Appendix H

Urban design and landscape plan
SCONE BYPASS
CONCEPT URBAN DESIGN and LANDSCAPE PLAN

Client:
GHD
1 Civic Avenue
Singleton
NSW 2330

Prepared by
CLOUSTON Associates
Landscape Architects • Urban Designers • Landscape Planners
Level 2, 17 Bridge Street • Sydney NSW 2000
PO Box R1388 • Royal Exchange NSW 1225 • Australia
Telephone +61 2 8272 4999 • Facsimile +61 2 8272 4998
Contact: Leonard Lynch
Email  •  sydney@clouston.com.au
Web • www.clouston.com.au

Note: this document is preliminary unless validated.

<table>
<thead>
<tr>
<th>Document</th>
<th>Issue Date</th>
<th>Status</th>
<th>Reviewed</th>
<th>Verified</th>
<th>Validated</th>
</tr>
</thead>
<tbody>
<tr>
<td>S14-0133</td>
<td>13/01/15</td>
<td>DRAFT</td>
<td>LC</td>
<td>MK</td>
<td>MOD</td>
</tr>
<tr>
<td></td>
<td>11/06/15</td>
<td>DRAFT</td>
<td>LC</td>
<td>MK</td>
<td>MOD</td>
</tr>
<tr>
<td></td>
<td>16/07/15</td>
<td>20% Design</td>
<td>LC</td>
<td>MK</td>
<td>MOD</td>
</tr>
<tr>
<td></td>
<td>14/09/15</td>
<td>80% Design</td>
<td>LC</td>
<td>MK</td>
<td>MOD</td>
</tr>
<tr>
<td></td>
<td>27/10/15</td>
<td>100% Design</td>
<td>LC</td>
<td>MK</td>
<td>MOD</td>
</tr>
</tbody>
</table>

Cover: Scone Town Centre
This Page: New England Highway entering Scone
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Title</th>
<th>page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 INTRODUCTION</td>
<td>3</td>
</tr>
<tr>
<td>2.0 SITE ANALYSIS</td>
<td>6</td>
</tr>
<tr>
<td>3.0 DESIGN PRINCIPLES</td>
<td>16</td>
</tr>
<tr>
<td>4.0 LANDSCAPE CONCEPT</td>
<td>20</td>
</tr>
<tr>
<td>5.0 VISUAL IMPACT ASSESSMENT</td>
<td>32</td>
</tr>
<tr>
<td>6.0 MITIGATION MEASURES</td>
<td>58</td>
</tr>
<tr>
<td>APPENDIX A</td>
<td>47</td>
</tr>
</tbody>
</table>
1.0 INTRODUCTION
1.0 INTRODUCTION

Roads and Maritime Services (RMS) has carried out an options assessment and feasibility study to identify a preferred option for a bypass of Scone in the Upper Hunter Valley. In April 2014, a modified version of option 1 was announced as the preferred option, identified to best meet the long term project goals whilst catering for local traffic into the future.

Currently, coal trains running through Scone from the Gunnedah area can, at times, ‘divide’ the town by closing access at both the Kelly Street and Liverpool Street crossings, potentially impeding emergency services access to the western side of the Great Northern Railway. The volume of coal being hauled along this line is predicted to increase substantially over the next five years and this would lead to more frequent and longer trains, exacerbating the problem.

1.1 PURPOSE OF REPORT

The report has been prepared in accordance with the policy and guidelines set down in Beyond the Pavement: RMS Urban Design Policy, Procedures and Design Principles (2014) which aim to ensure that the Proposal has an integrated engineering and urban design outcome that:

- fits sensitively into the built, natural and community environments through which they pass, is well designed and contributes to the character and functioning of the area
- contributes to the accessibility and connectivity of people within regions and communities
- contributes to the overall quality of the public domain for the community and all road users.

This concept urban design and landscape report has been prepared to assess the landscape character and visual impacts of the Proposal, whilst providing guidance on urban design. The report covers items such as materials, finishes, landscape treatments, sustainability initiatives and how the Proposal can be set within the local context.

The report has been prepared with consideration for the following RMS urban design documents:

- EIA Guidance Note: Guidelines for landscape character and visual impact assessment
- Noise Wall Design Guidelines
- Bridge Aesthetics
- Shotcrete Design Guidelines
- Landscape Guidelines

Landscape Character and Visual Impact Assessment (LCVIA) aims to ensure effects of change and development in the landscape, views and visual amenity are taken into account. It is concerned with how the surroundings of individuals or groups of people may be specifically affected by change in the landscape, both quantitatively and qualitatively.

Judgement as to the significance of the effects is arrived at by a process of reasoning, based upon analysis of the baseline conditions, identification of receptors and assessment of their sensitivity, as well as the magnitude and nature of the changes that may result from any development.

This assessment is an independent report and is based on a professional analysis of the landscape and the Proposal at the time of writing. The current and potential future viewers (visual receptors) have not been consulted about their perceptions. The analysis and conclusions are therefore based solely on a professional assessment of the anticipated impacts, based on a best practice methodology.

LCVIA is by its nature not an exact science and consequently is subject to varied methodologies both in Australia and overseas. Potentially subjective assessment material and differences of opinion about how to best assess visual characteristics, qualities, degrees of alteration and viewer sensitivity often arise. As a consequence, and as identified by the NSW Land and Environment Court, the key to a robust process is to explain clearly the criteria upon which an assessment is made.
1.2 THE PROPOSAL

RMS has carried out an options assessment and feasibility study to identify a preferred option for the bypass of Scone (refer Figure 01).

The objectives of the project are to:
- eliminate the only remaining rail level crossings on the New England Highway
- provide unimpeded access for Emergency Services to the western side of the Great Northern Railway
- improve freight and long distance travel through Scone on the New England Highway
- improve urban amenity through Scone
- improve the safety of the New England Highway through Scone
- eliminate community severance caused by rail transport.

The preferred option involves the following elements:
- a two lane highway bypass to the west of Scone
- elevated sections over the Great Northern Rail Line, Kingdon Street and Liverpool Street
- access to and from the bypass to the north and south of town and midway at St Aubins Street
- re-configuration of Scone golf course.

Middlebrook Road, looking south, on the western outskirts of Scone
Figure 01 - The Proposal

- Bypass to traverse golf course
- Viaduct over Parsons Gully, Kingdon and Liverpool Streets
- Span across railway line
- All intersection movements provided for

**North Intersection**
- No north bound right turn into Scone
- Right turn and left turn out from Scone
- South bound left turn slip into Scone via roundabout

**South Intersection**
- Right turn into Scone
- South bound left turn into Scone
- No right lane turn out from Scone
- South bound slip lane from Kelly St to HW9
2.0 SITE ANALYSIS
2.0 SITE ANALYSIS

Scone is located in the upper Hunter Valley about 150 kilometers north-west of Newcastle (refer Figure 02 and 03). It is on the New England Highway north of Muswellbrook about 270 kilometres north of Sydney, and is part of the Hunter (federal) and Upper Hunter (state) electorates. Scone is in a farming area and is also noted for breeding thoroughbred racehorses It is known as the ‘Horse capital of Australia’ (image 1).

Within the town of Scone, the Great Northern Railway (also known as Main North Line) intersects with the road network at two points - the New England Highway, on a stretch of the highway known as Kelly Street, and Liverpool Street. Each of these intersections are controlled by an at-grade rail level crossing.

Scone is a scenic town containing wide, leafy streets and a well planted public domain. Extensive view corridors exist east, west and north to the surrounding hills (image 2).
2.1 CHAPTER OVERVIEW
This section of the LCVA provides an overview of the existing landscape character of the study area including land use, vegetation, built form and topography. The study area is then described under distinct landscape character zones before the impact of the proposal on each is assessed.

2.2 STUDY AREA
The study area specific to the landscape character assessment comprises the land within and surrounding Scone in the Upper Hunter Valley, NSW, as seen in Figure 04.

2.2.1 Regional Landscape Setting
The regional landscape surrounding Scone has several distinct landscape types. These include rugged, forested landforms incised by numerous tributaries of the Hunter and Goulburn Rivers, undulating pasture lands and the distinct checkered pattern of crops, vineyards and orchards within the broader floodplain.

2.2.2 Topography
Scone sits on a mostly flat alluvial floodplain (220m) with the Middle Brook riparian corridor running to the west of the town. The topography raises to the north, east and west of the town with peaks such as the Black Mountain (1022m) clearly visible - refer Figure 03.

2.2.3 Vegetation
Scone sits within a heavily modified landscape, mostly given over to grazing and pasture land. Stands of remnant native vegetation can be found between fields and along riparian corridors. Exotic and native tree planting is found in abundance as street trees within Scone or planted as windbreaks within rural properties.

2.2.4 Land Use
The majority of land use within the study area is agricultural, residential and commercial with some areas of light industrial.

2.2 LANDSCAPE CHARACTER ASSESSMENT METHODOLOGY
This report has adopted the Guidelines for Landscape Character and Visual Impact Assessment as published by the Roads and Maritime Service, RMS. To enable the assessment of impacts on landscape character, landscape character zones have been determined for the study area.

2.2.1 Landscape Character Zones
Landscape character zones are defined as areas having a distinct, recognisable and consistent pattern of elements, be they natural (soil, vegetation, landform) and/or human built form, making one landscape different from another. The study area and surrounds have been assessed and five landscape character zones have been established (refer Figure 04):

1. Transport Corridors
2. Open Farmland
3. Residential Development
4. Commercial Development
5. Public/Private Open Space

2.2.2 Assessment
The overall impact rating of the Proposal on any given landscape character zone is based on themes of magnitude and sensitivity. The severity of these impacts are calculated using Table 01 - based on a combination of magnitude and sensitivity.

Table 01: Landscape Character Impact Rating as a combination of Sensitivity and Magnitude. Source: RMS Guidelines for Landscape Character and Visual Impact Assessment

<table>
<thead>
<tr>
<th>MAGNITUDE</th>
<th>HIGH</th>
<th>MODERATE</th>
<th>LOW</th>
<th>NEGLIGIBLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SENSITIVITY</td>
<td>HIGH</td>
<td>HIGH, MODERATE</td>
<td>MODERATE</td>
<td>NEGLIGIBLE</td>
</tr>
<tr>
<td>HIGH</td>
<td>HIGH</td>
<td>HIGH, MODERATE</td>
<td>MODERATE</td>
<td>NEGLIGIBLE</td>
</tr>
<tr>
<td>MODERATE</td>
<td>MODERATE</td>
<td>MODERATE</td>
<td>LOW</td>
<td>NEGLIGIBLE</td>
</tr>
<tr>
<td>LOW</td>
<td>MODERATE</td>
<td>MODERATE</td>
<td>NEGLIGIBLE</td>
<td>NEGLIGIBLE</td>
</tr>
<tr>
<td>NEGLIGIBLE</td>
<td>NEGLIGIBLE</td>
<td>NEGLIGIBLE</td>
<td>NEGLIGIBLE</td>
<td>NEGLIGIBLE</td>
</tr>
</tbody>
</table>

Figure 03 - Scone and surrounding topography. Source: Googleearth
DESCRiPTION

The two main transport corridors that cross the study area are the arterial New England Highway and the Great Northern Railway Line, both cutting through the centre of Scone from south to north. These define the town spatially, separating the eastern and western sides of Scone.

ASSESSMENT

Sensitivity

The presence of extensive road and rail infrastructure within the area reduces this zone’s sensitivity to development of a similar nature. This zone is recorded as having a low sensitivity to change.

Magnitude

The bypass would be larger in scale compared to existing transport infrastructure located within this zone but is unlikely to adversely impact the character of the existing transport corridors. The New England Highway through Scone town centre is likely to experience a reduction in traffic, potentially improving the character of the existing road in this location. Overall, the Proposal is considered to have a low magnitude within this zone.

Overall Landscape Character Impact Rating

LOW

From Table 01, using a combination of sensitivity and magnitude ratings.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topography</td>
<td>The transport corridors traverse a modified landscape of undulating landform.</td>
</tr>
<tr>
<td>Hydrology</td>
<td>Rainfall drainage varies, however in most situations drains from a central pitch in the road toward the road edge.</td>
</tr>
<tr>
<td>Ecology/vegetation</td>
<td>Swathes of native grasses and modified pasture land as well as some disturbed native bushland along the perimeter of the road corridor.</td>
</tr>
<tr>
<td>Land use</td>
<td>Transport Corridor.</td>
</tr>
<tr>
<td>Built form</td>
<td>Road and rail infrastructure.</td>
</tr>
<tr>
<td>Spatial</td>
<td>Mostly open floodplain with far reaching views to surrounding hills unless blocked by roadside vegetation. Sense of enclosure by surrounding hills.</td>
</tr>
</tbody>
</table>
**LANDSCAPE ZONE 2 - OPEN FARMLAND**

**DESCRIPTION**
This landscape zone is mostly flat and open with sweeping views to surrounding hills. Built form in the landscape is limited to a low density of residential properties and farm buildings.

**ASSESSMENT**

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topography</td>
<td>Mostly flat landform surrounded by low hills.</td>
</tr>
<tr>
<td>Hydrology</td>
<td>Natural drainage to local creeks.</td>
</tr>
<tr>
<td>Ecology/vegetation</td>
<td>Predominantly rural grassland. Vegetation has been retained in wet creek lines. Vegetation exists around built form in the traditional rural pattern, consisting of native and some exotic species.</td>
</tr>
<tr>
<td>Land use</td>
<td>Farming and rural residential.</td>
</tr>
<tr>
<td>Built form</td>
<td>Sparse residential dwellings and their associated buildings.</td>
</tr>
<tr>
<td>Spatial</td>
<td>Primarily open in character with views filtered by vegetation.</td>
</tr>
</tbody>
</table>

Any changes in landuse, built form and spatial quality would stand out within this flat landscape zone. Limited built form is currently present. Overall this zone is described as having a moderate sensitivity to change.

The bypass would be of a larger scale and bulk to existing elements within this landscape zone. The elevated nature of the viaduct and large embankments would spatially divide the open farmland, breaking the continuity of this landscape zone which acts as an important buffer between the edge of Scone and surrounding towns and hills.

**Sensitivity**
MODERATE

**Magnitude**
HIGH

**Overall Landscape Character Impact Rating**
MODERATE/HIGH

From Table 01, using a combination of sensitivity and magnitude ratings.
This character zone covers the township of Scone, consisting of medium density residential development. Development spreads along wide streets either side of the New England Highway and is mostly single storey bungalows on large blocks of land. Properties often have large, well planted gardens to the front and rear.

**ASSESSMENT**

**Sensitivity**

Scone is considered a scenic town with wide streets on a rectilinear grid with a consistency of form and a well planted public domain. This zone is capable of absorbing moderate change of a similar scale and bulk without detrimental impacts on its character. The sensitivity of this landscape zone is rated as moderate.

**Magnitude**

The bypass is approximately 800m from the centre of Scone but would pass in close proximity (60-120m) to residential properties to the west of the town. In this location the Proposal may alter the character of the residential landscape zone, increasing the sense of enclosure and bulk of infrastructure elements within the landscape. The Proposal is described as having a high magnitude within this landscape zone.

**Overall Landscape Character Impact Rating MODERATE/HIGH**

From Table 01, using a combination of sensitivity and magnitude ratings.

**Description**

**Element** | **Description**
--- | ---
Topography | Mostly flat landform.
Hydrology | Rainfall drainage varies however in most situations drains into local drainage pits and riparian areas.
Ecology/vegetation | A mix of native and exotic trees, shrubs and groundcovers planted within residential lots and as formal street trees.
Land use | Residential.
Built form | Detached dwellings on large blocks of land.
Spatial | Linear and moderately enclosed with filtered views to the surrounding hills.
**LANDSCAPE ZONE 4 - COMMERCIAL DEVELOPMENT**

**DESCRIPTION**
Scone town centre has a vibrant commercial precinct, traversed by the New England Highway. The commercial strip runs for approximately 700m with wide footpaths and protective awnings on many commercial properties.

**ASSESSMENT**

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topography</td>
<td>Mostly flat landform.</td>
</tr>
<tr>
<td>Hydrology</td>
<td>Rainfall drains into local drainage pits.</td>
</tr>
<tr>
<td>Ecology/vegetation</td>
<td>A mix of native and exotic trees, shrubs and groundcovers planted within the road median, at roundabouts and as formal street trees.</td>
</tr>
<tr>
<td>Land use</td>
<td>Commercial/retail.</td>
</tr>
<tr>
<td>Built form</td>
<td>Multi-storey commercial premises and road infrastructure</td>
</tr>
<tr>
<td>Spatial</td>
<td>Linear and moderately enclosed with filtered views down side streets to the surrounding hills.</td>
</tr>
</tbody>
</table>

**Sensitivity**
Scone town centre is scenic with many heritage brick buildings housing varied commercial premises. This zone is capable of absorbing moderate change without detrimental impacts on its character. The sensitivity of this landscape zone is rated as moderate.

**Magnitude**
The bypass is approximately 800m from the centre of Scone and would not adversely impact the character of the commercial area. Once operational, the bypass is likely to reduce the number of vehicles travelling through the town (including heavy vehicles) which may well improve the character of the commercial area for pedestrians. Overall the Proposal is described as having a negligible magnitude within this character zone.

**Overall Landscape Character Impact Rating**
From Table 01, using a combination of sensitivity and magnitude ratings.
### LANDSCAPE ZONE 5 - PUBLIC/PRIVATE OPEN SPACE

**DESCRIPTION**
Areas of open space are found within and surrounding Scone, including the Scone Golf Course, Bill Rose Sports Complex and Scone Rugby Club.

**ASSESSMENT**

<table>
<thead>
<tr>
<th>Sensitivity</th>
<th>MODERATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnitude</td>
<td>MODERATE</td>
</tr>
</tbody>
</table>

**Overall Landscape Character Impact Rating**
MODERATE

From Table 01, using a combination of sensitivity and magnitude ratings.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topography</td>
<td>Mostly flat.</td>
</tr>
<tr>
<td>Hydrology</td>
<td>Rainfall drains to man made channels and creeks.</td>
</tr>
<tr>
<td>Ecology/vegetation</td>
<td>Mostly grass land and tree planting along boundary lines. Pockets of undisturbed native bushland are evident throughout the study area.</td>
</tr>
<tr>
<td>Land use</td>
<td>Recreation</td>
</tr>
<tr>
<td>Built form</td>
<td>Minimal - some recreational facilities.</td>
</tr>
<tr>
<td>Spatial</td>
<td>Varies between enclosed with some views blocked by dense vegetation. Other areas are open with extensive views to distant hills.</td>
</tr>
</tbody>
</table>
2.4 LANDSCAPE CHARACTER SUMMARY

The landscape character surrounding the Proposal is typical of the Upper Hunter Valley district with areas of flat farmland, large swathes of pasture, pockets of native vegetation and creek lines.

Medium density commercial and residential development is focused within the town of Scone in a rectilinear street pattern. This consistency of form contributes to the strong spatial quality of the town and surrounds. The spatial quality is also underpinned by the major transport corridors that extend through the town centre from north to south, leaving the west and east of the town fringed by open farmland with very little transport infrastructure present.

The overall impact of the Proposal on landscape character is rated as:

- negligible across one character zone - Commercial Development
- low across one character zone - Transport Corridor
- moderate across one character zone - Public/Private Open Space
- moderate/high across two character zones - Open Farmland and Residential Development - see summary Table 02.

The viaduct and bulky embankment earthworks associated with the Proposal are likely to be the most significant changes in these two landscape zones. The Proposal would change the character of the open farmland through which it passes, as well as the spatial quality of the residential area in close proximity to the Bypass along the western edge of Scone.

The character of the central historic core of Scone would be unlikely to be impacted due to its distance from the Proposal and may well be improved by the reduction of traffic volumes through the town centre due to the bypass operation.

### SUMMARY OF LANDSCAPE CHARACTER IMPACTS

<table>
<thead>
<tr>
<th></th>
<th>Transport Corridors</th>
<th>Open Farmland</th>
<th>Residential Development</th>
<th>Commercial Development</th>
<th>Public/Private open space</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>LOW</td>
<td>MODERATE</td>
<td>MODERATE</td>
<td>MODERATE</td>
<td>MODERATE</td>
</tr>
<tr>
<td>Magnitude</td>
<td>LOW</td>
<td>HIGH</td>
<td>HIGH</td>
<td>NEGLIGIBLE</td>
<td>MODERATE</td>
</tr>
<tr>
<td>Overall Rating</td>
<td>LOW</td>
<td>MODERATE/HIGH</td>
<td>MODERATE/HIGH</td>
<td>NEGLIGIBLE</td>
<td>MODERATE</td>
</tr>
</tbody>
</table>

Table 02 Summary of Landscape Character Impacts
3.0 DESIGN PRINCIPLES
3.1 INTRODUCTION
As identified within section 5.0 - Visual Impact Assessment, the Proposal would be likely to be visually prominent from several key viewpoints around Scone, including locations with sensitive residential receptors.

3.1.1 Embankments
The bypass design features substantial embankments/batters along much of its length to raise the road above the flood plain and the local road network. These would be obvious elements passing through the mostly flat landscape of open farmland that fringes Scone. Planting to the batters would assist in blending these into the local context, although a lasting impact on the spatial quality of Scone is expected.

3.1.2 Viaduct
A new viaduct approximately 550m long would lift the bypass over Kingdon and Liverpool Street. The viaduct would act as a visual barrier, separating the western residential area of Scone from the adjacent open farmland. The viaduct would need to be designed as a cohesive structure with abutments, noise barriers, lighting, piers and headstocks working together as a seamless set of elements.

3.2 URBAN DESIGN AND LANDSCAPE Objectives
High quality detailing can assist in mitigating these impacts and ensure that the bypass and related infrastructure are as integrated as possible.

A set of objectives and principles for the built form and soft landscape treatments of the Scone bypass have been developed to ensure a consistent approach and guide the design to address the site’s opportunities and constraints.

The following objectives have been devised to guide the development of the design outcome for the project. These objectives are:

- develop an integrated concept design that fits sensitively with the existing qualities and characteristics of the Scone area
- ensure that impacts on visual amenity and landscape character are reduced as far as possible
- develop a suite of bridge elements that work cohesively together
- improve safety and connectivity for vehicles, pedestrians and cyclists.
3.3 MOVEMENT PRINCIPLES
- Maintain the spatial quality of Scone town centre, ensuring the strong rectilinear pattern of streets is retained and not cut off by the bypass.
- Allow for connectivity across the proposed road corridor for motorists, pedestrians and agricultural workers.
- Place wayfinding signage clearly and logically.

3.4 LANDSCAPE PRINCIPLES
- Choose vegetation on embankments either side of the bypass to screen built form and reduce the scale of the infrastructure. A selection of grasses, low groundcovers and groups of native trees should be utilised - refer Figure 05.
- Maintain long vistas to distant hills where possible, ensuring that landscape planting does not block views.
- Retain and frame views, especially along Kingdon, Liverpool and Saint Aubins Street.
- Give consideration to embellishing entry features to Scone with feature/gateway planting.

3.5 PLANTING PRINCIPLES
- Reinforce the local semi-rural landscape character through the use of appropriate native vegetation - refer suggested species list in Table 03.
- Restore areas outside the bypass corridor disturbed by construction to match existing condition.

3.6 STRUCTURE PRINCIPLES
3.6.1 Viaduct
The viaduct over Parsons Gully, Kingdon Street and Liverpool Street will be a Super T bridge with twenty, 27m spans and a 5.4m clearance at Liverpool St. The aesthetic quality of the new bridge structure is key to ensuring that the Proposal fits sensitively within the local context.

The bridge over the Great Northern Rail Line would be a three span Super Bulb T bridge with spans 33m apart. There will be a 5.15m clearance to the rail line.

- Maximise views from the viaduct towards the surrounding landscape by using visually permeable bridge barriers and transparent noise walls.
- Maximise span lengths to reduce number of vertical elements.
- Keep viaduct height as low as possible to reduce visual impact.
- Design pier and headstock to be elegant and robust to compliment viaduct aesthetic.

3.6.2 Lighting
- Viaduct lighting (if required) to align with vertical elements of viaduct (such as piers) to ensure consistent elevation of the viaduct structure.
- Pole types and lights (if required) are to be consistent with existing fixtures in the area.

3.6.3 Noise Walls
Noise walls will be required on the town side of the rail bridge and viaduct and westside of the viaduct at Parsons Gully. Noise walls should integrate with the design of the overall road corridor and complement the road structures.
- Consider limiting the height of the noise wall to balance noise and visual impacts.
- Lean noise wall outwards to improve visual profile and improve visual impact for road users.
- Select materials with consideration to acoustic performance, durability, weathering, ease of maintenance, vandal and graffiti resistance. Transparent materials will allow views through and reduce the perceived bulk of the structure (refer image 4).

3.6.4 Embankments
The bypass would be elevated on large embankments/batters. These embankments would be a visually intrusive element of the Proposal and consideration should be given to their treatment.
- Gradient of batters to be no steeper than 1:4 to ensure batters are not out of character with the predominately flat surrounding landscape.

<table>
<thead>
<tr>
<th>BOTANICAL NAME</th>
<th>COMMON NAME</th>
<th>Mature Height (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acacia incana</td>
<td>Coast Wattle</td>
<td>15</td>
</tr>
<tr>
<td>Angophora floribunda</td>
<td>Rough-barked Apple</td>
<td>30</td>
</tr>
<tr>
<td>Cunninghamia cunninghamii</td>
<td>Tuckeroo</td>
<td>6</td>
</tr>
<tr>
<td>Casuarina glauca</td>
<td>She-oak</td>
<td>10</td>
</tr>
<tr>
<td>Corymbia maculata</td>
<td>Spotted Gum</td>
<td>30</td>
</tr>
<tr>
<td>Eucalyptus crebra</td>
<td>Narrow-leaved Ironbark</td>
<td>20</td>
</tr>
<tr>
<td>Eucalyptus punctata</td>
<td>Grey Gum</td>
<td>30</td>
</tr>
<tr>
<td>Eucalyptus aggregata</td>
<td>Forest Red Gum</td>
<td>20</td>
</tr>
<tr>
<td>Melaleuca alternifolia</td>
<td>Blackbutt Honey Myrtle</td>
<td>5</td>
</tr>
<tr>
<td>Buddleja globosa</td>
<td>Blue Spire</td>
<td>20</td>
</tr>
<tr>
<td>Eucalyptus obliqua</td>
<td>Red Ironbark</td>
<td>25</td>
</tr>
<tr>
<td>Eucalyptus viminalis</td>
<td>Grey Ironbark</td>
<td>30</td>
</tr>
<tr>
<td>Leptospermum scoparium</td>
<td>Blue Leaved Tea-tree</td>
<td>5</td>
</tr>
<tr>
<td>Macrozamia truncata</td>
<td>Weeping Grass</td>
<td>8</td>
</tr>
<tr>
<td>Muehlenbeckia complexa</td>
<td>Weeping Grass</td>
<td>8</td>
</tr>
<tr>
<td>Parkinsonia aspalathoides</td>
<td>Tasmanian Rose</td>
<td>3</td>
</tr>
<tr>
<td>Rhus hastata</td>
<td>Sawtooth Wax-myrtle</td>
<td>10</td>
</tr>
<tr>
<td>Scaevola taccada</td>
<td>Scaevola Bluemound</td>
<td>2</td>
</tr>
<tr>
<td>Solanum aviculare</td>
<td>Common Rose</td>
<td>10</td>
</tr>
<tr>
<td>Stenocarpus longipetalus</td>
<td>Mat Rush</td>
<td>5</td>
</tr>
<tr>
<td>Melaleuca elaeagnifolia</td>
<td>Weeping Grass</td>
<td>10</td>
</tr>
<tr>
<td>Bossiaea australis</td>
<td>Pale Twig Rush</td>
<td>2</td>
</tr>
<tr>
<td>Grevillea georgiana</td>
<td>Swamp Sedge</td>
<td>10</td>
</tr>
<tr>
<td>Boronia sieberana</td>
<td>Raw Fringed Saw Sedge</td>
<td>8</td>
</tr>
<tr>
<td>Austrocedrus northiana</td>
<td>Common Cedar</td>
<td>10</td>
</tr>
<tr>
<td>Acacia pycnantha</td>
<td>Snow Gum</td>
<td>10</td>
</tr>
<tr>
<td>Acacia saligna</td>
<td>Snow Gum</td>
<td>10</td>
</tr>
<tr>
<td>Acacia baileyana</td>
<td>Snow Gum</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 03 - Suggested species list
Retain and frame views towards distant hills where possible

Native tree planting either side of bypass

Native grasses to embankment

Figure 05 - Viaduct elevation

Image 03 - Super T Concrete girder bridge

Image 04 - Transparent noise wall, allowing good visual permeability
4.0 LANDSCAPE CONCEPT
Feature trees provide entry marker to Scone

Tree planting to assist visual screening of rail crossing

Native tree planting
Riparian tree planting
Feature tree planting
Native grass embankments
Riparian planting
Noise wall
Golf course realigned on western side of highway

Native tree planting
Riparian tree planting
Feature tree planting
Native grass embankments
Riparian planting
Noise wall
Feature trees provide marker to viaduct crossing

Creek rehabilitated with appropriate riparian planting

Feature tree planting provides marker to bridge crossing

Native tree planting

Riparian tree planting

Feature tree planting

Native grass embankments

Riparian planting

Noise wall
PHOTOMONTAGE A
KINGDON STREET - LOOKING WEST

Existing
PHOTOMONTAGE A
KINGDON STREET - LOOKING WEST

Note
Photomontage indicative only

Bridge elements including
size and shape of noise
wall, piers and abutments
subject to detailed design.

Proposed
PHOTOMONTAGE B
LIVERPOOL STREET - LOOKING WEST

Existing
PHOTOMONTAGE B
LIVERPOOL STREET - LOOKING WEST

Note
Photomontage indicative only
Viaduct elements including size and shape of noise wall, piers and abutments subject to detailed design.

Proposed
PHOTOMONTAGE C
WINGEN STREET - LOOKING EAST

Existing
PHOTOMONTAGE C
WINGEN STREET - LOOKING EAST

Note
Photomontage indicative only
Bridge elements including size and shape of noise wall, piers and abutments subject to detailed design.
5.0

VISUAL IMPACT ASSESSMENT
5.0 VISUAL IMPACT ASSESSMENT

5.1 CHAPTER OVERVIEW
This section of the report provides an overview of the existing visual environment of the study area and the related visual impacts of the Proposal.

5.2 VISUAL ENVIRONMENT
The bypass traverses fields that make up the transition area between outlying rural farmland and residential/commercial core of Scone.

5.2.1 Private Domain
Residential receptors which would have views of the Proposal are located to the west of Scone town centre. Some of these properties back onto fields in close proximity to the bypass. Views to the Proposal site from Scone town centre and east of the New England Highway are blocked by built form and vegetation.

Some properties located close to Wingen Street on the western side of the Proposal would have unobstructed views over the development as well as more distant properties in the residential area of Satur.

5.2.3 Public Domain
Publicly accessible land with visual accessibility to the Proposal site include Scone Golf Course, Bill Rose Sports Complex and Scone Rugby Club. Parts of the New England Highway and the local road network would also have views of the Proposal site. The grid like pattern of Scone’s road network facilitates views to the Proposal along the streets that run in an east/west orientation such as Liverpool Street.

5.3 REPRESENTATIVE VIEWPOINTS
Ten representative viewpoints have been chosen for further analysis. The visual receptors encompassed by these viewpoints all have the potential to be visually impacted by some element of the Proposal (refer Figure 05).

The locations identified are:
1. New England Highway, looking north and south
2. Residential properties off Joan Street, looking west
3. Scone Golf Course, looking south
4. Kingdon Street, looking west
5. Residential properties on Aberdeen Street, looking west
6. Residential properties in proximity to Wingen Street, looking east
7. Aberdeen Street, looking west
8. Liverpool Street, looking west
9. Liverpool Street, looking east
10. Residential properties along Towarri Street, Satur, looking east

5.4 METHODOLOGY
The overall impact rating of the Proposal on any given receptor is based on factors of magnitude and sensitivity.

Sensitivity
Each visual receptor type has an inherent and varied sensitivity to change in the visual scene based on their personal context in which the view is being experienced. This would have a direct bearing on the perception of visual impact experienced by the receptor and qualifies the quantitative impacts. Appendix A describes the levels of sensitivity for each receptor type.

Magnitude
The magnitude of the visual effects of the development within the landscape. A series of quantitative assessments are studied, including distance from development, quantum of view, duration of view and scale of change. Appendix A describes the ratings assigned to these quantitative assessments.

Overall impact rating
The severity of these impacts is calculated using matrix Table 01 - based on a combination of magnitude and sensitivity.

<table>
<thead>
<tr>
<th>MAGNITUDE</th>
<th>HIGH</th>
<th>MODERATE</th>
<th>LOW</th>
<th>NEGLIGIBLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH</td>
<td>HIGH</td>
<td>HIGH - MODERATE</td>
<td>MODERATE</td>
<td>NEGLIGIBL</td>
</tr>
<tr>
<td>MODERATE</td>
<td>HIGH - MODERATE</td>
<td>MODERATE</td>
<td>NEGLIGIBLE</td>
<td>NEGLIGIBLE</td>
</tr>
<tr>
<td>LOW</td>
<td>MODERATE</td>
<td>MODERATE - LOW</td>
<td>LOW</td>
<td>NEGLIGIBLE</td>
</tr>
<tr>
<td>NEGLIGIBLE</td>
<td>MODERATE - LOW</td>
<td>LOW</td>
<td>NEGLIGIBLE</td>
<td>NEGLIGIBLE</td>
</tr>
</tbody>
</table>

Table 01: Landscape Character Impact Rating as a combination of Sensitivity and Magnitude. Source: RMS Guidelines for Landscape Character and Visual Impact Assessment.
Figure 05 - Viewpoint Locations
5.5 VISUAL ANALYSIS

The following section assesses the visual impact of the Proposal on each of the selected viewpoints shown in Figure 55. This includes a description of the current view from each viewpoint followed by a discussion of the potential visual impacts of the Proposal on that view. Each viewpoint is accompanied by a location map and photograph of the current view.

For a detailed description of the assessment factors and impact ratings used see Appendix A.
VIEWPOINT 1A and 1B

Photo 1A - New England Highway on outskirts of Scone, looking north

Approx. location of proposed road corridor

Some vegetation removal may be required

Photo 1B - New England Highway on outskirts of Scone, looking south

Approx. location of proposed road corridor

Viewpoint location

Proposed works
LOCATION
New England Highway heading into Scone, looking north and south.

Distance to Proposal
15 metres

Receptors
Users of the New England Highway, travelling in a north and southbound direction.

Current View
As shown in Photo 1A and 1B, these viewpoints look north and south respectively towards the entrance to Scone. The foreground of both viewpoints is dominated by the road corridor with open farmland spreading out to the east and west. Residential development associated with Scone can be seen in the middle distance with distant hills visible in the background.

VISUAL IMPACT
The bypass intersections with the existing New England Highway would be highly visible from these viewpoints. The new road corridor, embankments and associated road infrastructure (such as signage) would be visible within the viewframe.

Although noticeable, a major visual impact is not expected due to the short duration of the view by passing motorists. The presence of existing road infrastructure within the viewframe has helped lower the sensitivity of the receptors to change of this nature.

<table>
<thead>
<tr>
<th>RECEPTOR TYPE</th>
<th>RECEPTOR IDENTIFICATION</th>
<th>MAGNITUDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>1</td>
<td>L</td>
</tr>
<tr>
<td>Visual Impact</td>
<td>Rating</td>
<td>MODERATE/LOW</td>
</tr>
</tbody>
</table>
VIEWPOINT 2

Viewpoint location

Proposed works

Photo 2

Proposed bypass behind property

Existing rail line
LOCATION
Joan Street, looking west.

Distance to Proposal
110 metres

Receptors
Residents of approximately 6 properties, accessed from Joan Street.

Current View
As shown in Photo 2, this viewpoint looks over the Great Northern Rail Line. The foreground is dominated by the rail line and mature vegetation associated with the residential properties. The elevated nature of the railway blocks views to the middle and far distance.

VISUAL IMPACT
The bypass would be elevated over the railway line on a bridge at this location that may be clearly visible from several of these properties, partly screened by foreground vegetation. The bridge would be of a greater scale and bulk than existing infrastructure elements within the view.

The existing elevated rail track would obscure views of the bypass further to the west. Although potentially visually intrusive, the presence of current transport infrastructure within the view would reduce the magnitude of the changes associated with the bypass.

<table>
<thead>
<tr>
<th>RECEPTOR TYPE</th>
<th>RECEPTOR IDENTIFICATION</th>
<th>MAGNITUDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td></td>
<td>Private</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>H</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M</td>
</tr>
</tbody>
</table>

Visual Impact Rating: MODERATE/HIGH
VIEWPOINT 3

Viewpoint location

Proposed works

Photo 3

Approx. location of proposed bypass
LOCATION
Scone Golf Course, looking south.

Distance to Proposal
60 metres

Receptors
Users of the golf course.

Current View
As shown in Photo 3, this viewpoint looks over the Scone Golf course from near the club house. The foreground is dominated by the course with a small pedestrian bridge visible crossing a creek line. Dense vegetation and distant hills are visible in the middle and far distance. No transport infrastructure is currently visible within the viewframe.

VISUAL IMPACT
The bypass would be clearly visible from this viewpoint, bisecting the golf course in close proximity to the clubhouse. The road corridor is likely to be visually intrusive and dominate the view, blocking some views to the middle distance. A viaduct over the creek would also be highly visible to the west of this viewpoint. Vehicles would be visible moving along the new bypass. The functionality of the golf course is likely to be impacted, although as a private commercial facility, the sensitivity of the receptors is rated as moderate. The golf course is expected to be redesigned as part of the Proposal with all holes proposed to be on the western side of the bypass.

<table>
<thead>
<tr>
<th>RECEPTOR TYPE</th>
<th>RECEPTOR IDENTIFICATION</th>
<th>MAGNITUDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>3</td>
<td>M</td>
</tr>
<tr>
<td>Visual Impact</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>QUANTUM OF VIEW</th>
<th>PERIOD OF VIEW</th>
<th>SCALE OF CHANGE</th>
<th>SUMMARY OF RATINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td></td>
<td>M</td>
<td>MODERATE/HIGH</td>
</tr>
</tbody>
</table>

Entry sign to Scone Golf Club
VIEWPOINT 4

Photo 4

Approx location of proposed bypass viaduct

Proposed works

Viewpoint location
LOCATION
Kingdon Street, looking west.

Distance to Proposal
350 metres

Receptors
Users of Kingdon Street, travelling west.

Current View
As shown in Photo 4, this viewpoint looks west down Kingdon Street to the outskirts of Scone. The foreground is dominated by the road corridor, flanked by dense tree planting and Scone Grammar School on the right. Dense vegetation and hills are visible in the middle and far distance.

VISUAL IMPACT
The bypass would be visible in the middle distance of the viewframe, crossing over Kingdon Street on an elevated viaduct - refer photomontage A (p. 27). The carriageway, vehicles and viaduct piers may be clearly visible from this viewpoint, obscuring some of the middle distance view. Vegetation would screen views of the bypass to the north and south. A moderate impact on visual amenity is expected in this location.

<table>
<thead>
<tr>
<th>RECEPTOR TYPE</th>
<th>RECEPTOR IDENTIFICATION</th>
<th>DISTANCE</th>
<th>QUANTUM OF VIEW</th>
<th>PERIOD OF VIEW</th>
<th>SCALE OF CHANGE</th>
<th>SUMMARY OF RATINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>4</td>
<td>M</td>
<td>M</td>
<td>L</td>
<td>M</td>
<td>MODERATE</td>
</tr>
<tr>
<td>Visual Impact Rating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Visual Impact Rating: MODERATE
VIEWPOINT 5

Approx location of proposed bypass viaduct

Proposed works

Photo 5
LOCATION
Aberdeen Street, looking west.

Distance to Proposal
60 metres

Receptors
Residents approximately 20 properties on either side of Aberdeen Street.

Current View
As shown in Photo 5, this viewpoint looks west towards open farmland, partially obscured by built form associated with residential dwellings and vegetation. Hills are visible in the far distance.

VISUAL IMPACT
The bypass would be clearly visible from the rear of properties to the west of Aberdeen Street. The bypass would be elevated above the flood plain with the viaduct and embankments visible. Receptors to the east of Aberdeen Street would have glimpses of the bypass between buildings and vegetation. The greatest visual impact would be on properties with a second story, offering elevated views over the bypass and vehicular traffic from these floors.

RECEPTOR TYPE
- Private

RECEPTOR IDENTIFICATION
5

RECEPTOR SIGNIFICANCE
H

DISTANCE
H

QUANTUM OF VIEW
M

PERIOD OF VIEW
M

SCALE OF CHANGE
H

SUMMARY OF RATINGS
H

Visual Impact Rating
HIGH

*Individual access to properties was not possible so a general impact rating has been given for all dwellings on the street. Some properties may have a lower visual impact rating where local vegetation or topography screen views of the bypass.
VIEWPOINT 6

Viewpoint location

Proposed works

Liverpool Street

Photo 6

Proposed bypass viaduct
LOCATION
Wingen Street, looking east.

Distance to Proposal
98 metres

Receptors
Residents of approximately 8 properties on or in proximity to Wingen Street.

Current View
As shown in Photo 6, this viewpoint looks towards Scone over open farmland. Liverpool Street is visible to the left of the viewpoint with hills rising in the middle/far distance. Little built form or road infrastructure is currently visible within the viewframe.

VISUAL IMPACT
The bypass would be clearly visible from the majority of these properties, especially those that are orientated east. The bypass would be elevated above the flood plain on large embankments and a viaduct which would be visible crossing Liverpool and Kingdon Street - refer photomontage C (p.31). Vehicles would be clearly visible travelling in both directions. Foreground vegetation may screen some views of the bypass although it is still likely to be visually dominant and intrusive.

<table>
<thead>
<tr>
<th>RECEPTOR TYPE</th>
<th>RECEPTOR IDENTIFICATION</th>
<th>MAGNITUDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>6 H H H H H H</td>
<td></td>
</tr>
</tbody>
</table>

Visual Impact Rating

*Individual access to properties was not possible so a general impact rating has been given for all dwellings on the street. Some properties may have a lower visual impact rating where local vegetation or topography screen views of the bypass.
VIEWPOINT 7

Viewpoint location

Proposed works

Photo 7

Proposed bypass
LOCATION
Aberdeen Street, looking west.

Distance to Proposal
110 metres

Receptors
Drivers on Aberdeen Street.

Current View
As shown in Photo 7, this viewpoint looks west over open farmland towards hills in the middle/far distance. Little built form or road infrastructure is currently visible within the viewframe.

VISUAL IMPACT
The bypass would be visible from the road, elevated above the flood plain on a small embankment. Vehicles would be clearly visible travelling in both directions. Although visually dominant within the viewframe, a major impact on visual amenity is not expected due to the low sensitivity of receptors and short duration of view.

<table>
<thead>
<tr>
<th>RECEPTOR TYPE</th>
<th>RECEPTOR IDENTIFICATION</th>
<th>MAGNITUDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>L</td>
<td>M</td>
</tr>
</tbody>
</table>

Visual Impact Rating: MODERATE/LOW
VIEWPOINT 8

Viewpoint location

Proposed works

Photo 8

Proposed bypass viaduct
LOCATION
Intersection of Liverpool Street and Great Northern Railway, looking west.

Distance to Proposal
722 metres

Receptors
Drivers and pedestrians on Liverpool Street.

Current View
As shown in Photo 8, this viewpoint looks west down Liverpool Street to the outskirts of Scone. The foreground is dominated by the road corridor, flanked by commercial properties. Dense vegetation and hills are visible in the middle and far distance.

VISUAL IMPACT
The bypass would be visible in the middle distance of the viewframe, crossing over Liverpool Street on an elevated viaduct. The carriageway, vehicles and viaduct piers may be visible from this viewpoint, obscuring some of the middle distance view. A moderate/low impact on visual amenity is expected in this location due to the distance between the viewer and Proposal.

<table>
<thead>
<tr>
<th>RECEPTOR TYPE</th>
<th>RECEPTOR IDENTIFICATION</th>
<th>DISTANCE</th>
<th>QUANTUM OF VIEW</th>
<th>PERIOD OF VIEW</th>
<th>SCALE OF CHANGE</th>
<th>SUMMARY OF RATINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td></td>
<td>8</td>
<td>M</td>
<td>L</td>
<td>L</td>
<td>M L</td>
</tr>
</tbody>
</table>

Visual Impact Rating: MODERATE/LOW
LOCATION
Liverpool Street, looking east.

Distance to Proposal
500 metres

Receptors
Drivers on Liverpool Street.

Current View
As shown in Photo 9, this viewpoint looks east along Liverpool Street towards Scone. Large residential lots line the northern side of the road with open farmland to the south behind a row of street trees. Hills are visible rising up in the middle/far distance.

VISUAL IMPACT
The bypass would be visible in the middle distance of the viewframe, crossing over Liverpool Street on an elevated viaduct. The carriageway, vehicles, viaduct and piers may be clearly visible from this viewpoint, obscuring some of the middle distance view. Vegetation would screen views of the bypass to the north and south. A moderate impact on visual amenity is expected in this location.

<table>
<thead>
<tr>
<th>RECEPTOR TYPE</th>
<th>RECEPTOR IDENTIFICATION</th>
<th>MAGNITUDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>Visual Impact</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rating</td>
<td>MODERATE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RECEPTOR TYPE</th>
<th>RECEPTOR IDENTIFICATION</th>
<th>DISTANCE</th>
<th>QUANTITY OF VIEW</th>
<th>PERIOD OF VIEW</th>
<th>SCALE OF CHANGE</th>
<th>SUMMARY OF RATINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td></td>
<td>M</td>
<td>L</td>
<td>L</td>
<td>M</td>
<td>M</td>
</tr>
</tbody>
</table>
VIEWPOINT 10

Viewpoint location

Proposed works

Approx. location of bypass (behind vegetation)
Individual access to properties was not possible so a general impact rating has been given for all dwellings on the street. Some properties may have a lower visual impact rating where local vegetation or topography screen views of the bypass.

**LOCATION**
Middlebrook Road, looking east.

**Distance to Proposal**
1300 metres

**Receptors**
Residential properties along Towarri Street, Satur.

**Current View**
As shown in Photo 10, this viewpoint looks east over open farmland towards Scone town centre. This view is representative of the outlook from the residential properties on the eastern side of Towarri Street, Satur. These receptors would have elevated views over the floodplain towards hills in the middle distance behind Scone. The view is scenic and wide reaching, taking in large areas of open farmland.

**VISUAL IMPACT**
Elements of the bypass (embankments and viaduct) would be visible from these properties, partially screened by vegetation in the foreground. Although visible, they are unlikely to be visually dominant within the viewframe due to the distance from the Proposal and the panoramic nature of the view. A moderate impact on visual amenity is expected from this location.

<table>
<thead>
<tr>
<th>Receptor Type</th>
<th>Receptor Identification</th>
<th>Magnitude</th>
<th>Distance</th>
<th>Quantum of View</th>
<th>Period of View</th>
<th>Scale of Change</th>
<th>Summary of Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>10</td>
<td>M</td>
<td>L</td>
<td>M</td>
<td>M</td>
<td>M</td>
<td>MODERATE*</td>
</tr>
</tbody>
</table>

*Individual access to properties was not possible so a general impact rating has been given for all dwellings on the street. Some properties may have a lower visual impact rating where local vegetation or topography screen views of the bypass.
5.5 VISUAL IMPACT SUMMARY

The visual impacts of the Proposal on the studied viewpoints range from moderate/low to high (refer Table 04 and Figure 06). Three viewpoints received an impact rating of moderate/low, three moderate, two moderate/high and two high.

The most severe visual impacts associated with the Proposal are limited to the western edge of Scone, in close proximity to the proposed bypass corridor. The viewpoints that received a moderate/high and high impact rating are residential receptors with a high sensitivity to change in the visual environment. Properties along Joan, Aberdeen and Wingen Streets are the closest to the bypass and may have clear and unobstructed views of the road infrastructure.

The most visually intrusive elements of the proposal are likely to be the earth embankments, viaduct and vehicular movements associated with the road corridor. Vehicular headlights may also cause a visual impact at night.

Pedestrians and motorists travelling along Kingdon and Liverpool Street would have views of the viaduct structure along narrow view corridors. The viaduct would bisect these road corridors, visually separating the eastern and western sides of the street.

Visual impacts are negligible to the east of the existing New England Highway as distance, built form and vegetation block views towards the Proposal.

Construction of the bypass would reduce traffic volumes through Scone town centre which is likely to have a positive impact on visual amenity along the existing New England Highway.

Overall, the Proposal can be described as having a moderate/high to high visual impact on the residential receptors in close proximity to the bypass. A moderate/high visual impact is also expected on the Scone Golf Course which would be bisected by the road alignment. Impacts reduce to moderate and moderate/low as viewing distance increases or the receptors become less sensitive to change.

Table 04 - Summary of visual impacts of the Proposal across the study area
Figure 06 - Summary of visual impacts across the study area
6.0 MITIGATION MEASURES

6.1 TYPES OF MITIGATION
Effective mitigation measures for any form of potential visual impact are those that entail:
• Avoidance
• Reduction
• Alleviation

6.2 AVOIDANCE
A thorough route selection process has been undertaken. Once set, the ability to avoid impact is reduced. Location is key to the functioning of the bypass to improve traffic efficiency. Avoidance measures have not been considered applicable in this report.

6.3 REDUCTION
The principal forms of reduction are associated with refinements and modifications that address the siting and scale of built form. Measures include:
• Locating storage areas and associated works in cleared or otherwise disturbed areas away from vegetation
• avoiding stockpiling materials in areas supporting vegetation where possible
• restricting vegetation clearing to those areas where it is necessary. Opportunities to minimise clearing should be part of the detailed design, further to any being considered currently
• trimming rather than removal of trees to be undertaken where possible and to be conducted by a qualified arborist
• rehabilitating vegetated areas where ground is disturbed.

6.3.1 Vegetation
• Planting either side of the overpass to screen built form and reduce the scale of the infrastructure
• fill embankments to be planted with low groundcovers/native grasses and groups of trees
• reinforce the local semi-rural landscape character through the use of appropriate vegetation
• low planting of native species, mostly grasses and low shrubs to less than 1m high, combined with appropriately spaced tall Eucalyptus species to retain sightlines

6.3.2 Viaduct
The aesthetic quality of the bypass viaduct is key to ensuring the Proposal fits with the local context. The viaduct should as simple and elegant as possible to complement the semi-rural setting.
• All viaduct elements including lighting columns, barrier supports, crash barriers and piers to be considered as a whole to simplify the structure and reduce clutter
• viaduct to connect seamlessly with abutments and embankments

6.4 OFF SITE MITIGATION
Tree planting outside the works boundary may assist in visually screening the bypass and should be considered further during the detailed design.
APPENDIX A

An explanation of the rating categories used within this report to determine the level of visual impact on each viewpoint/receptor studied. These rating categories have been developed by CLOUSTON Associates and follow rational and international best practice.

<table>
<thead>
<tr>
<th>SENSITIVITY Assessment Definitions</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Receptor sensitivity</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>Each visual receptor type has an inherent and varied sensitivity to change in the visual scene based on their personal context in which the view is being experienced. This would have a direct bearing on the perception of visual impact experienced by the receptor and qualifies the quantitative impacts.</td>
</tr>
<tr>
<td>M/H</td>
<td>Public Reserve, Parks, Reserves, Public walkways: the purpose of visiting and using reserves largely relates to an enhanced sense of wellbeing. Receptor is more sensitive to both positive and negative visual experiences, especially where the reserve is the destination for leisure and relaxation.</td>
</tr>
<tr>
<td>M</td>
<td>Residential: view from dwelling or garden may be experienced regularly over extended periods of time; residents may have chosen the location specifically for the view and/or develop a strong familiarity and association with the view and have high sensitivity to change.</td>
</tr>
<tr>
<td>M/L</td>
<td>Public Roads/Transport: the view experienced can be important to the driver/passenger but is sometimes a brief experience and the driver is usually focused on the road.</td>
</tr>
<tr>
<td>L</td>
<td>Commercial Property - Work: view can enhance the work or education experience but focus of activity is not principally on the view.</td>
</tr>
<tr>
<td>L</td>
<td>Semi-Private property - Work/Education/Service provider: view can enhance the work or education experience but focus of activity is not principally on the view.</td>
</tr>
<tr>
<td><strong>M/H</strong></td>
<td>Sensitivity of receptor relevant to the proposal and the nature of the view.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MAGNITUDE Quantitative assessment definitions</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Distance</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>The effect the Proposal has on the view relating to the distance between the Proposal and the visual receptor. The distances are from the approximate centre of the site and categorised as:</td>
</tr>
<tr>
<td></td>
<td>Within 0 - 100 metres - high impact.</td>
</tr>
<tr>
<td>M</td>
<td>Further than 500 metres - low impact.</td>
</tr>
<tr>
<td>L</td>
<td>100 to 500 metres - moderate impact.</td>
</tr>
<tr>
<td>M/L</td>
<td>500 to 900 metres - moderate to low impact.</td>
</tr>
<tr>
<td>N</td>
<td>No view of the Proposal from this location.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quantum of view</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>The Quantum of view relates to the openness of the view and the angle of the view to the visual receptor. A development located in the direct line of sight has a higher impact than if it were located obliquely at the edge of the view. Whether the view of the Proposal is filtered by vegetation etc. also affects the impact, as does the nature of the view (panoramic, restricted etc.). A small element within a panoramic view has less impact than the same element within a restricted or narrow view. The effects can be categorised as:</td>
</tr>
<tr>
<td>M/H</td>
<td>A direct view of the Proposal or its presence (sometimes in a very narrow or highly framed view), where the Proposal occupies the greater proportion of the view cone.</td>
</tr>
<tr>
<td>M</td>
<td>A direct view of the Proposal or its presence in a broader view where the Proposal occupies a moderate proportion of the view cone.</td>
</tr>
<tr>
<td>M/L</td>
<td>An oblique, highly filtered or largely obscured view of the Proposal.</td>
</tr>
<tr>
<td>L</td>
<td>No view of the Proposal from this location.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Period of view</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>The length of time the visual receptor is exposed to the view. The duration of view affects the impact of the Proposal on the viewer - the longer the exposure the more detailed the impression of the proposed change in terms of visual impact:</td>
</tr>
<tr>
<td>M/H</td>
<td>Significant part of the day - high impact: usually residential property.</td>
</tr>
<tr>
<td>M</td>
<td>5 minutes to several hours - high to moderate impact: often from a garden or park or commercial property and work places.</td>
</tr>
<tr>
<td>M/L</td>
<td>10 seconds to 1 minute - moderate impact: usually from a road/through entrance, walking past or entrance to commercial property.</td>
</tr>
<tr>
<td>L</td>
<td>3 to 10 seconds - moderate to low impact: often from a road or walking past.</td>
</tr>
<tr>
<td>1 to 5 seconds - low impact: usually from a road or railway.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scale of change</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>Scale of change is a quantitative assessment of the change in compositional elements of the view. If the proposed development is largely similar in nature and scale to that of existing elements in the vicinity, the scale of change is low. If the development radically changes the nature or composition of the elements in the view, the scale of change is high. Distance from the development would accentuate or moderate the scale and variety of visible elements in the overall view and hence influence this rating:</td>
</tr>
<tr>
<td>M/H</td>
<td>Elements within the view would be greatly at odds with existing features in the landscape.</td>
</tr>
<tr>
<td>M</td>
<td>Elements within the view would be largely at odds with existing features in the landscape.</td>
</tr>
<tr>
<td>M/L</td>
<td>Elements within the view would be partly at odds with existing features in the landscape.</td>
</tr>
<tr>
<td>L</td>
<td>No view of the Proposal from this location.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Summary of Magnitude Ratings</th>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>H to N</td>
<td>A summary rating that combines all of the quantitative ratings. This is rated either high, moderate to high, moderate, moderate to low, low or none, where none implies no visible change based on the above criteria and high implies significant visible change in terms of the combined quantitative criteria.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SUMMARY</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Combined Rating</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>The nature of the visual impact may be beneficial or adverse, based on a transparent professional assessment of the combined totals of qualitative and quantitative ratings and comments as outlined above. The final rating is derived using the RMS matrix table - 01:</td>
</tr>
<tr>
<td>H</td>
<td>Highly adverse.</td>
</tr>
<tr>
<td>M/H</td>
<td>Moderately to Highly adverse.</td>
</tr>
<tr>
<td>M</td>
<td>Moderately adverse.</td>
</tr>
<tr>
<td>M/L</td>
<td>Slightly adverse.</td>
</tr>
<tr>
<td>L</td>
<td>Neutral or Beneficial.</td>
</tr>
</tbody>
</table>