 3764
CHRISTCHURCH 8140

P 03 366 3268
F 03 377 8287

Prepared by



.....
Tony Milne
Director / Landscape Architect

Reviewed by



.....
Nikki Smetham
Senior Landscape Architect

Date	November 2012
Reference	10089
Status	Technical Report 4 Revision 1

This Technical Report has been produced in support of the Assessment of Environmental Effects (AEE) for the Main South Road Four Laning and Christchurch Southern Motorway Stage 2 Project. It is one of 20 Technical Reports produced (listed below), which form Volume 3 of the lodgement document. Technical information contained in the AEE is drawn from these Technical Reports, and cross-references to the relevant reports are provided in the AEE where appropriate.

A Construction Environmental Management Plan (CEMP) has been prepared to provide the framework, methods and tools for avoiding, remedying or mitigating environmental effects of the construction phase of the Project. The CEMP is supported by Specialised Environmental Management Plans (SEMPs), which are attached as appendices to the CEMP. These SEMPs are listed against the relevant Technical Reports in the table below. This Technical Report is highlighted in grey in the table overleaf. For a complete understanding of the project all Technical Reports need to be read in full along with the AEE itself; however where certain other Technical Reports are closely linked with this one they are shown in in bold.

Schedule of Technical Reports for the AEE

No.	Technical Report Title	Primary AEE Chapter Reference	SEMP
1	Design philosophy statement	4	
2	Traffic and transportation effects report	11	Construction Traffic Management Plan
3	Assessment of storm water disposal and water quality	19	Erosion and Sediment Control Plan, Accidental Aquifer Interception Management Plan
4	Landscape and visual effects	15	Landscape Management Plan
5	Assessment of effects - urban design	14	Landscape Management Plan
6	Urban and landscape design framework	14, 15	Landscape Management Plan
7	Landscape context report	15	Landscape Management Plan
8	Assessment of operational noise effects	17	
9	Assessment of construction noise & vibration	17	Construction Noise and Vibration Management Plan
10	Assessment of air quality effects	18	Air Quality Management Plan
11	Geotechnical engineering and geo-hazards assessment	3, 21	
12	Assessment of archaeological effects	24	
13	Social impact assessment	26	
14	Economic impact assessment	25	
15	Cultural impact assessment	23	
16	Contaminated land assessment	22	
17	Aquatic ecology assessment	20	
18	Terrestrial ecology assessment	20	
19	Lighting assessment	16	
20	Statutory provisions report	6, 28	
-	Construction Environmental Management Plan	5	

For further information on the structure of the lodgement documentation, refer to the 'Guide to the lodgement documentation' document issued with the AEE in Volume 1.

Table of Contents

1.0 EXECUTIVE SUMMARY	6
2.0 INTRODUCTION	8
3.0 RELEVANT STATUTORY DOCUMENTS	9
4.0 METHODOLOGY	10
5.0 LANDSCAPE CONTEXT.....	13
5.1 Introduction.....	13
5.2 Landscape description of the receiving environment	13
5.3 Landscape Character Areas	14
5.4 Existing Landscape Values	16
6.0 THE PROJECT	20
7.0 LANDSCAPE AND VISUAL EFFECTS ASSESSMENT	24
7.1 Viewing Catchment and Audience	24
7.2 Landscape Effects	24
7.3 Visual effects	26
7.4 Visual Effects of Proposed Noise Barrier Mitigation	34
7.5 Temporary Construction Effects	35
7.6 Visual Effects of Proposed Swales and Stormwater Basins	36
7.7 Ephemeral Effects	36
7.8 Landscape and Visual Effects Summary	36
8.0 MITIGATION MEASURES.....	39
8.1 Recommended Landscape Mitigation.....	42
APPENDIX 1 REFER A3 GRAPHIC SUPPLEMENT	45
APPENDIX 2.....	46
RELEVANT STATUTORY AND POLICY DOCUMENTS.....	46

1.0 EXECUTIVE SUMMARY

Main South Road Four Laning (MSRFL) will consist of a four lane median divided expressway plus associated overbridges and interchanges. It will connect to the Christchurch Southern Motorway Stage 2 (CSM2) that will consist of a four-laned median separated motorway. Ultimately these roads will form State Highway (SH) 73 or SH 76. The introduction of this Project into the receiving environment will inevitably have some adverse landscape and visual effects and these will vary according to the landscape context and viewing audience.

The landscape setting of the proposed MSRFL and CSM2 alignments and their receiving environment is typical of much of the peri-urban and rural landscape of the southern extents of Christchurch. For the most part the setting is rural, characterised by the open space of farmland bisected by shelterbelts and hedges. The existence of rural residential and lifestyle blocks is increasing within the area of the proposed MSRFL and CSM2 alignments, resulting in additional built form, smaller allotments of land and further boundary planting. Agricultural businesses and other cultural elements including infrastructure, such as power transmission lines, are common features in the receiving environment.

In terms of natural character, the receiving environment over Landscape Character Areas 1 – 3 is considered to be of a **moderate** level of naturalness. Over Landscape Character Area 4, the natural character is considered to be low. This is due to the extent of modification of the land cover, current land use activities leaving few remaining natural features and development that will occur as a result of recent plan changes.

The quality of the rural character varies from **low** to **high** but is mostly **low** to **moderate** across the proposed CSM2 alignment in relation to the proportion of built form to open space. Where the CSM2 is in close proximity to the industrial area of southern Hornby or agricultural businesses within the vicinity, then the rural character is lower in comparison to where a rural land use predominates.

The amenity values attributed to the landscape setting are mostly derived from the green, open space quality of the landscape and the outlook across the plains to Banks Peninsula and the distant foothills of the Southern Alps. Like rural character, amenity values also fluctuate across the MSRFL and CSM2, depending on the degree of open space, greenery of localised settings and views to the wider landscape. At either end of the MSRFL and CSM2 visual amenity is **low** (i.e. over Landscape Character Areas 1, 2 and 4) while within the middle, rural section (Landscape Character Area 3), amenity values range between **moderate** to **high**.

The most significant landscape effect will result from the introduction of an extensive area of hard surfacing and engineered landforms into a predominantly rural setting, the removal of residential and commercial buildings, as well as the removal of a considerable amount of vegetation including amenity trees, sections of shelterbelts and hedges.

The most significant effects on visual amenity will arise from the overbridges and associated infrastructure, which will be prominently visible because of their height in a relatively flat landscape setting. These, in association with the MSRFL and CSM2 alignments will result in general changes to the rural character. Visual effects will range in magnitude depending on the viewing audience and their proximity to the Project.

Temporary effects will inevitably arise particularly during the period of earthworks construction prior to reinstatement of a pastoral land cover and mitigation planting. These will be minimised as far as practicable by planting as soon as each stage of earthworks is completed. Further effects

are likely in association with the construction compound areas. In general, these will be located so effects on nearby houses are avoided.

Landscape mitigation measures are recommended where the potential adverse effects would be noticeable by residents, workers and road users within the viewing catchment of the MSRFL and CSM2. Landscape mitigation is also recommended around overbridges and interchanges to allow these structures to be visually absorbed into their landscape setting. Consideration has also been given to the experience of potential road users, and consequently, view shafts will be maintained and landscape planting recommended in locations where the quality of the outlook on the receiving environment is considered to be low.

A landscape plan prepared by Beca is provided as part of the Project and will provide visual amenity over and above that provided as visual mitigation.

The receiving environment which the MSRFL and CSM2 will traverse ranges widely in terms of its landscape values and therefore an overall assessment of effects is difficult to specifically quantify. Although the landscape is quite ordinary in terms of natural character, landscape and amenity values, there is no doubt it holds values from an individual's perspective, especially for local residents who are more familiar with the landscape immediately surrounding the proposed development.

Effects are largely contained within a 1 km width band along the length of the MSRFL and CSM2. Local residents, particularly those within the 1 km band, are likely to be adversely affected to some degree in relation to rural character and visual amenity and this will range between substantial to negligible. In comparison, road users are more likely to show a high degree of acceptance to the provision of infrastructure that is integrated into the landscape through design, earthworks contouring, and planting.

Overall potential landscape and visual amenity effects are considered to be appropriately addressed by the proposed landscaping, as illustrated in the Landscape Context Report (Technical Report 7) and the landscape mitigation recommended by this report. In addition it is recommended that a Landscape Management Plan is a part of the suite of environmental management plans to be developed for the Project to ensure that these effects are managed and mitigated through to the Project completion.

2.0 INTRODUCTION

The NZ Transport Agency (NZTA) is constructing the Christchurch Southern Motorway in phases. This proposed development phase is comprised of two components:

1. Main South Road Four Laning (MSRFL)

The proposed MSRFL involves four-laning the existing two lane state highway (SH1) from Robinsons Road to Park Lane.

2. Christchurch Southern Motorway 2 (CSM2)

The proposed CSM2 will extend from Halswell Junction Road to join SH 1 just north of Robinsons Road. CSM2 will consist of a four-lane median separated motorway.

The purpose of this report is to assess landscape and visual effects arising from the proposed MSRFL and CSM2 development (together, the Project). The Project is located within a mixed peri-urban and rural environment on the south – western outskirts of Christchurch.

This assessment will include the following:

- Relevant Statutory Documents
- Assessment Methodology
- Landscape Context and Description of the Receiving Environment
- A Brief Description of the Project
- Landscape and Visual Effects Assessment
- Potential Mitigation Measures
- Conclusion

A series of aerial photographs, plans and visual simulations accompany this assessment (refer Appendix 1 Sheets 1 to 39 to this report). These sheets identify, among other things, the location and extent of the Project, the landscape character areas and the recommended locations for mitigation measures.

In particular, accompanying this assessment are Viewpoint panoramas which give an indication of the existing landscape character (refer Appendix 1 Sheets 3 to 8). Photographs are also included of the Christchurch Northern Motorway (refer Appendix 1 Sheets 14 and 15), as these show the degree of visibility of a similar constructed motorway from various distances. The CSM1 is currently being constructed and photographs of this are included to show the visual effects that are anticipated for the CSM2. Refer Appendix 1, Sheets 16 and 17.

A series of Visual Simulations from particular viewpoints are included to portray the actual effects of the Project and planting mitigation after 7 years. Refer Appendix 1, Sheets 29 – 39.

This assessment has been prepared with reference to the Project Scheme Plans (developed by GHD and BECA), and the Urban and Landscape Design Framework, copies of which can be found in the Volume 5 Plan Set that are associated with the relevant Technical Reports, numbers 5, 6 and 7.

3.0 RELEVANT STATUTORY DOCUMENTS

The following national, regional and territorial authority documents are relevant to the assessment of the landscape and visual effects of the Project. They provide guidance on the significance of potentially affected landscape and amenity values in the locality of the Project. They also indicate issues, objectives, and policies intended to protect or enhance these values.

Relevant statutory and policy documents include:

- Resource Management Act 1991
- Canterbury Regional Policy Statement 1998
- Proposed Canterbury Regional Policy Statement 2011
- Christchurch City Plan
- Selwyn District Plan.

Further guidance is given by the following documents:

- Christchurch South West Area Plan
- NZTA Guidelines for Highway Landscaping
- NZTA Urban Design Policy (August 2007)

A number of implications for the assessment of the landscape and visual effects of the Project flow from the documents outlined above. The key provisions of the Resource Management Act (RMA) are found in Part 2, Section 7, Other Matters. There is no section 6 (a) or (b) RMA issues that will arise in relation to landscape and visual viewpoints as a result of the Project.

Those most relevant to landscape and visual amenity are:

- Section 7 (c) requiring that particular regard is had to *“the maintenance and enhancement of amenity values”* (as defined in the RMA).
- Section 7 (f) requiring that particular regard is had to *“the maintenance and enhancement of the quality of the environment”*.

These provisions are given specific definition by the Canterbury Regional Policy Statement and the relevant District Plans. With respect to the Project the pertinent landscape issues focus on visual amenity values, landscape character and quality of the environment.

Refer to Appendix 2 to this report for further explanation of these reference documents.

4.0 METHODOLOGY

An assessment of the existing landscape context and character in the vicinity of the Project has been undertaken. Describing the existing landscape in terms of its landform, land cover and land use at a local scale provides a baseline for a consideration of the Project's landscape effects.

As an aid to appreciating the character of the existing landscape, sections of the CSM2 and MSRFL have been divided into areas with a readily distinguishable landscape character defined by the combination of vegetation cover, land uses / activities and structures.

These are mapped as 'Landscape Character Areas' in Appendix 1, Sheets 1 and 2. The proposed MSRFL and CSM2 alignments, and other existing roads (including the Christchurch Southern Motorway 1, State Highway (SH) 1 and local roads) in the vicinity are identified so that their relationship to the landscape character areas can be readily appreciated.

The Landscape Character Areas are identified as:

- Landscape Character Area 1 – Existing SH 1 Corridor from Park Lane (north of Rolleston) to Robinsons Road
- Landscape Character Area 2 – Robinsons Road to Waterholes Road
- Landscape Character Area 3 – Waterholes Road to Marshes Road
- Landscape Character Area 4 – Marshes Road to Halswell Junction Road

Following this is a general discussion of the natural character, landscape and visual amenity values that are attributed to each Landscape Character Area. This underpins the assessment of landscape and visual effects arising from the Project.

A visual envelope has been identified in Appendix 1, on Sheets 1 - 2 and Sheets 24 - 28, which show the MSRFL and CSM2 alignments with offset lines of 100m, 200m and 500m measured from the outer edges of the motorway / expressway. Beyond 500 m views of the Project from houses and public roads will not be adversely visually affected. The visual envelope has been determined by field work undertaken in analysing views of, and from, the Christchurch Northern Motorway and the CSM 1 which is currently under construction. Appendix 1, Sheets 14 and 15 show a series of photographs at various distances from the Christchurch Northern Motorway. Similarly photographs of the CSM 1 are included on Sheets 16 and 17. These photographs illustrate the visual effects arising from a motorway within a similar receiving environment.

Obviously visual effects are not strictly limited to an even 1 km wide corridor but will vary within this band, according to the criteria and proximity of physical features, such as vegetation. The 100 m and 200 m lines help to show the proximity of the houses and therefore the number of potentially visually affected parties. The extent of visual effects is largely dependent on distance and the laws of perspective that apply when looking across a flat plain. The localised screening effect of hedges and taller vegetation also play an important part in limiting the extent of visual effects.

Finally, taking into consideration the potentially affected parties and the overall change on the landscape character of the receiving environment, various landscape mitigation measures have been recommended.

The visual impacts on local residents, workers, properties, motorists and roads within the visual envelope of the Project are assessed against a landscape character area description, and from general viewpoints on public roads within these character areas in a broad sense (rather than

from selected viewpoints). Those specific houses that have been identified as requiring some form of mitigation are discussed in more detail. (Refer also Appendix 1, Sheets 24 – 28)

The visual and landscape effects assessment considers the changes in the appearance of the landscape during construction and once the Project is implemented. These changes are assessed in terms of the degree of effects on natural character, landscape and visual amenity.

A number of photomontages included in the Urban and Landscape Design Framework (Technical Report 6), are appended to this assessment on Sheets 18 – 23 to illustrate the Project at critical intersections. Visual simulations, including mitigation planting, have been prepared to show what the alignment and the overhead structures will look like from key viewpoints and / or properties. They are attached as Appendix 1, Sheets 29 – 39 to this assessment. The photomontages and visual simulations are used as an aid to determine the nature and extent of landscape and visual effects.

In addressing the matter of amenity values, this assessment is confined to those of a visual nature from public roads and specific houses. Although individuals will have different perceptions of landscapes, there will also be many similarities in relation to an appreciation of beauty and meaning. This suggests that it is possible to obtain some level of agreement on what is aesthetically special and why. These commonly held values in relation to rural character, landscape and amenity values are determined by this assessment as an expert opinion, without the benefit of a public perception study.

The criteria applied to the assessment of effects, and the terminology to define the degree of visual impact used in this report, have been adapted from existing body of literature¹ in regard to best practice. The following criteria are considered in the assessment of landscape and visual effects:

Criteria Applied to the Assessment of Visual Effects

Distance: The greater the distance, the less detail is seen.

Elevation: Where a viewpoint is lower than the proposed development, it is more likely to be viewed against the sky increasing its impact.

Size: The greater the proportion of the view is occupied by the development or activity, the greater the impact. Colour and form can also increase or diminish impact by drawing the eye or providing camouflage.

Context: The degree to which the development is in character with the context, whether urban or rural.

Weather conditions: The clarity of the air and the angle and direction of the sun at different times of year affect visibility. Haze may be frequently present especially in views towards the mountains.

¹ Guidelines for Landscape and Visual Impact Assessment, 2nd Edition, 2002 The Landscape Institute and the Institute of Environmental Management and Assessment, Spon Press, New York.

Activity: Where movement and light reflection change with movement, this draws the eye and increases visual impact.

Change: The degree of change in the view.

The following table describes the terminology used in this assessment to define the magnitude / degree of effects on visual amenity:

Magnitude / Degrees of Effects on Visual Amenity

None:	No part of the proposal, or work or activity associated with it, is discernible.
Negligible:	Only a very small part of the Project is discernible and / or it is at such a distance that it is scarcely appreciated. Consequently it has very little effect on the scene.
Low/Slight:	The Project constitutes only a minor component of the wider view, which might be missed by the casual observer or receptor. Awareness of the Project would not have a marked effect on the overall quality of the scene.
Moderate:	The Project may form a visible and recognisable new element within the overall scene and may be readily noticed by the observer.
Substantial:	The Project forms a significant and immediately apparent part of the scene that affects and changes its overall character.
Severe:	The Project becomes the dominant feature of the scene to which other elements become subordinate and it significantly affects and changes its character.

Note that impacts need not necessarily be detrimental. For example, the removal of a group of trees or a plantation might have a 'substantial' impact, but the effect on the landscape and views may be beneficial.

5.0 LANDSCAPE CONTEXT

5.1 Introduction

A general description of the peri-urban and rural landscape through which the Project traverses is provided below and followed by specific descriptions of each Landscape Character Area. The landscape will be affected in varying degrees by the Project.

5.2 Landscape description of the receiving environment

A series of Viewpoint panoramas record the existing appearance of the receiving landscape (refer Appendix 1, Sheets 3 - 13). These should be viewed in conjunction with the following description. The Viewpoints are confined to public roads and convey the general flat topography of the landform as well as the presence of shelter belts, amenity trees, residential and agricultural buildings, transmission power lines, pylons and roads. The Port Hills and distant Canterbury Foothills are an important component of the more distant surroundings. The landscape of the Project and its environs is quite typical of much of the peri-urban and rural landscape on the southern outskirts of Christchurch.

Landform

Essentially it is the flat topography of the plains that contributes most to the natural character of the environment in the vicinity of the Project. 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 in the receiving environment, 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. Typically the sky dominates the view, where views from roads are not obstructed by houses, amenity trees and shelter belts. 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.

Land cover

The dominant vegetative cover is exotic pasture, along with many shelterbelts and the occasional grouping of trees (both typically exotic), and amenity planting in association with buildings.

The landscape is generally perceived as highly modified with “the extent of naturally occurring indigenous vegetation confined to very localised areas where individual specimens or small groups of indigenous plants occur”², particularly within the area the MSRFL and CSM2 will

² Terrestrial Ecology Assessment, 3.4 Indigenous Vegetation, Page 146, Technical Report 18, Volume 3.

traverse. The study area contains no natural waterways or wetlands, but does contain a number of stock water races of limited ecological value³.

Land use

The overall land use is rural and characterised by open space dominated by greenery, rural activities and a relatively low density of rural houses / built structures. However the pervading rural character is increasingly being encroached upon by rezoning, resulting in the additional subdivision of land into smaller allotments for rural residential land use and the proposed industrial development as part of Plan Change 54, to the Christchurch City Plan (PC 54) close to Hornby. The increase in built structures and ongoing compartmentalisation of the landscape has the potential to further reduce the rural character of the landscape.

Currently the built form character of the rural environment consists mainly of scattered residential houses and accessory buildings. Horse training tracks and stables are prevalent along with agricultural commercial buildings, such as Prebble Seeds. These buildings are typically surrounded by well-established plantings. Two residential subdivisions, Claremont and Aberdeen, are located in close proximity of the proposed CSM2 alignment. Within these subdivisions the closest house at Claremont is approximately 200 m from the CSM2 and at Aberdeen the closest house lies approximately 280 m away. These subdivisions support a greater density of residential houses than elsewhere in the vicinity. (The subdivisions are discussed in more detail in relation to specific Landscape Character Areas below).

5.3 Landscape Character Areas

Landscape Character Area 1 - Existing SH 1 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 aligning the highway (Refer to Appendix 1, Sheets 3 - 5, Viewpoints 1 – 6.). Clusters of agricultural and horticultural businesses, and a motel, are predominantly located on the northern side of the highway in the strip of land between SH 1 and Jones Road. Residential properties are also located in groups, at intervals, along both sides of the highway.

Notable landscape features along SH 1 include a row of semi-mature oak trees to the south and clusters of oak trees on the north side of the road from Weedons Road to the Rolleston township. (Refer to Appendix 1 Sheet 4, Viewpoint 3.) These trees are a physical and visual indication of the approach to Rolleston.

The stretch of SH 1 between Park Lane and Weedons Road is still predominantly rural, however the recent plan change (Plan Change to the Selwyn District (PC 7)) rezones two neighbouring blocks of rural land adjoining Park Lane on the southern side of SH 1 for low density residential development. The Outline Development Plans (ODP Area 3 and Park Lane ODP Area 8) included in PC 7 set out the general pattern of development envisaged for these blocks of land. The ODP for Area 3 shows the development boundary setback from SH 1 and appears similar in distance to the Park Lane ODP that provides generous setbacks up to 40m and an acoustic fence for noise abatement recognising the proximity of SH 1. Clearly these currently rural blocks will change to an urban environment in the near future and at the time of this report construction of a

³ Terrestrial Ecology, Executive Summary, Page iii, Technical Report 18, Volume 4.

residential subdivision was underway (Refer Appendix 1, Sheet 3, Viewpoint 1). However the setbacks proposed by the ODP's, the retention of existing oak trees along SH 1 and proposed setbacks of the Project will adequately mitigate effects on the future residential development and offer a degree of visual mitigation for road users.

Glimpses of the Port Hills and the foothills of the Southern Alps can be seen from the SH 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 (Refer to Appendix 1, Sheet 5, Viewpoint 6).

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 SH 1 for approximately 120 m (Refer to Appendix 1, Sheet 5, Viewpoint 5).

Dense vegetation affords screening to most properties fronting the SH. It largely consists of shelterbelts, of predominantly mature exotic conifers, gorse hedges, small groupings of exotic trees and amenity planting in association with houses and businesses (Refer to Appendix 1, Sheet 5, Viewpoint 5 & 6).

Landscape Character Area 2 - Robinsons Road to Waterholes Road

This area is characterised by rural-residential and agricultural land use and is bisected by SH 1. Again 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 located along SH 1. (Refer Appendix 1, Sheets 6 and 7, Viewpoints 7 – 10.) These businesses include Knitworks, Murray Implements and the plant nurseries Southern Woods, Kiwiflora and Evergreen Garden Centre.

In general the landscape is highly compartmentalised with a greater built density south of SH 1, whereas to the north, beyond Jones Road, the landscape is relatively open and consequently appears more rural in character.

Landscape Character Area 3- Waterholes Road to Marshs Road

Similarly 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.

The open expanses of rural land in this area afford panoramic views to the Port Hills and Canterbury Foothills from several locations. (Refer to Appendix 1, Sheet 10, Viewpoint 15.)

A number of horse training tracks have been established in this area, and this is quite typical of the surrounding environs. Although unlike the built form of the agricultural businesses in the aforementioned section, horse racing tracks retain the open character typical of a rural environment. Other rural land uses, such as Trents Vineyard, offer a pleasant picturesque rural amenity to Landscape Character Area 3 (Refer Appendix 1, Sheet 8, Viewpoint 12).

The transmission line pylons, as mentioned above, lie to the south of Marshs Road, and continue through this landscape character area in a north-south direction bisecting the Shands Road interchange.

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 rural 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 Claremont subdivision is an extension of residential growth from the Templeton Township although separated by the State Highway. Claremont lies near the intersection of SH 1 and Waterholes Road and north of the CSM2 alignment (Refer to Appendix 1, Sheet 8, Viewpoint 11). The closest Claremont property on the southernmost boundary of the subdivision is located approximately 200 m away from the proposed CSM2.

The Aberdeen subdivision is an extension of residential growth from the township of Prebbleton (Refer to Appendix 1, Sheet 10, Viewpoint 16). Aberdeen lies directly south of the proposed CSM2 alignment, with the northernmost property located approximately 200 m away from the ramp of the Shands Road interchange.

This landscape character unit 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 because of the predominance of open green space, views and vegetation.

Landscape Character Area 4 - Marshs Road to Halswell Junction 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 Appendix 1, Sheet 11- 12, Viewpoints 18a – 18c).

The CSM2 is proposed to lie 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, which can be seen from Shands and Marshs roads, characterise this area as a highly modified semi-rural setting.

Although the land use is still predominantly rural, in Viewpoints 18a – 18c industrial buildings will become increasingly prominent. This will occur because of the recent plan change (PC 54) that rezones an area of rural land between Marshs and Springs Roads to Business 5, to be used for General Industrial activities. The industrial character arising from PC 54 will coincide with the Landscape Character Area 4 boundary along Marshs Road and will be screened by the landscape buffer, which is required by PC 54, of some 40 m wide for the length of the zone.

5.4 Existing Landscape Values

Natural Character

Natural character can be defined by the extent to which the naturally occurring elements, patterns and processes of a place, or resource, remain intact. It does not exclude structures or other human induced changes – a place may retain some of its natural character even with a building on it – but it is reduced by their presence. Natural character is generally understood to occur on a continuum from pristine to totally modified.

The natural character of the receiving environment has been diminished by the removal of most of the original native vegetation, waterways and further reduced by patterns of settlement, farming practices, built structures and associated infrastructure (roads and overhead utilities). Furthermore, the receiving environment contains limited amounts of naturally occurring

indigenous vegetation. Despite this exotic vegetation does provide habitat for commonly occurring indigenous birds and lizards⁴. Natural patterns arising from natural processes have largely been overlaid by the mono-cultural practises of farming so there is little natural diversity evident in the landscape.

In summary, the receiving environment has been significantly modified over time and while natural character varies slightly over the Project transect, overall, the receiving environment displays a **moderate** level of naturalness.

Rural Character

The Ministry for the Environment defines⁵ rural character as being:

...by their nature, strongly influenced by the type of rural activity and the intensity of associated settlement. Natural elements generally remain strongly evident but are overlaid by patterns and processes of human activity.

Natural systems, such as hydrological patterns, still operate but, in places are manipulated to enhance productivity. Human-induced patterns and processes are related predominantly to productive land uses such as agriculture, horticulture and forestry, typically including paddocks, shelter belts, wood lot and forest blocks, cropping regimes and settlement. The patterns of human activity are generally large scale (by comparison with urban areas), reflected in generally low-density settlement, few structures and often a sense of spaciousness.

Rural landscapes are inhabited landscapes – not to be confused with ‘wilderness’ or ‘natural’ landscapes where human presence is minimally present or absent.

Basically, the fewer occurrences of human artefacts or buildings present, typically the higher the quality of the rural landscape.

As discussed previously, the landscape that the Project traverses contains a variety of land uses, including rural, agricultural, industrial, commercial and rural-residential land use. Although predominantly rural in character, in places, the rural character is diminished by an increased presence of buildings. The existing level of rural character is identified for each Landscape Character Area.

Landscape Character 1, comprising SH 1, is characterised by its road corridor, which alternates between being enclosed by vegetation and built development and occasional glimpses to views of a rural landscape and distant hills. Where buildings are visible within this landscape, their presence is diminished, in some cases, by vegetation. Despite this and the overall perception of rural surroundings, the reasonably common occurrence of built structures, presence of commercial / industrial activity and enclosed nature of the SH 1 corridor reduces rural character over Landscape Character Area 1 **low to moderate**.

Over Landscape Character Area 2, the landscape is recognisably compartmentalised by shelterbelts and planting enclosing small rural allotments and rural residential lifestyle properties. Because of the enclosed nature and level of built development the rural character is considered to be **moderate**.

⁴ Terrestrial Ecology Assessment, Executive Summary, Technical Report 18, Volume 4.

⁵ See Glossary, The Impact of rural subdivision and development on landscape values, July 2000, MFE.

Where the Project traverses Landscape Character Area 3, which is predominantly rural with some rural-residential, and consequently more open and expansive, then the rural character is considered to be **moderate to high**. However, the encroaching subdivision of the land into smaller allotments and the existing and increasing density of rural-residential buildings results in a **moderate** level of rural character.

Where the Project is in proximity to the southern edge of the industrial development of Hornby (within Landscape Character Area 4) rural character is considered to be **moderately low**. Rural character will further diminish as the B5 zone activity anticipated by PC 54 progresses within this locality.

Amenity Values

Amenity values are defined in the RMA⁶ as:

...those natural or physical qualities and characteristics of an area that contributes to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes.

Amenity effects are those concerned with the changes that arise in the composition of a view as a result of changes to the landscape. Amenity value derives from many different factors, and is not solely related to the appreciation of the visual landscape, although visual amenity is generally a significant aspect of amenity values.

'Amenity values' in simple terms can be described as those values which create the appeal of a particular place. Such values are often derived from one's response to the character of a landscape and therefore amenity and landscape character are inextricably linked. The landscape character of any area is made up of a mix of generic natural and physical elements such as vegetation, landforms, water bodies, buildings, roads and so on. These elements are common to most landscapes or landscape types. What distinguishes one landscape from another is the way these generic elements are combined. However it is important to note that amenity is not always static and the effects of change on amenity can be quite subjective.

The existing amenity of the landscape the proposed development traverses is derived from the green, open space, a general dominance of vegetation over built form, and a low (albeit variable) built density.

The amenity values vary over the receiving environment due to the combination and proportion of natural and built elements as discussed above. Traversing Landscape Character Area 1, the amenity values experienced from SH1 are reduced by the presence of built development and enclosed nature of the road corridor and consequently visual amenity is considered to be **low to moderate**.

Between Robinsons Road and Marshs Road (Landscape Character Areas 2 and 3), the landscape is generally pleasant and visually coherent, resulting from the abundant green, open space and rural land uses. The green, open space, the patterns of shelter belts, woodlots and paddocks of the receiving environment and the visual proximity to the Port Hills all contribute to a **moderate to high** visual amenity setting.

⁶ Section 2, RMA 1991.

Over Landscape Character Area 4, between Marshs Road and the CSM1 connection, the land generally comprises a greater proportion of open space in contrast to the built up industrial edge and because of this visual amenity is **moderate**. However the underlying zoning resulting from PC 54 anticipates future industrial development, and as this development occurs visual amenity will diminish to **low**.

Landscape Values Summary

The obvious presence of cultural elements, rural activity and the general lack of indigenous vegetation contributes to a highly modified landscape that is of **low to moderate** naturalness. Overall the predominantly rural land use and modified land cover convey a rural character that is highly domesticated, although, this varies depending on the relationship between open space and built development. Despite this, a **moderate to high** visual amenity is conveyed along the MSRFL and CSM2 transect in places where a picturesque setting is delivered by the presence of houses surrounded by amenity trees within a pastoral landscape with views to the Port Hills and Canterbury foothills. In other places where buildings, hard surfaces and infrastructure dominate, visual amenity is **low**.

Landscape sensitivity is the degree to which a particular Landscape Character Area can accommodate change without significant adverse effects on its character. Sensitivity varies according to the type of change being considered, various factors (such as visibility, scenic qualities, enclosure, condition etc.) and the particular characteristics of landscapes all of which contribute to the sensitivity of a landscape for a particular type of development. The sensitivity of a landscape to accommodate the Project depends in part on these characteristics, but also on the degree to which society places a value on them.

It is against the background of this landscape setting that the Project is, in part at least, assessed, or in other words it is the context of the receiving environment that largely dictates the nature and extent of potential adverse effects. The generic quality of green open space of the rural environment exerts a significant influence over the landscape character and amenity of this receiving environment.

6.0 THE PROJECT

The NZ Transport Agency (NZTA) seeks to improve access for people and freight to and from the south of Christchurch via State highway 1 (SH1) to the Christchurch City centre and Lyttelton Port by constructing, operating and maintaining the Christchurch Southern Corridor. The Government has identified the Christchurch motorway projects, including the Christchurch Southern Corridor, as a road of national significance (RoNS).

The proposal forms part of the Christchurch Southern Corridor and is made up of two sections: Main South Road Four Laning (MSRFL) involves the widening and upgrading of Main South Road (MSR), also referred to as SH1, to provide for a four-lane median separated expressway; and the construction of the Christchurch Southern Motorway Stage 2 (CSM2) as a four-lane median separated motorway. The proposed construction, operation and maintenance of MSRFL and CSM2, together with ancillary local road improvements, are referred to hereafter as 'the Project'

MSRFL

Main South Road will be increased in width to four lanes from its intersection with Park Lane north of Rolleston, for approximately 4.5 km to the connection with CSM2 at Robinsons Road. MSRFL will be an expressway consisting of two lanes in each direction, a median with barrier separating oncoming traffic, and sealed shoulders. An interchange at Weedons Road will provide full access on and off the expressway. MSRFL will connect with CSM2 via an interchange near Robinsons Road, and SH1 will continue on its current alignment towards Templeton.

Rear access for properties fronting the western side of MSRFL will be provided via a new road running parallel to the immediate east of the Main Trunk rail corridor from Weedons Ross Road to just north of Currags Road. For properties fronting the eastern side of MSRFL, rear access is to be provided via an extension of Berketts Drive and private rights of way.

The full length of MSRFL is located within the Selwyn District.

MSRFL consists of:

- The widening of an existing road corridor.
- The localised removal of shelterbelts and some exotic tree planting.
- Excavation and the placement of fill formations, with road surface finished close to existing ground level.
- A dual two-lane carriageway that will be separated by a central 3.0 m wide grassed median. A full grade-separated interchange (flyover, with off-ramps and on-ramps) at the Weedons Road intersection, to a height of approximately 8 m.
- Overhead lighting in specific locations.
- Stormwater swales and detention ponds where necessary. They will be dry and subject to periodic stormwater inundation. Swales will be grassed and will not support wetland species.
- Acoustic fencing in specific locations.

CSM2

CSM2 will extend from its link with SH1 / MSRFL at Robinsons Road for approximately 8.4 km to link with Christchurch Southern Motorway Stage 1 (CSM1, currently under construction) at Halswell Junction Road. The road will be constructed to a motorway standard comprising four

lanes, with two lanes in each direction, with a median and barrier to separate oncoming traffic and provide for safety.⁷ Access to CSM2 will be limited to an interchange at Shands Road, and a half-interchange with eastward facing ramps at Halswell Junction Road. At four places along the motorway, underpasses (local road over the motorway) will be used to enable connectivity for local roads, and at Robinsons / Curraghs Roads, an overpass (local road under the motorway) will be provided. CSM2 will largely be constructed at grade, with a number of underpasses where elevated structures provide for intersecting roads to pass above the proposed alignment.

CSM2 crosses the Selwyn District and Christchurch City Council boundary at Marshs Road, with approximately 6 km of the CSM2 section within the Selwyn District and the remaining 2.4 km within the Christchurch City limits.

CSM2 consists of:

- creation of a new road corridor;
- the localised removal of houses owned by NZTA, shelterbelts and exotic amenity tree planting;
- excavation of the road formation and the placement of fill formations. Finished motorway levels will change slightly in elevation, but for the most part it will be relative to the existing ground level;
- a dual two-lane carriageway that will be separated by a central 3.0 m wide grassed median;
- the excavation for the motorway construction and overhead bridge structures for local roads, ranging in height from approximately 6 to 8 m, at Halswell Junction Road, Springs Road, Shands Road, Trents Road;
- the construction of a full-grade separated interchange, south of Marshs Road;
- the closure of Blakes Road and formation of 2 cul-de-sacs;
- overhead lighting in specific locations;
- stormwater swales to either side of the carriageways and detention ponds where necessary. They will be dry and subject to periodic stormwater inundation. Swales will be grassed and will not support wetland species;
- planted mounds in specific locations i.e. Blakes Road cul-de-sacs;
- acoustic fencing in specific locations.

Key Design Features

The key design features and changes to the existing road network (from south to north) proposed are:

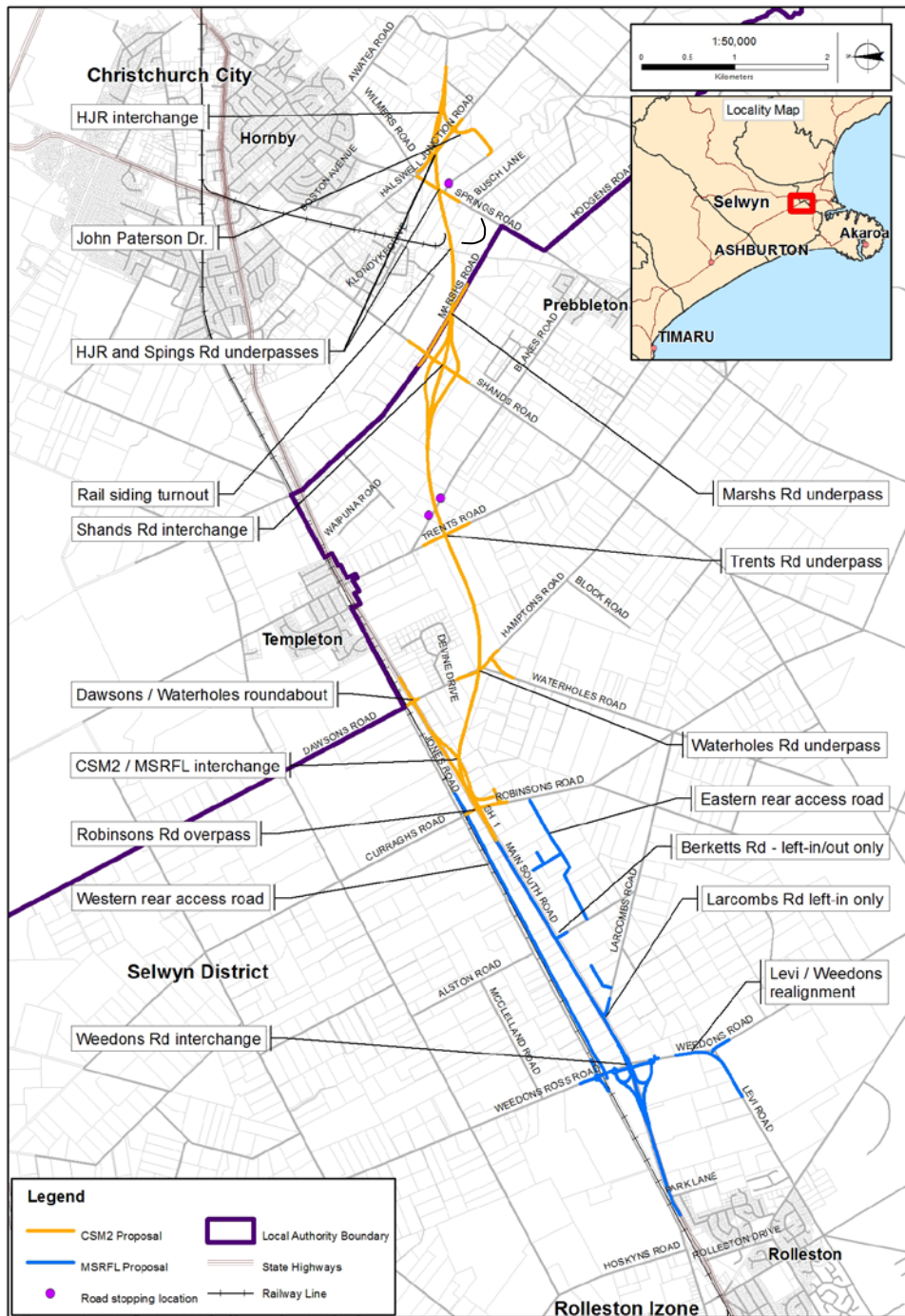
- a new full grade separated partial cloverleaf interchange at Weedons Road;
- a new roundabout at Weedons Ross / Jones Road;
- a realignment and intersection upgrade at Weedons / Levi Road;

⁷ CSM2 will not become a motorway until the Governor-General declares it to be a motorway upon request from the NZTA under section 71 of the Government Rounding Powers Act 1989 (GRPA). However, for the purposes of this report, the term "motorway" may be used to describe the CSM2 section of the Project.

- a new local road running to the immediate east of the rail corridor, to the west of Main South Road, between Weedons Ross Road and Curraghs Road;
- alterations and partial closure of Larcombs Road intersection with Main South Road to left in only;
- alterations to Berketts Road intersection with Main South Road to left in and left out only;
- a new accessway running to the east of Main South Road, between Berketts Road and Robinsons Road;
- an overpass at Robinsons and Curraghs Roads (the local roads will link under the motorway);
- construction of a grade separated y-junction (interchange) with Main South Road near Robinsons Road;
- a link road connecting SH1 with Robinsons Road;
- a short new access road north of Curraghs Road, adjacent to the rail line;
- a new roundabout at SH1 / Dawsons Road / Waterholes Road;
- an underpass at Waterholes Road (the local road will pass over the motorway);
- an underpass at Trents Road (the local road will pass over the motorway);
- the closure of Blakes Road and conversion to two cul-de-sacs where it is severed by CSM2;
- a new full grade separated diamond interchange at Shands Road;
- an underpass at Marshs Road (the local road will pass over the motorway);
- providing new walking and cycling path linking the Little River Rail Trail at Marshs Road to the shared use path being constructed as part of CSM1;
- an underpass at Springs Road (the local road will pass over the motorway);
- a new grade separated half interchange at Halswell Junction Road with east facing on and off ramps linking Halswell Junction Road to CSM1; and
- closure of John Paterson Drive at Springs Road and eastern extension of John Paterson Drive to connect with the CSM1 off-ramp via Halswell Junction Road roundabout (east of CSM2).

The proposed alignment is illustrated in Figure 1 and encompasses the MSRFL and CSM2 alignments between Rolleston and Halswell Junction Road.

Figure 1: Project location map



Approvals Sought

The NZTA is seeking all necessary RMA approvals to construct, operate and maintain the State Highway and local road works required for the Project. This includes Notices of Requirement for new and altered designations within the Christchurch City and Selwyn District Plans. The Notices of Requirement applications are anticipated to incorporate sufficient detail to satisfy Outline Plan requirements, pursuant to Section 176A (2)(b) of the RMA. Furthermore, all regional resource consents for the construction and operation of the road and associated drainage infrastructure are sought.

7.0 LANDSCAPE AND VISUAL EFFECTS ASSESSMENT

Landscape effects are those that ‘...derive from changes in the physical landscape, which may give rise to changes in its character and how it is experienced.’⁸

In contrast, visual effects are associated with amenity values, such as the pleasantness and aesthetic coherence of an area or view. Visual effects relate to ‘...the changes that arise in the composition of available views as a result of changes to the landscape, to people’s responses to the changes, and to the overall effects with respect to visual amenity.’⁹

Landscape and visual effects have, therefore, been taken to relate to the experience of change in landscape character and visual amenity, respectively.

7.1 Viewing Catchment and Audience

The Project’s visual catchment is nominally within 500 m to either side of the MSRFL and CSM2 alignments. The viewing audience will comprise:

- local residents who can see all or parts of the MSRFL and CSM2 road / corridor from their houses;
- road users on adjacent and intersecting local roads(including pedestrians and cyclists);
- workers and users of the surrounding industrial and commercial areas; and
- road users of the MSRFL and CSM2.

The following sections describe the potential landscape and visual effects within the various sections of the Project.

7.2 Landscape Effects

Potential landscape and visual amenity effects are those that change the appearance of the landscape, including its natural character. Any natural or physical activity has the potential to alter the landscape character and amenity. It is important to appreciate that change to the character of a landscape is not necessarily adverse. Whether effects are adverse or not depends to a large extent on public expectation of what can be reasonably anticipated to occur in the landscape. Allied to this is the landscape context in terms of its existing degree of naturalness / modification, patterns, scale, visibility and levels of public appreciation.

Potential landscape effects of the Project will result from changes to landscape character and these will consist largely of changes to landform, land cover and land use. The main landscape effect that may be experienced is that of a change in land cover and use, such as the removal of existing rural land uses through the introduction of built structures.

The overall landscape effect of implementing the proposed MSRFL and CSM2 alignments will be:

- increasing the “visual and physical presence” of the existing (SH 1) road within the Rolleston to Robinsons Road section of the Project and

⁸ The Landscape Institute and the Institute of Environmental Management and Assessment (2002), *Guidelines for Landscape and Visual Impact Assessment*, second edition, Spon Press, New York.

⁹ Ibid.

- a substantial new road from Robinsons Road to Halswell Junction Road, therefore affecting the local landscape of peri-urban and rural by introducing a new element into the landscape.

Landform

Effects on landform will arise from the elevated sections of the MSRFL and CSM2 alignments due to the construction of the interchanges and overbridges to connect and carry the local roads. The fill formations and construction of these structures will be above-grade. Therefore the changes will have a moderate to substantial localised effect on the landform, due to the changes to the existing flat topography.

Obvious changes to the topography will arise from the construction of embankments around the interchanges, overbridges, stormwater detention ponds and bunding. Where the earthworks are gently sloping with shallow grades, slopes will be grassed to integrate into the pastoral landscape, and effects on landform will be minimised. Where earthworks result in steep slopes (i.e. over 1: 4 grade), the landscape plan indicates some planting is proposed. These approaches will ensure some consistency with the existing rural character and enhance visual amenity.

Land cover

The majority of the landscape that the Project traverses is modified and the land cover mainly consists of a monoculture of exotic pasture grass and exotic amenity tree planting with scattered buildings. Notable vegetation in the landscape consists of mature, exotic trees, along with shelterbelts and hedges. Indigenous species are limited in extent and typically associated with the existing water races. The removal of pastoral farmland, trees, and some buildings will result in obvious, but localised landscape effects. The buildings removed typically lie within the direct path or within 100 m of the MSRFL and CSM2 alignment. Refer Appendix 1, Sheets 24 – 28 for the location of buildings proposed to be removed.

Along the MSRFL the following trees are likely to be removed:

- amenity trees and shelter belts from properties on the northern side of the existing highway between Weedons Road and Robinsons Road; and
- trees around the proposed location for the Weedons Road interchange, including amenity planting associated with buildings, sections of hedgerows and shelterbelts.

Within the CSM2 construction footprint, trees are likely to be removed in the following areas:

- various trees around the Robinsons Road overbridge, including amenity planting associated with buildings, sections of hedgerows and shelterbelts;
- sections of shelterbelt and amenity planting at Waterholes Road underpass;
- sections of several shelterbelts along the proposed alignment between Trents Road and Waterholes Road;
- several roadside trees where the Trents Road overbridge is proposed;
- sections of shelterbelt planting where the motorway alignment traverses Blakes Road;
- various trees around the proposed location for the Shands Road interchange, including amenity planting associated with buildings, sections of hedgerows and shelterbelts;

- conifer trees north of the intersection of Springs Road and John Paterson Drive, both individual specimens and a portion of a shelterbelt;

As far as practicable, trees will be retained on either side of the proposed roading alignments, in order to retain as much as possible of the rural character and visual amenity. Overall, the removal of vegetation and buildings will give rise to a more open, spacious landscape.

Land use

The widening of the existing SH 1 to construct the MSRFL will have an effect on a number of businesses and residential houses over a distance of 5 km along its length. Planting for amenity, shelter and/or screening has been established on many of these properties and the proposed widening on the northern side of SH 1 will result in the removal of much of this screen planting, leaving those properties exposed to the MSRFL, on their southern boundary. This will increase the prominence of built structures along this section of the MSRFL, effectively further reducing rural character.

The provision of infrastructure is a general public expectation and is likely to contribute to the acceptability of changes arising from the Project. As previously stated, farmland is the most common and expansive land use along the CSM2 alignment, although there are also numerous roads and other existing infrastructure within the area. It is clear that the creation of a 25 m wide motorway and its margins, the intersections with local roads, the closure of Blakes Road and the removal of various houses, businesses and other buildings, will be a noticeable change in land use. Within the broader context of the landscape however, a relatively small area of farm land will be removed. Overall, land use effects will be localised and contained within a 1 km width along the CSM2 alignment.

7.3 Visual effects

The nature and extent of the visual effects arising from the Project will depend on the viewer's proximity to it, the viewing aspect, the degree of contrast with the surrounding environment and how the Project is perceived by individuals. To assess the potential effects on amenity values, it is important to know about the visibility of a Project, who will be affected and how significant any effects will be.

The Project's visual catchment will vary relative to its linear extent. Visibility is limited by the mitigating effect of distance when looking across a flat plain and the localised screening effect of hedges and taller vegetation. The viewing audience will mainly consist of local residents who can see parts of the Project from their houses and properties, local workers, local road users and travellers using the proposed MSRFL, CSM2 and its link roads.

Whether the Project is considered appropriate is determined by the visual effect on the receiving environment and whether the visual amenity values attributed to this landscape setting are retained or whether, if adversely affected, effects can be satisfactorily mitigated. In general, amenity values include rural outlook (openness), spaciousness, privacy, tranquillity, and ease of access. Adverse visual effects on amenity values are not likely to be widespread but will be restricted in extent to the immediate vicinity (within 500 m to each side) of the proposed road corridors.

For the most part, the generic green open space, the patterns of shelter belts, woodlots and paddocks and the visual proximity to the Port Hills, which all contribute to the amenity values of the setting, will be preserved. This assumption is based on the fact that the Project will not

directly conflict with, or obscure, the existing landscape forms and land use patterns in the broad sense, except over a relatively narrow band, some 1 km in width.

To road users, the benefits of using the MSFL and CSM2 alignments are likely to outweigh the partial loss of a rural landscape, especially with the potential for enhanced views to the surrounding landscape and distant hills from elevated sections of the MSFL, CSM2 and local roads.

For residents who live in close proximity to the Project visual effects are likely to impact adversely on a spacious rural outlook. For the most part these are very specific, localised areas. Where the level of change may be greater, such as where extensive earthworks and bridge structures are proposed, or where large groups of mature trees are to be removed, then specific design and mitigation solutions are recommended to mitigate the effects of the change. Although effects on amenity values may be moderate, the recommended mitigation will ensure that effects are **slight to negligible** within the overall scale of the Project.

In Appendix 1, a series of plans (refer to Sheets 24 to 28) show the extent and location of the Project, the potentially affected houses and the recommended locations for mitigation measures to be implemented. These Sheets should be referred to in conjunction with the discussion below. Sheets 24 to 25 show the MSFL Project which overlays SH 1 from Robinsons Road to Park Lane. The CSM2 alignment, which runs from Halswell Junction Road to Robinsons Road, is shown on Sheets 26 to 28.

Visual Simulations have been prepared from specific locations and illustrate the Project and mitigation planting after seven years. Reference is made to these on Sheets 29 - 39, where relevant, in the following assessment.

MSRFL – Park Lane to Robinsons Road

- (a) The removal of farm trees, amenity planting, sections of shelterbelt and hedges along the MSRFL section.

The removal of planting, which currently provides amenity, shelter and/or screening along the existing SH 1 road corridor, in conjunction with the removal of land due to the widening of the road corridor, will leave many residential and commercial properties exposed to the proposed MSRFL. This will have an obvious and **substantial** visual effect for some 5 km along the MSRFL for both road users and property owners.

While it is understood that the type of commercial businesses located along the SH do not solely rely on visual exposure to the road for customer attraction, the removal of vegetation along the property boundaries will however increase their visibility. While this may be beneficial for attracting customers, the proximity of the MSRFL will reduce visual amenity and outlook from those properties. From the perspective of road users, the removal of vegetation and increased prominence of the existing built structures will have a **moderately** adverse visual impact.

In order to create a visually cohesive environment for road users, landscape mitigation is recommended to screen commercial properties from view. To achieve effective screening, exotic hedgerows and areas of extensive native planting are recommended. By default this will replace the visual amenity affected by the removal of vegetation along the boundaries of the residential and commercial properties required by the proposed MSRFL.

Those houses most affected that are located along SH 1 within 100 m of the proposed MSRFL are identified as H01, H05, H06, H07, H08, H09, H11, H13, H14 on Sheets 24 and 25. The landscape

mitigation for these properties will include the addition of exotic specimen / woodland tree species, which will be consistent with the existing trees in the immediate vicinity.

The planting mitigation for residential and commercial properties will soften the appearance of the MSRFL for road users and will afford views to the rural surroundings rather than the dense level of screening currently experienced. Over time visual effects on amenity will reduce to **slight** as the vegetation matures to provide visual interest and allow rural views.

(b) Introduction of new road corridors, engineered structures and landforms.

The MSRFL will increase the prominence of the SH road corridor due to the additional 14 m width, accommodating an extra two lanes running parallel to the northern edge of SH 1 and a central 3.0 m wide grassed median strip. A wire rope barrier will be installed on either side of MSRFL.

While this will be a **substantial** change to SH 1, effects on visual amenity to surrounding properties is likely to be **low** because existing amenity values are not high given the landscape context is an existing state highway with heavy traffic volumes and this use will continue. Even though those properties on the northern side of MSRFL will be closer to the road this will be largely offset by the proposed mitigation planting.

A new road is proposed to be constructed immediately south of the railway line to provide access to those properties that currently access their properties off SH 1. It is referred to as the Western Rear Access Road and will extend between Weedons Road and Robinsons Road along a strip of land designated for this purpose. The new access road will sit outside the property boundaries except for five properties towards and at either side of the Curraghs Road intersection. For the most part properties along this section are utilised for commercial / rural activities.

Changes arising from the Western Rear Access Road will entail the removal of northerly shelter vegetation and any land use that is occurring within the designation. Where possible the vegetation along the property boundaries will be retained but even so the change to the landscape will initially be **moderate** but largely limited in extent to those adjoining properties and views from passing trains. If deemed necessary mitigation planting along the railway corridor or property boundaries may provide shelter and screening. Overall the proposed Western Access Road will affect views for about 3 km but given the visual context that is dominated by existing infrastructure and utilitarian in nature, effects on visual amenity are considered to be **low**.

The Eastern Rear Access Road between Berketts and Robinsons Road is proposed to run parallel and approximately 500 m south of MSRFL. The introduction of the Eastern Rear Access Road will be a substantial change to the rural landscape, providing a new local road where currently pasture exists. The new road will mostly follow land use boundaries and largely avoid the removal of shelterbelt vegetation to minimise the extent of visual effects. Overtime the local road will be indistinguishable from other local roads in the vicinity and it is likely that although visual effects will be substantial they will not be adversely so, particularly because the road fulfils an essential purpose to those residents in proximity to the Project.

(c) The introduction of the Weedons Road Interchange

The introduction of new landforms, in the form of a full-grade separated interchange to be built at the Weedons Road intersection and a roundabout at the Weedons / Jones Road intersection, will result in a **substantial** visual effect and change to the existing rural character in the vicinity of Weedons Road and SH 1. Refer to Visual Simulation 1 on Sheet 29. The construction of the interchange will change a predominantly flat pastoral landscape to one dominated by roading

infrastructure incorporating roundabouts, approach and exit embankments and signage to the Weedons Road overpass bridge and MSRFL.

The interchange bridge structure will rise approximately 8 m above existing ground level, and the proposed lighting will protrude above this. It is evident that components of the interchange will have a **substantial** visual effect on several houses identified as H02, H03, H04 on Sheet 24, which are located on Weedons Road and between 80 – 300 m and to the east of the interchange. Weedons Road will shift eastward and therefore benefit H04 that is closest to MSRFL. However the southern approach / exit roundabout off Weedons Road will affect the two houses (H02, H03) to the south. The Landscape Plan (refer Technical Report Appendices, Report 7, Volume 4) shows a substantial amount of planting and the retention of existing vegetation around the houses that will afford effective screening. While existing vegetation cannot be relied on for mitigation, it has historically been established to provide shelter and screening and therefore it is considered highly unlikely that it will be removed. For houses more than 200 m from the interchange, visual effects will be less, although it is likely that the Weedons Road overbridge component will be at least partly visible due to its height above existing ground level. The visual effects on road users of MSRFL will be temporarily significant as components of the interchange will briefly dominate the view. However where expansive views to the surrounding landscape are afforded by the Weedons Road overbridge, then visual amenity will be enhanced. Substantial planting to the embankments and along the approaches to the Weedons Road overpass bridge will be undertaken for the purpose of mitigating potential adverse visual effects in general, but particularly for those houses (H02 and H03) identified on Sheet 24. This will assist in softening and partially screening the built components of the interchange so that it is visually integrated into the rural landscape.

The proposed realignment to Weedons and Levi Roads, south of the interchange, will be a noticeable change at this intersection and for those properties in close proximity. The realignment will traverse existing pasture essentially rounding off the southeast corner of the paddock. So while the realignment will be a moderate visual effect, it will benefit those adjoining residential properties by increasing the distance between the existing houses and the realigned Levi / Weedons Roads intersection.

CSM2 - Robinsons Road to Halswell Junction Road

- (d) The removal of farm trees, amenity planting, sections of shelterbelt and hedges along the CSM2 alignment.

The existing vegetation currently contributes significantly to rural character and visual amenity and its removal will change the local character within the immediate vicinity of the CSM2. In the broader landscape context over Landscape Character Areas 2 - 4, the loss of trees, shelterbelts and hedges will have a **substantial** impact but effects on the landscape and views are to some extent beneficial because an open and spacious quality will be increased. Mature trees, shelterbelts, hedgerows and stands of trees will still remain, providing some screening and to an extent, maintaining the visual compartmentalising evident in this landscape.

Adverse visual effects may also arise as a result of the removal of pastoral land, shelterbelts and an increased visibility of industrial activity anticipated by PC 54 between Marshs and Springs Roads. In this event, the rural outlook will change to one of a more industrial built character. However the CSM2 will include a 23 m wide landscape buffer on either side of the seal, with provision for a grassed swale and specimen tree planting. Despite this the close proximity of large industrial buildings with a minimal setback of 1.5 m from the designation boundary is likely to be

viewed as a built corridor. Over time, the proposed tree planting will afford some screening of the likely industrial activity from the CSM2 as it traverses the B5 zone.

In general, where practicable trees and shelterbelts will be retained and provide effective screening as shown by Viewpoints 7 – 20 (refer Sheets 6 – 13) even during winter when deciduous trees afford more expansive views. A substantial amount of mitigation in the form of woodland and specimen trees, native shrubs and low native species, is proposed as group or forest type plantings and embankment planting along the CSM2 alignment, particularly at the interchanges and around local road intersections or where views from specific houses will require screening. Over time, this planting will help mitigate the loss of existing vegetation, improve the rural character and provide a beneficial visual effect.

(e) The removal of houses and / or buildings.

A number of houses and buildings will be removed by the proposed CSM2 alignment and these are identified on Sheets 26 – 28. The removal of built structures will have a **moderate to substantial** effect on the existing rural character and visual amenity. Currently these buildings are only partly screened by existing vegetation, and consequently the removal of them is likely to improve visual amenity in the event that the land use changes by virtue of the removal of buildings to open space and a rural land use predominates. Therefore rural character and amenity will be enhanced by the removal of these buildings.

(f) Introduction of a new road corridor, engineered structures and landforms.

There will be obvious physical and visual changes to rural character and visual amenity where rural, semi-rural land uses are replaced by uniform elements of infrastructure consisting of a curvilinear band of hard surface, lighting, signage, culverts, and embankments.

The photomontage attached in Appendix 1, Sheet 22, shows CSM2 traversing the recently approved PC 54 B5 zone. The CSM2 alignment has the potential to form an appropriate edge to the urban form providing a transition between industrial and rural zones. However, setting this aside, the CSM2 is proposed to traverse the industrial development anticipated between Marshes and Springs Road, within a 75 m wide corridor that includes a 23 m landscape buffer on either side. The landscape buffer will comprise a grassed swale and tree planting. The area available for tree planting within this landscape strip is in the region of 5 m and will not be sufficient to adequately mitigate adverse visual effects of the built development enabled by PC 54, for the road user. However the landscaped edge will provide a better level of visual amenity for road users through an industrial zone than is typical of many peri-urban areas around the city.

Existing hedgerows and trees will generally provide a degree of screening to most properties, although some houses will have partial views of the CSM2 alignment. Those local residents who will see parts of the Project from their houses are identified as H26, H27 and H28 on Sheet 28 in Appendix 1, within 500 m of the motorway. Where views are towards those sections of the CSM2 that is at grade, then visual effects will generally be negligible. Visual effects are illustrated by Visual Simulation 10 Springs Road, Sheet 38, Appendix 1. There will be similar visual effects for houses within the Claremont subdivision that are between 200 – 500 m from the CSM2 (shown by Visual Simulation 4 on Sheet 32, Appendix 1).

In relation to distance, effects on visual amenity will vary over the 500 m distance from the Project. Effects on visual amenity for those in close proximity, i.e. within 100 m of CSM2 will be **substantial** for properties especially where there is no existing vegetative screening, but this will reduce to **slight to negligible** where there is substantial screening afforded by proposed or existing vegetation. Visual effects will reduce with increasing distance from the Project, to the

extent that views obtained from over 500 m will be **negligible** irrespective of whether there is vegetative screening or not.

In places, landscape planting to the southern and northern sides of the CSM2 is specifically required to assist mitigate visual effects on the properties identified above, although planting will also benefit other properties and road users in general. Landscape mitigation will include copses of exotic trees, native shrub and hedge planting. Mounding is not considered necessary for effective visual screening and furthermore can appear contrived especially within a constrained land area where it becomes a linear feature with an even grade. Nevertheless mounding is proposed as a result of resident consultation around the Blakes Road cul-de-sacs.

In general visual mitigation relies mostly on planting. Although the planting will take around 5 – 10 years to establish and provide effective screening, it will reduce visual effects where they are substantial to **become slight** in the long term. Where exotic species are proposed as hedges they will be of a species that is relatively fast growing therefore visual mitigation will take effect within about 5 years.

- (g) The introduction of the CSM2 and MSRFL Interchange with the Robinsons Road underpass and SH 1 overbridge structures and associated approach embankments.

The interchange is located within Landscape Character Area 2 and comprises a SH 1 overpass for southbound traffic across CSM2, and an underpass at Robinsons Road. The crest of the overpass bridge will be approximately 8 m above grade, and at this elevation, it will be a prominent feature of the surrounding flat landscape. There will be significant earthworks involved, particularly around the approach and exit embankments. These structures will have **substantial** but very localised visual effects. As described earlier, the landscape character of this section is highly compartmentalised by small allotments and existing shelterbelts / hedgerows along boundaries. This effectively reduces the ability for expansive views across the plains and consequently, views to the proposed interchange are limited.

Despite mitigation planting, local businesses (including Evergreen Garden Centre, Southern Woods Nursery and Knitworks) fronting SH 1 in the vicinity of the MSRFL onramp at Robinsons Road, will be **substantially** affected by the removal of boundary vegetation and encroachment of road works along SH 1 as part of the MSRFL. A new road is proposed to those properties affected and will address access issues arising from the Project. Mitigation in the form of planting is recommended to reduce visual effects to businesses. Where effects cannot be appropriately mitigated it is assumed that the NZTA will acquire those properties. Houses further from the overpass will not be affected.

Although road users will be aware of changes to the SH 1, the visual effects will be **slight**, as the overpass bridges will not be obvious for any great distance, due to the view perspective and the curvature of the road at this point. Road users on Jones Road will be accustomed to views of heavy traffic on SH 1 and changes to views are unlikely to be significantly different from those currently experienced except for that brief stretch of road where roundabouts will be visible at Weedons Road and Dawsons Road. Where the CSM2 joins SH 1 / MSRFL ramp roads will be obvious for a short distance but largely mitigated by the proposed planting. Refer Visual Simulation 2 Main South Road, Sheet 30, Appendix 1. In these locations it will be apparent that rural character is diminished and effects on visual amenity may be **moderate** at least until mitigation planting is established.

Mitigation in the form of extensive planting to the embankments and the approach roads is recommended to assist in 'anchoring' the structure into the landscape. Over time the planting

will improve the visual amenity and reduce the visual effects of the interchange on the nearby house and the immediate surrounding area.

- (h) The introduction of overbridge structures and associated approach embankments at Waterholes Road, Trents Road, Springs Road and Halswell Junction Road.

Visual impacts on the broad open rural landscape (mainly within Landscape Character Area 3) and to a lesser extent on the peri-urban / industrial landscape (within Landscape Character Area 4) will arise from the introduction of the overbridge structures and associated approach embankments at these roads. Each of the overbridges will be constructed to a maximum height of approximately 8 m above ground level and will include safety balustrades and lighting. Night time effects will largely arise from lighting both from the proposed infrastructure and travelling vehicles.

The lighting proposed uses full cut-off (Type 3) luminaires on overpasses and interchanges¹⁰. According to the Connetics report¹¹ light fixtures are to be directed onto the carriageway aimed away from houses to reduce direct view of luminaires to create less glare and spill light. Although there will be visual effects arising from illumination where previously there was none, it is understood that these lighting effects will be minimised by the choice and design of lighting fixtures and largely contained. It is considered that headlight glare will not be a significant issue for residents along CSM2 because the vehicles are not moving directly towards residential properties and for the most part residences are screened by planting. Potentially affected houses include H15, H16, H17, H18, H27, H28 and Trents Winery identified on Sheets 26 - 28.

Houses H15, H16 and H17 are within 100 to 200 m of the Waterholes Road overbridge. For these houses the existing rural character will be replaced by a bridge structure and new intersections and consequently, visual effects will be **substantial**.

Houses within the Claremont subdivision lie some 200 – 400 m north of the Waterholes Road overbridge. Existing Leyland Cypress shelterbelts along the Claremont subdivision boundary will, within a relatively short time frame of 5 years, largely obscure visual effects resulting from the Waterholes Road overbridge. Visual Simulation 4 Claremont on Sheet 32 shows the potential visual effects that may be obtained from the small corner reserve. However it is likely that existing vegetation will increasingly intervene and screen these views. This will occur in addition to the proposed mitigation planting surrounding the overbridge, resulting in negligible visual effects from the Claremont subdivision.

House H18 lies within 200 m of the Trents Road overbridge and because of its proximity will be **moderately** adversely affected. However the embankment planting proposed for Trents Road will assist in mitigating visual effects within 5 years. Refer Visual Simulation 6 Trents Road, Sheet 34, Appendix 1. The Trents Winery is located approximately 300 m from CSM2 and the Trents Road overbridge but because of screening afforded by the existing shelterbelts and amenity planting visual effects will be **negligible**. Refer Visual Simulation 5 Trents Winery, Sheet 33, Appendix 1.

The visual effects resulting from the presence of the Halswell Junction Road and Springs Road overbridges will have an effect on houses H27 and H28. Because of its close proximity, within 200 m, H27 will be moderately adversely affected. Refer Visual Simulation 10 Springs Road, Sheet 38, Appendix 1. House H28 will be less affected because the viewing distance is about 500 m and

¹⁰ Assessment of Lighting Effects, Proposed Lighting, Page 12, Technical Report 19, Volume 4

¹¹ Assessment of Lighting Effects, Executive Summary, Technical Report 19, Volume 4

therefore it is considered that effects will be no more than **slight**. However the realignment of local roads and the proposed mitigation planting will result in a pleasant amenity in the long term. In order to provide screening for those affected houses, landscape mitigation will include areas of native planting, hedge and exotic tree planting using species consistent with the rural character of the surroundings. Therefore, in time, effects on visual amenity from houses will be no more than **slight**.

In general the embankments and the overpass bridges will be new and obvious visual elements for the travelling public and workers utilising the local roads. The proposed infrastructure will have a **moderate** effect due to its visual prominence in an otherwise flat landscape. However, these effects will largely be minimised for road users and workers because of the expectation of adequate roading infrastructure. In addition, the overbridges have been designed to minimise their potential visual impact and will be consistent with a parkway appearance¹². However, it is a benefit of the Project that road users are able to gain expansive panoramas of the surrounding landscape from the elevated sections of the CSM2 and MSRFL alignments¹³.

(i) The introduction of the Shands Road Interchange

The construction of the Shands Road interchange will form a visible and recognisable new built element within the overall rural scene. It will be readily noticed from the surrounding landscape, particularly the local roads, as the interchange requires overbridge structures on Marshs and Shands Road. Changes to the landform will be obvious due to the proliferation of roads, intersections, height and length of the approach embankments and overbridge structures creating a localised visual barrier in what is an otherwise flat landscape. The bridge structures will rise approximately 8 m above existing ground level, and consequently, they will be visually prominent especially when viewed from distances within 200 m. Properties on either side of the interchange, particularly between the Aberdeen Subdivision and rural land to the north, are likely to be aware of these changes. Even so, the overbridge structures will be viewed as relatively flowing horizontal features that will be obscured by rural amenity trees as illustrated by Sheet 17, Photograph 8 and Visual Simulation 7 Aberdeen, Sheet 35, Appendix 1. Residents within the Aberdeen Subdivision are not likely to be affected because of the intervening shelterbelts.

Several residents located on Marshs Road within the rural land to the north of the interchange (identified as H19, H20, H21, H22, H23 and H24 on Sheet 27) are within 100 m of the Shands Road interchange but despite this visual effects will be **low** due to the existing shelterbelts and orientation of the overpass that lies south of these residential properties. Refer Visual Simulation 9 Marshs Road, Sheet 37, Appendix 1. In comparison, one resident located on Shands Road to the south (H25), is likely to be **substantially** affected by the introduction of these built structures and landform changes into their local / immediate view that will be exposed by the removal of established roadside vegetation. Obviously, the proposed mitigation planting will provide a level of screening that will overtime reduce visual effects. Refer Visual Simulation 8 Shands Road on Sheet 36, Appendix 1. The landscape mitigation recommended for the Project involves native planting, exotic hedgerows and groves of exotic trees to provide screening to these residents. The landscape planting mitigation will allow the bridge structure sit more sympathetically in the landscape and reduce effects on rural character and visual amenity to **moderate**.

¹² Urban Design, 8.2 Amenity Effects, Technical Report 5, Volume 4.

¹³ Ibid

7.4 Visual Effects of Proposed Noise Barrier Mitigation

Noise mitigation measures are proposed for houses in close proximity to the MSRFL and CSM2 alignments. Noise mitigations include the use of a low noise road surface, referred to as Open Graded Porous Asphalt (OGPA), and noise control barriers in the form of earth mounds or acoustic fencing, or a combination of the two. Where acoustic fences are proposed they will appear as a new visual element within the landscape. The acoustic fences will generally be constructed of materials that have a surface mass of at least 10 kg/m² and will be built with no gaps. Suitable materials can include concrete, fibre cement board, steel and timber

Planting will be used to minimise their height and help integrate the fence structures into the surrounding environment.

For each of the houses discussed below, the noise barrier mitigation will consist of acoustic fencing and / or the use of OGPA. This will be further investigated at the detailed design stage. From a landscape and visual perspective, earth mounds are preferred over built structures such as fencing, because they can be better integrated into the rural environment through contouring and planting. However, in most locations the amount of land area available is not enough to construct an earth bund to the required height without appearing to result in a contrived landscape form. For this reason, the noise barriers, up to 1.8 m, in height will be predominantly acoustic fences. Although there are a number of materials suitable for the acoustic fences it is recommended that predominantly timber palings are used, to be consistent with the most commonly used fencing material along MSRFL and for amenity reasons. The discussion below focuses on the acoustic fencing proposed for specific houses¹⁴ and how the fencing will be integrated into the existing landscape.

Noise mitigation in the form of a 1.8 m high fence is proposed for house H01 located at 1528 Main South Road on MSRFL (Refer Sheet 24 and Viewpoint 2 on Sheet 3). The acoustic fence is proposed for approximately 75 m along the southern roadside frontage and for 25 m along the western boundary. As there is currently an existing timber and corrugated iron fence to 1.8 m in height along the southern boundary, the proposed fencing will not be out of character. There is a mature macrocarpa hedge along the western boundary that will obscure views of the new fence from the house. It is recommended that planting occurs in conjunction with the fence, facing MSRFL, in order to improve visual amenity.

Noise mitigation is proposed for the northern road frontage boundary of house H10 at 95 Berketts Road and SH 1, to a height of 1.8 m. (Refer Sheet 25). Along this boundary is an existing post and wire fence to 1.2 m. On the roadside of this fence is a row of poplar trees and on the property side, a row of *Pittosporum* and silver birch trees. The placement of an acoustic fence in this location will create a more solid boundary than currently exists. For this reason, dense infill planting beneath the existing trees is recommended to help soften the presence of the proposed fence. On the roadside of the acoustic fence, the poplar trees will require trimming or be removed prior to construction.

Noise mitigation is proposed to the northern road side boundary of house H12 at 1213 Main South Road on MSRFL, to a height of 1.8 m. (Refer Sheet 25). It is recommended that the acoustic fence be rendered using recessive 'earthy' colours, as well as incorporating simple texturing, patterning or stepped setbacks to break up the extent of the fence. Some planting exists along the property boundary of H12 which will help to mitigate the visual effect of the

¹⁴ Assessment of Operational Noise Effects, Technical Report 8, Volume 4.

acoustic fence as seen from the house, however additional planting will offer better screening. Therefore planting is recommended along the length of the fence facing the road.

Noise mitigation is proposed to a two storey house H27 at 312 Springs Road (refer Sheet 28). The preferred mitigation is a combination of a section of OGPA surfacing, as well as a 1.8 m high noise acoustic fence along the road frontage of the property. There is currently fencing to 1.8 m high on the northern and southern boundaries of the property, constructed of timber and corrugated iron. On the road frontage is an existing 1.2 m high fence with a mix of relatively dense vegetation on the property side. Due to the existing boundary treatment, the proposed 1.8 m acoustic timber fence will not be out of character. In order to construct the noise mitigation fencing, some vegetation to the road frontage will have to be removed or limbed up, and replacement vegetation will be required. Mitigation planting is recommended along the length of the fence to the roadside boundary, as well as to the property side of the fence on the northern and southern boundaries.

7.5 Temporary Construction Effects

Temporary landscape and visual effects will result during construction of the Project. In order to minimise the visual effects during construction, it is proposed that existing vegetation is retained where possible. In particularly visually sensitive locations, it is proposed that planting of appropriate species is carried out as part of the landscape mitigation after earthworks are completed. It is also recommended that the area of soil exposed by earthworks is limited, as well as the length of time it is exposed. Construction Areas will be located to minimise their visual impacts. Four construction compound areas are proposed. The two main compound areas will be located at:

- Robinsons Road (between Robinsons Road and the off-ramp)
- Shands Road (north-east quadrant between the on-ramp and Marshs Road)

Two additional potential construction laydown areas / compounds will be located at:

- Trents Road (north-west quadrant)
- Weedons Road (within the interchange footprint)

Additional smaller satellite compounds may be used by the contractor at the remaining interchange and bridge locations.

It is considered that, depending on the nature of the construction areas there are likely to be adverse effects on nearby houses. This is of particular concern for H11 on Trents Road.

It is also important that the control of dust is carefully carried out. The following mitigation measures are recommended to be put in place:

- all exposed, unsealed surfaces and areas for re-vegetation shall be kept moist;
- truck loads shall be covered to prevent the escape of dust and debris; and
- stockpiles shall be kept moist to prevent the generation of dust.

As soon as is practicable after construction has been completed, suitable areas of land will be returned to pasture.

For the most part, visibility of the proposed construction works will be limited by the mitigating effect of localised screening provided by shelterbelts, hedges and taller vegetation.

7.6 Visual Effects of Proposed Swales and Stormwater Basins

The excavation and formation of the stormwater detention basins will be located in proximity to the CSM2 alignment and / or the interchanges and consequently will be largely indistinguishable from the general construction works. Although the basins will be new features within the landscape, they are recommended to be surfaced with grass and set below grade. Because the basins will appear as a continuation of the existing rural land, they will have minimal adverse effects and are likely to benefit the visual amenity experienced by immediately adjacent properties and road users. Where additional capacity in stormwater swales along MSRFL is required for isolated areas of topographic variation, small timber walls to approximately 300 mm will be constructed on stormwater bunds. At this height the walls will be easily obscured by normal grass growth. Consequently the timber walls will not be obvious and will have very little visual effect.

7.7 Ephemeral Effects

Ephemeral effects, such as those arising from vehicle movements and lighting will result from the MSRFL and CSM2 alignments. Overhead lighting will be installed at intervals along the CSM2 between Halswell Junction Road and the Marshs / Shands Road intersection, and in association with the MSRFL / CSM2 Weedons Road and Shands Road interchanges. The lighting proposed for the overpasses and interchanges uses full cut-off (Type 3) luminaires and semi cut-off (Type 2) luminaires for limited sections of the Project¹⁵. Elsewhere lighting will consist of reflective road studs.

Headlight sweep is raised as a potential issue but according to the Lighting Assessment Technical Report 19 *“Any effects from headlights are considered to be minimal because the vehicles will not generally be moving directly towards residential properties¹⁶”*. Aside from this, the existing and proposed planting and construction of any fences will mitigate any effect from headlights. Where the CSM2 traverses the industrial / peri-urban areas lighting is an expected part of the receiving environment and therefore visual effects will be minimal.

Effects from lights and headlight glare along the MSRFL will be negligible because these effects are part of the existing SH 1 environment. For the most part the recommended landscape and noise mitigation, along with the existing shelterbelts, woodlots and amenity planting associated with houses, will screen potentially affected houses from lighting effects. If lighting effects from traffic do occur it will be to a limited extent or already experienced as part of the existing environment.

Overall, lighting is not likely to be significantly intrusive because of the use of full cut-off Type 3 Luminaires in places and the recommended planting mitigation.

7.8 Landscape and Visual Effects Summary

Overall, the potential landscape and visual effects brought about by the Project range from **slight** through to **substantial**. The potential effects will result from changes to the local rural landscape due to removal of some existing pastoral land use, the removal of buildings, the introduction of manmade structures (roads and bridges), an increase in traffic movement, headlight glare and

¹⁵ Assessment of Lighting Effects, 4.6 Types of Luminaires, Technical Report 19, Volume 4.

¹⁶ Assessment of Lighting Effects, Page 19, Technical Report 19, Volume 4.

overhead lights. It is clear that some aspects of rural character and visual amenity will be affected to some degree, in particular for local residents.

To minimise the loss of pastoral land, once construction has been completed, suitable areas of land will be returned to pasture. Embankments, sloping mounds where overbridges are constructed and stormwater detention ponds will be either grassed or planted and consequently the land cover will be consistent with the surrounding rural character.

The introduction of raised landforms resulting from the construction of the overbridges, interchanges and their approaches into a predominantly flat landscape will create significant and immediately recognisable built elements into the landscape that in places will change the existing character of the landscape. However as previously stated, these effects will vary according to the landscape context (distance, existing vegetation etc).

Over Landscape Character Area 1, the MSRFL alignment increases the prominence of SH 1 and introduces large scale interchanges at the connection with CSM2 and at Weedons Road. These will result in substantial landscape and visual effects, albeit relatively localised. Similarly, the introduction of the new Eastern and Western Local Access Roads where previously no roads existed will result in substantial or moderate landscape and visual effects. Again, visual effects are reduced by roads constructed at grade and largely confined to those properties in close proximity. Given the existing SH 1 context, presence of built structures and limited viewing envelope, the overall effects are considered to be **negligible**.

Within Landscape Character Area 2 where the landscape is highly compartmentalised and dominated by a rural land use, effects arising from the overbridges and interchanges will be **moderate**. In general, effects will be confined to the designation area and will not have an effect on the broader rural landscape.

Where the existing landscape is more open and rural in nature (such as Landscape Character Area 3), an elevated interchange and overbridges will introduce a raised built feature into a more or less flat landscape. Rural character will diminish as the pastoral / agricultural land will be permanently lost and no longer productive, and consequently landscape and visual effects will be **substantial**.

Over Landscape Character Area 4, effects of the overbridges and interchanges on rural character will be **moderate** but this will change to **negligible** where the CSM2 is in proximity to the industrial development south of Hornby.

Over the extent of the Project, the contoured earthworks and recommended planting mitigation will assist to integrate these structures into the landscape and effects on rural character and visual amenity will be minimised. For those parts of the MSRFL and CSM2 alignments that are at grade and not prominently visible from the surrounding environment, landscape and visual effects will be **negligible**.

However along the proposed MSRFL alignment where shelter/screening planting is removed with those houses, some replacement planting is recommended.

Other land use effects will result from altered road alignments, the removal of various houses and other buildings within the CSM2 alignment. For example, Blakes Road will be closed effectively preventing through traffic. Two cul-de-sacs will provide access to those properties affected so the change in land use will be **negligible**. No mitigation measures are required in regards to the removal of houses.

For local residents within 500 m of the Project alignment, effects on the landscape and visual amenity are likely to be more significant and may be perceived as adverse depending on individual perspectives. Overall, the extent of landscape mitigation recommended, including noise mitigation, is considered adequate to mitigate adverse effects on landscape character and visual amenity.

There is likely to be a relatively high degree of acceptance of the Project by road users, especially those who are not familiar with the existing landscape. Positive effects include panoramic views obtained from new interchanges and overbridges by road users. These views are likely to contribute to a positive travel experience by increasing awareness of the Canterbury Plain landscape and distant landforms of Banks Peninsula and the Canterbury foothills.

Overall, the recommended landscape mitigation will ensure that the existing rural character remains dominant. Effects on visual amenity will vary, although over time, as areas of pasture are re-established and tree and shrub planting matures, the Project will reduce in prominence and eventually constitute only a minor component of the wider view. Therefore potential adverse effects of the Project on amenity will reduce to **slight**.

8.0 MITIGATION MEASURES

The primary landscape and visual mitigation goal is to implement the Project while avoiding, or mitigating adverse landscape and visual effects. This will be achieved in part by limiting vegetation removal where possible, minimising the extent of earthworks and designing structures that can be easily integrated into the landscape. The recommended landscape and visual mitigation measures are shown in Appendix 1 on Sheets 24 - 28. Sheets 24 - 26 show the MSRFL Project and Sheets 26 - 28 focus on the CSM2 alignment from Halswell Junction Road to Robinsons Road.

The key landscape design principles that underpin the design rational and subsequent landscape design of the Project are outlined in the Landscape Context Report (Technical report 7) and include:

- 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 CSM1 planting – adopt similar landscape design principles used on CSM1 to help 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 contain 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 Project designation to retain the existing landscape character. Of particular importance is the retention of shelterbelt lines that bisect the Project alignment and existing mature trees species found along the Project alignment;
- landscape mitigation planting – integrate informal woodland cluster planting and shelterbelt planting into the Project 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 (Crime Prevention through Environmental Design CPTED) provisions as part of future design phases; and
- riparian planting – incorporate planting to accommodate identified fauna habitat through both CSM2 and MSRFL.

The Landscape Plans¹⁷ (Technical Report Appendices, Report 7, Volume 5) show the proposed landscaping provided as mitigation for the Project.

Table 1: Recommended mitigation measures

MSRFL –Park Lane to Robinsons Road (Sheets 24 and 25)		
	Potential Visual Effect	Recommended Mitigation
(a)	Removal of planting farm trees, amenity planting, including sections of shelterbelt and hedges along the MSRFL alignment. Affecting H01, H05, H06, H08, H09, H11, H13, H14. Removal of oak trees approaching Rolleston.	Planting of sections of exotic hedgerows and extensive native planting along the road corridor. A condition to ensure retention of oak trees.
(b)	Removal of planting resulting in exposure of several commercial properties to road users.	Planting of exotic hedgerows and extensive native planting.
(c)	Increased width of road surface.	None required.
(d)	Introduction of interchange at Weedons Road intersection, affecting houses H02, H03, H04.	Substantial planting to the embankments and along the MSRFL approaches to the overpass bridge.
(e)	Introduction of the overpass at Robinsons Road, affecting house H15.	Extensive planting to the embankments and the approach roads.
CSM2 - Robinsons Road to Halswell Junction Road (Sheets 26, 27 and 28)		
	Potential Visual Effect	Recommended Mitigation
(a)	Removal of farm trees, amenity planting, sections of shelterbelt and hedges along the CSM2 alignment.	Landscape planting, including native planting, exotic hedgerows and groves of exotic trees.
(b)	Removal of several houses along CSM2 alignment – identified on Sheet Legend.	None required.
(c)	Introduction of the motorway as seen from houses H26, H27 and H28.	Retention of existing hedgerows and trees to provide screening. Recommended landscape planting including native shrub, hedge and exotic tree planting.
(d)	Introduction of Shands Road Interchange as seen from houses H19, H20, H21, H22, H23, H24, and H25.	Landscape planting, including native planting, exotic hedgerows and groves of exotic trees.

¹⁷ Landscape Context Report, Project Landscape Plans, Technical Report 7, Volume 5.

(e)	Introduction of the overbridge structures and associated approach embankments at Halswell Junction Road, Springs Road, Shands Road and Trents Road and the Waterholes Road underpass. Affecting houses H15, H16, H17, H18, H27, H28 and Trents Winery.	Recommend that bridges are designed to allow views of surrounding landscape from vehicles Landscape planting, including native planting, exotic hedgerows and groves of exotic trees.
Noise mitigation barriers		
	Potential Visual Effect	Recommended Mitigation
(a)	House H27 – 1.8 m barrier along property road frontage.	Replacement planting along the inside and roadside of property at 312 Springs Road.
(b)	House H10 – 1.8 m barrier to northern boundary.	Dense infill planting required along 95 Berketts Road.
(c)	House H12 – 1.8 m barrier	Design of fence to use recessive colours and simple texturing or patterning. Planting in association with the fence along the roadside boundary of 1213 Main South Road.
(e)	House H01 – 1.8 m barrier	Planting in association with the fence to roadside of 1528 Main South Road.
Ephemeral effects		
	Potential Visual Effect	Recommended Mitigation
(a)	Traffic movement and glare from headlights and lighting.	Retention of existing planting – shelterbelts, woodlots and amenity planting associated with houses. Landscape planting along CSM2 alignment; including native planting, exotic hedgerows and groves of exotic trees.

Landscape mitigation is recommended where the road alignment adversely affects the visual quality of the rural setting as viewed from the MSRFL and CSM2 alignments, local roads, particular houses and the surrounding landscape in general.

Sheets 24 - 28 show the locations where landscape mitigation has been recommended in order to ensure a pleasant and high quality experience for the MSRFL and CSM2 users, local road users and residents (refer Appendix 1). These Sheets also identify where prominent views are afforded to both the Canterbury Foothills and the Port Hills. When considering the recommended landscaping it is important that these view shafts are retained and enhanced including potential views from overbridges.

Where feasible, it is recommended that as much of the existing tree and shelterbelt planting is retained. This will ensure that the existing rural character of the Canterbury Plains setting is maintained as far as practicable. For example, an existing semi-mature row of oak trees extends along the southern side of MSRFL / SH 1 for approximately 1 km north of Park Lane. These trees are a distinctive feature and should be kept because they visually indicate the approach to Rolleston and contribute a high level of amenity over this section of the road.

The landscape mitigation recommended is shown in detail in the Landscape Plans (Technical Report Appendices, Report 7, Volume 5)¹⁸. The landscape treatment will involve planting, and fencing in association with planting for noise mitigation. Planting is recommended for embankments in association with the over bridges and interchanges and in areas where screening for visual amenity is required. Planting will be appropriate to a rural context, and includes re-instatement of pasture, copses of exotic and / or native trees, areas of native shrubs and groundcovers, shelterbelts and hedge planting.

8.1 Recommended Landscape Mitigation

Mitigation measures are recommended to be drafted as conditions in order to achieve the anticipated results regarding rural character and visual amenity. The conditions should provide for the following:

1. That the recommended landscape mitigation works be undertaken generally in accordance with the Project Landscape Plans¹⁹.
2. That prior to any work commencing, a detailed Landscape Management Plan (LMP), consistent with best management practice, is prepared by a qualified Landscape Architect and consistent with:
 - a. Transit NZ Guidelines for Highway Landscaping (2002)
 - b. NZTA NZ Urban Design Implementation Principles (2006)
 - c. Any plan that is relevant to the Project
 - d. Crime Prevention Through Environmental Design (CPTED) principles.
 - e. Transpower Corridor Management Policy – Red Zone: Trees / Vegetation
3. That the LMP provides for:
 - a. Input to earthworks contouring;
 - b. The integration of the Project's permanent works into the surrounding landscape;
 - c. Landscape works within land acquired for the Project which mitigate the effects of the Project on properties in the vicinity of the alignment.
 - d. Retention or relocation of significant existing trees, where practicable; and
 - e. Replacement planting for loss of existing trees, where appropriate and practicable.
4. That the LMP shall be prepared in consultation with the SDC and CCC and shall include the following:
 - a. The Project Landscape Plan/s
 - b. Landscape Design Details including:
 - i. The identification of vegetation to be retained
 - ii. A Planting schedule
 - iii. A Planting programme – the staging of planting in relation to the construction programme
 - iv. Detailed specifications according to best horticultural practice and including (but not limited to) the following:
 - Vegetation protection for that vegetation to be retained.

¹⁸ Landscape Context Report, Project Landscape Plans, Technical Report 7, Volume 5.

¹⁹ Landscape Context Report, Project Landscape Plans, Technical Report 7, Volume 5.

- Weed control and clearance.
 - Native plants to be genetically sourced from the relevant Ecological District.
 - A maintenance regime including monitoring, and reporting requirements which should apply for the two years following that planting being undertaken.
- v. Landscape treatment for noise barriers
 - vi. Integration of pedestrian and cycleway facilities
 - vii. A colour palette for fencing mitigation
 - viii. Penalties for damage to vegetation marked for retention.

9.0 CONCLUSION

The introduction of the MSRFL and CSM2 to the rural land south of Christchurch will result in some adverse visual and landscape effects. The MSRFL and CSM2 will traverse rural and peri-urban land which is considered to be of quite ordinary rural character and visual amenity and low sensitivity to change arising from the Project. The degree to which the adverse effects can be mitigated depends on the specific elements of the Project as well as the viewing audience and their proximity to the Project.

The visual effects on rural character and visual amenity brought about by the Project range from **slight** through to **substantial**. The most obvious visual changes will result from the removal of vegetation, the removal of buildings, the introduction of raised interchanges and overpasses and their approaches in a predominantly flat landscape, especially those proposed in the CSM2 alignment. The CSM2 alignment will result in changes to the existing local rural character and visual amenity due to removal of some pastoral land uses and the introduction of new manmade structures, including the motorway/expressway itself. The MSRFL alignment will result in a less obvious change to the existing rural character and visual amenity primarily because of the existing context of SH 1.

Effects on landscape character and visual amenity may be adverse to a greater or lesser degree on the receiving environment, especially in the short term. However the landscape mitigation will assist in integrating the built structures into the landscape setting. Landscape mitigation is recommended where the greatest visual effects arise along the MSRFL and CSM2 transect, particularly on residential properties within 100 m – 300 m of the Project. Extensive landscaping will also be undertaken in association with all of the overpasses and interchanges and will help to soften and integrate the raised built structures / landforms associated with the overpasses and interchanges into the surrounding landscape. The landscaping will adequately mitigate the visual effects and over time will enhance visual amenity for neighbouring properties and road users.

The temporary effects, particularly from earthworks, will be substantial but unavoidable. Effects will be minimised through project management and the reinstatement of pasture and planting as soon as each stage of earthworks is completed.

Although an overall rural character will be maintained in the wider landscape, within a relatively narrow 1 km width band where the CSM2 is constructed through a rural pastoral landscape and does not overlay an existing road, the landscape character will be altered. This is not to say that, in time, the resulting landscape will be of a lesser quality simply that it will be of a different landscape character.

Tony Milne
Landscape Architect

APPENDIX 1 REFER TO THE PLAN SET CONTAINED WITHIN VOLUME 5

Contents

SHEET 1	Landscape Character Area 1	Photograph Viewpoint Locations
SHEET 2	Landscape Character Area 2	Photograph Viewpoint Locations
SHEET 2	Landscape Character Area 4	Photograph Viewpoint Locations
SHEET 3	Landscape Character Area 1	Viewpoints 1 & 2
SHEET 4	Landscape Character Area 1	Viewpoints 3 & 4
SHEET 5	Landscape Character Area 1	Viewpoints 5 & 6
SHEET 6	Landscape Character Area 2	Viewpoints 7 & 8
SHEET 7	Landscape Character Area 2	Viewpoints 9 & 10
SHEET 8	Landscape Character Area 3	Viewpoints 11 & 12
SHEET 9	Landscape Character Area 3	Viewpoints 13 & 14
SHEET 10	Landscape Character Area 3	Viewpoints 15 & 16
SHEET 11	Landscape Character Area 4	Viewpoints 17 & 18a
SHEET 12	Landscape Character Area 4	Viewpoints 18b & 18c
SHEET 13	Landscape Character Area 4	Viewpoints 19 & 20
SHEET 14	Photographs 1 & 2	
SHEET 15	Photographs 3 & 4	
SHEET 16	Photographs 5 & 6	
SHEET 17	Photographs 7 & 8	
SHEET 18	Weedons Road Interchange	Photomontage 1
SHEET 19	MSRFL & CSM2	Photomontage 2
SHEET 20	Waterholes Road Bridge	Photomontage 3
SHEET 21	Trents Road Overbridge	Photomontage 4
SHEET 22	Shands Road Interchange	Photomontage 5
SHEET 23	Springs Road Overbridge	Photomontage 6
SHEET 24	Recommended mitigation	
SHEET 25	Recommended mitigation	
SHEET 26	Recommended mitigation	
SHEET 27	Recommended mitigation	
SHEET 28	Recommended mitigation	
SHEET 29 -39	Visual Simulations	

APPENDIX 2

RELEVANT STATUTORY AND POLICY DOCUMENTS

The Resource Management Act 1991 (RMA)

Relevant landscape matters are to be found in Part 2 of the RMA under:

- Section 5: Purpose
- Section 7: Other matters

There are no s6(a) or (b) issues arising in relation to the Project. The key provisions of section 7 in relation to landscape effects are:

- *Section 7(c) requiring that particular regard shall be had to the maintenance and enhancement of amenity values (as defined in the RMA).*
- *Section 7(f) requiring that particular regard shall be had to the maintenance and enhancement of the quality of the environment.*

Canterbury Regional Policy Statement (CRPS)

The specific RPS objectives and policies relating to landscape and visual amenity are found in Chapter 8: Landscape, Ecology and Heritage of the RPS, and include:

Objective 2 – Protection and enhancement of the natural features and landscapes that contribute to Canterbury’s distinctive character and sense of identity, including their associated ecological, cultural, recreational and amenity values.

The following policy implements this objective:

Policy 3 - Natural features and landscapes that meet the relevant criteria of sub-chapter 20.4(1) should be protected from adverse effects of the use, development, or protection of natural and physical resources, and their enhancement should be promoted. Activities that may have adverse effects include those involving the clearance or modification of areas of indigenous vegetation (particularly tall tussock), earthworks and alteration to landforms, tree planting, or the erection of structures. The particular sensitivity of these natural features and landscapes to regionally significant adverse effects in terms of sub-chapter 20.4(2) should be reflected in the provisions of district plans in the region. Assessments of effects should be made by considering:

- (i) aesthetic values;*
- (ii) expressiveness;*
- (iii) transitory value;*
- (iv) natural science factors.*

Proposed Canterbury Regional Policy Statement (PCRPS)

The PCRPS supports the relevant landscape issues in the RMA and provides strong direction as to the content of District Plans. The PCRPS recognises that the protection of other types of landscapes may also be important at a local, district or regional level, such as amenity landscapes, with reference to section 7(c) of the RMA.

Objective 12.2.2 – Identification and protection of other important landscapes.

The identification and management of other important landscapes and features that do not meet the threshold of outstanding is supported, including:

(2) Amenity landscapes and protection of those landscapes from inappropriate subdivision, use and development.

The following policies implement this objective:

Policy 12.332 – Protection of other important landscapes

To recognise that other important landscapes that do not meet the threshold of outstanding may warrant protection and management for natural character, amenity, historic cultural, historic heritage or other purposes..

The PCRPS also refers to the need to manage the development, expansion and maintenance of infrastructure in order to ensure the way in which it changes the environment is appropriate.

Issue 5.1.1 – Adverse effects of development

Development including the associated use and provision of infrastructure and services can result in significant adverse effects on the environment. The adverse effects on the environment of particular concern are:

(1) the loss and degradation of Canterbury's important:

(a) amenity values

(b) landscape values

These policies will be achieved primarily through the Christchurch and Selwyn District Plans.

District Plan provisions

Responsibility for the control of subdivision and the effects of the use, development, or protection of land rests with territorial authorities in Canterbury. The exercise of this responsibility is of considerable importance to the realisation of relevant landscape policies in the CPRS and Natural Resources Regional Plan (NRRP). In addition to these regional concerns, it should be noted that district may identify outstanding and significant areas valued by the local community.

Because designations are being sought District Plan rules do not apply. Nevertheless due to territorial authorities' functions the District Plans contain provisions to protect values associated with landscape, amenity and quality of the environment.

Christchurch City Plan (CCP)

The Christchurch City Plan contains a number of provisions relevant to the Project in sections dealing with city identity, transport and the rural area.

The CCP stresses the importance of the maintenance and enhancement of visual amenity in the rural areas.

Overall in relation to landscape effects, the amenity and character values of the proposed CSM2 and MSRFL alignments and the surrounding landscape need to be identified, in addition to the magnitude of potential effects on these values. Amenity values are identified in the CCP and in relation to the Project will include:

- a sense of open space
- a low density (albeit variable) character
- high levels of privacy
- trees and forests
- a clear dominance of open space the separation of rural activities;

These values need to be protected while providing for the wellbeing of the community.

Under Volume 2, Section 7 Transport, the primary objective is a sustainable transport system and the implementing policies include:

7.1.1 To remedy, mitigate or avoid the adverse effects of the use of the transport system

And in relation to amenity:

7.1.7 To design new roading works to visually compliment or improve the area

7.1.8 To maximise planting and landscaping associated with roading improvements, to avoid, remedy or mitigate their impact on the environment

The explanation and reasons acknowledge that unless designed with some sensitivity for the character of the area, the transport system, particularly roading works can detract from visual amenity. The impact of works can often be minimised by the retention and enhancement of important local features where practicable, or the planting of open areas created by roading changes.

Several of the environmental results anticipated by the implementation of the above policies are:

- An improvement in the amenity of the roading network;
- Maintenance of the character of local areas of high visual amenity and of major access routes for the City.

Selwyn District Plan (SDP)

The Selwyn District Plan contains a number of provisions relevant to the Project in the Rural volume under sections dealing with Natural Resources, Physical Resources, Peoples Health Safety and Values. Under Part B, Natural Resources, Canterbury Plains, the following policy is of particular relevance:

Policy B1.4.12 recognises that the land lying between Christchurch City and a line from West Melton to Tai Tapu as a 'rural' landscape that provides an important contrast to the 'urban' landscape of the City.

Consideration is also given to Objective B2.1.2 (in Part B2, Physical Resources) where:

Adverse effects on the environment from constructing and maintaining roads and rail links are mitigated.

The District Plan relies on the following associated or implementing policies such as:

Policy B2.1.9 Avoid planting trees or hedges in positions or allow them to grow to heights where they will shade roads for prolonged periods during winter

Policy B2.1.14 Discourage adverse effects from constructing or maintaining roads or railway lines on the natural environment, landscape values and sites with heritage or cultural values.

The Explanation and Reasons state that roads and rail links traverse or adjoin parts of the rural area with special values. Constructing or maintaining them can affect the environment. For example: disturbing sites; clearing vegetation; or visual effects on slopes.

In more general terms, in Part B3 relating to Peoples Health, Safety and Values, Objectives relevant to landscape recognise the quality of the environment, rural character and reverse sensitivity. In order to achieve these Objectives, Policy B3.4.3 requires adverse effects from activities on the amenity values of rural areas generally to be avoided, remedied or mitigated to satisfy, or have particular regard for, the maintenance and enhancement of amenity values under section 7 (c) of the RMA.

Further guidance is given by the following documents:

South-West Christchurch Area Plan 2009 (SWAP)

The South-West Christchurch Area Plan provides a framework within the Urban Development Strategy for managing urban and business growth during the next 35 years. It integrates land-use planning with key infrastructure projects, such as the strategic roading projects including the Christchurch Southern Motorway. The SWAP reflects how the local community wants the area to develop and provides a significant opportunity to develop and implement a long-term vision to protect and enhance landscape values. The potential for integrating with and connecting to relevant land uses and greenways proposed by the SWAP has been considered as part of this Project.

NZTA Guidelines for Highway Landscaping (2006)

NZTA's Environmental Policy aims to protect and enhance the environment where appropriate and to avoid adverse effects where reasonably possible.

These aims are also expressed in the NZTA's Guidelines for Highway Landscaping (2006) which has been considered as part of this assessment. Section 2 of the Guidelines identifies the NZTA's expectations for good highway landscaping as:

- Maintaining and improving safety
- Promoting biodiversity
- Improving visual quality
- Managing stormwater runoff
- Managing pests
- Improving local air quality, and
- Improving the NZTA's business practices.

NZTA Urban Design Policy

The NZTA has developed an urban design policy, which is outlined on the NZTA website²⁰. The NZTA was a founding signatory to the NZ Urban Design Protocol. It promotes an integrated design approach to its projects that encompasses the traffic and civil engineering, urban design, landscape and ecological, stormwater and heritage aspects of the project. The NZTA acknowledges that all these factors need to be integrated to ensure an overall positive environmental solution for its roading projects.

In summary these various reference documents outline the broad landscape context, the planning context and the Project context within which the current CSM2 and MSRFL Project has been developed.

²⁰ <http://www.nzta.govt.nz/resources/urban-design/policy/>