15. LANDSCAPE & VISUAL

Overview

The Project will be a large roading infrastructure element that will result in changes to the landscape. The main 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 and sections of shelterbelts and hedges. It is considered that the changes will have a moderate to substantial localised effect on the landform and localised effects on land use and land cover.

The most significant changes and resultant 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 conjunction with the MSRFL and CSM2 alignments, will result in changes to the rural character. Visual effects will range in magnitude from negligible to substantial depending on the viewing audience and its proximity to the Project. These effects are not likely to be widespread and restricted in extent to the immediate vicinity (within 500m each side) of the proposed alignment.

Landscape mitigation measures are recommended where the potential adverse effects would be noticeable from dwellings and road users in 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. Proposed landscaping is illustrated within Technical Report 7, in particular the Landscape Planting Plans appended in Volume 5.

15.1. Introduction

This chapter summarises the landscape and visual effects arising from the Project and recommends mitigation measures to avoid, remedy and mitigate these effects.

A series of aerial photos, plans and visual simulations accompany the Assessment of Landscape and Visual Effects report (Technical Report 4), which are contained in Volume 5. These sheets identify, among other things, the location and extent of the Project, the landscape character areas and the recommended locations for mitigation measures.

Also included with the full assessment report are panoramic viewpoints which give an indication of the existing landscape character and photosimulations illustrating how the Project will appear, with proposed mitigation planting in place. Viewpoints are also included of the Christchurch Northern Motorway and these show the degree of visibility of a similar constructed motorway from various distances.

Also relevant to this chapter are Technical Reports 6 and 7 within Volume 3, which are the ULDF and the Landscape Concept Report, incorporating the Project landscape plans. Effects on Urban Form and Function have been discussed in Chapter 14, which also considers visual amenity effects.

15.2. Landscape context

The landform is generally of flat topography with 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 proposed motorway and its environs is quite typical of much of the peri-urban and rural landscape on the southern outskirts of Christchurch.

15.3. Existing landscape values

15.3.1. 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. Natural character is generally understood to occur on a continuum from pristine to totally modified.

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

15.3.2. Rural character

The fewer occurrences of human artefacts or buildings present, typically the higher the quality of the rural landscape character. Although predominantly rural in character, in places, the rural character is diminished by the presence of industrial/commercial buildings and higher density of rural residential.

Main South Road is characterised by its road corridor, which alternates between being enclosed by vegetation and built development with occasional glimpses to views of a rural landscape and distant hills. The overall perception of rural surroundings, the reasonably common occurrence of built structures, and enclosed nature of the SH1 corridor reduces existing rural character to low to moderate.

Where CSM2 traverses land that is predominantly rural with some rural-residential land use present, it is more open and expansive, and 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 diminish rural character. Consequently, in some CSM2 areas, the rural character is assessed as moderate.

15.3.3. 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 existing amenity of the landscape the Project 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.

Amenity values experienced from Main South Road between the intersections of Park Lane and Robinsons Road are reduced by the presence of built development, including Main South Road itself, to a low level.

Between Robinsons Road and Marshs Road, 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.

Between Marshs Road and the CSM1 connection, the land comprises a greater proportion of built form to open space, mainly because of the presence of large industrial buildings. Consequently this area has a lower level of amenity.

15.4. Landscape and visual effects assessment

15.4.1. Effect definition and viewing catchment

Landscape effects are defined as those that "…derive from changes in the physical landscape, which may give rise to changes in its character and how it is experienced".[72]

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"[73].

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

The Project's visual catchment is nominally within 500m either side of the MSRFL and CSM2 alignment and the viewing audience will comprise:

- local residents who can see parts of the MSRFL and CSM2 corridor from their dwellings and properties;
- road users on adjacent and intersecting local roads;
- users of the surrounding industrial and commercial areas; and
- users of the State highway and motorway and link roads (including pedestrians and cyclists).

[72] The Landscape Institute with the Institute of Environmental Management and Assessment (2002), *Guidelines for Landscape and Visual Impact Assessment,* second edition, Spon Press

[73] Ibid

15.5. Landscape effects

15.5.1. Overview

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, although a 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 Project will be:

- increasing the "visual and physical presence" of the road within the Rolleston to Robinsons Road section of the proposal; and
- a substantial new road from Robinsons Road to Halswell Junction Road , therefore affecting the local peri-urban and rural landscape by introducing a new element into the landscape.

15.5.2. Landform

The effects on landform will be the result of the elevated sections of carriageway due to the construction of the interchanges and overbridges to carry the local roads. The fill formations and construction of these structures will be above-grade. Therefore, the changes will have a moderate localised effect on the landform, due to the changes to the existing flat topography.

The inclusion of embankments around interchanges, overbridges and stormwater detention ponds will contribute to changes in topography, however, where the embankments will be gently sloping with shallow grades, slopes will be grassed to integrate into the surrounding pastoral landscape, and effects on landform will be minimised. In places with steep slopes which will result in obvious landform changes, landscape planting is proposed which will assist in merging the Project with the existing landform to reduce effects.

15.5.3. Land cover

The majority of the landscape that the Project traverses is modified and the landcover mainly consists of a monoculture of exotic pasture grass and exotic amenity tree planting. Notable vegetation in the landscape consists of mature exotic trees along with shelterbelts and hedges. Apart from the removal of pastoral farmland, the removal of trees, in particular along the CSM2

alignment, will result in obvious, but localised, landscape effects. Essentially, the removal of vegetation will give rise to a more open, spacious landscape.

Trees will be retained on either side of the proposed motorway as much as is practicable, in order to retain rural character and visual amenity.

15.5.4. Land use

The provision of infrastructure is generally understood by the public and this is likely to contribute to the acceptability of changes arising from the motorway upgrade. 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. The creation of a 25m wide motorway and its margins, the intersections with local roads, the closure of Blakes Road and the removal of various dwellings 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, the effects will be localised and contained within approximately 1km of the motorway.

MSRFL will have an effect on a number of businesses and residential dwellings over a distance of 5km. Planting for amenity, shelter and/or screening has been established on many of these properties. The proposed widening on the northern side of SH1 will result in the removal of much of this planting, leaving those properties along this section exposed to the MSRFL alignment, albeit on their southern boundary.

15.6. Visual effects

15.6.1. Overview

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

Adverse visual effects on amenity values are not likely to be widespread, but restricted in extent to the immediate vicinity (within 500m) of the proposed motorway corridor.

For the most part, the generic green open space, 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 long term.

To road users, the benefits of using the motorway may outweigh the partial loss of a rural landscape, in addition to enhanced views to the surrounding landscape and distant hills from elevated sections of the motorway and the local road network.

For some residents who live in close proximity to the motorway, visual effects are likely to impact on the current rural outlook. For the most part, these are specific, localised areas. Where the level of change may be greater than what could be considered acceptable, such as where the location of extensive earthworks and bridge structures are proposed, or where large groups of mature trees are to be removed, specific design solutions are proposed to mitigate the effect of the change. Although effects on amenity values may be moderate, the proposed mitigation will ensure effects are 'acceptable' within the overall scale of the Project.

15.6.2. MSRFL – Existing SH1 corridor

Vegetation removal

The removal of planting, which currently provides amenity, shelter and / or screening for residential properties along SH1 will leave many properties exposed to the proposed MSRFL alignment. This will have an obvious and substantial visual effect for some 5km along the MSRFL for both motorists and property owners. The affected dwellings that are located along SH1 within 100m of MSRFL are identified as H01, H05, H06, H07, H08, H09, H11, H13 and H14 on Sheets 24 and 25 appended to Technical Report 4.

The landscape mitigation for these properties will include the addition of exotic hedgerow planting, which will continue, and be consistent with, the existing hedgerows in the immediate vicinity. The planting will provide effective screening for both the affected residential and commercial properties, as well as softening the appearance of the State highway for State highway users. Visual effects on amenity will reduce to slight as the hedgerows grow and screening becomes effective.

The removal of vegetation, which currently provides shelter and / or screening for several commercial properties along Main South Road, in conjunction with the removal of land due to the widening of the road corridor, will result in the visual exposure of these commercial properties. It is understood that given the type of business associated with these commercial properties, they do not rely on visual exposure to the road for customer attraction. Nevertheless, the removal of vegetation and increase of visible built structures will have a moderately adverse visual impact for users of the State highway.

In order to create a visually cohesive environment for users of the State highway, landscape mitigation is recommended to screen commercial properties from view. For effective screening, exotic hedgerows and areas of extensive native planting are suggested. 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 MSRFL. These have been incorporated on the Project landscape plans appended to Technical Report 7.

Roading infrastructure

The State highway will increase in prominence due to the additional 14m width, accommodating an additional two lanes running parallel to the western edge of SH1 and a central 3.0m median strip.

This will be a substantial change to SH1, however the existing neighbourhood amenity values are not high and consequently, effects on visual amenity will be negligible. This is because the receiving environment is not as sensitive to these changes.

Changes arising from establishing 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. 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 rear access road will affect views for about 3km but given the visual context that is dominated by existing infrastructure, which is utilitarian in nature, effects on visual amenity are considered to be low.

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.

Weedons Road interchange

The introduction of new landforms, in the shape of a full-grade separated interchange, to be built at the Weedons Road intersection will result in a substantial visual effect. The construction of the interchange will change a predominantly flat landscape to incorporate the height and length of the approach embankments to the overpass bridges and to the fill embankment.

The interchange structure will rise approximately 8m above existing ground level, and the lighting will protrude above this. The interchange will have a substantial visual effect from several houses identified as H02, H03 and H04 on Sheet 24, which are located between 80m and 300m and to the east of the structure. The Landscape Plans appended to Technical Report 7 show a substantial amount of planting and the retention of existing vegetation that will afford effective screening.

For houses more than 200m from the interchange, visual effects will be less, although it is likely that the structure will be at least partly visible due to its height above existing ground level. In the broader landscape context, the structure will not have an effect on visual amenity, as existing vegetation surrounding houses will provide effective screening of the structure.

The visual effects on the travelling public using the State highway will be temporarily significant as the interchange structure will briefly dominate the view. However, the structure will be less obvious to those travelling on Weedons Road where expansive views to the surrounding landscape will enhance visual amenity. Substantial planting to the embankments and along the motorway approaches to the overpass bridge will be undertaken for the mitigation of potential adverse visual effects. This will assist in softening and partially screening the built structure to integrate it 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.

15.6.3. CSM2 - Robinsons Road to Halswell Junction Road

Vegetation removal

The removal of farm trees, amenity planting, sections of shelterbelt and hedges along the CSM2 alignment, will have a moderate to substantial localised effect. The vegetation currently contributes to the visual amenity and rural character, and its removal will change the local character within the immediate vicinity.

In the broader landscape context, the loss of these trees will have a substantial impact. However, effects on the landscape and views are to some extent beneficial because an open and spacious quality will be increased. Despite this, mature trees, hedgerows and stands of trees will still remain, providing some screening and to an extent visually compartmentalising the landscape. Over time, the proposed landscape planting along the motorway and interchange will help mitigate the loss of existing vegetation.

Removal of dwellings

The removal of several houses will have a moderate but beneficial effect on the visual amenity of the area. Currently, these buildings are only partly screened by existing vegetation. Consequently their removal is likely to increase visual amenity in the event that the land use changes from residential to open space and a rural land use predominates. Therefore, rural character and amenity will be improved.

Introduction of a new road corridor, engineered structures and landforms

There will be an obvious visual change within the corridor of the Project as rural and semi-rural land uses are changed to the more uniform visual elements of infrastructure. Several local residents who will see parts of the proposal from their dwellings will be affected by this change in visual aspect. These dwellings are identified as H26, H27, and H28 on Sheet 28 appended to Technical Report 4. They are generally located within 500m of the motorway. Where views are

towards those sections of the CSM2 that are at grade, then visual effects will generally be negligible (refer Visual Simulation 10, Sheet 38). There will also be similar visual effects for houses within the Claremont subdivision that are between 200 – 500m from the motorway (see Visual Simulation 4, Sheet 32 appended to Technical Report 4). The unmitigated effects on visual amenity will be substantial in close proximity, reducing over 500m to negligible.

Hedgerows and trees

The many existing hedgerows and trees will provide a degree of screening to most properties, however many dwellings will have uninterrupted views of the motorway. Landscape planting to the southern and northern sides of the motorway adjacent to these properties is required to help mitigate visual effects on them. Landscape mitigation for this area is illustrated in the Landscape plans appended to Technical Report 7 and includes native shrub, hedge and exotic tree planting, which will reduce visual effects from substantial to slight in the long term.

Robinsons Road overpass and CSM2/ MSRFL interchange

The overpass at Robinsons Road incorporates the connection to SH1 and involves significant earthworks to construct the bridge structures and approach embankments. The crest of the overpass bridge will be approximately 8m above grade, and will be a prominent feature at this elevation, above the surrounding flat landscape. These structures will have substantial but localised effects, and these will be screened by existing shelterbelts and hedgerows which reduce expansive views of the structure.

The visual effects on the travelling public using the highway will be slight, as the overpass and overbridge will not be obvious for any great distance, due to the view perspective and the curvature of the road at this point. Extensive planting to the embankments and the approach roads is proposed to assist in 'anchoring' the structure into the landscape. Over time, the planting will improve the visual amenity and reduce the wider visual effects of the overpass on the immediate surrounding area.

Shands Road interchange

The construction of the Shands Road interchange will create a noticeable change due to the height and length of the approach embankments to the underpass. Changes to the landform will also form a localised visual barrier in what is an otherwise flat landscape between properties within the Aberdeen Subdivision and rural land to the north.

Several residents located on Marshs Road within 100 m to the north of the interchange (identified as H19, H20, H21, H22, H23 and H24 on Sheet 27) will experience low visual effects due to the existing shelterbelts and orientation of the underpass (refer Visual Simulation 9 Marshs Road, Sheet 37, appended to Technical Report 4). In comparison, one resident to the south identified as H25, is likely to be substantially affected by the introduction of a built structure into the view that will be exposed by the removal of established vegetation. The proposed mitigation planting will provide a level of screening that will over time reduce visual effects (refer Visual Simulation 8

Shands Road on Sheet 36, appended to Technical Report 4). Residents within the Aberdeen Subdivision are not likely to be affected because of the intervening shelterbelts.

Overbridge structures and associated approach embankments at Waterholes Road, Trents Road, Springs Road and Halswell Junction Road

The surrounding landscape is predominantly flat and the bridge structure will rise approximately 8m above existing ground level. Consequently, the structure will be visually prominent at least when viewed to the north from within 300m. The proposed landscape mitigation involves native planting, exotic hedgerows and groves of exotic trees to provide screening to these residents (refer to Technical Report 4). The combination of earthworks contouring and landscape planting mitigation will allow the structure to sit more sympathetically in the landscape and will successfully reduce effects on visual amenity to moderate.

The visual impacts on the broad open landscape of the existing rural area will arise from the introduction of the overbridge structures and associated approach embankments at Waterholes Road underpass, Trents Road, Springs Road and Halswell Junction Road. Each of these overbridges will be constructed to a maximum height of approximately 8m above ground level.

Dwellings H15, H16 and H17 are within 100 to 200 m of the Waterholes Road overbridge. For these dwellings the visual effects will be substantial as the existing rural character will be replaced by a bridge structure. The Waterholes Road overbridge will potentially present moderate visual effects for several dwellings within the Claremont subdivision. These dwellings lie between approximately 200 – 400m north of the underpass. In order to provide screening for these dwellings, landscape mitigation will include areas of native planting, hedge and exotic tree planting using species consistent with the rural character of the surroundings. In time, effects on visual amenity from the Claremont Subdivision will be no more than slight and negligible.

Because of their close proximity, the visual effects resulting from the presence of the Springs Road and Halswell Junction Road overbridges will have a slight effect on dwelling H28 and a moderate effect on dwelling H27 (refer Visual Simulation 10 Springs Road, Sheet 38, appended to Technical Report 4). Dwelling H18 may be moderately adversely affected by the construction of the Trents Road overbridge. The proposed planting will assist in mitigating visual effects within five years (see Visual Simulation 6 Trents Road, Sheet 34 appended to Technical Report 4). 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).

In general, the embankments and the overpass bridges will be new and obvious visual elements for the travelling public utilising these local roads. These elements will have a moderate effect on the travelling public due to their visual prominence in an otherwise flat landscape. However, these effects will be minimised through the bridge design which will be relatively narrow and will maintain views beneath the structure, therefore minimising their potential visual impact. In some instances, motorists will gain expansive views to the surrounding landscape from the elevated overpass bridges and this is considered to be a benefit of the Project.

15.7. Visual effects of proposed acoustic fence mitigation

Noise mitigation measures include the use of a low noise road surface and noise control barriers in the form of acoustic fences. Where acoustic fences are proposed and will appear as a new visual element within the landscape, the preference is to minimise their height and use planting to help integrate the structures into the surrounding environment.

Technical Report 8, Assessment of Operational Noise Effects, recommends that acoustic fences generally be constructed of materials that have a surface mass of at least 10 kg/m² and be built with no gaps. Suitable materials can include concrete, fibre cement board, steel and timber. It is important that the proposed fencing is well integrated into the existing landscape. The table below identifies the specific dwellings requiring this treatment and provides suggestions on appropriate visual integration.

Table 25: Landscape considerations for acoustic fences

Dwelling reference *	Landscape considerations for acoustic fences
H01 – 1528 MSRFL / SH1	A 1.8m high acoustic fence is proposed for approximately 75 m along the southern roadside frontage and for 25m along the western boundary. There is a mature macrocarpa hedge along the western boundary that will obscure views of the acoustic fences from the dwelling. It is recommended that planting occurs in conjunction with the fence, facing MSRFL, in order to improve visual amenity.
H10 – 95 Berketts Road	A 1.8m acoustic fence is proposed in this location. This will create a more solid boundary than currently exists. For this reason, dense infill planting beneath the existing rows of trees is recommended to help soften its presence. On the road-side of the proposed fence, the poplar trees will require trimming or be removed in order to construct the fence.
H12 – 1213 MSRFL	A 1.8m acoustic fence is proposed for the northern road-side boundary. It is recommended that the 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. Existing planting along the property boundary will help to mitigate the visual effect of the acoustic fences as seen from the dwelling. Additional planting will offer better screening. Planting is therefore recommended along the length of the fence facing the road.
H27 – 312 Springs Road	Preferred mitigation is a combination of low noise road surfacing and 1.8m high acoustic fences to three sides of the property. Some vegetation will be removed to construct the acoustic fences and will need to be replaced. 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.

* Dwelling references refer to locations shown on Sheets 24, 25 and 28 of Technical Report 4.

The landscape considerations and noise mitigation will be further investigated at the detailed design stage in consultation with the affected property owners.

15.8. Temporary construction effects

Temporary landscape and visual effects will also result during construction of the Project. In order to minimise the visual effects during construction, it is recommended that existing vegetation is retained where possible and in the areas identified, the planting of appropriate species is carried out as part of the landscape mitigation. It is also recommended that the area of soil exposed by earthworks is limited, as well as the length of time it is exposed. Consideration should also be given when locating and constructing vehicle accesses and locating stockpiles of excavated material or hardfill, to minimise their visual impacts. For the most part, visibility of the proposed construction works will be limited by the mitigating effect of localised screening of existing shelterbelts, hedges and taller vegetation.

15.9. Visual effects of proposed swales and stormwater basins

The excavation and formation of the stormwater detention basins will have only a minor effect on the immediately adjacent properties. Although the basins will be new features within the landscape, they are to be surfaced with grass and set below grade. The basins will be offset from the carriageway and will appear as a continuation of the existing rural land. They will have minimal effects on visual amenity both on the adjacent properties and on the travelling public utilising the motorway. The proposed small timber walls along stormwater swales, where required in isolated areas of topographic variation, will not be obvious and will have very little visual effect.

15.10. Other visual effects

In addition to the landscape and visual effects resulting from the built form of the motorway, ephemeral effects will result from vehicle movements and lighting associated with the motorway. For the most part the proposed landscape and noise mitigation, along with the existing shelterbelts, woodlots and amenity planting associated with dwellings, will screen potentially affected dwellings from lighting effects.

In general, lighting is not likely to be significantly visually intrusive because of the proposed mitigation and because it is largely confined to the industrial / peri-urban section of the motorway, overpass intersections and interchanges where lighting is an expected part of the receiving environment.

15.11. Landscape and visual effects summary

Overall, the potential landscape and visual effects brought about by MSRFL and CSM2 range from slight through to substantial. The potential landscape and visual effects will result from changes to the local rural landscape due to removal of some existing pastoral land use, the introduction of

manmade structures (roads and bridges), an increase in traffic movement, and glare from car lights and road lights.

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

Landscape effects such as those on rural character will be less obvious where built structures along SH1 are in close proximity to the motorway. The MSRFL proposal increases the prominence of SH1 and introduces a large scale interchange at Weedons Road. This will be a substantial landscape and visual effect, albeit relatively localised however given the existing motorway context and limited positions which can see the interchange. Similarly, the effects of the introduction of the new rear access roads where previously no roads existed will be reduced as the roads are constructed at grade and largely confined to those properties in close proximity. The overall effects are considered to be negligible.

The introduction of raised landforms resulting from the construction of the interchanges and their approaches into a predominantly flat landscape will create a significant and immediately recognisable built element into the landscape that in places will change the existing character of the landscape. However, as previously stated, these effects are not necessarily considered adverse.

Along the CSM2 alignment, where the existing landscape is more open and rural in nature, the elevated interchange and several overbridges will introduce a built feature into the surrounding landscape and consequently, in places, landscape and visual effects will be substantial. The sections of the motorway between these features will be at existing ground level grade and consequently landscape and visual effects will be negligible.

For local residents and motorists, 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 proposed landscape mitigation will ensure that the existing rural character will remain dominant. Effects on visual amenity will vary, although over time as pasture establishes and planting matures, adverse effects on amenity will reduce.

15.12. Summary of recommended mitigation measures

The primary landscape and visual mitigation goal is to construct and operate the Project in a way so as to avoid or mitigate adverse landscape and visual effects. This is achieved by limiting vegetation removal where possible, reducing the extent of earthworks and designing structures that can be easily integrated into the landscape.

As discussed in Technical Report 7 (Landscape Context Report), the landscape design approach will include the following considerations to limit effects and integrate MSRFL and CSM2 into the surrounding environment:

- preserving and complementing the existing landscape and rural qualities that characterise the receiving environment, through retaining existing vegetation where possible and replicating existing landscape / planting patterns;
- protecting valued view shafts, such as views to the Port Hills and Canterbury Foothills, by retaining and or providing gaps in existing and proposed vegetation;
- identifying areas where plantings are required for visual screening and improving amenity. The visual screening will be located to control headlight glare, "back dropping" curves and intersections and obscuring views of the motorway from adjoining residential properties;
- the provision of screen planting to ensure a high quality experience for users of the motorway;
- choosing plant species to reflect the local landscape character;
- the selection of native and exotic plant species that are appropriate to and will thrive in the local environment; and
- the development of a visual theme to promote consistency and continuity with CSM1 and other local sections of SH1.

15.13. Conclusion

The introduction of the CSM2 and MSRFL to the rural land south of Christchurch will result in some adverse visual and landscape effects. The CSM2 will traverse rural and peri-urban land which is considered to be generally of moderate rural character and visual amenity.

The visual effects on rural character and visual amenity brought about by the proposed CSM2 alignment and the MSRFL ranges 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 MSRFL component of the Project will result in a less obvious change to the existing rural character and visual amenity primarily because of the existing context of SH1.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 itself.

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. The landscaping will help to soften and integrate the raised built structures / landforms associated with the underpasses and interchanges into the surrounding landscape and over time will enhance visual amenity for neighbouring properties and road users.